Attachment 1

Definitions

Definitions from Agreement

The following lists the capitalized terms that are used in this Tolling Services Agreement and defined in the Agreement:

Affiliate
CDA Documents
Contractor
Customer Groups
Day or day
Developer's Interest
Directive Letter
Electronic Toll Collection System, or ETCS
Exempt Vehicles
Force Majeure Event
Functional Availability
Good Industry Practice
Incidental Charges
Laws
Lender
LIBOR
New Agreements
Person
Project
Project Segment
Project Trust Agreement
Service Commencement
Service Commencement Date
Special Vehicles
Substantial Completion
Substituted Entity
Target
Technical Documents
Technical Provisions
Termination for Convenience
Toll Revenue
Toll Revenue Account
User
User Classification
VES
Video Transaction User

Additional Definitions:

Agreement means the certain Comprehensive Development Agreement dated September 4, 2009 between Developer and TxDOT concerning the Project.

Authorized Representative means the individuals authorized to make decisions and bind the Parties on matters relating to this Tolling Services Agreement pursuant to Section 26. Where the term is used with reference to TxDOT, it has the meaning set forth in the Agreement.

Average Monthly NTTA Compensation means (i) after this Tolling Services Agreement has been in effect for a period of at least 12 full calendar months following the Service Commencement Date for the final Project Segment to be developed as part of the Project pursuant to the Agreement, one twelfth (1/12) of the total NTTA Compensation for the 12 full calendar months immediately preceding the termination of this Tolling Services Agreement requiring a determination of the Average Monthly NTTA Compensation or (ii) prior to such time as this Tolling Services Agreement has been in effect for 12 full calendar months following the Service Commencement Date for the final Project Segment to be developed as part of the Project pursuant to the Agreement, the monthly average of the NTTA Compensation for the number of full calendar months during which this Tolling Services Agreement has been in effect following the Service Commencement Date for the Project Segment most recently developed prior to the termination of this Tolling Services Agreement requiring a determination of the Average Monthly NTTA Compensation.

Average Monthly NTTA Cost of Services means (i) after this Tolling Services Agreement has been in effect for a period of at least 12 full calendar months following the Service Commencement Date for the final Project Segment to be developed as part of the Project pursuant to the Agreement, one twelfth (1/12) of NTTA's total cost of providing services hereunder for the 12 full calendar months immediately preceding the termination of this Tolling Services Agreement requiring a determination of the Average Monthly NTTA Cost of Services or (ii) prior to such time as this Tolling Services Agreement has been in effect for 12 full calendar months following the Service Commencement Date for the final Project Segment to be developed as part of the Project pursuant to the Agreement, the monthly average of NTTA's total cost of providing services hereunder for the number of full calendar months during which this Tolling Services Agreement has been in effect following the Service Commencement Date for the Project Segment most recently developed prior to the termination of this Tolling Services Agreement requiring a determination of the Average Monthly NTTA Cost of Services. NTTA's total cost of providing services used for purposes of determining the Average Monthly NTTA Cost of Services shall not include any costs that otherwise would be included in the total cost of providing services hereunder that have actually been recovered by NTTA through the collection of Incidental Charges.

Base Transaction Fee has the meaning set forth in Section 6(b).

Business Continuity Plan has the meaning set forth in Section 4(a)(viii).

Business Day means a day on which NTTA is officially open for business.

Candidate Vehicle means a vehicle for which Developer transmits one of the following to NTTA's CSC Host:

(a) A valid Transponder Transaction; or

(b) (i) a Video Transaction with an unobstructed readable video image of a license plate that bears a serialized or personalized plate number and means to identify the issuing jurisdiction, which in the case of a vehicle with a trailer (including a truck with a trailer) must be the front license plate, and (ii) video data as required by the ICD.

For this purpose, a "readable video image" means an image produced by the VES and transmitted to NTTA's CSC Host in which both plate number and issuing jurisdiction can be reliably read electronically or by the human eye.

Change Directive means a written direction signed by Developer directing a change in the services that complies with the requirements of Section 17(a).

Change Order means a written order issued by Developer to NTTA delineating changes in services or in technical terms and conditions (including changes in the standards) applicable to the services in accordance with Section 17 and establishing, if appropriate, an adjustment to NTTA's compensation in accordance with Section 17.

Consolidated Master List has the meaning set forth in Section 12(d).

Delinquent Payment Deduction has the meaning set forth in Section 6(d).

Developer means LBJ Infrastructure Group LLC, a Delaware limited liability company.

Developer-NTTA Regular Meeting has the meaning set forth in Section 4(k).

Duplicate Transaction means any circumstances resulting in more than one Transaction generated from the same vehicle within two minutes at the same general location (e.g., same or adjacent lane).

Emergency Mode means the period and circumstances when tolls are suspended on the Project or a portion of the Project in accordance with Section 3.6 of the Agreement.

Incidental Charges means:

(a) Reasonable amounts for the purchase or rental of transponders or other electronic toll devices;

(b) Reasonable, refundable security deposits for the distribution of transponders or other electronic toll devices;

(c) Reasonable administrative fees for account maintenance and account statements;

(d) Reasonable fees, penalties and interest for toll violations, including costs of collection;

(e) Amounts, with respect to Video Transactions, reasonably necessary for NTTA to recover (i) its reasonable out-of-pocket costs and expenses and (ii) a reasonable amount to reflect its collection risk.

(f) Other reasonable fees and charges for customary incidental services to Users for whom NTTA manages electronic tolling accounts (on the same basis as uniformly charged with respect to NTTA's own facilities).

Without limiting the requirements in the preceding provisions of this definition to charge reasonable fees, charges, penalties, interest or other amounts, NTTA shall determine and assess Incidental Charges under this Tolling Services Agreement consistent with its practices in respect of its own facilities.

Independent Engineer has the meaning set forth in Section 30.

Independent Engineer Agreement has the meaning set forth in Section 30.

Intellectual Property Rights means all intellectual property rights throughout the world, including all copyrights, copyright registrations and applications, patent rights, know-how, trade secrets, author's rights, algorithms, computer software and other intellectual property rights, as may exist now or hereafter come into existence, and all renewals and extensions thereof.

Interface Control Document or **ICD** means the document attached as Attachment 3 to this Tolling Services Agreement setting forth interface standards for NTTA's CSC Host and the ETCS, including the manner in which data shall be transmitted and received between NTTA's CSC Host and the ETCS, as such document may be revised or updated by NTTA from time to time.

Interoperability Functions means electronic funds transfer and clearing functions and capabilities established and operated by NTTA to enable the settlement and payment to the trustee under the Project Trust Agreement of electronic toll charges for Transponder Transactions on the Project by vehicles equipped with transponders issued by Toll Operators and Transponder Issuers other than NTTA.

Interoperable Transactions means Transactions involving Toll Operators other than NTTA; except that if NTTA's provision of services under this Tolling Services Agreement has been suspended or terminated, whether due to the Developer's exercise of step-in rights under Section 19 or for any other reason, **"Interoperable Transactions"** means Transactions involving Toll Operators other than an entity that is providing tolling services under this Tolling Services Agreement at the time of such a Transaction.

Interoperable Transponder Transactions means Transponder Transactions involving transponders of Transponder Issuers other than NTTA; except that if NTTA's provision of services under this Tolling Services Agreement has been suspended or terminated, whether due to the Developer's exercise of step-in rights under Section 19 or for any other reason, **"Interoperable Transponder Transactions"** means Transponder Transactions involving transponders of Transponder Issuers other than an entity that is

providing tolling services under this Tolling Services Agreement at the time of such a Transaction.

New TSA has the meaning set forth in Section 23(e).

Non-Compliance Deduction has the meaning set forth in Section 6(e).

Non-Compliance Points has the meaning set forth in Section 6(e) and Attachment 2 to this Tolling Services Agreement.

NTTA means the North Texas Tollway Authority.

NTTA Compensation has the meaning set forth in Section 6(a).

NTTA Prospective Compensation Damages Limit means the greater of the following:

(a) the amount determined by subtracting (x) the Average Monthly NTTA Cost of Services from (y) the Average Monthly NTTA Compensation and multiplying the difference by 60; or

(b) the amount determined by multiplying (x) the Average Monthly NTTA Compensation by (y) ten percent (10%) and then multiplying the product so obtained by 60.

NTTA's CSC Host means the central computer system of NTTA that supports customer service center account management functions for toll road facilities owned by NTTA.

Open Book Basis means allowing each Party to review all underlying assumptions and data of the other Party associated with pricing or compensation (whether of Developer or NTTA) or adjustments thereto, including assumptions and data as to marginal costs or other applicable costs, composition of equipment spreads, equipment rates, labor rates, productivity, estimating factors, design and productivity allowance, contingency and indirect costs, risk pricing, discount rates, interest rates, inflation and deflation rates, traffic volumes by User Classification, Toll Revenues, changes in toll rates, and other items reasonably required to satisfy the Party as to the reasonableness of the amount.

Party means Developer or NTTA, as the context may require, and "**Parties**" means Developer and NTTA, collectively.

Patron Confidential Information has the meaning set forth in Section 4(n)(i).

Payment Period means each calendar month during the Term of this Tolling Services Agreement from and after the Service Commencement Date, which shall include (if the Service Commencement Date occurs on a date other than the first day of a calendar month), the partial calendar month from and after the Service Commencement Date and which also shall include any partial calendar month at the end of the Term.

Performance Standards means the requirements, measures and standards for NTTA's performance set forth in Attachment 2 to this Tolling Services Agreement.

Permitted Person for purposes of Section 30 of this Tolling Services Agreement means (i) the partners, members, shareholders, directors, managers, officers and employees of the Parties who have a reasonable need to know the related information, (ii) accountants, attorneys, consultants and other professionals rendering services in connection with the Project or this Tolling Services Agreement and (iii) lenders and potential lenders to the Project or to the applicable Party.

Replacement Provider Compensation Damages Limit means in the case of any termination or step-in (by Developer due to a default by NTTA), the difference in the compensation payable to such replacement service provider and the compensation that would have been payable to NTTA hereunder for five years, utilizing in each instance regular rates of compensation of such replacement service provider.

Service Period means (a) the ten-year period beginning on the Service Commencement Date for the Project (or the initial Project Segment, if Developer develops the Project in Project Segments) and ending on the day before the tenth anniversary of such Service Commencement Date, and (b) beginning on the tenth anniversary of such Service Commencement Date, each successive five-year period thereafter.

Service Year shall mean each twelve (12) month period during the Term commencing on the Service Commencement Date for the Project (or the initial Project Segment, if Developer develops the Project in Project Segments) or an anniversary thereof and ending on (but including) the day before the next succeeding anniversary of such Service Commencement Date.

Statewide Confidentiality Protocols has the meaning set forth in Section 4(n)(ii).

Term has the meaning set forth in Section 3(a).

Tolling Services Agreement means this Tolling Services Agreement between NTTA and Developer.

Toll Operator means any Person, including NTTA and Developer, who or which (a) manages and operates a tolled roadway in the State of Texas and (b) participates with NTTA in interoperability protocols, agreements and arrangements.

Toll Operator Dispute Account means the trust account by that name established or to be established under the Project Trust Agreement.

Transaction means either a Transponder Transaction or a Video Transaction; and **Transactions** means all Transponder Transactions and Video Transactions.

Transponder Issuer means any Person, including NTTA and Developer, who or which (a) issues transponders for mounting in vehicles and transacting Transponder Transactions on any tolled roadway in the State of Texas and (b) participates with NTTA in interoperability protocols, agreements and arrangements.

Transponder Transaction means each electronic record of a toll, which may include video images and video data that together constitute one toll payable from a customer,

that are properly transmitted to NTTA's CSC Host in accordance with the ICD and Section 9 (including where the transmission is not received due to problems, downtime or other malfunction of NTTA's CSC Host) respecting a vehicle that (a) passes through a toll lane on the Project, (b) is equipped with a transponder issued by a Transponder Issuer, and (c) has a sufficient account balance at the time of posting or re-posting to pay in full the applicable toll rate.

TxDOT means the Texas Department of Transportation.

Unpostable Transponder Transaction means a Transponder Transaction that cannot be posted to an NTTA customer account due to reasons other than malfunctions of NTTA's CSC Host.

Variable Transaction Fee has the meaning set forth in Section 6(c).

Video Transaction means each electronic record of a toll and set of contemporaneous video images of license plates and other video data (as required by the ICD) that are properly transmitted to NTTA's CSC Host in accordance with the ICD (including where the transmission is not received due to problems, downtime or other malfunction of NTTA's CSC Host) respecting (a) a Candidate Vehicle under subsection (b) of the definition of Candidate Vehicle that passes through a toll lane on the Project or (b) a vehicle that passes through a toll lane on the Project and is equipped with a transponder that is (i) issued by a Transponder Issuer and (ii) associated with an account not closed at the time of transmission but having an insufficient account balance at the times of debit and re-debits to pay in full the applicable Transponder Transaction toll rate.

Attachment 2

Performance Standards and Non-Compliance Points

Performance Standard	Std.	Points
1. Non-Compliance Deduction Related Non-Compliance Points		
1. Less than 5% of walk in customers at the "store front" kept waiting for greater than ten minutes before being seen by NTTA staff, as demonstrated by statistically reliable random sampling each month.	<5% greater than 10 mins.	4
2. Call Efficiency – 80/20 service level with 80% of calls to be answered within 20 seconds.	80% in 20 seconds	3
3. Customer service requests via NTTA's Online CSC will be responded to within 2 business days.	within 2 business days	3
4. 95% of customer service requests via email, facsimile, and postal mail will be responded to within 2 business days.	within 2 business days	2
5. Customer Service Hours – operating sales office with walk in customer service manned in-person 7 AM to 7 PM, Monday through Friday local time and 9 AM to 1 PM Saturday local time, excluding NTTA-observed holidays		1
6. Customer Service Hours – manned telephone coverage 7 AM to 7 PM, Monday through Friday local time and 9 AM to 1 PM Saturday local time, excluding NTTA-observed holidays, and 24 hour availability of IVR system. Faults to telephone line and/or IVR rectified as soon as possible but no later than within 24 hours, with the possible exception of faults outside of scheduled maintenance and failures due to non-NTTA equipment or failures outside NTTA's control.	within 24 hours	1
7. 24X7 availability of secure customer access through NTTA Online CSC (in English and Spanish) for account maintenance purposes (including opening an account, changing information on an account, viewing account status and statements, and replenishing an account balance, etc.). Faults that result in NTTA Online CSC being unavailable (outside of scheduled maintenance and failures due to non-NTTA equipment or failures outside NTTA's control) rectified as soon as possible but no later than within 24 hours.	within 24 hours	3
8. 24X7 availability to receive email. Faults to email availability rectified as soon as possible but no later than within 24 hours. Exceptions include faults outside of scheduled maintenance and failures due to non-NTTA equipment or failures outside NTTA's control.	within 24 hours	1
9. 24X7 availability to receive facsimile. Faults to facsimile availability rectified as soon as possible but no later than within 24 hours. Exceptions include faults outside of scheduled maintenance and failures due to non-NTTA equipment or failures outside NTTA's control.	within 24 hours	1
10. Call abandon rate less than or equal to 4%.	< or = 4%	2
11. 96% of escalations received via the Service Recovery Process receive a response within one Business Day.	96%	2
12. 96% of Customer Service Specialists will have at least two customer interactions monitored each month.	96%	3
13. The NTTA Customer Service Center shall maintain a 90% or higher quality monitoring rating each month, based on evaluations using the quality monitoring form appended to this Attachment 2 as Appendix A.	>90%	3
14. NTTA CSC Host Availability - NTTA CSC Host shall be available to receive information from Developer on a 24X7 basis (excluding scheduled maintenance and failures due to non-NTTA equipment or failures outside NTTA's control). Any fault that results in NTTA CSC Host being unavailable (outside of scheduled maintenance and failures due to non-NTTA equipment or failures outside NTTA's control) rectified as soon as possible but no later than within 24 hours.	24 hours	4
15. Reconciled monthly financial reports under **Section 14(a)** shall be available by the 15th day of the month following the month being reported upon.	15 days	4
16. Monthly Delinquent Payment Deduction report under **Section 14(d)** shall be available by the 15th day of the month following the month being reported upon.	15 days	4

17. Monthly Non-Compliance Deduction report under **Section 14(e)** shall be available by the 15th day of the month following the month being reported upon.	15 days	4
18. Determine and document disposition of 98% of customer disputes within five Business Days after notice of dispute received by telephone, by email, by written correspondence or in person. Rejection or request for further information due to insufficient information from customer constitutes a determination and disposition.	Within 5 business days	3
19. For customer disputes determined to require a refund of an overcharge, issue 99% of customer refunds (and mail if appropriate) within five Business Days after resolution of dispute.	Within 5 business days	3
20. For any customer correspondence requiring a written response, including requests for written receipts, 98% are provided a written response within three Business Days	Within 3 business days	2
21. Where relevant and to the extent not already included in NTTA reports to the Developer, provide Developer with reports as discussed under Sections 14(f) and 14(h).	N/A	5
22. NTTA shall deliver to Developer such other information as Developer or any Lender may reasonably request (and that is reasonably available to NTTA within the time frame for delivery contemplated for this Performance Standard) to operate the Project and to evaluate NTTA's compliance with and performance of this Tolling Services Agreement.	Within 3 business days	1
23. NTTA will not charge a User more than once for a single transaction submitted to the NTTA by the Developer.	100%	3
24. NTTA will not charge a toll different than that identified by the Developer.	100%	3

Appendix A to Attachment 2

Quality Monitoring Forms

(Refer to Item 13 of Attachment 2)

Call Quality

Opening	Yes	No	N/A
Greets customers and thanks them for calling	☐	☐	☐
Branded the call NTTA	☐	☐	☐
Provided their name and department name	☐	☐	☐
Obtains/Verifies necessary customer information for call type	☐	☐	☐
Category Comment:	☐		

Customer Account Information	Yes	No	N/A
Verify/Update account address	☐	☐	☐
Verify/Update account e-mail address	☐	☐	☐
Verify/Update account phone number	☐	☐	☐
Verify/Update account vehicle information	☐	☐	☐
Category Comment:	☐		

Analytical Skills	Yes	No	N/A
Asks probing/clarifying questions * (Forfeit)	☐	☐	☐
Actively listens * (Forfeit)	☐	☐	☐
Category Comment:	☐		

Resolution	Yes	No	N/A
Provides best option(s) for resolution	☐	☐	☐
Utilized available tools	☐	☐	☐
Accurately noted account and made appropriate changes/updates	☐	☐	☐
Educates customer	☐	☐	☐
Category Comment:	☐		

Call Handle Procedures	Yes	No	N/A
Follows hold proper steps (i.e. - asks for permission, thanks for holding)	☐	☐	☐
Follows proper transfer steps (i.e. - explains transfer process/follows hold procedure/debriefs person receiving transfer/Thanks Customer)	☐	☐	☐
Category Comment:	☐		

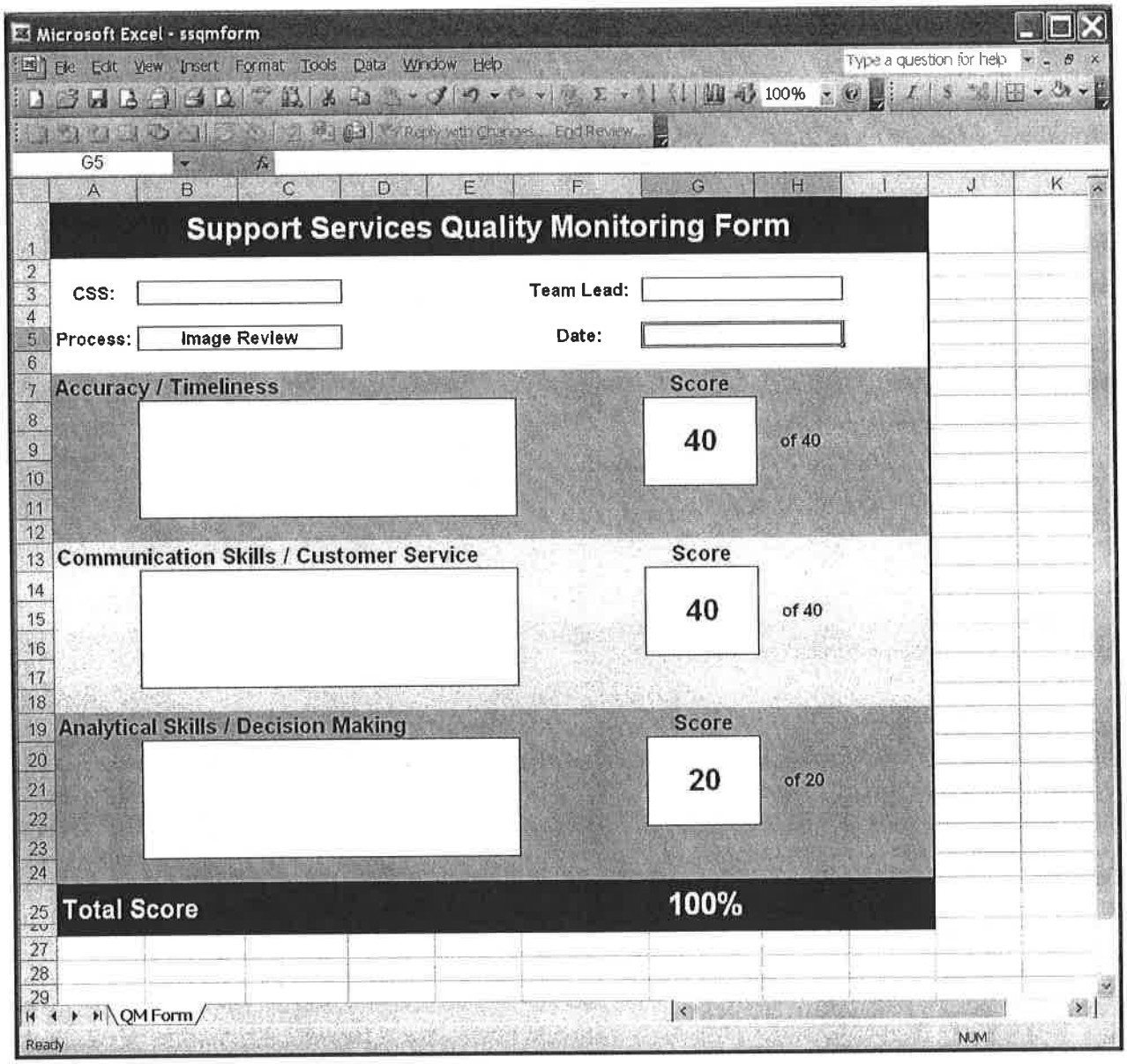
Professionalism	Yes	No	N/A
Courteous, professional tone	☐	☐	☐
Speaks clearly	☐	☐	☐
Uses customer name or Sir/Madam	☐	☐	☐
Provides clear, concise information	☐	☐	☐
Avoids use of technical/internal jargon	☐	☐	☐
Manages dead air time	☐	☐	☐
Avoids interrupting customer	☐	☐	☐
Conveys appropriate empathy	☐	☐	☐
Defuses customer anger	☐	☐	☐
Category Comment:	☐		

Closing	Yes	No	N/A
Summarizes call and actions taken	☐	☐	☐
Offers additional assistance and mentioned website option	☐	☐	☐
Expressed appreciation - Thank You	☐	☐	☐
Asked - Is there anything else I can help you with?	☐	☐	☐
Branded the closing - NTTA	☐	☐	☐
Category Comment:			

Section Comment:	☐

Summary

Rating:	☐
Comments:	☐



Attachment 2

Quality Evaluation Form – NTTA

(Customer Center)

CSS Name: _____ Date: _____

Observer: _____ Time: _____

1.0 INTRODUCTION	(Total Possible = 20) Score	Notes
1.1 Properly greeted customer	☐ Yes = 10, ☐ No = 0	
1.2 Offered assistance	☐ Yes = 10, ☐ No = 0	
2.0 REASON FOR VISIT	**(Total Possible = 20) Score**	**Notes**
2.1 Restated customer issue for clarification	☐ Yes = 5, ☐ No = 0, ☐ NA = 5	
2.2 Asked fact-finding questions to obtain necessary information	☐ Yes = 5, ☐ No = 0, ☐ NA = 5	
2.3 Validated customer information	☐ Yes = 5, ☐ No = 0, ☐ NA = 5	
2.4 Responses indicated understanding of issue	☐ Yes = 5, ☐ No = 0, ☐ NA = 5	
3.0 RESOLUTION	**(Total Possible = 20) Score**	**Notes**
3.1 Utilized available tools	☐ Yes = 4, ☐ No = 0, ☐ NA = 4	
3.2 Provided best options for resolution	☐ Yes = 4, ☐ No = 0, ☐ NA = 4	
3.3 Provided accurate and complete explanations	☐ Yes = 4, ☐ No = 0, ☐ NA = 4	
3.4 Verified customer understanding of information and/or explanation provided	☐ Yes = 4, ☐ No = 0, ☐ NA = 4	
3.5 Accurately noted account and made appropriate changes/updates	☐ Yes = 4, ☐ No = 0, ☐ NA = 4	
4.0 CLOSING	**(Total Possible = 20) Score**	**Notes**
4.1 Mentioned website option	☐ Yes = 5, ☐ No = 0	
4.2 Asked, "Is there anything else I can help you with?"	☐ Yes = 10, ☐ No = 0	
4.3 Expressed appreciation "Thank You"	☐ Yes = 5, ☐ No = 0	
5.0 CUSTOMER EXPERIENCE	**(Total Possible = 20) Score**	**Notes**
5.1 Managed customer effectively	☐ Yes = 4, ☐ No = 0	
5.2 Consistently acknowledged customer	☐ Yes = 2, ☐ No = 0	
5.3 Empathized by sincerely acknowledging customer emotion	☐ Yes = 2, ☐ No = 0, ☐ NA = 2	
5.4 Used effective listening skills, did not interrupt	☐ Yes = 2, ☐ No = 0	
5.5 Apologized when appropriate	☐ Yes = 2, ☐ No = 0, ☐ NA = 2	
5.6 Clearly articulated words	☐ Yes = 2, ☐ No = 0	
5.7 Built rapport using winning words	☐ Yes = 2, ☐ No = 0	
5.8 Maintained professional tone and temper	☐ Yes = 4, ☐ No = 0	
6.0 BONUS		
☐ Managed / Handled objections	☐ Yes = 2, ☐ No = 0	
☐ Recovered customer in difficult situations	☐ Yes = 2, ☐ No = 0	
☐ Prevented escalation	☐ Yes = 2, ☐ No = 0	
TOTAL SCORE: _____	Comments:	

Attachment 3

Interface Control Document

Customer Service Center (CSC) / Toll Management System (TMS)

Interface Control Document

Version 1.1
November 2007

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1. Document Revision History

Version	Date	Summary of Revisions
1.0	10/13/2006	Created for Toll Services Agreement
1.1	11/2007	Added fields required for IH 635

2. Document Acronyms and Definitions

Table 1 Document Acronyms and Definitions

Acronym	Acronym definition
ACK	Acknowledgement
CSC	Customer Service Center
CTRMA	Central Texas Regional Mobility Authority
CTTP	Central Texas Turnpike Project
DSP	Disposition
ETC	Electronic Toll Collection
FTP	File Transfer Protocol
I-Toll	Place holder
ICD	Interface Control Document
NAK	Not Acknowledged
NTTA	North Texas Tollway Authority
OCR	Optical Character Recognition
RMA	Regional Mobility Authority
TMS	Toll Management System
TPL8	Tag / Plate Association Data File
TTA	Texas Turnpike Authority - A division of the Texas Department of Transportation
TVL	Tag Validation List
TxDOT	Texas Department of Transportation
TXN	Transaction
V-Toll	A violation transaction associated with a customer's transponder due to the transponder, which is in good standing, being misread in a toll lane. These transactions are posted to the customer's account at the ETC toll rate without any violation fees in the CSC.
VIOS	Violations
VPC	Violation Processing Center

1. Introduction – Subsystem Interface Controls

This document is the Interface Control Document (ICD) that defines the interface between a Toll Management System (TMS) Host and the Customer Service Center (CSC) system interfaces.

Note: The CSC includes the Violation Processing Center (VPC) functionality. This document does NOT cover the Interoperability file exchange.

The Developer shall provide transactions containing image quality (OCR confidence) for both the license plate and state, the image reference, license plate, the cross-referenced TollTag, HOV/SOV designation, Transponder Transaction toll amount due, Video Transaction Toll amount dues and necessary data for the NTTA to pursue Transponder Transactions and Video Toll Transactions.

This document is considered draft, but is intended to contain the data elements required for Transponder Transaction and Video Toll Transaction processing by the NTTA.

This document will be finalized by the NTTA based on the tolling scheme and final decisions made by TxDOT, NTTA and the Developer.

3.1 Purpose

This ICD documents the subsystem interface requirements for subscribing authorities and agencies developing an interface to the CSC back office systems.

The ICD describes the requirements for transactions, commands and data elements used to implement the interfaces of the data transfers between a Toll Management System (TMS) Host and the CSC.

3.2 Referenced Documents

The following documents, of the exact issue stated, form a part of these design criteria to the extent stated by reference within this document.

3.2.1 Customer Documents

None at this time.

3.2.2 Vendor Documents

None at this time.

2. TMS Host – to/from - CSC Interface

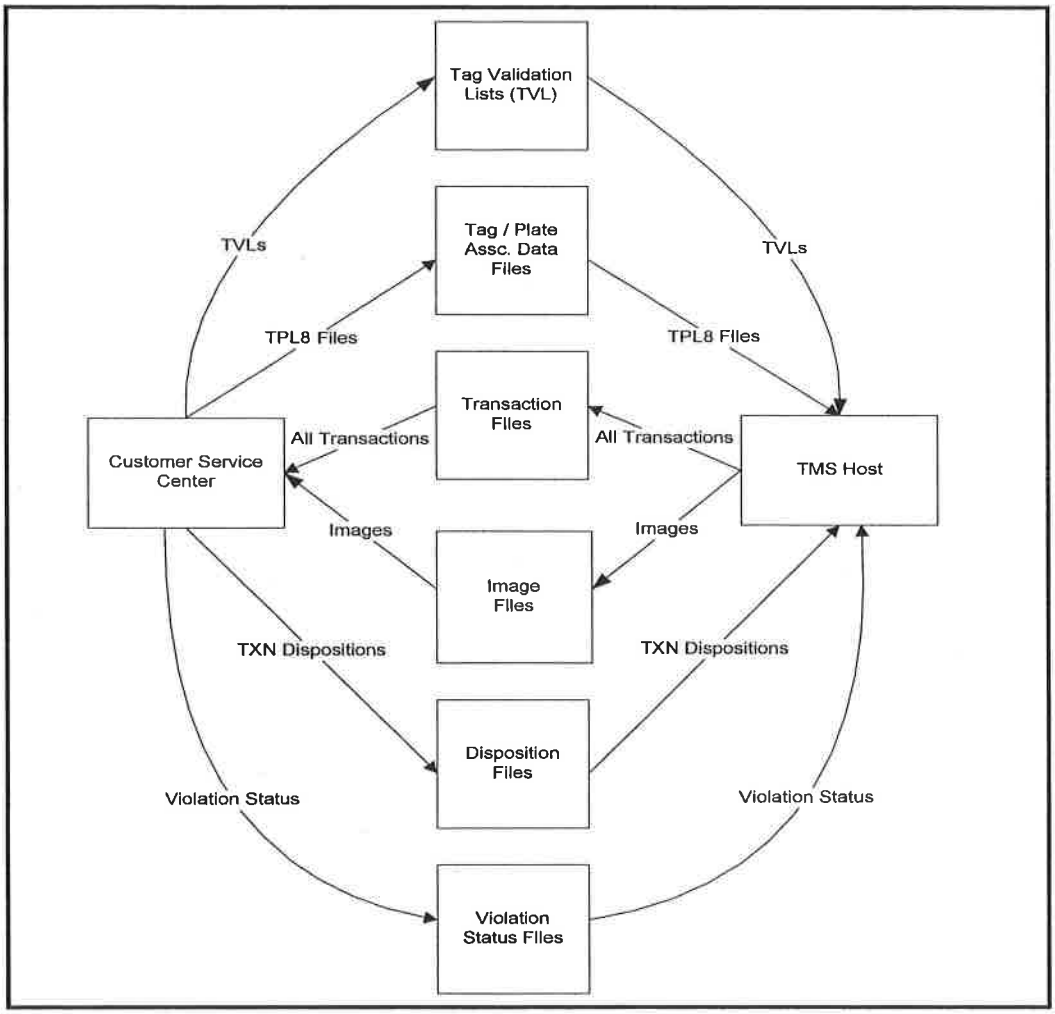
The TMS Host – to/from – CSC Interface consists of the following file transfers:

Note: All files exchanged between the CSC and a TMS Host shall be accomplished using File Transfer Protocol (FTP). All FTP servers must be password protected, and usernames and passwords will be shared at a mutually agreed time between the subscriber / Developer and the CSC operator.

1. Tag Validation List (TVL) File (Pushed from CSC to the TMS Host)
2. Tag / Plate Association Data File (Pushed from the CSC to the TMS Host)
3. Transaction Files (Pushed from the TMS Host to the CSC)
4. Image Files (Pulled from the TMS Host by the CSC)

   Note: Image files shall be pulled from the TMS Host FTP Server as needed.

5. Disposition Files (Pushed from the CSC to the TMS Host)
6. Violation Status Files (Pushed from the TMS Host to the CSC)
7. Acknowledgement Files



4.1.1 CSC / TMS Host File Transfer Locations

The CSC and TMS Host shall use the following locations on their respective FTP Servers to push, pull and archive files required by the CSC / TMS Host Interface.

Note: The TMS Host should constantly monitor its FTP site for file transfers provided by the CSC. Likewise, the CSC should constantly monitor its FTP site for file transfers from the TMS Host.

4.1.1.1 Tag Validation List File Transfers – FTP Server File Location

The CSC creates Tag Validation List Files and transmits them to the TMS Host for processing.

The structure of the file system on the TMS Host FTP Server for delivery of the Tag Validation List Files shall be as follows:

```
ftp://(TMS FTP Server)/(FTP TVL dir)/(Authority)/input
ftp://(TMS FTP Server)/(FTP TVL dir)/(Authority)/input/sending
ftp://(TMS FTP Server)/(FTP TVL dir)/(Authority)/input/arch
```

Note: The (Authority) designator for the directory for TVL Files shall always be 102 (NTTA).

The CSC shall push all Tag Validation List Files (via FTP) into the proper `/input/sending` directory on the TMS Host FTP Server. The CSC then moves the file from the `/input/sending` subdirectory up into the main `/input` directory. This is done to prevent the TMS Host from picking up a file that has not completed transmission. The TMS Host shall pick up the Tag Validation List File from the `/input` directory and move the file to the `/input/arch` directory for archive purposes.

1. Tag / Plate Association Data File Transfers– FTP Server File Location

The CSC creates Tag / Plate Association Data Files and transmits them to the TMS Host for processing.

The structure of the file system on the TMS Host FTP Server for delivery of the Tag / Plate Association Data Files shall be as follows:

```
ftp://(TMS FTP Server)/(FTP TPA dir)/(Authority)/input
ftp://(TMS FTP Server)/(FTP TPA dir)/(Authority)/input/sending
ftp://(TMS FTP Server)/(FTP TPA dir)/(Authority)/input/arch
```

Note: The (Authority) designator for the directory for Tag / Plate Associated. Data Files shall always be 102 (NTTA).

The CSC shall push all Tag / Plate Association Data Files (via FTP) into the proper `/input/sending` directory on the TMS Host FTP Server. The CSC then moves the file from the `/input/sending` subdirectory up into the main `/input` directory. This is done to prevent the TMS Host from picking up a file that has not completed transmission. The TMS Host shall pick up the Tag / Plate Association Data File from the `/input` directory, and then move the file to the `/input/arch` directory for archive purposes.

Note: All times used in the file name format and in the file contents are designated in GMT (Universal Time Zone – Grand Meridian).

4.1.1.3 Transaction File Transfers – FTP Server File Location

The TMS Host creates Transaction Files and transmits them to the CSC for processing.

The structure of the file system on the CSC's FTP Server for pickup of Transaction Files shall be as follows:

For Transaction Files:

```
ftp://(CSC FTP Server)/(Project dir)/(FTP TXN dir)/(Authority)/input
ftp://(CSC FTP Server)/(Project dir)/(FTP TXN dir)/(Authority)/input/sending
ftp://(CSC FTP Server)/(Project dir)/(FTP TXN dir)/(Authority)/input/arch
```

Note: The (Authority) designator for the directory for the Transaction File shall be the Authority that sent the Transaction File to the CSC. The (Authority) designator is found in Appendix A.

The TMS Host shall push all Transaction Files (via FTP) into the proper `/input/sending` directory on the CSC FTP Server. The TMS Host then moves the file from the `/input/sending` subdirectory up into the main `/input` directory. This is done to prevent the CSC from picking up a file that has not completed transmission. The CSC shall pick up the Transaction File from the `/input` directory and move the file to the `/input/arch` directory for archive purposes.

4.1.1.4 Image File Transfers – FTP Server File Location

The TMS Host creates the image file and places it for pick-up by the CSC for processing. The structure of the file system on the CSC for delivery will be as follows:

```
ftp://(TMS FTP Server)/(FTP IMAGE dir)/(Authority)/input/yyyymmddhhmn
```

Note: Subdirectories are set up by year (YYYY), month (MM), day (DD), hour (HH) and minute (MN).

Note: The (Authority) designator for the directory for Image Files is the Authority that creates the image file. The (Authority) designator is found in Appendix A.

The TMS Host shall place all image files into the main `/input/yyyymmddhhmn` directory for pickup by the CSC. The CSC will pull the image file(s) from the `/input/yyyymmddhhmn` directory and then delete the files from the `/input/yyyymmddhhmn` directory on the TMS Host.

Note: All times used in the file name format, file directory name format, and in the file contents are designated in GMT (Universal Time Zone – Grand Meridian).

4.1.1.5 Disposition File Transfers – FTP Server File Location

The CSC shall periodically create a Disposition File and transmit it to the TMS Host for processing.

The structure of the file system on the TMS Host FTP Server for pickup of disposition files shall be as follows:

Disposition Files:

```
ftp://(TMS FTP Server)/(FTP DSP dir)/(Authority)/input
ftp://(TMS FTP Server)/(FTP DSP dir)/(Authority)/input/sending
ftp://(TMS FTP Server)/(FTP DSP dir)/(Authority)/input/arch
```

Note: The (Authority) designator for the directory for Disposition Files shall be the Authority that creates the Disposition File. The (Authority) designator is found in Appendix A.

The CSC shall push all Disposition Files (via FTP) into the `/input/sending` directory on the TMS Host FTP Server. The CSC shall then move the file from the `/input/sending` subdirectory to the main `/input` directory for pick up by the TMS Host. This is done to prevent the TMS Host from picking up a file that has not completed transmission. The TMS Host shall pick up the Disposition File from the `/input` directory and move the file to the `/input/arch` directory for archive purposes.

4.1.1.6 Violation Status File Transfers– FTP Server File Location

The TMS Host creates the Violation Status Files and pushes them to the CSC for processing.

The structure of the file system on the CSC FTP Server for delivery of Violation Status Files shall be as follows:

```
ftp://(CSC FTP Server)/(Project dir)/(FTP VIOS dir)/(Authority)/input
ftp://(CSC FTP Server)/(Project dir)/(FTP VIOS dir)/(Authority)/input/sending
ftp://(CSC FTP Server)/(Project dir)/(FTP VIOS dir)/(Authority)/input/arch
```

Note: The (Authority) designator for the directory for Violation Status Files is the Authority that creates the Violation Status File. The (Authority) designator is found in Appendix A.

The TMS Host shall push all Violation Status Files (via FTP) into the CSC's `/input/sending` directory on the CSC FTP Server. The TMS Host shall then move the file from the `/input/sending` subdirectory to the main `/input` directory for pickup. This is done to prevent the CSC from picking up a file that has not completed transmission. The CSC shall pick up the Violation Status File from the `/input` directory and then move the file to the `/input/arch` directory for archive purposes.

4.1.1.7 Acknowledgement File Transfers – FTP Server File Location

The structure of the file system on the CSC and the TMS Host FTP Server for pickup of Acknowledgement Files shall be as follows:

Acknowledgement Files:

```
CSC FTP Server:
  ftp://(CSC FTP Server)/(Project dir)/(FTP ACK dir)/(Authority)/input
  ftp://(CSC FTP Server)/(Project dir)/(FTP ACK dir)/(Authority)/input/sending
  ftp://(CSC FTP Server)/(Project dir)/(FTP ACK dir)/(Authority)/input/arch
```

```
TMS FTP Server:
  ftp://(TMS FTP Server)/(FTP ACK dir)/(Authority)/input
  ftp://(TMS FTP Server)/(FTP ACK dir)/(Authority)/input/sending
  ftp://(TMS FTP Server)/(FTP ACK dir)/(Authority)/input/arch
```

Note: The (Authority) designator for the directory for Acknowledgement Files shall be the Authority that creates the Acknowledgement File. The (Authority) designators are found in Appendix A.

The sending agency shall transfer Acknowledgment Files (via FTP) into the `/input/sending` directory. The sending agency then moves the file from the `/input/sending` subdirectory to the main `/input` directory. This is done to prevent the receiving agency from picking up a file that has not completed transmission. The receiving agency shall pick up the Acknowledgement File from the `/input` directory and move the file to the `/input/arch` directory for archive purposes.

3. CSC / TMS Host Interface File Types

This section of the ICD defines the requirements for each file type required for the TMS Host to interface to the CSC. In this section, you shall find information about the following file types:

- Tag Validation List (TVL) Files – Section 5.1
- Tag / Plate Association Data Files – Section 5.2
- Transaction Files – Section 5.3
- Image Files – Section 5.4
- Disposition Files – Section 5.5
- Violation Status Files – Section 5.6
- Acknowledgement Files – Section 5.7

5.1 Tag Validation List Transfer

Tag Validation List Files are built by the CSC. The Tag Validation List is a list of CSC tags that are issued or previously issued and also lists tags from interoperable agencies. New CSC tags, just entered into inventory and with no history of having been issued, are not included in this file. The Tag Validation List can be transferred in two (2) forms: full transfers (which contains information for all tags – a full refresh of status), and incremental transfers (updates for issued tags which have occurred since the previous file was sent). The full transfer (once daily) shall send a complete list of all CSC tags issued or previously issued. The incremental transfers (once an hour) shall send any changes to the Tag Validation List since the last full transfer or update was sent. If there are no changes or updates since the last TVL File was sent, the CSC shall not send an empty (incremental) TVL File to the TMS Host; however, the full transfer will occur once daily, regardless.

Note: If a tag is not in the TVL, it is automatically considered to be a violation.

The TVL Files are transferred daily, usually overnight, and loaded into each lane that accepts ETC transactions. Updates are provided on a more frequent basis when the status of a particular tag or account changes during the day. Careful planning of these update transfers is important so that the CSC, TMS Host and Lane computers are not consumed with updates.

Note: All times used in the file name format and in the file contents are designated in GMT (Universal Time Zone – Grand Meridian).

5.1.1 File Transfer Timetable

Full Tag Validation List Files shall be created and pushed from the CSC to the TMS Host FTP Server once a day by 4AM. Subsequently, Tag Validation List Incremental (Update) Files shall be created and pushed from the CSC to the TMS Host FTP server once an hour after the CSC completes and sends the full TVL File, provided updates occur. The CSC shall stop sending

incremental TVL Files by 3:00AM everyday. The Developer's system shall acknowledge the receipt and successful installation of the full TVL in each lane on a daily basis as described later in this document using a lane message defined in Appendix C.

5.1.2 File Name Format

The file name shall have the date and creation time as the filename and the "tag" suffix extension.

```
"yyyymmddhhmnssaaa.tag"
```

where: yyyy = year
mm = month
dd = day
hh = hour
mn = minute
ss = second
aaa = 102 (NTTA)

Example: `20040815143045102.tag`

5.1.3 File Format

The file format follows the standard guidelines referenced in Appendix B (File Structure - Standard Guidelines).

5.1.3.1 File Header Format – TVL File

When a Tag Validation List (TVL) File is packaged for transmission, the sender must construct the File Header so that it contains all of the required fields listed below. Once the File Header is constructed, the file contents are appended, and the entire file is transmitted to the appropriate directory location on the TMS Host FTP Server for processing.

The File Header is a fixed length ASCII record with comma-delimited fields, terminated by a carriage return-line feed. Some of the fields within the File Header are right-justified and must be zero padded. Although all fields in the File Header are fixed in length, they are still separated by commas. This is to allow processing by either of two means: (1) specifying absolute file offset position and field length; or (2) parsing the record, breaking on the comma-delimiter. This format was developed to afford developers maximum flexibility in processing this record type.

The CRC 32 standard algorithm is used to compute the checksum value. The checksum is a 32-bit value and is displayed as an ASCII hex number. The file size is a base-10 ASCII number.

Note: The java checksum referenced in this ICD is the java.util.zip.CRC32 algorithm.

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		Record Type. Value = 'H'
File_Type_Designator	Char (4)	Y	TAGS or FULL	TAGS = incremental TVL FULL = full TVL
File_date_time	Char (14)	Y	yyyymmddhhmnss	Date and time of this file creation
TR_File_control_number	Char (8)	Y	00000000-99999999	A unique, sequential number used to identify the tag file (assigned by the CSC) **Note**: This field is right-justified and must be zero padded.
Authority	Char (3)	Y	For a list of authorities, refer to Appendix A.	Code indicating the Authority that own/operate the facility to which the tag file is being transmitted
Rec_count	Char (10)	Y	0000000000-9999999999	The number of records in the Data Record (exclusive of the Header and Trailer). **Note**: This field is right-justified and must be zero padded.
File_Size	Numeric (12)	Y	000000000000-999999999999	The size of the file in bytes. **Note**: This field is right-justified and must be zero padded.
Checksum	Char (8)	Y		A 32-bit checksum computed for the contents of the file, beginning at the character immediately following the header record and continuing to the end of the file (including the Trailer). This value is displayed as an 8-digit ASCII hex number.
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.1.3.2 File Trailer Format – TVL File

The File Trailer is a fixed length ASCII record with comma-delimited fields, terminated by a carriage return-line feed. Some of the fields within the File Trailer are right-justified and must be zero padded.

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		Record Type. Value = 'T'
Rec_count	Char (10)	Y	0000000000 – 9999999999	The number of records in the Data Record (exclusive of the Header and Trailer). **Note**: This field is right-justified and must be zero padded.

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.1.3.3 Data Record Format – TVL File

Field Name	Data Type (Max Length)	Required Field	Format/Range	Description
Rec_type	Char(1)	Y		Record Type. Value = 'S'
Authority	Char (3)	Y	For a list of authorities, refer to Appendix A.	Identifier for the Authority that owns the Tag
Tag_id	Char (20)	Y		Internal ID for each transponder
Tag Status	Char (1)	Y		Tag Status See Appendix H
Revenue Type	Char (1)	Y	1 – full-fare 2 – non-revenue	Revenue Type for the Tag
Axle Classification	Char (3)	Y	See Appendix D for list of vehicle classes	Classification of the vehicle assigned the transponder
LPCheckReq	Char(1)	Y	0-9,A-Z	Whether a LP image validation is required (0=No, 1=Yes, Others reserved for future use.)
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.1.4 File Example – TVL File

```
H,TAGS,20050417220000,00000001,104,0000000001,000000000050,12345678
S,104,TEX.12345678,G,1,002,Y,12
T,0000000001
```

5.2 Tag / Plate Association Data File

The Tag / Plate Association Data Files are built by the CSC. The Tag / Plate Association Data File is a list of tags (CSC and interoperable) and their associated license plate(s). The Tag / Plate Association Data File can be transferred in two forms: full transfers (which contain the information about all tags with their associated license plate(s)), and incremental transfers (updates which have occurred since the previous file was sent). The full transfers are created and pushed from the CSC to the TMS Host once a day. The incremental transfers are created and pushed from the CSC to the TMS Host once an hour. If there are no changes or updates since the last Tag / Plate Association Data File was sent, the CSC shall not send an empty (incremental) Tag / Plate Association Data File to the TMS Host.

Note: This file does not contain tags without an associated license plate.

5.2.1 File Transfer Timetable

Full Tag / Plate Association Data Files shall be created and pushed from the CSC to the TMS Host FTP Server once a day by 4AM. Subsequently, Tag / Plate Association Data Incremental (Update) Files shall be created and pushed from the CSC to the TMS Host FTP server once an hour after the CSC completes and sends the full Tag / Plate Association Data File, provided updates occur. The CSC shall stop sending incremental Tag / Plate Association Data Files by 3:00AM everyday.

5.2.2 File Name Format

The file name shall have the date and creation time as the filename and the "tpl8" suffix extension.

```
"yyyymmddhhmnssaaa.tpl8"
```

where:
- yyyy = year
- mm = month
- dd = day
- hh = hour
- mn = minute
- ss = second
- aaa = 102 (NTTA)

Example: `20040815143045102.tpl8`

5.2.3 File Format

The file format follows the standard guidelines referenced in Appendix B (File Structure - Standard Guidelines).

5.2.3.1 File Header Format – Tag / Plate Association Data File

When a Tag / Plate Association Data File is packaged for transmission, the sender must construct the File Header so that it contains all of the required fields listed below. Once the File Header is constructed, the file contents are appended; and the entire file is transmitted to the appropriate directory location on the TMS Host FTP Server for processing.

The File Header is a fixed length ASCII record with comma-delimited fields, terminated by a carriage return-line feed. Some of the fields within the File Header are right-justified and must be zero padded. Although all fields in the File Header are fixed in length, they are still separated by commas. This is to allow processing by either of two means: (1) specifying absolute file offset position and field length; or (2) parsing the record, breaking on the comma-delimiter. This format was developed to afford developers maximum flexibility in processing this record type.

The CRC 32 standard algorithm is used to compute the checksum value. The checksum is a 32-bit value and is displayed as an ASCII hex number. The file size is a base-10 ASCII number.

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		Record Type. Value = 'H'
File_Type_Designator	Char (4)	Y	INTP or FUTP	INTP = Incremental TPL8 FUTP = Full TPL8
File_date_time	Char (14)	Y	yyyymmddhhmmss	Date and time of this file creation
TR_File_control_number	Char (8)	Y	00000000-99999999	A unique sequential number used to identify the tag / plate association data file (assigned by the CSC) **Note**: This field is right-justified and must be zero padded.
Authority	Char (3)	Y	For a list of authorities, refer to Appendix A.	Code indicating the Authority that owns / operates the facility to which the tag / plate association data file is being transmitted
Rec_count	Char (10)	Y	0000000000-9999999999	The number of records in the Data Record (exclusive of the Header and Trailer). **Note**: This field is right-justified and must be zero padded.
File_Size	Numeric (12)	Y	000000000000-999999999999	The size of the file in bytes. **Note**: This field is right-justified and must be zero padded.
Checksum	Char (8)	Y		A 32-bit checksum computed for the contents of the file, beginning at the character immediately following the header record and associated CR/LF. This value is displayed as an 8-digit ASCII hex number.
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.2.3.2 File Trailer Format – Tag / Plate Association Data File

The File Trailer is a fixed length ASCII record with comma-delimited fields, terminated by a carriage return-line feed. Some of the fields within the File Trailer are right-justified and must be zero padded.

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		Record Type. Value = 'T'
Rec_count	Char (10)	Y	0000000000 – 9999999999	The number of records in the Data Record (exclusive of the Header and Trailer). **Note:** This field is right-justified and must be zero padded.
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.2.3.3 Data Record Format – Tag / Plate Association Data File

Field Name	Data Type (Max Length)	Required Field	Format/Range	Description
Rec_type	Char(1)	Y		Record Type. Value = 'P'
Authority	Char (3)	Y	For a list of authorities, refer to Appendix A.	Facility Identifier for the Authority Owning the Tag
Tag_id	Char (20)	Y		Internal ID for each transponder
License_Plate_State	Char (3)	Y		Three characters indicate the state code
License_Plate_Numb er	Char (15)	Y		License plate number associated with the tag
Alternate_License_Pl ate_State	Char (3)	N		Alternative license plate number associated with the tag (if any)
Alternate_License_Pl ate_Number	Char (15)	N		Alternative license plate number associated with the tag (if any)
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.2.4 File Example – Tag / Plate Association Data File

```
H,FUTP,20050417220000,00000001,104,0000000002,000000000050,12345678
P,104,TEX.12345678,TX,ABC123,TX,ASD543
P,104,TEX.22345679,TX,DEF456,
T,000000002
```

5.3 Transaction Files

Transaction Files are pushed from the TMS Host FTP Server to the CSC by FTP. All transactions, including violations, are sent from the TMS Host to the CSC in Transaction Files. Once a Transaction File has been received and processed, the reconciliation information is returned to the TMS Host in a Disposition File.

Note: All times used in the file name format and in the file contents are designated in GMT (Universal Time Zone – Grand Meridian).

5.3.1 File Transfer Timetable

Transaction Files shall be pushed from the TMS Host FTP Server to the CSC every 10 minutes at a minimum. If there are no transactions to send, then no file shall be pushed.

5.3.2 File Name Format

The file name shall have the date and creation time as the filename and the "tr" suffix extension.

```
"yyyymmddhhmnssaaa.tr"
```

where:
- yyyy = year
- mm = month
- dd = day
- hh = hour
- mn = minute
- ss = second
- aaa = Authority where the transaction(s) originated

Example: `20040815143045104.tr`

5.3.3 File Format

The file format follows the standard guidelines referenced in Appendix B (File Structure - Standard Guidelines).

5.3.3.1 File Header Format – Transactions File

When a Transaction File is packaged for transmission, the TMS Host must construct the File Header so that it contains all of the required fields listed below. Once the File Header is constructed, the file contents are appended; and the entire file is transmitted to the appropriate directory location on the CSC FTP Server for processing.

The File Header is a fixed length ASCII record with comma-delimited fields, terminated by a carriage return-line feed. Some of the fields within the File Header are right-justified and must be zero padded. Although all fields in the File Header are fixed in length, they are still separated by commas. This is to allow processing by either of two means: (1) specifying absolute file offset

position and field length; or (2) parsing the record, breaking on the comma-delimiter. This format was developed to afford developers maximum flexibility in processing this record type.

The CRC 32 standard algorithm is used to compute the checksum value. The checksum is a 32-bit value and is displayed as an ASCII hex number. The file size is a base-10 ASCII number.

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		Record Type. Value = 'H'
File_date_time	Char (14)	Y	yyyymmddhhmmss	Date and time of this file creation
TR_File_control_number	Char (8)	Y	00000000-99999999	A unique, sequential number created by the TMS Host that is used to identify the file **Note**: This field is right-justified and must be zero padded.
Authority	Char (3)	Y	For a list of authorities, refer to Appendix A.	Code indicating the Authority that owns/operates the facility on which the transaction occurred
Rec_count	Char (10)	Y	0000000000-9999999999	The number of records in the Data Record (exclusive of the Header and Trailer). **Note**: This field is right-justified and must be zero padded.
File_Size	Numeric (12)	Y	000000000000-999999999999	The size of the file in bytes. **Note**: This field is right-justified and must be zero padded.
Checksum	Char (8)	Y		A 32-bit checksum computed for the contents of the file, beginning at the character immediately following the header record and associated CR/LF. This value is displayed as an 8-digit ASCII hex number.
Total_revenue_amount	Char (9)	Y	0.00 - 999999.99	The total amount due based on the transactions sent within that transaction file **Note**: This field is right-justified and must be zero padded.
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.3.3.2 File Trailer Format – Transactions File

The File Trailer is a fixed length ASCII record with comma-delimited fields, terminated by a carriage return-line feed. Some of the fields within the File Trailer are right-justified and must be zero padded.

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		T = Trailer
Rec_count	Char (10)	Y	0000000000 – 9999999999	The number of records in the Data Record (exclusive of the Header and Trailer). **Note:** This field is right-justified and must be zero padded.
Separator	Char(1)	Y		"CR/LF" Carriage Return/Line Feed

5.3.3.3 Data Record Format – Transactions File

Field Name	Data Type (Max Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		Record Types: • ETC Value = 'A' • Violation Value = 'V'
Sequence_no_plaza	Char (10)	Y	0000000000-9999999999	Plaza sequence number
Authority	Char (3)	Y	For a list of authorities, refer to Appendix A.	Indicates the Host authority providing the transaction (same as the Authority ID in header)
Plaza	Char (5)	Y	See Plaza ID list in Appendix J.	Indicates which Plaza the transaction originated from
Sequence_no_lane	Char (19)	Y	0000000000000000000-9999999999999999999	Lane sequence number
Lane	Char (2)	Y	Lane Number within the Plaza	Lane ID number
Revenue_date	Char (8)	Y	yyyymmdd	Revenue Date of the Transaction
Lane_mode	Char (3)	Y	See Appendix G for lane modes.	Lane Mode of Operation
Collector_id	Char (4)	N	0000-9999	Toll attendant ID
Record_type	Char (3)	Y	See Appendix C for list of all Transaction Record Types.	Record type
Tdate	Char (8)	Y	yyyymmdd	Transaction date
Ttime	Char (6)	Y	hhmmss	Transaction Time
ETC_tag_number	Char (20)	N	ETC number	ETC number

Field Name	Data Type (Max Length)	Required Field	Format/Range	Description
Class	Char (3)	Y	See Appendix D and E for list of vehicles classes.	The class of a vehicle is based on the classification methodology agreed to between the TMS and the CSC. Currently, Axle-Based and Shape-Based classifications are planned. The CSC will post the toll revenue or bill the toll revenue and any video toll premiums provided by the TMS and will only use the provided Class to determine if any additional Upclass / Downclass efforts are required for dispute resolution.
Transpnder_Toll_Amount	Char(6)	Y	000.00–999.99	Transponder Transaction Toll amount due
Video_Toll_Amount	Char(6)	Y	000.00–999.99	Video Toll amount
Total_Amount	Char(6)	Y	000.00–999.99	Expected full toll amount (Toll + Video Toll Premiums as defined by the Record Type) In the event that a Transponder Transaction is unable to be posted and is converted to a Video Toll transaction, the Total Amount will be adjusted at the CSC with the Premium Amount provided in the transaction. Likewise, if a Video Toll Transaction was sent from the TMS to the CSC and was processed as a V-Toll transaction, the Total Amount shall be adjusted down by the Premium Amount provided in the transaction.
Amount_paid	Char(6)	N	000.00–999.99	Toll amount paid (if monies received from toll attendant or coin machine) – this is used for partial payments with a tag read
Axle Class Expected	Char (3)	Y	000 – 999	Number of Axles expected based upon Pre Class or Collector **Note**: If there is no collector and pre class, this field shall be zero (i.e. 00).
Axle Class Counted	Char (3)	Y	000 – 999	Actual Axles Counted based upon Post Class **Note**: If post class is not working, this field shall be zero (i.e. 00).
Vio_code	Char (2)	Y	See Appendix F for list of violation codes	Violation code that identifies the status of the violation
PlateImage	Char(1)	Y	Y or N	Whether a License Plate Image was taken
RejectCode	Char (3)	N	000 – 999	Reason Transactions was not accepted See Appendix H

Field Name	Data Type (Max Length)	Required Field	Format/Range	Description
BaseFileName	Char(31)	N	SSAAAPPPPPLLYYYYMMDDHHMISSQQQQQ	The base file name format (a subset of the complete image file name.)
SOV/HOV Designation	Char(3)	Y	HOV or SOV	Indication of weather the vehicle was single or multiple occupancy.
License Plate State	Char(2)	N	Standard state abbreviation	State abbreviation.
License Plate	Char(8)	N	12345678	The License Plate Number.
License Plate Prefix	Char(6)	N		The prefix to the license plate (i.e., UTX – University of Texas).
Plate OCR Confidence	Char(5)	N	100.00 – 00.00	The OCR Confidence of the license plate.
State OCR Confidence	Char(5)	N	100.00 – 00.00	The OCR Confidence of the license plate's state.
TagFileControlID	Char(8)	N	00000000 – 99999999	Full Tag File used to process transaction
TagStatus	Char(1)	N	See Appendix I for tag status indicators	Tag Status (currently at the lane) of the tag read for this transaction
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.4 Image File

The TMS Host – to – CSC (Image Processing) Interface consists of the following file transfer:

Image Files (TMS Host – to – CSC-Image Processing)

5.4.1 File Name Format – Image File

The file name for the image files shall have the following format:

```
<State_Abbrev><Authority><Plaza><Lane><Year><Month><Day><Hour><Min
><Sec><Sequence><lane_sequence_no><ImageNumber><OSR_Conf><OSR><Pla
te_Type>_<OCR_Conf><OCR>.jpg
```

Note: If OCR/OSR is not available, the **<OSR_Conf>, <OSR>, <Plate_Type>, <OCR_Conf>** and **<OCR>** fields shall not be provided.

where: <State_Abbrev> = SS = "TX" (2 Char)
<Authority> = AAA = "102" (3 Char)
<Plaza> = PPPPP = "00007" (5 Char)
<Lane> = LL = "01" (2 Char)
<Year> = YYYY (4 Char)
<Month> = MM (2 Char)
<Day> = DD (2 Char)
<Hour> = HH (2 Char)
<Min> = MI (2 Char)
<Sec> = SS (2 Char)
<Sequence> = QQQQQ = "12345" (5 Char)
<lane_sequence_no> = '9999999999999999' (19 Char)
<ImageNumber> = _1 or _A (2 char – 1 underscore and a number for front camera images, or 2 char – 1 underscore and a letter for rear images) - for Violations or LP for License Plate captures.

Note: The date and time information captured in the image file name shall match the date and time information of the associated transaction.

The following additional fields are provided only when the image has been processed by an OCR/OSR system (omitted otherwise):

<OSR_Conf> = ###	Confidence Number (3 Char – 000 to 100)
<OSR> = ST	State determined by OSR processing (2 char – if OSR is not known or No OSR system is available, then the default value shall be set to '00')
<Plate_Type> = PLT	Indication of the type of Plate for the given State (3 Char – 000 to 999, if Plate Type is unknown or not supported then the default value is '000')
<OCR_Conf> = %%%	Confidence indicator of OCR (3 Char – 000 to 100)
<OCR> = CCCCCCC	License number determined by OCR processing (variable 7 Char – if less than 7 characters, then no leading or trailing characters are specified; no spaces used)

5.4.2 File Format

All files shall be saved in a JPEG format, and shall be designated with a filename and extension, per Section 5.4.1 (above).

5.4.3 Accuracies Recommended for OCR Systems

The following accuracies are recommended for the automated plate recognition engine with properly mounted, unobstructed plates:

OCR Parameter	Recommended Accuracy
Coarse Plate Locator Accuracy	>99%
Fine Plate Locator Accuracy	>95%
Overall Plate Locator Accuracy	>(99% X 95% = 94%)
Optical State Recognition Accuracy	> 99%
Optical Character Recognition Accuracy	> 97%
Overall Accuracy	>(94% X 99% X 97% = 90%)

5.5 Disposition File

Disposition Files contains financial (reconciliation) and adjustment data in its data records. In addition to this file containing data records regarding reconciled financial data from posted transactions, the Disposition File shall also contain data records relating to adjustments and unpostable transactions. Therefore, data records returned in this file shall not have a one-to-one relationship with the data records contained within the Transaction File. Every change to the status of a transaction shall receive a separate disposition. Every transaction submitted in the transaction file shall be reconciled. If the TMS Host does not receive a disposition for a sent transaction within 3 days, the TMS Host shall repackage the transaction and resend it in the next Transaction File.

If an adjustment is made to an account, then the original toll amount is negated and the adjusted toll amount is posted. Therefore, the TMS Host shall receive two adjustment transactions for an adjustment made to a toll account.

For Example, a toll is posted to a customer account in the amount of $1.00 when in reality the proper toll amount was $.75 cents. To correct the error, the CSC shall send the TMS Host two (2) adjustments for the original transaction. The first adjustment shall be for the amount of $-1.00 to negate the original toll amount and to bring the amount posted to the customer account to $0.00 dollars. After the first adjustment is posted to the customer account, the CSC shall send the TMS Host a second adjustment in the amount of $.75 cents to reflect the proper, posted toll amount.

Note: All times used in the file name format and in the file contents are designated in GMT (Universal Time Zone – Grand Meridian).

5.5.1 File Transfer Timetable

The Disposition File is created and sent by the CSC to the TMS Host FTP Server once a day at a minimum.

5.5.2 File name format

The file name shall have the date and creation time as the filename and the "dsp" suffix extension.

```
"yyyymmddhhmnssaaa.dsp"
```

where:
- yyyy = year
- mm = month
- dd = day
- hh = hour
- mn = minute
- ss = second
- aaa = The Authority that receives the Disposition File from the CSC.

Example: `20040815143045102.dsp`

5.5.3 File Format

The file format follows the standard guidelines referenced in Appendix B (File Structure - Standard Guidelines).

5.5.3.1 File Header Format – Disposition File

When a Disposition File is packaged for transmission, the sender must construct the File Header so that it contains all of the required fields listed below. Once the File Header is constructed, the file contents are appended; and the entire file is transmitted to the appropriate directory location on the CSC or TMS Host FTP Server for processing.

The File Header is a fixed length ASCII record with comma-delimited fields, terminated by a carriage return-line feed. Some of the fields within the File Header are right-justified and must be zero padded. Although all fields in the File Header are fixed in length, they are still separated by commas. This is to allow processing by either of two means: (1) specifying absolute file offset position and field length; or (2) parsing the record, breaking on the comma-delimiter. This format was developed to afford developers maximum flexibility in processing this record type.

The CRC 32 standard algorithm is used to compute the checksum value. The checksum is a 32-bit value and is displayed as an ASCII hex number. The file size is a base-10 ASCII number.

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		Record Type. Value = 'H'
File_date_time	Char (14)	Y	yyyymmddhhmmss	Date and time of this file creation
TR_File_control_number	Char (8)	Y	00000000-99999999	A unique, sequential number created by the CSC that is used to identify the file **Note:** This field is right-justified and must be zero padded.
Authority	Char (3)	Y	For a list of authorities, refer to Appendix A.	Code indicating the Authority that owns/operates the facility on which the transaction occurred
Rec_count	Char (10)	Y	0000000000-9999999999	The number of records in the Data Record (exclusive of the Header and Trailer). **Note:** This field is right-justified and must be zero padded.
File_Size	Numeric (12)	Y	000000000000-999999999999	The size of the file in bytes. **Note:** This field is right-justified and must be zero padded.
Checksum	Char (8)	Y		A 32-bit checksum computed for the contents of the file, beginning at the character immediately following the header record and associated CR/LF. This value is displayed as an 8-digit ASCII hex number.

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.5.3.2 File Trailer Format – Disposition File

The File Trailer is a fixed length ASCII record with comma-delimited fields, terminated by a carriage return-line feed. Some of the fields within the File Trailer are right-justified and must be zero padded.

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		T = Trailer
Rec_count	Char (10)	Y	0000000000 – 9999999999	The number of records in the Data Record (exclusive of the Header and Trailer). **Note:** This field is right-justified and must be zero padded.
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.5.3.3 Data Record Format – Disposition File

Field Name	Data Type (Max Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		Record Type. Value = 'R' Adjustment. Value = 'J'
Unique_id	Char (10)	Y	0000000000 – 9999999999	Unique ID for each record assigned by the CSC (CSC Transaction #)
Recordtype	Char (3)	Y	The record type in the original transaction	Record Type (from original transaction)
Sequence_no_plaza	Char (10)	Y	0000000000 – 9999999999	Plaza sequence number (from original transaction)
Authority	Char (3)	Y	For a list of authorities, refer to Appendix A.	This is the Facility ID from the original transaction file.
Plaza	Char (5)	Y	Plaza ID	Plaza ID (from original transaction)
Sequence_no_lane	Char (19)	Y	0000000000000000000- 9999999999999999999	Lane sequence number (from original transaction)
Lane	Char (2)	Y	Lane ID	Lane ID (from original transaction)
revdate	Char (8)	Y	yyyymmdd	Revenue date (from original transaction)
Toll Amount Expected	Char (6)	Y	000.00 – 999.99	Toll amount expected from the original transaction

Field Name	Data Type (Max Length)	Required Field	Format/Range	Description
Premium_Amount	Char(6)	Y	000.00–999.99	Video Toll Premium amount
Total_Amount Expected	Char(6)	Y	000.00–999.99	Expected full toll amount (Toll + Video Toll Premiums as defined by the Record Type) In the event that a Transponder Transaction is unable to be posted and is converted to a Video Toll transaction, the Total Amount will be adjusted at the CSC with the Premium Amount provided in the transaction. Likewise, if a Video Toll Transaction was sent from the TMS to the CSC and was processed as a V-Toll transaction, the Total Amount shall be adjusted down by the Premium Amount provided in the transaction.
Amount posted	Char (6)	Y	000.00 – 999.99	Toll amount paid (based on processed transaction) **Note**: If an adjustment is made to an account, then the original toll amount posted is negated and the adjusted toll amount is posted. Therefore, the TMS Host shall receive two adjustment transactions for an adjustment made to a toll account.
Nonrevflag	Char (1)	Y	Y, N	Non revenue flag (Y/N) Y – processed to a Non-Revenue account (Amount Paid = 0) N – processed to a Revenue account
Testflag	Char (1)	Y	Y, N	Test flag (Y/N) Y – processed to a Test Account N – processed to a Revenue/Non-Revenue account
Paymenttype	Char (1)	Y	A, V, E	Payment type (A/V/E) A – Accepted and Paid V – Not Paid, Was Indicated as Violation, and errnum contains reason for non-payment, amount paid = 0 E – Not Paid, errnum contains reason for non-payment, amount paid = 0
errnum	Char (2)	Y	00 – 99	Error number – See Appendix H for the list of error codes
Posted_date	Char (8)	Y	yyyymmdd	Date the transaction was posted by the CSC
Vio_status_code	Char (2)	Y	Refer to Appendix M for a list of violation codes.	Violation code that identifies the status of the violation.
License_plate_num	Char (15)	N		License plate number associated with the tag

Field Name	Data Type (Max Length)	Required Field	Format/Range	Description
License_plate_state	Char (3)	N		Three characters indicate the state code
VTR_owner name_one	Char (30)	N		Registered owner of the vehicle listed in VTR **Note:** A backslash (\) shall be inserted before any embedded commas to retain the integrity of the fields within the data record. Backslashes are not included in the maximum data length count.
VTR_owner name_two	Char (30)	N		Registered co-owner of the vehicle listed in VTR **Note:** A backslash (\) shall be inserted before any embedded commas to retain the integrity of the fields within the data record. Backslashes are not included in the maximum data length count.
VTR_owner address_one	Char (30)	N		Address of the registered owner of the vehicle **Note:** A backslash (\) shall be inserted before any embedded commas to retain the integrity of the fields within the data record. Backslashes are not included in the maximum data length count.
VTR_owner address_two	Char (30)	N		Address of the registered co-owner of the vehicle **Note:** A backslash (\) shall be inserted before any embedded commas to retain the integrity of the fields within the data record. Backslashes are not included in the maximum data length count.
VTR_owner_city	Char (19)	N		Name of the city in which the owner of the vehicle can be contacted
VTR_owner_state	Char (2)	N		2-letter abbreviation of the state in which the owner of the vehicle can be contacted
VTR_owner_zip	Char (5)	N		5-digit number assigned by the U.S. Post Office to the geographical area where the entity listed in the OWNER-NAME-LINE1 field can be contacted

Field Name	Data Type (Max Length)	Required Field	Format/Range	Description
Tag_id	Char (20)	N		Internal ID for each transponder
Tag_agency	Char (3)	N	For a list of authorities, refer to Appendix A.	Agency who owns the tag
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.5.4 File Example – Disposition File

```
H,20050417220000,00000001,104,0000000003,000000000050,12345678
R,1,10,1,104,202,2,3,20050417,1.00,0.45,1.45,0.00,0.00,1.45,N,N,A,00,20050417,10,ABC123,
TX,John Doe,,123 Address St,,Austin,TX,78704,TEX.12345678,104
R,2,10,2,104,202,2,3,20050417,1.00,0.45,1.45,0.00,0.00,1.45,N,N,A,00,20050417,10,ABC123,
TX,John Doe,,123 Address St,,Austin,TX,78746,TEX.23456543,104
R,3,10,3,104,202,2,3,20050417,1.00,0.45,1.45,0.00,0.00,1.45,N,N,A,00,20050417,10,ABC123,
TX,Jane Doe,,123 Address St,,Austin,TX,78756,TEX.98765432,104
T,0000000003
```

5.6 Violation Status File

The Violation Status File transmitted from the CSC to the TMS Host and contains the disposition status of the violation. The Violation Status File consists of the following file transfer:

Violation Status File (Pushed from the CSC to the TMS Host)

5.6.1 File Transfer Timetable

Violation Status Files shall be pushed from the CSC to the TMS Host FTP Server as needed.

The TMS Host should constantly monitor its FTP site for file transfers from the CSC.

Note: All times used in the file name format and in the file contents are designated in GMT (Universal Time Zone – Grand Meridian).

5.6.2 File Name Format

The file name shall have the date and creation time as the filename and the "vsf" suffix extension.

```
"yyyymmddhhmnssaaa.vsf"
```

where:
- yyyy = year
- mm = month
- dd = day
- hh = hour
- mn = minute
- ss = second
- aaa = The Authority that creates the Violation Status File.

Example: `20040815143045102.vsf`

5.6.3 File Format

The file format follows the standard guidelines referenced in Appendix B (File Structure - Standard Guidelines).

5.6.3.1 File Header Format – Violation Status File

When a Violation Status File is packaged for transmission, the sender must construct the File Header so that it contains all of the required fields listed below. Once the File Header is constructed, the file contents are appended, and the entire file is transmitted to the appropriate directory location on the TMS Host FTP Server for processing.

The File Header is a fixed length ASCII record with comma-delimited fields, terminated by a carriage return-line feed. Some of the fields within the File Header are right-justified and must be zero padded. Although all fields in the File Header are fixed in length, they are still separated by commas. This is to allow processing by either of two means: (1) specifying absolute file offset position and field length; or (2) parsing the record, breaking on the comma-delimiter. This format was developed to afford developers maximum flexibility in processing this record type.

The CRC 32 standard algorithm is used to compute the checksum value. The checksum is a 32-bit value and is displayed as an ASCII hex number. The file size is a base-10 ASCII number.

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		Record Type. Value = 'H'
File_date_time	Char (14)	Y	yyyymmddhhmmss	Date and time of this file creation
TR_File_control_number	Char (8)	Y	00000000-99999999	A unique, sequential number used to identify the file **Note**: This field is right-justified and must be zero padded.
Authority	Char (3)	Y	For a list of authorities, refer to Appendix A.	Code indicating the Authority that own/operate the facility on which the transaction occurred
Rec_count	Char (10)	Y	0000000000-9999999999	The number of records in the Data Record (exclusive of the Header and Trailer). **Note**: This field is right-justified and must be zero padded.
File_Size	Numeric (12)	Y	000000000000-999999999999	The size of the file in bytes. **Note**: This field is right-justified and must be zero padded.
Checksum	Char (8)	Y		A 32-bit checksum computed for the contents of the file, beginning at the character immediately following the header record and associated CR/LF. This value is displayed as an 8-digit ASCII hex number.
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.6.3.2 File Trailer Format – Violation Status File

The File Trailer is a fixed length ASCII record with comma-delimited fields, terminated by a carriage return-line feed. Some of the fields within the File Trailer are right-justified and must be zero padded.

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		Record Type. Value = 'T'
Rec_count	Char (10)	Y	0000000000 – 9999999999	The number of records in the Data Record (exclusive of the Header and Trailer). **Note**: This field is right-justified and must be zero padded.
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.6.3.3 Data Record Format – Violation Status File

Field Name	Data Type (Max Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		Record Type. Value = 'C'
Sequence_no_plaza	Char (10)	Y	0000000000-9999999999	Plaza sequence number
Authority	Char (3)	Y	For a list of authorities, refer to Appendix A.	Indicates the facility providing the transaction (same as the Facility ID in header)
Plaza	Char (5)	Y	See Plaza ID list in Appendix J	Plaza ID number
Sequence_no_lane	Char (19)	Y	0000000000000000000-9999999999999999999	Lane sequence number
Lane	Char (2)	Y	Lane Number within Plaza	Lane ID number
Revenue_date	Char (8)	Y	yyyymmdd	Revenue Date of the Transaction
Toll Amount_due	Char(6)	Y	000.00–999.99	Toll amount
Premium_due	Char(6)	Y	000.00–999.99	Premium amount
Total Amount_due	Char(6)	Y	000.00–999.99	Total amount
Vio_status_code	Char (2)	Y	Refer to Appendix M for a list of violation codes.	Violation code that identifies the status of the violation.
Unique_id	Char (10)	Y	0000000000 – 9999999999	Unique ID for each record assigned by the CSC (CSC Transaction #)
Sub_viol_fee_due	Char(6)	Y	000.00–999.99	Fee added to the violation by the TMS Host
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.6.4 File Example – Violation Status File

```
H,20050417220000,00000001,104,0000000003,000000000050,12345678
C,1,104,202,1,2,20050417,1.00,0.45,1.45,12,123,0.00
C,2,104,202,1,2,20050417,1.00,0.45,1.45,12,124,0.00
C,3,104,202,1,2,20050417,1.00,0.45,1.45,12,125,0.00
T,0000000003
```

5.7 Acknowledgement File

Acknowledgement Files shall be sent from the receiving authority after every file transfer, except in regards to Image Files. Because Image Files are pulled by the CSC from the TMS Host FTP Server, acknowledgement is not necessary. Acknowledgement Files shall indicate a successful or unsuccessful file transfer based on verification of the transferred file's checksum, file size and record count.

File Transfers:

After a file is transferred (via FTP) from the `/input/sending` subdirectory into the main `/input` directory, the receiving Authority shall pick up the file and check the integrity of the data within the file using the file checksum. Once the file is checked, the TMS Host shall send an **_ack** or **_nak** file back to the sending Authority before archiving the file. Acknowledging the file is done before archiving the file to prevent the receiving Authority from archiving a bad file. Should a file prove to be invalid based on the file checksum, the receiving Authority shall delete the invalid file and the sending Authority shall be notified by the **_nak** file. Once the Authority that sent the original file receives the **_nak** file, they shall repackage the file and send it again. Should the second attempt also result in the generation of a **_nak** file, the sending Authority shall send an e-mail to the target Authority to notify them of the problem, investigate the problem and transfer the file manually to the target Authority once the problem has been resolved.

Note: All Acknowledgement Files shall be sent within five (5) minutes of the receiving authority's receipt of a file.

File Naming Conventions:

Acknowledgement Files shall use the following naming conventions based on the success or failure of the file transfer.

Successful Transmission:

If a file's checksum, file size and record count, identified in the file's header, are verified as correct by the receiving agency, the receiving agency shall send an Acknowledgement File to the sending agency. The Acknowledgement File shall use the following naming scheme:

(original file name.ext)**_(Authority)_ack**

Unsuccessful Transmission:

If a file's checksum, file size and record count cannot be verified as correct, based on the information in the file header, or if there were any inconsistencies in the data contained within the file, the receiving agency shall create an Acknowledgement File that specifies that the transmission of the file was not

successful. The receiving agency shall specify that the file transfer failed by utilizing the following file naming scheme:

(original file name.ext)_**(Authority)_nak**

5.7.1 File Transfer Timetable

The CSC and subscribing agencies shall receive acknowledgement files for the following file types:

- TVL Files
- Tag / Plate Assc. Data Files
- Transaction Files
- Disposition Files
- Violation Status Files

The party that sends a file shall receive an acknowledgement file within 5 minutes of the file being received by the target authority.

Note: All times used in the file name format and in the file contents are designated in GMT (Universal Time Zone – Grand Meridian).

5.7.2 File Name Format

As mentioned above, Acknowledgement Files shall be named based on the success or failure of the file transmission. Refer to the lists below for an example of the Acknowledgement File naming conventions used for each file type based on both success and failure.

Successful Transmission:

Successful file transmissions shall use the following naming convention:

(original file name.ext)_**(Authority)_ack**

- TVL Files – `20040815143045102.tag_104_ack`
- Tag / Plate Association Data Files – `20040815143045102.tpl8_104_ack`
- Transaction Files – `20040815143045104.tr_102_ack`
- Disposition Files – `20040815143045104.dsp_104_ack`

- Violation Status Files – 20040815143045104.vsf_**102_ack**

Unsuccessful Transmission:

Unsuccessful file transmissions shall use the following naming convention:

(original file name.ext)_**(Authority)_nak**

- TVL Files – 20040815143045102.tag_**104_nak**
- Tag / Plate Association Data Files – 20040815143045102.tpl8_**104_nak**
- Transaction Files – 20040815143045104.tr_**102_nak**
- Disposition Files – 20040815143045104.dsp_**104_nak**
- Violation Status Files – 20040815143045102.vsf_**104_nak**

5.7.3 File Format

The file format follows the standard guidelines referenced in Appendix B (File Structure - Standard Guidelines).

5.7.3.1 File Header Format – Acknowledgement File

The File Header is a fixed length ASCII record with comma-delimited fields, terminated by a carriage return-line feed. Although the fields are fixed in length, they are still separated by commas. This is to allow processing by either of two means: (1) specifying absolute file offset position and field length; or (2) parsing the record, breaking on the comma-delimiter. This format was developed to afford developers maximum flexibility in processing this record type.

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		Record Type. Value = 'H'
File_date_time_created	Char (14)	Y	yyyymmddhhmmss	Date and time of this file creation
Original_file_date_time_received	Char (14)	Y	yyyymmddhhmmss	Date and time the original file was received

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Processing_Status	Char (1)	Y		• Processing status of file received: • ▪ "V" – Checksum, file size and record count validated ▪ "C" –Checksum invalid ▪ "F" – File size invalid ▪ "D" – Record count invalid
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.7.3.2 File Trailer Format – Acknowledgement File

Field Name	Data Type (Fixed Length)	Required Field	Format/Range	Description
Rec_type	Char (1)	Y		Record Type. Value = 'T'
Separator	Char (1)	Y		"CR/LF" Carriage Return/Line Feed

5.7.4 File Example – Acknowledgement File

H,20050417220000,20050416220000,V

Appendix A: Authority/Plaza/Lane Descriptions

The following shall be used to uniquely identify plazas and lanes:

ID	Number of Characters
Authority	3
Plaza	5
Lane	2

Authority ID Number – (AUTHORITY):

8. 101 – TxDOT
9. 102 – NTTA
10. 103 – HCTRA
11. 104 – CTRMA
12. 105 – OTA
13. 106 – CCCD (GNO2)
14. 107 – LPC

The CSC shall also need to be provided with the physical descriptions for each location that shall be placed on the customer statements.

Appendix B: File Structure - Standard Guidelines

The files involved in the file transfer that are described in this document are ASCII text files. All fields shall be comma-delimited. The various components of a file that are involved in the file transfer are as follows:

15. File Header line: The first line of the file shall be the file header record. The format of the header record may be different for different types of transfers. All file headers fields are right-justified and fixed length (zero padded if necessary).
16. Data Record line(s): All files created from the database for file transfer shall have comma-delimited records. Field sizes are maximum lengths. Field data can be less than the maximum length.
17. File Trailer line: The last line of the file shall be the file trailer record. The format of the trailer record may be different for different types of transfers. All file trailers fields are right-justified and fixed length (zero padded if necessary).

Note: The default value for required fields that are not being used shall be zero (0).

Appendix C: Transaction Record Types

Record Type ID	Record Type	Description
10	Toll Transaction	Used for ALL Transponder Toll transactions
11	Video Toll Transaction	Used for ALL Video Toll transactions
13	Unusual Occurrence	Used for maintenance messages, if implemented in the system
15	Account Transaction	Used for transactions that affect accounts, i.e. adding money or giving discounts
19	Lane TVL Installation ACK	Used for sending TVL installation acknowledgement messages from the TMS to the CSC.

Appendix D: Axle-based Vehicle Classes

Axle-Based Vehicle Class	Vehicle Class	No. of Axles
001	NOT USED	N/A
002	CLASS 2 VEHICLE	<=2 axles
003	CLASS 3 VEHICLE	3 axles
004	CLASS 4 VEHICLE	4 axles
005	CLASS 5 VEHICLE	5 axles
006	CLASS 6 VEHICLE	6 axles
007	CLASS 7 VEHICLE	7 axles
008	CLASS 8 VEHICLE	8 axles
009	CLASS 9 VEHICLE	9 axles
010	CLASS 10 VEHICLE	>=10 axles

Appendix E: Shaped-Based Vehicle Classes

Shape-based Vehicle Class ID	Vehicle Description	Distinguishing Characteristics
011	(Reserved)	N/A
012	Motorcycles, Passenger cars, Light duty vehicles, Pickups/Vans/SUVs	Height < 7 ft. Length < 20 ft.
013	Any class 012 vehicle pulling a trailer	Same as the class 12 above with a detected trailer
014	Unibody trucks, Cement trucks, Dump trucks, Buses, Motor homes, Tractors without a trailer	Not a class 12 with the following characteristics: Height 7 ft. to 12 ft. Length 20 ft. to 46 ft.
015	Tractor with on trailer	Height > 12 ft. Length > 46 ft. Including detected trailer
016	Tractor with two trailers	Same as class 15 with second trailer

Appendix F: Violation Codes

Violation Code	Meaning	Description
0	No Violation Detected	No violation occurred
1	Vehicle Run Through	Vehicle passed through the Plaza/Lane location without paying and has no transponder
2	Insufficient Funds Toll Transaction	Vehicle did not pay enough, usually occurs with ACMs
3	Invalid ETC Patron Account	Vehicle has an invalid transponder
4	Lost/Stolen Transponder	Vehicle has a lost/stolen transponder
5	Transponder Class Mismatch	The class assigned to the transponder does not match the classification at the lane
6	Misclass	The automatic classification of the lane dos not match the classification by the toll operator (manual)
7	Unsuccessful ETC Transaction	This is the catch-all code when a vehicle has a transponder but the lane does not know what to do with it. This would handle buffered tag transactions – transactions held by the tag reader with no other associated data.
8	Account/Plate Check Requested	Image taken because of a LPCheckReq
9	Speeding at *xx* mph	Image taken when vehicle exceeds a preset speed. Used only when speed check is implemented at the lane.
10	National Guard	Used at manual lane.
11	Police	Used at manual lane.
12	Fire	Used at manual lane.
13	Ambulance	Used at manual lane.
14	Handicapped	Used at manual lane.
15	Other	Used when no other code fits. This is the catch-all code.

Appendix G: Lane Modes

Lane Mode ID	Meaning
1	Closed
2	Manned
3	Manned Preclass
4	Manned Exact Change
5	Manned Exact Change – Preclass
6	ACM
7	Dedicated ETC
8	ACM – ETC
9	Maintenance
10	Event Mode
11	Standby Mode
12	Open Road ETC
13	Manned ETC Lane
14	Emergency Mode

Appendix H: Reconciliation/Error Codes

Table 1 includes the error codes that are used by the lane and included in the 'RejectCode' field of the ETC Transaction data record.

Error Code ID	Meaning
0	Not an Unusual Occurrence
1	No Payment Received
2	Toll Misclass by Operator

Error Codes

Table 2 includes the reconciliation codes that are used by the CSC and included in the 'errnum' field of the ETC Reconciliation data record.

Reconciliation Code ID	Meaning
17	Invalid Tag
20	Paid More Than Due
21	Unknown record type
22	Operational Error
23	Forcing Patron Balance Negative
24	Patron Balance Less Than or Equal to Zero
25	Cannot find Tag / No Tag read
26	Cannot find Patron
31	Activity Record Not Saved
34	Bad Record on Import
36	Duplicate Violation Time
37	Non-Vehicle Collection
38	Class Difference on Toll
39	Bad Paytype on Import
40	Duplicate Transaction
99	Miscellaneous

Reconciliation Codes

Appendix I: Tag Statuses

Tag Status ID	Meaning	Interoperability Code	Violation (Y/N)
G	Good	G	N
B	Low Balance	B	N
I	Invalid	I	Y
L	Lost	L	Y
N	Negative Balance	N	Y
R	Returned	R	Y
S	Stolen	S	Y
X	Non-Revenue Tag	Status based on account type (i.e., a Non-Revenue tag on an account with funds would be reported as G (Good) to the Interoperability agencies	N

Note: Tag Statuses are consistent with Interoperability Tag Status Values.

Appendix J: Plaza ID List (Needs Completion by Developer)

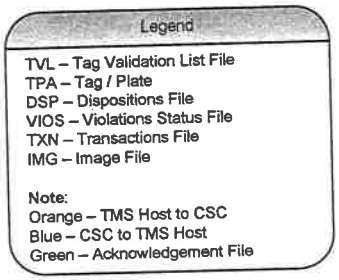
Plaza ID	Definition

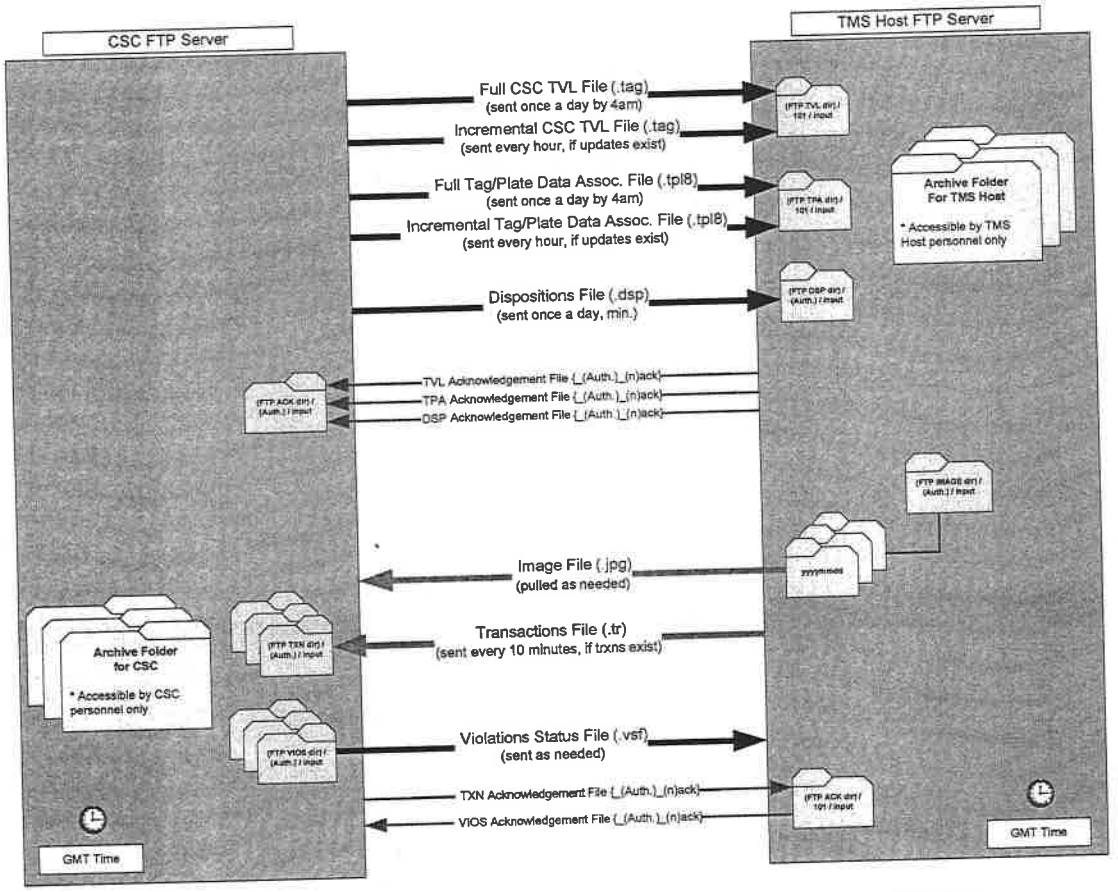
Appendix K: File Record Types

Record Type Value	Definition
H	File header
T	File trailer
S	TVL data record
P	Tag / Plate Assc. Data File data record
A	Transaction File ETC data record
V	Transaction File Violation data record
R	Disposition File data record
J	Disposition file Adjustment data record
C	Violation Status File data record

Appendix L: CSC / TMS Host File Transfer Locations

- File Validation Criteria – all files, except Image Files
  1.) File Size
  2.) Record Count
  3.) Checksum
- Acknowledgement Files shall be received by the transmitting authority no more than 5 minutes after receipt of a transmitted file by the receiving authority.





Appendix M: Violation Status Codes

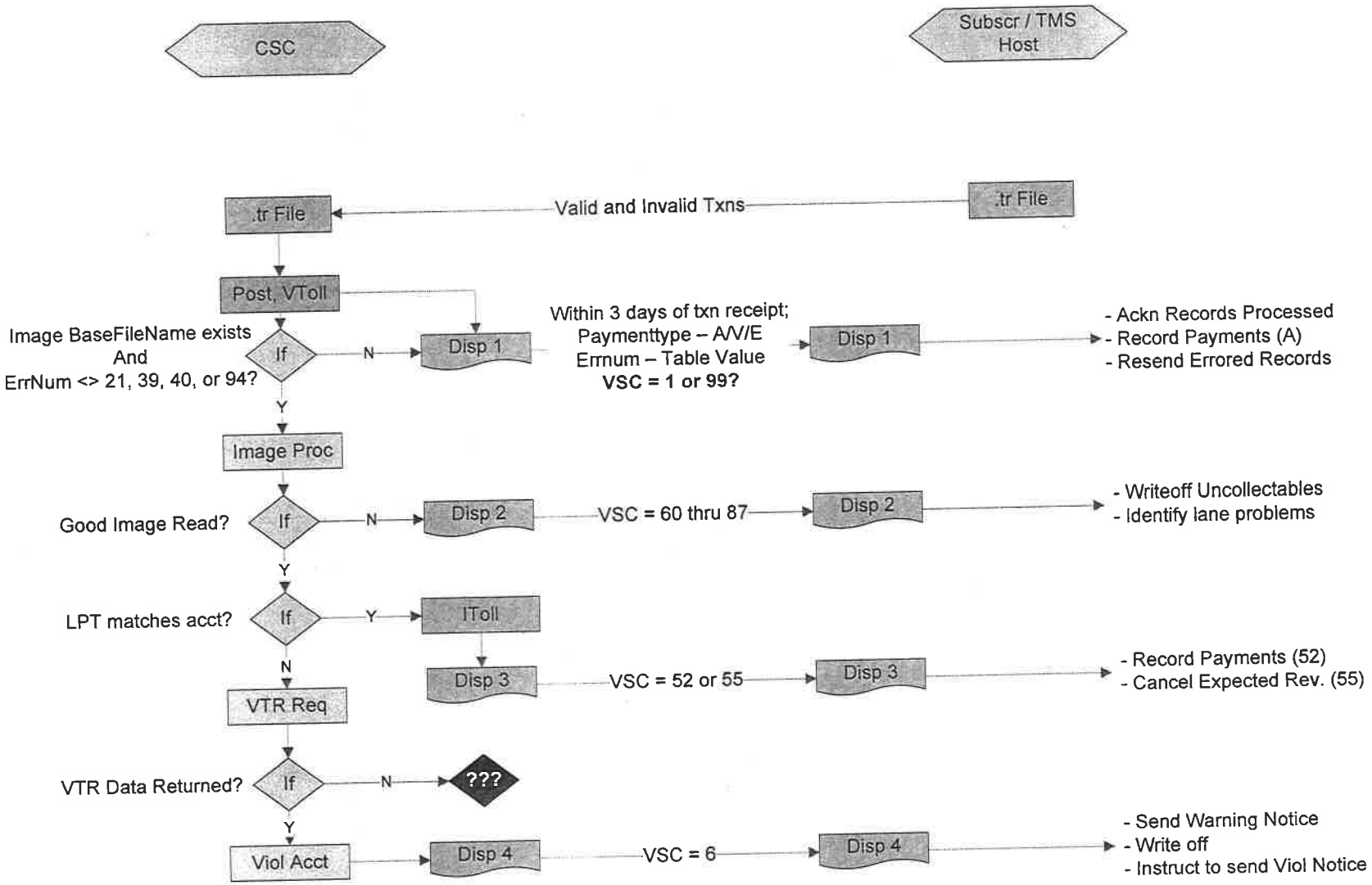
Code	Status	Definition
1	VIOL LANE	Violation transaction was recorded.
2	VIOL AUDIT	Violation has been audited by Finance and determined to be a true violation.
3	SUPV REVIEW	Request image review by Image Processing Supervisor.
4	SC PENDING	First pass to Service Center to determine if it is a customer match.
5	RQST VTR	Submit first request to VTR for registered owner name and address.
6	VIO ACCT OPEN	Violation account has been opened with data from VTR, and the CSC is pending direction from TMS Host.
7	NOTICE VIOLATOR	Violation has been attached to a violation account with the name and address from VTR, and a notice shall be sent to the registered owner of the vehicle.
8	CANCELLED PRE NOTICE	CSC has cancelled the violation for the associated transaction before a notice was sent.
9	CANCEL VIOLATION	Cancel the violation for the associated transaction.
10	RENTAL ACCOUNT MATCH	Plate number matched a current plate listed in a Rental type account.
11	RENTAL MATCH RETURN	Participating car rental agency sends a file back with renter information
12	RENTAL RETURN	An account is created from the renter information returned from the rental agency.
13		
14		
15		
16		
17		
18		
19		
20	NOTICE 1	Violator shall be mailed a violation Notice 1 (Toll + Administrative Fee Due).
21	NOTICE 2	Violator shall be mailed a violation Notice 2 (Toll + Administrative Fee + Delinquent Penalty Due).
22	MANUAL FEE	A manual fee adjustment has been made to the balance on the violation.
23		
24	RESERVED	RESERVED
25	VIOL TO COURT	CSC to forward the violation(s) to the county court where the violation occurred for final collection.
26	VIOL SENT TO COURT	The CSC has forwarded the violation(s) to the appropriate county court.
27	COURT PAID	Court rules against the violator and collects the debt owed for the violation.

Code	Status	Definition
28	COURT UNCOLLECTABLE	Court rules against the CSC, rendering the violation debt uncollectible.
29		
30	SUSPEND HRNG EX	System action suspended pending administrative review.
31		
32		
33		
34		
35		
36		
37	VIOLATOR TO COLLECTIONS	Collection agency to pursue the violation.
38	VIO TO COLLECTIONS	The CSC has forwarded the violation(s) to a collection agency for debt collection or skip tracing.
39		
40	REDUCTION	Violation has been reduced.
41	SOLD RETURN	Vehicle Sold
42	STOLEN RETURN	Vehicle Stolen
43	CUSTOMER ACCOUNT PENDING CLOSE	Customer Account is in PEND CLOSE status and in the process of being closed.
44	VOIDED DUE TO EVENT	Special Event write-off
45	NOTICE TIME EXPIRED	The latest date to send a Notice of Toll Violation has expired.
46	CANCEL COLLECTION ACTION	CSC to remove and cancel a violation that has been forwarded to a collection agency.
47	WRITE OFF UNCOLL	Violation is uncollectible.
48	WRITE OFF VIOLATION	TMS Host must write off violation due to court decision or violator producing evidence of innocence.
49	CANCELLED POST NOTICE	The CSC cancelled the violation during the collection process.
50	PD VIOL	Violation has been paid either in full or partial payment received.
51	RESERVED	RESERVED
52	I/P PAY BY PLT	Violation paid from an active customer account with a positive account balance.
53	RECEIVABLE PAY BY PLT	Customer received a violation notice (receivable) as their account was not current. Customer contacted agency to update account and the violation was paid by plate out of the customer account.
54	PARTIAL PAID VIOLATION	Violation occurred on a partial payment at the lane.
55	PD NON REVENUE CUSTOMER	Violation was paid by plate out of a non-revenue customer account.
56	OUT OF SYNC-NO VIOL	Lane was out of sync and caused a false violation.
57	CUSTOMER ACCT CLOSED	Violation was matched to a customer account but could not be paid, as the account was not in good standing.

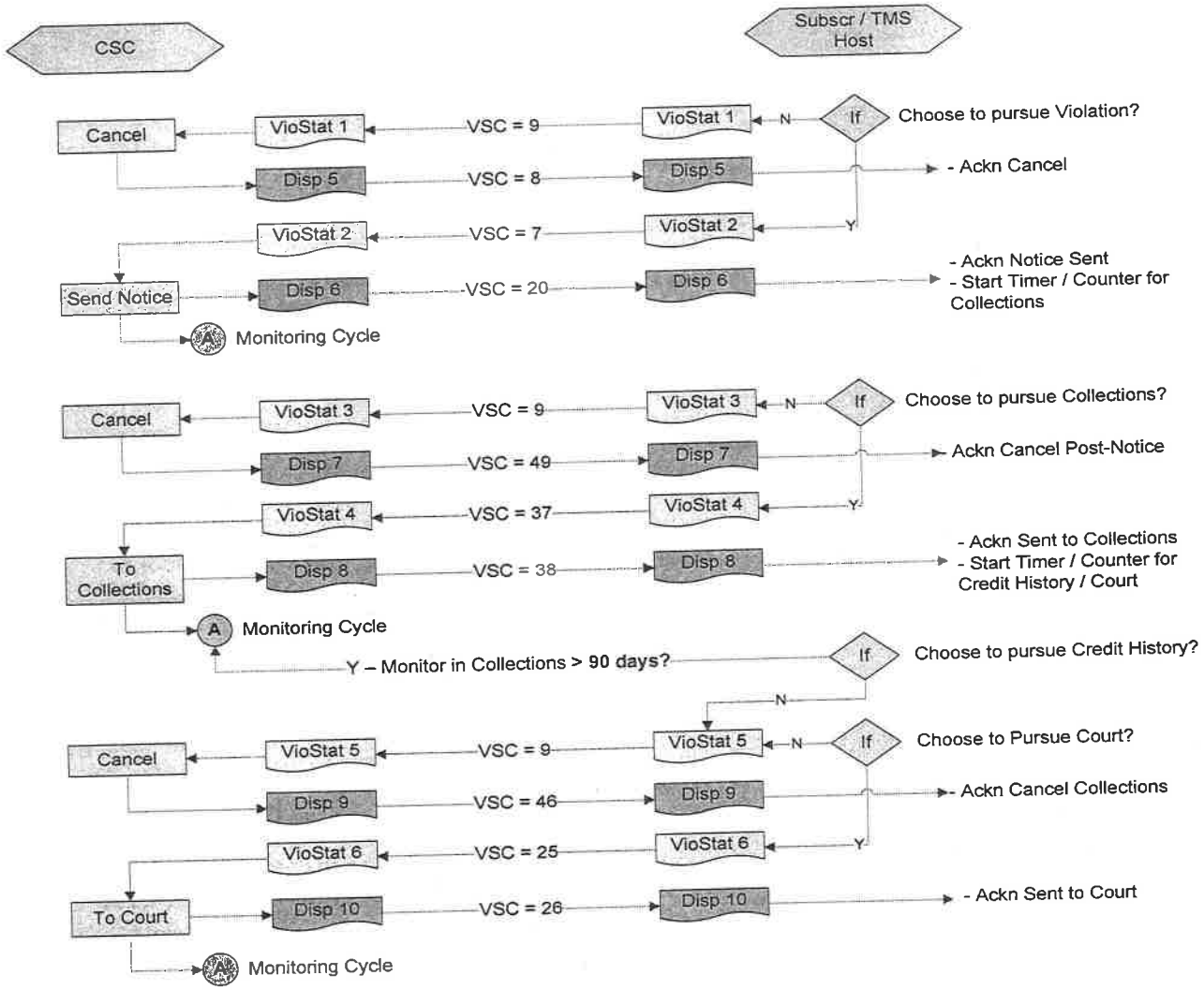
Code	Status	Definition
58	CROSS LANE DUPLICATE/ STRADDLE	Violation met criteria in system of a cross lane duplicate or straddle and is coded off by the system.
59	DUPLICATE	Request for payment by AVI or pay-by-plate to Service Center was previously submitted and resolved.
60	IMG NT CLEAR	Violation image was too fuzzy to read license plate.
61	IMG TOO LT	Violation image was too light (overexposed) to read license plate.
62	IMG TOO DK	Numbers on license plate was too dark to read clearly.
63	CAMERA TOO HGH	License plate was below the image frame.
64	CAMERA TOO LOW	License plate was above the image frame.
65	CAMERA TOO LFT	License plate was obscured by the right side of the image frame.
66	CAMERA TOO RGT	License plate was obscured by the left side of the image frame.
67	BLACK	Entire violation image was black.
68		
69		
70	HATCHED	Violation image is distorted by lines or interference pattern.
71	IMAGE NOT AVAILABLE	No image appeared for the violation.
72	NO VEHICLE IN IMAGE	Violation image did not show a vehicle.
73	FUNERAL PROCESSION	Used to code off funeral procession vehicles by agency approval.
74	PLATE GLARE OR SHADOW	Violation image was unreadable due to sunlight glare.
75	VEHICLE NOT IN LANE	Used for 2-image lanes. License plate could be read because it was obscured by left or right image frame.
76	UNREADABLE PLATE	Violating vehicle had unreadable license plate (e.g., older, non-reflective plate type)
77		
78		
79		
80		
81	OUT OF STATE PLATE	License plate is from a U.S. state other than the home state
82	US GVT PLT	Vehicle had U.S. government issue license plate or an exempt plate.
83	NON US PLT	Vehicle had a non-U.S. (foreign) license plate.
84	NO PLT	Vehicle had no license plate.
85	PLT OBSC	View of license plate image was obscured by other object in image.
86		
87	PLASTIC SHIELD	Plate is covered with a blue or white plastic shield and cannot be read.
88		
89		

Code	Status	Definition
90	TEST CAR/SYSTEM PROBLEM	False violation due to system testing or a system problem.
91	AUDITED PAID REJECT	During an ACM malfunction, toll was paid but fell into the ACM reject bin, and was not recorded as a paid transaction.
92	AUDITED PAID NVC	Toll was paid into ACM but vehicle exited the lane before the green light.
93	AUDITED AD HOC COLL	Toll payment by ad hoc collection verified.
94	AUDITED PAID OTHER	Toll payment was made, but was attached to the following vehicle in the lane.
95	MISC	Code reserved for problems in the lane that the agency needed to be coded off as a separate code.
96	AUDITED LATE COMMIT	Toll payment verified as toll attendant late commit.
97	ACM RESOLUTION	Toll payment was made, but part of the payment was attached to the following vehicle in the lane.
98	PAID AVI IMPORT	Violation was paid from a valid customer account by the system.
99	NO VIOLATION DETECTED	A violation waived due to equipment errors, special events, or customer service by agency approval.

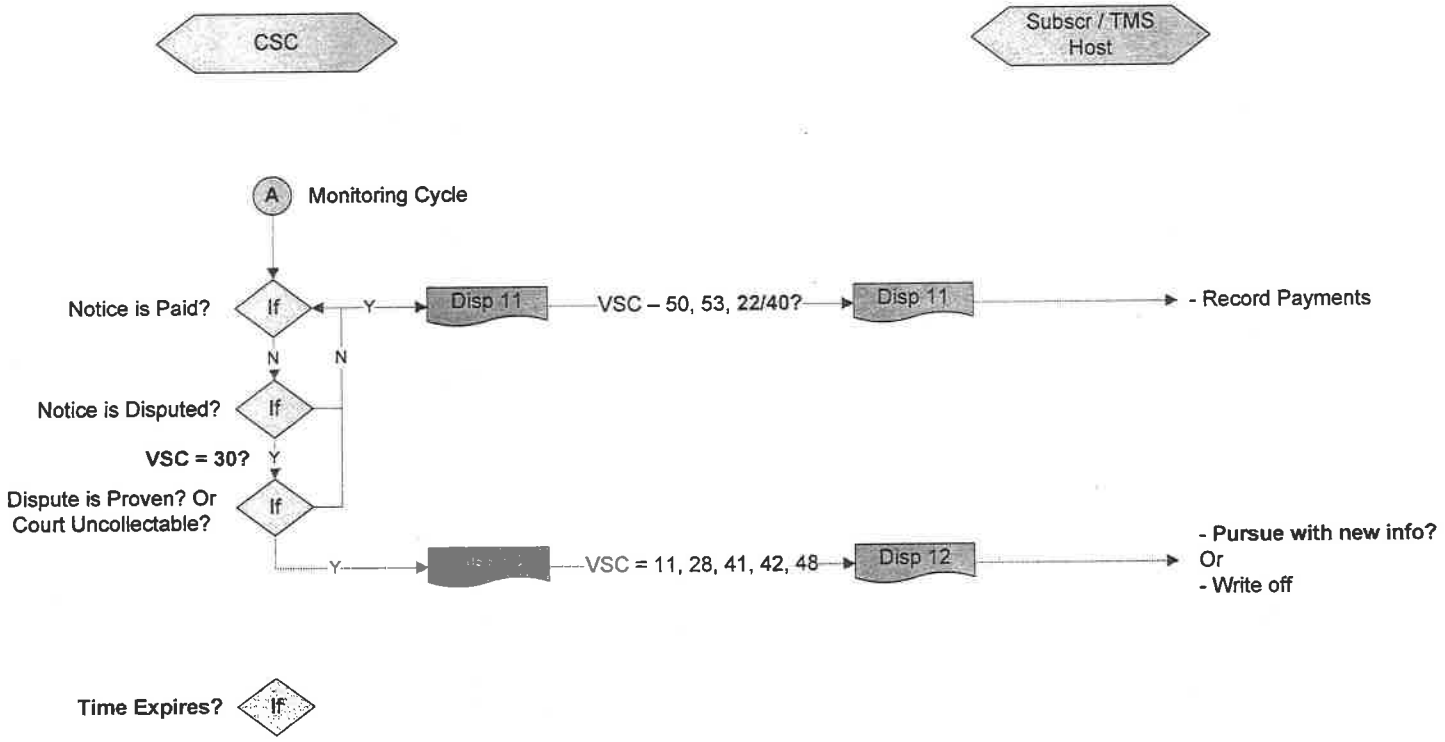
Appendix N: *Typical* Violation Status Code Flow – Pre-Violation Notice



Appendix N: *Typical* Violation Status Code Flow (cont) – Post-Violation Notice



Appendix N: *Typical* Violation Status Code Flow (cont) – Monitoring Cycle (A)



Attachment 4

List of Transponder Models Establishing Benchmark Transponder Performance

TransCore Model Number	Power	Internal/ External	Mounting Surface	Agency
AT5544	Battery	either (sealed case)	non-metallic	HCTRA
AT5545	Battery	either (sealed case)	metallic	HCTRA
AT5547	Battery	internal	non-metallic	HCTRA
AT5140	Battery	external (bumper)	metallic or non-metallic	HCTRA
eGo Plus 0700	Beam	printable sticker tag	window	HCTRA
AT5100	Beam	internal	non-metallic	NTTA
AT5145	Beam	external (bumper)	metallic or non-metallic	NTTA
eGo Plus 0700	Beam	printable sticker tag	window	NTTA
eGo Plus 0700	Beam	printable sticker tag	window	TxDOT
AT5145	Beam	external (bumper)	metallic or non-metallic	TxDOT
AT5544	Battery	either (sealed case)	non-metallic	TxDOT

Attachment 5

[Reserved.]

Attachment 6

Form of Letter of Credit

(ISSUING BANK)

IRREVOCABLE LETTER OF CREDIT NO. _____

_____
_____
_____

Ladies and Gentlemen:

At the request and for the account of the North Texas Tollway Authority ("NTTA"), 5900 W. Plano Parkway, Suite 100, Plano, TX 75093, we hereby issue this irrevocable stand-by letter of credit ("Letter of Credit") pursuant to the Tolling Services Agreement between NTTA and _____ ("Beneficiary") dated _____, 2009, as the same may be amended, modified or supplemented from time to time (the "TSA") in the initial amount of $_____ **[insert the applicable amount determined pursuant to Section 16 of the Tolling Services Agreement]** (the "Stated Amount"). An amount not to exceed the Stated Amount, plus any increases by the amount of NTTA's reimbursements as provided below, may be drawn by the Beneficiary or any designee thereof under this Letter of Credit at any time with respect to the occurrence of a Drawing Event (as defined below).

Funds under this Letter of Credit will be made available to you against receipt by us of a Demand for Payment (as defined below), duly completed and purportedly signed by a representative of the Beneficiary. Any such Demand for Payment shall be presented at our office located at the address set forth below or at any other office in the same city which may be designated by written notice delivered by us to you prior to the presentation of the Demand for Payment. Each Demand for Payment hereunder may be made up to the close of business on the Stated Expiration Date. Multiple partial drawings are permitted hereunder with respect to the occurrence of a Drawing Event.

If a Demand for Payment is made by you hereunder at or prior to 10:00 a.m., central time, on any weekday (i.e., Monday through Friday, excluding Texas state holidays and U.S. federal holidays) (a "Business Day"), and provided that such Demand for Payment conforms to the terms and conditions hereof, payment shall be made by us to you in immediately available funds free and clear of and without deduction for any taxes, duties, fees, liens, set-offs or other deductions of any kind and regardless of any objection by any third party, to the account designated below or such other account at a national bank in the United States of America that you may designate in the Demand for Payment on the next Business Day after demand is made. If a Demand for Payment is made by you hereunder after 10:00 a.m., central time, on a Business Day, and provided that such Demand for Payment conforms to the terms and conditions hereof, such payment shall be made no later than the close of business, local time of the location of

the account designated below or such other account at a national bank in the United States of America that you may designate in the Demand for Payment, on the second Business Day after demand is made. Payment under this Letter of Credit shall be made in same day funds, by wire transfer to your account described below or such other account as you may designate in writing.

Financial Institution: _____
Routing Number: _____
Account Name: _____
Account Number to Credit: _____
Reference: _____
Attention: _____

If any Demand for Payment delivered by you hereunder does not, in any instance, conform to the terms and conditions of this Letter of Credit, we shall give you notice thereof, stating the reasons therefor and that we will upon your instructions hold any document at your disposal or return the same to you. Upon receipt of any such notice, you may attempt to correct any such non-conformance; provided, however, that any Demand for Payment presented to correct such non-conforming demand must be presented on or prior to the Stated Expiration Date.

The Letter of Credit may be transferred by you in connection with a transfer and assignment of your rights under the TSA upon receipt by us of a transfer request in the form attached hereto as Annex B accompanied by this original Letter of Credit.

In the event of any drawing by you hereunder, we shall immediately notify NTTA of such drawing, and request that NTTA reimburse us in the amount of such drawing, plus any interest earned thereon. If, and to the extent that, NTTA reimburses us prior to the termination date hereof for any amounts drawn by you hereunder, the available amount under this Letter of Credit shall be increased by the amount of NTTA's reimbursement. During our business hours you may request and we will thereupon provide to you documented verification of increases and of the then available amount of this Letter of Credit.

Except as expressly stated herein, this Letter of Credit is not subject to any condition or qualification. We engage with you that all Demands for Payment made in compliance with the terms of this Letter of Credit will be duly honored upon delivery of documents as specified if presented at this office in the manner described above on or before _____, 20__ (the "Stated Expiration Date").

This Letter of Credit shall become effective immediately, and shall automatically terminate on the earliest to occur of (i) our honoring of a drawing hereunder in an amount equal to the Stated Amount plus any increases by the amount of NTTA's reimbursements, or (ii) the close of business on the Stated Expiration Date.

All notices (including without limitation presentation of any Demand for Payment) to be made to us under this Letter of Credit shall be in writing, shall refer to this Letter of Credit by number, and shall be delivered by hand or sent by registered or certified mail, postage prepaid, return receipt requested, if to us at **[address]**, **[attention]**, or at such address as we shall notify you in writing.

As used herein:

(i) "Demand for Payment" shall mean the delivery to us of a certificate in the form attached as Annex A hereto.

(ii) "Drawing Event" shall mean the occurrence of any event under paragraph (2) of the Demand for Payment.

The Letter of Credit sets forth in full the terms of our undertaking, and such undertaking shall not in any way be modified, amended, amplified or limited by reference to any document, (including the TSA), instrument or agreement referred to or to which the Letter of Credit relates (except only the certificates referred to herein); and any such reference shall not be deemed to incorporate herein by reference any document (including the TSA), instrument or agreement (except for such certificates). The obligations of the Issuing Bank under this Letter of Credit are the individual obligations of the Issuing Bank and are in no way contingent upon reimbursement with respect thereto from NTTA or any other party.

Except so far as otherwise expressly stated, this Letter of Credit is subject to the International Standby Practices ("ISP98"), International Chamber of Commerce Publication No. 590 (the "Uniform Customs"), which shall in all respects be deemed a part hereof as fully as if incorporated herein except as modified hereby.

This Letter of Credit shall be deemed to be a contract made under the laws of the State of Texas and applicable U.S. federal law, and shall, as to matters not governed by Uniform Customs, be governed by and construed in accordance with the laws of the State of Texas, without regard to principles of conflicts of law.

Any failure by you to draw upon this Letter of Credit as permitted hereunder shall not cause this Letter of Credit to be unavailable for any future drawing, provided that this Letter of Credit has not expired prior to such future drawing and that all requirements of this Letter of Credit are independently satisfied with respect to any such future drawing.

Communications with respect to this Letter of Credit shall be in writing and shall be addressed to us at _____, Attention: _____, specifically referring to the number of this Letter of Credit.

Very truly yours,

[ISSUING BANK]

By: _____
Name: _____
Title: _____

ANNEX A

TO LETTER OF CREDIT
DEMAND FOR PAYMENT CERTIFICATE

Date: _____, 20__

[ISSUING BANK]

RE: Irrevocable Letter of Credit No. _____ (the "Letter of Credit")

The undersigned, a representative of _____ (the "Beneficiary"), hereby certifies to [Issuing Bank] as follows:

1. The Beneficiary is making a Demand for Payment under the above-referenced Letter of Credit in the amount of US $_____ (the "Requested Drawing Amount") for credit to Account No. _____ of the Beneficiary at [institution and location of institution].

2. Under the terms of the Tolling Services Agreement (TSA) dated _____ between the undersigned and the North Texas Tollway Authority (NTTA), the Beneficiary is entitled to draw on the Letter of Credit for the Requested Drawing Amount.

3. The Requested Drawing Amount was computed in compliance with the terms and conditions of the Letter of Credit, does not exceed the Stated Amount of the Letter of Credit and does not exceed the amount available to be drawn under the Letter of Credit.

4. This Demand for Payment is made before the Stated Expiration Date of the Letter of Credit.

Capitalized terms used herein (without definition) shall have the respective meanings set forth in the Letter of Credit.

IN WITNESS WHEREOF, the undersigned, the [office held] of the Beneficiary has executed and delivered this Certificate as of the _____ day of _____, 20__.

_____
[Name]

ANNEX B
TO
LETTER OF CREDIT

TRANSFER REQUEST

To: [Issuing Bank]

RE: Irrevocable Letter of Credit No. _____

We have assigned our interest under the Tolling Services Agreement to the party named below as secondary beneficiary, and we hereby request you to transfer all our rights as beneficiary under the Letter of Credit referenced above to the second beneficiary named below.

_____
Name of second beneficiary

_____
Address

We do hereby transfer all our rights as the original beneficiary, including all rights to make drawings under the Letter of Credit, to the second beneficiary. The second beneficiary shall have sole rights as beneficiary, whether existing now or in the future, including rights to agree to any amendments, including increases or extensions or other changes. All amendments will be sent directly by the second beneficiary without the necessity of consent by or notice to us.

We enclose the original letter of credit and any amendments. Please indicate your acceptance of our request for the transfer by processing the letter of credit and sending it to the second beneficiary with your customary notice of transfer.

Your transfer fee: $_____

Enclosed is our check for $_____.

You may debit our Account No. _____

We also agree to pay you on demand any expenses which may be incurred by you in connection with this transfer.

_____
Name of beneficiary

_____
Address

Attachment 7

Initial Designation of Authorized Representatives

For NTTA:

Name: Clayton K. Howe

Title Assistant Executive Director of Operations

Address: 5900 W. Plano Parkway, Plano, Texas 75093

Office Tel: 214.461.2000

Mobile Tel: 214.325.5459

Fax: 972.930.2625

Email: chowe@NTTA.org

For Developer:

Name: Jose Maria Lopez de Fuentes

Title: Authorized Representative

Address: 7700 Chevy Chase Drive, Building One, Suite 500C, Austin, TX 78752-1562

Office Tel: 512.637.8545

Mobile Tel: 512.496.2684

Fax: 512.637.1498

Email: jmlopez@cintra.us.com

Attachment 8

Example of Calculation of Delinquent Payment Deduction

***Typical* Monthly Delinquent Payment Deduction**

Month:	December, 2007	
LIBOR on 12/1/07	8%	
LIBOR + 400 basis points	12%	(100 Basis points = 1%)

Business Date	Due Date	Payment Date	Number of Days	Amount	Delinquent Payment Deduction
12/3/2007	12/5/2007	12/6/2007	1	$100,000.00	$32.88
12/4/2007	12/6/2007	12/8/2007	2	$125,000.00	$82.19
				Total	$115.07

Attachment 9

Example of Calculation of Non-Compliance Deduction

Typical Non-Compliance Deduction Calculation		
Adjusted Payment Period Compensation	##########	
Monthly Non-Compliance Reduction %	2%	For this Sample Month, the NTTA was non-compliant in performance which resulted in 18 Non-Compliance points. The Reduction % is then 2%.
Monthly Non-Compliance Deduction	$2,000.00	

Attachment 10

Example of Reclassification Report

[Example follows this page.]

Transaction Report

User ID: JHARP
Run Time: 2/8/2008 13:45:50

Date Type: Received (Other types include: Transaction, Posted, or Status)
Reporting Period: 02/04/2008 00:00:00 - 02/05/2008 23:59:59
Agency: NTTA
Facility: 121
Plaza: All
Lane: All
Transaction Status: Received (Other type is Paid)

Date	Home Agency	Transponder Transactions		Video Transactions		Total Transactions		Processing Fees				Net Payment
		Count	Toll	Count	Toll	Count	Toll	Per Trxn (Base)	Per Trxn (%)	IOP Fee	Total	
2/4/2008	NTTA	500	350.00	0	0.00	500	350.00	25.00	0.00	0.00	25.00	325.00
	HCTRA	100	70.00	0	0.00	100	70.00	5.00	0.00	0.00	5.00	65.00
	TTA	75	52.50	0	0.00	75	52.50	3.75	0.00	0.00	3.75	48.75
	Unknown	0	0.00	125	87.50	125	87.50	6.25	0.00	0.00	6.25	81.25
	Total Trxns	675	472.50	125	87.50	800	560.00	40.00	0.00	0.00	40.00	520.00
2/5/2008	NTTA	525	367.50	0	0.00	525	367.50	26.25	0.00	0.00	26.25	341.25
	HCTRA	110	77.00	0	0.00	110	77.00	5.50	0.00	0.00	5.50	71.50
	TTA	100	70.00	0	0.00	100	70.00	5.00	0.00	0.00	5.00	65.00
	Unknown	0	0.00	100	70.00	100	70.00	5.00	0.00	0.00	5.00	65.00
	Total Trxns	735	514.50	100	70.00	835	584.50	41.75	0.00	0.00	41.75	542.75
Total	NTTA	1,025	717.50	0	0.00	1,025	717.50	51.25	0.00	0.00	51.25	666.25
	HCTRA	210	147.00	0	0.00	210	147.00	10.50	0.00	0.00	10.50	136.50
	TTA	175	122.50	0	0.00	175	122.50	8.75	0.00	0.00	8.75	113.75
	Unknown	0	0.00	225	157.50	225	157.50	11.25	0.00	0.00	11.25	146.25
	Total Trxns	1,410	987.00	225	157.50	1,635	1,144.50	81.75	0.00	0.00	81.75	1,062.75

Note: Selection of the Agency/Facility affects the processing fees charged.

Adjustment Report

Date Type: (Transaction, Received, Posted, or Status)
Reporting Period: 02/04/2008 00:00:00 - 02/05/2008 23:59:59
Agency: NTTA
Facility: 121
Plaza: All
Lane: All

User ID: JHARP
Run Time: 2/8/2008 13:45:50

Date	Home Agency	Transponder Transaction Adjustments													
		Not Posted - Not Pursuable		Not Posted - Pursuable		Duplicate Transactions		Exempt Transactions		User Disputes		Posted Video Transactions		Total	
		Count	Toll	Count	Toll	Count	Toll	Count	Toll	Count	Toll	Count	Toll	Count	Toll
2/4/2008	NTTA	(10)	(7.00)	(5)	(3.50)	(5)	(3.50)	0	0.00	(8)	(5.60)	30	21.00	2	1.40
	HCTRA	(5)	(3.50)	(1)	(0.70)	0	0.00	0	0.00	0	0.00	15	10.50	9	6.30
	TTA	(2)	(1.40)	0	0.00	0	0.00	0	0.00	(1)	(0.70)	10	7.00	7	4.90
	Unknown	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Total Trxns	(17)	(11.90)	(6)	(4.20)	(5)	(3.50)	0	0.00	(9)	(6.30)	55	38.50	18	12.60
2/5/2008	NTTA	(15)	(10.50)	(4)	(2.80)	0	0.00	0	0.00	(1)	(0.70)	45	31.50	25	17.50
	HCTRA	(5)	(3.50)	0	0.00	(1)	(0.70)	0	0.00	(2)	(1.40)	25	17.50	17	11.90
	TTA	(10)	(7.00)	(3)	(2.10)	(1)	(0.70)	0	0.00	(1)	(0.70)	15	10.50	0	0.00
	Unknown	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Total Trxns	(30)	(21.00)	(7)	(4.90)	(2)	(1.40)	0	0.00	(4)	(2.80)	85	59.50	42	29.40
Total	NTTA	(25)	(17.50)	(9)	(6.30)	(5)	(3.50)	0	0.00	(9)	(6.30)	75	52.50	27	18.90
	HCTRA	(10)	(7.00)	(1)	(0.70)	(1)	(0.70)	0	0.00	(2)	(1.40)	40	28.00	26	18.20
	TTA	(12)	(8.40)	(3)	(2.10)	(1)	(0.70)	0	0.00	(2)	(1.40)	25	17.50	7	4.90
	Unknown	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Total Trxns	(47)	(32.90)	(13)	(9.10)	(7)	(4.90)	0	0.00	(13)	(9.10)	140	98.00	60	42.00

Not Posted - Not Pursuable are transactions which were good in the lane but couldn't be posted due and there are NO pursuable candidate vehicle images

Not Posted - Pursuable are transactions which were good in the lane but couldn't be posted due and there ARE pursuable candidate vehicle images

User Disputes include toll credits, excusals, and rate (class adjustments)

Unpursuable Not a Candidate Vehicle transactions include image review rejects and OCR reject vehicles

Adjustment Report

Date Type: (Transaction, Received, Posted, or Status)
Reporting Period: 02/04/2008 00:00:00 - 02/05/2008 23:59:59
Agency: NTTA
Facility: 121
Plaza: All
Lane: All

User ID: JHARP
Run Time: 2/8/2008 13

Date	Home Agency	Video Transaction Adjustments									
		Unpursuable (NCV's)		User Disputes		Not Posted - Pursuable		Posted Video Transactions		Total	
		Count	Toll	Count	Toll	Count	Toll	Count	Toll	Count	Toll
2/4/2008	NTTA	0	0.00	0	0.00	5	3.50	(30)	(21.00)	(25)	(17.50)
	HCTRA	0	0.00	0	0.00	1	0.70	(15)	(10.50)	(14)	(9.80)
	TTA	0	0.00	0	0.00	0	0.00	(10)	(7.00)	(10)	(7.00)
	Unknown	(50)	(35.00)	(5)	(3.50)	0	0.00	0	0.00	(55)	(38.50)
	Total Trxns	(50)	(35.00)	(5)	(3.50)	6	4.20	(55)	(38.50)	(104)	(72.80)
2/5/2008	NTTA	0	0.00	0	0.00	4	2.80	(45)	(31.50)	(41)	(28.70)
	HCTRA	0	0.00	0	0.00	0	0.00	(25)	(17.50)	(25)	(17.50)
	TTA	0	0.00	0	0.00	3	2.10	(15)	(10.50)	(12)	(8.40)
	Unknown	(60)	(42.00)	(10)	(7.00)	0	0.00	0	0.00	(70)	(49.00)
	Total Trxns	(60)	(42.00)	(10)	(7.00)	7	4.90	(85)	(59.50)	(148)	(103.60)
Total	NTTA	0	0.00	0	0.00	9	6.30	(75)	(52.50)	(66)	(46.20)
	HCTRA	0	0.00	0	0.00	1	0.70	(40)	(28.00)	(39)	(27.30)
	TTA	0	0.00	0	0.00	3	2.10	(25)	(17.50)	(22)	(15.40)
	Unknown	(110)	(77.00)	(15)	(10.50)	0	0.00	0	0.00	(125)	(87.50)
	Total Trxns	(110)	(77.00)	(15)	(10.50)	13	9.10	(140)	(98.00)	(252)	(176.40)

Not Posted - Not Pursuabl
Not Posted - Pursuable ar
User Disputes include toll
Unpursuable Not a Candid

Adjustment Report

Date Type: (Transaction, Received, Posted, or Status)
Reporting Period: 02/04/2008 00:00:00 - 02/05/2008 23:59:59
Agency: NTTA
Facility: 121
Plaza: All
Lane: All

User ID: JHARP
Run Time: 2/8/2008 13:45:50

Date	Home Agency	Total Transponder Adjustments		Total Video Billing Adjustments		Processing Fees									Net Payment
						Transponder Trxn Fees			Video Trxn Fees			IOP Fees			
		Count	Toll	Count	Toll	Per Trxn (Base)	Per Trxn (%)	Total	Per Trxn (Base)	Per Trxn (%)	Total	Per Trxn (Base)	Per Trxn (%)	Total	
2/4/2008	NTTA	2	1.40	(25)	(17.50)	0.10	0.00	0.10	(1.25)	0.00	(1.25)	0.00	0.00	0.00	(1.15)
	HCTRA	9	6.30	(14)	(9.80)	0.45	0.00	0.45	(0.70)	0.00	(0.70)	0.00	0.00	0.00	(0.25)
	TTA	7	4.90	(10)	(7.00)	0.35	0.00	0.35	(0.50)	0.00	(0.50)	0.00	0.00	0.00	(0.15)
	Unknown	0	0.00	(55)	(38.50)	0.00	0.00	0.00	(2.75)	0.00	(2.75)	0.00	0.00	0.00	(2.75)
	Total Trxns	18	12.60	(104)	(72.80)	0.90	0.00	0.90	(5.20)	0.00	(5.20)	0.00	0.00	0.00	(4.30)
2/5/2008	NTTA	25	17.50	(41)	(28.70)	1.25	0.00	1.25	(2.05)	0.00	(2.05)	0.00	0.00	0.00	(0.80)
	HCTRA	17	11.90	(25)	(17.50)	0.85	0.00	0.85	(1.25)	0.00	(1.25)	0.00	0.00	0.00	(0.40)
	TTA	0	0.00	(12)	(8.40)	0.00	0.00	0.00	(0.60)	0.00	(0.60)	0.00	0.00	0.00	(0.60)
	Unknown	0	0.00	(70)	(49.00)	0.00	0.00	0.00	(3.50)	0.00	(3.50)	0.00	0.00	0.00	(3.50)
	Total Trxns	42	29.40	(148)	(103.60)	2.10	0.00	2.10	(7.40)	0.00	(7.40)	0.00	0.00	0.00	(5.30)
Total	NTTA	27	18.90	(66)	(46.20)	1.35	0.00	1.35	(3.30)	0.00	(3.30)	0.00	0.00	0.00	(1.95)
	HCTRA	26	18.20	(39)	(27.30)	1.30	0.00	1.30	(1.95)	0.00	(1.95)	0.00	0.00	0.00	(0.65)
	TTA	7	4.90	(22)	(15.40)	0.35	0.00	0.35	(1.10)	0.00	(1.10)	0.00	0.00	0.00	(0.75)
	Unknown	0	0.00	(125)	(87.50)	0.00	0.00	0.00	(6.25)	0.00	(6.25)	0.00	0.00	0.00	(6.25)
	Total Trxns	60	42.00	(252)	(176.40)	3.00	0.00	3.00	(12.60)	0.00	(12.60)	0.00	0.00	0.00	(9.60)

Not Posted - Not Pursuabl
Not Posted - Pursuable ar
User Disputes include toll
Unpursuable Not a Candid

Attachment 11

Summary of Certain Terms of NTTA's Business Continuity Plan

[Summary follows this page.]

Executive Summary
NTTA's Business Continuity Plan

History

It is the policy of the NTTA to maintain a comprehensive Business Continuity Plan to protect its technology infrastructure, information assets, assure employee safety, and provide continued services. The Plan provides for reestablishment of critical and essential operations that may have been disrupted due to the impact of an unforeseen event.

The Plan was developed to document the tasks, support and resources needed should a disaster impact the North Texas Tollway Authority. The Plan will be activated when an emergency beyond the scope of standard operating procedures occurs. It is designed to reduce confusion created during a disaster, and provides a framework for recovery and restoration of critical systems, voice/data communications, business processes and facilities.

General Overview

The purpose of this Plan is to formalize and document the Business Continuity Policies and Procedures of the NTTA and to provide guidelines to:

- Gain control of problem situations early;
- Minimize the impact of an operational outage on the NTTA,
- Gather critical information into a central repository,
- Reduce risks to essential information resources,
- Make decisions in advance of a crisis,
- Test periodically.
- Restore the facilities.
- Return to a permanent operating environment.
- Resume time-sensitive business operations.

The Business Continuity Plan addresses the logical flow of events in responding to major disruptions in IT services, business processes and technology infrastructure. Specifically, the events to:

- Continue/resume time-sensitive business operations for the critical and essential business processes.
- Activate the resumption and support of those services. (chain of command, communication with key personnel, emergency procurements, etc.).
- Provide ability to initiate restoration procedures of critical computer processing and data communications capabilities quickly following a disaster.
- Define how the NTTA Departments will communicate and coordinate with the Business Continuity Teams.
- Identify the staff assigned to implement resumption support (Business Continuity Teams & Key Personnel) and their responsibilities.
- Restore critical operating systems, application systems, functions and telecommunications.
- Achieve each of the above objectives in a timely, efficient, and cost effective manner.
- Return to a permanent operating environment.

The Business Continuity Plan is a restricted document and classified as confidential given the nature of the contents. Elements of the Plan are tested periodically and it is modified as needed based upon test results, as well as changes to hardware, software, applications, procedures, personnel, and the NTTA's organization structure. The Plan documents are stored electronically, backed up and saved off site, and made available in electronic form to authorized individuals.

Attachment 12

Summary of NTTA's Audit and Reconciliation Procedures

[Summary follows this page.]

Executive Summary
NTTA's Audit and Reconciliation – All Electronic Toll Collection

The NTTA has embarked on a transition to Electronic Toll Collection and ZipCash in all lanes; the Revenue Audit Department needs to change to support this transition. The changes planned will include change in audit from cash to ETC and ZipCash utilizing existing staffing levels as used for cash audit today. Additional facilities shall be included in the audit as a result of Toll Service Agreements.

Overview

- The NTTA has incorporated ZipCash as of January 31, 2007.
- The Board has approved a plan for removing cash toll collection in the lanes.
- As NTTA changes its' Toll Collection methods, the Revenue Audit Department will determine potential areas for revenue leakage and adapt preventative measures to minimize variances.
- Transition of Audit responsibilities will be accomplished by: Analyzing, Defining, Implementing and Documenting processes and procedures.

Goals

- Minimize toll revenue variance.
- Maximize TollTag transaction posting.
- Maximize audit and audit-ability of TollTag transactions and VTolls including Interoperable transactions to maximize the customer's experience.
- Minimize NTTA's leakage.
- Define process for periodic audits of Customer Service shifts.
- Define process for audit of Customer Service cash deposits.
- Ensure chain of custody of money.
- Reconciliation of Toll Collection system to journal entries.
- Identify potential system issues as they relate to Toll Collection in a proactive manner.

Existing Responsibilities:

Audit, Analyze, Reconcile, and Report Traffic and Revenue

1. Revenue Audit Clerks (Quantity: 3)
   a. Reconcile vault and toll attendant shifts (Cash Audit)

2. Revenue Audit Analyst (Quantity: 1)
   a. Evaluate notifications to determine implications on Cash Audit

3. Senior Revenue Audit Analysts (Quantity: 2)
   a. Audit and reconcile complicated anomalies
   b. Perform quality review
   c. Perform revenue assurance

d. Train staff

4. Revenue Audit Manager (Quantity: 1)
   a. Manage and coordinate the Revenue Audit Department
   b. Distribute reconciled reports
   c. Close month in a timely fashion

Transitioned Responsibilities:

Audit, Analyze, Reconcile, and Report Traffic and Revenue

1. Revenue Audit Clerks (Quantity: 3)
   a. Reconcile Transactions and Images
   b. Reconcile Image Disposition and Quality
   c. Reconcile TollTag Transactions
   d. Reconcile VTolls
   e. Audit Class Mismatches
   f. Perform License Plate Verification

2. Revenue Audit Analyst (Quantity: 1)
   a. Reconcile Interoperable Accounts
   b. Review and Resolve Unposted Transactions
   c. Audit Cash Fund and Internal Bank
   d. Tag Validation List Data Verification
   e. Audit Incidental Fees

3. Senior Revenue Audit Analysts (Quantity: 2)
   a. Audit Invoice Excusals and Discounts
   b. Audit Refunds, Other Credits and Debits
   c. Reconcile Bank Deposits (Cash and Credit)
   d. Reconcile Toll-related Ledger Activity
   e. Resolve Reconciliation Discrepancies
   f. Audit/Monitor/Calculate TSA Performance Measures

4. Revenue Audit Manager (Quantity: 1)
   a. Manage and coordinate the Revenue Audit Department
   b. Distribute reconciled reports
   c. Close month in a timely fashion

***Typical* Reconciling Items (High-Level)**

Item	What	Why	Resolution
1	Images and Transactions 1. Determine and verify we are not missing images from any location. 2. Verify that no transactions are lost. 3. Verify that no images are lost through the life cycle of an image.	The NTTA is dependant on the collection of transactions and images for revenue collection.	If images are missing: 1. Determine if the files were never saved (all images references are there, but there are transactions without images). 2. If image references are missing, notify IT.
2	Images – Image Disposition/Quality 1. Verify that images are being reviewed by OCR	The NTTA is dependant on the accurate review of images for toll collection of ZipCash. This will also	If image disposition requires Roadway maintenance: 1. Notify Roadway Support with detail of findings and

Item	What	Why	Resolution
	and manually, correctly. 2. Review trends and value of rejected images.	help to identify potential image quality issues such as camera focus, angle, illumination, etc.	location(s). If image disposition requires retraining and guidance during image review: 1. Notify CSC with review information and recommendations for quality improvement.
3	Excusals and Discounted Payments. Review invoices (both ZipCash and Violation) for excusals by user. Review trends.	Since the NTTA will be more dependant on the revenue generated from invoiced tolls and violation fees there is a need for performing an audit of the excusals and discounts.	If there is a high frequency of excusals or discounts by a CSS, validate role of CSS and notify CSC. If there is a high frequency of excusals or discounts for a Customer, validate information found. Determine who is performing the excusals/discounted transactions and why. Notify CSC or Risk Management. If an excusal code such as 'other', 'VIP' &, 'special vehicle' is used, validate excusal code reason with information found. Notify CSC management or Risk management.
4	Bank Deposit Reconciliation in ARM	Assist with bank deposit (cash and credit card) reconciliation currently performed by Finance. Cross-train audit with this functionality. This will insure timely resolution to discrepancies.	Upon unresolved discrepancy, research with Bank and CSC until resolution is found.
5	Ledger Account Reconciliation in ARM	This is a Finance function that is currently performed by MBI Consulting, Inc. The Audit team's availability will ease the transition of this task to the NTTA.	Perform reconciliation. Upon discrepancy, notify Application Support and Finance of unresolved discrepancies and track discrepancies through resolution.
6	Cash Fund and Internal Bank Audit	Verification of the funds in the CSC Safe	Notify CSC Management or Risk Management upon discrepancy.
7	Class Mismatch Audit and Follow-up	There is substantial potential revenue in TollTags that are mis-classified.	Classify TollTag correctly and notify customer of classification change.
8	TollTag Transaction Reconciliation	Account verification should be performed to insure the validity and accuracy of the transactions posted to accounts, deferred	Notify Application Support should inconsistencies arise.

Item	What	Why	Resolution
		revenue balances, accounts receivables, etc.	
9	Reconciliation of transactions from the lane to the Host. Verifying transactions generated in the lane reached the Host.	Revenue assurance.	If transactions did not get to Host or if duplicates exist notify Application Support and Roadway Support of potential issue.
10	Reconciliation of items from the Host to the CSC. Verifying transactions posted in Host are posted in the CSC.	Revenue assurance and customer service. This can also potentially identify lane problems.	If transactions did not get posted to either system or duplicate transactions exist, notify the applications group via a helpdesk ticket.
11	Research and reconciliation for transactions in the Host that were rejected from posting in the CSC.	Revenue assurance and customer service. This can also potentially identify lane problems.	If transactions are not posted to the CSC, research the tag ID and account. *Research the possibility of reposting the transactions.*
12	Ensure NTTA visited interoperable transactions balance between the Host and interoperable.	Revenue assurance.	If transactions did not get posted to either system or duplicate transactions exist, notify Application Support. *Research the possibility of reposting the transactions.*
13	Ensure that NTTA home interoperable transactions balance between the CSC and interoperability.	Revenue assurance.	If transactions did not get posted to either system or duplicate transactions exist, notify the Application Support. *Research the possibility of reposting the transactions.*
14	Confirm retail transactions against customer accounts.	To ensure complete posting of transactions.	If a transaction did not get posted, notify the Application Support.
15	Confirm interoperable partner Tag Validation List is transferred each day.	To ensure the Tag Validation List file is transferred each day, revenue assurance.	Notify app support that if Tag Validation List file is missing.
16	Research when a credit card used is not the credit card on file.	Revenue Assurance.	Notify CSC management of instances.
17	Monitor and research refunds.	Revenue Assurance.	Identify high frequency refund transaction by CSC employee and credit card number. Verify transactions and information provided. Notify CSC management.
18	Monitor and research 'other credits' to TollTag accounts.	Revenue Assurance.	Identify high frequency refund transaction by CSC employee and account number. Verify transactions and information provided. Notify CSC management.
19	Monitor TollTag and velcro fulfillments to ensure they are being completed in allotted timeframe.	Customer Service Quality Assurance. Monitor for performance.	If fulfillments are in queue longer than 4 days, notify CSC management, via email, for complete processing of fulfillment requests.

Item	What	Why	Resolution
20	Monitor Shifts to ensure they are closed within one business day.	Revenue Assurance. To ensure complete transaction postings.	If shifts are in an open status for more than a day, notify CSC management,.
21	Reconciling SCIP, CSC, and VPS shifts to ensure amounts are consistent between systems. *This will go away with the upgrade.* Monitor and research force closure of shifts.	Monitor performance trends and identify potential collusion and theft, as well as resolve any potential discrepancies. Shift level discrepancies may be a result of payments not being processed correctly.	Notify the Application Support and CSC Management to assist in the resolution, if needed.
22	Reconcile VTolls between CSC to VPS.	To ensure complete transaction postings.	Notify the Application Support. Application Support will then verify VToll posting is working correctly or resolve the issue.
23	Monitor VToll rates for fluctuation.	Monitor percentage trends that can point to broken processes, etc. that need to be corrected.	Notify Application Support. The applications group will then verify VToll posting is working correctly or resolve the issue.
24	Monitor Invoice transactions in the VPS for complete posting.	To ensure complete transaction postings for hanging payments.	Notify Application Support for complete transaction postings. Application Support will correct the hanging payment.
25	Reconcile TollTag Statement fees (and ultimately all additional fees) to accounts with mailed statement flag checked.	To ensure accurate and timely statement fee postings.	Notify Application Support. The applications group will then research the issue to determine cause and correct the issue.
26	Variance Reconciliation - We need to know where are variances are and their status. We need to be able to determine why variances are not matched to owners.	We are dependant on the revenue generated from violations. This will help define areas for improvement or issues. Review variances by license plate that are not matched to an owner of a vehicle. Determine if plate ownership can be resolved.	Notify appropriate parties of all variances to determine cause. Request resolutions.
27	Non-revenue TollTag usage – monitoring for misuse	Non-revenue tags are a benefit to our employees and should not be abused. Abuse results in potential lost revenue to the NTTA.	Notify Risk management of instances for resolution.
28	Monitor image review backlog	We are dependant on the revenue generated from images.	Determine if backlog is creating a performance concern. Notify CSC.
29	Monitor and Report performance measures as	NTTA's payment may be reduced as a result of low	Notify before performance becomes a financial hit on the

Item	What	Why	Resolution
	defined in every Toll Services Agreement.	performance.	NTTA.
30	Duplicate Transaction Verification	Verify customers are not billed duplicate transactions and that duplicate transactions are not posted to customer accounts.	Apply adjustments when needed based on research.

Attachment 13

Summary of NTTA's Marketing/Distribution Activities

[Summary follows this page.]

Executive Summary
NTTA's Marketing Distribution

Overall Marketing Objective

The NTTA objective is to increase market share throughout north Texas through a combination of tactics and strategies that touch the widest range of our customer base including: brand awareness campaigns, grass roots marketing within the four counties (geographic and economic), community outreach and strategic partnerships. The overlay to this objective is a coordinated and cohesive message that identifies the NTTA as the toll provider of choice in north Texas with a focus on customers, economy, mobility and partnerships.

The unique element to the north Texas TollTag market is that there are multiple untapped geographic markets/locations. Historically, NTTA roads have been concentrated in a finite geographic region of Collin and Dallas counties. As NTTA expands its system throughout the four-county region, there is large and yet to be tapped market potential for TollTags, retail partnerships and operations.

TollTag Strategies and Tactics

NTTA marketing distribution initiatives are to increase the availability of TollTags throughout the north Texas region and put more tags in cars. The strategy is to provide solid messaging for having an NTTA TollTag, make it convenient to do business with the NTTA and establish strong marketing campaigns to consistently reinforce the message, sign-up locations and the role of the NTTA in north Texas. NTTA will continue to build on the tradition of maintaining its position as the single toll provider of choice in north Texas through the following main strategies.

1. Increasing customer and corporate accounts;
2. Strategic Retail Partnerships
3. Working in coordination with NTTA Operations to expand the TollTag opportunities i.e. parking garages, stadiums etc.

The Tagwagon: Mobile Marketing/Distribution

Office Visits

The NTTA visited over 125 offices in '07 with its mobile marketing unit the Tagwagon, a 38 ft. RV equipped with the ability to promote NTTA initiatives and distribute TollTags. Based on a strategy of "going to the customer" the NTTA targets medium to large office complexes with the goal of customer sign up at their convenience. Office workers have the ability to visit the Tagwagon, sign up for a TollTag and actually use the TollTag on the way home. Customers also visit the Tagwagon for updates on projects or clarification on recent media reports. Staff is always equipped with the necessary collateral/information to keep customers accurately informed.

For 2008, the TagWagon and staff will reach out in creative ways to smaller businesses (those with under 75 employees). Small businesses make up the majority of metroplex businesses and creating an outreach program with the limited staff resources available.

Festivals/Promotional Events

The Tagwagon attended over 130 festivals and promotional events in '07 with a dual mission. Festival attendance focuses on public outreach to reinforce the NTTA brand and the NTTA mission statement. TollTag distribution is also provided at festivals and promotional events. Opportunities vary from festival to festival depending on attendance, and can include print advertising opportunities, radio spots and/or banner presence. However, the one element common to all events is the ability to distribute TollTags.

Festivals and promotional events provide staff the opportunity to interact with existing and potential customers. It is the front line in regards to customer concerns; a benefit in that staff receives the information uncensored and can provide accurate, detailed information on site to rectify the issue.

Combined the Tag wagon saw distribution growth of 150% in '07 and has targeted specific areas and objectives to continue that growth in years to come.

Retail Distribution

Respectable Retail Partners: By targeting retail partners with strong community support, the NTTA can maintain its standing as a community partner while providing residents added access to TollTags.

The retail initiative is speared by the ability to offer "special" packages to individual retail centers. These packages provide the retail customer an incentive that encourages the purchase of a TollTag from this particular location. For example: Pre-loaded tags to stores that require membership, i.e. Costco. Funds are set aside, provided by the vendor, and then loaded upon activation to a customer's card. The customer sees instant value in the TollTag provided by a trusted source and becomes a customer of the NTTA.

Partners with a common interest: The NTTA is targeting partners that share a common customer base such as dealerships and auto supply stores. The strategy is to not only distribute TollTags from these locations but to also provide branding opportunities to the retail outlet - telephone and address information - on the TollTag itself. This increases the chances of a repeat customer for the retail outlet, while providing yet another location for TollTag distribution and provides the TollTag added value to the customer. As an example, the American Airline Center sponsorship was instrumental in communicating the construction activities and closures at the south end of the Dallas North Tollway.

Third Party Outreach (Municipalities): Within the past year, this program has seen substantial growth in number of locations and interest throughout north Texas. The program partners with cities to serve as TollTag distribution centers. The NTTA provides the TollTags, applications and marketing material for the location; the city provides a designated place (generally the water payment desk) where residents can come in and sign up for a TollTag. The resident receives an active TollTag upon completion. For every TollTag issued by the city they receive $5 from the NTTA. The program establishes the NTTA as the toll provider of choice by associating with the cities our customers live in, while making it convenient for them to do business with the NTTA. Also included in the Third Party Program are select Albertson's and Kroger's food stores.

Marketing Strategy

stations to ensure that all target audiences are reached. Included in radio packages are live remotes, designed to increase foot traffic at key Customer Center locations.

Focus Groups

Key to the success of any organization in sustaining market share is the ability to receive customer feedback, track trends and the flexibility to address those needs while not losing sight of the overall marketing objectives. The NTTA has established proven measures that collect both quantitative and qualitative data including:

- Web Support – A variety of email addresses that customers can submit complaints, concerns or feedback on any topic related to the NTTA. A system is in place that assures an accurate response is provided to the customer in a timely manner.
- Focus Groups – Performed throughout the year with set topics and used to develop messaging points or test advertising material or key communication points.
- Mystery Driver – A program that utilizes customers as "secret drivers" to provide data on customer touch points throughout the NTTA system.

Future Growth

The NTTA will continue to maintain and strengthen our market share within north Texas through methods that have proven successful while keeping an eye on market and industry trends. The NTTA has identified key initiatives/product launches that will assist in establishing an even stronger share of the market while solidifying our relationship with our existing customer base. As we transition to Electronic Tolling, the NTTA marketing team is looking for additional ways to communicate with the customer base and attract new customers.