NORTH CAROLINA Turnpike Authority

BACK OFFICE SYSTEM
REQUEST FOR PROPOSALS

Mandatory Pre-Proposal Scope of Services Meeting

October 24, 2017

10:00 a.m. to 12:00 p.m. EDT

NCDOT Transportation Building

Auditorium (Room 125)

1 South Wilmington Street

Raleigh, NC 27601

Qualification Package Due Date

~~December 21, 2017~~ January 16, 2018 | 4:00

p.m. Local Time

Physical Delivery Address:

North Carolina Turnpike Authority

Transportation Building

1 South Wilmington Street

Raleigh, NC 27601

Attn: ~~Kristen Pearce~~ Christina Poucher

~~**Mailing Address:**~~

~~North Carolina Turnpike Authority~~

~~1578 Mail Service Center~~

~~Raleigh, NC 27699-1578~~

Issue Date: October 10, 2017

Addendum Revisions Table

Description	Date
Addendum 1	October 23, 2017
Addendum 2	November 9, 2017
Addendum 3	November 14, 2017
Addendum 4	November 27, 2017
Addendum 5	December 8, 2017
Addendum 6	December 21, 2017
Addendum 7	January 5, 2018
Addendum 8	February 22, 2018
Addendum 9	March 20, 2018
Addendum 10	March 30, 2018 (BOS Pricing Sheets)
Addendum 11	March 30, 2018: (BOS RFP)
Addendum 12	April 18, 2018
Addendum 13	May 2, 2018
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1. Notice of Request for Qualification Packages

TITLE: Back Office System Request for Qualification Packages

ISSUING DATE: October 10, 2017

ISSUING AGENCY: North Carolina Turnpike Authority

CONTACT PERSON: Ms. Kristen Pearce

1.1. Background and Purpose

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. Due to concerns about rapid growth, heavy congestion and dwindling resources in the State, NCTA was created with the mission 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's 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

Organized into four (4) core departments (Engineering, Finance, Government and Public Relations, and Operations), NCTA is authorized to study, plan, develop, and undertake preliminary design work on Turnpike Projects. The NCTA is interested in soliciting Qualification Packages from industry suppliers/vendors that can provide NCTA with a state-of-the-art Back Office System (BOS) solution. With this procurement, NCTA desires to be at the forefront of account management and customer service, offering business requirement driven solutions and services deployed in a modular fashion addressing current and future needs.

NCTA is requesting written Qualification Packages from qualified companies ("Proposers") interested in providing a full-service BOS.

The Toll Systems Manager has primary responsibility for this Request for Proposal (RFP) process, the systems, services, scope of work addressed in this RFP, the evaluation of the Qualification Packages submitted by Proposers, and the oversight of the contract.

1.2. Procurement Process

NCTA is soliciting responses from qualified firms in the form of a Qualification Package with an emphasis on qualifications and experience. Qualification Packages received from qualified firms will be evaluated, and a short-list of Proposers (maximum of three (3)) will be identified. The Short-listed Proposers will advance to the Preliminary System Design Procurement Phase and submit a Preliminary System Design Package wherein they will refine the business requirements, system design, and delivery approach. NCTA will ultimately select one firm to advance beyond the Preliminary System Design Procurement Phase, and provide the BOS. The remaining Short-listed Proposers will receive a stipend for their design efforts.

The goal of the procurement is to develop the short-list of Proposers based upon qualifications, high-level technical approach, and ability to deliver the BOS required by NCTA. The short-list process will allow NCTA and the Short-listed Proposers to jointly advance the scope, system design and contract terms in a collaborative fashion, eliminating any confusion surrounding requirements or contract terms.

1.3.   Existing NCTA Toll Program

The Triangle Expressway is the NCTA's first toll facility, and it is located in the Raleigh-Durham area. The Triangle Expressway is a roadway extending from the NC 55 Bypass near Holly Springs to I-40 at NC-147. This toll road system is approximately 18.8 miles in length with 11 interchanges and 80 tolled lanes (4 mainline toll zones and 12 ramp toll zones).

The Triangle Expressway is an all-electronic toll (AET) facility with no cash toll collection. Tolls are collected electronically through a pre-paid transponder program (NC Quick Pass®), or a post-paid video program (Bill by Mail). Motorists who pay their tolls using properly mounted transponders on their vehicles pay a discounted rate compared to video toll customers.

Quarterly NCTA Operations Statistics reports are located on the NCTA website: http://www.ncdot.gov/projects/triangleexpressway. The reports include data related to traffic volumes, toll system, and roadway operations and maintenance.

1.3.1.   Planned Toll Projects

Several new NCTA toll projects are under development as listed below. These are currently funded and scheduled for construction within the next five years. Four of the five projects are in the greater Charlotte area, an area that does not yet have an operating toll road. It is anticipated that all future toll projects, with the possible exception of the Mid-Currituck Bridge, will be integrated into the NCTA BOS and will use the NC Quick Pass® program.

- The Monroe Expressway is a 20-mile long Expressway facility in Mecklenburg and Union Counties. Tolls will be collected at seven mainline toll zone locations. This project is under construction, and expected to open to traffic in 2018.

- I-77 Express Lanes is an NCDOT Public Private Partnership project that will construct 26 miles of Express Lanes on I-77 in Mecklenburg and Iredell Counties. The NCTA is responsible for the management of the transponder program and Back Office processing of the Express Lanes transactions. This project is under construction and is expected to be complete in 2018.

- US 74 Express Lanes will be constructed through two projects totaling 12 miles in Mecklenburg County. Construction is expected to begin in 2017.

- I-485 Express Lanes is a 17-mile long project in Mecklenburg County. Construction is expected to begin in 2017.

- Complete 540 is a 20+ mile long expressway facility in Wake and Johnston Counties. This project is an extension of the Triangle Expressway, and tolls will be collected electronically at mainline toll zone locations. This project is expected to begin construction in 2018.

- The Mid-Currituck Bridge is a 7-mile long project to construct a new-location toll bridge in Currituck County. Construction is programmed to begin in NCDOT Fiscal Year 2019.

Current information and project descriptions can be found on the NCTA website:

http://www.ncdot.gov/turnpike/projects/.

1.3.2.   Current Interoperability Status

The NCTA has led tolling interoperability advancements by implementing processes to accommodate transponder and reader technology that has interoperability with the E-ZPass®, SunPass®, and PeachPass® tolling programs. It is anticipated that the system interfaces necessary for Southern States Interoperability will be very similar to the interface currently utilized to support Florida / Georgia interoperability.

1.3.3.   Current BOS Technology and Operations

Back Office Technology

NCTA currently operates a BOS provided and maintained via contract with Conduent State and Local Solutions (Conduent). The majority of the BOS infrastructure, inclusive of hardware and software, is located in the Customer Service Center (CSC) with standby failover functionality located in Tarry Town, NY. The CSC is anticipated to expand its footprint to include one or more storefront locations in the greater Charlotte, NC area.

The existing BOS was developed to manage all the North Carolina toll collection system functionality, and potentially serve as an Electronic Toll Collection (ETC) clearing house for all toll transactions produced in the State. The current System provides functionality for:

- Processing of all lane transactions (ETC, image-based and interoperable (IOP))

- Customer service and customer interaction (website, Interactive Voice Recognition (IVR), e-mail, text message, etc.)

- Financial transactions and account replenishment

- Financial and lane transaction reconciliations

- Image review

- Revenue management

- Reporting

The existing BOS maintains accounts for tolls collected electronically through NC Quick Pass® and Bill by Mail (BBM). Numerous interfaces required for interoperability, license plate lookup, document mailing, banking, credit card processing, collections, etc. are in place supporting ongoing business processes. By year 2020, NCTA is projected to service approximately 300,000 accounts within the BOS. The NC Quick Pass® transponder participation rate is roughly 60%.

Refer to Figure 1-1 below for an overview of the current BOS architecture.
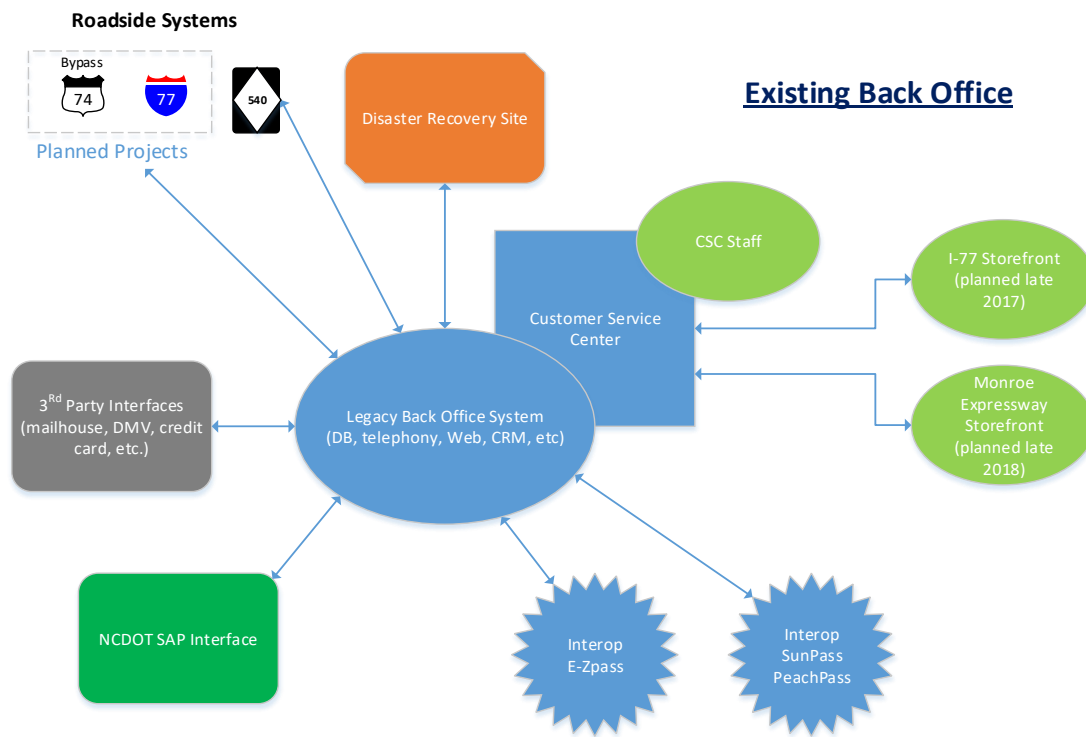
Figure 1-1: Current BOS Architecture Overview

Back Office Operations

Staffing of the CSC located in Morrisville, NC is provided via contract with AECOM, which provides full-scale back office staffing and operations for NCTA's toll program, including:

- Operations staffing and staff management

- Call center operations support

- Walk-in center staffing and operations including payment processing

- Account management support

- Bill by Mail invoicing

- NC Quick Pass® transponder distribution

- Image review

- Financial management and reconciliation services

1.4. Scope of Services

Contractor is to provide an efficient and cost-effective BOS with a modular architecture, utilizing proven commercial-off-the-shelf (COTS) products where possible, enabling the BOS to efficiently process fully-formed transactions (inclusive of any necessary license plate identification) provided by existing and future Roadside Toll Collection System (RTCS). The NCTA is particularly interested in modular software architecture and private cloud-based computing / hosted services / Infrastructure as a Service (IAAS), envisioning a predominantly service based approach to infrastructure, storage, and applications provision with a strong emphasis on private cloud-based offerings that leverage resilient third-party hosting capabilities.

The Scope of Work under this agreement is for the design, development, testing, installation and integration of a complete, end-to-end back office system that conforms to the requirements defined within **Section III, Scope or Work and Requirements** of this RFP.

The following is a summary of the critical areas of scope, and the phases for the development and implementation of the BOS. For more detailed information refer to the **Section III, Scope of Work and Requirements**:

1.4.1.   Critical Areas of Scope

- Back Office System Functionality and Design

- Back Office System Architecture

- Communications and Networks Design

- Toll Collection and Back Office Systems Reporting

1.4.2.   Summary of Phases

- Proposer Qualification Package Submission and Proposer Short-listing

- Preliminary System Design Procurement Phase

   o   This phase of work commences after the firms have been short-listed by NCTA.

- Final System Design and Development Phase

   o   This phase of work commences after NCTA has selected a final Contractor to complete the design and development of their BOS, and issued a Notice to Proceed (NTP). It includes completion of the concept design developed in the Preliminary System Design Procurement Phase, and development of the BOS.

- System Testing and Installation Phase

   o   This phase of work includes installation, integration and testing of the BOS.

- Training Phase

- Maintenance Phase

- Project Closeout Phase

The intent of this approach is to develop a BOS that offers best-in-class customer relationship management, billing, customer service and financial management functionality. Transparency into all design and development efforts, maintenance, reports generation, dash boarding, and system improvement plans will be required.

The BOS procured under this Contract *does not* include:

- CSC back office operations

   o   Back office operations will be provided under a separate contract; however, the Contractor is expected to interact with the NCTA CSC Back Office Operations Team and provide the necessary coordination with CSC contractor sufficient to properly integrate, test, train and operate the BOS.

1.5. Contact Person

Ms. Kristen Pearce is NCTA's Project Manager for this BOS Implementation, and the contact person on this RFP. Any questions in regard to this Notice or requests for an RFP package shall be directed in writing to Ms. Pearce by e-mail at nctabosrfp@ncdot.gov.

1.6. 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 Qualification Package Submittals.

2.   General Information for Proposers

NCTA is requesting written Qualification Packages from qualified Proposers interested in providing and maintaining a BOS. Qualified Proposers may submit a Qualification Package either solely or in partnership with other firms.

Interested parties shall provide and submit responses to this RFP in accordance with the guidelines and schedule set forth herein.

2.1.   Schedule

Table I-1 provides a planned schedule for this procurement process, listed in the order of occurrence. The 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 **Section I, Administrative**, Section 1.6 Information Posting.

SCHEDULE	
(The NCTA reserves the right to modify the schedule at any time and for any reason.)	
RFP Issue Date	October 10, 2017
Mandatory Pre-Proposal Conference	October 24, 2017 (10:00 a.m. to 12:00 p.m. EDT)
RFP Questions and Proposer Industry Comment Due	November 7, 2017
NCTA Question Responses and Addendum (if required) Due	November 27, 2017
Response to RFP (Proposer's Qualification Package) Due Date/Time	~~December 21, 2017~~ January 16, 2018 (4:00 p.m. EDT)
Short-list Notification	~~February 22, 2018~~ March 5, 2018
Final Contractor Selection	~~June 21, 2018~~ ~~July 18, 2018~~ September 7, 2018
~~**GENERAL INFORMATION**~~	
~~Contact Person Contact Information~~	~~**Kristen Pearce**~~ ~~Toll Systems Manager~~ ~~E-Mail: nctabosrfp@ncdot.gov~~ ~~Phone: (919) 674-5544~~
~~Response Delivery~~	~~NCDOT North Carolina Turnpike Authority~~ ~~1578 Mail Service Center~~ ~~Raleigh, NC 27699-1578~~
~~Posting Locations~~	~~www.ncdot.gov~~ ~~www.tollroadsnews.com~~

Table I-1 BOS RFP Procurement Schedule

2.1.1. Qualification Package Due Date

Qualification Packages will be received by NCTA until the due date and time provided in Table I-1 BOS RFP Procurement Schedule.

2.1.2. Mandatory Pre-Proposal Scope of Services Meeting

The NCTA will convene a mandatory Pre-Proposal Scope of Services meeting for interested firms on the date and time presented in Table 1-1: BOS RFP Procurement Schedule. The meeting will be held at the **NCDOT Transportation Building, Auditorium (Room 125), 1 South Wilmington Street, Raleigh, NC 27601** 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 mandatory for all Proposers who submit Qualification Packages in response to this RFP. Proposer is defined as the entity that submits a Qualification Package in response to this RFP.

2.1.3. Customer Service Center Tours

NCTA will provide site tours of the existing NC Quick Pass CSC located at 200 Sorrell Grove Church Road, Morrisville NC to the Short-listed Proposers at a date to be announced after the short-list posting. This site tour will allow Short-listed Proposers to assess the existing Customer Service Center site.

2.1.4. Proposer Questions and Industry Comment

- Questions regarding the RFP:

   NCTA invites potential Proposers to submit written questions regarding the procurement approach, scope of work and/or requirements.

- Request for Industry Comment on the RFP:

   Additionally, NCTA invites potential Proposers to submit industry comment on the scope of work and requirements outlined within this RFP. Proposers are urged to suggest changes to the scope of services and/or requirements which will provide NCTA with an innovative solution(s) for the new Back Office System. The suggested changes should not impact the Implementation Schedule. The overall goal is for BOS implementation is improved customer service and/or reduced NCTA system and operational costs. Providing industry comment on the scope of work and requirements outlined within this RFP is optional.

Note: All questions and industry comment on the scope of work and requirements must be submitted to NCTA by the date listed in Table I-1 BOS RFP Procurement Schedule. NCTA will also post responses and issue an addendum(s) in accordance with the timeline documented in Table I-1 BOS RFP Procurement Schedule.

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 the 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.

2.3. RFP Inquiries and Industry Comment

Any questions or industry comment Proposers may have in regard to this RFP shall be directed in writing to the contact person identified in **Section I, Administrative**, Section 1.5. Only inquiries and industry

comment received in writing will be accepted by NCTA, and only written responses will be binding upon NCTA. Any inquiries or industry comment received after the deadline referenced in Table I-1 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 forms provided in **Exhibit D-9**, and **Exhibit D-10**, **Forms**, when submitting questions and industry comment to be addressed by NCTA.

2.4. Non-Solicitation Provision

From the date that this RFP is issued until the award of a BOS Contract is announced, Proposers shall only contact the contact person with respect to any facet of this procurement. Proposers shall not be permitted to contact any NCTA or NCDOT employee, Agent or Selection Committee member with respect to this procurement. Violation of this provision ~~shall result in the disqualification~~ may be grounds for rejection of the Proposer's Qualification Package.

2.5. Cost Incurred Responsibility

The NCTA shall offer Short-listed Proposers not selected for the final design a stipend for their coordination of work with NCTA to refine the design of the future BOS. Firms not short-listed shall not receive any stipend, and NCTA shall not be liable for any costs incurred by the Proposer in preparation of its response.

2.6. Right to Reject

NCTA retains the right and option to reject any and all Proposal Materials submitted in response to this RFP.

2.7. Responsiveness of Proposals

NCTA reserves the right to reject any Proposal (i.e. Qualification Package and Price Proposal) as non-responsive if the Proposal fails to include any of the required information in the specified order, including as further detailed in **Section IV, Procurement Approach and Qualification Package Submission**.

2.8. Right to Cancel

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

2.9. 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 **Section I, Administrative**, Section 1.6 Information Posting. NCTA expects to issue the last addendum no later than the date for NCTA Response to All Questions and Industry Comments provided in Table I-1 BOS RFP 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 addenda shall apply.

Proposers are required to confirm the receipt of all addenda issued to this RFP by completing **Exhibit D-11**, **Forms**, and including the completed form in the Qualification Package Section 7.

2.10. Written Clarifications

NCTA may request written clarifications to Qualification Packages. 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.

2.11. Oral or Referenced Explanations

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

2.12. 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 short-list for the oral presentations and interviews based on the scores of the Qualification Packages. See **Section 1, Administrative**, Section 3 BOS Procurement Approach Overview 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. Proposers should be prepared to demonstrate key elements of their proposed System and Implementation approach, and to respond to specific questions regarding their Qualification Packages. NCTA may also provide demonstration scripts to be followed, and sample demonstration data to be processed.

2.13. Qualification Package Submittal Deadline

Complete Qualification Packages shall be delivered to the front desk of the NCDOT building location presented on the cover page of this RFP, before the due date and time provided in Table 1-1, where they will be logged in as received. NCTA will not accept Qualification Packages delivered after the due date and time.

2.14. Submittal Responsibility

The responsibility for submitting a Qualification Package 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.

2.15. Waivers

NCTA may waive minor informalities or irregularities in Qualification Packages 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 Qualification Packages by giving a Proposer an advantage or benefit not enjoyed by other Proposers.

2.16. Modification or Withdrawal of Qualification Packages

NCTA will permit modifications to a Qualification Package after Qualification Package Submittal until the specified due date and time for accepting Qualification Packages provided in Table 1-1 BOS RFP

Procurement Schedule. The Qualification Package may be picked up by a representative of the Proposer, provided that the request to modify is submitted in writing to the contact listed in Table I-1, is executed by the Proposer or the Proposer's duly authorized representative, and is filed with NCTA. It is the Proposer's responsibility to resubmit a Qualification Package before the deadline in accordance with the instructions and requirements for Qualification Package submission detailed in this RFP.

A Proposer may withdraw a Qualification Package without prejudice prior to the Submittal deadline provided in Table I-1, provided that the request is submitted in writing to the NCTA contact noted in Table I-1, is executed by the Proposer or the Proposer's duly authorized representative, and is filed with NCTA.

2.17. Confidentiality and RFP Ownership

Trade secrets or similar proprietary data which the Proposer does not wish disclosed to persons other than personnel involved with this RFP will be kept confidential to the extent permitted by N.C.G.S. § 132-1.2 if identified as follows: Each page shall be identified in boldface at the top and bottom as "CONFIDENTIAL." Any section of the RFP that is to remain confidential shall also be so marked in boldface on the title page of that section. Cost information may not be deemed confidential. In spite of what is labeled as confidential, the determination as to whether or not it is shall be determined by North Carolina law.

In addition to the above, the State intends to keep every Qualification Package received confidential as a whole until such time as an RFP has been awarded or canceled (aka the "Confidentiality Period"). After the expiration of the Confidentiality Period, all Qualification Package information will be subject to the normal confidentiality provisions of the State as set out above.

Exception: Proposers expressly acknowledge that the concepts, methods, equipment and procedures presented in a response may be wholly or partially incorporated into an RFP.

2.18. Contractual Obligations

NCTA will not be required to evaluate or consider any additional terms and conditions submitted with a Qualification Package. This applies to any language appearing in or attached to the document as part of the Proposer's Qualification Package. By execution and delivery of this RFP and Qualification Package, 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 **Section IV, Qualification Package Response and Submission Instructions**, Section 1.3.1 Content of Qualification Package (H. Qualification Package Section 6).

2.19. Proposer's Bid

By submitting a Qualification Package to NCTA, the Proposer agrees that their Qualification Package and Price Proposal (Price Proposal only submitted by Short-listed Proposers) shall remain effective two hundred and forty (240) Calendar Days after the deadline for submitting the Qualification Package.

2.20. Registration to Conduct Business in North Carolina

Proposers and Subcontractors wishing to be considered will be properly registered and licensed to conduct business in the State of North Carolina with the Office of the Secretary of State at the time the Qualification Package is submitted. It is the responsibility of the Proposers to verify the registration of any corporate subsidiary or Subcontractor prior to submitting a Qualification Package.

2.21. Disadvantaged, Minority, Women Business Enterprises (Race and Gender Neutral)

2.21.1. Policy

It is the policy of the 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 subconsultant participation on all contracts and supplemental agreements.

2.21.2. 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 subconsultant 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.

2.21.3. 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) subconsultants and/or suppliers on professional services contracts let by NCDOT. All DBE/MBE and WBE firms currently certified by the NCDOT Unified Certification Program (UCP) automatically qualify as a SPSF.

2.21.4. Listing of Subconsultants

The Proposer, at the time of Qualification Package Submittal, shall submit a list of all known SPSF that will participate in the performance of the identified Work. The participation of each SPSF shall be submitted on a separate Form RS-2. In the event the Proposer has no SPSF/Subconsultant participation, the Proposer shall indicate this on the Form RS-2 by entering the word 'none' or the number 'zero' and the form shall be signed and submitted with the Qualification Package. Form RS-2 is provided in **Exhibit D-5**, **Forms**, behind the List of Subcontractors. The form may also be accessed on the website at: https://connect.ncdot.gov/business/Turnpike/Documents/Form%20RS-2%20Subcontract.pdf.

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 RS-2 is required for all Subcontractors whether or not they are considered a SPSF entity.*

Note that each Proposer must complete the List of Subcontractors provided in **Exhibit D-4**, **Forms**, in addition to having each Subcontractor complete the RS-2. Completed List of Subcontractors and RS-2 Form shall be included in Qualification Package Section 7 Forms as instructed below in **Section IV, Qualification Package Response and Submission Instructions**.

2.21.5. Directory of Approved Transportation Firms

For Subconsultants to be considered for SPSF utilization, a Proposer 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/VendorDirectory/default.html.

2.21.6. Reporting Participation

When payments are made to Subconsultants, including material suppliers, firms at all levels (Proposer, subconsultant or subfirm) shall provide NCTA's contract administrator (the addressee for invoices under this Contract) with an accounting of said payments. The accounting shall be listed on NCTA's Subcontractor Payment Information Form (Form DBE-IS). In the event the Proposer has no Subconsultant participation, the Proposer shall indicate this on the Form DBE-IS by entering the word 'none' or the number 'zero' and the form shall be signed. Form DBE-IS may be accessed on the website at https://connect.ncdot.gov/business/Turnpike/Documents/Form%20DBE-IS%20Subcontractor%20Payment%20Information.pdf.

A responsible fiscal officer of the payee Firm, or Subconsultant, who can attest to the date and amount of the payments shall certify that the accounting is correct on the Form DBE-IS by affixing his/ her signature. This information shall be submitted as part of the requests for payments made to NCTA.

2.22. Federal Aid Requirements

Due to the potential of Federal Aid in development of various portions of the NCTA BOS, NCTA has provided related instructions and information in Appendix A, Standard Special Provisions Required Contract Provisions Federal-Aid Construction Contracts and Appendix B, Standard Special Provisions-Award of Contract. The following Federal-Aid Requirements set forth in Appendix A are applicable to this Contract for services: Section II, Nondiscrimination; Section X, Debarment and Suspension; and Section XI, Anti-Lobbying Amendment. Proposers shall also include the appropriate completed Non-Collusion Forms provided in **Exhibit D-12-16**, **Forms**, in Qualification Package Section 7.

3. BOS Procurement Approach Overview

Refer to this section for an understanding of the approach NCTA will employ to procure a BOS. The approach will include:

- Qualification Package Submission and Evaluation

- Preliminary System Design Procurement Phase and Evaluation

- Complete Implementation of a BOS solution, beginning after Contract NTP

Note: NCTA maintains the right to modify this approach via addendum as necessary.

3.1. Qualification Package Submission and Evaluation

For this procurement, NCTA requests that qualified firms submit a response in the form of a Qualification Package. Qualification Packages shall detail firm qualifications and experience, and describe how the back office solution they propose addresses NCTA's Statement of Work and Requirements and business policies.

Responses shall be limited to sixty (60) **combined** pages in length. Parties interested in responding to this RFP are urged to review **Section IV Qualification Package Response and Submission Instructions**, Section 1.2 Qualification Requirements and Section 1.3 Response Instructions for additional information on page restrictions.

Upon receipt of responses, NCTA will evaluate and score the Qualification Packages. NCTA may elect to contact qualified Proposers to schedule interviews/demonstrations, and NCTA may choose to follow up directly with Proposers with more detailed questions or to clarify submissions.

At the conclusion of this phase of the procurement, NCTA will select a final short-list of two (2) or three (3) Proposers to move forward into the one hundred and twenty (120) Calendar Day Preliminary System Design Procurement Phase.

3.2. Preliminary System Design Procurement Phase and Evaluation

This phase of the procurement process commences after the Short-listed Proposers have been notified by NCTA. Consisting of both design and evaluation periods, this phase will last approximately one hundred and twenty (120) Calendar Days. During this phase, NCTA will work with each Short-listed Proposer, independently and concurrently, to refine functional and system requirements of the proposed solution, and tailor the design of the Short-listed Proposers' systems to meet NCTA requirements.

This phase will be broken out as such:
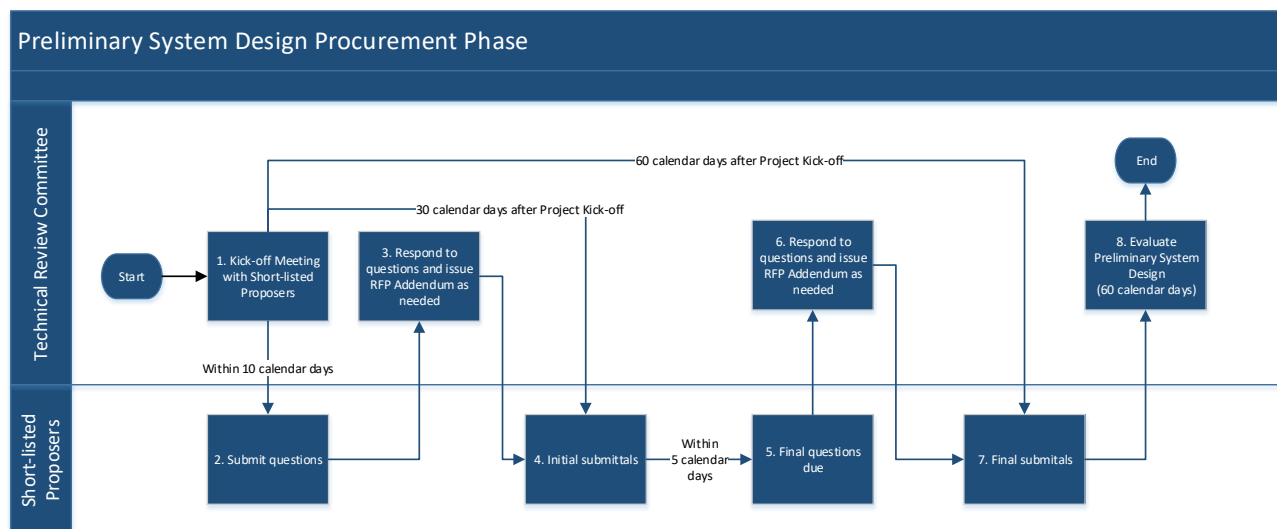
Figure 1-2: Preliminary System Design Procurement Phase Overview

1. Preliminary Design Kick-off: To initiate this phase, the Authority will conduct kick-off meetings with each Short-listed Proposer, individually, to review the agenda for this phase, set expectations and provide the Proposers with an avenue to ask questions about the process over the next four (4) months.

2. Questions Due: Within ten (10) Calendar Days of the kick-off meeting, each Short-listed Proposer will be required to submit any questions they have regarding the scope of work, system requirements (e.g. functional, implementation, or performance), business policies, etc. in order to refine their system design. At NCTA's discretion, a subsequent round of questions and answers may occur.

3. Responses and Addendums: Once all questions from all Proposers have been received, the Authority will respond to each question, make the responses available for all Short-listed Proposer(s) to review and issue any addendums to the RFP, as necessary.

4. Initial Submittals: Thirty (30) Calendar Days after the Preliminary Design Kick-off, all Short-listed Proposer(s) will be required to submit their ~~Preliminary Design Package containing: first~~

draft ~~of their~~ Requirements Traceability Matrix (RTM), draft Implementation Schedule, and draft <u>project management documents, including the:</u> Project Management Plan (PMP), ~~which will contain but not be limited to: a~~ Quality Management Plan (QMP), <u>Project</u> Communications Plan, ~~Document Deliverable and Management Plan, Change Management Plan,~~ Software Development Plan and ~~Risk Management~~ <u>Subcontractor Management</u> Plan as specified in the RFP.

5. Final Questions Due: Within five (5) Calendar Days of the initial submittals, each Short-listed Proposer will be required to submit any final questions they have regarding the scope of work, system requirements (e.g. functional, implementation, or performance), business policies, etc. in order to refine their system design.

6. Addendums and Final Responses: Once all final questions from all Proposers have been received, the Authority will respond to each question, make the responses available for all Short-listed Proposer(s) to review and issue any addendums to the RFP, as necessary.

7. Final Submittals: Sixty (60) Calendar Days after the Preliminary Design Kick-off, all Short-listed Proposer(s) will be required to submit their complete Preliminary Design Package for evaluation by the Technical Evaluation Committee (TEC) and Selection Committee. The complete Preliminary Design Package will contain: Preliminary Design Document (PDD)/technical proposal, an updated RTM and an updated Implementation Schedule, as well as other documentation as described in **Section III Scope of Work and Requirements**, Section 1.3.1 Preliminary System Design Procurement Phase. The Preliminary Design Package~~, and the Price Proposal~~ shall be submitted ~~in a~~ separately <u>from the Price Proposal in a</u> sealed package~~s~~ for evaluation by the Authority.

    <u>**Note**: Vendors will not be required to resubmit the project management documents (as specified in number 4 above) they submitted with the initial documentation submittal.</u>

8. Price Proposal Submittal: The Price Proposal shall be submitted one hundred fifteen (115) Calendar Days after the Preliminary Design Kick-off. <u>The Price Proposal shall be submitted separately from the Preliminary Design Package in a sealed package for evaluation by the Authority.</u>

Notes: All elements of the complete Preliminary Design Package must address the technical elements of the scope of work, complete system design and address all requirements documented within the RFP.

Once the complete Preliminary Design Packages are received, the TEC and the Selection Committee will evaluate each complete Preliminary Design Package in accordance with the process outlined in Section 4.3 Preliminary System Design Procurement Evaluation below. <u>The evaluation of the Preliminary Design Packages is expected to span approximately sixty (60) Calendar Days.</u>

At the conclusion of this phase, NCTA will select one (1) Proposer with which to enter into a Contract and complete implementation of a BOS solution. ~~The evaluation of the Preliminary Design Packages is expected to span approximately sixty (60) Calendar Days.~~

Note: NCTA will provide Short-listed Proposers not selected for final procurement a stipend, as described in **Section 4.5. Stipend Provision** below, as a mechanism to recoup costs associated with their efforts during the Preliminary System Design Procurement Phase.

3.3. Complete Implementation of a BOS Solution

The selected Proposer (herein referred to as the "Contractor") will continue working with NCTA designing, developing, testing and implementing the back office solution based on the timeframe documented in the negotiated Contract.

Note: For more information on BOS Implementation Phases and requirements, refer to **Section III, Scope of Work and Requirements**.

4. BOS Procurement Evaluation Processes

The evaluation process for both the Qualification Packages and the Preliminary System Design Packages will consist of a narrative evaluation development, and a quantitative scoring and ranking in order to ascertain which Proposer best meets NCTA's needs for the back office system. By using this method, the overall ranking may be adjusted up or down by the Selection 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.

4.1. Technical Evaluation Committee and Selection Committee

NCTA will utilize a TEC and Selection Committee made up of NCTA/NCDOT employees and other contracted staff, as requested by NCTA, to support the associated procurement. The TEC will provide input to the Selection Committee, and both will be responsible for the evaluation of both (1) the Qualifications Packages for the purpose of Short-listing Proposers, and (2) the Preliminary Design Packages and Price Proposals at the conclusion of the Preliminary System Design Procurement Phase for the purpose of determining a committee consensus for the Short-listed Proposer representing the "Best Value." A confidentiality agreement will be signed by all members of committee, which will limit their discussion on the Preliminary Design Package to only those NCTA personnel, or other personnel as dictated by NCTA, deemed necessary to assist in the evaluation.

4.2. Qualification Package Evaluation Process

4.2.1. Qualification Package Pass / Fail Screening

In response to this RFP, each Proposer shall submit a Qualification Package in strict compliance with the requirements outlined in **Section IV**, **Qualification Package Response and Submission Instructions,** and the timeline outlined in **Section I, Notice of Request for Qualification Packages**, Section 2: General Information for Proposers. Upon expiration of the Qualification Package Response due date, as detailed in Table I-1 BOS RFP Procurement Schedule above, the TEC shall:

1. Open all received Qualification Packages and validate the completeness of each package. Completeness includes all Qualification Package sections, correctly completed forms and required information. Qualification Packages which are incomplete will not be evaluated further.

2. Review each Qualification Package to ensure that the Proposer meets the minimum Proposer project experience qualifications. See **Section IV, Qualification Package Response and Submission Instructions** for additional information.

3. Immediately notify Proposers who did not meet the Pass / Fail Screening after the screening is complete**.**

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

4.2.2. Qualification Package Evaluation

1. **Qualification Package Narrative Evaluation Development.** Once the Qualification Packages have been checked for completeness, the TEC will evaluate each Qualification Package on material content, responsiveness to the requirements of the RFP, and the degree of adherence to **Section III, Scope of Work and Requirements** set forth in this document, as well as each Proposer's capabilities, composition, past performance (particularly on comparable projects), understanding and approach, quality program, and history implementing similar BOS projects. The TEC will develop a narrative evaluation of each Proposal to be provided to the Selection Committee.

2. **Preliminary Technical Scoring.** Once the Selection Committee receives the narrative evaluations from the TEC, the Selection Committee will score the Qualification Packages.

3. **Non-Compliant.** Any Qualification Packages scored below 65 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 65 will be considered compliant and asked to participate in the oral presentations and interviews (should NCTA elect to conduct them), and/or be short-listed to move forward into the Preliminary System Design Procurement Phase.

4. **Oral Presentations and Interviews (if conducted).** 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 TEC and Selection Committee to further its understanding of the Qualification Package(s) and proposed solution.

5. **Updated Technical Scoring.** After the oral presentations and interviews, the Selection Committee may update its preliminary technical scoring. The updated scoring will consider the Qualification Package and the results of the oral presentations and interviews (if conducted).

4.2.3. Qualification Package Scoring and Proposer Short-listing

1. The overall Qualification Packages are scored as shown in Table I-2 below:

Qualification Package Elements	Maximum Possible Points
Qualification Package Section 1: Proposer Qualifications	15
Qualification Package Section 2: Key Team Qualifications	25
Qualification Package Section 3: Approach to Scope of Work and Requirements	25
Qualification Package Section 4: Approach to Project Plan and Implementation	20
Qualification Package Section 5: Approach to Maintenance	15
Maximum Possible Technical Points	**100**

Table I-2 Qualification Package Elements and Maximum Possible Points Breakdown

2. After the initial Qualification Package evaluation has been completed and initial scores ranked, the Selection Committee will develop a Short-list of Proposers considering the numerical, technical scoring as well as other factors. This will result in the Short-listed Proposers being invited to participate in the Preliminary System Design Procurement Phase.

    a. At the Selection Committee's discretion, one additional Proposer may be designated as the Short-list Alternate. In the event a Short-listed Proposer withdraws from further consideration, NCTA may invite the Short-list Alternate to enter into the Preliminary System Design Procurement Phase, and submit a Preliminary Design Package and Price Proposal provided the alternate Proposer can do so without negatively affecting the BOS Implementation schedule. In this event, all previously Short-listed Proposers will be made aware of this invitation.

    b. Only Short-listed Proposers selected by the Selection Committee will move forward into the Preliminary System Design Procurement Phase.

4.3. Preliminary System Design Procurement Evaluation

The TEC and Selection Committee will evaluate all received Preliminary Design Packages over the course of sixty (60) Calendar Days. The evaluation process will consider the Short-listed Proposer's composition, approach to innovation, understanding of the scope of work, quality of the proposed system, anticipated problems and solutions, schedule, and system design. Evaluation of the Preliminary Design Packages shall also include the Short-listed Proposer's demonstrated capabilities, design features, schedule, innovation, long term maintenance considerations, quality control, product demonstrations, and deliverable guarantees.

Note: While the following evaluation process is similar to the Qualification Package evaluation process described above, it is a wholly separate and distinct evaluation of the Preliminary Design Packages produced by Short-listed Proposers at the conclusion of the Preliminary System Design Procurement Phase. The scores from the Qualification Package Evaluation phase will not be taken into consideration during the Preliminary Design Phase.

Following receipt of the Preliminary Design Packages by all Short-listed Proposers:

1. **Responsiveness Validation.** The TEC shall first determine whether or not the Preliminary Design Packages are responsive to the requirements of the RFP. If any of the Preliminary Design Packages are considered non- responsive, NCTA will notify the Short-listed Proposer. Non-responsive Short-listed Proposers shall not be eligible for further consideration, and will not receive a stipend.

    Each Preliminary Design Package found to be responsive will be evaluated by the TEC and Selection Committee. NCTA reserves the right to ask for clarification on any item in the Technical Proposals.

2. **Preliminary Design Package Narrative Evaluation Development.** Once the Preliminary Design Packages have been validated for responsiveness, the TEC will evaluate each Preliminary Design Package on material content, responsiveness to the requirements of the RFP, proposed schedule, and the proposed design of the system. The TEC will develop a preliminary narrative evaluation for each Proposer to document their findings recommendations to the Selection Committee.

3. **Technical Demonstrations.** Following the preliminary narrative evaluation, each Short-listed Proposer shall address the TEC and Selection Committee with a system demonstration based on their Preliminary Design Package. The TEC and Selection Committee Each will meet with

each Short-listed Proposer individually. The purpose of these demonstrations is to provide the TEC and Selection Committee with an opportunity to ask questions regarding the Preliminary Design Package and proposed system design to better understand the capability of each system, and provide each Short-listed Proposer with a forum to demonstrate how they propose to modify their system to meet all requirements of the RFP.   All Short-listed Proposers will be afforded equal time for these demonstrations.

4. **Final Evaluation and Narrative Evaluation Development.** Once all Short-listed Proposers have completed their technical demonstrations, the TEC will re-evaluate each Preliminary Design Package with the technical demonstrations in mind in order to develop a final narrative evaluation for each Short-listed Proposer. The TEC will submit their final narrative evaluations to the Selection Committee.

5. **Technical Scoring.** Once the Selection Committee receives the final narrative evaluations and recommendations from the TEC, the Selection Committee will score each Preliminary Design Package and create a ranking based on final scores.

   Any Preliminary Design Package scored below 65 out of 100 possible total points will be considered non-compliant, and will not be considered further. Only Short-listed Proposers that meet the minimum score of 65 will be considered for final Contracting.

6. **Transmission of Final Evaluation Results.** With narrative evaluations and scoring completed, the Selection Committee will then transmit their evaluation results, in confidence, to the Designated Contract Officer. These final results remain in the possession of the Designated Contract Officer.

4.3.1.   Preliminary Design Package Scoring

The overall Preliminary Design Packages are scored as shown in Table I-3 below:

Preliminary Design Package Elements	Maximum Possible Points
Preliminary System Design Document	25
Approach to Legacy Data Migration	15
Approach to BOS design, communications infrastructure design, and system hosting mechanism (e.g. cloud-based or other) proposal of hardware and software components	15
Quality of Preliminary System Design Phase documentation and Schedule	15
Customer Service Functionality Offered, and Configurability	15
Quality of User Interface Design and Usability	15
Maximum Possible Technical Points	100

Table I-3 Preliminary Design Package Elements and Maximum Possible Points Breakdown

4.3.2.   Opening of Price Proposals

All Price Proposals shall be submitted at the conclusion of the Preliminary Design Phase as set forth in **Section IV, Qualification Package Response and Submission Requirements**. After the Selection Committee has transferred the final narrative evaluations and scoring on the Preliminary Design Packages to the Designated Contract Officer, the Designated Contract Officer will open the Price Proposals.

4.3.2.1.   Negotiations and Best and Final Offers (BAFOs) Process

NCTA may elect to negotiate with one more Short-listed Proposers determined to be in a competitive range based upon the evaluation process described above. Short-listed Proposers may be requested to provide 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 Short-listed Proposer not be successful, NCTA reserves the right to negotiate with the next ranked Short-listed Proposer(s) at NCTA's sole determination.

4.4.   Determination of the "Best Value" Proposer

At the conclusion of the BAFO process, the Authority will recommend to the Secretary of Transportation, or their designee, the Short-Listed Proposer representing the best value be awarded the contract.

Note: The determination of best value will be made based on the merits of the Short-listed Proposer, their Preliminary Design Package and their Price Proposal, as documented within this **Section 4.3, Preliminary System Design Procurement Evaluation** of the RFP. The combination of these items will factor into the determination of "best value," recognizing that Best Value may result in award to a Short-listed Proposer other than the one with lowest price or highest technically qualified Preliminary Design Package. This combination balances the quality of a PDD/Technical Proposal with a bid price to create a best value solution.

4.5.   Stipend Provision

A stipulated fee of $150,000 will be awarded to each Short-listed Proposer that provides a responsive, but unsuccessful, BOS Proposal in response to the Request for Proposals and all associated Addenda. If a contract award is not made, all Short-listed Proposers that provide a responsive BOS Proposal will receive the stipulated fee. In the event that NCTA suspends or discontinues the procurement process prior to the Short-listed Proposers' submittal of the final Preliminary Design Package during the Preliminary System Design Procurement Phase, no stipulated fee will be paid.

Once award is made, or a decision is made not to award, an unsuccessful Short-listed Proposer can apply for the stipulated fee by notifying the State Contract Officer in writing and providing an original invoice within 60 days of Award. If the Short-listed Proposer accepts the stipulated fee, the NCTA reserves the right to use any ideas or information contained in the BOS Proposal, whether incorporated into the BOS Proposal or not, in connection with any contract awarded for the project, or in connection with any subsequent procurement, with no obligation to pay additional compensation to the unsuccessful Short-listed Proposer. The stipulated fee will be paid to eligible Short-listed Proposer within ninety days after the award of the contract or the decision not to award. Unsuccessful Short-listed Proposers may elect to refuse payment of the stipulated fee and retain any rights to its BOS Proposal and the ideas and information contained therein.

4.6. **Proposer Debrief**

Once a contract has been awarded to one (1) Short-listed Proposer, all Proposers, regardless of Short-list status, will be afforded the opportunity for a debriefing with NCTA regarding the relative merits of their Qualification Package, or their PDD/Technical Proposal and demonstration.

5.   **Award and Execution of Contract**

5.1. **Notification of Award**

Following evaluation, short-listing, the Preliminary System Design Procurement Phase, and evaluation of Price Proposals, NCTA may execute a Contract with the successful Proposer deemed to present the "best value" and the most advantageous offer to NCTA. NCTA will notify the successful Short-listed Proposer of the award by telephone and/or in writing via a notification of award letter via e-mail.

The successful Proposer will have fourteen (14) Calendar Days after receipt of the notification of award to furnish the performance and payment bonds and insurance required in the notification of award letter. If the successful Proposer defaults or otherwise is unable to enter into a Contract with NCTA, then NCTA may begin negotiations with the next highest ranked Short-listed Proposer.

The NCTA award of, or continuation of any Contract for or related to its BOS is subject to the availability of funding.

NCTA will issue an original Contract for execution by the successful Short-listed 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. On Federal-Aid projects, a true copy will be sent to the Federal Highway Administration.

Bonding Requirements. All bid and performance bonds will be handled using the following procedures. The NCTA Bid Bond form is available online at:
https://connect.ncdot.gov/resources/Specifications/2006ResurfacingProjects/Bid Bond.pdf

1. Payment and Performance Bonds:

    a. Proposer shall submit evidence that it is capable of obtaining Contract payment and performance bonds in an amount equal to 100 percent of the Contract Proposal Price, including the Preliminary System Design Procurement Phase, Final System Design and Development Phase, System Testing and Installation Phase, Training Phase, and for one year of Maintenance as further set forth in the paragraphs immediately below. A surety letter shall be required of Short-listed Proposers at the end of the Preliminary System Design Procurement Phase as acceptable evidence of meeting this bond requirement. The form for this letter shall be provided by NCTA to Short-listed Proposers upon initiation of the Preliminary System Design Procurement Phase.

    b. The initial bonds shall be in the amount of 100 percent of the total Contract price as set forth in the Proposer's Price Proposal. This bond amount will be decreased after Final Acceptance in the value of the completed Work. The Phase Bonds may be annually renewable, to be renewed each year at the anniversary of Contract execution.

    c. Bonding shall be continuous in that the Maintenance Bond associated with the BOS Procurement must be provided prior to the release of the Phase Bond for the BOS triggered by System Acceptance. The initial bonding level for the Maintenance Phase shall be provided at 100 percent of Year 1 of Maintenance. For purposes of the Surety Commitment, bonding

levels are defined as the total annual maintenance price and may be annually renewable, to be renewed each year at the anniversary date of Final Acceptance through the end of the Contract.

2. Bid Bonds

   a. Short-listed Proposers shall submit with their Price Proposal a bid bond or bid deposit in the amount of at least five (5) percent of the amount of the total Price Proposal. Contractor may submit certified and cashiers' checks in lieu of bid bonds.

   b. All bid bonds will be retained by the NCTA until the payment and performance bonds are furnished by the successful Proposer and Contract is executed. After such time, all bid bonds will be destroyed, unless the individual bid bond forms contains a note indicating that the bonds be returned to the Contractor or Surety and all certified and cashiers' checks will be refunded.

5.2. Insurance Requirements

The Contractor at all times during the Term of this Agreement shall maintain insurance in such form as is satisfactory to the NCTA, and will furnish the 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 firms 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 Proposer 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.

The 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 the 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 the NCTA or as provided in accordance with North Carolina law. Copies of all insurance policies and endorsements shall be provided to the NCTA upon request.

The 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 NCTA will not accept Self-Insurance Retention (SIR).

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 the NCTA. Nor shall the Contractor allow any Subcontractor to commence Work until all insurance required of the Subcontractor has been obtained. The Proposers who is the intended award shall submit the required Certificates of Insurance to the 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 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; and

2. Commercial General Liability Policy - Combined Single Limits: $1,000,000.00 per person, $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. Business Automobile Liability Policy - To include liability coverage covering all owned, hired and non-owned vehicles used in connection with the Contract. Combined Single Limits: $1,000,000.00 per person $3,000,000.00 per occurrence; and

4. 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.

5. 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 ten million dollars ($10,000,000) 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.

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 4; 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 4, 5, 6, if coverage is written on a claims 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.

6. Protest Procedure

Each Proposer, by submitting its Qualification Package, 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 Qualification Package 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.

<div align="center">

NCTA Executive Director

1578 Mail Service Center

Raleigh, NC 27699-1578

</div>

2. All protests shall include the following: 1) Name and Address of Protestor; 2) RFP Name and date of issuance; 3) 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. Protest Submittal Requirements – See Appendix C, North Carolina Turnpike Authority Policies and Procedures for the Procurement of Commodities and Services (February 2009).

6. All Qualification Packages shall be irrevocable until final administrative and judicial disposition of a protest.

Section II

Defined Terms and Acronyms

Section II - Table of Contents

1. Defined Terms

Term	Definition
Acceptance	Approval of a Phase or a test by the NCTA, based on meeting certain conditions and test requirements, including Approvals, set forth in **Section III, Scope of Work and Requirements** and the Agreement.
Account	A customer Account in the NCTA CSC Back Office system.
Account Conversion	The process whereby one an account is converted from one type to another.
Acknowledgement	A file type exchanged between two interfacing systems to acknowledge that files exchanged between the systems are complete and uncorrupt based on the validation of a file's checksum value. See also NACK.
Agreement	Also referred to as the contract, is the written contract between NCTA and the respective contractors covering the Scope of Work and other contract documents attached to the agreement and made a part thereof.
All-Electronic Tolling (AET)	A system that enables motorists to drive through toll zones and pay their tolls without stopping. As customers drive through the toll zones, tolls will be deducted from customer accounts using a transponder mounted in the vehicle or by identifying the license plate number of the vehicle.
Amendment	Change in the Agreement executed in writing made by adding, altering, or omitting a certain part or term.
Application	The term "Application," when capitalized in this Agreement refers to the BOS Mobile Application, both the website and mobile variants, for all browser types, mobile devices or mobile operating systems.
Application Program Interface (API)	A set of routines, protocols and tools used for building software applications, also specifying how software components should interact. Also used when programming graphical user interface (GUI) requirements.

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.
Approved Baseline Implementation Schedule	The Implementation Schedule Approved pursuant to the Agreement.
As-Built Drawings	Documents and other items set forth in **Section III, Scope of Work and Requirements** that constitute a complete and accurate record of the BOS as Designed, delivered, installed, Accepted and Approved.
Authority	North Carolina Turnpike Authority (NCTA)
Authorized User	Using a role-based login, a user with specific authority to perform a function(s) in the System. An Authorized User could be the Contractor, NCTA user, or a third-party service provider designated by the NCTA.
Away Agency	An Interoperable agency other than the NCTA.
Back Office System (BOS)	Hardware and software provided by the Back Office System Contractor to support toll collection and customer service operations, including but not limited to: data interfaces, subsystems, mobile application(s) and website(s).
Bill by Mail (BBM)	Customers who choose not to participate in the NC Quick Pass program will be invoiced at a higher toll rate through the Bill by Mail program. No account or toll transponder is required; instead as the vehicle passes through the toll zone, a video image of the license plate is taken from an overhead camera. The registered owner of the vehicle is identified through the Department of Motor Vehicles and a Bill by Mail is sent to the customer for payment.
Bug Fixes	Software development performed to resolve defects and deliver the required functions to the system that should have been included in the system at acceptance, per the system requirements.
Business Policies	A set of policies and procedures established by NCTA that defines how the business processes will be carried out during the course of toll operation.
Change Order	Change to quantities of Work within the scope pursuant to the **Section V, Terms and Conditions**.
Commercial Off-the-Shelf Software	Pre-packaged proprietary software or other product.
Concept Validation Testing (CVT)	The testing performed by the BOS contractor to verify that functional elements of the BOS Contractor's system are in conformance with the functional requirements and the final design.

Configurable	Functionality provided such that changes to the related thresholds, values, methods, parameters and/or settings shall not require additional Software development and Software testing effort. Verification of the change for this purpose is not considered testing. This same meaning applies to all variations, e.g. Configured.
Concessionaire	For the purpose of this RFP, a concessionaire is a private person, group, or company with the exclusive right to manage the construction, maintenance, and operation of a tolled Express Lane, and to collect toll revenue from the Express Lane during the term of the Concession Agreement.
Contract	See "Agreement".
Contract Documents	All of the documents that make up the Contract for the BOS, including but not limited to: • Executed Agreement, including the RFP, all executed RFP addenda, BAFO (if applicable), and Amendments • Qualification Package • Scope of Work and Requirements, as conformed • Terms and Conditions • Contractor's Proposal and system design documentation • Approved, baselined implementation schedule and approved updates • Change order documentation
Contract Project Manager	The Contractor's duly authorized representative designated to manage the Contractor's performance of the Work in accordance with the Agreement.
Contractor	The person, firm, corporation or entity undertaking the execution of the Work with whom NCTA has entered into an Agreement.
Correspondence	Any and all information in written form which is sent to and from the CSC.
Customer Relationship Management (CRM)	An auditable and reportable system component that tracks and monitors customer inquiry resolution and all progressive actions from inception to resolution.
Customer Service Center (CSC)	The facility that houses the equipment, software, and personnel required to establish, manage, and maintain customer accounts; provide customer service; process transactions and license plate images; and prepare customer notifications in accordance with NCTA's Business Policies and Procedures.
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 and transponder distribution to NCTA customers.
Dashboard	A visual display of collected information that is consolidated, arranged, and displayed on a screen(s) in an interactive and intuitive manner so that the information can be monitored and interpreted at a glance. A Dashboard is should include access to drill down links for more detailed information, including, but not limited to, additional screens, static and drill-down reports. In no way shall a report be considered a dashboard.
Deliverable(s)	All Documentation and any items of any nature submitted by the Contractor to the NCTA's Project Manager for review and Approval pursuant to the terms of this Agreement. See "Submittal".
Department of Motor Vehicles (DMV)	The North Carolina Department of Motor Vehicles registers vehicle titles and provides ownership data to NCTA for owner identification.
Design	All aspects of design relating to the system, as set forth in the requirements.
Design Documentation	System design documentation required under of this Scope of Work to adequately document how the System is designed.
Disaster Recovery	The process of re-establishing and making available the NCTA BOS after an event which renders the System inoperable.
Electronic Toll Collection (ETC)	A system of integrated devices and components that perform the automatic recording and reporting of vehicle transactions through electronic media in a toll revenue collection system.
Enhancements	Software development on the system that takes place, other than bug fixes or maintenance after system acceptance.
Escheatment	NCTA forwards unused funds to the State Comptroller for handling after a certain time of account inactivity.
Express Lane	A limited access expressway lanes or roadways separated from adjacent general purpose lanes and employing payment of tolls to manage demand.
Final Acceptance	Final Acceptance of each System will be considered by NCTA to have occurred, when NCTA has received and Approved all required documents, drawings, Software, interface data, test data, manuals and other Deliverables for the relevant System.
Force Majeure	The circumstances as defined in this Agreement whereby either party is excused from meeting a performance requirement specified in this Agreement.
Fully-formed Image-based Transaction	A fully-formed image-based transaction is an image-based transaction captured by a RTCS that has been processed by the RTCS host (e.g. image review has been completed, an OCR confidence has been applied and the best images for use in the BOS have been identified) and is ready to be sent to the BOS for processing onto a customer account.
General Ledger (GL)	The General Ledger is the main accounting record of a business that uses double-entry bookkeeping and is maintained by NCTA using a

	financial system separate from the BOS Contractor's system. The BOS Contractor's system will maintain a sub ledger, which will populate the GL via an interface.
Graphical User Interface (GUI)	A software screen and menu representation that allows users to input and retrieve data.
Hardware	"Hardware" is an all-inclusive term to mean the Equipment, Hardware, associated peripherals, associated firmware, electrical and other materials and supplies necessary or furnished by the Contractor to provide Services pursuant to the Contract Documents.
High Occupancy Toll (HOT) lane	A lane(s) of traffic available to high-occupancy vehicles (HOV) and other exempt vehicles to use without incurring a toll charge. Non-exempt vehicles and vehicles that do not meet HOV requirements are required to pay a toll based on the NCTA's business policies.
Holiday(s)	Days that are designated by NCTA as Holidays for purposes of this Agreement.
Infrastructure as a Service (IAAS)	An automated form of cloud computing that provides computer resources, complemented by storage and networking capabilities are owned and hosted by a service provider and offered to customers on-demand.
Image File	A file consisting of digital images and other meta-data collected by the RTCS, including but not limited to: license plate number, time of the transaction OCR values and transaction location.
Image Toll (I-Toll)	Initially an image-based transaction created at the lane level, but which is subsequently determined to be associated with a valid Transponder Account and is further processed as such.
ISO 27001:2013	An information security standard that is published by the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) under the joint ISO and IEC subcommittee, and is a specification for an information security management system (ISMS).
Interface	A point of interaction between two systems for the exchange of data.
Interface Control Document (ICD)	The document that defines the file formats and related business policies for processing data or transactions between the BOS Contractor's system and third-party systems.
Interoperable/ Interoperability (IOP)	A relationship between tolling agencies or entities where their systems are capable of capturing and transmitting transactions generated on an agency's roads by customers of the other agency or entity. Generally requires that reciprocity agreements between agencies and entities are in place to govern payments and reconciliation.
Interoperable Agency(ies)	Agencies that have a relationship that is Interoperable with NCTA and/or other Agencies.

Interoperability Partner	For customer convenience, NCTA has formed agreements with toll authorities from the Interoperable Agency Group (IAG), Florida and other surrounding states to allow customers to use one toll account to travel throughout many of the toll roads in the eastern and north eastern portion of the United States, regardless of which toll authority operates the road.
Invalid Transactions	Transactions that cannot be matched with the vehicle owner, cannot be pursued for payment and are therefore considered invalid. For example, this occurs when a license plate image is of insufficient quality to identify the correct license plate.
Invalid Transponder	Transactions from an invalid transponder (lost, stolen, or damaged etc.) at the time of usage at the toll facility will be invoiced through the Bill by Mail process.
Key Performance Indicators (KPIs)	Financial and non-financial measures or metrics used to help NCTA define and evaluate how successful system and operational areas of their business are performing.
Key Personnel	Staff designated as "key" in the NCTA BOS RFP and **Section III, Scope of Work and Requirements**, subject to the Approvals and conditions set forth therein and in the Agreement. Also referred to as "Key Team Personnel" or "Key Team Member."
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 **Section III, Scope of Work and Requirements**. May also be referred to as "Maintenance Services or Maintenance and Software Support Services."
Maintenance Phase	The phase which begins upon System Acceptance. Also known as Maintenance, Operations, and Support Services Phase.
Maintenance Services	The maintenance and related services required to be furnished by the BOS Contractor, pursuant to the contract documents. See Maintenance Phase.
Mobile Application	A software application developed specifically for use on small, wireless computing devices, such as smartphones and tablets, rather than desktop or laptop computer.
NCTA Designated Representatives	Person or persons authorized by the NCTA to represent NCTA in all dealings with the Contractor.
NCTA Operations Center	Synonymous with the Customer Service Center (CSC).
NC Quick Pass 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.

Nixie	A piece of undeliverable mail, or the postal marking on such a piece of mail which indicates that it is to be returned to sender.
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 Turnpike Authority (NCTA)	A Division 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.
Notice to Proceed (NTP)	The written authorization by the NCTA designating the date and time for the Contractor to commence Work.
Open Road Tolling (ORT)	A system that electronically collects tolls while vehicles pass through the tolling zone at highway speeds.
Optical Character Recognition (OCR)	A software process that automatically recognizes license plate characters without requiring human intervention and which, in this application, extracts and provides the license plate numbers and jurisdiction from the image of the license plate.
Order of Precedence	The order in which Agreement documents control in the event of a conflict or ambiguity in such documents.
Partial Payment	A payment posted to an account that does not cover the full amount of a toll transaction and/or any associated fee.
Payment Reversal	The reversal of a payment previously applied to an account or transaction.
Payment Card Industry (PCI) Data Security Standard (PCI DSS)	Is the guideline to help organizations that process card payments prevent credit card fraud, hacking, and various other security vulnerabilities and threats. A company processing, storing, or transmitting payment card data must be PCI DSS compliant or risk losing their ability to process credit card payments and being audited or fined.
Performance Requirements	The required level of performance standards for this Contract as set forth in the Terms and Conditions and **Section III, Scope of Work and Requirements.**
Preliminary and Final Design Document	Separate document deliverables that include, but are not limited to: the defined architecture, components, interfaces, design and functionality for the BOS to satisfy applicable Requirements in **Section III, Scope of Work and Requirements**, which is submitted by both the Short-listed Proposers (Preliminary) the Contractor (Final) for Approval by the NCTA.
Price Proposal	The sealed "bid" that constitutes the Proposer's price to complete the development, implementation, operation and maintenance of the work as required by the Request for Proposal and the Proposer's Proposal.

Priority	Ranking and assignment of importance used in the identification, monitoring, correction and reporting of System problems, bugs, and failures in accordance with **Section III, Scope of Work and Requirements.**
Project	The total Work set forth in **Section III, Scope of Work and Requirements** and as further set forth and detailed in the Agreement Documents.
Project Manager (PM)	The NCTA's duly authorized representative designated to manage this Work and Agreement.
Proposer	An entity that has submitted a Qualification Package on this RFP.
Provisional Acceptance	Provisional acceptance for each phase will be achieved when NCTA, in its sole discretion, determines that the Contractor(s) have complied with the system completion requirements set forth for that phase in the contract documents.
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.
Qualification Package	The document submitted in response to an RFP that outlines the prospective Firm's/Proposer's experience, qualification, design and project development qualifications as well as their understanding of the scope of services.
Recovery Time Objective (RTO)	The recovery time objective is the targeted duration of time and a service level within which a business process must be restored after a disaster (or disruption) in order to avoid unacceptable consequences associated with a break in business continuity.
Recovery Point Objective (RPO)	A recovery point objective is defined by business continuity planning. It is the maximum targeted period in which data might be lost from an IT service due to a major incident. The RPO gives systems designers a limit to work to.
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 Contract.
Requirements	Each of the required Work activities in numbered form as set forth in **Section 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, submitted by both the Short-listed Proposers and the Contractor, that summarizes the requirements of the BOS for Approval by NCTA, and that serves to track completion of design, development and testing as further described in **Section III, Scope of Work and Requirements**.
Registered Video	Transaction processed as a pre-paid registered video account using the vehicles license plate.
Services	Services shall mean the duties and obligations undertaken by the Contractor under, and to fulfill, the specifications, requirements, terms and conditions of the Agreement.
Short Message Service (SMS) Notification	A communication service component of mobile communication systems using standardized communications protocols that allow the exchange of short text messages between mobile phone devices.
Software	All computer programs, media, procedures, rules and associated Documentation pertaining to the control and operation of the data processing and data storage for the System, as further set forth in **Section III, Scope of Work and Requirements**. Software includes all associated features and functions described in **Section III, Scope of Work and Requirements**, including all updates, derivative works, enhancements, modifications or Upgrades thereto, and all error corrections, patches and bug fixes provided by the Contractor and which is made part of the System, as well as all related or ancillary data files, modules, libraries, tutorial and demonstration programs, and other components thereof, all source and object code, firmware and all Documentation.
Software-as-a-Service (SaaS)	Software that is deployed over the Internet and/or is deployed to run behind a firewall in a local area network. With SaaS, a BOS Contractor normally licenses an application to customers as a service on demand through a subscription or a "pay-as-you- go" model.
Storefront	The area in the lobby of the NCTA Customer Service Center, or other remote, stand-alone building outside of the NC Quick Pass Customer Service Center where Customer Service Representatives service walk-in customers.
Subcontractor	Any person, Proposer 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. Also referred to as "Subconsultant".
Submittal	See "Deliverables".
System	A discrete set of information technology (IT), data, and related resources, such as personnel, hardware, software, and associated IT services organized for the collection, processing, maintenance, use, sharing, dissemination, or disposition of information. **Note**: See also Back Office System.

System Acceptance	A completion milestone defined in **Section III, Scope of Work and Requirements.** Upon System Acceptance, the Maintenance Phase begins.
Technical Evaluation Committee (TEC) and Selection Committee	The Committees NCTA will use to evaluate Qualification Packages and Preliminary Design Packages submitted by Proposers for this procurement in order to determine the Best Value Proposer.
Technical Proposal	The proposal as set forth by the Proposer that conveys their design, development approach, schedule, and other items required by the RFP. The Technical Proposal is made a part of the Contract.
Transaction Aging	When a Bill by Mail transaction remains unpaid after the days allowable in the NCTA business policies. The term "aging" signifies that the transactions "age" to the point where the transaction is sent to a collection agency and additional fees (civil or processing) are added.
Transponder	Vehicle-mounted radio frequency device, supported by NCTA (e.g. NC Quick Pass) and those of NCTA's interoperability partners, read by the RTCS RF antenna(s) and reader Equipment in in a toll lane.
Unapplied Payments	Payments posted to an account that has yet to be applied to specific transactions. Lockbox fees, over-payments, and refunds are examples of unapplied payments.
Uncollected Tolls	Amount(s) due NCTA for toll passage that are collectable, but have not yet been received.
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.
Website Application	A web application, or web app, is a client-server software application in which the client (or user interface) runs in a web browser.
Wireframe	Generally an image or set of images that displays the functional elements of an application that is used for planning the application's structure.
Warranty	An assurance by the Contractor that the Services in furtherance of this Contract are guaranteed by the Contractor and the Services provided will operate in conformity with Requirements as defined by the Contract. See Section 1.6, Warranties.

2. Acronyms

Acronym	Meaning
ACD	Automatic Call Distributor
ACH	Automated Clearing House
ACK	Acknowledgement Files
AET	All-Electronic Tolling
AMEX	American Express
AOC	Attestation of Compliance
API	Application Program Interface
ATC	Alternative Technical Concepts
BAFO(s)	Best and Final Offer(s)
BBM	Bill by Mail
COTS	Commercial Off-the-Shelf
CRM	Customer Relationship Management
CSC BOS	Customer Service Center Back Office System
CSR	Customer Service Representative
CSV	Comma Separated Values
CVT	Concept Validation Test
CVV	Card Verification Value
DBA	Database Administrator
DBE	Disadvantaged Business Enterprise
DMV	Department of Motor Vehicles
DR	Disaster Recovery

DRP	Disaster Recovery Plan
DRT	Disaster Recovery Test
(E&O)	Errors & Omissions
EFT	Electronic Funds Transfer
ETC	Electronic Toll Collection
FAQ	Frequently Asked Questions
FIFO	First in-First Out
FSDD	Final System Design Document
FTP	File Transfer Protocol
GAAP	Generally Accepted Accounting Principles
GL	General Ledger
GUI	Graphical User Interface
HOT	High Occupancy Toll
IAAS	Infrastructure as a Service
ICD	Interface Control Document
IEC	International Electrotechnical Commission
IOP	Interoperability
IVR	Interactive Voice Recognition
ISMS	Information Security Management System
ISO	International Organization for Standardization
ITS	Intelligent Transportation Systems
IVR	Interactive Voice Recognition
I-Toll/IToll	Image Toll
KPI	Key Performance Indicators

LAN	Local Area Network
MBE/WBE	Minority Business Enterprise/Women Based Enterprise
MTBF	Mean Time Between Failures
MTP	Master Test Plan
NCDOT	North Carolina Department of Transportation
NCTA	North Carolina Turnpike Authority
NIST	National Institute of Standards and Technology
NSF	Non-Sufficient Funds
NTP	Network Time Protocol
NTP	Notice to Proceed
OOP	Operations Observation Period
OS	Operating System
PA-DSS	Payment Application Data Security Standard
PCI	Payment Card Industry
PCI-DSS	Payment Card Industry Data Security Standard
PCI SSC	Payment Card Industry Security Standards Council
PDF	Portable Document Format
PII	Personally Identifiable Information
PIN	Personal Identification Number
PMP	Project Management Plan
PDD	Preliminary Design Document
QA	Quality Assurance
QC	Quality Control
QIR	Qualified Integrators and Resellers

QMP	Quality Management Plan
QR	Quick Response
QSA	Qualified Security Assessor
RFP	Request for Proposal
RPO	Recovery Point Objective (
RTM	Requirements Traceability Matrix
RTO	Recovery Time Objective
SaaS	Software as a Service
SAT	Site Acceptance Testing
SH	State Highway
SIR	Self-Insurance Retention
SMS	Short Message Service (also known as text message)
SPSF	Small Professional Services Firms
SOP	Standard Operating Procedure
TEC	Technical Evaluation Committee
TVL	Tag Validation List
UAT	User Acceptance Testing
UCP	Unified Certification Program
USB	Universal Serial Bus
USPS	United States Postal Service
VIN	Vehicle Identification Number
VPN	Virtual Private Network

Section III

Scope of Work and Requirements

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1. Scope of Work

NCTA's goal with this procurement is to transition to a BOS with a modular architecture, utilizing proven COTS products where possible, enabling the BOS to seamlessly process fully-formed transactions (inclusive of any necessary license plate identification) that existing and future RTCSs will provide. The intent of this approach is to develop a back office solution that offers best-in-class customer relationship management, billing, customer service and financial management functionality. Transparency into all design and development efforts, testing, maintenance, reports generation, dash boarding, and system improvement plans will be required.

The NCTA is particularly interested in modular software architecture, private cloud-based computing, hosted services, and infrastructure as a service. NCTA envisions a predominantly service based approach to infrastructure, storage, and applications provision with a strong emphasis on private cloud-based offerings that leverage resilient third-party hosting capabilities. A greatly limited footprint within NCTA facilities is required such that secure network connectivity to CSC workstations or other administrative workstations is all that is required to establish an operational customer service facility.

This Scope of Work under this agreement is for the design, development, procurement, furnishing, installation, integration and testing of a complete, end-to-end back office system that conforms to the requirements of this RFP. This will include all required software, systems, equipment, maintenance, and training necessary to operate the entire system in an efficient, responsive, and accountable manner for the duration of the Contract.

Note: NCTA will retain all rights for unlimited use of any, and all, custom software developed and deployed with this BOS Implementation by the Contractor.

This section of the RFP, along with the requirements documented in Sections 2, 3 and 4, collectively comprise the Scope of Work.

1.1. Service Requirements

1.1.1. Key Implementation Dates

The following schedule tasks and milestones dates 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. The Contractor chosen to proceed with the Final System Design shall be required to meet the dates outlined in the final, baselined schedule.

Milestone	Start Date	End Date
Receipt of Qualification Packages		~~December 21, 2017~~ January 16, 2018
Qualification Package Scoring and Short-listing	~~December 22, 2017~~ January 17, 2018	~~February 11, 2018~~ March 2, 2018
Authority Notifies Short-listed Proposers and Holds Kick-off Meeting	~~February 12, 2018~~ March 5, 2018	~~February 28, 2018~~ March 16, 2018
Preliminary System Design Procurement Phase	~~March 1, 2018~~ March 19, 2018	~~June 20, 2018~~ ~~July 16, 2018~~ August 15, 2018
Final Selection and Contract Negotiations	~~June 21, 2018~~	~~July 31, 2018~~

	July 17, 2018 ~~September 7, 2018~~	August, 13, 2018 ~~October 5, 2018~~
Notice to Proceed (Final System Design and Development Phase Commences)	~~August 1, 2018~~ ~~August 14, 2018~~ October 9, 2018	~~January 31, 2019~~ ~~February 13, 2019~~ April 9, 2019
System Testing and Installation Phase	~~February 1, 2019~~ ~~February 14, 2019~~ April 10, 2019	~~May 20, 2019~~ ~~June 3, 2019~~ July 26, 2019
Training Phase	~~May 21, 2019~~ ~~June 4, 2019~~ July 29, 2019	~~August 1, 2019~~ ~~August 13, 2019~~ October 7, 2019
Cutover from Legacy System	~~July 1, 2019~~ ~~July 15, 2019~~ September 6, 2019	~~July 31, 2019~~ ~~July 15, 2019~~ October 7, 2019
Back Office Go Live		~~August 1, 2019~~ ~~August 13, 2019~~ October 8, 2019
Maintenance and Project Closeout Phases	~~August 2019~~ October 2019	~~October 2024~~ ~~November 2024~~ December 2024

Table 3-1 Key Implementation Dates

1.1.2.   Back Office System

The Contractor shall design, develop, test, implement and maintain a full-scale back office system to meet all of the requirements defined within this RFP, including the provision of services related to: data and data exchange interface management, bidirectional interfaces to multiple RTCS, transponder and license plate transaction processing, and revenue collection. The system shall also support third-party vendors, financial processing (such as credit cards, and electronic funds transfer (EFT)) and financial reconciliation with interoperable partners and concessionaires.

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 BOS Implementation. Cooperation and coordination is required to avoid claims by NCTA or ultimate dismissal from the BOS Implementation.

1.2.   Critical Areas of Scope for the Back Office System

Within the fully functioning back office system, the following areas are considered critical areas of scope. While the Contractor(s) 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, 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 **Section III, Scope of Work and Requirements**, Sections 2, 3 and 4 below. Further, the

final scope and requirements will be determined during the Preliminary System Design Procurement Phase.

1.2.1.   Back Office System Functionality and Design

- Customer account creation, management and maintenance

- System security and PCI compliance

    o   Payment Application Data Security Standard (PA-DSS) certified solution

    o   Compliant with the current version of Payment Card Industry Data Security Standard (PCI-DSS)

    o   Compliant with the current version of National Institute of Standards and Technology (NIST) 800-53

- Transponder inventory management, assignment and maintenance

- Interface development and management

- Transaction processing

- Customer account statement creation and generation

- File creation for transmission to RTCS hosts and external interface partners

- Payment processing and revenue tracking

- Interoperability support

- Performance tracking

- Data exchange interfaces

- Legacy data migration and support

- Customer self-service channels (e.g. IVR, website and mobile device applications) development and support

1.2.2.   Back Office System Architecture

- Utilization of new hardware, new and existing (where approved by NCTA) infrastructure, including wiring and cables

- Modular system design

- Private cloud-based computing and infrastructure as a service

- Cloud-based telephony inclusive of IVR and Automatic Call Distributor (ACD) functionality

- Provision of CSC workstations and related equipment as required

- Database design

- Data Conversion and migration

- System reliability, availability, and maintainability

- Equipment diagnostic and self-test requirements

1.2.3. Toll Collection and Back Office Systems Reporting

- Pre-defined reports:

  The Contractor(s) shall provide pre-defined reports, to be defined by NCTA during the development process, that address activity related to but not limited to: transaction processing, posting, system performance, operations performance, transaction reconciliation, auditing, revenue tracking and exception reporting.

- Custom reports:

  The Contractor(s) shall provide NCTA with access to a reporting database (e.g. Data Mart), updated daily, that will allow authorized users to develop and run customized reports without the assistance of a database administrator, a software engineer or other highly skilled system developer with expert knowledge of the Contractor's system. A tool such as Tableau or Microsoft Power BI licensed for up to twenty-five users shall be leveraged for this functionality.

- Database Access:

  User access to the reporting database and on-line reports shall be based on an approved Roles and Responsibilities Matrix.

1.2.4. Communications and Networks

- Communications network architecture

- Network security, protection and access

- Network configuration

- Redundancy, availability, capability

- Virtual Private Network, authentication infrastructure and BOS thin-client applications

- Network connectivity to Storefront(s)

- Operations Center local area network supporting all systems

1.3. Phases, Milestones, and Tasks

The scope of work includes the phases shown below.

1.3.1. Preliminary System Design Procurement Phase

This phase of work commences after the final Proposers have been short-listed by NCTA. This phase includes the Preliminary System Design of the back office system, including but not limited to:

- Clarification of the BOS requirements (including mobile application requirements), as necessary, to fully develop the new BOS.

- Coordinating with NCTA to schedule and attend a Preliminary Design Kick-off conference with NCTA and other representatives as designated by NCTA.

- ~~Evaluation of the existing primary CSC facility and planned storefront location(s) communications infrastructure in place to support NCTA's back office operations, and design of any new infrastructure that may be needed to support the new system.~~

- Identification of any differences necessary between the BOS, website(s) and mobile device based application(s).

- Identification/clarification of the type of the required browser types, mobile devices and mobile device operating systems/versions to develop to and support.

- Preliminary back office system and communications infrastructure design, system hosting mechanism (e.g. cloud-based or other) proposal of hardware and software components that shall be utilized to support NCTA BOS Operations once the BOS is installed at the NCTA CSC, and other locations as directed by NCTA.

- Preliminary plan for conversion and migration of legacy data into the new system.

- Preliminary design of the back office system software that will be customized to manage NCTA's back office operations.

- Preliminary design of tools, concept of interfaces, and system functionality required to operate the back office system. This includes the software applications, customer correspondence (e.g. bills, statements, system generated notices, etc.), notifications, and triggers that allow system users to actively manage certain aspects of the back office system and its subsystems.

- Preliminary design of customer self-service tools and functionality, including but not limited to: IVR, websites, mobile applications, phone system applications and tools.

- Coordination with NCTA on the look and organization and review of the BOS and application website(s) and Graphical User Interfaces (GUI) for all system applications (BOS client, website(s) and mobile application), as well as development of user interface mockups for review and approval by NCTA.

- Creation of Mobile Application and website wireframes for all supported platforms and functions.

- Coordinating with NCTA to schedule and attend regular design meetings and other status meetings as directed by NCTA.

- Development of Preliminary Compensating Control Worksheet listing the security and compliance requirements that the Contractor cannot meet as currently specified, 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 800-53r4, Statewide Information Security).

- Development of the Short-listed Proposers' approach to system training.

- Development of Preliminary System Design Procurement Phase documentation for NCTA's review and approval, including but not limited to:
  - Draft Project Management Plan *
  - Draft Software Development Plan *
  - Draft Quality Management Plan *
  - Draft Project Communication Plan *
  - Draft Subcontractor Management Plan *

- o Draft System Hardware / Hosting / IAAS / Private Cloud-based Design

- o Draft Data Migration Plan

- o ~~System Network Evaluation~~

- o Preliminary Implementation Schedule, Including all System-related Milestones and Touchpoints

- o Draft System Training Plan

- o Draft Requirements Traceability Matrix

- o Draft Business Continuity / Disaster Recovery Plan

- o Preliminary System Design Document

- o Preliminary Security Configurations Documents that align with required security and compliance standards (e.g. PCI-DSS, NIST 800-53r4, etc.)

- o Preliminary Network and Dataflow Diagrams

- o Preliminary Roles and Responsibilities Matrix that align with required security and compliance standards (e.g. PCI-DSS, NIST 800-53r4, etc.)

Note: Aside from the items marked with an *, ~~All of~~ the deliverables listed ~~herein~~ above shall make up the complete Preliminary Design Package, and shall be ~~to be~~ presented to NCTA for evaluation ~~at the conclusion of the initial sixty (60) Calendar Day period of this phase~~ sixty (60) Calendar Days after the Preliminary Design Kick-off.

1.3.2. Final System Design and Development Phase

This phase of work commences after NCTA has selected a final Contractor, and issued NTP to complete the concept design developed in the Preliminary System Design, as well as the development of the back office system, including but not limited to:

- Advancing all of the preliminary concept designs from the previous phase to finalize the design of the BOS, completing the system design document, and validation of the back office system hardware and software components that will be installed and / or provisioned at the NC Quick Pass CSC and other locations as directed by NCTA.

- Finalizing the data conversion, migration and incorporation plan for all legacy data.

- Coordinating with NCTA to schedule and attend regular design meetings and other status meetings as directed by NCTA.

- Coordination with NCTA and their designees on focus groups related to the Application GUI designs, as requested.

- 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.

- Final validation of the existing communications infrastructure in place to support NCTA's primary CSC facility and planned storefront location(s), and design of any new infrastructure that may be needed to support the new system.

- Documentation of the Contractor's approach to system testing to meet the requirements of NCTA's testing phases.

- Finalization of the Contactor's approach to system training, and training material development.

- 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 the back office systems, subsystems, Mobile Application and website software that shall be customized to manage NCTA's back office operations, including tools, interfaces, and system functionality required to support NCTA CSC operations. This also includes the software applications, notifications, and triggers that allow system users to actively manage certain aspects of the back office system and its subsystems.

- Development of an updated Compensating Control Worksheet listing the security and compliance requirements that the Contractor cannot meet as currently specified, 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 800-53r4, Statewide Information Security).

- Development of Final System Design and Development Phase documentation for NCTA's review and approval, including but not limited to:

  o Final Project Management Plan

  o Final Quality Management Plan

  o Final Project Communication Plan

  o Final Software Development Plan

  o Final Subcontractor Management Plan

  o Final System Hardware / Hosting / IAAS / Private Cloud-based Design

  o Private Cloud / Infrastructure as a Service / Cloud-based Telephony Provisioning and Integration Plan, local equipment delivery and installation plan

  o Master Test Plan

  o Final System Design Document

  o Final System Training Plan

  o Test Plans

  o Baselined Implementation Schedule, Including all System-related Milestones and Touchpoints

  o Updated Requirements Traceability Matrix

  o Draft Training Materials

  o Final Data Migration Plan

- o Final Business Continuity / Disaster Recovery Plan

- o Updated Security Configurations Documents that align with required security and compliance standards (e.g. PCI-DSS, NIST 800-53r4, Statewide Security Policy)

- o Updated Network and Dataflow Diagrams

- o Updated Roles and Responsibilities Matrix that align with required security and compliance standards (e.g., PCI-DSS, NIST 800-53r4)

- Draft database documentation, including thorough documentation of each database's structure and a plan for database management.

    - o Other Documentation Items Required:

        - Equipment Layouts / Private Cloud-based Architecture

        - Hardware Architecture

        - Communications Block Diagrams

        - Interface Control Documents

        - Storage and Sizing Analysis

        - Capacity Analysis

        - Power and Heat Load Analysis, if applicable

        - Surge Suppression Analysis, if applicable

        - Communications Resiliency Analysis,

        - System Security (System Access)

        - Redundancy / Business Continuity Analysis

1.3.3. System Testing and Installation Phase

This phase of work includes system integration, testing and installation of the back office system, including but not limited to:

- 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.

- Transition of data from the legacy system to the new system in preparation for system testing.

- Testing of all functionality for systems and subsystems, including websites and the Mobile Application, at all levels including: BOS Contractor internal testing (e.g. unit, regression and Quality Assurance (QA) testing) and formal system testing, including:

    - o Usability and User Interface Testing (may be two different tests) – Enable NCTA to test available functionalities before each release, conduct focus group testing as requested by NCTA, and provide feedback on the usability, function and look of the Mobile Application and website to improve usability and function.

- o   User Acceptance Testing (UAT) – including NCTA testing of available functionalities before each release and final UAT for websites and the Mobile Application.

- o   Concept Validation Test (CVT)

- o   Site Acceptance Test (SAT)

- o   Disaster Recovery Test (DRT); as applicable based upon private cloud architecture approach

- o   Operations Observation Period (OOP)

- o   Google Play and Apple Application Store Certification Testing

- o   Vulnerability Scan Reports

- Internal and External Penetration Testing in in accordance with the current version of PCI-DSS.

- Development of a Compensating Control Worksheet addressing all system vulnerabilities that the Contractor cannot rectify, including the Contractor's risk-based scoring methodology. NCTA must approve all Compensating Controls relating to security and compliance requirements (e.g., PCI-DSS, NIST 800-53r4, Statewide Information Security).

- Integration of the back office system within the private cloud-based infrastructure, at the NCTA CSC, at storefront locations, and other location(s) as directed by NCTA.

- Installation of any electrical and communications infrastructure required by the back office system not already present in the existing facility(ies).

- Installation of the BOS system software and subsystems, configuring and integrating system and communication components, and bringing all aspects of the BOS online.

  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).

- Provision of documentation and training for users responsible for operating the back office system.

- Providing regular updates to the Implementation schedule, and attending update meetings as requested/required by NCTA.

- Finalization of training materials, help systems, "how-to" and user manuals per the approved Training Plan.

- Coordination with NCTA to develop a training schedule and list of CSC operations and NCTA staff who will require training on the BOS and application.

- Development of System Testing and Installation Phase documentation for NCTA's review and approval, including but not limited to:

- o   Installation Plans and schedule, including all system-related milestones and any necessary system transition activities

- o   Installation Punch List

- o   Test Report Results Documentation

- o   Equipment And Network Configurations

- o   Updated Requirements Traceability Matrix

- o   Business Continuity Plan

- o   Maintenance Plan

- o   Maintenance Manual

- o   BOS Operator Manual

- o   Updated Training Documentation and Materials

- Finalizing testing results documentation, and/or testing punch lists for NCTA review and approval, as necessary.

1.3.4.   Training Phase

This phase of work includes training for the system, CSC operations staff, NCTA staff and others as directed by NCTA. This phase includes, but is not limited to the following:

- Coordinating with NCTA to develop a training schedule for all CSC operations staff, NCTA staff and other contractors as directed by NCTA. The schedule shall identify all dates and durations required for conducting all training.

- Providing both electronic and hard copies of the training materials for each person being trained.

- Conducting training for the BOS for all CSC operations staff, NCTA staff and other contractors as directed by NCTA.

- Providing all training material, computers, projectors, projector screens, video players, meals, and supplies required for the training class.

- Completion of the following documentation for NCTA's review and approval, including but not limited to:

- o   Final Training Materials

- o   Final Operations Manual(s)

- o   Final Systems Administration Manual(s)

- o   Final Maintenance Manual(s)

- o   Final Business Continuity Manual(s)

- o   Final Training Documentation

- o   Final Test Results Documentation

1.3.5.   Maintenance Phase

This phase of work includes the maintenance of the back office system. This phase includes, but is not limited to the following:

- Monitoring and management of activities of the back office system in its entirety.

- Responding to system issues in the appropriate amount of time, determined by priority.

- Performance of corrective and preventive/planned maintenance of the back office system, including the implementation of system enhancements as directed by NCTA or required to maintain compliance with Contract requirements.

- Providing system updates as required and as necessary in order to keep the BOS fully functional, and capable of meeting system performance metrics.

- Providing Mobile Application updates as required to maintain compliance with ongoing mobile device operating system upgrades during the life of the Contract.

- Development and ongoing Maintenance documentation for NCTA's review and approval, including but not limited to:

  o   Installed equipment list

  o   Spare parts list, if applicable

  o   Maintenance service manual

  o   Schedule of preventive maintenance

1.3.6.   Project Closeout Phase

This phase of work includes the Project closeout activities, including, but not limited to the following:
- Upon completion of the Maintenance Phase and during the initial warranty period, the Contractor shall provide Project Closeout documentation (printed and soft copy) for NCTA's review and approval, including but not limited to:

  o   Drawings / sketches

  o   Cut sheets

  o   Inventory numbers and information, such that NCTA will be able to make changes or hardware change outs in the future

  o   Final software documentation

  o   Final as-built design documentation

  o   Final website templates and formatting style sheets

  o   Final security configurations documents

  o   Final vulnerability assessment scan reports

  o   Final penetration testing reports

  o   Final compensating control worksheets

  o   All source code associated with the BOS and Mobile Application software developed for the Contract

  o   Final software documentation to provide Application Program Interface (API) developers the necessary information to create functions required to pass data to and from mobile applications.

2. BOS Implementation Requirements

2.1. Project Management

2.1.1. Project Management General Requirements

1.	Under 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 BOS Implementation, and other entities as directed by NCTA. The Contractor shall also be responsible for documenting and reporting on all aspects of the Implementation.
2.	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:

3.	Execute the work in accordance with the PMP approved by NCTA and other plans developed pursuant to the Contract.
4.	Prosecute all work required to deliver the required products and systems.
	Note: Any activities required to meet the requirements of the RFP are within the scope of the overall contract.
5.	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 due to poor quality assurance. Delays due to changes both within and outside the Contractor's control shall require the prior approval of NCTA.
6.	Use structured software development methodologies and standards.
7.	Provide best practices for system development, testing and implementation.
8.	Administer the Contract by establishing and maintaining effective communication with all groups related to the BOS Implementation.
9.	Communicate the scope or work and requirements to Contractor's staff and subcontractors.

10.	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.
11.	Provide transition plans including key resources, timelines, and regular coordination touch points for the following key areas: data migration, end of contract transition and data migration, back office system software implementation, and website(s) management.
12.	Propose commercial-off-the-shelf software and equipment, where appropriate, that provides NCTA with an accurate, reliable reporting system and tools to audit data.
	Note: A key objective is to reduce the possibility of errors in operation and maintenance, provide consistent, reliable data outputs, and minimize the effect of human error on the output of the system.
13.	Ensure against loss of data while communicating, processing, recording, or storing data sent or received via external interfaces.
14.	Cooperate with other NCTA-selected contractors and concessionaires to integrate the back office system components into a fully integrated and seamless system from the RTCS (new and existing) to various channels of customer interaction.
	Note: Contractor must be cooperative with the other contractors and concessionaires during work activities in development, design, provision, installation, testing and warranty services for the back office system.

2.1.3. Preliminary Design Kick-off Conference

15.	The Short-listed Proposers shall participate in a Preliminary Design Kick-off Conference by the date required in the Schedule. NCTA shall coordinate and moderate the conference. The conference should last no more than one (1) Business Day. Agenda items for this conference shall include, but not be limited to:
16.	Introduction of key staff to NCTA and NCTA's partners.
17.	Collaboration on core elements of the system design, the system design and development process, and coordination with other stakeholders.
18.	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.

2.1.4.   Key Personnel

19.	The following positions shall be identified as Key Personnel throughout the term of the contract: • Project Principal: Responsible for the overall conduct and performance of the Project; oversight of the Project; the performance of the Contractor Project Manager and a point of contact for any escalated Project 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 Project and the day-to-day contact person for the Contractor. The assigned Contract Project Manager shall have decision making authority for the Contractor regarding the design, development, testing, implementation and maintenance of the system. • 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. • Software Development Manager: Responsible for design and development of the back office system (including subsystems, and internal and external interfaces), supervision of software development resources, and administration of system testing. • Implementation Manager: Responsible for the overall planning and implementation of the back office system testing program. Also responsible for integration and installation of the BOS. • Quality Assurance Manager: Responsible for consistent quality throughout the design, development, testing and implementation of the back office system through good QA and Quality Control (QC) practices. • Maintenance Manager: Responsible for all aspects of system maintenance during the Maintenance Phase.
20.	The Contract Project Manager~~,~~ and Lead Business Analyst~~, and Software Development Manager~~ shall be 100% allocated to this project and reside in the Raleigh-Durham area throughout the term of the contract. **Notes**: 1) The Software Development Manager is required to work full time in Raleigh during the design portions of the Preliminary Design Procurement and Final System Design and Development Phases 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. 2) The Maintenance Manager shall reside in the Raleigh-Durham area during the Maintenance Phase.

	3) ~~NCTA shall not be responsible for any travel expenses borne by Contractor.~~ ~~The Maintenance Manager shall reside in the Raleigh-Durham area during the Maintenance Phase.~~ ~~**Note**: NCTA shall not be responsible for any travel expenses borne by Contractor.~~
21.	The Contract Project Manager, Lead Business Analyst, and Software Development Manager shall attend weekly status meetings in Raleigh, and other meetings as requested by NCTA.
22.	Other Key Personnel shall be located in, or shall be local to, the Raleigh metropolitan area as requested by NCTA during their active portions of the contract.
23.	NCTA shall have the right to request a replacement of Key Personnel at any time during the duration of contract.
24.	In cases where a person identified as Key Personnel leaves the contractor's team, becomes incapacitated or 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.

2.1.5.   Implementation Schedule

25.	Implementation Schedule and Progress Schedules – The Contractor shall coordinate with NCTA on the development of a comprehensive 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, including external activities (e.g. external interface testing, dates for certification testing with Google Play and the Apple Application Store, etc.), 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.
26.	The Implementation schedule shall be resource loaded, displaying the critical path, and shall be used as a basis for progress tracking throughout the course of work. The schedule shall identify each milestone separately, and shall utilize "finish no later than" constraints. Unless approved by NCTA, the schedule shall not contain hidden lag durations, and schedules must display available slack.
27.	Each Implementation schedule submitted for NCTA's review and approval shall clearly demonstrate the progression of the work by using separate activities, including but not limited to: • Milestones and contract milestone completion dates • Procurement and delivery of equipment and materials, third-party services (e.g. cloud services, communications circuits, telephony services), etc. • System and Mobile Application design, development and testing activities

	• System installation activities
	• Dependencies on critical activities performed by other partners and contractors
	• All Work components, including management, NCTA documentation reviews and approvals, impacts from other Contractor schedules, quality assurance activities, etc.
	• Data migration tasks and go-live preparation
	• Staff training and documentation preparation (e.g. training materials, etc.) and training dates
28.	Within thirty (30) Calendar Days of receiving NTP from NCTA, the Contractor selected following the Preliminary System Design Procurement Phase shall update and submit to NCTA for approval an update to the preliminary Implementation schedule.
29.	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 thirty (30) Calendar Days of receiving NTP.
30.	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.
31.	The Contractor shall be responsible for monitoring and updating the Implementation schedule, and reporting progress of the work throughout the duration of the contract.
32.	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.
33.	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.
34.	NCTA's approval of the Implementation schedule does not relieve the Contractor from any liability for Liquidated Damages.
35.	Changes to go-live milestones require a contract change order approved by NCTA. NCTA's approval of the Implementation schedule does not relieve the Contractor from Liquidated Damages.
36.	To accommodate NCTA's review of the Implementation schedule, the Contractor shall submit all files in native and Portable Document Format (PDF) format.

37.	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.
38.	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, including but not limited to:
	• Perform overtime work
	• Increase the number of personnel assigned to the BOS implementation
39.	The Contractor shall promptly report to NCTA all schedule and progress-related delays.
40.	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.
41.	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.
42.	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.

2.1.6.   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.

43.	All documentation the Contractor submits shall be in English, unless otherwise dictated by NCTA, and ensure NCTA's ability to understand the system solution.
44.	Document Updates - The Contractor shall update documents in accordance to the PMP.
45.	Document Retention - The Contractor shall maintain current versions of all required documentation electronically. The Contractor shall keep the documentation per the NCTA retention requirements, in a secure location, backed up nightly and provide electronic/online access to NCTA.
46.	All documentation shall be maintained utilizing Microsoft Office tools.

47.	All manuals, standard operating procedures and supporting information shall be delivered electronically, but formatted to print 8.5 x 11 and / or 11 x17 as required. Documentation shall be formatted such that printed material can be placed into a manageable three-ring binder for end user reference as required. All documents shall be submitted in native format and PDF. All documentation shall be maintained on a secure SharePoint site for the duration of the Contract.
48.	Each document produced for the back office system shall contain a title sheet, table of contents, list of illustrations (if applicable), revision log, and list of reference drawings (if applicable).
49.	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.
50.	The Contractor shall ensure all maintenance manuals only cover systems maintained by the Contractor.
51.	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.
52.	System technical documentation is to include, but not be limited to: • Development processes, including logical data design, physical data design and interface development • API documentation that outlines all functional aspects and web-service endpoints within which data will flow to and from external interfaces • Data mapping documentation of the legacy data from existing system to new system • Third-party data collection methodology • Data integrity safeguards to ensure data quality (i.e. duplicate filters, file integrity, address validation) • Reporting documentation • Implementation approach • Implementation and installation of software components
53.	System operations-related documentation is to include, but not be limited to: • General description of the system and equipment including overall design and specific features with descriptive drawings and/or printout of screens and reports to complement the text where practical • System operating instructions, including critical items to be observed during operations

	• Presentation material to be used for training
	• Accounting requirements
54.	Maintenance-related documentation is to include, but not be limited to:
	• Maintenance instructions
	• First line fault diagnosis
	• Details of the hardware configuration; as applicable
	• Preventative maintenance recommendations and procedures
	• Lists of spares, maintenance facilities, test equipment and tools, as required / applicable
	• Procedures for maintaining each item, including overhaul and requirement for regular inspections, as required / applicable
55.	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.
56.	The Contractor shall keep accurate records of as-built drawings, diagrams and documents, including any deviations from original.
57.	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.
58.	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.
59.	Proposer and Contractor logos 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.
60.	All documents and document revisions shall be maintained on a SharePoint site in Microsoft Word format and PDF format for the duration of the Contract.

2.1.7. Project Management Plan

61.	The Contractor shall develop and submit to NCTA for review and approval a PMP per the Implementation schedule.
62.	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.
63.	The Project Management Plan shall describe the approach to management, including but not limited to:

	• Change control: Describing the procedures for tracking contract change orders (draft and approved change orders for system modifications or enhancements), interactions with NCTA's change control procedures, and documentation management to reflect changes approved by NCTA.
	• Change management: Describing the management, and issue mitigation strategy, with regard to changes to staff, internal process and the back office system.
	• Deliverable management: Describing the procedures to ensure deliverables are produced on time per the Implementation schedule with a high level of quality.
	• Configuration control: Describing the procedures for tracking changes to the back office system software, third-party component software or hardware, the back office systems' configurations and documentation processes to reflect any changes made.
	• Risk management: Describing the approach to identifying, reporting, tracking and mitigating risks.
	• Inventory management: Describing the procedures and processes to manage the procurement, receipt, storage, tracking and installation of software, hosted services, and equipment for the back office system as approved by NCTA.
	• Coordination planning: Describing the coordination techniques with NCTA and other stakeholders, and how the Contractor will coordinate with external entities to ensure deliverable dates are met.
	• Personnel management: Describing the approach to personnel management, key personnel (including sub-contractors), and provide a team organization chart organized by Phase, role and reporting hierarchy noting which staff are local or onsite with NCTA.

2.1.8.   Deliverable Management

64.	The Contractor shall include a description of their deliverable management processes and procedures in the PMP.
65.	The Contractor shall develop and provide a schedule, subject to NCTA approval, for all deliverables including Standard Operating Procedures (SOPs) and operating manuals.
66.	The Contractor shall be responsible for submitting all deliverables required by NCTA for NCTA's review, comment and approval.
67.	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.

68.	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.
69.	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.
70.	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.
71.	Once comments are received by NCTA, the Contractor shall be responsible for updating the deliverable to address any unresolved comments submitted by NCTA.
72.	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.
73.	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.
74.	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.
75.	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.

76.	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.

2.1.9. Quality Management Plan

77.	The Contractor shall develop a QMP covering all aspects of the work. The QMP shall outline the Contractor's internal QC and 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 back office system throughout the duration of the Contract.
78.	The Contractor shall publish all internal documentation and processes related to its quality management procedures and processes on the SharePoint site. This shall include, but not be limited to:
	• Defect reporting
	• Internal audits
	• Internal testing results (e.g. regression testing, load testing, etc.)
79.	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.

2.1.10. Project Communications Plan

80.	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.
81.	The Communications Plan shall address all aspects of coordination with NCTA, its consultants, and other third-parties as directed by NCTA.
82.	The Contractor, and its representatives, shall ensure an approved NCTA representative is copied on, or apprised of, all communications with third-parties regarding the BOS Implementation.
83.	The plan shall detail the Contractor's contact information and communication escalation plans in the event that the main contact is unavailable or unresponsive.

2.1.11. Subcontractor Management Plan

84.	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 utilizing to deliver the Scope of Work detailed in this RFP. At a minimum, the 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

2.1.12. Software Development Plan

85.	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. At a minimum, the plan should include:
	• Description of the software development method (e.g. agile, waterfall, etc.) the Contractor shall utilize to manage and control development efforts
	• Description of the integration, configuration management, testing, and other system development processes the Contractor shall utilize to deliver the system as documented in the RFP and mitigate delays
	• Description of the quality assurance and quality control techniques and process the Contractor shall employ to ensure software code reviews are completed and software builds compile properly while minimizing software defects
	• Description of the processes the Contractor shall utilize to react to issues during the software development and maintenance phases, and how they propose to manage them
	• Description of how the Contractor shall roll our software updates, whether due to a software enhancement or bug fix, and how they propose to document related updates
	• Description of the software version control process
	• Description of how the Contractor proposes to utilize the development and testing environments as required in the requirements

2.1.13. Data Migration Plan

	The Contractor shall be responsible for developing and submitting a Data Migration Plan for NCTA's review and approval. The plan shall document a comprehensive plan that includes all aspects needed to successfully identify, convert, migrate, test and validate legacy data within the new system. The plan shall include, but not be limited to:
	• Identification of proposed migration tools
	• Description of data migration phases/approach
	• Data assessment and identification process techniques
	• Description of all files and tables to be built in the new system
	• Expected data volumes
86.	• Data sources for all legacy files, tables and data
	• Roles, responsibilities, and a schedule for the conversion effort
	• Mapping data to the new system database(s), formatting/conversion of data, determining quality of legacy data
	• Extracting data from current system, loading data into new system (including test and producing environments), performing data validation
	• Generation and review of data migration validation reports, data record reconciliation and validations, resolution to migration issues
	• Preparation of data migration results paper for NCTA review and approval
	• Identification of, and recommendation for, data that may be converted to the appropriate format using automated conversion tools or programming to significantly reduce data conversion labor

2.1.14. Business Continuity / Disaster Recovery Plan

	The Contractor shall be responsible for delivering a Business Continuity / Disaster Recovery Plan for NCTA's review and approval. This plan 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 BOS. At a minimum, the plan should include:
87.	• Assess and identify critical resources and recovery methods to ensure that all critical systems and data are included in the plan

	• Description of the approach the Contractor shall utilize to manage and control impacts related to an event that disables or disrupts the BOS and NCTA's back office operations
	• Description of the disaster recovery procedures the Contractor recommends in order to ensure business continuity and recover from a disaster that disables or disrupts the BOS
	• Descriptions of processes and procedures the Contractor shall employ to mitigate the effects of disasters should they occur
	• Describe how security protocols shall be maintained during disaster recovery to prevent data from being corrupted and/or compromised
	• Description of the business continuity procedures, personnel roles (including escalation procedures should some Contractor and NCTA staff be unavailable), and communication plans the Contractor shall implement during a disaster to ensure the continuity of NCTA's business
	• Description of the processes the Contractor shall utilize after event recovery in order to analyze and report on recovery success, or recommend modifications to the recovery process to improve future performance

2.1.15. Training Plan

88.	The Contractor shall be responsible for delivering a Training Plan for NCTA's review and approval. This plan shall describe the Contractor's approach to system training for NCTA staff, NCTA Operations staff and others as designated by NCTA prior to system go-live. At a minimum, the plan should include:
	• Recommended course title(s), course objectives, method of delivery for each training course (e.g. live or online), equipment to be used, media to be employed, course length, optimum number of attendees per training session, and certificate of completion requirements
	• Description of the training materials the Contractor recommends to successfully train NCTA staff, NCTA Operations staff and others as designated by NCTA
	• Description of the manuals and help systems the Contract shall develop to assist in system training
	• Description of the Contractor's training environment they shall utilize to train staff, and how the Contractor recommends managing and maintaining the data within it and
	• Description of the processes and procedures the Contractor shall utilize to receive feedback from NCTA after training, and how they propose making updates to their training program to foster continuous improvements
	• A training schedule

2.1.16. Weekly Status Meetings

89.	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.
90.	These status meetings shall run from NTP through completion of the BOS Implementation, or until NCTA decides to cease these meetings.
91.	The Contractor PM shall utilize web-based meeting software as required enabling all meeting attendees to share and view documents in real-time during meetings.
92.	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.
93.	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 captured during every meeting shall capture, at a minimum:
	• List of meeting attendees
	• Summary notes for each agenda topic
	• Summary notes for additional non-agenda items discussed
	• Action items, including responsible party and any associated due dates
	• Decisions made during the meeting
	• NCTA direction provided during the meeting

2.1.17. Monthly Progress Reports

94.	The Contractor shall be required to submit a progress report monthly after receiving NTP from NCTA.
95.	Monthly progress reports shall by submitted to NCTA no later than the 10th Business Day of every month.
96.	Monthly progress reports shall detail activity performed by the Contractor during the preceding month.

97.	The Contractor shall coordinate with NCTA, within the first thirty (30) Calendar Days after receiving NTP, on the structure, content and level of detail to be included in each monthly progress report. At a minimum, monthly progress reports shall include:
	• Progress achieved on all activities during the prior month
	• Notice of any potential delays or issues, steps the Contractor is recommending or taking to mitigate the issues and any potential impact to the Implementation schedule
	• Critical issues that may impact the Implementation schedule that need an NCTA decision including risk analysis as required
	• Deliverables scheduled for submittal in the next reporting period
	• One (1) month look ahead

2.2. System Design

2.2.1. Requirements Traceability Matrix

98.	The Contractor shall be responsible for developing and maintaining an RTM throughout the BOS Implementation. The RTM developed for the Preliminary System Design Procurement Phase shall list all requirements and business policies, and cross reference those items to the PDD developed during this phase. The RTM developed during Final System Design and Development Phase and beyond shall list all requirements and business policies, and cross reference specific areas in the Final System Design Document (FSDD) where each requirement is covered. As the BOS 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.
99.	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.
100.	The Contractor shall continuously maintain and update the RTM.
101.	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.
102.	The Contractor selected following the Preliminary System Design Procurement Phase shall submit an updated RTM within thirty (30) Calendar Days of notice of contract award from NCTA.

103.	The Contractor shall not incorporate any changes into the RTM without written approval from NCTA.
104.	The Contractor shall update the RTM to cross reference specific test plans and test scripts thirty (30) Calendar Days prior to the start of any system test for NCTA's review and approval.

2.2.2.   Preliminary System Design Procurement Phase

105.	During the Preliminary System Design Procurement Phase, Short-listed Proposers shall be required to collaborate with NCTA and its designees on the preliminary design of a back office system, and prepare other preliminary BOS documents as described in **Section III Scope of Work and Requirements**, Section 1.3.1 Preliminary System Design Procurement Phase above.
106.	During the Preliminary System Design Procurement Phase, the Short-listed Proposers shall design a back office system to meet or exceed all implementation, functional and performance requirements set forth in this RFP and the scope of work. The Short-listed Proposers shall coordinate with NCTA throughout the design process.
107.	Short-listed Proposers shall coordinate with NCTA on design meetings to facilitate the design of the system, answer questions and clarify issues necessary to develop a preliminary system design.
108.	The Contractor shall coordinate with NCTA to clarify and finalize the BOS requirements (including mobile application requirements), as necessary, to fully design the new BOS.
109.	The Contractor shall coordinate with NCTA to evaluate the existing primary CSC facility and planned storefront location(s) communications infrastructure in place to design any new infrastructure that may be needed to support the new system.
110.	The Contractor shall coordinate with NCTA to identify any differences necessary between the BOS, required website(s) and mobile device based application(s).
111.	The Contractor shall coordinate with NCTA to identify and clarify the type of the required browser types, mobile devices and mobile device operating systems/versions to develop to and support.
112.	The Contractor shall develop a plan for conversion and migration of legacy data into the new system.
113.	The Contractor shall coordinate with NCTA on the look and organization of the Graphical User Interfaces (GUI) for all system applications (BOS client, website(s) and mobile application), as well as development of user interface mockups and wireframes for review and approval by NCTA.
114.	The Contractor shall develop a Preliminary Compensating Control Worksheet listing the security and compliance requirements that the Contractor cannot meet as currently

	specified, including each compensating control and 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 800-53r4, Statewide Information Security).
115.	System design during the Preliminary System Design Procurement Phase shall result in submission of a Preliminary Design Package from all Short-listed Proposers.
116.	The Short-listed Proposers' design documentation shall clearly trace back to the Business Policies and the draft RTM.
117.	The PDD shall address all areas of the back office system design, and fully describe the preliminary design of the system, including, but not limited to: • System overview (high level system description) • System architecture (Private Cloud, Hardware and Software, Communications, etc.) • Data security and integrity, including the conversion and incorporation of legacy data into the new system • Reports • Compliance with functional and performance requirements, and Business Policies • Updated software list **Note:** The above description is not complete, and the Short-listed Proposers shall be responsible for including all aspects of the system in the PDD whether or not that aspect has been included on the above list.
118.	The Short-listed Proposers shall submit an updated RTM and Implementation schedule with their Preliminary Design Package.
119.	The Short-listed Proposers shall be responsible for developing an approach to system training to include: • Draft System Training Plan, including training materials development, training media, etc.
120.	During this phase, the Short-listed Proposers shall be responsible for developing drafts of the documents as described in **Section III Scope of Work and Requirements**, Section 1.3.1 Preliminary System Design Procurement Phase above for NCTA's review.

2.2.3. Final System Design and Development Phase

121.	During the Final System Design and Development Phase, the selected Contractor shall be required to advance the preliminary system design concept to a final design, and collaborate with NCTA and its designees on the development of system documentation as described in **Section III Scope of Work and Requirements**, Section 1.3.2 Final System Design and Development Phase above.
122.	During the Design Phase, the Contractor shall be required to collaborate with NCTA and its designees on the design of the Mobile Application and websites, including but not limited to: • The Application GUI(s) via wireframes and user interface prototypes • Identification/clarification of the required Apple and Android devices, web browsers, operating system (OS) versions to develop to and support (latest and two prior versions) • Core Application functionality
123.	During the Final System Design and Development Phase, the selected Contractor shall advance the design of the BOS to meet or exceed all functional and performance requirements set forth in this RFP. The Contractor shall coordinate with NCTA throughout the design process.
124.	The selected Contractor shall coordinate with NCTA on design meetings to facilitate the final design of the system, answer questions and clarify issues necessary to develop the FSDD.
125.	The Contractor shall provide regular updates on the Implementation Schedule to NCTA.
126.	The Contractor shall coordinate with NCTA to schedule and attend regular design meetings and other status meetings as directed by NCTA.
127.	The Contractor shall complete 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.
128.	The Contractor shall be responsible for assisting NCTA in opening a developer account with both Apple and Google. While NCTA shall own the accounts, the Contractor shall be responsible for maintaining them throughout the duration of the contract.
129.	The Contractor shall coordinate with NCTA to implement design review meetings and focus groups, if desired and directed by NCTA, for the BOS, website and Mobile Application GUI and functionality.
130.	During the Final System Design Phase, the Contractor shall coordinate with NCTA to develop a process to receive, review, accept and incorporate any feedback from NCTA and/or its designees into the design of the BOS, Mobile Application and website usability and/or user interface.

131.	The Contractor shall coordinate with NCTA and its designees to advance go-live planning by developing and submitting the following for NCTA's review:
	• Final System Training Plan
	• Draft Training Materials
132.	The Contractor's design documentation shall clearly trace back to the final Business Policies and the RTM.
133.	The FSDD shall address all areas of the back office system design and fully describe the final design of the system, providing greater detail of the system description provided in the PDD. This shall include, but not be limited to: • System design overview • System architecture • Data security and integrity • Reports • Compliance with functional and performance requirements **Note:** The above description is not complete and the Contractor shall be responsible for including all aspects of the system in the FSDD, whether or not that aspect has been included on the above list.
134.	The Contractor shall be responsible for submitting an updated RTM and Implementation schedule.
135.	The FSDD shall be submitted for NCTA's review and approval prior to the Contractor beginning any development work.
136.	During the Final System Design and Development Phase, the Contractor shall be responsible for developing and submitting a Final Data Migration Plan for NCTA's review and approval. The plan shall document a comprehensive plan that includes all aspects needed to successfully identify, convert, migrate, test and validate legacy data within the new system. The plan shall include, but not be limited to the details as described in Section 2.1.13 Data Migration Plan.
137.	The Contractor shall develop an updated Compensating Control Worksheet listing the security and compliance requirements that the Contractor cannot meet as currently specified, including each compensating control and 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 800-53r4, Statewide Information Security).
138.	The Contractor shall finalize the plan for data conversion, migration and incorporation of all legacy data into the new system.

139.	The contactor shall work with NCTA to jointly determine what data to be migrated from the legacy BOS to the new BOS during the Design Phase.
140.	The Contractor shall finalize their approach to system training, and training material development.
141.	During this phase, the Contractor shall be responsible for developing final drafts of the documents as described in **Section III Scope of Work and Requirements**, Section 1.3.2 Final System Design and Development Phase above for NCTA's review and approval.

2.2.3.1.   Master Test Plan (MTP)

142.	During this phase, 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 (MTP) that will be the basis for all testing conducted on the system, including internal and formal testing.
	b. The MTP shall outline the scope and testing concepts to be used to validate the systems from initial development through deployment and acceptance.
	c. The objective of the MTP 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 all interoperable agencies.
	d. The Master Test 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 RTCS 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
	•	Tests necessary for mobile application certification with Google Play and the Apple Application store
	f.	A Draft MTP shall be submitted to NCTA no later than sixty (60) Calendar Days after notice of award is provided by NCTA.
	g.	The Final MTP shall be submitted to NCTA ninety (90) Calendar Days prior to the first formal test for NCTA's review and approval.
	h.	No formal testing can proceed without a NCTA approved Master Test Plan.

2.2.3.2.   Detailed Test Cases and Test Procedures

143.	a.	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.
	b.	All customer-facing elements, including all areas of the website and customer correspondence) shall be fully tested.
	c.	The Contractor shall develop separate test cases and detailed procedures shall be developed for each formal test phase (e.g., Usability, User Interface, UAT, CVT, SAT, and OOP).
	d.	Contractor's test cases and procedures shall be submitted and approved by NCTA prior to any testing for record.
	e.	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.

2.2.3.3.   Test Reports

144.	a.	The Contactor shall be responsible for developing test reports for every formal test performed during the course of the BOS Implementation.
	b.	The Contractor shall submit a test report within ten (10) Calendar Days following the completion of each individual test.

	c. Test reports shall document 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.
	d. The Contractor shall coordinate with NCTA to dictate a priority level for each issue / punch list item identified during each test. The Contractor shall be responsible for fixing and retesting high-priority items for NCTA's approval before an individual test can be completed and approved by NCTA.
	e. 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.
	f. When NCTA has received all relevant documentation and deems that all punch list items have passed testing, the Contractor completes that test phase.

2.2.3.4.   Updated Test Observation Log

	a. 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.
145.	b. The Contractor shall be responsible for completing all corrective actions identified during a formal test.
	c. Acceptance of any phase or aspect of testing shall not relieve the Contractor from their responsibility in meeting the complete functional and performance requirements.
	d. NCTA reserves the right to withhold approval of the test, pending completion of the required corrective actions.

2.2.3.5.   System Development

146.	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.

147.	With NCTA's prior written approval, the Contractor may begin limited system development efforts prior to the FSDD being approved by NCTA. However, any back office system development efforts conducted in parallel with design efforts is strictly at the Contractor's risk. The Contractor shall be liable for all costs related to any change if Contractor assumptions place the development in conflict with the approved FSDD or modified business policies. The Contractor shall also be liable for any penalties related to missed milestones as a result of any necessary rework.
148.	As the Contractor develops the BOS (including the website and Mobile Application), and during various development and testing touchpoints throughout the BOS Implementation, the Contractor shall make versions of releases available to NCTA and its designees to sample and test usability, design and function. **Note**: The Contractor and NCTA shall coordinate to ensure a suitable and stable version of the BOS (including the website and Mobile Application) are made available to NCTA.
149.	During the development phase, the Contractor shall coordinate with NCTA to develop a process to receive, review, accept and incorporate any feedback from NCTA and/or its designees into the design of the BOS (including the website and Mobile Application) usability and/or user interface during development to improve usability.

2.3. System Testing and Installation

2.3.1. General Testing Requirements

150.	The Contractor is responsible for all aspects of system internal testing and formal testing.
151.	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.
152.	The Contractor shall be required to coordinate with NCTA and its external interface partners in order to develop and agree upon a schedule to test external interfaces.
153.	The Contractor shall conduct formal testing in various phases and stages to validate the system's integrity, reliability and functionality.
154.	The Contractor shall be responsible for the transition of data from the legacy system to the new system in preparation for system testing.
155.	The Contractor shall provide required support personnel, test equipment and test environment(s) as approved in the Master Test Plan.
156.	The Contractor's BOS, any associated sub-systems, websites and Mobile Application shall undergo testing prior to acceptance and system go-live, including:
	• Usability and User Interface Testing (may be two different tests)

	• UAT
	• CVT at the Contractor's facility
	• SAT in the new system's final operational location
	• Mobile Applications shall be required to undergo any testing required by the Apple Application Store and Google Play certification processes.
	• Disaster Recovery Test (DRT); as applicable based upon private cloud architecture approach
	• OOP to demonstrate the reliability and stability of the back office system **Note**: This observation period shall be conducted after system go-live, but shall be required prior to NCTA's acceptance of the system.
157.	The Contractor shall be responsible for providing regular updates to the Implementation schedule, and attending update meetings as requested/required by NCTA.
	During formal system testing, the Contractor and NCTA shall verify the system's compliance to the:
	• Functional and Business Requirements herein
158.	• System Requirements Document
	• System Design Documents
	• Data and reporting accuracy requirements
	• Detailed test procedures/scripts
159.	Should any issues or defects be discovered after the system has been placed into a live operational environment, 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.
160.	The Contractor shall be responsible for Internal and External Penetration Testing in in accordance with the current version of PCI-DSS, and producing vulnerability scan reports.
161.	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 800-53r4, Statewide Information Security).

162.	The Contractor shall be responsible for the development of System Testing and Installation Phase documentation, as documented in **Section III Scope of Work and Requirements**, Section 1.3.3 System Testing and Installation Phase above for NCTA's review and approval.
163.	During this phase, the Contractor shall be responsible for finalizing training materials, help systems, "how-to" and user manuals per the approved Training Plan.

2.3.2. Test Environments

164.	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 live system. These are Development, System Test, User Acceptance Test (UAT), and Training environments. The non-production environments shall be available to NCTA at all times (i.e. total transparency). <u>The Development Environment can be located within the Contractor's Development Center. While NCTA does not require access to the Contractor's development environment, transparency into the Contractor's development process and progress shall be required, as outlined in other requirements of this RFP. All remaining environments shall reside in the private cloud, and access to NCTA shall be provided.</u>
165.	All data stored within the test environment shall be the property of NCTA and shall not be purged without prior authorization from NCTA.

2.3.3. Formal Testing Phases

166.	The Contractor shall be responsible for completing all of the formal tests in coordination with NCTA and its designees. All formal testing shall be structured, organized events which are sufficiently scheduled to accommodate participation and observation by NCTA and its designees. It is the Contractor's responsibility to coordinate and schedule formal testing with NCTA at least thirty (30) Business Days in advance of any formal test.
167.	Usability and User Interface Testing (may be two different tests): **Note**: Depending on the Contractor's approach to system development and testing, these tests may be two independent tests with individual testing dates on the Implementation schedule. The UAT shall demonstrate application functionality and interface(s) to external entities.
	a. Usability Testing shall ensure that the BOS (including the mobile application and website) are easy to use, and provide a satisfactory user experience to the customer.
	b. User Interface Testing shall test and demonstrate menu options, buttons, bookmarks, history, settings, report functionality and navigation flow of the BOS (including the mobile application and website).
	c. All user-facing aspects of the BOS (including the mobile application and website) shall be tested as part of the Usability and User Interface testing. Load testing shall also be conducted simulating the projected user volume.

	d.	The Contractor shall provide hardware and software test tools for NCTA to use and test the (including the mobile application and website), and to simulate data transfers, as necessary, as defined by the Interface Control Documents (ICD).
	e.	During Usability and User Interface Testing, the Contractor shall make versions of BOS (including the mobile application and website) available to NCTA and its designees to sample and test usability, design and function.
	f.	The Contractor shall coordinate with NCTA to develop a process to receive, review, accept and incorporate any feedback from NCTA and/or its designees captured during usability and/or user interface testing to improve the usability of the BOS (including the mobile application and website).
	g.	Upon completion of Usability and User Interface Testing, the Contractor shall submit a test report that details the results of each test (if separate) to NCTA for review and approval.
	h.	Successful completion of each test and approval by NCTA is required before the Contractor will be given the authorization to proceed with formal tests.

2.3.3.1. User Acceptance Testing

	a.	The UAT shall demonstrate BOS (including the mobile application and website) functionality and interface(s) to external entities (e.g. NCTA and Concessionaire RTCS networks).
	b.	All functionality and functional requirements of the BOS (including the mobile application and website) shall be tested as part of the UAT. It is the Contractor's responsibility to ensure that each requirement is certified and/or tested for compliance during the UAT.
	c.	The UAT shall include review of BOS reports, and validation of the accuracy of data captured within each report.
168.	d.	The Contractor shall conduct a dry run of all UAT procedures, record the results and submit them to NCTA for review at least five (5) Business Days prior to UAT.
	e.	The Contractor shall conduct UAT using NCTA approved test cases and procedures.
	f.	NCTA or its designees will participate in and/or observe the UAT as described in the accepted Test Plan.
	g.	The Contractor shall provide hardware and software test tools for simulating data transfers, as necessary, as defined by the ICDs.
	h.	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.

	i. Successful completion of the UAT and approval by NCTA is required before the Contractor will be given the authorization to move forward to proceeding formal tests.

2.3.3.2.   Android and Apple Operating Systems Certification Testing

169.	The contractor shall conduct all necessary certification testing with the institutions necessary to obtain certifications for the Mobile Application to be made available on both Google Play and the Apple Application Store. The Mobile Application shall be compatible with all Apple devices and associated operating systems spanning the most recent four generations (e.g. iPhone 4,5,6,7) and Android software spanning the most recent three generations (e.g. version 5,6, 7). The final list of required devices and operating systems to support shall be identified by NCTA and the Contractor, and approved by NCTA during the Preliminary System Design Procurement Phase and Final System Design and Development Phase.

2.3.3.3.   Concept Validation Testing (CVT)

170.	The CVT shall demonstrate BOS (including the mobile application and website) functionality, accuracy, capacity, modules, interfaces and ease of use with system data to provide sufficient confidence to NCTA that the system is ready to advance to the System Acceptance Test.
171.	All functionality of the BOS (including the mobile application and website) shall be tested as part of the CVT. It is the Contractor's responsibility to ensure that each requirement is certified and/or tested for compliance during the CVT.
172.	CVT will be conducted at the Contractor's facility to prove that the system requirements meet all applicable functional and performance requirements.
173.	CVT testing shall be conducted with a representative sample of all interconnected equipment and software, i.e. to form a system (or sub-system as required) in order to verify the functionality and performance of inter-linked components as well as the overall system meet system requirements.
174.	The Contractor's functional and performance tests shall include repetitive tests that simulate regular and irregular system operations.
175.	Where CVT testing relies on inputs or outputs from interfaces on equipment or sub-systems (e.g. RTCS Host, banks, etc.), these inputs and outputs shall be simulated in the CVT test environment.
176.	The Contractor shall conduct a dry run of all CVT procedures, record the results and submit them to NCTA for review at least five (5) Business Days prior to CVT.

177.	Prior to beginning the CVT, the Contractor shall update the RTM and have the updates approved by NCTA.
178.	The Contractor shall conduct CVT using NCTA approved test cases and procedures.
179.	NCTA or its designees will observe the CVT tests at the Contractor's facility as described in the accepted Master Test Plan.
180.	The Contractor shall provide hardware and software test tools for simulating transaction, customer and other data transfers as defined by the ICDs.
181.	Upon completion of the CVT, the Contractor shall submit a test report that details the results of the test to NCTA for review and approval.
182.	Successful completion of the CVT and approval by NCTA is required before the Contractor will be given the authorization to move forward to proceeding formal tests.

2.3.3.4.   System Acceptance Test (SAT)

183.	The SAT 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 BOS is ready to be integrated with RTCS and other external interfaces for full revenue collection.
184.	The SAT shall be accomplished on-site in the system's final operational location.
185.	The SAT shall include tests of the complete system functions and performances.
186.	Due to the nature of this test, many, if not all, of the requirements tested and verified during CVT shall be also tested and verified during SAT.
187.	SAT test cases shall include, but not be limited to, the areas outlined below: • Operation of all back office and customer service center processes • Operation of all required interfaces • Tests on back office and customer service center equipment • Tests on the internal interfaces between connected items / sub-systems within the back office system (e.g. ensuring the ability of Customer Service Representatives (CSR) to perform research on the back office database) • Generation and validation of system reports

	• Simulation of regular and irregular system operations
	• Disaster recovery; as applicable based on cloud architecture approach
188.	Prior to beginning the SAT, the Contractor shall establish all hosted and cloud-based environments as required, install all equipment involved in the SAT in its final location, configure all software involved in the SAT in the final production configuration, and configure the NCTA-provided network in the final production configuration.
189.	The Contractor shall configure all interfaces to other entities (where available) in the final production configuration.
190.	Where SAT testing relies on inputs or outputs from interfaces on equipment or sub-systems that are not available, these inputs and outputs shall be simulated in the SAT test environment.
191.	At least five (5) Business Days prior to SAT, the Contractor shall conduct a dry run of all SAT procedures, record the results and submit them to NCTA for review.
192.	Prior to beginning the SAT, the Contractor shall update the RTM, and have the updates approved by NCTA.
193.	The Contractor shall conduct SAT using NCTA approved test cases and procedures.
194.	It is the Contractor's responsibility to ensure that each requirement is certified and/or tested for compliance.
195.	The Contractor shall test the transfer of all files and data between other Interoperable agencies during SAT.
196.	Upon completion of the SAT, the Contractor shall submit a test report that details the results of the test to NCTA for review and approval.
197.	NCTA will determine if a re-test of the entire SAT or part of the SAT is required.
198.	Upon the successful completion SAT, any further changes to the software shall be fully documented and made only with the approval of NCTA.
199.	Successful completion of the SAT and approval by NCTA is required before the Contractor will be given the authorization to move forward.

2.3.3.5.   Operations Observation Period (OOP)

200.	The purpose of the OOP is to demonstrate the back office system, including all subsystems, associated websites and applications, utilizing "live" operational data, is operating in a capacity to provide sufficient confidence to NCTA that the system is ready to support NCTA toll operations and continued revenue operations.
201.	The Operations Observation Period shall be conducted for a continuous period of no less than thirty(30) Calendar Days commencing upon successful go-live of the BOS, including all subsystems, and after all website(s) and the mobile application(s) are available on Google and Apple stores for download.
202.	In order to complete and pass the OOP, the BOS, including all subsystems, associated websites and applications, utilizing "live" operational data shall be in production ("live") without malfunction, and free of defects lower than priority 3 for a period of thirty (30) consecutive Calendar Days. Any priority 1 or 2 defects shall restart the 30 day OOP.
203.	Upon completion of the OOP, the Contractor shall submit a production defect report that details the results of the observation period to NCTA for review and approval.
204.	The OOP Test Report shall include a fault report detailing any problems, issues or concerns raised/discovered (either by Contractor staff, NCTA, CSC staff or customers).
205.	The production defect report shall also contain the Contractor's recommendation for addressing any problem, issue or concern raised/discovered during the observation period.
206.	At the end of the OOP, NCTA will assess the performance of the BOS, including subsystems and associated website(s) and application(s), and measure their availability, stability and reliability against contract performance requirements.
207.	Successful completion of the OOP and approval by NCTA shall be required before NCTA grants Systems Acceptance.

2.3.4.   Testing and Acceptance Criteria

208.	NCTA shall, at its sole discretion, determine whether the Contractor's system meets the acceptance criteria of each testing phase.
209.	The Contractor shall be responsible for finalizing all required testing documentation, and/or testing punch lists for NCTA review and approval prior to receiving system acceptance.
210.	To meet the Acceptance criteria, the BOS shall pass all stages of testing, as required by the phase, and the Contractor shall have met the following conditions: • All deliverables required for each phase have been provided to and approved by NCTA.

	• The BOS is fully operational, all affiliated websites are operational on all required browsers, and Mobile Applications are available for download from both the Google Play and the Apple Application Store for all required devices.
	• The system is fully operational in its installed setting at a location(s) approved by NCTA
	• All system interfaces with external systems are functioning as designed.
	• The system meets the security, stability, availability, performance and functional requirements as defined within this RFP.
	• All system data conforms to expected output, and data integrity is verified.
	• Training/knowledge transfer to NCTA and NCTA Operations personnel has been completed.
	• The BOS, including all subsystems, associated websites and applications, has successfully completed the OOP.

2.3.5. Implementation Approach

211.	The Contractor's solution for implementation shall include, but not be limited to the following:
212.	Infrastructure Test Plan - The Contractor shall provide an Infrastructure Test Plan for review and approval by NCTA that shall include, but not be limited to:
	• Performance testing to ensure that the integrated system satisfies service level targets under normal workloads.
	• Stress testing of the application to determine failure point(s) of the system under extreme levels of usage.
213.	Data Conversion and Migration - The Contractor shall coordinate with NCTA on the conversion and migration of all legacy data to the new system per the approved Data Migration Plan.
214.	The Contractor shall be responsible for performing and leading any and all required data conversion and migration activities associated with the BOS Implementation.
215.	NCTA and/or its designee, in conjunction with the Contractor, shall be responsible for verifying the accuracy of the converted and loaded data.
216.	The Contractor shall be responsible for the integrity of the data after migration.

217.	In the execution of the data conversion plan, the Contractor shall be responsible for developing and testing automated conversion programs. This effort shall include, but not be limited to:
	• Development of programming specifications
	• Coding of conversion programs in accordance with program specifications
	• Performance of unit and integration testing of the conversion programs
	• Performance of data integrity testing, which includes correcting problems associated with past code changes
	• Building any file structures required to assist in developing test scenarios and conducting acceptance testing
	• Running the conversion programs and assisting NCTA with the verification of the converted data in the production environment
218.	In the execution of the data migration plan, the Contractor shall be responsible for implementing and testing the migration of legacy system data to live operations. This effort shall include, but not be limited to:
	• Validate the back office system of record for source data, and identify and document requirements of the new system
	• Assess and document data quality of the current system to meet target application requirements and business needs
	• Identify and plan to mitigate any gaps and discrepancies between available source data and target application data requirements
	• Assess and document the challenges of consolidating data from several sources
	• Assess and document the effort required to accurately identify source data at column-level detail, including any transformation specifications
	• Assess the effort required to design, code, test, implement, and document the data migration

2.3.6. System Installation and Staging Requirements

219.	The Contractor shall procure, provision, and make ready all necessary private cloud infrastructure, software, storage, software, etc. in close coordination with NCTA. All cloud based services, infrastructure as a service, cloud-based telephony solutions, cloud storage, etc. shall be procured and provisioned in a timely manner to support development, integration, testing, and system implementation activities.

220.	The Contractor and NCTA shall coordinate and agree upon what items (e.g. hardware and software), services (e.g. cloud-based infrastructure, storage, telephony, CSC workstations and associated network equipment, etc.) and consumables need to be procured by the Contractor, as pass-through costs to NCTA, when they need to be procured and where they are to be delivered. **Note**: While the Contractor and NCTA shall coordinate on procurement items in support of the BOS as mentioned above, the Contractor shall not be permitted to reuse existing network equipment, telephony equipment, servers, storage, etc. without NCTA's prior written authorization.
220.1	All CSC/CSR workstations procured and maintained by the Contractor shall have the latest version of Microsoft Office Standard installed for use by CSR and other CSC personnel in support of the BOS operation.
221.	The Contractor shall be responsible for monitoring all licenses, associated with hardware, software and/or cloud-based services, inventories on consumables, and updating NCTA on when items need to be purchased before inventory runs out in order to maintain uninterrupted operations services.
222.	The Contractor shall first furnish, install, burn-in, and test the new BOS systems equipment ~~and any reused equipment~~ at the NCTA CSC and storefront facilities, and establish all necessary communication network links for back office system operations.
223.	The Contractor shall appoint a staff member, or subcontractor, that is a Qualified Integrator and Reseller (QIR), as certified by the Payment Card Industry Security Standards Council (PCI SSC), to oversee and manage the installation of the system.
224.	The Contractor, upon approval by NCTA after initial installation testing, shall complete the installation of other system elements in accordance with the installation plan and schedule to include all conduit runs, wiring, terminations, communications services, etc. (as necessary). All equipment in the NCTA CSC and storefront facilities shall be installed and fully tested by the Contractor prior to release of the back office system to NCTA for final testing.
225.	During system installation testing at the CSC and storefront facilities, the Contractor shall demonstrate the proper function of all data exchange interfaces utilizing the BOS communication network.

2.3.7. Back Office System Installation and Readiness Punch List

226.	Following the complete provisioning and implementation of all private cloud-based services and installation of the back office system equipment at the primary CSC and storefront facilities, the Contractor shall coordinate with NCTA to conduct a system and site walkthrough. The purpose of the walkthrough is to identify and document any system issues, installation completion items or note any quality of installation or provisioning workmanship issues. This list of issues shall be documented into an installation punch list.
227.	The Contractor shall be responsible for coordinating with NCTA on the prioritization of items on the punch list, fixing/addressing the items and conducting any system installation retests as necessary.
228.	Unless approved by NCTA prior to SAT testing, all items on the installation and readiness punch list must be complete prior to SAT.

2.4. Training Phase

The Contractor shall provide comprehensive training for all aspects of the BOS, including but not limited to the Operation, System monitoring, problem detection and resolution, and reconciliation and audit of the BOS. The training program shall recognize and incorporate the plan for NCTA to operate the BOS. As such, NCTA Operations staff, and others as designated by NCTA, shall be fully trained to successfully operate all aspects of the BOS.

2.4.1. Training Program

229.	The Contractor shall develop the Training Plan, and submit it for NCTA's review and approval during the System Testing and Installation Phase.
230.	The Contractor shall be responsible for coordination with NCTA to develop a training schedule, and a list of CSC operations and NCTA staff who will require training on the BOS and application.
231.	NCTA shall have the right to require additional interim drafts at no additional cost should draft training materials submitted not be of adequate quality or have missing or incorrect information.
232.	The Contractor's Training Plan shall include, but not be limited to: course title(s), course objectives, method of delivery for each training course (e.g. live or online), equipment to be used, media to be employed, course length, optimum number of attendees per training session, certificate of completion requirements, etc.
233.	Prior to the beginning of any training, the Contractor shall be responsible for developing all training materials and user manuals, and submitting them for NCTA's review and approval.
234.	The Contractor shall ensure NCTA or their representatives have the right to attend any training sessions and to make recordings and copies of all training program materials for their use in training new employees.

235.	The Contractor shall coordinate with NCTA to develop a list of CSC Operations and NCTA staff who will require training on the new back office system.
236.	It shall be the Contractor's responsibility to provide sufficient notice to NCTA on the types of training it will provide and the timing for each training session.
237.	The Contractor shall perform all scheduling activities and shall make every attempt necessary to accommodate the maximum number of persons for each training session given scheduling conflicts. Contractor shall provide sufficient notice to allow participants a reasonable lead time.
238.	The Contractor shall notify NCTA of the dates, or range of dates, it would like to hold a training session at the NCTA offices, and shall coordinate with NCTA staff to arrange the proper classroom setting a for each training session.
239.	All training shall be conducted in the Raleigh-Durham, North Carolina area, as approved by NCTA.
240.	The Contractor shall be responsible for providing all training material, computers, projectors, projector screens, video players, meals, and supplies required for the training class. All dates and durations required for training material development and conducting all training classes shall be identified in the Implementation Schedule.
241.	Upon NCTA's request, the Contractor shall provide both electronic and hard copies of the training materials for each person being trained.
242.	The Contractor shall revise the training program, Training Plan and training documentation and classroom materials, as necessary, throughout the contract term based on feedback from NCTA, system changes, additional functionality, etc.
243.	The Contractor shall train NCTA and CSC operations staff members on the operation, maintenance and support of the entire back office system. The Contractor training shall provide an overview of design, operations, and maintenance of the system including, but is not limited to: overall system functionality, account maintenance, system reconciliation and audit, system administration and database administration.
244.	The contractor shall utilize a blended approach to training, consisting of classroom training, train-the-trainer training, hands-on training, system-based training, etc.
245.	NCTA shall provide a listing of designated personnel who the Contractor shall provide training to and which persons shall be designated as NCTA trainers subsequent to the completion of the training course.
246.	NCTA may require additional courses be offered or additional personnel be provided training. The Contractor shall accommodate these requests to the extent possible with onsite personnel and Documentation that is readily available.

247.	The Contractor(s) shall make annual updates to the training program. The annual updates are required by any contractor selected. The updates will run through the life of the contract.
248.	The Contractor(s) shall provide an abridged refresher course / handbook for refresher training and quick reference.
249.	**Training Manuals.** The Contractor shall provide training manuals for each major component of the System. All manuals are to be kept up to date by the Contractor to account for all system upgrades or any modifications to the system. Manuals shall be made available on NCTA provided SharePoint site and online if available:
	a. Operations Manuals – These manuals will serve to assist in the training of CSC operations personnel and to provide documentation of the proper operation of the systems.
	b. System Administration Manuals – These manuals will serve to assist in training the System Administrator in all elements of operating and maintaining the System including generating reports, configuring components of the system, developing system performance metrics, etc.
	c. Maintenance Manuals – These manuals shall be comprehensive manuals that address all hardware and software components of the various modules of the system. This document should specifically address preventive maintenance, preemptive/ predictive maintenance, routine maintenance, etc.
	d. Business Continuity Manual – This manual should address a comprehensive approach to transitioning day-to-day operations to an off-site facility. The manual shall address any configuration necessary to allow NCTA to establish access to the private cloud-based solution at one or more secondary facilities that may be used during events that impact NCTA's ability to staff the CSC or during periods of time when NCTA has a need for overflow staffing.
250.	The Contractor is responsible for providing regular updates to all training materials to keep them up to date throughout the life of the contract.

2.5. Maintenance Phase

The Contractor shall provide maintenance services for the BOS system, including but not limited to: issue response, defect fixes, planned maintenance, patches and updates, and system modifications and enhancements.

2.5.1. Maintenance Services

Note: All system maintenance activities are included in this service (backups, updates, security, etc).

251.	The Contractor shall develop a continuous system update program as part of the overall Project Management Plan that addresses system obsolescence and details an upgrade schedule for system components over the term of the agreement.
252.	A strict version control system shall be maintained and utilized by the Contractor.
253.	Software modifications that are required to expand, maintain and support the back office system, including any interfaces to support the RTCS hosts, as a part of the normal course of business shall not be considered upgrades, modifications or enhancements, and shall be performed during maintenance activities.
254.	Subsequent to system implementation and acceptance, the Contractor shall be responsible for performing administrative activities, corrective action and routine maintenance services to the Contractor's system supporting Contractor's services.
255.	Ongoing, routine Maintenance Services shall be a component of the price offer.
256.	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: • Procedures that ensure all potentially affected users are notified in a timely manner if at any point a system must be halted to provide maintenance • Planned software and data upgrades and maintenance schedules • Clearly defined roles, responsibilities, and coordination processes • Clearly identified roles and responsibilities and ownership during disaster readiness and recovery • Clearly defined process for testing recovery / business continuity services at a minimum of once per year with documentation for each recovery process • The hours available and number of system support personnel needed to support NCTA by responding to NCTA user issues via logged tickets • Ongoing application certification with the Apple Application Store and Google Play as required • How the Contractor shall accommodate expansion of operations to include other toll facilities and interoperable toll authorities
257.	Software upgrades shall be coordinated with NCTA to ensure that version incompatibilities are not created.

258.	Planned maintenance and upgrades shall be scheduled, and approved by NCTA prior to their implementation.
259.	The Contractor shall provide its own maintenance facilities and inventory storage, which shall always be available for inspection and inventory by NCTA.
260.	The Contractor shall maintain current inventory of all system hardware, and provide updated serial number and model information to NCTA as components are replaced.
261.	With the exception of any items identified by, or agreed to, in writing by NCTA, the Contractor shall be responsible for the maintenance of any and all hardware (e.g. workstations, printers, network equipment, etc.) deployed in NCTA's NC Quick Pass Customer Service Center and storefront locations.
262.	The Contractor shall notify NCTA in advance of making any configuration changes during planned maintenance operations, and shall notify NCTA within 24 hours of any configuration changes required by corrective maintenance.
263.	Once each system bug, issue or defect is identified, the Contractor shall provide NCTA with a Cause and Impact Analysis, which shall include at a minimum: • Defect cause • System module impacted • Functionality impacted • Number of customers impacted • Number of dollars impacted • Proposed solutions and recommendation • Program names • End-to-end test scenarios **Note**: This information may be captured in defect tracking software and provided to NCTA for review.
264.	Routine software repairs and service modifications that are required to maintain and support tolling operations as a part of the normal course of business (e.g. version changes, configuration or parameter changes, minor changes to software or code, or changes that improve the Contractor's ability to maintain and support the system) shall not be considered negotiable modifications or enhancements. Routine modifications shall be part of the maintenance price, and shall include, but not limited to:

	• Routine, configurable updates that result in improvements in operational efficiency
	• Modifications to the website to ensure content is current or accurate
	• Changes to NCTA financial system interface information
	• Adjustments to standard reports
	• Modifications to IVR call flow to correct routing and call flow problems identified during normal operations
	• Modification to CSR scripts
	• Modifications of existing interfaces
	• Modifications to the wording of toll bills, statements and other standardized communications with customers
	• Predictive maintenance and replacement of limited-life and consumable components
	• Periodic database and system tuning and checks for processing performance
	• Periodic mobile device updates to maintain compliance with the Apple Application Store and Google Play, as well as all operating systems and devices as required by NCTA
	• Modifications required to address end user satisfaction when ratings fall below three stars out of five for the respective mobile device applications (Apple and Google / Android)
	• Regular monitoring and daily backups of the Back Office System and other host level servers
265.	The Contract shall develop a software release schedule for NCTA's review and approval before each software release.
266.	The Contractor shall test each new software release (whether resulting from routine maintenance, a defect fix or any other origin), provide a written rest report, and submit the report for NCTA's review and approval before the changes can be implemented in a live, production environment. Should a software release have an impact to BOS, website or application user interface, the Contractor shall be required to develop test scripts for NCTA's review and approval prior to conducting the test.
267.	The Contractor shall be required to develop and provide detailed release notes for NCTA's review and approval for every new software release, update, fix or enhancement prior to releasing any new software into production. The Contractor shall coordinate with NCTA on the content and format of release notes.

2.5.2. Maintenance Priorities, Response and Repair Times

268.	Response and Repair time is defined as the combined time from when failure occurred or problem was reported to when the repair or correction of the failure occurred; the period of time beginning when the failure occurred (failure time) and ending when the fault condition is corrected and returned to normal Operations.
269.	Response and repair times for every Maintenance event shall be recorded and reported by the Contractor, and such reports shall be provided to NCTA every two (2) weeks.
270.	The Contractor shall provide NCTA with contact information (e.g. phone number and e-mail address) for the Contractor's on-call technical support staff. The Contractor shall also be responsible for updating NCTA should any contact information change during the course of the Contract.
271.	Response to calls and repair times shall be determined by Priority as described below. Contractor failure to meet the response and repair time criteria described below shall result in monthly fee adjustments.
272.	Acknowledgement of receipt of notification of a Maintenance issue or human acknowledgment of a failure shall not exceed thirty (30) minutes after the failure notification was recorded or problem was reported.
273.	The Priority of failures shall be defined and/or modified from what is documented below during the Preliminary System Design and Final System Design and Development Phases. Time to respond and complete repair are determined by Priority and is defined as below.
274.	Priority 1: Defined as any malfunction or fault that results in the loss of revenue due to the interface with the RTCS or other external interface; security breach; loss of audit data; loss of redundancy in any redundant System components; loss of functionality that impacts the availability of the BOS (including subsystems, mobile application and/or website), loss or corruption of new or migrated legacy data, or operation of the mobile application and/or website(s).
	For this Priority, the Contractor shall have a two (2) hour time to respond and complete repair.
275.	Priority 2: Defined as any malfunction or fault that degrades the System performance but not the operational ability of the BOS, its subsystems, mobile application and/or the website(s). It includes, but is not limited to inaccurate reporting, or loss of functionality that impacts access to data.
	For this Priority, the Contractor shall have a four (4) hour time to respond and complete repair.

276.	Priority 3: Defined as any action or event that has the potential to result in a malfunction or degrading of the System performance but has not impacted performance and is not anticipated to immediately impact performance.
	For this Priority, the Contractor shall have a twenty four (24) hour time to respond and complete repair.
277.	Outages and tasks performed under an Approved Preventive Maintenance schedule shall be defined as Priority 4. The BOS, mobile application and website(s) shall be available and fully operational within the Approved time schedule for such activities and upon completion of the Preventive Maintenance period. Delays and problems associated with not completing scheduled Preventive Maintenance within the window specified may be included in the Performance Requirement Calculations. Any failures generated or resulting from Preventive Maintenance activities shall be accounted for as Priorities 1, 2 or 3 and be addressed in accordance with these Requirements.

2.5.3. Acknowledgement of All Priority Events

278.	The Contractor shall acknowledge receipt of all Priority events within thirty (30) minutes of failure/event notification.
279.	The Contractor shall be required to utilize software to track software bugs, defects issues or system enhancements throughout the term of the Contract. The Contractor shall coordinate with NCTA on the selection of tracking software prior to the Contractor's purchase of any software (if necessary) to ensure it meets NCTA needs. At a minimum, the software shall:
	• Provide complete tracking of software bugs, defects issues or system enhancements from the identification/entry of an item until it is fixed/closed in the tracking software
	• Utilize NCTA defect priority assignment as described in this RFP or defined further during the Preliminary System Design and Final System Design and Development Phases.
	• Provide access to NCTA staff as directed and requested.
	• Tie defect fixes or software enhancements to specific software releases.
280.	For the purposes of assessing monthly fee adjustments, 95% of failure or Priority events shall be acknowledged within thirty (30) minutes of receipt.

2.5.4. System Modifications and Enhancements

281.	After the system is launched in a live operating environment, NCTA may request the Contractor to modify or enhance the back office system in response changes in their tolling program. For example, NCTA may request modifications to the system to support:
	• The addition of new toll facilities
	• The addition of new system functionality
	• Changes in toll system technology
	• Changes in legal, regulatory, or policy concerning tolling operations
	• Modifications to internal processes that provide NCTA with a demonstrable benefit in performance, costs or productivity
282.	Either NCTA or the Contractor may initiate a change request for system enhancements or modifications.
	Note: Once initiated, change requests will follow NCTA's change request process.
283.	Regardless of who initiates a change request, the Contractor shall be responsible for fully documenting and submitting the following for NCTA's review and approval prior to the initiation of any work:
	• Impacts of the change on the system, including system function, maintenance and operation
	• Level of effort to make the change
	• Testing needs and impacts
	• Implementation schedule
	• Proposed fixed price for the development, testing and implementation of the modification or enhancement
284.	System software enhancements shall be negotiated, and be based upon a mutually agreed upon change order.
285.	Change orders are payable upon achievement of milestones and deliverables stipulated in the change order.
286.	Any proposed pricing for software modifications / enhancements shall be developed using the same estimating, cost, schedule, risk assessment, overhead and profit principles used to develop the original Pricing Schedule.

2.6. Project Closeout Phase

2.6.1. Project Closeout Requirements

287.	Upon completion of the Project, the Contractor shall coordinate with NCTA to ensure all contract items have been closed out and complete, resolve any open issues and ensure NCTA has all of the final documents in their possession.
288.	During Project closeout, the Contractor shall cooperate fully with NCTA and any other Contractor as designated by NCTA to provide full technical support related to data migration, system transition, and operational transition as required to facilitate a seamless transition. These services shall be provided at no additional cost.
289.	Upon NCTA's written Notice, the Contractor shall furnish transition Services prior to the end of the Contract Term. The Contractor shall develop with the successor contractor or NCTA staff, a Contract Transition Plan describing the nature and extent of transition Services required.
290.	Upon NCTA's request, the Contractor shall coordinate with NCTA to conduct a lessons learned meeting.

2.6.2. Final Submittals

291.	Upon completion of the Maintenance Phase and during the initial warranty period, the Contractor shall provide Project Closeout documentation (printed and soft copy) for NCTA's review and approval , including but not limited to: • Drawings / sketches • Cut sheets • Inventory numbers and information, such that NCTA will be able to make changes or hardware change outs in the future • Final software documentation • Final as-built design documentation • Final website templates and formatting style sheets • Final security configurations documents • Final vulnerability assessment scan reports • Final penetration testing reports • Final compensating control worksheets • All source code associated with the BOS and Mobile Application software developed for the Contract • Final software documentation to provide Application Program Interface (API) developers the necessary information to create functions required to pass data to and from Mobile Applications.

3. Functional Requirements

The functional and technical requirements contained within this section serve to describe NCTA's required system functionality. The requirements are not all inclusive as NCTA expects the Short-listed Proposers to refine, expand, validate and finalize the functional requirements during the Preliminary System Design Procurement Phase. The user interface or other customer-facing messages, text and content provided herein are examples, and may or may not reflect final language to be developed and approved during the Final System Design and Development Phase.

Additionally, requirements for the website application and mobile device application may differ slightly from one another, and those differences shall be identified and documented during the Final System Design and Development. The final agreed requirements will be incorporated into an updated document as required during both the Preliminary System Design and Final System Design and Development Phases, and serve as the basis for the executed Contract.

Refer to the figure below for a depiction of the concept for the future cloud-based BOS architecture.

Conceptual Back Office Solution
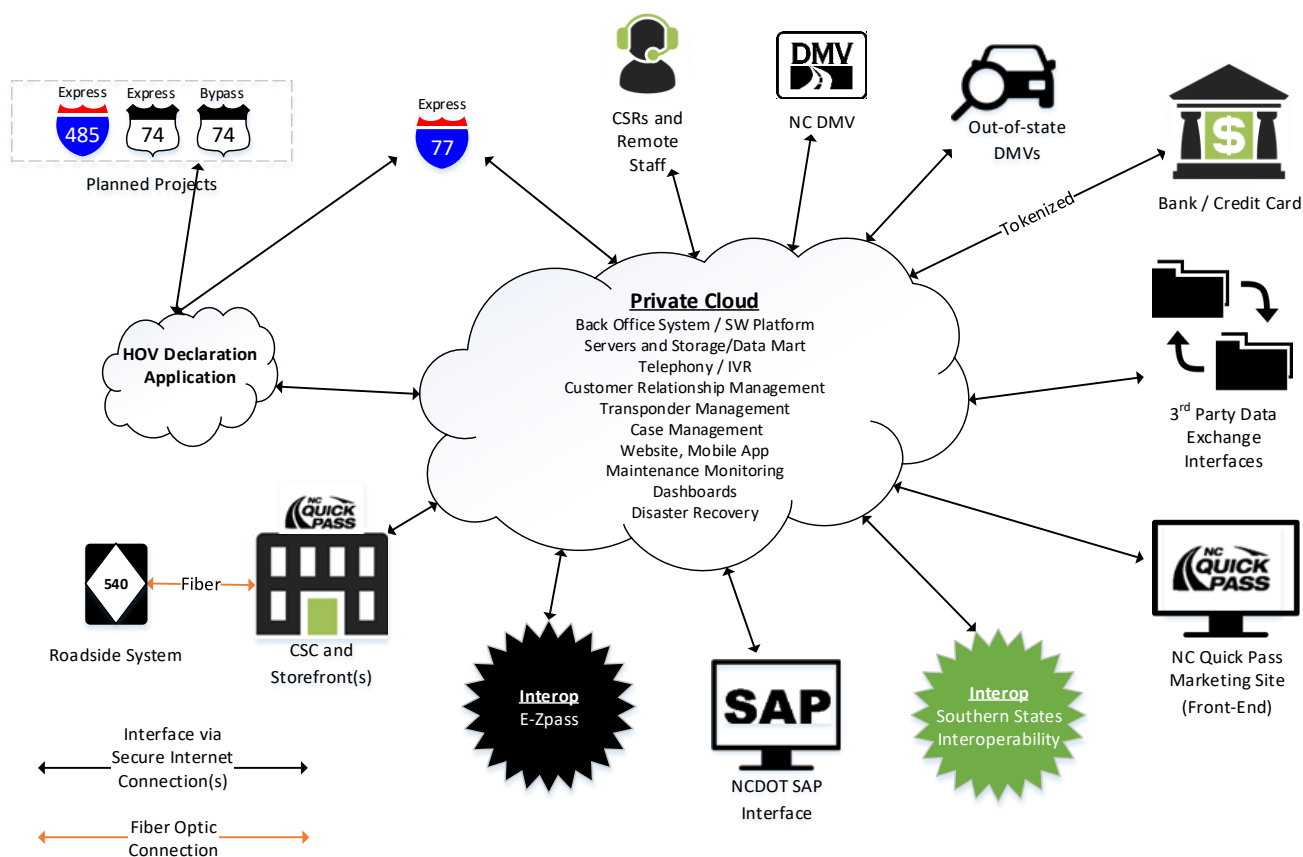
Figure 3-1: Conceptual BOS Architecture Overview

3.1. General Requirements

3.1.1. Software and Technology

The Contractor's proposed software and hardware solution for NCTA's back office toll operation shall meet the following requirements:

292.	The Contractor's back office system shall support the receipt and processing of ETC transactions, image-based transactions and interoperable transactions, and posting them to customer accounts in accordance with NCTA Business Policies, Business Policies defined during design, and the requirements herein.
293.	The system shall ~~support English and Spanish languages~~ be internationalized to allow for properly formatted input and output of non-US addresses and license plates, especially those from Mexico and Canada without system changes. The internal elements (e.g. software code) of the system shall support English only.
294.	The system shall include an interactive website component that shall allow customers to initialize and maintain an account, order transponders, make payments, and access statements and historical data, contact the CSC, dispute transactions, etc.
295.	The system and the database shall be structured such that growth is accommodated, access is easy, and reports are configurable and accurate.
296.	The systems must be auditable, and provide for reconciliation processes associated with all system activity including CSR transactions, ETC transactions, image-based transactions, account balances, front counter and call center activity, adjustments, credit card transactions, payments, etc.
297.	The Contractor shall propose commercial-off-the-shelf software, where appropriate, to provide a modular, fully integrated back office system to support NCTA's Customer Service Center back office operations.
298.	The CSC module must be user friendly, accurate, dependable, and easily configurable to accommodate NCTA Business Policies and changes.
299.	The System must provide automated processes for CSRs to provide a more efficient and customer friendly service.
300.	The system must provide for intuitive management of information by CSC staff without having to involve NCTA or Contractor IT staff.
301.	The system must provide the ability to export data to other applications, such as NCTA General Ledger, Microsoft Excel and other applications.
302.	In order to maximize the system's performance, any infrastructure as a service, hosted services, or private cloud-based services shall be hosted within the United States in a region

	close to or within North Carolina. <u>All private cloud-based services shall be provided by a third-party that specializes in such service provision, managed by the Contractor.</u>
303.	All data hosted in an infrastructure as a service / private cloud-based environment shall be readily accessible by NCTA staff for the duration of the agreement. All data (exclusive of Contractor developed applications which shall be licensed) shall be owned by NCTA in its entirety.
304.	The system shall be capable of supporting other NCTA sites, retail sites, and other remote locations to include services for transponder sales, account payment posting and account management.
305.	The Contractor's back office system shall utilize web-based client applications and interfaces with separate access authorizations for separate categories of users.
306.	The Contractor shall configure and size the back office system appropriately to support projected transaction volumes from existing and future toll projects. Refer to Attachment 1 for Transaction Projections by NCTA Project. An incremental sizing approach wherein the system is sized accordingly on an annual basis is acceptable. Should the Contractor choose to size the system in an incremental manner the Contractor shall develop and submit for approval a plan that addresses all aspects of system sizing including but not limited to data storage, call volume capacity / recording, communications bandwidth, voice circuit sizing, website hosting, etc.
307.	Customers shall be able to perform all required account establishment and management tasks online via web and mobile device applications.

3.2. Customer Information Security

3.2.1. Standard and Service Organization Reporting

308.	The Contractor shall be responsible for performing an attestation engagement annually to report on controls of the BOS based on the Statement on Standards for Attestation Engagements (SSAE) No. 16 (SSAE16; or most recent version) utilizing Service Organization Control No. 2 (SOC2; or most recent version) <u>Type II</u> reporting standards throughout the term of the contract. The Contractor shall be responsible for all costs related to the annual assessment audits and all costs associated with SSAE16 (or most recent version) validation and reporting.

3.2.2. PCI Compliance

309.	The back office system / solution 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 which is projected to be June 30.

310.	The Contractor's back office system/solution 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.
311.	The payment card processing solution shall utilize a PCI certified Point to Point Encryption (P2PE) architecture wherein sensitive data is encrypted and tokenized.
312.	The Contractor shall be responsible for contracting with and utilizing a PCI-approved scanning vendor to perform quarterly network scans to ensure the security of the back office system and data exchanges, including internal and external penetration testing consistent with the current version PCI-DSS.
313.	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.
314.	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.
315.	The choice of QSA shall to be mutually agreed upon by the Contractor and NCTA.
316.	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.

3.3. Account Functionality

3.3.1. General Account Functionality

317.	The system shall support all account types and functionality as described in the NCTA Business Policies. Refer to Appendix D for the NCTA Business Policies.

3.3.2. Customer Account Creation

318.	The BOS shall support account creation functionality for pre-paid and post-paid accounts <u>for all account types as described in the NCTA Business Policies. Refer to Appendix D for the NCTA Business Policies</u>.
319.	The system shall allow customers to open and maintain accounts both with and without transponders.
320.	The back office system shall support multiple channels for customers to fill out and submit an application to create an account, including: • In person at an NCTA operations center or retail location

	• Via e-mail, mail or fax
	• Via website or a mobile device application
	• Via phone
321.	The system shall capture and store the minimum information NCTA requires to open a pre-paid account, including:
	• Name
	• Address
	• Contact information
	• License plate number(s)
	• Vehicle information (year, model, number of axles)
	• Payment type (cash, check, money order, ~~or~~ credit and debit cards, Apple Pay, Google Pay, or PayPal)
	• Payment information (automatic or manual replenishment)
322.	The system shall allow for customers to provide their signature electronically for applications submitted via the website or phone-based application for pre-paid accounts.
323.	The system shall also support creating image-based, post-paid accounts based on information received from the Department of Motor Vehicles (DMV) or license plate lookup interface should the license plate associated with a transaction not exist on an active account in the system.
324.	The system shall enable customers to select and modify their preferred method of contact from NCTA (e.g. e-mail, text, mail, etc.).
325.	The system shall provide the ability to send notifications (e-mail, mail, phone, and/or Short Message Service (SMS)) to customers either individually or to a group. Such notifications shall include bills, statements, periodic announcements, promotional messages, real-time ad hoc notifications, etc. The Contractor shall be responsible for obtaining SMS service, and managing the service throughout the duration of the contract on behalf of NCTA.
326.	The system shall deliver notifications based on the customer preference of notification method.
327.	The system shall enable customers to provide multiple addresses that can be expanded upon, shall allow customers to select their default mailing address, and shall maintain historical address information.
328.	The system shall prevent customers from having more than one account and vehicles from being assigned to more than one account.
329.	The system shall be designed and developed so that a single account structure is apparent in the system application/GUI, the database(s), reports (including ad hoc reports and query outputs), and web services.

330.	The system shall consolidate and associate all transaction types with a single account for each customer. The system shall not create separate accounts for each transaction type (e.g. image-based vs transponder-based).
331.	The system shall display all transactions chronologically, by default, but the system shall allow users to sort transaction views by various data types (e.g. date, time, transaction type, paid, unpaid, license plate, transponder number, etc).
332.	The system shall post all account activity, financial and non-financial, to a single account for each customer. The system shall enable a user to see all account activity viewable in a customer account history.
333.	The system shall display a single account balance, regardless of transaction or account activity, for each account.
334.	The system shall show separate subtotal balances for paid and unpaid transactions on an account. The system shall reflect the sum of all transactions in one, total account balance, as well as any unapplied balance available, if appropriate.
335.	Before an account is created, the system shall verify if the license plate number already exists on an active account and prevent the use of a license plate on more than one active account.
336.	The system shall accept addresses and license plates from the United States and internationally (~~e.g.~~ Mexico and Canada <u>only</u>) on customer accounts.
337.	The system shall allow users with valid NC Quick Pass transponders, which are not switchable, to modify their HOV Declaration for travel on North Carolina Express Lanes via the BOS interface.

3.3.3. Account Maintenance

338.	The system shall provide customers with the ability to update, maintain, replenish and manage their accounts through the following interaction channels:
	• In person at an NCTA operations center or storefront location
	• Via e-mail, mail or fax
	• Via website or a mobile device application
	• Via phone or IVR system
	• Via the Mobile Application
339.	The system shall allow authorized users the following maintenance activities on customer accounts:
	• Add, modify or end date vehicles/license plates
	• Demographic updates
	• Change transponder status
	• Request additional transponders

	• Update replenishment methods upon customer request
	• Update replenishment information
	• Update customer correspondence delivery method
	• Post payments and reversals
	• PCI compliant password requests and resets
	• Reinstate or re-validate suspended accounts and transponders
	• Close accounts
	• Opt into NC Quick Pass Park and Pay (final brand to be determined) **Note**: Only available for customers whose NC Quick Pass account is backed by a valid credit or debit card, or other valid auto-replenishment payment mechanism supported by the BOS.
	• Add account notes
340.	The System shall provide a way to manage access and functionality restrictions for specific personnel positions and job duties. The system shall allow authorized users, including customers, to maintain customer accounts.
341.	The system shall provide the ability to trace and audit each change made to a customer account.
342.	The system shall not allow customers to remove, modify or reduce transactions or toll rates posted to their account.
343.	The system shall process and record account maintenance functions in real-time.
344.	The system shall enable users to search or query the system through the system GUI using multiple search criteria for account lookup.
345.	The system shall allow customers to dispute individual transactions via all interaction channels.
346.	The system shall process, record, manage and all customer disputes.
347.	The system shall provide functionality for large, business accounts (e.g. rental car fleet accounts) to easily manage and maintain their account. For example, the system shall provide functionality for large businesses to manage fleet license plate additions and deletions via a secure file transfer protocol (FTP) or web interface.
348.	The system shall support the creation of security procedures for customer-requested information and account updates over the phone.
349.	The system shall automatically update customer address data obtained from various sources (e.g. DMV) while maintaining all previous customer data information/history (e.g. all other data provided by the customer).
350.	The system shall support both in-bound and out-bound customer contacts (phone, mail, email, facsimile, text, etc.).

351.	The system shall support and process the following payment types, including but not limited to: • Cash • Check • Money order • Automated clearing house (ACH) • Debit cards (PIN-less) • Credit cards • Apple Pay • Google Pay • PayPal
352.	The system shall enable customers to utilize and store multiple auto-replenishment payment types, including but not limited to: • ACH • Debit cards • Credit cards • Apple Pay • Google Pay • PayPal
353.	The system shall offer users the ability to provide payments by any method, regardless of the designated replenishment method for their account.
354.	The system shall automatically generate a notification to a customer in the month prior to expiration for any payment method(s) on file.
354.1	The system shall interface to NCTA's credit card service provider(s), and shall utilize expiration dates received through this interface to automatically update customer credit card expiration dates for credit and debit cards assigned to pre-paid NC Quick Pass accounts.
355.	The system shall process one-time replenishment or bill payments.
356.	The system shall enable a customer to store and set the priority for up to two (2) replenishment methods.
357.	Once an account balance threshold has been reached, the system shall automatically attempt to auto-replenish an account using all methods available on the account until replenishment is successful or the pre-defined threshold for attempts has been met per NCTA business policies.
358.	The system shall maintain transaction history records for all replenishment events.

359.	The system shall enable users to change the replenishment frequency and amount on an account so long as the changes do not contradict NCTA business policies.
360.	The system shall provide functionality for both automated (e.g. based on road usage history) and manual (user changing individual accounts) adjustments to replenishment amounts.
361.	Thirty (30) Calendar Days after a pre-paid account, auto-replenished by a valid credit card or other payment method, has been opened, the system shall evaluate the toll usage on the account and adjust the replenishment amount based on the customer's initial usage.
362.	After the initial adjustment, the system shall evaluate account usage every ninety (90) Calendar Days to calculate the average monthly toll usage and automatically adjust the auto-replenishment amount to correspond with the average usage rate.
363.	While the system shall allow a customer to change their auto-replenishment amount, or override an auto-adjusted amount, the system shall continually recalculate and adjust the auto-replenishment amount based on the customer's usage per NCTA business policies.
364.	The system shall automatically send notification to customers when a system generated adjustment is made to their account replenishment amount or frequency.
365.	The system shall automatically generate a notification to a customer upon the final failed attempt to replenish an account if the failure was not due to system-related issues.
366.	The system shall support sending pre-paid customers a "low balance notification" when the funds available on their account reach a threshold as determined by NCTA business policies.
367.	The Contractor shall support further detailed policies and business policies incorporated in this specification and required by North Carolina law and Memoranda of Understanding, such as for interoperability.

3.3.4.   Customer Online Account Management Functionality

368.	The system shall allow customers to access and manage both pre-paid and post-paid accounts via the web or mobile device applications per NCTA's business policies for each account type. The online system shall:
369.	Support customers changing of account passwords.
370.	Allow for customers to request and resolve forgotten passwords online or delivered via mail, email, or text, based on client selection after validation.
371.	Allow for customers to specify answers to additional security questions to be used in order to identify account holder and reset passwords via email.

372.	Allow customers to designate or modify contact preferences (e.g. mail, e-mail, text, etc). The system shall notify customers of any fees associated with their selection, where applicable.
373.	Display information to customers as it appears on the system application (e.g. account holder name, account number, address(es), phone, etc.).
374.	Provide customers the ability to update to biographical information (e.g. account holder name, account number, address(es), phone, etc.).
375.	Display historical information on demographic information updates.
376.	Display financial information (e.g. account balance, replenishment amount, low-balance threshold, replenishment method(s), etc.).
377.	Enable customers to change their replenishment method(s), as well as the priority of those methods.
378.	Display and enable customers to change or update vehicle information: make, model, color, year, plate, state.
379.	Show transponder information: transponder ID, date assigned, etc.
380.	Allow customers to add one or more transponder(s), up to five on an individual account.
381.	Display which transponder is associated with which vehicle.
382.	Allow customers to report transponder lost or stolen, or request replacement, per business policies.
383.	Allow customers to request additional transponders.
384.	Allow for transponder activation page, which allows multiple transponder activation.
385.	Allow customers to track transponder replacement requests through delivery.
386.	Allow customers to make a one-time payment.
387.	For customers without an active transponder on their account, display the benefits of funding a NC Quick Pass transponder upon successful account login.
388.	Display summary, detail, and activity reports on account activity, as well as archived monthly statements in Excel, comma separated value (CSV) or PDF formats.
389.	Allow users to view transaction history by license plate or transponder.
390.	Allow customers the ability to sort transactions by date, amount, roadway, vehicle, or other parameters.
391.	Have images associated with image-based toll transactions available to customers online after login, accessible via hyperlink.
392.	Allow customers the ability to export transaction history to Excel, CSV, or PDF.
393.	Allow users to dispute individual or multiple transactions.

394.	Allow customers to request the close their account online by providing a digital signature.
395.	Allow customer to access suspended accounts to resolve all fees and bring accounts to good standing.
396.	Allow for non-revenue account holders to have read only access to their account information.
397.	Allow non-revenue account set up and change requests to be submitted via the web and routed to authorized users to approve or disapprove via the GUI.
398.	Allow large account holders to maintain their own accounts, verifying all their vehicles, adding additional vehicles, making payments and removing vehicles.
399.	Allow fleet and large account customers to view their transaction history, sort transactions by vehicle, transponder, date, or tolling location, and add or remove vehicles.
400.	Allow customers whose accounts are backed by a valid credit or debit card, or other valid auto-replenishment payment mechanism supported by the BOS, to opt into NC Quick Pass Park and Pay (final brand to be determined).

3.3.4.1. HOV Declaration

401.	The system shall allow NC Quick Pass account holders in good financial standing with valid NC Quick Pass transponders, which are not switchable, to modify their HOV Declaration status for travel on North Carolina Express Lanes via the account maintenance interface/screen.
402.	The system, via the account maintenance user interface/screen, shall allow users to assign nicknames to their NC Quick Pass transponders. Should the user select *"Create NC Quick Pass Transponder Nicknames,"* the system shall present the user with the following: • A list of NC Quick Pass Transponders registered to the account and the associated vehicle license plate number. Beside each NC Quick Pass Transponder Number, the system shall present a text field enabling users to provide each NC Quick Pass Transponder with a nickname so that they do not have to have to remember the NC Quick Pass Transponder number or their license plate when using the system, contacting the CSC or using the Mobile Application in the future. This user interface shall present a message similar to the following: *"NC Quick Pass will use these nicknames on the website and Mobile Application display pages should you decide to save the nicknames you have provided. So, use these names when you are, for example, trying to setup a new HOV declaration for a specific NC Quick Pass Transponder in the future."* The system shall provide the user with *"Save"* and *"Cancel"* options. • Should the user select the *"Save"* button or hyperlink, the system shall save the nicknames provided by the user and use the nicknames throughout the system.

	• Should the user select the "Cancel" button or hyperlink, the system shall make no changes, present the page the user was last on.

403.	The system shall allow users to select on any active HOV declaration, and be presented with the following:
	
	• Time remaining for the HOV declaration
	
	• Anticipated expiration date
	
	• "Extend time"
	
	   o Should the user select *"Extend Time,"* the user shall be able to extend their time in 1 hour increments, not to exceed 4 hours. The system shall calculate and display the deactivation date and time, and shall present the user with a message similar to the following:
	
	   "Your HOV declaration will end at XX:XX on MM:DD:YYYY. Your HOV Declaration must be submitted at least 15 minutes prior to your travel on NCTA Express Lanes in order to receive the benefit of your HOV Declaration. In order to prevent receiving a fine on the Express Lanes if you do not meet occupancy requirements, you must revise or remove your occupancy selection 15 minutes prior to your travel on NCTA Express Lanes."
	
	• "Cancel Declaration"
	
	   o When a user selects the *"Cancel Declaration,"* the system shall present the user with the following options: *"Confirm"* and *"Cancel."*
	
	   o Should the user select the *"Confirm"* button or hyperlink, the system shall update the associated transponder(s) as "HOV Off," and update the web page to reflect the selection. The system shall also present a message similar to the following:
	
	   "In order to prevent receiving a fine on the Express Lanes if you do not meet occupancy requirements, you must revise or remove your occupancy selection 15 minutes prior to your travel on NCTA Express Lanes."
	
	   Note: By selecting this option, the user shall be required to reselect an HOV declaration(s) to benefit from HOV declarations in the future.
	
	   o Should the user select the *"Cancel"* button or hyperlink, the system shall not make any changes to the user's current HOV declarations.

404.	When a user selects the *"Cancel Declaration(s),"* button/hyperlink, the system shall present the user with the following.
	
	• A list of all active HOV declarations.
	
	   o When a user selects one of the active HOV Declarations and selects *"Cancel Declaration,"* the system shall present the user with the following options: *"Confirm"* and *"Cancel."*
	
	   o Should the user select the *"Confirm"* button or hyperlink, the system shall update the associated transponder(s) as "HOV Off," and update the web page to reflect the selection. The system shall also present a message similar to the following:

	"In order to prevent receiving a fine on the Express Lanes if you do not meet occupancy requirements, you must revise or remove your occupancy selection 15 minutes prior to your travel on NCTA Express Lanes." **Note**: By selecting this option, the user shall be required to reselect an HOV declaration(s) to benefit from HOV declarations in the future. • Should the user select the "Cancel" button or hyperlink, the system shall not make any changes to the user's current HOV declarations.
405.	When a user selects the *"Set New HOV Declaration"* button/hyperlink, the user shall be presented with a page enabling them to select their HOV Declaration Status by transponder number or nickname. This page shall present the following, or similar, information: • A drop-down box (or other easy to use selector tool) showing each transponder registered or transponder nickname on the account allowing the user to select one. • HOV Declaration Schedule selector with activation duration and calendar selector user interfaces. • A button or hyperlink titled: *"Submit"* • A button or hyperlink titled: *"Cancel"* • A button or hyperlink titled: *"Logout"*
406.	The system shall allow users to declare HOV status for the current day, or for a date in the future using the following configuration options: • *"Start Now"* activates HOV status for all transponders on the account immediately. **Note**: Once selected, the system shall present users with the following, or similar, message: "*Your HOV Declaration must be submitted at least 15 minutes prior to your travel on NCTA Express Lanes in order to receive the benefit of your HOV Declaration. In order to prevent receiving a fine on the Express Lanes if you do not meet occupancy requirements, you must revise or remove your occupancy selection 15 minutes prior to your travel on NCTA Express Lanes."* • *"Date in the Future"* (e.g. single day or timeframe 3/13/17 – 3/20/17) enables users to select a declaration status for a date in the future.
407.	The system shall allow users to set the duration for their HOV declaration using the following, or similar, configuration options: • *"4 hours"* A user's HOV declaration shall deactivate 4 hours after the user's HOV declaration became active. The system shall calculate and display the deactivation date and time, and shall present the user with a message similar to the following: *"Your HOV declaration will end at XX:XX on MM:DD:YYYY."* (time and date) • *"1 Day"* A user's HOV declaration shall deactivate at 12AM the day after the date the user selected hours to begin their HOV declaration to be active. The system shall calculate and display the deactivation date and time, and shall present the user with a message similar to the following: *"Your HOV declaration will end at 12AM on MM:DD:YYYY."* (time and date)

	• *"Weekdays"* would enable users to automatically declare for all weekdays. A user's HOV declaration shall deactivate at 12AM on the Saturday following the week the HOV declaration was active. The system shall calculate and display the deactivation date and time, and shall present the user with a message similar to the following: • *"Your HOV declaration will end at 12AM on MM:DD:YYYY."* (time and date) **Note**: The system shall prevent a user from completing their declaration without selecting a duration.
408.	The system shall support the follow declaration status: • HOV Off • HOV3+ **Note**: The system shall be designed so that additional HOV declaration status can be easily added based on NCTA business or policy decisions/changes.
409.	The system shall provide the following, or similar, message on the *"Set New HOV Declaration"* page: *"Your HOV Declaration must be submitted at least 15 minutes prior to your travel on NCTA Express Lanes in order to receive the benefit of your HOV Declaration. In order to prevent receiving a fine on the Express Lanes if you do not meet occupancy requirements, you must revise or remove your occupancy selection 15 minutes prior to your travel on NCTA Express Lanes."*
410.	Once the user has made their HOV Declaration(s), they will have the following, or similar, options: • Should the user select *"Submit,"* the system will present the user with a *"Confirm"* and *"Cancel"* buttons. If the user selects *"Confirm,"* the system will update the web with the user's selections and show the updated selections on the web page. Should the user select, *"Cancel,"* the system shall not make any modifications and display the user's previous selections prior to selecting the *"Submit"* button or hyperlink. • Should the user select, *"Cancel,"* the system shall not make any modifications and display the user's previous selections prior to selecting the *"Submit"* button or hyperlink. • Should the user select, "Logout" the system shall not make any modifications, logout the user from the Application and display the login page.
411.	Once any modification to the user's HOV declarations are made, the system shall send the user an e-mail notifying them of the changes made.
412.	The system shall present users with a real-time, running "activation clock" displaying how much time is remaining (e.g. down to the second) for each transponder set to an active declaration status.

413.	The system shall support sending text message or e-mail alerts (based on the user's selection), and screen notification popups for: • Once a user's activation becomes active • 5 minute alerts prior to a declaration deactivating • Upon HOV declaration deactivation
414.	Should the user select *"Save"* after any of their modifications to their profile, the system shall update the information in the system database and display the updated information.
415.	Should the user select *"Cancel"* after any of their modifications to their profile, the system shall not update the information in the system database and display the unedited profile information.
416.	The system shall provide users with the ability to view their HOV Declaration history.
417.	The Contractor shall coordinate with NCTA, their contractors, other designees and concessionaires to develop and/or implement a real-time interface to NCTA and concessionaire Express Lane RTCSs to transmit HOV declaration information.

3.3.5.   Account Merge Functionality

418.	The system shall support the merger of two or more accounts into a single account.
419.	When accounts are merged, the system shall consolidate all personal, replenishment, vehicle, transponder, financial and non-financial historical and transactional data into a single account.
420.	The system shall provide authorized users with the ability to select the preferred personal and replenishment information from the accounts to be merged.
421.	The system shall maintain the audit ability and report ability of the data related to the merging of the accounts.
422.	The system shall automate the transfer of all data and history, including transponders to merged accounts, in the event that accounts are merged.

3.3.6.   Account Unmerge Functionality

423.	The system shall support the separation of a merged account into one or several individual (unmerged) accounts.
424.	When accounts are unmerged, the system shall provide functionality for the separation all personal, replenishment, vehicle, transponder, financial and non-financial historical and transactional data into a single account(s).

425.	The system shall provide authorized users with the ability to select the preferred personal and replenishment information from the unmerged accounts to be applied to the individual account(s).
426.	The system shall maintain the audit ability and report ability of the data related to the unmerging of accounts.
427.	The system shall automate the transfer of all data and history, based on unique information (e.g. transponder ID, license plate, credit card number, etc.), in the event that accounts are unmerged.

3.3.7. Close Customer Accounts

428.	The system shall allow authorized users to close accounts.
429.	The system shall place an account into a status (e.g. Pending Close) that will allow pending transactions to post to an account and be processed for a configurable amount of time, per NCTA business policies, once the account has been requested to be closed.
430.	The system shall close accounts after a configurable number of Business Days after the close account request per NCTA business policies.
431.	The system shall automatically track the account closing status from request through account closing.
432.	The system shall prevent transactions from posting to closed accounts.
433.	The system shall create a new account for new toll transactions that cannot post to a closed account.
434.	The system shall place all transponders associated with a closed account into an invalidate state.
435.	The system shall prevent accounts with a balanced owed/due from being placed into a closed or pending closed state.
436.	The system shall only allow accounts with a $0 balance to be closed, manually or automatically by the system.

3.3.8. Account Alarms

437.	The system shall support the generation of account-based alarms, which will be displayed on a GUI, based on scenarios that must clearly stand out to the user (CSR or web-based user) upon the users' initiation of an activity. These scenarios shall be further defined by the Contractor and NCTA during system design. They shall include, but not be limited to:
	• Credit card on file will expire within a configurable time frame or has expired
	• Credit card has been declined

	• Account cannot be closed due to a balance due
	• Notes have been added to the account within the past configurable number of Calendar Days
	• Excessive number of image-based transactions, (specified by a configurable number of i-tolls within a configurable period of time) if the license plate recorded is associated with a transponder
	• Bankruptcy of account holder
	• Transponder marked as lost or stolen
	• Recognition of vehicles whose windshields contain metallic properties – The System shall recognize vehicles that cannot use a window-mounted transponders and require an external mounted transponders. It is the responsibility of the Contractor to remain up to date on this information at all times.

3.3.9.   Account Notes

438.	The system shall automatically document all account activity by automatically generating, posting and storing account notes.
439.	The system shall provide functionality for a CSR to manually enter a note into an account. The system shall provide automatic spell check and grammar check (if available) for manually-created notes.
440.	The system shall assign system-generated attributes to any account note, including note category, user identification and date/time stamp.
441.	The system shall incorporate a list of standard account-related note entries approved by NCTA that shall be easily customizable without software release.
442.	The system shall provide CSRs with an easy and efficient method to search text content within account notes within an individual account.
443.	The system shall provide the ability for authorized users to modify or delete account notes. The system shall note the ID of the user making any change, and require the user to provide a reason for the change.
444.	The system shall allow account notes to be placed into a report or other document system (e.g. Microsoft Word) to be printed or e-mailed.
445.	The system shall provide the capability for a CRS, or other authorized personnel, to select up to forty wrap-up codes under each queue (Bill by mail, QP Account Manager, General, DMV Collections and Ferry) at the end of a call or interaction with a customer that has visited the CSC or a storefront location. The Contractor shall coordinate with NCTA on the types of wrap-up codes they desire during system design.
446.	The system shall contain functionality to track all customer complaints entered into the system, at the account level. The system shall enable complaints to be escalated to a Supervisor or Manager queue, and enable authorized personnel to close-out complaints. The system shall track and report the timeliness of complaint resolution and the recurrence of complaints associated with individual accounts.

	Note: The Contractor shall coordinate with NCTA to design the full functionality of the customer interaction/escalation tracker during system design.

3.3.10. Complaint Management

447.	The system shall allow a web customer/CSR to select a drop down list of items (to be determined during system design), and enter a complaint.
448.	The system shall allow a web customer/CSR to select communication preference: email, text or mail to receive details about their complaint status.
449.	The system shall send an automated message to a customer, via their selected communication preference, confirming a complaint submission.
450.	The system shall support queuing complaints for an authorized user to review.
451.	The system shall support automatic escalations for complaints not resolved within a configurable numbers days per the NCTA Business Policies.
452.	The system shall support multiple levels of escalation to be decided by NCTA during the design phase.
453.	The system shall support an authorized user to enter notes on a complaint, which will stamp the notes with the current system date and time upon saving.
454.	The system shall support an authorized user to view all notes sorted by timeline and escalation level for all complaints, individually or in totality.
455.	The system shall support an authorized user creating a complaint, canceling a complaint, assigning a complaint to another authorized user, merging complaints, or closing a complaint.

3.3.11. Account Conversion

456.	The system shall support CSR initiated conversion of Bill by Mail accounts to transponder accounts.
457.	The system shall support conversion of Bill by Mail accounts to a NC Quick Pass via the website by customers that have received a bill in the mail.
458.	Once a Bill by Mail user logs into the website to pay a bill, the system shall present a message to the user offering conversion to a NC Quick Pass account, noting any cost savings or incentives as approved by NCTA.
459.	The system shall convert transactions from a Bill by Mail account to a NC Quick Pass account based on functionality defined in the NCTA Business Policies.

460.	If payment is required to successfully convert a Bill by Mail account to a transponder-based account and a one-time payment is not provided at the time of conversion, the system shall require that transponder-based accounts be backed by a credit or debit card, or other valid auto-replenishment payment mechanism supported by the BOS. This shall ensure any balances owed are adequately paid by the conversion to the transponder-based account upon the account's next replenishment.
461.	The System shall include and consolidate all account histories into the transponder-based account once accounts are converted and consolidated.

3.3.12. Account Status

462.	The system shall have functionality to validate and ensure all account statuses are current and updated within the back office system, and that all transponders are linked to the appropriate license plate as dictated by a CSR or customer.
463.	The system shall provide transponder and license plate status updates to NCTA toll systems and interoperable agencies per a configurable frequency. If required, the transponder and license plate status list shall be configurable in nature based upon the destination facility or interoperable partner.
464.	The system shall have functionality to validate files dictating account status, which are exchanged with lane system hosts and to interoperable agencies, are sent per configurable frequencies.

3.3.13. Account Adjustments

465.	The system shall support authorized users with the valid permissions to make adjustments to transactions on customer accounts.
466.	The system shall track and age accounts with a positive balance without any activity for a configurable number of Calendar Days per NCTA business policies.
467.	The system shall have functionality to automatically make customer account adjustments per NCTA's business policies. For example, should a customer's NC Quick Pass account have a positive balance and have no activity for more than twelve (12) months, the system shall automatically apply the appropriate account maintenance fee and deduct that fee from the customer's account balance.
468.	The system shall have policies in place to ensure only adjustments consistent with NCTA's business policies occur by authorized users.
469.	The system shall allow authorized users to transfer transactions from one account to another, revise toll transactions due to vehicle classification corrections, or other scenarios as dictated by NCTA business policies.
470.	The system shall allow authorized users, per NCTA business policies, to reverse, identify as uncollectible, or adjust transactions identified by NCTA either in mass or individually.
471.	The system shall allow an authorized user to reverse tolls, fees and payment of transactions.

472.	The system shall track any and all adjustments made to all transactions and all accounts via a unique identifier that shall enable NCTA personnel to identify the person which initiates all transaction and/or account adjustments.
473.	The system shall provide a GUI to display and report on all adjusted transactions by date/time, type, amount and user ID.
474.	The system shall display adjusted transactions on customer account statements or bills.
475.	The system shall be configurable so that authorized users are able to modify, edit or adjust fee waiving rules.

3.3.14. Account and Transaction History

476.	The system shall automatically assess and process any payment necessary for customer account enrollment.
477.	The system shall validate the payment method provided for validity, and shall not allow the account to be in an active state if the method of payment fails.
478.	Maintain a full account history, which shall include, but not be limited to:
	• All changes to all account types and note the user who performed the change, whether it be a system process or task, or internet user (e.g. customer)
	• Changes or updates to any value or toll amount
	• Financial and non-financial transactions

3.3.15. Customer Account Statements

479.	The system shall offer customers multiple methods for delivery of customer account statements, including but not limited to: mail, e-mail, text, etc.
480.	The system shall support statement generation and the application of statement fees per the NCTA business policies.
481.	The system shall allow customers to select their correspondence delivery method at the account level.
482.	The system shall provide functionality that enables users with authorized security access to modify, edit and select the information presented in the customer account statement based on date range and/or location parameters.
483.	The system shall only provide customers with one customer account statement per statement period.
484.	The system shall show all transaction types on the same customer account statement.
485.	The system shall allow NCTA to assign and charge a mailing fee for customer account statements sent via United States Postal Service (USPS). The mailing fee shall be a configurable value within the system.

486.	The system shall not mail or print any customer statement or customer correspondence if the generation and/or mailing fee results in the customer account carrying a balance due. The statement shall be generated and made available electronically only.
487.	The system shall provide NCTA with the ability to specify when account statements are generated and mailed, whether based on a configurable unpaid amount, after a configurable number of transactions have posted to the customer account, after the account has reached a configurable amount due or after a configurable period of time.
488.	The system shall show, at a minimum: • Account/vehicle owner(s) name and address • Date and time of current statement • All activity on a customer account during the current billing cycle (e.g. credits, adjustments, payments, charge-backs, fees, charges incurred, tolls, parking and/or ferry charges, etc.) • Toll amount paid or due/unpaid • Location, date and time, and amount of each toll transaction **Note**: Details to appear on each statement shall be finalize and approved by NCTA during the Final System Design and Development Phase.
489.	Statements shall breakout details by each vehicle or transponder separately.
490.	The system shall generate a subsequent customer account statement for unpaid billable toll transactions when they remain unpaid longer than NCTA business policies allow.
491.	The system shall provide the same information from the original/prior customer statement, at a summary level, on the subsequent customer account statement in addition to information for any additional transactions and fees that posted to the customer account between the initial customer statement and the second customer statement.

3.3.16. Customer Statement Payment Options

492.	The system shall contain functionality that allows payment to individual toll transactions, regardless of status, on a customer account for accounting and reporting purposes.
493.	The system shall provide NCTA the ability to reduce or waive image-based toll transactions and fees in accordance with NCTA business policies.
494.	The system shall provide a view of all waived toll transactions and fees.
495.	The system shall support NCTA charging a configurable returned check fee to customer accounts for returned checks.

496.	The system shall support reinstating both toll transactions and fees, previously paid, should NCTA be notified of a returned check and/or ~~credit card~~ charge back <u>from any auto-replenishment payment mechanism supported by the BOS</u>.
497.	The system shall include reinstated transactions and fees, associated with returned checks and ~~credit card~~ charge-backs <u>from any auto-replenishment payment mechanism supported by the BOS</u>, on the next customer statement with a new due date.

3.3.17. Accounts Including Unpaid Transactions

498.	The system shall display paid and unpaid transactions on accounts with the ability to sort by any of the fields related to the transactions.
499.	The system shall allow users to choose specific transactions for payment, including "check all" and "clear all checked" options. Transactions shall display with the toll and fee associated in a single transaction line item.
500.	The system GUI shall display the amount due for all checked transactions.
501.	The system shall allow or disallow users to view unpaid transactions filed with a collection agency to be configurable in accordance with NCTA business policies.
502.	The system shall allow users to pay all selected transactions and print and/or e-mail a detailed receipt.
503.	The system shall provide user the ability to mark specific transactions for dispute at the transaction level.
504.	The system shall enable customers to view their payment history, and allow customer to query payment history for all date periods.

3.3.18. Image-based Bills – Bill by Mail / Bill by Email

505.	The System shall generate and mail or email (in the case where customers opt into the Bill by Email program) bills for unpaid image-based transactions (from one or more RTCS sources) that are not associated with a pre-paid account based on NCTA business policies.
506.	The Contractor shall coordinate with NCTA on the modification of existing Bill by Mail / Bill by Email invoices, or the redesign of new invoices for the new system. Content shown on invoices, including data elements and format, shall be easily configurable and modifiable by NCTA.
507.	The system shall also allow image-based transactions to "age," and shall track the age of each transaction for account billing and the application of processing and civil fees/penalties.
508.	The system shall apply fees and civil penalties per NCTA business policies and state statutes.
509.	The system shall support the application of Registration Holds on accounts should transactions not be paid according to NCTA business policies.

510.	Bills distributed by the back office system shall include an image of the license plate associated with the transaction(s), along with other transaction data (e.g. time, location, etc.). The image shall be printed in black and white, and clearly depict the license plate number.
511.	The system shall be able to regenerate bills with images on request.
512.	The system shall track the status of bills and provide detailed data on the disposition of their associated transactions.
513.	The system shall support customers choosing whether to receive their Bill by Mail bills by regular mail via the USPS or through e-mail.
514.	The system shall provide opt in and opt out functionality for Bill by Email. Appropriate notices shall be provided to customers when they opt in or opt out of the Bill by Email program.
515.	The system shall support Quick Response (QR) code technology allowing QR codes to be placed on customer bills enabling expedient payment via a mobile device and / or enrollment in the option to receive invoices via e-mail.
516.	The system shall support customers electing to receive their Bill by Mail bill via e-mail by either logging into the customer website and selecting e-mail as an option, or scanning the QR code on their bill with their smart phone.
517.	Once the QR code is scanned by a customer, the back office system mobile device application shall confirm a customer wants to receive their bills via e-mail and shall remember this setting until the customer's account is closed or the customer selects another delivery option.

3.4. Mail Processing Requirements

3.4.1. Addressing, Mailing and Returned Mail (Nixie) Processing

518.	The system shall provide functionality to identify accounts when the current address is incorrect or mail has been returned.
519.	The system shall not send correspondence via mail to accounts where the address is known to be incorrect or mail has been returned as undeliverable.
520.	The system 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.

521.	The system 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.
522.	The system 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.
523.	The system shall maintain address history for each account.

3.5.   Parking and Ferry Payment Support

524.	The system shall support customers whose accounts are in good standing (e.g. not suspended, Close pending or any other status than "good"), backed by a valid credit or debit card, or other valid auto-replenishment payment mechanism supported by the BOS, to opt into NC Quick Pass Park and Pay, which shall enable customers to pay for charges affiliated with parking at designated areas and ferry service with their NC Quick Pass using the ~~credit or debit card~~ payment method on their account.
525.	The system shall enable customers to opt into NC Quick Pass Park and Pay (final brand to be determined) when they create their account, or after by calling into the CSC, using the website or the mobile application.
526.	The Contractor shall coordinate with NCTA and its third-party parking and/or ferry vendors to develop an ICD that shall enable real-time payments to ~~the~~ a valid credit or debit card, or other valid auto-replenishment payment mechanism supported by the BOS, associated with ~~an~~ the NC Quick Pass customer account.
527.	Should an NC Quick Pass customer attempt to pay for parking or ferry charges at a participating location with their NC Quick Pass, the system shall validate the customer's form of payment on their NC Quick Pass account and pay for the parking or ferry charges in real-time without affecting the pre-paid toll amount on the customer's account.
528.	Should an NC Quick Pass customer attempt to pay for parking or ferry charges at a participating location with their NC Quick Pass and the system is unable to validate the customer's form of payment on their NC Quick Pass account, the system shall reject the charge in real-time allowing the customer to pay using a different method.
529.	Should a customer's charges be validated with a method of payment on their account, and the charge later be charged back or reversed, the system shall generate a report detailing the charge back activity for use by NCTA staff.

530.	The system shall capture all parking and ferry payments and reversals on the customer's NC Quick Pass statement for the time period in which the charge occurred.
531.	The system shall capture and track all financial history related to parking and ferry charges for each customer.
532.	The system shall assign each participating parking and ferry location with a unique code so that payments and payment history at each location can be captured, tracked, audited and reported on.

3.6. Transponders Management Requirements

3.6.1. Third-Party Transponder Fulfillment

533.	The contractor shall coordinate with NCTA and its third-party transponder fulfillment vendor to develop an ICD in order to support the exchange of information between the BOS and the third-party vendor(s) to facilitate offsite transponder fulfillment and sales.
534.	Via the data exchange interface, the BOS shall support sending the third-party vendor(s) the following information: • Customer account information (e.g. name, address, and account number) • Number of transponders ordered • Type(s) of transponders ordered • Acknowledgement and Non-acknowledgement files (Ack/Nack) to communicate the success or failure of a data exchange.

535.	Via the data exchange interface, the BOS shall support receiving the following information from the third-party vendor(s): • Confirmation on the number and type of transponders mailed/sold to the customer • Transponder numbers mailed/sold to each customer account • The date each customer's order was fulfilled/mailed or sold. • Tracking number from USPS • Tracking status updates from USPS • Amount received via transponder sale • Transponder inventory levels • Confirmation of replacement transponders from NCTA purchase • Details on defective transponders received from the transponder vendor (e.g. transponder number and type of transponder) • Acknowledgement and Non-acknowledgement files (Ack/Nack) to communicate the success or failure of a data exchange.
536.	The BOS shall only transmit order fulfillment requests once a customer has successfully paid for new and/or replacement transponder(s), depending on NCTA business policies.

3.6.2. Transponder Inventory Management

537.	The system shall enable NCTA or their designee to manage the transponder inventory, within the back office system, ensuring an adequate supply is maintained at each distribution point. This shall include, but not be limited to: transponder purchasing, distribution, tracking, life cycle analysis, returns to manufacturer, and reporting.
538.	The System shall include bar code processing and automatic entry of transponder identification numbers.
539.	The System shall be able to generate labels on the packing slip for new orders.
540.	The System shall be required to track all transponders from time of purchase by NCTA, with the ability to track a transponder throughout its use (issuance to customer, warranty times, removal from inventory, etc.).
541.	The system shall keep an accurate record of transponder inventory and activation status (e.g. active/valid, invalid, lost, stolen, customer retained, damaged, or defective).

542.	The system shall allow the CSC staff to set transponder inventory thresholds and associated materials, as well as track lead time required for replenishment, so that the CSC, third-party distributors, storefronts and retailers can avoid running out of transponders and associated materials.
543.	They system shall allow the CSC staff to track all transponder shipments and all activities related to the shipments whether distributed/sold internally or fulfilled from an offsite location (e.g. storefront, retailer or third-party fulfillment vendor).
544.	The system shall provide a method to manage and track inventory, via a real-time inventory dashboard, at multiple locations and adding new locations.
545.	The system shall allow NCTA to modify or adjust transponder, or transponder deposit, costs without recalling or reissuing the transponder inventory already distributed to the NCTA store front or other locations (e.g. storefronts, third-party fulfillment vendors, or retail locations).
546.	The system shall allow the CSC staff to process and place returned, undamaged transponders into transponder inventory.
547.	The system shall enable the CSC staff, or transmit a fulfillment request to a third-party fulfillment vendor, to issue replacement transponders to customers, both with and without charging a fee in accordance with NCTA business policies.
548.	The system shall allow for at least six different transponder types to be tracked and distributed in inventory.

3.6.3. Transponder Assignment

549.	The system shall support NCTA or CSC staff assigning active transponders to customers as payment is collected.
550.	The system shall support NCTA, CSC staff or customers (via IVR, website or app) activating transponders once transponders received via mail are assigned to a specific customer vehicle.
551.	The system shall allow NCTA to charge a configurable transponder deposit or transponder fee when assigning transponders. The system shall charge the transponder deposit and/or fee based on NCTA business policies.

3.6.4. Transponder Maintenance

552.	The system shall provide functionality to set transponder status as lost, stolen, customer retained, damaged, or defective.
553.	The system shall provide an audit trail of all replaced and new transponders.

554.	The system shall track the distribution of transponders through all distribution methods (e.g. CSC, storefront, retail, third-party fulfillment, etc.).
555.	The system shall allow authorized BOS users to re-issue non-sticker transponders from one account to another while tracking the history of account assignment.

3.6.5.   Transponder Sales

556.	The system shall support the collection of revenue related to the sale of transponders per NCTA business policies, and immediately post the sale and return of transponders to a customer's account.
557.	The system shall associate specific transponders to a sale location.
558.	The system shall track and store the payment type used for the transponder sales.
559.	The system shall track and store the location from which the transponder was sold. If the transponder was sold at the CSC, a retail store, via mail or at the Storefront, the system shall track and record the name of CSR, time of sale, transponder number and other criteria relevant for all transponder sales.
560.	The system shall provide a means to communicate real-time transponder order status to customers who purchase a transponder via the website or phone. Status shall be presented on the website within the customer's account screens and also communicated via e-mail and text messaging. Order status details shall be finalized during design, but shall have similar functionality as outlined below.
561.	The system shall contain functionality that allows a customer to track and predict a newly ordered tag's arrival date at their desired shipping location.
562.	Each time a transponder/transponder mail package bar code is read as it advances through the fulfillment process, the BOS account GUI shall automatically update as status updates are received from the third-party fulfillment vendor, enabling a customer to log into their account and see where in the process their new tag is with regard to fulfillment and mail out. The system shall have statuses similar to the following, which will be determined by NCTA during the design phases: • New order received • Transponder assigned • Transponder packaged for delivery • Transponder in the mail
563.	Once a transponder package has been placed in the mail, the system shall support an interface to the USPS to receive a tracking number enabling a customer to anticipate the new transponder's arrival time at their desired shipping location.
564.	Once a customer requests a new NC Quick Pass Transponder, via any customer interface (e.g. website, phone, application, etc.), the system shall provide a GUI that enables the customer to see the status of their order as fulfillment updates are provided by the third-party fulfillment vendor or USPS.

565.	The system shall provide functionality allowing a user to "opt in" to receiving notifications via their preferred method of contact (e.g. e-mail or text message) to track their transponder order.
566.	The system shall support providing a user that has opted in to receiving notifications with notifications via their preferred method of contact (e.g. e-mail or text message) upon each read of the transponder package as it moves through the fulfillment process.
567.	The system shall support the collection of sales tax for all transponder sales. Sales tax shall be assessed at the county rate associated with the sale location (for CSC and storefront sales) or the mailing destination. This shall include all counties within NC and all states within the US. The system shall interface as required with a Contractor provided sales tax determination service for periodic updates (at least annually) of applicable sales tax rates. Detailed reports shall be provided, and the ledger shall be configured in a manner that allows for efficient and accurate distribution and reporting of all collected sales tax. The Contractor shall coordinate on report design in the Final Design Phase.
568.	The system shall reflect all resulting financial data from transponder sales on the ledger.

3.7. Image Processing Requirements

3.7.1. Image Processing

569.	The Contractor shall coordinate with NCTA, other contractors, other designees and concessionaires to develop and/or implement real-time interfaces to NCTA and concessionaire Express Lane RTCSs to receive and process fully-formed image-based transactions with their associated images.
570.	Once fully-formed image-based transactions and associated images have been received from an RTCS host(s), the system shall attempt to post image-based transactions associated with the identified license plate to existing accounts via license plate data lookup functionality prior to sending the license plate to the DMV for identification.
571.	The system 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.
572.	Once the owner of a vehicle has been identified through external entities and an account has been setup using their name and address, the system shall support processing fully-formed image-based transactions and associated images to the newly-identified vehicle owner's account.
573.	The system shall support sending updates back to the RTCS host from which images were received as described in RTCS ICDs.

3.7.2. Administrative Review of Transaction Images

574.	The system shall support an administrative review process for all images by NCTA, regardless of their resolution.
575.	The system shall provide a search feature to assist users in easily finding specific types of images for review. The following list of criteria shall be used at a minimum: • License plate state

	• License plate number
	• Lane ID/number
	• Plaza ID/number
	• Lane date
	• Post date
576.	The system will allow a CSR to click on a lane transaction ID hyperlink to view its associated image(s).

3.8. Financial Requirements

3.8.1. General Financial Requirements

577.	The Contractor's system shall interface with NCTA's/NCDOT's financial system utilizing a similar interface as is currently utilized between the BOS and NCDOT's financial system. **Note**: Financial interface requirements to be worked out between the Contractor, NCTA and NCDOT Finance in the Final System Design and Development Phase.
578.	The Contractor's system shall interface with a third-party collections agency as dictated by NCTA.
579.	The system shall support both automated and manual allocation of financial activities to various funds, accounts or programs.
580.	The system shall accurately post transactions to the correct account in real-time.
581.	The system shall generate and store transaction dates and posting dates when posting transactions.
582.	The system shall identify the source of all transactions, and map the transaction data to the proper customer account.
583.	The system shall utilize functionality to ensure all customer accounts are in balance at all times.
584.	The system shall account for all data accurately, and provide the tools necessary so that full and complete financial reconciliations can be performed within the system.

3.8.2. Transaction Processing and Posting Requirements

585.	The Contractor shall coordinate with NCTA, other contractors, other designees and concessionaires to develop and/or implement real-time interfaces to NCTA and concessionaire Express Lane RTCSs to receive and process transactions and fully-formed image-based transactions with their associated images.
586.	The back office system shall track each transaction utilizing a unique identifier from the RTCS host through to final settlement/payment.

587.	The system shall record and store the date, time and all other transaction attributes of every transaction occurrence transmitted to the back office system in accordance with NCTA's business policies and interface control documents.
588.	The system shall generate ledger entries for all toll transactions.
589.	The system shall automatically and immediately attempt to post transactions to a single customer account once files from a RTCS host have been received and processed.
590.	The system shall immediately update account balance any time a financial transaction posts to an account.
591.	The system shall immediately replenish customer accounts based on a configurable threshold amount, and record the account replenishments, including the amounts replenished and the method of payment for all accounts.
592.	The system shall track the date and time any transaction posts to an account.
593.	The system shall prevent any changes made to transaction data to effect prior accounting periods.
594.	The system shall accurately track and record financial activity within the system.
595.	The system shall capture and store all toll transaction rates transmitted from a RTCS host system(s) with each transaction.
596.	The system shall age unpaid image-based transactions based on NCTA business policies.
597.	The system shall support the assessment of civil or administrative fees on image-based transactions, which shall be configurable within the system, that remain unpaid for a configurable number of Calendar Days per NCTA business policies.
598.	The system shall send unpaid transactions in an automated fashion to external entities for DMV hold and collections, via the appropriate external interfaces, based on NCTA business policies.
599.	The system shall automatically update and track unpaid image-based transactions as they age, calculating and updating the status and amount due with associated civil fees.
600.	The system shall track unpaid image-based transactions (e.g. via a unique status code) as they age within the system.
601.	The system shall provide functionality that allows an authorized user to transfer image-based transactions from one registered vehicle owner/account to another owner/account when ownership is disputed and proven, in accordance to NCTA business policies.
602.	The system shall track the reason for each image-based transaction ownership reassignment, in accordance with NCTA business policies.

603.	The system shall support an external interface to identify the owners of out-of-state license plate from a third-party.
604.	The system shall support monthly account maintenance fees being applied to accounts per NCTA business policies.
605.	The system shall constantly check pre-paid account balances, and only post transactions the pre-paid balance is able to cover.
606.	Should a pre-paid account, which is not auto-replenished by a valid credit card or other payment method, not have enough funds on the account to cover all toll transactions posting to the account, the system shall suspend the account, invalidate the transponder(s) on that account and apply the remaining transactions to Bill by Mail transactions at the Bill by Mail toll rate.
607.	The system shall support the export of system financial data in multiple formats for input into various NCTA Financial Systems, mapping the sub ledger to a General Ledger (GL).
608.	The system shall comply with NCTA's Financial Management and Accounting Policies, procedures and accounting treatment.
609.	The system shall treat unpaid image-based transactions as a receivable amount due from an accounting, invoicing and reporting standpoint.
610.	The system shall accurately track and account for all transactions, customer account activities and other toll-related financial activities conducted by the system.
611.	The system shall accurately account for transactions and activities according to NCTA's and NCDOT's state fiscal year.
612.	The system shall provide timely, reliable and accurate financial information.
613.	The system shall provide automated tools and controls that prevent monetary loss or informational abuse from internal and external users.
614.	The system shall support functionality to send and receive notification of transfers of funds between NCTA and designated parties such as banks, lockbox, stakeholders, etc. at planned intervals, i.e. daily and ad hoc.
615.	The system shall accurately account for any cash activity.
616.	The system shall assign a unique identifier to each payment transaction.
617.	The system shall age unpaid fees and tolls in accordance with NCTA business policies.
618.	The system shall calculate and apply fees due on unpaid amounts automatically.
619.	The system shall provide functionality that allows authorized users to mark transactions as uncollectible.
620.	The system shall contain data integrity safeguards that prevents a duplicate transaction(s) generated by a RTCS from posting to the same customer account and being applied to a customer's Bill by Mail invoice.

3.8.3.   Payment Processing

621.	The system shall support an external interface with NCTA's Lockbox services vendor.
622.	The system shall facilitate payments received through the lockbox interface to be applied to the appropriate account and transaction.
623.	The system shall track, reconcile and report on deposits and funds in all appropriate bank accounts.
624.	The system shall support the application of payments to accounts, or a transactions, according to a predetermined order, such as first in-first out (FIFO), as defined by NCTA.
625.	The system shall track and store for future reporting all <u>supported</u> payment types and payment transactions~~, including but not limited to: cash, personal check, certified check, business check, money order, Visa, Master Card, American Express (AMEX), ACH~~.
626.	The system shall process all authorized payments to accounts in real-time, including account replenishments.
627.	The system shall provide functionality and tools allow system users to audit and reconcile payments, by each payment type, on a daily basis in accordance with NCTA requirements.
628.	When Non-Sufficient Funds (NSF), charge backs and any other fees are assessed on a customer account, the system shall automatically adjust balances on affected accounts to account for the appropriate fee(s).
629.	The system shall provide the following payment functions to manage charges to customers, and the revenues which result from those charges: - Payments applied to specific toll transactions and fees - Financial Transactions - Payment Details - Payment Batches - System-generated receipt that is re-printable on demand - Payment Interfaces which includes Manual (storefront, retail locations and special events), Lockbox (utilizing NCTA's contracted Lockbox services vendor), Point-of-Sale, IVR and Web self-service - Accommodate manual payment processing - Unapplied Payments - Payment reversals - Partial Payments

	• Payment Plans
	• Applying additional fees
	• Ability to waive fees based on security access levels
	• End-of-day closeout per CSR, Location and System
	• Bank deposit generation and reconciliation
	• Security password and/or card verification value (CVV) code for credit card and other applicable payments types
	• Ability to remove payment information (i.e. credit card, debit card, ACH) from an account

3.8.4. Financial Reconciliation

630.	The Contractor shall design the back office system to adhere to generally accepted accounting practices (GAAP) in all system modules and databases.
631.	The system shall balance and reconcile all toll transactions, fees, deposits, refunds, reversals, NSFs, transfers, withdrawals, transponder sales to ensure the accurate financial accounting of all toll collection activities.
632.	The system shall provide functionality allowing authorized users to audit and reconcile all financial activity on the system, including but not limited to: replenishments, deposits, transaction postings, reversal of fees, etc.
633.	The system shall provide the ability to locate and consolidate transactions by transaction type, payment type, payment location, in aggregate, by facility, lane and time. The system shall also identify and report any duplicate, invalid and pending transactions.
634.	The system shall have functionality to automatically verify that total balance due on accounts matches the total outstanding amounts due for transactions. If not, the system shall provide alarms or notifications to make Contractor and NCTA staff aware of the discrepancy.
635.	The system shall provide reports, to be defined by NCTA during the Preliminary System Design and Final System Design and Development Phases, to support financial reconciliation activities.
636.	The system shall allow the Financial Manager to create a new financial entry as a financial adjustment with his/her user ID, user name, date and time stamp and reason for changes. The system shall provide audit trail on any changes to the system including user ID, user name, date and time stamp and reason for changes.
637.	The system shall support processes to reconcile all financial activity with NCTA's/NCDOT's financial systems as well as with NCTA's bank accounts for all financial transactions, including but not limited to: deposits, credits, refunds, returned items, adjustments and notifications of change of payment type (i.e. credit card, cash, ACH).

638.	The system shall allow for the import of financial documents, such as bank account statements, in order to assist with financial reconciliations. Financial documents may be in Excel or PDF formats.
639.	The system shall track the amount owed on all Bill by Mail accounts, and enable NCTA to identify the amounts owed for in-state and out-of-state accounts separately.
640.	The system shall provide functionality to process, track and reconcile all exceptions received from the NCTA lock box.

3.8.5. Audit Requirements

641.	The system shall provide security and audit measures in accordance with NIST SP800-53 and PCI-DSS to ensure system and data integrity.
642.	The back office system shall be fully auditable allowing authorized users to audit all system actions in accordance with Sarbanes-Oxley legislation.
643.	The system shall support the creation of secure, read only auditing roles for internal and external audit groups.

3.8.6. Refunds

644.	The system shall provide authorized users the ability to issue refunds and electronically track the refund status from request through refund issuance.
645.	The system shall allow customers the ability to request refunds via online customer interfaces (e.g. web and phone-based applications).
646.	The system shall automatically credit approved refunds to the last replenishment method on the account or to a check if a replenishment method is invalid or unavailable.
647.	The system shall support reports showing all refund activity by date range within the system. These reports shall be designed in coordination with NCTA during the design process.

3.8.7. Customer Bankruptcy

648.	The system shall allow an authorized user the ability to place a customer's account into, or remove them from, bankruptcy status. The system's bankruptcy functionality shall be based on the attached Business Policies document, and shall be finalized with NCTA during the Final System Design and Development Phase.
649.	The system shall support an Roles and Responsibilities Matrix, and prevent unauthorized users from modifying a customer's bankruptcy status.

650.	The system shall provide a mechanism to track and uniquely identify all accounts in bankruptcy status.
651.	When a customer with a "Bankruptcy" status drives through a toll point, the system shall create a new Bill by Mail Account.

3.9. Marketing

3.9.1. Customer Relationship Management (CRM)

652.	The back office system shall support customer self-service channels, allowing self-maintenance of accounts from all customer contact points, i.e. walk-in, web, phone, mobile application, IVR, etc.
653.	The system's customer interaction channels shall support customer self-service options, allowing customers to communicate their disputes with NCTA without CSR contact.
654.	The system shall log and store a repository of customer issues in need of resolution and track, assign and report on these issues, ensuring that all customer requests are tracked to completion per NCTA business policies.
655.	The system shall provide functionality that enables NCTA to develop and publish surveys or other crowd sourcing tools via mail, email, web, mobile application and IVR.
656.	Upon request, the Contractor shall coordinate with, and provide data to, NCTA from the BOS in the format they request for use in the development and execution of marketing or research initiatives (e.g. e-mails for e-mail campaigns or surveys).
657.	The system shall track and report on customer survey results.

3.9.2. Special Events

658.	The back office system shall enable NCTA and/or Contractor staff to provide full-service customer support during a special event, including but not limited to answering questions about NC Quick Pass, registering new customers, performing account maintenance activities, etc.
659.	The system shall track and report on various metrics associated with each special event conducted by NCTA, such as: the number and type of transponders sold, number of accounts serviced, number of accounts opened, money collected and other metrics to be determined by NCTA during system design.

3.10. Website Hosting and Development Requirements

3.10.1. General Website Requirements

Note: NCTA/NCDOT shall be responsible for procuring and providing the website domain for the Contractor's development and maintenance throughout the term of the contract.

660.	The Contractor shall be responsible maintaining the NC Quick Pass Website, including the browser-based website for handheld mobile devices (herein referred to as "the website") throughout the term of the contract.
661.	The Contractor shall maintain an online presence for NC Quick Pass in coordination with the NCTA/NCDOT marketing team.
662.	The Contractor shall be responsible for coordinating with NCTA and NCDOT Web Services to integrate the marketing/customer information portion of the website (herein referred to as the "front-end"), which shall be provided by NCTA, into the customer relationship management portion of the BOS website (herein referred to as the "back-end"), which the Contractor is responsible to provide.
663.	The Contractor shall coordinate and work with NCTA or its designated representative to develop and/or integrate a website landing page (i.e. marketing front-end) together with the account management portion/back-end of the website into one, cohesively looking and functioning site.
664.	The integration of the front-end and back-end websites shall not prevent either sites from being updated independently of one another.
665.	The Contractor shall supply private cloud-based dedicated, high-availability servers with redundancy and failover mechanisms to host system websites as directed by NCTA.
666.	The Contractor shall brand all back-end website and mobile pages as directed by NCTA/NCDOT, and all pages shall utilize a consistent look and feel as required by NCTA, NCDOT Web Services and Communications teams.
667.	The Contractor shall create a website design for the account management (i.e. back-end) side of the NC Quick Pass website, as well as a Mobile Application design, draft all website and Mobile Application content and submit it for NCTA's review and approval prior to developing the website or mobile application and posting to a live environment.
668.	NCTA websites shall only include content that has been reviewed and approved by NCTA.
669.	The Contractor shall design and construct NCTA back-end website and mobile application pages using current usability and web design standards as approved by NCTA and NCDOT Web Services.

670.	The Contractor shall develop the NC Quick Pass website to be 100% functional on the latest version of the web browsers approved by NCTA. **Note**: The final list of required web browsers to support shall be identified by NCTA and the Contractor, and approved by NCTA during the Final System Design and Development.
671.	For all supported web browsers, the Contractor's system shall support at least two (2) major versions back from the latest version.
672.	The Contractor shall also fully test and validate the functionality of the websites on these various platforms and web browsers during system testing.
673.	All NCTA websites and mobile applications shall support multiple languages and international addresses without making software changes, as specified by NCTA during system design.
674.	NCTA websites shall utilize page titles, keywords, meta-tags and other search engine optimization tools to enhance search performance.
675.	NCTA websites, and associated mobile applications, shall be ~~fully~~ compliant with ~~screen reader accessibility devices~~ Revised Section 508 and WCAG 2.0/2.1 AA requirements/success criteria.
676.	Website pages shall be organized and designed to allow for easy printing of any page of data.
677.	NCTA websites shall be designed to auto-detect user-based browser settings and optimize display of the website to individual settings.
678.	NCTA websites shall be compatible with mobile devices and smart phone applications.
679.	The Contractor shall utilize space on NCTA website home pages to notify customers, in advance, of planned outages and post messages that will appear during website downtime for scheduled maintenance or unexpected website unavailability.
680.	The Contractor shall coordinate and track domain registrations, security updates, or other web specific needs with NCTA in advance to ensure NCTA websites are available at all times.
681.	The Contractor shall utilize tools that support the ability to regularly audit the site for internal or external broken links, and provide scan results to NCTA.
682.	The Contractor shall design NCTA websites to report on website metrics and be capable of providing analytics on a monthly basis, and as requested by NCTA, on usage for all pages and summary-level metrics sorted by content and by month.
683.	The Contractor shall design all websites and mobile applications to include links to NCTA/NCDOT information (e.g. disclaimers, privacy & security policy, accessibility policy, etc.) on all pages.

684.	NCTA websites shall be designed to support content update features that enable authorized NCTA users access to easily update website content that does not require a database update to display on web pages.
685.	NCTA websites shall provide comprehensive site search functionality.
686.	The website and mobile application shall be designed in accordance with the current versions of NIST SP800-53 and PCI-DSS to secure customer data (e.g. include coding that overrides functionality to cache and/or auto-populates data) and prevent security breaches.
687.	Access to the website and mobile application shall be restricted by a secure login, with validation, for all application users.
688.	The website and mobile application shall contain functionality that validates all login credentials and information upon user login attempt.
689.	The website and mobile application shall lock out customers after a configurable number of unsuccessful attempts to login for a configurable period of time.
690.	The website and mobile application shall be internationalized to allow for properly formatted input of non-US addresses and license plates, especially those from Mexico and Canada.
691.	The website and mobile application shall provide clear and specific error messages, for example when form data cannot be validated or when an action is not allowed.
692.	The website and mobile application shall validate data at the field level, preventing spaces and special characters from being provided in fields where they are not allowed.
693.	A separate, secure website shall be made available that allows NCTA staff to research declaration status history. The site shall allow authenticated users to query transponder declaration event history in support of customer calls disputing tolls. Declaration event history shall be maintained for no less than one year.

3.10.2. Account Services Web Site(s) Requirements

694.	Account-side website(s) shall be fully integrated with the back office system database(s), providing customers online access to much of the functionality provided by the main back office system, allowing customers with access to real-time account management functionality.
695.	The back office system website shall be designed to secure customer data (e.g. include coding that overrides functionality to cache and/or auto-populates data) and prevent security breaches.
696.	NCTA account-side website access shall be restricted by a secure login, with validation, for all account holders.

697.	The website shall contain functionality that validates all login credentials and information upon user login attempt.
698.	Websites shall lock out customers after a configurable number of unsuccessful attempts to login for a configurable period of time.
699.	Websites shall be internationalized to allow for properly formatted input of non-US addresses and license plates, especially those from Mexico and Canada.
700.	Account-side website(s) shall support payments to accounts via ~~credit card, debit card, or ACH~~ all valid auto-replenishment payment mechanism supported by the BOS.
701.	The website shall prompt customers to confirm actions prior to completing any finical transaction or making changes to their account (e.g. changing passwords, updating contact information, etc.).
702.	The website shall provide clear and specific error messages, for example when form data cannot be validated or when an action is not allowed.
703.	The websites shall validate data at the field level, preventing spaces and special characters from being provided in fields where they are not allowed.
704.	The website shall enable customers to enroll for notices and alarms via delivery via e-mail and/or text messages for multiple forms of account correspondence, including but not limited to statements, low balance notifications, credit card expiration notifications, payment declined notifications.
705.	The back office system and website shall support online chat features and functionality, allowing customers to chat live with CSRs and post the contents of the chat to customer accounts for future reference.
706.	The system website shall present users visiting the "front-end" of the myncquickpass.com site with the option of chatting with a CSR after a configurable number of seconds or minutes after being on the site.
707.	The system website shall present customers that have logged into their account with the option of chatting with a CSR after a configurable number of seconds or minutes after being logged onto the site.
708.	Should a customer logged into their account elect to chat with a CSR, the system shall open the customer's account details for the CSR based on the login credentials.
709.	The system shall save all website chats in the system database, and make the logs/details of those chats available, via hyperlink, to CSC Staff with the appropriate authorization.

3.11. Mobile Application and Development Requirements

3.11.1. General Application Requirements

710.	The Contractor's Application shall be available via a website Application (via both traditional and mobile device web browser formats) and a mobile device Application.
711.	The Application and the Application database shall be structured such that growth is accommodated, access is easy, and reports are configurable and accurate.
712.	The Application must be auditable, and provide for reconciliation processes associated with all Application activity.
713.	The Application must be user friendly, accurate, dependable, and easily configurable to accommodate NCTA Business Policies and changes.
714.	In order to maximize the Application's performance, any hosted services or private cloud-based services shall be hosted within the United States in a region close to or within North Carolina.
715.	All data hosted in a private cloud environment shall be readily accessible by NCTA staff for the duration of the agreement. All data and custom software shall be owned by NCTA in its entirety.
716.	The Application shall be designed to easily accommodate future functionality, modifications and enhancements.
717.	The BOS must comply with the State's information system security compliance requirements as described in the current versions of NIST SP800-53, PCI-DSS and the Statewide Information Security Manual. http://it.nc.gov/statewide-resources/policies
718.	The Application shall support no fewer than four (4) RTCS interfaces.

3.11.1.1. General BOS Mobile Application Functionality

Note: The requirements presented in this section are not final, and the BOS Mobile Application's functionality shall be refined and finalized with NCTA during the Preliminary System Design and Final System Design and Development Phases.

719.	The Contractor shall develop a Mobile Application enabling customers to download the Application from Google Play and Apple Stores to perform functions including, but not limited to: • Account creation • Account maintenance • Making Bill by Mail payments or NC Quick Pass account replenishments • HOV declaration
720.	The Application landing page (presented when the website Application is accessed or the Mobile Application is enabled) shall present the following, or similar options:

	• Links/icons to the Google Play and Apple Application Store (website only)
	
	• A sign-in area for registered users, including:
	
	    ○ A field titled: *"Username/e-mail."*
	
	    ○ A field titled: *"Password."*
	
	    ○ An option for "Remember my Username."
	
	    ○ An option for "Sign in with Touch ID" (only for mobile Application)
	
	    ○ A button or hyperlink titled: *"Forgot my password."*
	
	• A registration area for new users to create an NC Quick Pass Account
	
	• A link to a an "Frequently Asked Questions (FAQ)" page, and "Help" or "How-To" guide that explains how to use the Application
	
	• Links to phone number(s) for the NC Quick Pass Customer Service Center(s), which will provide users with the ability to dial a phone number when selected on a phone.
	
	• A link to the NC Quick Pass website address (as well as any other website as directed by NCTA during design)
	
	• A link to "Invite a Friend" to use the Application button/link.
	
	• A warning message about using the Application / texting while driving.

721.	Prior to use of the Application, the Application shall require first-time users to have registered NC Quick Pass or Bill by Mail account.
722.	When a user selects the *"Create a new account"* button or hyperlink, the Application shall provide an account creating page, requiring the following information from first-time users: • First Name • Last Name • E-mail address • Phone Number • A button, or other mechanism, to select a preference for method of contact. • Bill by Mail number or NC Quick Pass Transponder Number(s) and zip code associated with the NC Quick Pass account **Note**: The Application shall accept up to 5 transponders on the account. • Username • Password • Password Reminder Question(s) • Four (4)-digit Personal Identification Number (PIN) • Vehicle Information to include the ability to define a label for each vehicle

	• A link to the Application terms and conditions with an area for a digital signature or check box for agreement with the terms and conditions.
723.	The Application shall interface to the BOS to validate the user provided information associated with their NC Quick Pass account when the customer initially establishes their account. The interface with the BOS shall be via a secure real-time interface. The Application shall only allow users with a NC Quick Pass account in an "active" status (i.e. not closed or suspended) to successfully register with the Application.
724.	Should the BOS be unable to validate the user and be unable to find a matching NC Quick Pass/BBM account, the Application shall prevent the user from completing registration and present a note on the Application screen similar to the following: *"Unable to validate the associated NC Quick Pass/BBM account. Please verify the zip code used matches the zip code listed on your NC Quick Pass/BBM account. Please call the NC Quick Pass Customer Service Center (#-###-###-####) for assistance."*
725.	After the user successfully registers with the Application, the Application database shall store the required information for each user on an Application host database.
726.	Once a user has successfully registered with the Application, the Application shall automatically send the user a notification via their preferred method of communication (e.g. phone/text or e-mail) welcoming them to the Application, providing them links to the NC Quick Pass Customer Service Center, a high-level overview of the Application and links to an Application "how to" and/or help system.
727.	Once a user has registered with the Application, the Application shall require users to enter their username and password to access the Application.
728.	The Application shall prevent unauthorized access to accounts without proper security credentials.
729.	The Application shall provide warning messages when incorrect login information is provided.
730.	After five (5) incorrect login attempts, the Application shall lock the user's account and force the user to reset their password. The Application shall prevent access to the Application until the user resets their password.
731.	Should a user select the *"Forgot my password"* button or hyperlink, the Application shall present the following, or similar options: • A button or hyperlink titled: *"Send me a reset password code"* • Password reminder question(s) • A button or hyperlink titled: *"Submit"*

732.	Should the user provide answers for their password reminder(s) and select the *"Submit"* button, the Application shall validate the answers provided. • If the password reminder answer(s) are not validated by the Application, the Application shall provide a message that the answer(s) were incorrect. The user shall be able to submit password reminder answer(s) a total of five (5) times. If the Application is unable to validate the password reminder(s) after five (5) attempts, the Application shall lock the account and require the user to reset their password. • If the user's username and password reminder(s) are validated by the Application, the Application shall log the user into the Application and present the "logged in" landing page.
733.	The Application shall be designed to support the reset of customer passwords by sending reset codes via e-mail or text message.
734.	Once a user selects the "Send me a reset password code," the Application shall present the following, or similar options: • The option to send a temporary reset code via e-mail or the phone number (text message) they have on their profile. • A button or hyperlink titled: *"Submit"* • A button or hyperlink titled: *"Cancel"* • A button or hyperlink titled: *"Logout"*
735.	Once the user selects the delivery method and selects the *"Submit,"* the Application shall send the user with a temporary code, and present a page to enter the reset code. The reset code shall contain a message that the code is only viable for 10 minutes; and if not entered within the allotted time frame, they will have to repeat the process. • If the user enters the correct code within the allotted time frame, the Application shall present a page enabling the user to reset their password. Once the password is successfully reset, the Application shall login the user and present the "logged in" page. • If the user fails to enter the code correctly or the Application is unable to validate the code, the Application shall present a message notifying the user to enter the reset code again. • If the Application is unable to validate the code within the allotted time frame or the user selects the *"Cancel"* button or hyperlink, the Application shall display the Application login page.
736.	If a user's password is modified, an attempt to modify the password is made or an unsuccessful attempt to access a user's account is made, the Application shall send an e-mail to the e-mail on the user's profile notifying the user of the activity.
737.	Once logged into the Application, the Application shall display a page presenting the following, or similar options:

	• The user's current HOV Declaration for each transponder number (or transponder nickname) and time remaining on the declaration. • A button or hyperlink titled: *"Cancel Declaration(s)"* • A button or hyperlink titled: *"Set New HOV Declaration"* • A button or hyperlink titled: *"Manage my NC Quick Pass Account"* • A button or hyperlink titled: *"Make a Payment"* • A button or hyperlink titled: *"Submit"* • A button or hyperlink titled: *"Cancel"* • A button or hyperlink titled: *"Logout"*
738.	When a user selects the *"Manage My NC Quick Pass"* button or hyperlink, the Application shall present the user with a page enabling them to edit the following, or similar, information: • E-mail address • Phone Number • NC Quick Pass Transponder Number(s), allowing for the removal or addition of transponders up to the account limit. 　　o A button or hyperlink titled: *"Create NC Quick Pass Transponder Nicknames."* • Order transponders • Password • Password Reminder Question(s) • Four (4)-digit PIN • Vehicle Information • A button or hyperlink titled: *"Save"* • A button or hyperlink titled: *"Cancel"* • A button or hyperlink titled: *"Logout"*
739.	When a user selects the *"Make a Payment"* button or hyperlink, the Application shall present the user with a page enabling them to make a payment to their Bill by Mail Account or replenish their NC Quick Pass account via credit card, debit card, ~~or~~ ACH, Apple Pay, Google Pay or PayPal.
740.	Should the user select *"Create NC Quick Pass Transponder Nicknames,"* the Application shall present the user with the following: • A list of NC Quick Pass Transponders registered to the account and the associated vehicle license plate number. Beside each NC Quick Pass Transponder Number, the system shall present a text field enabling users to provide each NC Quick Pass Transponder with a nickname so that they do not have to have to remember the NC Quick Pass Transponder number or their license plate when using the Application in the future.

	This page of the Application shall present a message similar to the following:
	"The NC Quick Pass Mobile Application will use these nicknames on the Application display pages should you decide to save your provided nicknames. So, when looking for your active HOV declarations for a particular NC Quick Pass Transponder number or when trying to setup a new HOV declaration for a specific NC Quick Pass Transponder number, refer to the nickname(s) you provided above."
	At the bottom of this page, the user shall be presented with *"Save"* and *"Cancel"* buttons.
	• Should the user select the *"Save"* button or hyperlink, the Application shall save the nicknames provided by the user and use the nicknames throughout the Application.
	• Should the user select the "Cancel" button or hyperlink, Application shall make no changes, present the page the user was last on.
741.	Should the user select *"Save"* after any of their modifications to their profile, the Application shall update the information in the Application database and display the updated information.
742.	Should the user select *"Cancel"* after any of their modifications to their profile, the Application shall not update the information in the Application database and display the unedited profile information.
743.	Once any modification to the user's profile are made, the Application shall send the user an e-mail notifying them of the changes made.
744.	Should a user select *"Logout"* at any time, the Application shall present the user with both *"Confirm"* and *"Cancel"* buttons or hyperlinks. • Should the user select the *"Confirm"* button or hyperlink, the Application shall logout the user and present the login page. • Should the user select the *"Cancel"* button or hyperlink, Application shall make no changes, present the page the user was last on and not logout the user.
745.	The Application shall support functionality that allows registered users of the NC Quick Pass Mobile Application to invite friends to use the Application by providing the invitee's e-mail address or phone number. The Application shall contain a disclaimer stating that message and data rates may apply and any fee or charge resulting from messaging services is the responsibility of the consumer, not NCTA or NCDOT.
746.	Once the information is submitted, the Application shall support transmission of an e-mail or text message providing basic information about the Application, and an invitation to register (e.g. a link to the website and/or link to download the Application from the Google Play or the Apple Application Store).

3.11.1.2. HOV Declaration Mobile Application Functionality

747.	The Application shall allow users to select on any active HOV declaration and be presented with the following: • Time remaining for the HOV declaration

| | Anticipated expiration date "Extend time" Should the user select *"Extend Time,"* the user shall be able to extend their time in 1 hour increments, not to exceed 4 hours. The system shall calculate and display the deactivation date and time, and shall present the user with a message similar to the following:

"Your HOV declaration will end at XX:XX on MM:DD:YYYY. Your HOV Declaration must be submitted at least 15 minutes prior to your travel on NCTA Express Lanes in order to receive the benefit of your HOV Declaration. In order to prevent receiving a fine on the Express Lanes if you do not meet occupancy requirements, you must revise or remove your occupancy selection 15 minutes prior to your travel on NCTA Express Lanes."
"Cancel Declaration"
When a user selects the *"Cancel Declaration,"* the Application shall present the user with the following options: *"Confirm"* and *"Cancel."*
Should the user select the *"Confirm"* button or hyperlink, the Application shall update the associated transponder(s) as "HOV Off," and update the Application page to reflect the selection. The Application shall also present a message similar to the following:

"In order to prevent receiving a fine on the Express Lanes if you do not meet occupancy requirements, you must revise or remove your occupancy selection 15 minutes prior to your travel on NCTA Express Lanes."

Note: By selecting this option, the user shall be required to reselect an HOV declaration(s) to benefit from HOV declarations in the future. Should the user select the *"Cancel"* button or hyperlink, the Application shall not make any changes to the user's current HOV declarations. |
| 748. | When a user selects the *"Cancel Declaration(s),"* button/hyperlink, the Application shall present the user with the following.

A list of all active HOV declarations.
When a user selects one of the active HOV Declarations and selects *"Cancel Declaration,"* the Application shall present the user with the following options: *"Confirm"* and *"Cancel."*
Should the user select the *"Confirm"* button or hyperlink, the Application shall update the associated transponder(s) as "HOV Off," and update the Application page to reflect the selection. The Application shall also present a message similar to the following:

"In order to prevent receiving a fine on the Express Lanes if you do not meet occupancy requirements, you must revise or remove your occupancy selection 15 minutes prior to your travel on NCTA Express Lanes."

Note: By selecting this option, the user shall be required to reselect an HOV declaration(s) to benefit from HOV declarations in the future. |

	• Should the user select the "Cancel" button or hyperlink, the Application shall not make any changes to the user's current HOV declarations.
749.	When a user selects the *"Set New HOV Declaration"* button/hyperlink, the user shall be presented with a page enabling them to select their HOV Declaration Status by transponder number. This page shall present the following, or similar, information: • A drop-down box (or other easy to use selector tool) showing each transponder registered on the account allowing the user to select one transponder number. • HOV Declaration Schedule selector with activation duration and calendar selector user interfaces. • A button or hyperlink titled: *"Submit"* • A button or hyperlink titled: *"Cancel"* • A button or hyperlink titled: *"Logout"*
750.	The Application shall allow users to declare HOV status for the current day or for a date in the future using the following configuration options: • *"Start Now"* activates HOV status for all transponders on the account immediately. **Note**: Once selected, the Application shall present users with the following, or similar, message: "*Your HOV Declaration must be submitted at least 15 minutes prior to your travel on NCTA Express Lanes in order to receive the benefit of your HOV Declaration. In order to prevent receiving a fine on the Express Lanes if you do not meet occupancy requirements, you must revise or remove your occupancy selection 15 minutes prior to your travel on NCTA Express Lanes.*" • *"Date in the Future"* (e.g. single day or timeframe 3/13/17 – 3/20/17) enables users to select a declaration status for a date in the future.

751.	The Application shall allow users to set the duration for their HOV declaration using the following, or similar, configuration options:
	
	• *"4 hours"* A user's HOV declaration shall deactivate 4 hours after the user's HOV declaration became active. The system shall calculate and display the deactivation date and time, and shall present the user with a message similar to the following:
	
	    "Your HOV declaration will end at XX:XX on MM:DD:YYYY." (time and date.)
	
	• *"1 Day"* A user's HOV declaration shall deactivate at 12AM the day after the date the user selected hours to begin their HOV declaration to be active. The system shall calculate and display the deactivation date and time, and shall present the user with a message similar to the following:
	
	    "Your HOV declaration will end at 12AM on MM:DD:YYYY." (time and date.)
	
	• *"Weekdays"* would enable users to automatically declare for all weekdays. A user's HOV declaration shall deactivate at 12AM on the Saturday following the week the HOV declaration was active. The system shall calculate and display the deactivation date and time, and shall present the user with a message similar to the following:
	
	• *"Your HOV declaration will end at 12AM on MM:DD:YYYY."* (time and date.)

	Note: The system shall prevent a user from completing their declaration without selecting a duration.
752.	The Application shall support the follow declaration status: • HOV Off • HOV3+ **Note**: The Application shall be designed so that modification of HOV declaration status are easily modifiable based on NCTA business or policy decisions/changes.
753.	The Application shall provide the following, or similar, message on the *"Set New HOV Declaration"* page: *"Your HOV Declaration must be submitted at least 15 minutes prior to your travel on NCTA Express Lanes in order to receive the benefit of your HOV Declaration. In order to prevent receiving a fine on the Express Lanes if you do not meet occupancy requirements, you must revise or remove your occupancy selection 10 minutes prior to your travel on NCTA Express Lanes."*
754.	Once the user has made their HOV Declaration(s), they will have the following, or similar, options: • Should the user select *"Submit,"* the Application will present the user with a *"Confirm"* and *"Cancel"* buttons. If the user selects *"Confirm,"* the Application will update the Application with the user's selections and show the updated selections on the Application page. Should the user select, *"Cancel,"* the Application shall not make any modifications and display the user's previous selections prior to selecting the *"Submit"* button or hyperlink. • Should the user select, *"Cancel,"* the Application shall not make any modifications and display the user's previous selections prior to selecting the *"Submit"* button or hyperlink. • Should the user select, "Logout" the Application shall not make any modifications, logout the user from the Application and display the login page.
755.	Once any modification to the user's HOV declarations are made, the Application shall send the user an e-mail notifying them of the changes made.
756.	Once any modifications to the user's HOV declaration are made, the declaration status for all transponders associated with customer accounts shall be made available in near real-time to a RTCS via a secure interface.
757.	The Application shall present users with a real-time, running "activation clock" displaying how much time is remaining (e.g. down to the second) for each transponder set to an active declaration status.

758.	The Application shall support sending text message or e-mail alerts (based on the user's selection), and screen notification popups for: • Once a user's activation becomes active • 5 minute alerts prior to a declaration deactivating • Upon HOV declaration deactivation
759.	The Application shall provide users with the ability to view their HOV Declaration history.

3.12. Telephony / IVR System Requirements

760.	The Contractor shall coordinate with NCTA to design a fully integrated, scalable private cloud-based telephony and IVR system allowing NCTA customers access to general information about NCTA toll roads, and another mechanism to manage their account. The design of the system shall be finalized during the design phases, but the IVR system functionality shall include, but not be limited to:
760.1	The IVR shall support dual tone multi-frequency and speech based commands.
761.	The system shall provide and support softphone functionality.
762.	The system shall provide the capability for a CSR, or other authorized staff member, to call a customer by clicking a customer's phone number on their account using softphone technology/functionality.
763.	The system shall accurately route, queue, and answer all inbound and outbound customer calls.
764.	The system shall be fully integrated with the back office system and HOV Declaration Application.
765.	The IVR system shall be designed so that modifications to the IVR system, IVR call tree and/or call scripts can be made and deployed quickly (e.g. via a GUI) without the need for costly or lengthy modifications.
766.	The IVR system shall be available to customers and provide access to their accounts twenty four (24) hours a day, seven (7) days a week.
767.	The IVR system shall provide customers real-time access to customer management functions that are auditable and reported in account records.
768.	The system shall provide a unique identifier that identifies transactions as being completed via the IVR.

769.	The system shall manage call lists and track call activity.
770.	The system shall accurately associate account management activity to the appropriate customer account.
771.	The system shall log and report the reason for the customer contact.
772.	The system shall have the ability to report accurate call wait times to customers, and offer them the ability to log their phone number for an automated call back.
773.	The system shall have the ability to automatically open the customer's account screen upon routing the call to a CSR, given sufficient information from the phone system. This shall prevent customers from having to repeat information already provided to the IVR system. This functionality is generally referred to as Computer Telephony Integration (CTI).
774.	When a customer calls the CSC, the system shall display the customer profile to the CSR with matching caller ID with the existing customer phone number.
775.	The system shall provide authorized users the ability to monitor phone conversations in real-time.
776.	The system shall support authorized users the ability to record calls on-demand or 100% of calls into the CSC.
777.	The system shall contain playback functionality of recorded call audio for staff counseling and training purposes.
778.	The system shall provide the capability to retrieve recorded calls from a hyperlink of the call log.
779.	The system shall support a fully integrated ACD.
780.	The system shall provide parameter-driven Call Center reporting related to the IVR in hourly, daily, date range, weekly, monthly, and annual frequencies.
781.	The telephony / IVR system shall incorporate real-time speech analytics that monitors all customer interactions, flags calls that contain key words, elevates tones, phrases, etc., and produces an automated score / ranking for each call.
782.	The telephony / IVR system shall support survey functionality that allows NCTA to develop and deploy customer surveys, report on survey results (both in accrual or in real-time) and provide other means for customer feedback.
783.	The system shall provide web-based dashboard functionality that allows supervisors, managers and other NCTA personnel the ability to login, view real-time call center call metrics, team quality measurements, and other functionality as defined by NCTA during system design.

784.	The system dashboard shall provide functionality that provides authorized users the ability to drill down into specific metrics displayed on the online dashboard to see additional metric details, as determined my NCTA during the design phase.
785.	The system shall provide a real-time call queue dashboard, available online or with the ability to be displayed on monitors installed on the CSC walls, providing information with regard to the number of calls in queues (Bill by mail, QP Account Manager, General, DMV Collections and Ferry) and call waiting time for each queue based on information call-in customers provide via IVR system. The Contractor shall coordinate with NCTA to determine the metrics for the dashboard during system design.
786.	The system shall provide functionality for Operation Managers, or other authorized personnel, to generate reports on each CSR individually and all CSRs as an aggregate or shift with regard to call statistics, such as: calls received by date, by time range, along with wrap-up codes and other items as requested by NCTA. The Contractor shall coordinate with NCTA to determine the call statistics they want to track during system design.
787.	The system shall tag and log customers who call over three times during a configurable period of time regarding the same wrap-up code.
788.	The system shall rank and log the most frequent callers (within a configurable time period) based on their telephone number or account number accessed in a trending report or dashboard.
789.	The system shall provide the capability for a CSR, or other authorized personnel, to search customer call-in details and timelines.

3.13. Correspondence Management

3.13.1. Correspondence Management Requirements

790.	The Contractor shall be required to develop a data exchange interface to a professional, third-party mail house vendor managed by the Contractor. Costs associated with the mail house shall be pass through.
791.	The Contractor shall be responsible for all aspects of mail house vendor oversight and payment with the sole exception of correspondence quality review which shall be conducted by Authority designees via a user interface provided by the Contractor.
792.	The system shall support the ability for CSC staff members to regenerate and re-mail customer statements and correspondence, on demand, for a specific account or for an entire processing date.

793.	The system shall support functionality to scan correspondence via bar code and associate scanned documents to a specific account or transaction.
794.	The system shall support linking e-mails to customer accounts, which shall be accessible at the CSR level.
795.	The Contractor shall coordinate with NCTA to design all customer correspondence to adhere to all federal and state laws, rules and regulations relating to the privacy and security of mail and guarantee the security of all documents at all times.
796.	The system shall have the ability to retain all documents in accordance with NCTA's record retention schedule under secure conditions.
797.	The Contractor shall coordinate with NCTA to develop new document templates for customer statements, bill by mail invoices and other customer correspondence as directed by NCTA.
798.	The system shall accept and route customer e-mails to the appropriate staff in a secure manner and protect customer privacy.
799.	The System shall provide functionality for an authorized user to flag an account and/or address on an account that has had mail returned as undeliverable as "bad" in order to prevent mail from being delivered to that address in the future. The System shall track the "flagged" bad addresses and if a customer logs into the account, the System shall request that the customer update the address. If email or text messaging information is provided on the account, the system shall send a message to notify the customer that their address information needs to be updated in the system.
800.	The system shall provide functionality that enables CSC staff or NCTA personnel to provide randomly check a subset of customer correspondence, or all correspondence, prior to being mailed to customers.
801.	If a customer-supplied e-mail is returned as undeliverable, the system shall send a notice via regular mail to the address on the account informing them that their e-mail address needs to be updated.

3.14. Uncollected Toll Requirements

3.14.1. General Requirements

802.	The system shall provide reports, to be defined during system design, on uncollected tolls and any associated fees.
803.	The system shall provide functionality allowing authorized users the ability to designate toll transactions and administrative fees as uncollectible as approved by NCTA.
804.	The system shall designate accounts as uncollectible accounts if they meet any of the following conditions:

	• Have balances owed for two (2) or more years
	• Have mail returned as "Nixie"
	• Owner of the account is unable to be identified through skip tracing or other address identification methods
805.	The system shall allow accounts marked as uncollectible to remain in a DMV Hold status.
806.	The system shall prevent accounts marked as uncollectible from being assigned to a collection agency.
807.	The system shall prevent any customer correspondence and special customer notifications from being sent via USPS to accounts marked as uncollectible.

3.14.2. Collection Agencies

808.	The Contractor's interface with a collection agency shall automate all processes, including but not limited to: file transfer, payment updates, payment status, flagging accounts marked in collection status, updating addresses identified through skip tracing, ceasing other system processes as required per NCTA Business Policies. Other automated details shall be determined by NCTA during system design.
809.	The system shall track and report the collection status of all bills and judgments by toll amounts, fees and any outstanding balances for a selected time period.
810.	After certain configurable criteria are met, and upon proper authorization, the system shall send files to a registered collection agency as designated by the NCTA.
811.	The system shall have the capability to send collections files to multiple collection agencies.
812.	The system shall ensure that multiple bills/transactions for the same individual customer go to the same collection agency, and are not distributed to multiple collection agencies.
813.	The system shall generate reporting for comparison, analysis and scorecard on the collection performance of the collection agencies.
814.	The system shall suspend any escalation of fees when a transaction/bill is flagged for dispute. The system shall handle all subsequent bills/transactions accordingly based on dispute ruling.

3.15. Interoperability

3.15.1. Interoperability Requirements

815.	The Contractor shall develop and maintain data exchange interfaces and associated reporting to include financial reconciliation between all agencies with which NCTA has interoperable agreements (E-ZPass, Florida's Turnpike SunPass inclusive of Georgia PeachPass).
816.	The Contractor shall implement the existing interoperable interfaces (E-ZPass, Florida's Turnpike SunPass inclusive of Georgia PeachPass) in a manner that allows for scalability should the approach to National Interoperability replicates a similar data exchange.
817.	The system shall support home authority and reciprocal authority transaction posting for all Interoperable transactions.
818.	The system shall allow authorized users the ability to fully reconcile and settle all interoperable transactions and revenue.

3.16. NCTA Data Exchange Interfaces

3.16.1. Interface Requirements

819.	The Contractor shall develop and present, for NCTA's approval, an approach to interface design, development, test and deployment of data interfaces. The Contractor shall develop and/or implement defined data exchange interfaces between all systems, agencies, contractors, vendors and third-parties NCTA has data processing agreements with, including but not limited to:
	• All roadside toll collection systems for North Carolina toll roads, whether managed by NCTA or a concessionaire
	• Interoperable agencies
	• NC DMV
	• Out of state DMVs with which NCTA has agreement to share data
	• Third-party license plate lookup service (service provided by Contractor)
	• Banks
	• Lockbox
	• Credit and Debit Card Processing Host(s), including Apple Pay, Google Pay and PayPal
	• Third-party transponder fulfillment service
	• Mail House (service provided by Contractor)
	• Retail locations for transponder sales

	• Third-party retail payment processor supporting cash-based payment provision
	• Collections agency
	• Third-party parking entities (repeatable, scalable interface with secure web facing communications)
	• NCTA and Concessionaire Express Lanes for HOV Declaration Support
	• High-Occupancy Vehicle Declaration Application
820.	The Contractor shall be responsible for developing data exchange interfaces per existing ICDs, or coordinating with NCTA, their contractors or third-party providers on the modification or creation of ICDs to existing or new entities as required.
821.	RTCS interfaces shall be RTCS specific and support the creation and transmission of facility specific transponder validation lists.
822.	The data exchange interfaces shall be in near real-time via a secure interface.
823.	A dashboard shall be implemented that depicts real-time status of all file reconciliation processes, external interfaces, interoperable interfaces, etc. Drill down functionality shall be provided.

3.17. Report Development

3.17.1. Report Development Requirements

824.	The reporting system shall be accurate, and produce predictable results.
825.	The Contractor shall provide a reporting database environment and reporting application interface for authorized users to run and view reports related to NCTA tolling activity, financial information, audit detail, operational performance information, and system performance.
826.	The back office system shall provide users with a user friendly user interface for access to a self-service menu wherein non-technical users, with minimal training, can run pre-defined reports and run reports using pre-defined filters, including but not limited to: date(s), file type, report type (summary, detail, etc.), tolling point, transaction type, payment type, account type, etc., and other meaningful parameters. Tableau, Microsoft Power BI or approved equivalent shall be utilized for this functionality.
827.	A Data Mart and required Cubes shall be provisioned within the private cloud that facilitates reporting and analysis functionality.
828.	The system shall allow authorized users to run or schedule reports on demand.

829.	The system shall allow users to print, save, share, and export reports to CSV, PDF, XLSX, and other file types as directed by NCTA during system design.
830.	The system shall provide each user a personalized view into the reporting environment that will allow for the refresh of previously ran reports and receipt of user's scheduled reports.
831.	The system shall provide reports in both summary and detail display where applicable.
832.	The Contractor shall be required to coordinate with NCTA on the development of 50 pre-defined reports during the Final System Design and Development Phase. The Contractor shall include in their price proposal the development of another 25 custom reports that will be developed at NCTA's request either during system design or after the system has gone live. These reports shall include but not be limited to:
	• Account activity reports
	• User activity reports
	• Transaction and revenue reports
	• Financial and reconciliation reports
	• Duplicate transaction reports, capable of detecting and reporting on the number of duplicate transactions (individually and in aggregate), their value and the toll location from which they were generated
	• Uncollected and unprocessed tolls, by transaction status/age, transaction type, toll amount, write-off code, and any associated fees
	• Daily HOV declaration volume by NCTA Express Lane
	• Number of registered Application users by location (e.g. registered zip code)
	• Daily declaration volume by facility, and declaration duration
	• HOV Declaration activation history by user by method (e.g. web or mobile),including activation/deactivation time
	• Operations-related reports (e.g. quality control, IVR, tag distribution, call center metrics, etc.)
833.	The Contractor(s) shall provide NCTA with access to a reporting database, updated daily, and the ability to develop and run customized reports without the assistance of a database administrator, a software engineer or other highly skilled system developer with expert knowledge of the Contractor's system.

834.	The Contractor shall be responsible for maintaining and storing all report data, making it available for reporting, throughout the term of the contract.
835.	The BOS shall provide a self-service menu wherein non-technical users with minimal training can run and generate professional and accurate pre-defined reports via a user-friendly interface.
836.	The BOS shall allow users to print, save, share, and export reports to PDF and XLSX.

3.18. Date and Time System Requirements

3.18.1. Date and Time Synchronization

837.	The system shall have the functionality for synchronizing all systems and subsystems based upon date/time synchronization from a master clock set for US Eastern Time Zone as defined in the current versions of NIST SP800-53 and PCI-DSS.
838.	The master clock shall be a part of the Contractor's back office system and shall utilize an industry standard timing source NTP (Network Time Protocol).
839.	All network switches and components shall support SNTP (Simple Network Time Protocol) to synchronized date/time to all other systems and subsystems comprising the BOS.
840.	All computers, servers, routers and switches shall be synchronized at a minimum to the nearest 1/100 of a second.

3.19. Database Design

3.19.1. General Database Design Requirements

841.	The system database(s) shall be designed to accommodate all applications, including the back office system host, system sub systems, website(s), mobile applications and IVR system.
842.	The system 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.
843.	The system database shall be appropriately sized to handle NCTA's projected NC Quick Pass account volumes, Bill by Mail account volumes, transaction volumes, as specified in Attachment I, and image volumes over the next five (5) years to avoid the need to expand storage or memory for the system to prevent system-related issues due to database capacity being reached.

844.	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.
845.	The BOS shall separate data with code logic, and the database shall store data only. No stored procedures shall be implemented at the database level.
846.	The Contractor shall house all data such that it is available online, regardless of whether it was migrated legacy data or newly generated data, and available within the system for real-time access throughout the life of the contract.
847.	The Contractor shall be responsible for:
	• Database documentation - The Contractor shall provide thorough detailed documentation of the database structure and training for database administration.
	• Database Interfaces – The system database(s) shall interface with the internal and external systems associated with the back office system.
	• Database growth - The database shall allow for expansion to accommodate NCTA's planned projects and growth of the system in general, accounting for changes in technologies and operational policies.

3.19.2. System and Database Security

848.	The Contractor shall propose state-of-the-art security measures to protect system data against corruption, loss, intrusion and theft.
849.	The Contractor shall implement an Information Security Management System (ISMS) that is ISO/IEC 27001:2013 compliant in order to ensure the security of the BOS, as well as any and all subsystems, websites, Mobile Applications and associated data.
850.	The Contractor 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 system go-live and maintain compliance during the term of the Contract.
851.	Access to system database(s) shall be tightly controlled, and access shall be provided via strict user authentication.
852.	Access to all data stored shall be limited to authorized personnel including NCTA and Contractor personnel, and shall be password controlled.
853.	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, GUIs, reports, and other functionalities per the approved Roles and Responsibilities Matrix, as determined during final design phase. **Note**: Access control privileges shall extend to all systems and applications using the NCTA network.

854.	The Contractor shall develop a Roles and Responsibilities Matrix during the design phases, and coordinate with NCTA on its review and approval.
855.	The system database(s) shall support version control and record traceability at the field level for auditing database functions.
856.	The BOS shall incorporate "single sign on" enabling users to perform tasks, and access resources consistent with their specified user permissions.
857.	Each user shall have only one user ID and one password for access to any part of the system to which they are authorized to access. This ID and password shall protect not only the user interface but command line and database access as well. User identification will be facilitated by NCTA.
858.	The system shall have the ability to require passwords to be changed periodically. The system 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.
859.	All BOS, subsystems, 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.
860.	The access control shall apply to all systems and applications using the network.
861.	The BOS shall comply with NCTA's security/audit policies, the current versions of NIST SP800-53, PCI-DSS, and the Statewide Security Manual.
862.	The BOS shall incorporate a configurable intrusion detection application.
863.	The BOS shall at a minimum: • Provide audit control functions • Enable security event monitoring, logging, and storage • Collect and report on detection, analysis, and response to security incidents and events • Implement secure storage of audit logs, collect machine state and all items required for thorough forensic investigations • Provide audit tracking and logging features to trace database activity, including but not limited to: read, write, and modify activity. Each record shall include (at minimum) a time stamp, the activity, the result, and requester.

3.19.3. Data Backup and Archive

864.	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.

865.	The BOS shall provide an automatic archive capability with the ability to backup data to an off-site facility. No purging of data shall occur.
865.1	All data shall be retained for the duration of the Contract. Any archival policies shall be defined during the Final System Design and Development Phase.

3.20. Host System

3.20.1. General Requirements

866.	The BOS Host is the central control node for the BOS functioning within a private cloud, which includes the BOS Host, database(s), and back office systems. The BOS Host shall control all aspects of the system, and be configurable and flexible to accommodate additional facilities and different functionalities.
867.	The system shall provide system dashboards, to be defined by NCTA during system design, which allows authorized users to monitor the health and operation of system components in real-time. A report shall in no way meet this dashboard requirement.
868.	The BOS Host shall interface with external entities to exchange data files.
869.	The BOS Host shall interface with the NCTA General Ledger system (SAP) and shall have the ability to interface 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.
870.	The Contractor shall obtain and provision private cloud-based service(s) as required to support the Back Office functionality described herein.
871.	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.
872.	The BOS Host shall be available on a twenty four (24) hours a day, seven (7) days a week production schedule excluding scheduled maintenance activities approved by NCTA.
873.	The Contractor shall make available the system and private cloud hosting facility(ies) for onsite visits and audits by NCTA.
874.	Scheduled downtime for pre-planned maintenance shall be scheduled in advance and agreed upon by NCTA.
875.	The Contractor shall ensure that all third-party software utilized within the private cloud is licensed by the Contractor in NCTA's name.

876.	The private cloud-based infrastructure utilized to provide the collective BOS Host functionality shall be geographically and functionally redundant such that service provision cannot be interrupted by the loss of a single cloud hosting site.

3.20.2. Back Office System Security and Remote Access

877.	The Contractor shall have methods for satisfying all security concerns for each component of the system including:
	• Physical site
	• Environmental
	• Computer hardware and software
	• Data access and storage – logical or physical separation of NCTA data
	• Private cloud-based infrastructure
	• Network
878.	The system host 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 SP800-53 throughout the term of the contract.
879.	The system host shall incorporate a configurable intrusion detection application.
880.	The system Host shall incorporate the "single sign on" enabling users to perform tasks and access resources consistent with their specified user permissions.
881.	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, GUIs, reports, and other functionalities per the approved Roles and Responsibilities Matrix, as determined during final design phase.
882.	The Contractor shall develop a Roles and Responsibilities Matrix during the design phases, and coordinate with NCTA on its review and approval.
883.	The system shall allow authorized users to access the system remotely. The remote access virtual private network shall be sized for up to 50 remote users.

3.21. Business Continuity / Disaster Recovery

3.21.1. Business Continuity / Disaster Recovery Requirements

884.	The Contractor shall be responsible for developing and submitting a detailed, comprehensive Business Continuity / Disaster Recovery Plan, including Disaster Recovery Procedures, in accordance with current the versions of NIST SP800-53, PCI-DSS and the Statewide Security Manual for review and approval by NCTA.

885.	In order to maximize the system's performance, any infrastructure as a service, hosted services, or private cloud-based services shall be hosted within the United States in a region close to or within North Carolina.
886.	The private cloud service provider shall configure the collective private cloud-based environment in such a manner that disruption of service at a single location shall not interrupt private cloud-based service provision in any way.
887.	The Contractor shall incorporate disaster recovery procedures and tests into a formal test to be determined by NCTA.
888.	The Contractor shall design the private cloud-based infrastructure to seamlessly failover to another infrastructure and/or cloud to ensure minimal interference with BOS availability after a disaster event in order to provide NCTA with business continuity at all times.
889.	The Recovery Time Objective (RTO) shall be five (5) hours.
890.	The Recovery Point Objective (RPO) shall be one (1) minute.

3.22. System Support, Serviceability and Reliability Requirements

3.22.1. Technical Support Functions

891.	The Contractor shall provide local staff for technical support, system monitoring and other services, as directed by NCTA, for all personnel engaged with Contractor's system (e.g. Help Desk services for Contractor staff, NCTA, CSC Operations staff, NCTA consultants, etc.), and according to the approved Roles and Responsibilities Matrix, including but not limited to:
	• Issue resolution and troubleshooting
	• Help desk support
	• New system installation, update and integration support
	• 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
	• Maintenance records management and tracking

4.   Performance Requirements

The Contractor shall be required to meet all Performance Requirements detailed herein; and as part of their Monthly Invoice, provide reports that show compliance to the defined Performance Requirements including details of failures that resulted in the non-compliance.

4.1.   Performance Requirement Details

Performance Objective	Required Service	Performance Standard	Method of Measurement	Damages*
4.1.1. Back Office System Requirements				
Back Office System availability	The system needs to operate continuously throughout the year and cannot be down more than two (2) hours in a given year (or 8 minutes and 45 seconds a month) as a result of Contractor failure.	≥99.98%	System Reports Help Desk Tickets	$200 for each .01% below standard measured monthly
Telephony / IVR System availability	The collective telephony and IVR system needs to operate continuously throughout the year and cannot be down more than 4.22 hours in a given year (or 21 minutes and 54 seconds a month) as a result of Contractor failure.	≥99.95%	System Reports Help Desk Tickets	$200 for each .01% below standard measured monthly
Mobile Application availability	The Application, inclusive of all private cloud-hosted infrastructure and services, needs to operate continuously throughout the year and cannot be down more than forty three (43) minutes in a given month (excluding approved maintenance intervals) as a result of vendor failure.	≥99.9%	System Reports Help Desk Tickets	$500 for each .1% below standard measured monthly

Performance Objective	Required Service	Performance Standard	Method of Measurement	Damages*
Web Application Portal availability	Website Application portal needs to operate continuously throughout the year and cannot be down more than forty three (43) minutes in a given month (excluding approved maintenance intervals) as a result of vendor failure.	≥99.9%	System Reports Help Desk Tickets	$500 for each .1% below standard measured monthly
BOS System, Mobile and Web Application Responsiveness	The BOS, including Mobile and Web application(s), shall respond (e.g. render web and mobile application pages, submit data, cancel request, etc.) to user requests/actions within a sufficiently immediate timeframe.	≤1 Second (1,000 ms)	Periodic response checks and validated customer complaints.	$500 per day out of compliance
Mobile Device End User Rating	End user ratings for the respective mobile device applications (Apple and Google / Android) shall always be three out of five stars or better.	100%	Apple App Store and Google Play store ratings	$500 per month out of compliance

Note: The System shall be considered down if any portion of the System cannot be accessed. The Contractor shall ensure that the System does not demonstrate degraded performance. The System 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 causes Application errors for multiple users and customers; and

- System prevents access to NCTA staff or customers.

Transaction processing and posting	Transactions shall be posted to the correct customer account within four (4) hours of	100%	System reports	$500 per delay in transaction posting

Performance Objective	Required Service	Performance Standard	Method of Measurement	Damages*
	receipt of transaction files or account creation.			
Auto-replenishment processing	The system shall execute all auto-replenishment tasks, automatically replenishing each account with a valid replenishment method, within one (1) hour of the account reaching the auto-replenishment threshold.	100%	System reports, account review	$20 per account not replenished within the required timeframe
Manual replenishment processing	The system shall post manual replenishments made by customers to customer accounts within five (5) minutes of the customer's method of payment being validated.	100%	System reports, account review	$500 per event per day or $10 per account, whichever is greater.
Financial data posting	The system shall accurately post all required financial data within twenty four (24) hours of its receipt.	100%	System reports	$1,000 per occurrence of non-compliance
File processing	All files required to be exchanged between the back office system its interfacing systems, as defined by the ICD(s), shall be acknowledged and processed by the back office system, or created and distributed to each of the interfacing entities, within five (5) minutes of receipt of the file or creation of the file by the back office system.	100%	System reports	$500 per day out of compliance

Performance Objective	Required Service	Performance Standard	Method of Measurement	Damages*
DMV file processing	The System shall process response files from the DMV, create accounts and/or post image-based transactions within twenty four (24) hours of file receipt from the DMV.	100%	System report	$1,000 per delay exceeding 24 hours
Payment processing errors	The system 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), Apple Pay, Google Pay or PayPal account • Improperly drawing down a customer's account causing an improper replenishment	100%	System reports, customer complaints	$500 per event, or $10 per affected account or customer (whichever is greater)
PCI certification	Maintain payment card industry certification	100%	Evidence of certification	$1,500 per Calendar Day out of compliance
Customer correspondence	The system shall ensure 100% of customer correspondence letters (e.g. low balance, account suspension, credit card declined, credit card expiration letters, etc.) are mailed or e-mailed within two Business Days of each letter's "triggering event" (e.g. customer account reaching low balance threshold, credit card set to expire in XX months, etc.).	100% within two (2) Business Days	System reports	$5 per letter not in compliance

Performance Objective	Required Service	Performance Standard	Method of Measurement	Damages*
Account statement mailings	The system shall ensure 100% of customer statements are mailed or e-mailed within two (2) Business Days from the account anniversary date (anniversary date is defined as the day of the month in which the account was created).	100% within two (2) Business Days	System reports	$5 per letter not mailed within specified time frames
Bill by Mail mailings	The system shall mail or e-mail 100% of Bill by Mail invoices according to NCTA business policies.	100%	System reports	$5 per invoice not mailed within specified time frames

4.1.2. Maintenance Requirements

Performance Objective	Required Service	Performance Standard	Method of Measurement	Damages*
Priority 1 Failure/Event Response	For this Priority, the Contractor shall have a two (2) hour time to respond and complete repair.	≤ 2 hours	Maintenance event log	$100 per occurrence for every additional delay of one (1) hour to respond and complete repair of Priority 1 failures/events.
Priority 2 Failure/Event Response	For this Priority, the Contractor shall have a four (4) hour time to respond and complete repair.	≤ 4 hours	Maintenance event log	$100 per occurrence for every additional delay of two (2) hours to respond and complete repair of Priority 2 failures/events.
Priority 3 Failure/Event Response	For this Priority, the Contractor shall have a twenty four (24) hour time to respond and complete repair.	≤ 24 hours	Maintenance event log	$100 per occurrence for every additional delay of two (2) hours to respond and complete

Performance Objective	Required Service	Performance Standard	Method of Measurement	Damages*
				repair of Priority 3 failures/events.
Acknowledgement of Events	95% of all failure or Priority events shall be acknowledged and logged in issue tracking software within thirty (30) minutes of receipt.	≤ 30 Minutes	Maintenance event log	$250 for every Priority event if the monthly acknowledgment and logging percent is below the 95%
Preventative maintenance	The Contractor shall be responsible for fully resolving 95%, or more, of the maintenance events generated each month.	≥95%	Maintenance event log	$1,000 per day out of compliance, $2,500 for every maintenance event that remains open for longer than thirty (30) Calendar Days
Third-Party Software Version Update	Ensure all third-party software on all system components and subsystems is no more than one version behind, including associated website(s) and Mobile Application(s). Version releases for third-party software shall be tested with all system components and subsystems, and implemented immediately after an updated version release by the third-party provider. **Note**: Should any test of third-party software by the Contractor indicate potential adverse impacts with the Contractor system, the	100%	Evidence of third-party version history/releases and Contractor internal test results	$500 per Calendar Day out of compliance, per third-party software component

Performance Objective	Required Service	Performance Standard	Method of Measurement	Damages*
	Contractor shall notify NCTA in writing immediately.			
Note: All unscheduled maintenance events (e.g. corrective maintenance) shall be considered as system downtime. Scheduled events (e.g. preventive maintenance) shall not be used to correct system issues unless NCTA provides prior approval in writing. Scheduled maintenance shall be communicated to NCTA a minimum of five (5) Business Days in advance for approval, and will be scheduled for times when the customer service center is not operating.				

4.2. Non-Chargeable and Chargeable Failures

For purposes of calculating Performance Requirements, chargeable and non-chargeable failures are defined as follows:

4.2.1. Non-Chargeable Failures

Non-chargeable failures shall include:

- Force Majeure, as defined in the Contract Documents

- Vandalism

- Failure of a test facility or test instrumentation

- System component failures caused by environmental or operating conditions outside of the Requirements of this Scope of Work and Requirements

- Normal operating adjustments as allowed in the Test Procedure or Maintenance Plan, as applicable

- Failures where the NCTA have Approved to waive a chargeable failure in advance

- Failures that are customer or NCTA user induced, or are caused by a third-party service provider not under the Contractor's control as determined by the NCTA

4.2.2. Chargeable Failures

Chargeable failures shall include any failures not specifically identified as non-chargeable.

Section IV

Qualification Package
Response and Submission Instructions

Section IV - Table of Contents

Section IV - List of TABLES

1. Qualification Package Response and Submission Instructions

1.1. General

Refer to this section for instructions how to develop and submit a Qualification Package for NCTA's consideration. Parties interested in responding to this RFP are urged to thoroughly review **Section IV Qualification Package Response and Submission Instructions**, Section 1.2 Qualification Requirements and Section 1.3 Response Instructions.

In the development of a Qualification Package, proposers are encouraged to fully describe their qualifications, and demonstrate how their solution will address the functional requirements and business policies described herein.

Note: NCTA maintains the right to modify the information required in the Qualification Package via addendum as they deem necessary.

For information on NCTA's approach to the BOS procurement, refer to **Section 1, Administrative,** Section 3, BOS Procurement Approach Overview.

1.2. Qualification Requirements

Proposers <u>and / or their Subcontractor(s)</u> shall demonstrate significant experience in those areas for which they are submitting a Qualification Package. These areas shall include:

- Relevant successful firm experience

- Experience designing and integrating back office solutions in support of tolling operations, or similar business models supporting account quantities and annual transaction volumes similar to, or in excess of, NCTA's current transaction volumes listed in Attachment 1.

- Experience delivering and operating a similar solution for at least one year within the past five years

- Experience successfully migrating legacy data from an existing system to the Proposer's system

- Relevant key personnel experience and availability

- Experience designing, developing, deploying and maintaining website and mobile applications on multiple web browsers and operating systems

- Experience integrating website and mobile applications with other transaction-based systems

- Experience developing and managing near real-time data exchange interfaces to external entities

- Experience with the mobile application certification process for both Google Play and the Apple App Store

- State-of-the-art technology solutions with a focus on adaptability to changing business requirements

- Financial stability and resources

- Registration to do business with the Office of the Secretary of State

Proposers shall demonstrate their experience, knowledge and understanding of all aspects of customer account management systems, including but not limited to: customer service centers, phone centers, inventory, etc. Additionally, Proposers shall demonstrate the ability to design, develop, implement and operate the BOS in an effective and efficient manner, and to provide the personnel necessary to implement, maintain and support the system in accordance with NCTA performance requirements throughout the duration of the Contract. The selected Contractor shall be required to work with other contractors to provide seamless System integration.

1.3.   Response Instructions

Qualification Packages must be submitted in the format, including sections and heading descriptions, as described in this section. To be considered, the Qualification Package must respond as instructed to all requirements in this part of the RFP. Proposers must provide complete Qualification Packages, including all Qualification Package sections, in accordance with these instructions. Omission of any section may render a Qualification Package non-responsive, and it may not be evaluated. Instructions on how to submit the Qualification Package, as well as the content and form of each, are included in Section 1.3.1 Content of Qualification Package below.

1.3.1.   Content of Qualification Package

Qualification Packages shall be prepared simply and economically, providing a straightforward, concise description of the Proposer's qualifications and ability to meet the requirements of the RFP. To that end, the Qualification Package shall be limited to a **combined** total of 60 pages, as indicated by the table below. Portions of the Qualification Package that are excluded from these page limitations are also shown in Table 4-1: Qualification Package Page Limitations below.

Qualification Package Sections to be Completed by a Proposer	Page Count Limitations
Cover Letter	1 to 2 pages (excluded from page limit)
Executive Summary	Limited to 5 printed pages
Section 1: Proposer Qualifications	Limited to 45 printed pages (not including table of contents, table of tables, or table of figures) **Note**: The Preliminary Implementation Schedule is not counted towards the page limit for this section.
Section 2: Key Team Qualifications	
Section 3: Approach to Scope of Work and Requirements	
Section 4: Approach to Project Plan and Implementation	
Section 5: Approach to Maintenance	
Section 6: Adherence to the Scope of Work, Requirements and Terms and Conditions	Limited to 10 printed pages (not including table of contents, table of tables, or table of figures)
Section 7: Forms and Submittals	Excluded from page limit
Appendix 1: Audited Financial Statements	Excluded from page limit
Appendix 2: Sample Reports	Excluded from page limit

Table 4-1: Qualification Package Page Limitations

The Qualification Package shall be submitted in the format shown below. The cover sheet for the completed Qualification Package shall be included at the front of the package submitted to NCTA, as directed below. The cover sheet is not subject to the page limitations.

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

A. Cover Letter

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

B. Executive Summary

The executive summary shall be a brief overview, summarizing the contents of the Qualification Package, and explaining how the Qualification Package being offered best addresses the evaluation criteria listed in this RFP. The summary shall describe the Proposer's 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. The Proposer shall describe the amount of design and software development anticipated, identify any Subcontractors the Proposer anticipates utilizing, and discuss their proposed roles.

C. Qualification Package Section 1: Proposer Qualifications

Provide the following information regarding the Proposer's qualifications, including Subcontractors. Number and 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 detailed discussion of the Proposer's qualifications and experience related to **Section III, Scope of Work and Requirements** as required by this RFP, including the Subcontractors' relevant experience, in the following areas:

   a. Designing, developing, testing, implementing and maintaining full-scale back office account management and financial reconciliation systems for the toll industry or related field;

   b. System enhancement and change order management;

   c. Developing and managing data exchange interfaces to internal and external entities;

   d. Meeting schedule milestone delivery dates for design, development, testing and implementation of a back office system;

   e. Coordinating with external entities to develop data exchange interfaces, especially with regard to interoperable agencies for the exchange of transactions and revenue

   f. Meeting system performance metrics and key performance indicators

3. Annual revenues for the Proposer and for the subsidiary, division or group responsible for this BOS Implementation.

4. A copy of the Proposer's audited financial statements for the past two years as Appendix I to the Qualification Package. 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 Proposer, 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 **Section I, Administrative**, Section 2.10 Written Clarifications.

5. A recent Client List 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 five (5) years. Specify the name, address and telephone number of the individual responsible at the client organization for the supervision of such services.

6. The Proposer Company Reference, using **Exhibit D-2**, **Forms**. The Authority strongly desires that the completed forms must include at least two (2) references to demonstrate that the Proposer meets the following minimum requirements:

   a. The Proposer and / or its Subcontractor(s) shall have successfully designed, developed, implemented and be currently maintaining a back office solution for at least one (1) toll agency project (or similar Project type) in the United States. The back office solution must be able to process financial, account-based transactions (including the production and mailing of toll bills or similar), and it must support account quantities and annual transaction volumes similar to, in excess of, NCTA's current numbers listed in Attachment 1. The Proposer shall have maintained the system for at least one (1) year as of October 2017.

   b. The proposer Proposer and / or its Subcontractor(s) shall have successfully planned for the migration of legacy system data into a new account-based solution, migrated legacy data into a new account-based system, tested the new system and reporting functionality with the newly migrated legacy data incorporated and implanted the new system inclusive of both legacy and new system data.

7. The Proposer shall notify NCTA in its Response, and promptly thereafter as otherwise applicable, of any civil litigation, arbitration, proceeding, or judgments against it or its subcontractors during the three (3) years preceding its offer, or which may occur during the term of any award to the Proposer pursuant to this solicitation, that involve (1) Services or related goods similar to those provided pursuant to any contract and that involve a claim that may affect the viability or financial stability of the Proposer, or (2) a claim or written allegation of fraud by the Vendor or any subcontractor hereunder, arising out of their business activities, or (3) a claim or written allegation that the Proposer or any subcontractor hereunder violated any federal, state or local statute, regulation or ordinance. Multiple lawsuits and or judgments

against the Proposer or subcontractor shall be disclosed to NCTA to the extent they affect the financial solvency and integrity of the Proposer or subcontractor.

All notices under this section shall be provided in writing to NCTA within thirty (30) calendar Days after the Proposer learns about any such criminal or civil matters. Details of settlements which are prevented from disclosure by the terms of the settlement shall be annotated as such. The Proposer may rely on good faith certifications of its subcontractors addressing the foregoing, which certifications shall be available for inspection at the option NCTA.

D. Qualification Package Section 2: Key Team Qualifications

Provide the following information regarding the Proposer's Key Team qualifications, including Subcontractors.

1. Identify the following Key Personnel proposed for this BOS Implementation, including their percentage of time on site (NCTA Project office), and overall percentage time commitment to this BOS Implementation. 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 reside 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, reside 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.

   - Software Development Manager: Responsible for design and development of the back office system (including subsystems, and internal and external interfaces), supervision of software development resources, and administration of system testing. The assigned Software Development Manager shall be 100% committed to this Implementation, reside in the Raleigh-Durham area, and have at least 5 years of

relevant experience. Information provided within the Software Development Manager's resume shall demonstrate their background, knowledge, competence and experience in managing and developing software solutions.

- Implementation Manager: Responsible for the overall planning and implementation of the back office system testing program. Also responsible for integration and installation of the BOS.

- Quality Assurance Manager: Responsible for consistent quality throughout the design, development, testing and implementation of the back office system through good QA and QC practices.

    Note: Proposers are permitted, but not required to, name up to two additional Key Personnel to reflect their commitment to work they believe to be key to the BOS Implementation's success. All named additional Key Personnel shall have resumes and references supplied as instructed below.

2. Describe the experience of each person identified as Key Personnel, and how it relates specifically to the scope of work in this RFP.

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.

4. Proposers must complete at least one (1) Key Team References form provided in **Exhibit D-3**, **Forms**, for each Key Team member.

5. Complete the List of Subcontractors Form from **Exhibit D-4**, **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. Subcontractor substitutions after Qualification Package submittal shall require NCTA prior approval.

E. **Qualification Package 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 back office system, focusing on modular software architecture and private 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

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 requirements and ongoing certification.

5. Provide details of the Proposer's solution for transaction reconciliation (between the various roadway systems and the BOS, interoperable partners, etc.) and audit functionality.

6. Discuss Proposer's adherence to the Performance Requirements and explain how the Proposer will meet or exceed specific Performance Requirements set forth in **Section III, Scope of Work and Requirements**. Provide actual examples, if available, of how each of the Performance Requirements was met or exceeded on other similar projects, and how the performance was measured.

7. Discuss the Proposer's approach to satisfying the specific reporting requirements of the scope of work in this RFP, highlighting any unique features of the Proposer's reporting system relating to performance reporting and other types of reports. Discuss the Proposer's approach to new report development. Describe the tools, processes and/or software the Proposer employs allowing for ad-hoc report generation by end users without the need for a report developer or database administrator to run database queries. Provide examples of the Proposer's flexibility in reporting by transaction type, paid vs unpaid transactions, agency, toll facility, toll zone and lane, etc. Provide examples of key reports.

8. Discuss the Proposer's approach necessary to identify, convert (if necessary), and migrate legacy data within the old BOS, as well as test, validate and maintain legacy data within the new system. The Proposer's approach should include, but not be limited to:

   a. Description of data migration phases/approach

   b. Identification of data need to convert and migrate

   c. Data assessment and identification process techniques

   d. Identification of automated conversion tools, or programming needed, to significantly reduce data conversion labor

   e. Roles, responsibilities, and a schedule for data conversion, migration, testing and validation efforts

   f. Generation and review of data migration validation reports, data record reconciliation and validations, resolution to migration issues

   g. Preparation of data migration results paper for NCTA review and approval

9. Discuss Proposer's approach to system and interface testing and System Acceptance to support the scope of work in this RFP. Please address:

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

     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.

     d.   Describe the process undertaken as enhancements are made to the system to ensure the stability of system as new business processes, components or roadways are added to the existing system.

10. Discuss the Proposer's approach and process of incorporation and management of legacy system data. Describe any prior experience the Proposer has had with legacy system data migration, and testing and operating the system in an organizational transition (cutover) environment.

11. Discuss any "no-cost innovations" and/or value additions that the Proposer, or software solution, offers NCTA to help them, for example:

     a.   Reduce costs associated with operation and maintenance of the system and/or CSC operations

     b.   Implement customer service improvements to improve the customer experience when they interface with NCTA customer portals (e.g. website, call center, walk-in storefront, etc.)

     c.   Improve the rate of return on toll bills mailed to customers and/or increase the number of customers utilizing NC Quick Pass

F. Qualification Package Section 4: Approach to Project Plan and Implementation

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

NCTA has established milestone and key implementation dates for the BOS Implementation that are subject to change at the sole determination of NCTA. These milestones are provided in **Section 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 Qualification Package. Proposers may identify certain interim milestones on the Implementation schedule; however, it is critical that the milestones and key implementation dates in bold italics Table 3-1 of Section 1.1.1. Key Implementation Dates of **Section III, Scope of Work and Requirements** are achieved on the dates shown in the schedule.

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

1. Discuss the approach for delivering the back office system in the timeframe specified, highlighting the major challenges and issues to meeting the Implementation milestones established in **Section 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. Provide a Preliminary Implementation Schedule that has been developed using MS Project (submitted in both MS Project and PDF file formats) that meets the schedule guidelines set forth above and is based on the **Section 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.

3. Discuss the Proposer's approach to Project Management for the design, development, testing, implementation and maintenance of the back office system, addressing the PMP requirements of **Section III, Scope of Work and Requirements**. Specifically discuss the approach to the following Project Management elements:

   a. Implementation Schedule;

   b. Design, hardware 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; hardware 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).

4. 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, operation and maintenance of the back office system integration process to ensure timely communication and resolution of problems with NCTA, their consultants and other contractors without the intervention of NCTA.

5. Provide an organization chart that shows planned staffing for all levels and phases of the BOS Implementation.

6. Discuss how 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.

7. Provide an organizational chart that details how the Proposer will maintain the application throughout the duration of the contract.

G. Qualification Package Section 5: Approach to Maintenance

Provide responses to the items below regarding the Proposer's approach to Maintenance of the BOS, subsystems, website(s) and Mobile Application. Please number and provide the information in the specific format provided below.

1. Discuss the Proposer's approach to Maintenance that will meet or exceed all Maintenance Services and warranty requirements as specified in **Section III, Scope of Work and Requirements**.

2. Discuss the Proposer's Plan to coordinate the delivery of Maintenance Services with the interfacing third-parties of the BOS, subsystems, website(s) and Mobile Application. Address the BOS and the tools that facilitate identification of problems and the ability to communicate effectively with NCTA.

3. Discuss the Plan for coordination of NCTA and Proposer's Maintenance responsibilities.

4. Provide an organizational chart that details how the Proposer will maintain the BOS, subsystems, website(s) and Mobile Application throughout the duration of the contract.

5. Discuss Proposer's staffing model, how the Proposer will respond to issues, and how the Proposer will be staffed to respond to issues in order to meet performance requirements.

6. Discuss the Proposer's training approach for the Proposer's Maintenance staff and for NCTA staff.

7. Describe the Proposer's approach to system updates and system enhancements.

H. **Qualification Package Section 6: Adherence to the Scope of Work, Requirements and Terms and Conditions:**

1. The Proposer must submit its Qualification Package on the basis of the terms and conditions set out in **Section V, Terms and Conditions**. The NCTA may reject any Qualification Package that is conditioned on the negotiation of Terms and Conditions set out in **Section V, Terms and Conditions**, or to other provisions of the RFP.

2. In Qualification Package Section 6, Proposers may identify and describe any key assumptions made related only to **Section III, Scope of Work and Requirements**. Scope of Work and Requirements assumptions may be considered during the Qualification Package evaluation process at the sole discretion of NCTA. No assumptions regarding the terms and conditions of the Contract shall be included in the Qualification Package. An "assumption" is a Proposer's stated expectation or supposition that would require a change to an RFP term and condition, or the addition or deletion of an RFP term and condition.

3. The Proposer must clearly identify any proposed exceptions to the Terms and Conditions in this section of their response, which will be considered in accordance with **Section I, Administrative**, section 2.18 Contractual Obligations. The Proposer waives the right to raise new exceptions and alternatives during negotiations, however, any details not yet defined in the documents by NCTA may still be negotiated.

I. **Qualification Package Section 7: Forms and Submittals**

Proposers shall provide all Qualification Package forms required to be submitted as part of the RFP, unless otherwise specifically directed.

Proposers shall submit properly completed forms that have been provided in **Exhibit D**, **Forms**. Please refer to Table 4-2 below for a Forms and Submittals 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 Qualification Package.

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 Qualification Packages. Qualification Packages not adhering to this requirement may be considered as non-compliant.

Form #	Form/Submittal Name	Location in RFP	Location of Form/Submittal in Qualification Package
Forms to be Submitted			
D-1	Qualification Package Cover Sheet Form	Exhibit D-1	Qualification Package Envelope with Original of the Qualification Package
D-2	Reference Form	Exhibit D-2	Qualification Package Section 7
D-3	Key Team Qualifications Form	Exhibit D-3	Qualification Package Section 7
D-4	List of Subcontractors Form	Exhibit D-4	Qualification Package Section 7
D-5	Subconsultant RS-2 Form	Exhibit D-5	Qualification Package Section 7
D-6	Recent Client List Form	Exhibit D-6	Qualification Package Section 7
D-7	Firm Qualifications and Financial Stability Form	Exhibit D-7	Qualification Package Section 7
D-8	Requirements Conformance Matrix	Exhibit D-8	Qualification Package Section 6
D-9	Proposer Questions Form	Exhibit D-9	N/A: To be used for submission of Proposer questions to NCTA.
D-10	Proposer Industry Comment Form	Exhibit D-10	N/A: To be used for submission of Proposer Industry Comment to NCTA.
D-11	Acknowledgment of Receipt of Addenda Form	Exhibit D-11	Qualification Package Section 7
D-12	Non-Collusion Form (Corporation)	Exhibit D-12	Qualification Package Section 7
D-13	Non-Collusion Form (Individual with a firm Name)	Exhibit D-13	Qualification Package Section 7

D-14	Non-Collusion Form (Individual)	Exhibit D-14	Qualification Package Section 7
D-15	Non-Collusion Form (Limited Liability)	Exhibit D-15	Qualification Package Section 7
D-16	Non-Collusion Form (Partnership)	Exhibit D-16	Qualification Package Section 7
Other Qualification Package Submittals			
N/A	Resumes	See Section IV, 1.3	Qualification Package Section 7
N/A	Preliminary Implementation Schedule	See Section IV-1.3	Qualification Package Section 4
N/A	Implementation Phase Organization Chart	See Section IV-1.3	Qualification Package Section 4
N/A	Maintenance Phase Organization Chart	See Section IV-1.3	Qualification Package Section 5
N/A	Bid Bond	See Section I- 5.1	Price Proposal Envelope Section 8 **Note**: Due after short-list announcement.

Table 4-2: Forms and Submittal Checklist

J. Qualification Package Appendices - The Proposer shall submit the following materials in the form of Qualification Package Appendices:

- Appendix 1. – Audited Financial Statements (Two Years)
- Appendix 2. – Sample Reports

K. Price Proposal (Provided Separately)

Proposers are not required to submit a Price Proposal with their Qualification Package. Short-listed Proposers shall be required to submit a Price Proposal in the Preliminary System Design Procurement Phase, per the instructions documented in Section 3 below.

2. Submission of Qualification Package

All Qualification Packages shall be submitted in a sealed envelope(s) or box(es), bearing on the outside the following information, and delivered to the address provided on the front page of this RFP:

Qualification Package or Price Proposal:

BACK OFFICE SYSTEM

Submitted By:

PROPOSER'S NAME

PROPOSER'S ADDRESS

CITY, STATE, ZIP CODE

PROPOSER'S PHONE NUMBER

2.1.   Submission of Qualification Package

1. **Form of Qualification Package.** Submit Qualification Packages in printed form and on Universal Serial Bus (USB) flash drive.

   a. The hard copy of the Qualification Package shall be included in one (1) volume only so that only one (1) three ring binder is required for the Qualification Package.

   b. The electronic copy shall be provided in .pdf format. Any Qualification Package exhibits or information prepared either as graphics or with other programs (e.g. scheduling programs) shall be viewable in a .pdf file without any other software required for Qualification Package review, with the exception of the Implementation Schedule and the Price Proposal, which shall also be provided in Microsoft Project and Excel respectively.

2. **Page Presentation.** Qualification Package text shall be single-space, a minimum of 10- point Arial or 12-point Times New Roman font, printed on both sides of the page. Each page header and/or footer should include the Proposer's name ~~and Qualification Package section~~, along with page numbers and date of the Qualification Package.

   Supplemental information other than the Qualification Package Cover Letter, Executive Summary and Qualification Package response Sections 1 through 6 may be in a different font from that specified; however, in no case should the font be smaller than 9- point and Proposers should consider the overall readability of the document when submitting. NCTA will not be responsible for reviewing portions of Qualification Packages with illegible text.

   Headers and footers may be in different size font from that specified, subject to the same caveats identified in the paragraph above.

3. **Number of Copies.** Provide ten (10) printed copies and one (1) USB flash drive of all portions of the Qualification Package. The copy with the original cover letter and cover sheet should be marked "Original". Each copy shall be numbered (e.g., 2 of 7, 3 of 7).

4. **Easy to Read and Cross-Reference.** The Proposers need not duplicate or quote in detail from attached reference materials as long as 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 calls attention to referenced information in a manner that will assist in locating it is recommended.

5. **Writing Style.** Qualification Package documentation should provide an example of what Design Documentation will look like. NCTA prefers economy of words, direct writing, active voice, and limited marketing superlatives.

6. **Trade Secrets and Confidential Information.** The 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. The 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. The 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 Qualification Package 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 Qualification Package 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.

NCTA does not intend to divulge the contents of any of the Qualification Packages. NCTA will retain all Qualification Packages until final successful Contract execution, after which NCTA intends to destroy Qualification Packages submitted by unsuccessful Proposers as allowed by law.

3. Price Proposal Content and Format

Upon NCTA's request, at the conclusion of Preliminary System Design Procurement Phase, all Short-listed Proposers shall submit Price Proposals in a sealed envelope(s), as described below, bearing on the outside the following information, and delivered to the address provided on the front page of this RFP:

<div align="center">

Price Proposal:

BACK OFFICE SYSTEM

Submitted By:

PROPOSER'S NAME

PROPOSER'S ADDRESS

CITY, STATE, ZIP CODE

</div>

PROPOSER'S PHONE NUMBER

1. Separate and Sealed. The copies of the Price Proposal shall be submitted in a sealed envelope. Price Proposals shall not be submitted with the Preliminary Design Document/Technical Proposal and Preliminary Design Package. All price proposals shall be submitted in strict compliance with the requirements of this section. Failure to comply with this requirement will cause the entire Proposer's entire Proposal package to be rejected.

2. Price Proposals shall be submitted using the Form provided to Short-listed Proposers at the time of short-list announcement.

3. Proposers shall complete the Form/Workbook in accordance with the Price Proposal Instructions provided to Short-listed Proposers at the time of short-list announcement.

4. One (1) original hard copy of the Price Proposal shall be submitted by the Proposer.

5. The original Price Proposal envelope shall be marked "Original."

6. An original of the bid bond shall be included in the Price Proposal package. Amount and instructions for the bonds is included in **Section 1 Administrative,** Section 5.1 Notification of Award.

7. One copy of a USB flash drive containing the Price Proposal in electronic format shall be provided. The file format for the electronic copy of the Price Proposal shall be Microsoft Excel. The USB FLASH DRIVE containing the Price Proposal shall be clearly labeled with the same nomenclature identified for the outside of the sealed Price Proposal envelope.

8. Proposers shall not include any assumptions in their Price Proposals. If the Proposer includes assumptions in its Price Proposal, NCTA may reject the Proposal. Assumptions should be provided in the manner set forth in **Section IV, Qualification Package Response and Submission Instructions**.

    Note: Any costs for work that is not provided in the Price Proposal will be assumed as no charge to NCTA.

Section V
Terms and Conditions

Section V – Table of Contents

1. Contract Terms and Conditions

1.1. Payment Terms and Conditions

1. Payment terms are net thirty (30) Calendar Days after receipt of a correct invoice. 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 **Section III, Scope of Work and Requirements**.

2. The Contractor shall invoice NCTA based on milestone payments set forth in **Exhibit B, Payment Schedule**.

3. The Contractor shall invoice NCTA for monthly maintenance payments in accordance with the amounts set forth in the Contractor's Price Proposal.

4. NCTA may exercise any and all rights of Set Off as permitted in 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. Term of Contract

The term of the Contract will commence on the Effective Date with a base term of five (5) years. The phases are further described as follows:

- BOS Implementation – The BOS Implementation (including, Preliminary System Design, Final System Design and Development, System Testing and Installation, and Training Phases) shall begin on the Effective Date and shall continue until System Acceptance by NCTA.

- Maintenance Phase – The Maintenance Phase shall begin upon System Acceptance of the back office system by NCTA, and shall continue through the end of the base Contract Term.

- Options to Extend – The Optional Extension Phase includes two (2) three (3)-year optional Maintenance extensions to be executed at the sole discretion of NCTA, with the first extension commencing upon the end of the base Contract Term.

NCTA shall fix the Effective 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.

1.3. Bonus and Damages

1.3.1. Bonus Payments

1.3.1.1. BOS Ready by Go-Live Date

Coordination and cooperation among the Contractor, NCTA, NCTA contractors, NCTA Toll System Integrator(s) (TSI) and Concessionaires is critical in order to meet the Go-Live Date for the BOS. This date is listed in **Section III Scope of Work and Requirements**, Section 1.1.1. Key Implementation Dates. As such the NCTA desires that the Contractor works with the NCTA, its contractors, external entities and other contractors, as directed, to ensure that the Go-Live Date will be met without regard to the time extensions and time reliefs provided for in this Contract. Therefore, as full compensation for all extra cost involved and subject to the conditions outlined herein, the NCTA agrees to pay as a bonus to the Contractor as noted below:

In the event that Go-Live date for the BOS is achieved by the Go-Live Date set forth in **Section III Scope of Work and Requirements**, Section 1.1.1. Key Implementation Dates, or another date as agreed to by NCTA, $75,000 will be paid to the Contractor.

For purposes of the bonus, the Go-Live Date for the BOS Contractor shall mean the following has occurred:

- The BOS system, and all subsystems, are complete and have passed all required testing.

- The BOS is installed at the NC Quick Pass CSC and/or Storefront(s), or other location(s) as directed by NCTA.

- Both the website and mobile versions of the BOS Application are complete and have passed all required testing.

- Interfaces to all external entities are complete and functioning as designed, and full and correct data transmission are occurring.

- The BOS Mobile Application is available for download on both the Apple Application Store and Google Play.

- The BOS is capable of processing transactions from all toll systems, and capable of supporting full revenue service, successfully collecting revenue from all toll locations.

- All data migration activities have completed successfully with no errors.

If the Contractor does not Go-Live by the Go-Live Date, the Contractor shall not be entitled to any portion of the bonus, implementation No partial bonus payments for partial completion of any Work will be made.

1.3.1.2. BOS Passes OOP

In the event that the BOS successfully completes the OOP without any Priority 1 or 2 issues within the allotted time period as documented in **Section III Scope of Work and Requirements**, Section 2.3.3.5. Operations Observation Period, $175,000 will be paid to the Contractor.

If the BOS experiences any Priority 1 or 2 issues within the allotted time period, the Contractor shall not be entitled to any portion of the bonus. No partial bonus payments for partial completion of any Work will be made.

1.3.2. 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 Maintenance Performance Standard Requirements set forth in **Section III Scope of Work and Requirements**, Section 4 Performance Requirements. If in the performance of the Services 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 or the Surety shall promptly pay any remaining amounts due on demand.

4. In the event that liquidated damages are disallowed for any reason whatsoever, NCTA shall be entitled its actual damages including any and all consequential or incidental damages.

5. 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.

1.3.3. Actual Damages

1. The Contractor acknowledges that its performance after system acceptance is critical to the operation of NCTA in so much as the Services to be provided pursuant to this Agreement directly involve NCTA's revenue and customer service. The Contractor agrees that the actual damages set forth below are fair and reasonable and shall be incurred by the Contractor in the event of unsatisfactory performance.

2. The Contractor shall reimburse NCTA for any revenue, which NCTA identifies as having been lost due to the fault of the Contractor. NCTA may choose, in its sole discretion, to recover such lost revenue from the Contractor by deducting such amounts from payments otherwise due and owing from NCTA to the Contractor. Lost revenue includes, but is not limited to, such events as lost transactions; lost images; lost data; transactions that are not able to be collected upon due to delays in Contractor processing; Contractor-caused delays in escalation or customer notifications that exceed statutory Requirements.

3. The Contractor shall be responsible for any other costs incurred, which are the results of its improper handling of these Services, including such things as special mailings to customers to notify them of a mistake in their monthly statements due to transaction gathering and processing failures and inaccuracies.

1.3.4. 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.

2. The risk of loss for all Equipment until installed by the Contractor, subject to the NCTA's Approval of the installed Equipment. Title and ownership of the Equipment (other than the Software), and the right to possess and use the Software pursuant to the rights and licenses granted to the NCTA under this Agreement, shall pass to the NCTA upon delivery, subject, in the case of such title and ownership, to the Equipment conforming to the Requirements set forth **Section III, Scope of Work and Requirements**.

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.

1.4.2. Audit and Examination of Records

1. Definition of Records

   a. Contract Records shall include, but not be limited to, all information, communications and data, whether in writing or stored on a computer, external hard drive, computer disks, microfilm, writings, working papers, drafts, computer printouts, charts or any other data compilations, books of account, photographs, videotapes and audiotapes supporting documents, any other papers or preserved data in whatever form, related to the Contract or the Contractor's performance of the Contract determined necessary or desirable by the NCTA for any purpose.

   b. Proposal Records shall include, but not be limited to, the Proposer's Qualification Package, preliminary design document, any material relating to the determination or application of Equipment rates, related time schedules, labor rates, efficiency or productivity factors, arithmetic extensions, quotations from Subcontractors, or material suppliers, profit contingencies and any manuals standard in the industry that may be used by the Contractor in determining a price.

2. Pursuant to G.S. 147-64.7, NCTA, the State Auditor, appropriate Federal officials, and their respective authorized employees or Agents are authorized to examine all books, records, and accounts of the Contractor insofar as they relate to transactions with any department, board, officer, commission, institution, or other authority of the State of North Carolina pursuant to the performance of this Contract or to costs charged to this Contract. Additional audit or reporting Requirements may be required by any authority, if in NCTA's opinion, such requirement is imposed by Federal or State law or regulation. The State Auditor and internal auditors of NCTA

may audit the records of the Contractor during and after the term of the Contract to verify accounts and data affecting fees and performance.

3. NCTA reserves and is granted the right (at any time and from time to time, for any reason whatsoever) to review, audit, copy, examine and investigate in any manner, any Contract Records (as herein defined) or Qualification Package Records (as hereinafter defined) of the Contractor or any Subcontractor. By submitting a response to the RFP, Contractor or any Subcontractor submits to and agrees to comply with the provisions of this section.

4. If NCTA requests access to or review of any Contract Documents and Contractor refuses such access or review, Contractor shall be in default under its Contract with NCTA, and such refusal shall, without any other or additional actions or omissions, constitute grounds for suspension, termination or disqualification of Contractor. These provisions shall not be limited in any manner by the existence of any Contractor claims or pending litigation relating to the Contract. Disqualification or suspension of the Contractor for failure to comply with this section shall also preclude the Contractor from acting in the future as a subcontractor of another contractor doing work for NCTA during the period of disqualification or suspension. Disqualification shall mean the Contractor is not eligible for and shall be precluded from doing future work for NCTA until reinstated by NCTA.

5. Final Audit for Project Closeout: The Contractor shall permit NCTA, at NCTA'S option, to perform or have performed an audit of the records of the Contractor and any or all Subcontractors to support the compensation paid the Contractor. The audit will be performed as soon as practical after completion and Acceptance of the contracted Services. In the event funds paid to the Contractor under the Contract are subsequently determined to have been inadvertently paid by NCTA because of accounting errors or charges not in conformity with the Contract, the Contractor agrees that such amounts are due to NCTA upon demand. Final payment to the Contractor shall be adjusted for audit results

6. Contractor shall preserve all Contract Records for the entire term of the Contract and for a period of three (3) years after the later of: (i) Final Acceptance of the Project by NCTA, (ii) until all claims (if any) regarding the Contract are resolved, or (iii) expiration of the Qualification Package Records and Contract Records' status as public records.

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, including CSC Operations and/or some external interfaces related to **Section 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 technical specifications, 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 **Section 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. Interface Control Document Development and Ongoing Cooperation Requirements

   a. The Contractor shall fully cooperate with NCTA and its designated contractor(s), vendors and agencies as necessary to develop ICDs as set forth in **Section III, Scope of Work and Requirements**. The ICDs shall specify all specifications, parameters, data types, and formatting to effectively and completely interface into the back office system and sub-systems. The Contractor shall be responsible for its respective roles and responsibilities as set forth in **Section III, Scope of Work and Requirements.**

   b. In the event that the back office system and sub-system interfaces do not properly exchange data with each other as designed, and the Contractor's and the interfacing contractors' collective efforts to correct the issue(s) are untimely or unsuccessful, or the interfacing contractors fail to cooperate with the other NCTA designated and/or interfacing contractor(s) to the satisfaction of the NCTA and as determined at NCTA's sole discretion, then in addition to NCTA's other available remedies, NCTA shall have the right to, in whole or in part, withhold and/or require a refund of payments to the Contractor and/or the interfacing contractors involved in developing the ICD.

5. 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.

6.   Contractor Responsibility for Design

Upon Approval of the Back Office System and Sub-System Design by the Contractor, Contractor shall assume responsibility for the Design to the extent that if the back office system and sub-systems are installed and configured as designed and the back office system does not meet the Performance Requirements of this Contract, the Contractor shall be responsible for the costs of system redesign, system reconfiguration, additional Equipment costs, if necessary, and any other costs associated with the sub-standard performance.

1.6.   Warranties

1.6.1.   System Warranty during Maintenance 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 **Section 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 **Section 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 1.6, Warranties, shall survive the expiration, cancellation, or termination of this Agreement.

1.6.2.   Software Warranties

1. The Software needed to operate the Back Office System shall be as set forth in **Section III, Scope of Work and Requirements**. NCTA's Acceptance of the Software shall occur in accordance with the provisions of **Section 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 Back Office 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 back office 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 **Section 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 **Section III, Scope of Work and Requirements**, and

c. Accurately direct the operation of the System, as required by **Section 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 **Section III, Scope of Work and Requirements**, but in any event not later than the deadline(s) in **Section III, Scope of Work and Requirements**, Section 4 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 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. Unless necessary to address a priority level 1 defect or malfunction, or to prevent revenue loss, the Contractor shall make no enhancements to the back office system software or hardware without NCTA's prior, written authorization. Should the Contractor need to make a modification or enhancement to the back office system or software to address a priority level 1 defect or malfunction, or to prevent revenue loss, 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 **Section III, Scope of Work and Requirements**.

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

10. The Contractor shall obtain Maintenance agreements for third-party Software in accordance with **Section V, Terms and Conditions,** section 1.6.3 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 Back Office Software does not satisfy the conditions of performance set forth in **Section 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 **Section 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 1.6 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.

1.6.3.   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.

1.6.4.   Services 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 **Section 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 **Section 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 **Section V, Terms and Conditions,** Section 2.6.2 Termination for Cause.

1.6.5.   Data Accuracy

The Contractor acknowledges and understands that the data and/or information it collects, processes and/or 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.

1.6.6.   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. The Equipment and Systems the Contractor installs and places into operation will not result in any damage to existing facilities, walls or other parts of adjacent, abutting or overhead buildings, structures, surfaces, or any physical/mental damage to any individual utilizing any units(s) of Equipment.

3. All provided Equipment is new and unused.

4. Warranties provided in this Section 1.6 are in addition to warranties set forth in the General Conditions.

5. UNLESS MODIFIED BY AMENDMENT OR THE SOLICITATION DOCUMENTS, THE WARRANTIES IN THIS SECTION 1.6 ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, OR WHETHER ARISING BY COURSE OF DEALING OR PERFORMANCE, CUSTOM, USAGE IN THE TRADE OR PROFESSION OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND NO OTHER REPRESENTATIONS OR WARRANTIES HAVE FORMED THE BASIS OF THE BARGAIN HEREUNDER.

1.6.7.   Pervasive Defects

The Contractor agrees to promptly remedy, at no cost to NCTA, any defects determined by NCTA to

be Pervasive, such that 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 agrees that a "Pervasive Defect" shall be deemed to be present in such affected types of Equipment or Software. 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.

1.6.8. 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.

1.7. 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.

1.7.1. Description of License

The Contractor hereby grants to NCTA, for purposes of operating the System, an unlimited, fully-paid-up, royalty-free, perpetual, universal, irrevocable, non-exclusive 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.

1.7.2. Scope of License

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 1.7.1. Description of License 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 1.7.1. Description of License.

1.7.3. Escrow

1. Establishing the Escrow

    Upon execution of the Contract the parties shall enter into a Software escrow agreement, hereto attached, to the final Contract as an Exhibit. Prior to depositing the Software and related Documentation into escrow, the Contractor shall submit the name of the escrow agent to NCTA for its Approval. In the event that the escrow agent requires its own form of escrow agreement, the form of escrow agreement used by the escrow agent shall be subject to the prior written Approval of NCTA and if not Approved by NCTA then another escrow agent shall be selected. If the escrow agent's form of escrow agreement is Approved by NCTA, said escrow agreement shall be used.

2. Deposits

    Pursuant to the terms of the escrow agreement, the Contractor shall deposit with the escrow agent, without charge to NCTA, all Deposit Materials (as hereinafter defined) necessary or useful to: (i) use, operate, reproduce, modify, repair and maintain the Software; (ii) operate, modify, repair and Maintain the Equipment, and (iii) operate, use, modify, repair and maintain the System

in accordance with this Agreement. Access to and rights in the materials in the escrow shall be governed by the terms and conditions hereof and as further defined in the escrow agreement.

Materials so deposited ("Deposit Materials") shall include but not be limited to: all Software programs (including all source and object code with respect thereto); configuration files; ICDs; operator's and user's manuals, and other associated Documentation; reports; control files, utilities, and packages; operating Systems; data base Systems; network packages; Maintenance items (including test programs and program specifications); functional Documentation, compilers, instructions for generating the Software, and any proprietary Software tools that are necessary in order to maintain the Software and other Equipment. A list of all deposit materials shall accompany the Deposit Materials.

Contractor shall deposit a complete set of Deposit Materials upon the Acceptance of the Final System Design and Development Phase, and shall make deposit updates no less frequently than quarterly or when major Updates are made to Software pursuant to the following paragraph, whichever occurs first.

In the event the Contractor revises or supplements any of the Deposit Materials or creates additional materials related to the System, the Contractor shall deposit a complete set of such revised, supplemented, or additional Deposit Materials with the above named escrow agent within thirty (30) Calendar Days of such revision, supplement or addition and shall indicate with each deposit which documents and which pages have been revised, supplemented or added since the last deposit. Any deposits made pursuant to the two preceding sentences shall become part of the Deposit Materials.

The Contractor shall provide Notice to NCTA confirming and describing the content of any deposits made within thirty (30) Calendar Days of such deposits, certifying that all such deposits are complete and include accurate copies of the required materials.

To the extent the Software includes components developed by third-parties, the Contractor shall ensure that the Deposit Materials include copies of license agreements, computer programs, disks and Documentation for all Software obtained by the Contractor from third-parties. At the Contractor's expense, the Contractor shall ensure that all third-party licenses are transferable to NCTA at the time of any release of the escrow provided for hereunder.

3. Payment for Costs of Escrow

   The Contractor shall be responsible for payment of all costs arising in connection with the establishment and maintenance of the escrow throughout the Contract Term, including any fees of the escrow agent, and NCTA shall not be charged by the Contractor for its time in compiling and depositing Deposit Materials. The Contractor's obligation to maintain the escrow in place shall continue after the expiration or termination of the Contract Term until the Contractor receives Notice from NCTA that the escrow is no longer required.

4. Verification of Escrow Deposits

   From time to time while the escrow is in place, NCTA may, at its sole discretion, verify directly or hire a firm qualified and mutually and reasonably acceptable to both parties, to provide verification of the applicable escrow deposits at NCTA's expense, and to prepare a report. The agreement between NCTA and such firm will include non-disclosure provisions deemed appropriate by NCTA. Should any deficiencies or differences be noted between the System implemented under this Agreement and the applicable deposits delivered to the escrow agent,

NCTA shall provide Notice to the Contractor and shall provide the Contractor with a copy of the audit report. Within thirty (30) Calendar Days after its receipt of such notification and accompanying audit report, the Contractor shall deliver to the Escrow Agent for deposit the applicable Deposit Materials necessary to make the escrow deposits consistent with the System.

5. Release of Escrow Deposits

    Except as may be otherwise provided in the escrow agreement, the Deposit Materials are to remain in escrow unless or until withdrawal of such Deposit Materials is permitted pursuant to **Section V, Terms and Conditions**, Section 2, Contract Changes and Termination of this Agreement, or upon end of the Contract, whether due to termination or expiration, at which time such Deposit Materials shall be provided to NCTA subject to the limitations contained in the confidentiality provisions, and the terms of the escrow agreement, and shall be incorporated into the licenses granted to NCTA hereunder.

    In addition, effective upon any release of the Deposit Materials to NCTA, the Contractor hereby grants to NCTA and its designees a perpetual, irrevocable, universal, non-exclusive, fully-paid-up, royalty-free license to use, reproduce, adapt, modify, enhance and reverse engineer the source code form of the Software and all Deposit Materials for the purpose of supporting and maintaining the System, and for using, making, and having made derivatives of the Software and Deposit Materials in connection therewith. The license granted hereunder shall cover the full definition of Software, including components directly owned, developed or licensed by the Contractor, as well as components owned, developed or licensed by any Contractor affiliates, licensors, Contractor parties, including third-party Software suppliers.

1.8.   Authority of the Project Manager

1. For purposes of this Contract with Toll Systems Manager 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 **Section III, Scope of Work and Requirements**; and claims for damages, compensation and losses.

2. The Project Manager shall act as the designated representative of NCTA in all matters relating to the BOS Implementation.

3. The 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 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 Project Manager, including the withdrawal or modification of any previous order and regardless of whether the Contractor agrees with the 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.

1.9. Key Team Personnel

The Contractor has designated an individual Project Principal who is an officer authorized to sign the Agreement and any Amendments to the Agreement and to speak for and make commitments on behalf of the Contractor. The Contractor shall designate a Project Manager ("Contractor Project Manager"), identified in the Qualification Package, who shall act as the primary point of contact in all matters on behalf of Contractor. The Contractor Project Manager shall assign other individuals as contacts with regard to specific functional areas of the Work, subject to the Approval of NCTA. NCTA shall have input into determining who shall be assigned as Project Manager for Contractor and the Contractor may not change the Contractor Project Manager without consulting with NCTA and obtaining Approval from NCTA as set forth in the following paragraph.

The Contractor's Qualification Package identifies certain job categories as "Key Team Personnel" for the Agreement. Key Team Personnel for this BOS Implementation are identified in the Contractor's Qualification Package, and shall be Approved as part of the Project Management Plan as set forth in **Section III, Scope of Work and Requirements**. Key Team Personnel shall be required to work in the position indicated in the Qualification Package and Approved Project Management Plan, unless Approval is obtained from NCTA. The Contractor shall obtain NCTA's prior Approval to any desired changes in Key Team Personnel or any significant reduction in the level of effort for such Key Team Personnel, which consent shall not be unreasonably withheld. Should NCTA determine during the term of the Agreement that the list of Key Team Personnel does not include personnel essential to the successful performance of the Work, NCTA may require the Contractor to add any existing job category to such list.

If NCTA becomes dissatisfied with the performance of any person designated as Key Team Personnel performing under this Agreement, NCTA shall notify Contractor in writing. Within ten (10) Business Days of receipt of such Notice, the Contractor shall either propose a replacement person for evaluation and Approval by NCTA or present to NCTA a Plan for correcting the incumbent's performance deficiencies within a period of thirty (30) Calendar Days thereafter. If either NCTA rejects the Plan presented by Contractor or the incumbent's performance deficiencies are not corrected to NCTA's satisfaction within the thirty (30) Calendar Day plan period Approved by NCTA, then the Contractor shall, within ten (10) Business Days after rejection of the Plan or expiration of the thirty (30) Business Day plan period, propose to NCTA a replacement person for evaluation and Approval by NCTA.

1.10. Implementation Phases and Acceptance

1.10.1. Implementation Phases

All Short-listed Proposers shall proceed with the Preliminary System Design Procurement Phase upon notification of short-listing by NCTA. The Contractor shall proceed with the Final System Design and Development Phase upon receiving the Notice to Proceed, and progress through all of the phases as defined and required in the **Section III, Scope of Work and Requirements**.

The Contractor's Maintenance responsibilities shall begin upon Final System Acceptance, 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 **Section III, Scope of Work and Requirement**s, and does not waive any of the rights of NCTA in this regard.

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

1.10.2. Completion the of Preliminary System Design Procurement Phase

Final Completion of the Preliminary System Design Procurement Phase will be considered by NCTA to have occurred, when NCTA has:

- All items required of the Preliminary System Design Package, including: a PDD/technical proposal, an updated RTM and an updated Implementation Schedule;

- Price proposals

- Evaluated the Preliminary System Design Package for all Short-listed Proposers and documented their final evaluation;

- Opened all price proposals and completed negotiations, as necessary;

- Submitted their final recommendation of the Short-listed Proposer representing the best value to the Secretary of Transportation, or their designee; and

- The Contract has been awarded to the best value Proposer.

1.10.3. Final Acceptance of Phases

After the Preliminary System Design Procurement Phase has been completed, the Final Acceptance of each subsequent BOS Implementation Phase shall be deemed to have occurred, and payment shall be provided, when all of the following conditions have been met:

1. The Contractor shall provide a Final Acceptance letter Certification to close out each Phase. The Certifications shall include, but not be limited to: total costs associated with each Phase, date of Work completion and any–phase associated deliverables as required in **Section III, Scope of Work and Requirements**, and **Exhibit B - Payment Schedule**;

2. All Contractor claims for the Phases are deemed to be resolved by NCTA, and the Contractor has submitted a statement that no such requests or protests will be applied for; any and all claims under this Agreement are resolved, and that no such claims will be made;

3. All of Contractor's other obligations for each Phase under the Agreement shall have been satisfied in full or waived in writing by NCTA; and

4. NCTA shall have delivered to the Contractor a Notice of Final Acceptance for each Phase before payment can be issued.

1.10.4. Project Acceptance of All Phases

Project Acceptance shall mean the Final Acceptance for all BOS Implementation Phases, and shall be deemed to have occurred when all of the following conditions have been met:

1. The Contractor shall provide a Project Acceptance letter Certification to close out the Agreement. The Certification shall include the total costs associated with the Agreement, date of Work completion and any additional required information contained in item 2 through 9 below, if applicable;

2. The Acceptance of each BOS Implementation phase has been Accepted, and closed out in accordance with this agreement as documented in **Section V, Terms and Conditions**;

3. The Contractor has met all End of Contract and transition Requirements pursuant to **Section V, Terms and Conditions**, Section 2.7 End of Contract and Transition and **Section III, Scope of Work and Requirements**;

4. The Contractor has deposited all current escrow materials required under this Agreement, including all necessary Documentation and support materials;

5. The Contractor has provided NCTA with all final (e.g. as-built), required materials, equipment and software; documentation and manuals, either owned by or licensed to NCTA, pursuant to this Agreement. All such materials have been verified by NCTA to be in good, working order;

6. An Affidavit has been delivered to NCTA, signed by the Contractor, stating all debts and claims of suppliers and Subcontractors have been paid and/or settled;

7. All Contractor claims for the phase are deemed to be resolved by NCTA, and the Contractor has submitted a statement that no such requests or protests will be applied for; any and all claims under this Agreement are resolved, and that no such claims will be made;

8. All Requirements identified in **Section III, Scope of Work and Requirements** shall be verified and Certified by the Contractor to be successfully delivered, and shall be Approved by NCTA; and

9. All the Contractor's other obligations under the Agreement shall have been satisfied in full or waived by NCTA.

1.10.5. 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.

1.11. 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. **Section III, Scope of Work and Requirements**, as conformed.
3. **Section V, Terms and Conditions**, Section 3 General Terms and Conditions.
4. Contractor's Qualification Package.

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 enhance the Back Office System Software, Upgrade Equipment, enhance or otherwise improve the Back Office System.

2. Extra Work Orders – The NCTA anticipates issuing Extra Work Orders to address variances in the specifications or **Section III, Scope of Work and Requirements** beyond that of the Approved FSDD 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 Maintenance Services for the system 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 BOS 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 Technical 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 Back Office System. 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 functionality, Hardware or Software 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 in Hardware platforms or operating Systems beyond changes covered in Upgrades or Maintenance Task Orders;

2. Changes to insurance or legal requirements

2.4. Maintenance Task Orders

1. A Task Order will be a change in design or work needed to maintain operation of the NCTA BOS after Acceptance of the original System by the NCTA. Examples of this type of work include:

    a. Software modifications and upgrades to improve reliability, diagnostics, data exchange interfaces, or other tasks directly related to toll collection.

b. Hardware upgrades to provide better data storage and handling, such as replaced, improved or expanded hard drives, routers, etc., or prototype new equipment to test system modifications. This does not include updates or upgrades required to meet required system or transaction growth or modifications currently included in the scope of work and requirements.

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 following the Preliminary System Design Procurement Phase, the Contractor shall update the schedule they submitted with their Qualifications Package, and submit an updated schedule 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 monthly 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 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, as required in **Section 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 the complete design, development, testing, implementation, training and maintenance of the BOS. 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 BOS will terminate at the end of the Contract Term(s) set forth above, inclusive of any Operations and Maintenance and or extension periods as noted in **Section V, Terms and Conditions**, Section 1.2 Term of Contract.

2. The 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 **Section V, Terms and Conditions**, Section 2.7 End of Contract and Transition.

2.6.2. Termination for Cause

1. In the event any System Software, Hardware Software, or 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, the 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 process transactions, secure data and/or function 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 Software/Equipment proves incapable of meeting the functional and/or Performance Requirements set forth in **Section 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 the performance metric or metrics as defined in **Section 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

1.   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 **Section III, Scope of Work and Requirements**, but without separate compensation.

2.7. End of Contract and Transition

The Contractor acknowledges that the Services it provides under the terms of the Contract are vital to the successful operation of the System 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 **Section 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 the BOS 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 the State, 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 Vendor 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

1. Any Deliverables shall meet all applicable State and Federal requirements, such as State or Federal Regulation, and NC Chief Information Officer's (CIO) policy or regulation. The Contractor will provide and maintain a Quality Assurance system or program that includes any Deliverables and will tender or provide to the State 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 requirements as required.

    a. Site Preparation: The Contractor shall provide NCTA complete site requirement specifications for the Deliverables, if any. These specifications shall ensure that the Deliverables to be installed shall operate properly and efficiently within the site environment. The Contractor shall advise NCTA of any site requirements for any Deliverables required by NCTA's specifications. Any alterations or modification in site preparation which are directly attributable to incomplete or erroneous specifications provided by the Contractor and which would involve additional expenses to NCTA, shall be made at the expense of the Contractor.

    b. Specifications: The apparent silence of the specifications as to any detail, or the apparent omission of detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and only material and workmanship of the first

quality may be used. Upon any Notice of noncompliance issued by NCTA, Contractor shall supply proof of compliance with the specifications within ten (10) Calendar Days. Contractor shall provide written Notice of its intent to deliver alternate or substitute products, goods or Deliverables. Alternate or substitute products, goods or Deliverables may be accepted or rejected at the sole discretion of NCTA; and any such alternates or substitutes shall be accompanied by Contractor's Certification and evidence satisfactory to NCTA that the function, characteristics, performance and endurance will be equal or superior to the original Deliverables specified. All alternates or substitutes are subject to Approval by NCTA.

3.2. Acceptance Criteria

1. 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 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.

3.4. Subcontracting

1. 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.

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. 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 3.6.1 shall apply.

3.6.1. 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, as used herein, shall comprise all project materials, including goods, software licenses, data, and documentation created during the performance or provision of services hereunder. 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. Work Product 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 Work Product, 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 Work Product, 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 Work Product.

   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 Work Product. 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 Work Product, 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 Work Product 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 patty 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.

3.6.2.   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.

3.6.3.   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.

3.6.4.   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.

3.7.   Other General Provisions

3.7.1.   Governmental Restrictions

1.   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.

3.7.2.   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.

3.7.3.   Equal Employment Opportunity

1. 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.

3.7.4.   Inspection at Contractor's Site

1. 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.

3.7.5.   Advertising / Press Release

1. 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.

3.7.6.   Confidentiality

1. 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.

3.7.7.   Deliverables

1. 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. Hardware, Custom Software first requested and developed for the State and other 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 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.

3.7.8.   Late Delivery, Back Order

1. 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.

3.7.9.   Assignment

1. 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.

3.7.10. Insurance Coverage

1. 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 **Section I, Administrative**, Section 5.2, Insurance Requirements.

3.7.11. Dispute Resolution

1. 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.

3.7.12. 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 ten (10) Business Days, or Contractor fails to meet the requirements of paragraph 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. NCTA allows for ten (10) Business Days to rectify a problem and thirty (30) Calendar Days to cure a termination.

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 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.

6. If the prescribed acceptance testing stated in the RFP or performed pursuant to paragraph 3.2 herein, is not completed successfully, NCTA may request substitute Software, cancel the portion of the Contract that relates to the unaccepted Software, or continue the acceptance testing with or without the assistance of Contractor. These options shall remain in effect until such time as the testing is successful or the expiration of any time specified for completion of the testing. If the testing is not completed after exercise of any of the State's options, the State may cancel any portion of the contract related to the failed Software and take action to procure substitute software. If the failed software (or the substituted software) is an integral and critical part of the proper completion of the work for which the Deliverables identified in the solicitation documents or statement of work were acquired, NCTA may terminate the entire Contract.

3.7.13. Waiver of Default

1. Waiver by either party of any default or breach by the other Party shall not be deemed a waiver or 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.

3.7.14. Limitation of Contractor's Liability

1. Where Deliverables 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.

3.7.15. 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.

3.7.16. 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.

3.7.17. Changes

1.   This Contract is awarded subject to shipment of quantities, qualities, and prices indicated in the Contract, and all conditions and instructions of the Contract or Qualification Package on which it is based. Any changes made to this Contract or purchase order proposed by the Contractor are hereby rejected unless accepted in writing by NCTA. NCTA shall not be responsible for Deliverables or Services delivered other than those specified in the Contract or the Qualification Package on which it is based.

3.7.18. Time is of the Essence

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

3.7.19. Date and Time Warranty

1.   The Contractor warrants that any Deliverable, whether Hardware, firmware, middleware, custom or commercial Software, or internal components, subroutines, and interface therein which performs any date and/or time data recognition function, calculation, or sequencing, will provide accurate date/time data and leap year calculations. This warranty shall survive termination or expiration of the Contract.

3.7.20. Independent Contractors

1.   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.

3.7.21. Transportation

1.   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.

3.7.22. Notices

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

3.7.23. Titles and Headings

1.   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.

3.7.24. Amendment

1. 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.

3.7.25. Taxes

1. 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.

3.7.26. 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.

3.7.27. Force Majeure

1. 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.

3.7.28. Compliance with Laws

1. 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.

3.7.29. Severability

1. 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.

3.7.30. Federal Intellectual Property Bankruptcy Protection Act

1. 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.

3.7.31. Iran Divestment Act Certification

1. In compliance with the requirements of the Iran Divestment Act and G.S. §147-86.60 et seq., Contractor shall not utilize in the performance of the Contract any Subcontractor that is identified on the Final Divestment List. The Final Divestment List can be found on the State Treasurer's website at the address: https://www.nctreasurer.com/inside-the-department/OpenGovernment/Pages/Iran-Divestment-Act-Resources.aspx

3.7.32. Availability of Funds

1. 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.

3.7.33. E-Verify

1. 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.