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

RESOLUTION NO. 22-028

**APPROVING AMENDMENT NO 2 TO THE CONTRACT WITH DELOITTE
CONSULTING LLP FOR CONTINUED DEVELOPMENT OF A DATA PLATFORM
AND ASSOCIATED TRANSACTION ROUTING AND SYSTEM INTERFACES TO
SUPPORT TOLL TRANSACTION MANAGEMENT**

WHEREAS, Mobility Authority staff is developing a data platform to transition all toll transaction data processing and data management capabilities after the point of transaction creation from a third-party vendor to the Mobility Authority (the "Data Platform System"); and

WHEREAS, a Mobility Authority managed data platform will support new business capabilities such as external reporting, data analytics and a connection to the Texas Department of Motor Vehicles' datasets to allow better informed agency decision making; and

WHEREAS, by Resolution No. 21-018, dated March 31, 2021, the Board of Directors approved a contract with Deloitte Consulting LLP for the first and second releases of the Data Platform System to establish the data platform and create the routing and exchange processes; and

WHEREAS, by Resolution No. 21-059, dated September 29, 2021, the Board of Directors approved a contract with Deloitte Consulting LLP for the third release of the Data Platform System to support development for pricing and billing transactions, define how data governance is handled in the new processing schema, and identify the suite of reports necessary to account for the Mobility Authority's revenue and monitor performance for an amount not to exceed $2,069,364.00 including ten percent project contingency; and

WHEREAS, on March 14, 2022, the Mobility Authority and Deloitte Consulting LLP executed Amendment No. 1 to the contract to remove a portion of the scope of the third release of the Data Platform System and to reduce the total amount not to exceed to $2,015,294.00; and

WHEREAS, the Executive Director has negotiated Amendment No. 2 to the contract with Deloitte Consulting LLP to ensure the Data Platform System is tested and prepared for transaction processing workflow from end to end, in an amount not to exceed $312,000.00 which is attached hereto as Exhibit A; and
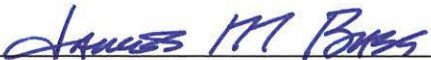
WHEREAS, considering previously approved Amendment No. 1 and proposed Amendment No. 2, the total amount to be paid under the contract with Deloitte Consulting LLP for the third release of the Data Platform System is $2,327,294.

NOW THEREFORE BE IT RESOLVED that the Board of Directors hereby approves Amendment No. 2 to the contract with Deloitte Consulting LLP to ensure the Data Platform System is tested
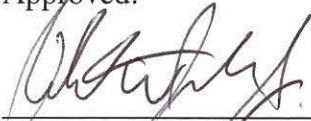
and prepared for transaction processing workflow from end to end, in an amount not to exceed $312,000.00 which is attached hereto as Exhibit A.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 29th day of June 2022.

Submitted and reviewed by: Approved:

_____   _____
James M. Bass   Robert W. Jenkins, Jr.
Executive Director   Chairman, Board of Directors

Exhibit A

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

AMENDMENT NO. 2 TO DATA PLATFORM SERVICES RELEASE 3 STATEMENT OF WORK

VENDOR AGREEMENT

This Amendment is made to the VENDOR AGREEMENT, dated September 24, 2021 (the Agreement), between **CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY** (CTRMA) AND **DELOITTE CONSULTING LLP** (Deloitte).

The total compensation for this Scope of Work, as amended, represents an increase of $312,000 from the approved amount for Release 3 Amendment 1 for a new total expected amount of $2,139,170. All other terms, conditions and obligations set forth in the Agreement shall remain in full force and effect.

Deloitte must invoice the CTRMA after each Payment Deliverable is accepted. CTRMA will not make partial payments for deliverable milestone subtasks. Payments will be made in accordance with Appendix A of the Contract.

CTRMA anticipates the completion of development for Release 3, inclusive of the effort as defined herein, will result in a fully functional application, capable of receiving and processing transactions in the production environment in accordance with CTRMA business processes and rules. Additional change orders will not be considered unless CTRMA and Deloitte agree to additional scope.

This Amendment is made for the following purpose, consistent with the Project defined in the Agreement:

Additional Deliverables shall be added to the Scope of Work with the following description and delivery acceptance criteria:

- #62: TVL-LVL File Availability for Vendors and Agencies
    - Design, Development, Functional Testing, Production Readiness Testing with CTRMA defined test cases, and integration testing with CTRMA system integrators
    - **Acceptance Criteria**: Successful testing with no major outstanding software, including internal testing with CTRMA and/or CTRMA vendors or external agencies

- #63: CUSIOP Certification Reports
    - HUB Reconciliation Report identified in the Release 3 Report documentation
    - SQL Shell reports for CUSIOP Certification validation
        - CTRMA KTA Toll Invoice Report
        - CTRMA TTA Fee Invoice Report
        - Transaction Reconciliation Detail Report
        - Transaction Reconciliation Summary Report
        - TAG Status Change Report
    - **Acceptance Criteria**: Successful demonstration of each report, data validation, CTRMA ability to successfully generate reports with no major outstanding issues.

- #64: Consume Southeast U.S. Interoperability Hub (SEIOP) Tag Validation List (TVL)
  - Design, Development, Functional Testing, Production Readiness Testing with CTRMA defined use cases.
  - System Integration Testing with SEIOP partner agencies for one week.
  - SEIOP TVL will utilize the same Interface Control Document (ICD) format as the Central U.S. Interoperability (CUSIOP) TVL. *Reference Attachment A.*
  - All possible SEIOP TVL workflow scenarios and reconciliation between the SEIOP and Data Platform System shall be included in development and testing.
  - Design to be reviewed and approved with CTRMA staff and consultants prior to initiation of development.
  - **Acceptance Criteria**: Successful testing with no major outstanding software or user interface defects, including internal testing with CTRMA and SEIOP Hub and/or partner agencies.

- #65: DPS Support Duplicate Transactions
  - Design, Development, Functional Testing, Production Readiness (user) Testing with CTRMA defined use cases.
  - Business rule: BR-505 *Reference Attachment B.*
    - Multiple transactions for the same vehicle shall not be processed, and may consist of the following:
      1. An AVI Transaction and Video Transaction for the same vehicle at the same location, direction, and time (within a configurable threshold (parameter).
      2. Multiple AVI Transactions for the same vehicle at the same location, direction, and time (within a configurable threshold (parameter).
      3. Multiple Video Transactions for the same vehicle at the same location, direction, and time (within a configurable threshold (parameter).
    - DPS Identified duplicates shall be flagged in the database and reportable.
  - CTRMA business rules shall be interpreted for DPS to mean multiple transactions for the same vehicle shall not be processed through the Hub or PBM, but instead put in a final state with a distinct workflow status.
  - **Acceptance Criteria**: Successful testing with CTRMA approved test cases with no major outstanding software or user interface defects.

- #66: Transaction Reporting
  - Discovery sessions, design, and development of transaction reports, including TOMS UI and APIs associated with SQL queries already included in scope for Release 3.
  - Specific reports identified in the Release 3 Report documentation.
    - Report 1: Transaction Search (created in Release 1-2, migrating to Release 3)
    - Report 2: CSC Pending Reconciliation – Summary
    - Report 3: CSC Pending Reconciliation – Detail
    - Report 4: Reconciliation Summary
    - Report 5: PBM Reconciliation Report
    - Report 6: Non-Revenue by Agency
    - Report 7: Transaction Summary
    - Report 8: Pending Workflow Stages Report
  - *Reference Attachment C: Release 3 Report Requirements v1.2.*
  - Selection criteria and report results are detailed in the requirements document.

- o Current reports samples provided in the documentation are not intended to be duplicated but are for reference only.
  - o Design review and approval by CTRMA is required prior to initiation of development.
  - o **Acceptance Criteria**: Successful demonstration of each report in TOMS, data validation, CTRMA ability to successfully generate reports in TOMS with no major outstanding issues.

- #67: Integration Testing: CUSIOP, PBM, ETCS (Kapsch)
  - o DPS-ETCS (Kapsch) Integration Testing, CUSIOP Certification Testing (including Dry-Run testing), DPS-PBM Integration Testing
  - o Load testing and performance testing is included to reach CTRMA processing volume and timing expectations.
  - o Includes resolution of all outstanding issues identified during testing.
  - o **Acceptance Criteria**: Successful completion of all identified test cases with no major outstanding issues.

- #68: End-to-End Production Readiness Testing
  - o Testing and UAT support of End-to-End (E2E) testing with CTRMA provided test cases.
  - o Load testing and performance testing is included to reach CTRMA processing volume and timing expectations.
  - o Includes resolution of all outstanding issues identified during testing and development required based on uncovered requirements or new design/development.
  - o **Acceptance Criteria**: Successful completion of all identified test cases with no major or minor outstanding issues, and all code moved to and verified in the Production Environment.

- #69: DPS-TCS API-Based ICD for RTRAN, ITRAN, IREQ, and HRR
  - o Design, Development of ICD documentation coordinated with new ETCS (ETC) and CTRMA.
  - o Collaborative design is expected with coordinated ETC workshops.
  - o API-Based ICD will be created by Deloitte with review and approval by ETC and CTRMA.
  - o **Acceptance Criteria**: API-Based ICD delivered and approved.

- #70: DPS-TCS API-Based Data Exchanges for RTRAN, ITRAN, IREQ, and HRR
  - o Design, Development, Internal Testing, Production Readiness Testing with CTRMA, and coordinated testing with new ETCS (ETC).
  - o Collaborative design is expected with coordinated ETC workshops.
  - o Coordinate testing with ETC to meet their delivery schedule.
  - o Test Cases will be created by Deloitte with review and approval by ETC and CTRMA.
  - o **Acceptance Criteria**: Successful testing of API-Based data exchanges for RTRAN, ITRAN, IREQ, and HRR.
  - o **Not Included**: Production go-live and post go-live verification; this will be performed under a separate maintenance contract.

Pricing Schedule shall be updated to include the new deliverables as shown:

#	Deliverables	Deliverable Price
Tolling Product Management		
1	Development and deployment of Product database(s) and relationships	$50,055.00
2	Design and development of automated Product Management process(es)	$50,055.00
3	Development of automated business process(es) for payor ID and payment path routing logic	$50,055.00
Discount Management		
4	Development and deployment of Discount database(s) and relationships	$56,355.00
5	Design and development of automated Discount Management process(es)	$78,890.00
6	Integration of Discount Management with Product Management processes	$90,160.00
"Billing" (Invoice) Management		
7	Development and deployment of Invoice database(s) and relationships	$78,890.00
8	Design and development of automated Invoice Management process(es)	$112,700.00
9	Integration of Invoice Management with Product and Discount Management	$112,700.00
Data Exchange Management		
10	Design, development, and testing for Pay by Mail('PBM') Invoice data exchange modifications (Fixed file, API, XML, JSON)	$90,160.00
11	Design, development, and testing for IOP Hub Invoice data exchange modifications (Fixed file, API, XML, JSON)	$90,160.00
Data Governance & SOC 2 Compliance		
20	SOC 2 Risk Objectives, Control Objectives, and Policies	$56,350.00
21	SOC 2 Compliance Processes & Procedures	$56,350.00
22	Support for establishment of Data Governance strategy and approach	$78,890.00
23	Definition of Data Use criteria	$56,350.00
IT Enterprise Management		
28	Policies & Procedures documentation	$56,350.00
29	Revision of Source Data Entity Catalog	$56,350.00
30	Data Platform IT Service Catalog(s) and Service Level definition & documentation	$56,350.00
TOMS		
Product Management		
52	Product Types and Groups: Design and development of UX/UI for Product Management (View List, View Item, Create, Modify, Delete)	$55,000.00
53	Products: Design and development of UX/UI for Product Management (View List, View Item, Create, Modify, Delete)	$66,000.00
54	Pricing (Price Charts): Design and development of UX/UI for Product Management (View List, View Item, Create, Modify, Delete)	$66,000.00
Discount Management		
55	View Exempt Discount: Design and development of UX/UI for Discount Management (View List, View Item, Create, Modify, Delete)	$55,000.00
56	Add/Edit Discount Programs: Design and development of UX/UI for Discount Management (View List, View Item, Create, Modify, Delete)	$44,000.00
57	Organizations: Design and development of UX/UI for Discount Management (View List, View Item, Create, Modify, Delete)	$38,500.00
Billing Management		
58	Manage Billing: Design and development of UX/UI for Billing Management (View List, View Item, Create, Modify, Delete)	$71,500.00
59	Manage Transactions: Design and development of UX/UI for Billing Management (View List, View Item, Create, Modify, Delete)	$60,500.00
Data Exchange Management		
60	Manage File Exchange Report: Design and development of UX/UI for Data Exchange Management (View List, View Item, Create, Modify, Delete)	$66,000.00
61	Manage File Runs: Design and development of UX/UI for Data Exchange Management (View List, View Item, Create, Modify, Delete)	$27,500.00
Additional Effort (Change Order 2)		
62	TVL-LVL File Availability for Vendors and Agencies	$0.00
63	CUSIOP Certification Reports	$0.00
64	Consume SEIOP TVL	$19,500.00
65	DPS Support Duplicate Transactions	$20,800.00
66	Transaction Reporting	$63,700.00
67	Integration Testing: CUSIOP, PBM, ETCS (Kapsch)	$52,000.00
68	End-to-End Production Readiness Testing	$31,200.00
69	DPS-TCD API-Based ICD for RTRAN, ITRAN, IREQ, and HRR	$15,600.00
70	DPS-TCD API-Based Data Exchanges for RTRAN, ITRAN, IREQ, and HRR	$109,200.00
DPS Release 3 Complete Development		$2,139,170.00

IN WITNESS WHEREOF, the parties have caused this Amendment to be executed as of the date signed by the CTRMA and written below.

DELOITTE CONSULTING LLP   **CENTRAL TEXAS REGIONAL**
                                                MOBILITY AUTHORITY

_____   _____
Uday Katira, Managing Director   James M. Bass
Deloitte Consulting LLP   CTRMA Executive Director

_____06/14/2022_____   _____
Date   Date

ATTACHMENT A: NIOP / CUSIOP ICD DOCUMENTATION

- NIOP ICD VERSION 1.02 FINAL RELEASED 20190507
- NIOP ICD Appendix A - RELEASED 20181126
- NIOP ICD Appendix B - RELEASED 20181126
- NIOP ICD Appendix C - RELEASED 20200205
- NIOP ICD Appendix D - RELEASED 20181126
- NIOP ICD Appendix E - RELEASED 20190201
- CUSIOP ICD Supplement CLEAN DISTRIBUTED 20191021

ATTACHMENT B: CTRMA BUSINESS RULES

- The Mobility Authority Business Rules - Lane Systems 1.0 FINAL DRAFT - CLEAN

ATTACHMENT C: REPORT REQUIREMENTS

- Data Platform Release 3 Report Requirements v1.2

DIR Vendor Agreement

This is to signify that the Central Texas Regional Mobility Authority and Deloitte Consulting LLP Corporation have entered into an Agreement **in an amount not to exceed $2,139,170.00** pursuant to Texas Government Code Section 2054.0565 utilizing Texas Department of Information Resources Contract No. #DIR-TSO-4031 for the deliverable-based information technology services described in this proposal. All terms and conditions of Texas Department of Information Resources Contract No. #DIR-TSO-4031 are applicable to and made part of this agreement.

DELOITTE CONSULTING LLP

_____
Uday Katira, Managing Director
Deloitte Consulting LLP

 06/17/2022
_____
Date

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

_____
James Bass
Executive Director

_____
Date

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National Interoperability
Interface Control Document
Version 1.02
FINAL

LAST UPDATE: MAY 2019

Table of Contents

Modification History

Date	Version	Modifications
September/ October 2018	NIOP X.XX	1. Conformed the Southern States Interoperability ICD to National Interoperability ICD. 2. Incorporated revisions requested by the NIOP Working group. a. Entry and Exit Date/Time with the Time zone to be added in the spare fields in transaction data. [Edited and created separate fields in November 2018.] b. Add GS and US as License Plate State Codes. [Removed US in November 2018.] c. Update Tag Agency ID Appendix. d. Updated Tag ID to 10 characters. e. Use of the word "Local" (Local Hub/Local Agency). Add to Definitions, if needed. f. Updated Classification Fields to be 4 characters and optional. g. Updated Tag Class Fields to be 4 characters and not optional. h. Edited XML Definitions. i. Conform document to NIOP: i. Edited Southern States ICD to conform to NIOP. ii. Replaced Southern States specific drawing with NIOP map. iii. Removed abbreviations and terms that are no longer used. iv. Added Table from M. Kolb & added ATA column. v. Cross-referenced Agencies with Hubs. j. Changed the reference to IBR-REC 6 to IBR-REC-7. 3. Moved appendices to separate documents.
November 2018	NIOP 1.00	Edited based on NIOP Technical Meeting November 7-8, 2018. Added XML Definitions and samples from ETCC. Removed remaining SSIOPs and references. 11/26/18: As suggested by M. Kolb: 1. Removed "CSC" where appropriate. 2. Section 1, Introduction: The table column labeled "File Extension" may be better titled "File Extension / Submission Type" 3. Removed or replaced "file" with "submission" where appropriate.
February 2019	NIOP 1.01	Added Appendix E License Plate Types. Corrected appendix naming convention.
March 2019	NIOP 1.02	Added revised XML examples.
May 2019	NIOP 1.02 FINAL	Removed DRAFT, updated date and made FINAL.

1 Introduction

The purpose of this document is to describe and record the interfaces for National interoperability.

This document, the *National Interoperability Interface Control Document,* defines the formats for all data that is transmitted between the NIOP Hubs who participate in National Interoperability (NIOP).

The interface data types defined are:

Data Type	File Extension / Submission Type	Usage
Tag Validation List	{Bulk Identifier}TVL	Tag Validation List (TVL) data shall be created by each Home Agency to inform the Away Hubs and Agencies as to the status of tags and license plates associated with an account held by the Home Agency.
Transaction Data	STRAN	Created by the Away Hub (based on transactions from the Away Agencies) to inform the Home Hub of all toll transactions occurring at Away Agency facilities for tags and/or license plates belonging to a Home Agency as determined by its inclusion in the TVL active at the time of the transaction. Away Hub determines Home Agency ID if not already specified by the Away Agency. One STRAN data submission is created per Away/Home Agency pair.
Adjustment/Correction Data	SCORR	Created by the Away Hub (based on correction data from the Away Agencies) to replace toll transaction information already sent to the Home Hub with updated/corrected information. Such adjustment/correction data will be provided to the Home Agency to which the original transaction information was originally delivered. Note: replacement data represents current values, not delta from previously submitted values. Adjustments and resubmittals may be included in the same SCORR submission. Adjustment/Correction Data also includes resubmitted transactions.
Reconciliation Data	SRECON	Created by the Home Hub (based on reconciliation data from the Home Agencies) to inform the Away Hub as to the disposition of toll transactions processed by the Home Agency belonging to the original Transaction Data submission. Performing detailed transaction level reconciliation allows the Away Agency and the Away Hub to ensure that all transactions included in the original Transaction Data submission were properly received and processed.
Acknowledgement Data	ACK	Created by the Hub which received a submission to inform the Hub which sent the submission that the submission was received in its entirety. Acknowledgement data shall be sent for each of the above referenced submissions.

2   General Data Requirements

1. All participating Hubs shall support the exchange of data as XML files utilizing SFTP for Tag Validation List data and their corresponding Acknowledgements. Participating Hubs shall support the exchange of individual data records or blocks of records as XML utilizing secure Web Services for Transaction data, Correction data, Reconciliation data and their associated Acknowledgements. Support of Web Services shall include support of faults, as well as timeouts as defined in the exception handling section below.

2. When using XML file data exchange over SFTP, all files (except for the Acknowledgement data) shall be compressed (ZIPed) using .ZIP compression.

3. When using XML file data exchange over SFTP, upon compression, file names shall be converted from {FILE_NAME}.{FILE_TYPE} to {FILE_NAME}_{FILE_TYPE}.ZIP and all files names shall be created using uppercase characters only.

4. Data records shall be formatted utilizing Extensible Markup Language (XML).

5. This document adopts the terms Home and Away as defined by the Business Rules for NIOP. The Home Agency is the entity that establishes and/or maintains the customer's account and issues the tag(s). The Away Agency is any agency that is not the customer's Home Agency. The Away Agency is typically the agency on whose facility the transaction transpired. An Away Agency may transmit data to a Home Agency through an Away Hub and Home Hub.

6. The date/time values contained in a file name represents the creation date/time of the file and shall always match the date/time value contained in the file's header record.

7. All date/time values within the data contents of a submission shall be transmitted as Coordinated Universal Time (UTC) unless otherwise indicated.

8. A field "Type" of "Date/Time" shall be transmitted with no time zone data and shall assume a time zone of "+00:00". Date/Time format shall be "YYYY-MM-DDThh:mm:ssZ". Where,
   YYYY = 4-digit year
   MM = 2-digit month (zero filled)
   DD = 2-digit day of the month (zero filled)
   T = The 'T' character signifies the start of the time value
   hh = 2-digit hour (00-23)
   mm = 2-digit minute
   ss = 2-digit second
   Z = The "Z" character indicating UTC designation.
   Fields utilizing this format are, generally, not customer facing.

9. A field containing "Date/Time w/TZ" shall be transmitted with time zone data. "Date/Time w/TZ" shall be "YYYY-MM-DDThh:mm:ss±HH:MM". Field utilizing this format are, generally, customer facing and allow the recipient to display date/time information with the appropriate date/time for the time zone.

10. A field "Type" of "Char" can contain any combination of alphanumeric and/or special characters as further defined in the sections below. These fields shall be left-justified with no leading characters or trailing blanks.

11. A field "Type" of "Num" shall contain only numeric characters (0 through 9). These fields shall be left-justified with no leading zeroes.

12. As Agencies strive to accept Transaction entry and exit locations without any manual intervention or configuration, it is recommended each Agency notify their Local Hub of entry and exit location additions and changes so that transactions are not rejected due to a location not being known. Hubs will notify the Other Hubs who will then, in turn, notify their Local Agencies.

13. Where XML Tags in the XML Definitions are different from the Field Name in the Data Records/Fields, the XML Tag shall take precedence.

2.1 Web Services Guidelines

2.1.1 General Web Services Guidelines

1. Simple Object Access Protocol (SOAP) Web Services shall be used.

2. Web Services send and receive example:
   a. If Central US IOP (CUSIOP) Hub needs to send data to Southeast US IOP (SEIOP) Hub, CUSIOP Hub shall use the Web Services provided by SEIOP Hub.
   b. If SEIOP Hub needs to send data to CUSIOP Hub, SEIOP Hub shall use the Web Services provided by CUSIOP Hub.

3. There are no limits on the number of transactions sent via Web Services.

2.1.2 General Exception Handling for Web Services

When using Web Services interfaces, the exception-handling schemes are defined as part of the Web Service Definition Language (WSDL) for each web service, generally denoted as faults. Faults can generally be categorized into two types: those that are recoverable and those that are unrecoverable.

Recoverable Faults are transient or temporary in nature. Such faults are raised by the provider to signal to the consumer that the request can be resubmitted after an elapsed time period with the expectation the transient condition has been resolved.

Unrecoverable Faults are raised when the provider is unable to process a request and resubmission without correction would result in the same fault. An example would be invalid data within the request which must be corrected in order for the request to be resubmitted and processed successfully.

The following construct defines each of these faults

```
<!-- Faults -->
<xsd:element name="RecoverableFault">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element name="message" nillable="true" type="xsd:string"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>

<xsd:element name="UnrecoverableFault">
  <xsd:complexType>
```

```
                <xsd:sequence>
                   <xsd:element name="message" nillable="true" type="xsd:string"/>
                </xsd:sequence>
              </xsd:complexType>
           </xsd:element>
         </xsd:schema>
      </wsdl:types>l
```

In addition to the above two fault types, any web service request may result in a timeout condition. A timeout condition occurs when no response is received from the provider within some configurable timeout interval. When a timeout occurs, the consumer typically does not know if the provider actually received the request. The consumer may resubmit the request with the expectation that if the prior submission was received and successfully processed, the provider will return the same response that would have been sent had the timeout condition not occurred. Such re-submissions would not result in the request being reprocessed resulting in possible duplication.

2.2   SFTP File Transfer Guidelines

When transferring files between Hubs via SFTP, the guidelines in this section should be followed.

Inbound Files to a Hub from another Hub ("Other Hub"):

1. Each Other Hub ("Other Hub") connects to the Hub's SFTP server with their credentials.

2. Each Other Hub shall push STVL (when sending a TVL) and STVL ACK (when responding to a TVL) files to the Hub.

3. Each Other Hub shall have their own "Inbound" directories on the Hub's SFTP server for STVL and STVL ACK submissions. Note: Directories are not needed for the other submission types (STRAN, STRAN ACK, SRECON, SRECON ACK, SCORR, and SCORR ACK) since they shall be transferred via Web Services.

   For example, on the CUSIOP Hub SFTP server:
   /SEIOPHUB/{env}/inbound/STVL/
   /SEIOPHUB/{env}/inbound/STVL_ACK/

   Where {env} = PROD or PREPROD

4. Each Other Hub shall copy (SFTP) files from their local directories to the appropriate Hub's SFTP server Inbound "/temp" directory.

   For example, on the CUSIOP Hub SFTP server:
   /SEIOPHUB/{env}/inbound/STVL/temp
   /SEIOPHUB/{env}/inbound/STVL_ACK/temp

5. Each Other Hub shall make sure that their SFTP file transfer is successful.
   a.   Compare the Local file size and the Remote file size
   b.   If both are equal, it is a successful transfer

6. If the file transfer is successful, the Other Hub shall "move" the file from the "/temp" directory to the "/current" directory.

   For example, on the CUSIOP Hub SFTP server:
      Move from:

/SEIOPHUB/{env}/inbound/STVL/temp

To:
/SEIOPHUB/{env}/inbound/STVL/current

7. If the file transfer fails, the Other Hub shall delete the file from the "/temp" directory.

Outbound Files from a Hub to another Hub ("Other Hub"):

1. Since the Hubs push STVL and STVL ACK files to each other and are "inbound" to the receiving Hub, the Hub-to-Hub file transfers are treated as Inbound. There shall be no Outbound Hub-to-Hub file transfers.

3   Tag Validation List (TVL) Data

3.1   Usage

Tag Validation List (TVL) data shall be created by each Home Agency to inform the Away Hubs and Agencies as to the status of tags and license plates associated with an account held by the Home Agency. The Home Hub will combine TVLs from each Home Agency before sending the TVL to the Other Hub(s). The Away Hub forwards the TVL information to each Away Agency in the format agreed upon between the entities.

Because the transfer of TVL data is expected to involve significant volume of data at once, the transfer of TVL data will not be supported through Web Services.

3.2   File Name

{NIOP_Hub_ID}_{HOME_AGENCY_ID}_YYYYMMDDHHMMSS.{Bulk Indicator}TVL

Example: 9002_9002_20171201001015.BTVL

3.3   Data Records/Fields

Tag Validation List Header Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
Submission Type	Char	4	Required	Defines the type of data in the file. Value: STVL
Submission Date/Time	Date/Time	20	Required	The date/time (UTC) the file was created. Shall match the date/time in the file name.
NIOP Hub ID	Char	4	Required	The ID assigned to the Home Hub when transmitting the Tag Validation Data from the Home Hub to the Away Hub. Refer to Appendix A for valid values.
Home Agency ID	Char	4	Required	The ID assigned to the Home Agency. This is the agency that manages the customer account to which toll charges may be posted. For consolidated TVLs this is the Home Hub ID. Refer to Appendix A for valid values.

Tag Validation List Header Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
Bulk Indicator	Char	1	Required	Indicates whether this file is a bulk update (Bulk TVL) or differential update (Differential TVL). Bulk updates shall replace all previously transmitted tag/plate data for the Home Agency ID. Differential updates shall contain all changes since the last Bulk and shall be used to indicate new tag/plate data and/or updates in tag/plate status. Values: B – Bulk D – Differential
Bulk Identifier	Num	9	Required	Incremental Identifier for each Bulk TVL generated. When a Differential is created, the Bulk Identifier shall be included identifying from which Bulk the Differential should be applied.
Record Count	Num	10	Required	The number of detail records contained in this file. Values: 0 – 9999999999

Tag Validation List Detail Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
Home Agency ID	Char	4	Required	The ID assigned to the Home Agency. This is the agency that manages the customer account to which toll charges may be posted. Refer to Appendix B for valid values. For example, NTTA = 0041.
Tag Agency ID	Char	4	Required	An identifier used by NIOP that corresponds to one or more Region and/or Agency field values read directly from a transponder. The Region/Agency fields encoded in a transponder represent the entity that originally issued the transponder. Refer to Appendix C, NIOP Tag Agency ID column for valid values and how they map to actual data encoded on the transponder.
Tag Serial Number	Char	10	Required	Serial Number that may be read from the transponder. Leading zeroes included. 10 decimal digits 0 – 9 converted to a character field.
Tag Status	Char	1	Required	Tag Status. Values: V – Valid (applies to both Bulk and Differential TVL) Z – Zero/Negative Balance (applies to both Bulk and Differential TVL) I – Invalid (only used for Differential TVL). Notes: 1. Omitting a tag from a Bulk TVL automatically makes the tag Invalid. 2. Some Home Agencies do not support the "Z" Tag Status value and will put their Zero/Negative Balance tags into the "I" Tag Status.
For each Discount Type, there would be an array with the following fields:				

				Tag Validation List Detail Record
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
Discount Plans	Char	12	Optional	An array of Regional or NIOP supported discount plans associated with the transponder. Would also be used to support cross agency non-revenue status. Discount Plans are currently not supported. The definition for this data element will be provided when support for it becomes necessary and/or is defined by NIOP.
Discount Plan Start Date	Date/Time	20	Optional	Discount Plan start date (UTC).
Discount Plan End Date	Date/Time	20	Optional	Discount Plan end date (UTC).
Tag Type	Char	1	Optional	Type of transponder. If not specified, standard windshield mounted tag is assumed. Values: S – Switchable L – License Plate F – Feedback G - Feedback and Switchable
Tag Class	Num	4	Required	The number of axles associated with the tag. Default to "2" axle when not available. Values 2-15. Note: Vehicle classifications may differ between Home Agencies and have different meanings based on the business rules for the Agency or Region.
For each Account Transponder Number, there would exist an array of associated plates with the following fields.				
License Plate Country	Char	2	Optional	Country code associated with the license plate. Values: US – United States CA – Canada MX – Mexico "-" – Used for plates not in the referenced documentation in "License Plate State". If a License Plate Number is provided, the License Plate Country must be provided.

License Plate State	Char	2	Optional	Standard Postal Service State abbreviation (or Province abbreviation for Canada). For Mexico, this field would contain MX.
				Values:
				
				Publication 28, Appendix B – US State abbreviations
				    http://pe.usps.com/text/pub28/28apb.htm
				Publication 28, Appendix A.A32 – Canadian Province abbreviations
				    http://pe.usps.com/text/pub28/28apa_005.htm
				"GS" – Used for plates issued by any Federal agency.
				"-" – Used for plates not in the referenced documentation.
				
				If a License Plate Number is provided, the License Plate State must be provided.

License Plate Number	Char	15	Optional	Plate letters/numbers. Shall follow format required for DMV lookups including required prefixes, suffixes, or handling of special characters as dictated by the state which issued the plate.
License Plate Type	Char	30	Optional	Plate type as required for DMV lookups. If Home Agency provides License Plate Type, Away Agency must match to that License Plate Type and must include License Plate Type in any plate based transactions.

Tag Validation List Detail Record				
Field	Type	Max Length	Required/ Optional	Description
License Plate Effective From	Date/Time	20	Optional	Date/time (UTC) license plate became associated to the current Tag. If not provided, is assumed to be effective when first seen in this record.
License Plate Effective To	Date/Time	20	Optional	Date/time (UTC) license plate stopped being associated to the current Tag. If not provided, is assumed to still be effective as of the date of this record. When the plate is no longer associated to the current Tag, a line item shall be included in the next Differential TVL for the Tag with this field set to the date/time the plate was no longer associated. The next Bulk TVL would exclude the association of the plate to the current Tag.
For each Account Transponder Number, the following additional elements of information may be provided				
Account Number	Char	50	Optional	The unique account number at the Home Agency of the associated tag and plate data. May not be provided for all agencies.
Fleet Indicator	Char	1	Optional	Flag used to denote whether or not the indicated tag is associated with a fleet account (e.g., rental car company, etc.). If indicator is not provided, account is assumed to not be a fleet account. Values: Y – Account is a fleet account N – Account is not a fleet account

3.4 XML Definition

TagValidationList_1
1152018.xml

3.5 Processing Requirements

1. Consolidated TVLs (not Agency-specific TVLs) will be sent from the Home Hub to each Away Hub.

2. The Home Hub shall only include Transponder Data for Agencies that are nationally interoperable through the specific Home Hub. In other words, if an Agency is regionally interoperable and not nationally interoperable through the Home Hub, its tags should not be included in the TVL.

3. The transmission of the file to the Away Hub shall be completed by the Home Hub over SFTP.

4. In the event that an invalid header record is encountered (e.g., character data in a numeric field, mismatch between the number of records indicated in the header record and the actual number of detail records found, etc.), the Away Hub shall reject the file and notify the Home Hub via the Acknowledgement data.

5. In the event that an invalid detail record is encountered (e.g., inappropriate TAG_STATUS, etc.), the Away Hub shall reject the detail record and notify the Home Hub via the Acknowledgement data that one (or more) detail records were rejected. The Away Agency will continue to process and use the remaining records in the TVL. The Away Hub shall make available to the Home Hub a report showing each detail record that was rejected and the reason for its rejection. This information will be communicated back to the Home Agency as appropriate.

Because the Tag and associated Plate is not forwarded to the Away Agency when rejected, the Away Agency will treat any transactions associated with the Tag or Plate as no match on TVL.

6. The Home Hub shall perform appropriate sanity checks on the Bulk TVL data file prior to its transmission to the Away Hub. The Away Hub shall perform appropriate sanity checks on the Bulk TVL data file after receiving the transmission from the Home Hub. Such sanity checks should include, but not be limited to:
   a. A configurable threshold of unusual growth in the number of tags from previous version, initially set to (recommended 3-5%)
   b. A configurable threshold of unusual change in number of tags with a particular tag status, initially set to (recommended 3-5%)
   c. Acknowledgement Data with Return Code of 03 should be used when the sanity checks fail.

7. The Home Hub shall only include information for tags and plates which are associated to accounts managed by a Home Agency certified with the Hub.

8. The frequency of Bulk TVL data file transmissions shall be as stipulated in the Business Rules.

9. The frequency of Differential TVL data file transmissions shall be as stipulated in the Business Rules.

10. There may be 1 tag with multiple associated license plates and 1 license plate associated with multiple tags.

11. When a Tag is replaced in an existing vehicle, two line items should be included in the next Differential TVL: one for the existing Tag becoming invalid (showing the plate association ended by setting the License Plate Effective To value); the second for the new Tag (showing the plate association by setting the License Plate Effective From value). The next Bulk TVL would include only the new Valid Tag with the associated plate.

12. When a tag is included in a differential all the active license plates should be included with that tag that would have been included in the bulk. If active license plates are not included in the differential with that tag, any previous supplied active license plates will be considered to be expired.

3.6 Sample Submission

Below example includes 3 Tags, the first having 2 Plates associated to it, the second having a single plate, and the third having no plate.

TagValidationListSa
mple_11192018.xml

4 Transaction Data

4.1 Usage

Transaction data shall be created by the Away Hub to inform the Home Hub of all toll transactions occurring at Away Agency facilities.

4.2 Data Records/Fields

Transaction Data Header Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
Submission Type	Char	5	Required	Defines the type of data in the submission or web service request. Value: STRAN
Submission Date/Time	Date/Time	20	Required	The date/time (UTC) the submission was created or the web service request was submitted.
NIOP Hub ID	Char	4	Required	The ID assigned to the Away Hub when transmitting Transaction Data from the Away Hub to the Home Hub. Refer to Appendix A for valid values.
Away Agency ID	Char	4	Required	The Agency ID of the Away Agency. This is the agency on whose facility the transaction took place. Refer to Appendix B for valid values.
Home Agency ID	Char	4	Required	The ID assigned to the Home Agency when transmitting Transaction Data from the Away Hub to the Home Hub. Refer to Appendix B for valid values.
Transaction Data Sequence Number	Num	12	Required	A sequence number generated by the entity creating the Transaction Data unique to that entity across all Transaction Data and Correction Data submissions. Used to correlate the Transaction Data and Reconciliation Data.
Record Count	Num	9	Required	The number of detail records contained in this submission or web service request. Values: 0 – 999999999

				Transaction Data Detail Record
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
Record Type	Char	4	Required	Record Type. Values: TB01 – Tag Toll - Barrier Type TC01 – Tag Toll - Closed Type (either from a single entry/exit pair or from a constructed trip comprised of multiple toll zones) TC02 – Tag Toll - Closed Unmatched Type (either from a single entry/exit pair or from a constructed trip comprised of multiple toll zones). Used when either the entry or exit toll zone has been inferred. VB01 – Video Toll - Barrier Type VC01 – Video Toll - Closed Type (either from a single entry/exit pair or from a constructed trip comprised of multiple toll zones) VC02 – Video Toll - Closed Unmatched Type (either from a single entry/exit pair or from a constructed trip comprised of multiple toll zones). Used when either the entry or exit toll zone has been inferred. Note: Video Record Types are used when the transaction originates as a Video Transaction.
Transaction Reference ID	Num	20	Required	The unique reference number for the Away Agency for this transaction. This number is unique across all Record Types (i.e., the same number is not found in two different Record Types). Would be returned in the reconciliation submission to uniquely identify the transaction being reconciled to the Away Agency. This reference ID would also be included in any subsequent adjustment/correction data required for this transaction.
Exit Date/Time	Date/Time	20	Required	The date/time (UTC) the vehicle exited the facility. For Barrier type transactions, this is the date/time the vehicle used the facility. For Unmatched type transactions, this may be inferred information.
Facility ID	Char	10	Required	Unique identifier of the facility on which the transaction took place. An Away Agency may have one or more facilities under its control. For example, NJ Turnpike Authority controls both the NJ Turnpike and the Garden State Parkway. This would be a character representation as the Away Agency wants this facility represented on a customer statement.
Facility Description	Char	30	Required	The facility description that corresponds to the Facility ID. To be used for customer statements as necessary by the Home agency.
Exit Plaza	Char	15	Required	Unique (for the Facility ID) identifier of the plaza on the facility at which the vehicle exited the facility. For Barrier type transactions, this is the plaza used. For Unmatched type transactions, this may be inferred information.
Exit Plaza Description	Char	30	Required	The exit plaza description that corresponds to the Exit Plaza. To be used for customer statements as necessary by the Home agency. For Unmatched type transactions, this may be inferred information.
Exit Lane	Char	4	Required	Lane identifier at which the vehicle exited the facility. For Barrier type transactions, this is the lane used. For Unmatched type transactions, this may be inferred information.
Entry Date/Time	Date/Time	20	Required for TC and VC transactions	The date/time (UTC) the vehicle entered the facility. For Barrier type transactions, this is unused. For Unmatched type transactions, this may be inferred information.

			Transaction Data Detail Record	
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
Entry Plaza	Char	15	Required for TC and VC transactions	Unique (for the Facility ID) identifier of the plaza on the facility at which the vehicle entered the facility. For Barrier type transactions, this is unused. For Unmatched type transactions, this may be the inferred information.
Entry Plaza Description	Char	30	Required for TC and VC transactions	The entry plaza description that corresponds to the Entry Plaza. To be used for customer statements as necessary by the Home agency. For Barrier type transactions, this is unused. For Unmatched type transactions, this may be inferred information.
Entry Lane	Char	4	Required for TC and VC transactions	Lane identifier at which the vehicle entered the facility. For Barrier type transactions, this is unused. For Unmatched type transactions, this may be inferred information.
Tag Agency ID	Char	4	Required	An identifier used by NIOP that corresponds to one or more Region and/or Agency field values read directly from a transponder. The Region/Agency fields encoded in a transponder represent the entity that originally issued the transponder. Refer to Appendix C, NIOP Tag Agency ID column for valid values and how they map to actual data encoded on the transponder. If the TVL is used to look-up license plate information for a video transaction, the Tag Agency ID, Tag Serial Number, and Tag Status shall be populated by the Away Agency. Refer to Appendix C for valid values.
Tag Serial Number	Char	10	Required	Serial Number as read from the transponder. Leading zeroes included. 10 decimal digits 0 – 9 converted to a character field. If the TVL is used to look-up license plate information for a video transaction, the Tag Agency ID, Tag Serial Number, and Tag Status shall be populated by the Away Agency.
Tag Status	Char	1	Required	Tag Status associated with the Exit Date/Time as determined by the Away Agency from the then active TVL. If the TVL is used to look-up license plate information for a video transaction, the Tag Agency ID, Tag Serial Number, and Tag Status shall be populated by the Away Agency. Values: V – Valid I – Invalid Z – Zero/Negative Balance
Occupancy Indicator	Char	1	Optional	HOV switch position or other means used to indicate vehicle occupancy. For facilities with multiple gantries/toll points that could comprise a trip, this would be the switch position/indicator used to calculate the toll. Values: 1 – SOV 2 – HOV2 3 – HOV3+
Vehicle Classification	Char	4	Optional	Classification of the vehicle based on the Away Agency's classification structure/rules and used to calculate the Toll Amount. This field does not require validation by the Home Agency.
Toll Amount	Num	9	Required	Toll amount in Cents.

				Transaction Data Detail Record
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
Discount Plan	Char	12	Optional	The discount plan, if any, as determined by the Away Agency that was applicable when calculating the Toll Amount. Used by the Home Agency, if necessary, on the customer statement. Must match to a valid Discount Plan from the TVL for this tag/plate. Discount Plans are currently not supported. The definition for this data element will be provided when support for it becomes necessary and/or is defined by NIOP.
License Plate Country	Char	2	Required (only for V transactions)	Issuing country of the license plate as determined by the Away Agency and matched to the Home Agency data from the TVL. Values: US – United States CA – Canada MX – Mexico "-" – Used for plates not in the referenced documentation. If a License Plate Number is provided, the License Plate Country must be provided.

License Plate State	Char	2	Required (only for V transactions)	Issuing jurisdiction of the license plate as determined by the Away agency and matched to the Home agency data from the TVL.
				
				Values:
				Publication 28, Appendix B – US State abbreviations
				    http://pe.usps.com/text/pub28/28apb.htm
				Publication 28, Appendix A.A32 – Canadian Province abbreviations
				    http://pe.usps.com/text/pub28/28apa_005.htm
				"GS" – Used for plates issued by any Federal agency.
				"-" – Used for plates not in the referenced documentation.
				
				If a License Plate Number is provided, the License Plate State must be provided.

License Plate Number	Char	15	Required (only for V transactions)	License Plate Number as determined by the Away Agency and matched to the Home Agency data from the TVL.
License Plate Type	Char	30	Optional (only for V transactions)	License Plate Type as determined by the Away Agency and matched to the Home Agency data from the TVL. If the TVL did not contain a plate type, then it is should not be included.
Vehicle Classification Adjustment Flag	Char	1	Optional	Used to indicate if the Vehicle Classification presented in the transaction was adjusted by the Away Agency as compared to the TVL tag classification. Allows the Home Agency to include a statement notice, if applicable, indicating that the tag classification was adjusted or to track mismatch frequency. Values: A – Axles adjusted It is noted that this field is used by OTA for transactions when the vehicle classification has been adjusted (transactions originating at OTA).

Transaction Data Detail Record				
Field	Type	Max Length	Required/ Optional	Description
System Matched Flag	Char	1	Optional	0 = System did not force (system) match the entry and exit transaction. 1 = System did force (system) match the entry and exit transaction. It is noted that this field is used by OTA for transactions originating at OTA that were force matched.
Spare 1	Char	20	Optional	Spare field for future growth. Defined by the CUSIOP Hub as the Guaranteed Transaction flag, where 1 = Guaranteed, 0 = Not Guaranteed, blank = not used.
Spare 2	Char	20	Optional	Spare field for future growth. Defined by the CUSIOP Hub as the Activation Date and Time of the TVL used to determine the Guaranteed Flag. This field should be in a Date/Time (UTC) format.
Spare 3	Char	20	Optional	Spare field for future growth.
Spare 4	Char	20	Optional	Spare field for future growth.
Spare 5	Char	20	Optional	Spare field for future growth.
Exit Date/Time w/TZ	Char	25	Required	The date/time with TZ the vehicle exited the facility. For Barrier type transactions, this is the date/time the vehicle used the facility. For Unmatched type transactions, this may be inferred information. Format shall be "YYYY-MM-DDThh:mm:ss±HH:MM.
Entry Date/Time w/TZ	Char	25	Required if the Entry Date/Time is provided	The date/time with TZ the vehicle entered the facility. For Barrier type transactions, this is the date/time the vehicle used the facility. For Unmatched type transactions, this may be inferred information. Format shall be "YYYY-MM-DDThh:mm:ss±HH:MM. For example: 2018-10-05T08:15:30-05:00 2018-06-06T06:14:30-04:00

4.3 XML Definition

TransactionData_11 152018.xml

4.4 Processing Requirements

N/A

4.5 Sample Submission

TransactionDataSa mple_03182019.xml

5 Adjustment/Correction Data

5.1 Usage

Correction data shall be created by the Away Hub to replace toll transaction information already sent to a Home Hub and subsequently to the Home Agency. Correction data is intended to inform the Home Agency of updated/corrected information to the original transaction sent. This Data is also used for resubmitting transactions.

5.2 Data Records/Fields

Adjustment/Correction Data Header Record				
Field	Type	Max Length	Required/ Optional	Description
Submission Type	Char	5	Required	Defines the type of data in the submission or web service request. Value: SCORR
Submission Date/Time	Date/Time	20	Required	The date/time (UTC) the submission was created or web service request was submitted.
NIOP Hub ID	Char	4	Required	The ID assigned to the Away Hub when transmitting Correction Data from the Away Hub to the Home Hub. Refer to Appendix A for valid values.
Away Agency ID	Char	4	Required	The Agency ID of the Away Agency. This is the agency on whose facility the transaction took place. Refer to Appendix B for valid values.
Home Agency ID	Char	4	Required	The Agency ID of the Home Agency. This is the Home Agency ID assigned where the Correction Data will be sent. The Away Agency should specify the Home Agency ID that was returned on the Reconciliation Data submission corresponding to the Transaction Data submission that originally contained the transaction. In the event the Hub provided the Reconciliation Data for a transaction where the Reconciliation Data was late or had transaction/content format error, The Home Agency ID should be the Hub ID who provided the Reconciliation Data unless the Away Agency specified the Home Agency to begin with. Refer to Appendix A and B for valid values.

Adjustment/Correction Data Header Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
Correction Data Sequence Number	Num	12	Required	A sequence number generated by the entity creating the Correction Data unique to that entity across all Transaction Data and Correction Data submissions. Used to correlate the Correction Data and Reconciliation Data. As Applicable: The Away Agency generates the unique number when sending Correction Data to the Away Hub. The Away Hub generates the unique number when sending Correction Data to the Home Hub, associating their number to the number received from the Away Agency. The Home Hub generates the unique number when sending Correction Data to the Home Agency, associating their number to the number received from the Away Hub.
Record Count	Num	9	Required	The number of detail records contained in this submission. Values: 0 – 999999999

Adjustment/Correction Data Detail Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Comment**
Record Type	Char	5	Required	Record Type being adjusted. Values: TB01A – Tag Toll - Barrier Type - Adjustment TC01A – Tag Toll - Closed Type – Adjustment TC02A – Tag Toll - Closed Unmatched Type – Adjustment VB01A – Video Toll - Barrier Type – Adjustment VC01A – Video Toll - Closed Type – Adjustment VC02A – Video Toll - Closed Unmatched Type - Adjustment
Correction Date/Time	Date/Time	20	Optional	The date and time (UTC) the adjustment was made by the Away Agency. Required for adjustments. Not required for transaction resubmittals.

Adjustment/Correction Data Detail Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Comment**
Correction Reason	Char	1	Optional (Adjustment Reason or Resubmit Reason must be populated; if an adjustment is resubmitted, both must be populated)	The reason for the adjustment. Values: C – Class adjusted. Apply toll/class from this record. New toll may be equal to or lower than original toll amount only. I – Ignore original transaction. Back out original transaction (full credit to account). L – Location information corrected. Apply toll/location from this record. New toll may be equal to or lower than original toll amount. T – Toll adjusted. Apply toll from this record. New toll may only be lower than original toll amount. O – Other adjustment/correction. Apply fields from this record. New toll may be equal to or lower than the original toll amount. For adjustments where the original transaction is required to be backed out, an "I" must be sent by the Visited Agency before a "C", "L", "T" or "O".
Resubmit Reason	Char	1	Optional (Adjustment Reason or Resubmit Reason must be populated; if an adjustment is resubmitted, both must be populated)	The reason for the resubmitted transaction or adjustment: Values: R – Resubmittal of transaction or adjustment previously rejected with Posting Dispositions of N or T. S – Resubmitted Transaction or adjustment because disposition received by Away Agency with "System/Communication Issue".
Other Correction Description	Char	255	Required for Adjustment Reason O only	Free form field used by the Away Agency to indicate further details for Adjustment Reason O (Other).
Correction Count	Num	3	Required	An incrementing sequence number for each adjustment of a Transaction identified by its specific Transaction Reference ID. Values: 1 – 999
Resubmit Count	Num	3	Required	Incremented every time a transaction or adjustment is resubmitted; This should be 0 the first time an adjustment (Correction Data) is transmitted.
Home Agency Reference ID	Num	20	Optional	Reference ID provided by the Home Agency within the Reconciliation Submission for either the original transaction or the most recent adjustment/correction.
All other fields from the Transaction Data Detail				All fields from the original transaction detail (refer to Transaction Data structure for details) will be retransmitted with the appropriate fields corrected to their required values. Notes: 1. Transaction Reference ID from the original transaction remains the same for any related adjustment/correction transactions. 2. For the "I" Correction Reason, the Toll Amount shall be the negative value of the original Toll Amount or the previous accepted adjustment when multiple adjustments are made. 3. The Toll Amount should be the value of the new Toll Amount that needs to be applied at the Home Agency.

Example:

The original amount is $1.00
The new toll amount value should be $.75

The first adjustment record is an "I" with "-100" as the toll amount.
The second adjustment is "T" with "75" as the toll amount.

5.3 XML Definition

CorrectionData_111
52018.xml

5.4 Processing Requirements

1. The Home Agency is responsible for making certain the credit adjustment from the Away Agency is processed before another adjustment.

2. When an "I" is expected prior to another adjustment, it shall be in the same correction data before the subsequent adjustment/correction record and applied first.

3. The Correction Data submission from the Away Agency is specific to Home Agency (or Hub).

4. Adjustment Count and Resubmit Count are incremented as follows:

Case	Transaction Type	Posting Disposition	Description	SCORR				
				Transaction Type	Adjustment Reason	Adjustment Count	Resubmit Reason	Resubmit Count
1	Toll	N, T	Toll transaction returned with a disposition of N or T. Transaction is resubmitted.	Toll Resubmittal	N/A	0	R	Increment
2		S	Toll transaction returned with a disposition of S. Transactions is resubmitted.	System Issue Resubmittal	N/A	0	S	Increment
3		P	Toll transaction returned with a disposition of P. No action taken.					
4		D, I, C, O	Toll transaction returned with a disposition that may not be resubmitted. No action taken.					
5	Toll Adjustment	P	Toll Adjustment where Toll Transaction returned with a disposition of P.	Toll Adjustment	C, I, L, O, T	Increment	N/A	0
6		N, T	Toll Adjustment returned with a disposition of N or T. Toll Adjustment is resubmitted.	Toll Adjustment	C, I, L, O, T	Do Not Increment	R	Increment
7		S	Toll Adjustment returned with a disposition of S. Toll Adjustment is resubmitted.	Toll Adjustment	C, I, L, O, T	Do Not Increment	S	Increment
8		D, I, C, O	Toll Adjustment returned with a disposition that may not be resubmitted. No action taken.					

5.5 Sample Submission

CorrectionDataSam
ple_03182019.xml

6 Reconciliation Data

6.1 Usage

Reconciliation data shall be created by the Home Hub to inform the Away Hub as to the disposition of transactions/corrections processed. The Away Hub will forward the disposition to the Away Agency per the agreement between those entities.

6.2 Data Records/Fields

Reconciliation Data Header Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
Submission Type	Char	6	Required	Defines the type of data in the submission or web service request. Value: SRECON
Submission Date/Time	Date/Time	20	Required	The date/time (UTC) the submission was created or web service request was submitted.
NIOP Hub ID	Char	4	Required	The ID assigned to the Home Hub when transmitting Reconciliation Data from the Home Hub to the Away Hub. Refer to Appendix A for valid values.
Home Agency ID	Char	4	Required	The ID assigned to the Home Agency when transmitting Reconciliation Data from the Home Hub to the Away Hub. Refer to Appendix B for valid values.
Away Agency ID	Char	4	Required	The Agency ID of the Away Agency. This is the agency on whose facility the transaction took place. This field should be populated with the Away Agency ID not the Away Hub ID. Refer to Appendix B for valid values.
Data Sequence Number	Num	12	Required	The unique sequence number (Transaction or Correction Data) to which this Reconciliation Data is associated. This is the Transaction Data Sequence Number or the Correction Data Sequence Number.
Record Count	Num	9	Required	The number of detail records contained in this submission. Values: 0 – 999999999

Reconciliation Data Detail Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Comment**
Transaction Reference ID	Num	20	Required	The unique reference number created by the Away Agency for this transaction. This number is unique across all Record Types (i.e., the same number is not found in two different Record Types). Returned in the reconciliation data to uniquely identify the transaction being reconciled to the Away Agency.

Reconciliation Data Detail Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Comment**
Adjustment Count	Num	3	Required	The incrementing sequence number for each adjustment of a Transaction identified by its specific Transaction Reference ID. For original Transactions, this field would contain zero (0). Values: 0 – 999
Resubmit Count	Num	3	Required	Incremented every time a transaction or adjustment is resubmitted; This should be 0 the first time a transaction or adjustment is transmitted.
Reconciliation Home Agency ID	Char	4	Required	The ID assigned to the Home Agency to which the Transaction Data or Correction Data was sent and who responded with the posting disposition. Refer to Appendix B for valid values.
Home Agency Reference ID	Num	20	Optional	The unique reference ID created by the Home Agency for this transaction as a result of posting the transaction to a customer account.
Posting Disposition	Char	1	Required	The processing disposition for the transaction by the Home Agency. Values indicating Home will pay Away: P – Posted successfully or accepted. The transaction was accepted by the Home Agency. Values indicating the transaction was rejected and no funds are due to the Away Agency: D – Duplicate transaction. Includes exact duplicates as well as duplicates determined by the Home Agency based on its business rule logic. Cannot be resubmitted. I – Invalid Tag/Plate (tag/plate was communicated as invalid and should not have been sent in the first place). Cannot be resubmitted. N – Not posted. Transaction was received after the guarantee period or the Tag Status was Zero/Negative Balance and the account had insufficient funds. Can be resubmitted by the Away Agency /Hub if the account is determined as having sufficient funds (based on the most recent Tag Validation List). S – System or communication issue prevents receiving the Posting Disposition from the Home Agency within the Home Agency Performance SLA for Interoperable transaction processing. The Away Agency can resubmit with the same Transaction Reference ID and the Home Agency will process the transaction considering the original submission date and applicable guarantee. T – Transaction content/format error. Transaction could be corrected and resubmitted with the same Transaction Reference ID. C – Tag/plate not on file. Cannot be resubmitted. O – Transaction too old. Cannot be resubmitted.

Reconciliation Data Detail Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Comment**
Posted Discount Plan	Char	12	Optional	The Away Agency discount plan used when the transaction was posted. This is only applicable when the Home Agency offers the Away Agency discount plan to its customers. Discount Plans are currently not supported. The definition for this data element will be provided when support for it becomes necessary and/or is defined by NIOP.
Posted Amount	Num	9	Required	Toll amount in Cents posted to the account or accepted by the Home Agency and owed to the Away Agency. US Currency.
Posted Date/Time	Date/Time	20	Required	The date/time (UTC) the Home Agency posted or accepted the transaction to the customer's account. Note, this field is not used for settlement reporting purposes.
Transaction Flat Fee	Num	9	Required	Flat Fee in cents. The Home Hub or Home Agency shall calculate the fees for each Posted (accepted) transaction. Note: Fees may not be applied to transaction adjustments.
Transaction Percent Fee	Num	9	Required	Percent Fee in cents. The Home Hub or Home Agency shall calculate the fees for each Posted (accepted) transaction. Note: Fees may not be applied to transaction adjustments.
Spare 1	Char	20	Optional	Spare field for future growth.
Spare 2	Char	20	Optional	Spare field for future growth.
Spare 3	Char	20	Optional	Spare field for future growth.
Spare 4	Char	20	Optional	Spare field for future growth.
Spare 5	Char	20	Optional	Spare field for future growth.

6.3   XML Definition

ReconciliationData.
xml

6.4   Processing Requirements

1. Prior to sending the Reconciliation Data submission, the Home Hub shall verify each Transaction Data detail record has a corresponding Reconciliation Data detail record; and no unmatched Reconciliation Data records have been included in the Reconciliation Data submission.

2. In the event the Hub provided the Reconciliation Data for a transaction where the Reconciliation Data was late, had transaction/content format error or Tag/plate not on file, the Home Agency ID should be the Hub who provided the Reconciliation Data unless the Away Agency specified the Home Agency to begin with.

6.5   Sample Submission

ReconciliationData
Sample_10112016_sr

7   Acknowledgement Data

7.1   Usage

Acknowledgment data shall be created by the Hub which received the file or web service request to inform the Hub which sent it that the data transmitted was received in its entirety. Acknowledgement data shall be sent for each of the previously referenced files or web service requests.

The TVL acknowledgements shall be implemented via SFTP and the transaction, correction, and reconciliation data acknowledgements shall be implemented via Web Services.

Specific to acknowledgment of a Tag Validation List (TVL) Data file, an initial Acknowledgement Data file shall be sent back to the Hub which sent the TVL. Additionally, a second Acknowledgement submission with Return Code value '10' shall be created by the Away Hub and shall be sent to the Home Hub to provide the date/time the TVL is considered active by the Away Hub and all of its Local Agencies. Please refer to section 7.4, "Return Code".

Specific to acknowledgement of a Reconciliation Data (SRECON) submission, an initial Acknowledgement shall be sent back to the Hub which sent the SRECON. Additionally, a second Acknowledgement submission with Return Code value '13' shall be created by the Away Hub based on the SRECON ACK received from the Away agency. This second ACK will be used for Reconciliation reporting. Please refer to section 7.4, "Return Code".

7.2   File Data Exchange over SFTP

File Name: {NIOP HUB_ID}_{FROM_AGENCY_ID}_{FILE_NAME_{RETURN CODE}}_FILE_TYPE}.ACK

First ACK for a TVL:
Example: 9001_9001_9002_9002_20171201001015_00_BTVL.ACK
Second ACK for a TVL:
Example: 9001_9001_9002_9002_20171201001015_10_BTVL.ACK

First ACK for an SRECON:
Example: 9002_9002_9001_0035_0040_20171201041015_00_SRECON.ACK

Second ACK for an SRECON:
Example: 9002_9002_9001_0035_0040_20171201041015_13_SRECON.ACK

7.3   Data Exchange using Web Services over VPN

Provider: Hub which sent a web service request

Consumer: Hub which received a web service request

Trigger: Hub upon receiving a web service request confirms the content is either acceptable for processing or determines the content cannot be processed.

Operation: Synchronous Request-Response.

Format: WSDL

7.4 Data Record/Fields

Acknowledgement Data Detail Record				
Field	Type	Max Length	Required/ Optional	Comment
Submission Type	Char	3	Required	Defines the type of data in the file or web service request. Value: ACK
Original submission Type	Char	10	Required	The submission type of the original file or web service request being acknowledged as received from the To Agency ID. This value together with the field below uniquely identifies the original submission.
Original Submission Date/Time	Date/time	20	Required	The submission date/time (UTC) provided in the header of the original file or web service request being acknowledged as received from the To Agency ID. This value together with the field above uniquely identifies the original submission.
NIOP Hub ID	Char	4	Required	As Applicable: The ID assigned to the "To" Hub when transmitting Acknowledgement Data from the "From" Agency to the "To" Hub. The ID assigned to the "From" Hub when transmitting Acknowledgement Data from the "From" Hub to the "To" Hub. The ID assigned to the "From" Hub when transmitting Acknowledgement Data from the "From" Hub to the "To" Agency. Refer to Appendix A for valid values.
From Agency ID	Char	4	Required	The Agency/Hub generating the acknowledgement. Refer to Appendix A and B for valid values.
To Agency ID	Char	4	Required	The Agency/Hub that originated the file or submission being acknowledged. Refer to Appendix A and B for valid values.
ACK Date/Time	Date/Time	20	Required	The acknowledgement date/time (UTC); or in case of Return Code 13, the Reconciliation Date/Time; or in the case of Return Code 10, the Activation Date/Time.

Acknowledgement Data Detail Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Comment**
Return Code	Char	2	Required	A code indicating the status of the submission being acknowledged. Values: 00 – Submission was successfully received and verified. Submission is accepted and processed. 01 – Header record count does not match the number of detail records found in the submission. Entire submission is rejected. 02 – Detail record(s) found with invalid data. Remainder of submission was processed. Submission is partially accepted and processed. 03 – Sanity check failure. (Bulk TVL - Sanity checks failed. Differential TVL – Bulk Identifier was invalid.) Submission is rejected and not processed. 04 – Transaction Reconciliation Data (or Correction Reconciliation Data) does not match corresponding Transaction Data (or Correction Data). The number of reconciliation records do not match the number of records in the original transaction submission) (Reconciliation Data only – partial reconciliation) Submission is rejected and not processed. 05 – Duplicate submission sequence number. The entire submission is rejected and not processed. 07 – Invalid ZIP file or other file structure defect, for data file exchange over SFTP. Invalid data resulting in rejection of entire data submission, for data exchange using web services. The entire submission is rejected and not processed. 10 – Acknowledgement date/time of a TVL at Away Hub communicating the operative date/time of the TVL for purposes of comparison to transaction date/time. Second ACK of the TVL only. 11 – Reconciliation calculations are incorrect (toll amounts and fees may have a calculation error). (ACK to a Reconciliation Data) Submission is accepted and processed. 12 – File received late. This is used when a TVL or Reconciliation Data is received after the allotted time. For TVLs the previous TVL will be used. The entire submission is rejected and not processed. 13 – SRECON Reconciliation Date/Time created by the Away Hub based on the Away Agency's Acknowledgement of the SRECON data submission. Note, this date/time would be used for reconciliation reporting. If the date/time falls within the current reconciliation period, all reconciliation records in the associated Reconciliation submission with a Posting Disposition value of "P" shall be paid from the Home agency to the Away Agency.

7.5   XML Definition

Acknowledgement.
xml

7.6   Processing Requirements

1. This file or web service request shall contain a single record only. For each data submission received by a Hub, the Hub shall generate Acknowledgement data and transmit the file or web service request back to the Hub which sent the data submission.

2. The ACK Date/Time (UTC) field shall be used by the Hub which sent the original data submission as the acknowledgement date/time of the transmitted data.

3. The Hub that received a file or web service request shall generate a report showing all detail records that were skipped due to invalid data (RETURN_CODE = '02') and shall have this report available, if needed, for the Hub that sent the data submission.

4. Specific to acknowledgment of a Tag Validation List (TVL) Data file, an initial Acknowledgement Data file shall be sent back to the Hub which sent the TVL. Additionally, a second Acknowledgement Data file with Return Code value '10' shall be sent to provide the date/time the TVL is considered operative by the Away Hub and all of its local Agencies. The second Acknowledgement Data file will only be sent after an initial Acknowledgement Data file with Return Code '00' or '02' has already been delivered.

5. Specific to acknowledgement of an SRECON data submission, an initial Acknowledgement shall be sent back to the Hub which sent the SRECON. Additionally, a second Acknowledgement submission with Return Code value '13' shall be created by the Away Hub based on the SRECON ACK received from the Away agency. This submission contains the Reconciliation Date/Time (UTC) that will be communicated to the Home Agency, through the Home Hub when applicable. If the Reconciliation Date/Time falls within the current reconciliation period, all reconciliation records in the associated Reconciliation submission with a Posting Disposition value of "P" shall be paid from the Home agency to the Away Agency for the current reconciliation period.

7.7   Sample Submission

AcknowledgementSa
mple.xml

Appendix A: NIOP Hub IDs

The NIOP Hubs are assigned a numeric ID value. These values are listed in <u>NIOP ICD Appendix A – RELEASED YYYYMMDD.xlsx</u>.

Appendix B: NIOP Agency IDs

The agencies participating in National Interoperability are assigned unique Agency IDs. The NIOP Agency IDs listed in <u>NIOP ICD Appendix B – Last Uapdate RELEASED.xlsx</u> are the values to be used for the "Home Agency ID" and "Away Agency ID" fields in the Tag Validation List and Transaction Data.

Each NIOP Agency may only be nationally interoperable through one Hub.

Appendix C: NIOP Tag Agency IDs

A single RFID transponder must be uniquely identifiable by all members of NIOP. A transponder is identified by the combination of the NIOP Tag Agency ID and Tag Serial Number.

RFID transponders are encoded with an agency designation. The agency designation of a particular tag is encoded in accordance with the particular communication protocol to which the tag responds. A single tag may respond to one or more communications protocol. Developers of tag reader interfaces (e.g., lane controllers, POS terminals) require these specific agency designations to determine the NIOP Tag Agency ID.

This table in <u>NIOP ICD Appendix C – RELEASED YYYYMMDD.xlsx</u> defines the NIOP Tag Agency ID. The Agency designation encoding for each tag communication protocol is listed. The Tag Agency ID is intended to designate a specific RFID transponder, irrespective of the tag communication protocol used to acquire the transponder read.

The Tag Agency IDs in <u>NIOP ICD Appendix C – RELEASED YYYYMMDD.xlsx</u> are the values to be used for the "Tag Agency ID" fields in the Tag Validation List and Transaction Data.

Appendix D: Tag Validation List Schedule

The Tag Validation List schedules are included in this section. These schedules may change from time to time.

The content of this section is located in <u>NIOP ICD Appendix D – RELEASED YYYYMMDD.xlsx.</u>

Appendix E: License Plate Types

The defined License Plate Types are included in this section.

The content of this section is located in <u>NIOP ICD Appendix E – RELEASED YYYYMMDD.xlsx.</u>

Date	Modifications
18-Oct-18	B. Jewell: Created from ICD.
11/25/2018	B. Jewell: Updated abbreviations to conform with the Business Rules.
11/26/2018	B. Jewell: Updated the following as suggested by M. Kolb a. Changed "E-Zpass" to "E-ZPass". b. Changed "Western US Hub" to "Western Region Hub".

NIOP Hub ID	Hub Description
9001	Southeast US Hub (SEIOP)
9002	Central US Hub (CUSIOP)
9003	Northeast (E-ZPass) Hub (EZIOP)
9004	Western Regiion Hub (WRIOP)

Date	Modifications
10/18/2018	B. Jewell: Created from ICD.
11/8/2018	B. Jewell, M. Kolb: Added and populated Home and Away Agency columns and Notes.
11/25/2018	B. Jewell: Accepted revisions from R. Carrier.

NIOP Agency ID	Assigned NIOP Hub	Home Agency	Away Agency	Agency Description	Note
0017	9001	X	X	South Carolina DOT (SCDOT)	
0033	9001	X	X	North Carolina Turnpike Authority (NCTA)	
0034	9001	X	X	Georgia State Road and Tollway Authority (SRTA)	
0035	9001	X	X	Florida Turnpike Enterprise (FTE)	
0036	9001	X	X	Central Florida Expressway Authority (CFX)	
0037	9001		X	Miami Dade Expressway Authority (MDX)	
0038	9001		X	Tampa Hillsborough Expressway Authority (THEA)	
0039	9001	X	X	Lee County Florida	
0062	9001		X	Southern Connector SC	
0040	9002	X	X	Texas DOT (TxDOT)	
0041	9002	X	X	North Texas Tollway Authority (NTTA)	
0042	9002	X	X	Harris County Toll Road Authority (HCTRA)	
0043	9002		X	Central TX Regional Mobility Authority (CTRMA)	
0046	9002	X	X	E-470 Colorado	
0047	9002		X	Northwest Parkway Colorado	
0050	9002			Greater New Orleans Expressway Commission (Lake Pontchartrain Causeway)	
0051	9002			Louisiana DOT and Development (LADOTD)	
0055	9002	X	X	Oklahoma Turnpike Authority	
0056	9002	X	X	Kansas Turnpike Authority	
0070	9002		X	Ft. Bend County Toll Road Authority	
0002	9003		X	New Jersey Highway Authority (NJHA)	
0003	9003		X	New Jersey Turnpike Authority (NJTA)	
0004	9003	X	X	New York State Thruway Authority (NYSTA)	
0005	9003	X	X	Port Authority of New York & New Jersey (PANYNJ)	
0006	9003	X	X	Pennsylvania Turnpike Commission (PTC)	
0007	9003		X	South Jersey Transportation Authority (SJTA)	
0008	9003	X	X	MTA Bridges & Tunnels (MTAB&T)	
0009	9003		X	Delaware River Port Authority (DRPA)	
0010	9003	X	X	Virginia DOT (VDOT)	
0013	9003		X	Peace Bridge, New York	
0015	9003	X	X	Illinois State Toll Highway Authority (ISTHA)	
0016	9003	X	X	Maryland Transportation Authority (MdTA)	
0018	9003		X	New York State Bridge Authority (NYSBA)	
0019	9003	X	X	Delaware DOT (DelDOT)	
0021	9003	X	X	Massachusetts DOT (MassDOT)	
0022	9003	X		New Jersey CSC (NJCSC)	
0024	9003	X	X	West Virginia Parkways Authority (WVPA)	
0025	9003		X	Delaware River and Bay Authority (DRBA)	
0026	9003	X	X	New Hampshire DOT (NHDOT)	
0027	9003		X	Burlington County Bridge Commission (BCBC)	
0028	9003	X	X	Maine Turnpike Authority (MeTA)	
0029	9003		X	Delaware River Joint Toll Bridge Commission (DRJTBC)	
0030	9003	X	X	Indiana Toll Road Concession Company (ITRCC)	
0031	9003	X	X	Ohio Turnpike and Infrastructure Commission (OTIC)	
0032	9003	X	X	Rhode Island Turnpike and Bridge Authority (RITBA)	
0044	9003	X	X	Skyway Concession Company (SCC)	
0045	9003	X	X	Louisville-Southern Indiana Ohio River Bridges (LSIORB)	
0048	9003			Minnesota DOT (MnDOT)	
0049	9003			Blue Water Bridge	
0059	9003		X	Niagara Falls Bridge Commission	
0060	9003		X	Thousand Islands Bridge Authority	
0058	9004	X	X	Utah DOT (UDOT)	
0077	9004	X	X	Washington DOT (WashDOT)	
0101	9004	X	X	Bay Area Toll Authority (BATA)	
0103	9004	X	X	Transportation Corridor Agencies (TCA)	
0105	9004		X	Golden Gate Bridge, Highway and Transportation District (GGBHTD)	
0106	9004	X	X	Los Angeles County Metropolitan Transportation Authority (LA Metro)	
0107	9004	X	X	Orange County Transportation Authority (OCTA)	
0108	9004	X	X	Riverside County Transportation Commission (RCTC)	
0109	9004	X	X	San Diego Association of Governments (SANDAG)	
0110	9004		X	Santa Clara Valley Transportation Authority (VTA)	
0111	9004		X	South Bay Expressway, LLC (SBX)	
0112	9004		X	Alameda County Transportation Commission (ACTC)	
0113	9004		X	San Francisco County Transportation Authority (SFCTA)	
0114	9004		X	San Bernardino County Transportation Authority (SBCTA)	
0116	9004	X	X	Port of Hood River (PoHR)	
0011				Highway 407, Canada	Has not indicated they are doing NIOP.
0014				Ambassador Bridge, Michigan	Has not indicated they are doing NIOP.
0054				Capufe, Mexico	Has not indicated they are doing NIOP.
0057				Puerto Rico Highway and Transportation Authority	Has not indicated they are doing NIOP.
0061				Halifax Dartmouth Bridge Commission	Has not indicated they are doing NIOP.
0066				TI Corp (Canada)	Has not indicated they are doing NIOP.
0115				Concession A25 S.E.C.	Has not indicated they are doing NIOP.
0118				McAllen-Hidalgo & Anzalduas Bridges	Has not indicated they are doing NIOP.
n/a				New Brunswick (Canada) Highway Corporation	Has not indicated they are doing NIOP.

Date	Modifications
18-Oct-18	B. Jewell: Created from ICD.
11/25/2018	B. Jewell: Accepted revisions from R. Carrier.
11/26/2018	B. Jewell: Made the following revisions as suggested by M. Kolb. a. NIOP Tag Agency ID 127 – Removed. The cell should be blank since these are not 6C transponders and this might cause confusion in the future. b.General Note B - Removed. c. General Note C - Removed. d. General Note E - changed "NIOP/SSIOP HUB (Tvl) Tag Agency ID" to "NIOP Tag Agency ID" and changed "EZG Hub" to "EZIOP Hub". Updated references.
12/18/2018	M. Kolb: Made the following revisions: a. NIOP Tag Agency ID 0050 - added Native 6C ID 451. b. Added NIOP Tag Agency ID value of 0062 to Southern Connector (was previously n/a). c. Added NIOP Tag Agency ID values 0119, 0120, 0121, 0122, 0124, 0125 d. Added Native 6C ID 2306
1/15/2019	B. Jewell: Updated based on email from Bill Brownsburger on behalf of SRTA, as follows: SRTA would like to update their agency ID listings in the NIOP Appendix C listing of tag agency IDs. SRTA has already been assigned two tag agency IDs: 034 and 063. In the table, 034 was identified to be used for their SeGo tags (which haven't been issued for several years but are still on the road) and 063 for their 6C (which are the only tags SRTA currently issues). SRTA's 6C tags are their main tag population at this point. SRTA has been using agency ID 034 for all of their Southeast hub communications, and would prefer to keep this as their 'primary' tag Agency ID, to be used for their 6C tags. So the change essentially amounts to changing 034 to be their 6C tags and 063 to be their SeGo tags. This will not affect currently-implemented systems at all, as 034 is the only tag agency ID currently in use.
5/30/2019	M. Kolb: Made the following revisions: a. Added Native TDM IDs 120 and 125 b. Added NIOP Tag Agency ID value of 0102
10/17/2019	M. Kolb: Made the following revisions: Added NIOP Tag Agency IDs 0070, 0071, 0099 and 0126 Assigned NIOP Tag Agency ID 0080
11/22/2019	B. Jewell: Made the following revision from B. Brownsburger: I'd like to get the Native 6C ID field (column E) for SRTA's 0034 agency code updated with the agency ID that's actually programmed into SRTA's 6C tags. That ID is decimal 321 (hex 141).
2/5/2020	B. Jewell: Corrected Tag Agency ID 1101. Changed back from HCTRA to TxDOT.

NIOP Tag Agency ID	Native ETC Program	Protocols	Native TDM ID	Native 6C ID	Native SeGo ID	ATA	Reserved EZG Agency ID	State	Original Issuing Agency	Note
0002	E-ZPass	TDM	2				002	NJ	New Jersey Highway Authority (NJHA)	
0003	E-ZPass	TDM	3				003	NJ	New Jersey Turnpike Authority (NJTA)	
0004	E-ZPass	TDM	4				004	NY	New York State Thruway Authority (NYSTA)	
0005	E-ZPass	TDM	5				005	NY	Port Authority of New York & New Jersey (PANYNJ)	
0006	E-ZPass	TDM	6				006	PA	Pennsylvania Turnpike Commission (PTC)	
0007	E-ZPass	TDM	7				007	NJ	South Jersey Transportation Authority (SJTA)	
0008	E-ZPass	TDM	8				008	NY	MTA Bridges & Tunnels (MTAB&T)	
0009	E-ZPass	TDM	9				009	NJ	Delaware River Port Authority (DRPA)	
0010	E-ZPass	TDM	10				010	VA	Virginia DOT (VDOT)	
0011	407ETR	TDM	11			;	011	Canada	Highway 407, Canada	
0013	E-ZPass	TDM	13				013	NY	Peace Bridge, New York	
0014	A-Pass	TDM	14				014	MI	Ambassador Bridge, Michigan	Believe that they currently use 6C transponders.
0015	E-ZPass	TDM	15				015	IL	Illinois State Toll Highway Authority (ISTHA)	
0016	E-ZPass	TDM	16				016	MD	Maryland Transportation Authority (MdTA)	
0017	Palmetto Pass	TDM/SeGo	17		2568 (0x0A08)		017	SC	South Carolina DOT (SCDOT)	Issues dual protocol transponders.
0018	E-ZPass	TDM	18				018	NY	New York State Bridge Authority (NYSBA)	Does not currently issue its own transponders.
0019	E-ZPass	TDM	19				019	DE	Delaware DOT (DelDOT)	
0021	E-ZPass	TDM	21				021	MA	Massachusetts DOT (MassDOT)	
0022	E-ZPass	TDM	22				022	NJ	New Jersey CSC (NJCSC)	
0024	E-ZPass	TDM	24				024	WV	West Virginia Parkways Authority (WVPA)	
0025	E-ZPass	TDM	25				025	NJ	Delaware River and Bay Authority (DRBA)	
0026	E-ZPass	TDM	26				026	NH	New Hampshire DOT (NHDOT)	
0027	E-ZPass	TDM	27				027	NJ	Burlington County Bridge Commission (BCBC)	Does not currently issue its own transponders.
0028	E-ZPass	TDM	28				028	ME	Maine Turnpike Authority (MeTA)	
0029	E-ZPass	TDM	29				029	NJ	Delaware River Joint Toll Bridge Commission (DRJTBC)	
0030	E-ZPass	TDM	30				030	IN	Indiana Toll Road Concession Company (ITRCC)	
0031	E-ZPass	TDM	31				031	OH	Ohio Turnpike and Infrastructure Commission (OTIC)	
0032	E-ZPass	TDM	32				032	RI	Rhode Island Turnpike and Bridge Authority (RITBA)	
0033	Quick Pass	TDM/6C/SeGo	33	33	2567 (0x0A07)	NCTA	033	NC	North Carolina Turnpike Authority (NCTA)	NCTA segregates protocols by serial number range. As such, all three protocols can be mapped to a single Agency ID without the risk of overlapping.
0034	Peach Pass	6C		321 (hex 141)		GSTA	034	GA	Georgia State Road and Tollway Authority (SRTA)	For their 6C transponders. See ID 063 for their SeGo transponders.

NIOP Tag Agency ID	Native ETC Program	Protocols	Native TDM ID	Native 6C ID	Native SeGo ID	ATA	Reserved EZG Agency ID	State	Original Issuing Agency	Note
0035	SunPass	SeGo			2561 (0x0A01)	FDOT	035	FL	Florida Turnpike Enterprise (FTE)	The CRC in the FTE tag is formatted differently than most others.
0036	E Pass	TDM/SeGo	36		2565 (0x0A05)		036	FL	Central Florida Expressway Authority (CFX)	CFX segregates protocols by serial number range. As such, both protocols can be mapped to a single Agency ID without the risk of overlapping.
0039	LeeWay	SeGo			2563 (0x0A03)		039	FL	Lee County Florida	
0044	E-ZPass	TDM					044	IL	Skyway Concession Company (SCC)	
0045	RiverLink	TDM/6C	45	449			045	KY	Louisville-Southern Indiana Ohio River Bridges (LSIORB)	LSIORB segregates protocols by serial number range. As such, both protocols can be mapped to a single Agency ID without the risk of overlapping.
0046	ExpressToll	6C		194			046	CO	E-470 Colorado	
0048	MnPass				2569 (0x0A09)		048	MN	Minnesota DOT (MnDOT)	
0049	?	6C		2529			049	MI	Blue Water Bridge	
0050	TollTag	6C/SeGo		451	50 (0x0032)	LPC.	050	LA	Greater New Orleans Expressway Commission (Lake Pontchartrain Causeway)	GNOEC tag ID is formatted a little different than others. They do not have a CRC and their ID is in the space where the CRC generally is. In addition, they segregate protocols by serial number. As such, both protocols can be mapped to a single Agency ID without the risk of overlapping.
0051	GeauxPass	6C/SeGo		450	51 (0x0033)	GNO2	051	LA	Louisiana DOT and Development (LADOTD)	LADOTD segregates protocols by serial number range. As such, both protocols can be mapped to a single Agency ID without the risk of overlapping.
0054	IAVE Pass	SeGo			203 (0x00CB)	CPFI	054	Mexico	Capufe, Mexico	Believe they may have migrated to 6C.
0057	AutoExpreso	6C		448			057	PR	Puerto Rico Highway and Transportation Authority	
0058	Express Pass	6C		1409			058	UT	Utah DOT	
0059		TDM	59				059	NY	Niagara Falls Bridge Commission	Does not currently issue its own transponders.
0060		TDM	60				060	NY	Thousand Islands Bridge Authority	Does not currently issue its own transponders.
0061	MACPASS	SeGo			197 (0x00C5)	CAHD	061	Canada	Halifax Dartmouth Bridge Commission	
0062		6C/TDM	n/a	62			062	SC	Southern Connector SC	
0063	Peach Pass	SeGo			200 (0x00C8)		063	GA	Georgia State Road and Tollway Authority (SRTA)	For their SeGo transponders. See ID 034 for their 6C transponders.
0064	SunPass	SeGo			2570 (0x0A0A)		064	FL	Florida Turnpike Enterprise (FTE)	Second ID assigned to FTE.
0065	SunPass	SeGo			2571 (0x0A0B)		065	FL	Florida Turnpike Enterprise (FTE)	Third ID assigned to FTE.
0066	TReO	6C		2305			066	Canada	TI Corp (Canada)	
0070		6C		70			070	AL	American Roads (AR)	
0071		6C		71			071	MI	Detroit Windsor Tunnel (DWT)	
0077	Good To Go	6C/SeGo		77 / 78	218 (0x00DA)		077	WA	Washington DOT (WashDOT)	WashDOT segregates protocols by serial number range and has also segregated its Agency ID 77 and 78 transponders by serial number range. As such, both protocols and all the current Agency IDs can be mapped to a single Agency ID without the risk of overlapping.
0080	E-ZPass	TDM	80				080		Cline Avenue Bridge LLC	
0081							081		Reserved for future E-ZPass expansion	
0082							082		Reserved for future E-ZPass expansion	

NIOP Tag Agency ID	Native ETC Program	Protocols	Native TDM ID	Native 6C ID	Native SeGo ID	ATA	Reserved EZG Agency ID	State	Original Issuing Agency	Note
0083							083		Reserved for future E-ZPass expansion	
0084							084		Reserved for future E-ZPass expansion	
0085							085		Reserved for future E-ZPass expansion	
0086							086		Reserved for future E-ZPass expansion	
0087							087		Reserved for future E-ZPass expansion	
0088							088		Reserved for future E-ZPass expansion	
0089							089		Reserved for future E-ZPass expansion	
0090							090		Reserved for future E-ZPass expansion	
0091							091		Reserved for future E-ZPass expansion	
0092							092		Reserved for future E-ZPass expansion	
0093							093		Reserved for future E-ZPass expansion	
0094							094		Reserved for future E-ZPass expansion	
0095							095		Reserved for future E-ZPass expansion	
0096							096		Reserved for future E-ZPass expansion	
0097							097		Reserved for future E-ZPass expansion	
0098							098		Reserved for future E-ZPass expansion	
0099	E Pass	TDM/SeGo	99		2659 (0x0A63)		099	FL	Central Florida Expressway Authority (CFX)	Second ID assigned to CFX.
0100							100		Reserved for future E-ZPass expansion	
0101	FasTrak	6C		101			101	CA	Bay Area Toll Authority (BATA)	
0102		6C		102			102	Canada	Atlantic Highway Management Corporation Limited (AHMCL)	
0103	FasTrak	6C		103			103	CA	Transportation Corridor Agencies (TCA)	
0106	FasTrak	6C		106			106	CA	Los Angeles County Metropolitan Transportation Authority (LA Metro)	
0107	FasTrak	6C		107			107	CA	Orange County Transportation Authority (OCTA)	
0108	FasTrak	6C		108			108	CA	Riverside County Transportation Commission (RCTC)	
0109	FasTrak	6C		109			109	CA	San Diego Association of Governments (SANDAG)	

NIOP Tag Agency ID	Native ETC Program	Protocols	Native TDM ID	Native 6C ID	Native SeGo ID	ATA	Reserved EZG Agency ID	State	Original Issuing Agency	Note
0115	A25	6C		115			115	Canada	Concession A25 S.E.C.	A25 segregates protocols by serial number range. As such, both protocols can be mapped to a single Agency ID without the risk of overlapping.
0116	BreezeBy	6C		116	220 (0x00DC)		116	OR	Port of Hood River (PoHR)	Open question on their old SeGo transponders and whether there is serial number overlap with their 6C transponders.
0118	EZ Cross	6C		118			118	TX	McAllen-Hidalgo & Anzalduas Bridges	
0119		6C		119			119	TX	Pharr-Reynosa International Bridge	
0120		6C	120	120			120	n/a	TransCore	
0121		6C		121			121	TX	Cameron County Regional Mobility Authority (CCRMA)	
0122		6C		122			122	TX	Starr County	
0124		6C		124			124	MI	Mackinac Bridge Authority	
0125		6C	125	125			125	n/a	BestPass	
0126		6C		126			126	n/a	Kapsch	
0127	FasTrak	Title-21					127	CA	WRIOP (WRIOP Hub) - For Title 21 Tags	The Western Region IOP (WRIOP) will include Title 21 Tags with converted serial numbers to map to eight (8) characters in an interim until Regions are able to accept more than eight (8) characters.
1100	TxTAG	SeGo			21550 (0x542E)	TEX.	040	TX	Texas DOT (TxDOT)	
1101	TxTAG	SeGo			102 (0x0066)	TXDT	067	TX	Texas DOT (TxDOT)	2/2020: Changed from HCTRA back to TxDOT.
1110	TollTag	SeGo			20052 (0x4E54)	DNT.	041	TX	North Texas Tollway Authority (NTTA)	
1111	TollTag	SeGo			182 (0x00B6)	DFW.	053	TX	NTTA / DFW	
1112	TollTag	SeGo			TBD		069	TX	NTTA	Additional ID assigned to NTTA.
1120	EZ Tag	SeGo			100 (0x0064)	HCTR	042	TX	Harris County Toll Road Authority (HCTRA)	
1121	EZ Tag	SeGo			222 (0x00DE)	MTAH	068	TX	HCTRA / Houston Metro	
1130		SeGo			n/a	n/a	043	TX	Central TX Regional Mobility Authority (CTRMA)	Does not issue its own transponders.
1131		SeGo			n/a		052	TX	Ft. Bend County Toll Road Authority	Does not issue its own transponders.
1250	PikePass	SeGo			20299 (0x4F4B)	OTA.	055	OK	Oklahoma Turnpike Authority	
1300	K Tag	SeGo			19284 (0x4B54)	KTA.	056	KS	Kansas Turnpike Authority	
n/a		n/a	n/a				000	n/a	Reserved - Manufacturer (Kapsch)	
n/a		n/a	n/a				001	n/a	Reserved	
n/a		n/a	n/a				012	FL	MetroDade, Florida	No longer issues transponders.
n/a		TDM	n/a				020	n/a	Advantage I-75	Not sure they still issue transponders. Were never reciprocal.
n/a			n/a				023	Canada	New Brunswick (Canada) Highway Corporation	Do not believe they ever actually issued any transponders.
n/a		SeGo			n/a		037	FL	Miami Dade Expressway Authority (MDX)	Does not issue its own transponders.
n/a		SeGo			n/a		038	FL	Tampa Hillsborough Expressway Authority (THEA)	Does not issue its own transponders.
n/a		6C		n/a			047	CO	Northwest Parkway Colorado	Does not issue its own transponders.
n/a		6C		104			104	CA	California Department of Transportation (Caltrans)	Does not issue its own transponders.

NIOP Tag Agency ID	Native ETC Program	Protocols	Native TDM ID	Native 6C ID	Native SeGo ID	ATA	Reserved EZG Agency ID	State	Original Issuing Agency	Note
n/a		6C		105			105	CA	Golden Gate Bridge, Highway and Transportation District (GGBHTD)	Does not issue its own transponders.
n/a		6C		110			110	CA	Santa Clara Valley Transportation Authority (VTA)	Does not issue its own transponders.
n/a		6C		111			111	CA	South Bay Expressway, LLC (SBX)	Does not issue its own transponders.
n/a		6C		112			112	CA	Alameda County Transportation Commission (ACTC)	Does not issue its own transponders.
n/a		6C		113			113	CA	San Francisco County Transportation Authority (SFCTA)	Does not issue its own transponders.
n/a		6C		114			114	CA	San Bernardino County Transportation Authority (SBCTA)	Does not issue its own transponders.
n/a		6C		2306			n/a	England	MercyFlow	

General Notes:

    A.   Several agencies that have been shown in other tables and documents have been removed as they no longer collect tolls or have never collected tolls.

    B.   The "Reserved EZG Agency ID" represents the mapped ID that will be presented by the MPR reader to the lane controller for transponders read with the indicated Native IDs.

    C.   The "NIOP Tag Agency ID" represents the mapped ID that will be presented by the EZIOP Hub to other regional Hubs for transponders in its TVL and for transactions with the given "Reserved EZG Agency ID".

    D.   The following ATA tag references were removed from the table above since they are no longer in use:
- a.   MPA. – Massport
- b.   TNB. – Tacoma Narrows Bridge
- c.   TXDT - Texas DOT (original issue)
- d.   SATX – Texas DOT (San Antonio)
- e.   PRIB – Texas DOT (Pharr Bridge/Trindel)
- f.   LDO. – Laredo, Texas
- g.   CASJ – St. John's Bridge, Canada
- h.   CAAH – Atlantic Highway, Canada

Date	Modifications
18-Oct-18	B. Jewell: Created from ICD.
11/26/2018	B. Jewell: Removed CUSIOP and SSIOP Schedules as suggested by M. Kolb.

D: NIOP Tag Validation List Schedule

The times notes below are times when each NIOP Hub is expected to receive each other's TVL on a daily basis.

TVL	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Bulk	3AM						
Differential		3:00 AM	3:00 AM	3:00 AM	3:00 AM	3:00 AM	3:00 AM

Revision	Revised By	Revision Notes
20190128	M. Kolb	Created.
20190129	B. Jewell	Added the following detail from MK's email:
		The spreadsheet has two tabs:
		• Plate Type – lists the DMV defined plate types for select states. The E-ZPass Group does not track this against all 50 states and also cannot vouch for the long-term accuracy of this data. For NIOP purposes, we will need to encourage individual states to keep on top of this with their own DMV and update accordingly. It should also be noted that NY technically has plate types for many other types of plates. However, the NY DMV only requires plate type (due to potential plate duplication) for plates whose content is a 1-5 digit number. Plates with alphas or 6+ digits are unique/not duplicated and, hence, do not really require plate type. There are some plate types that are not shown and indicate as "not available for general lookup". These represent plates that are not stored by the DMV in their normal DMV database and are either not available for lookup at all or are only available via alternative lookup methods. However, for the purposes of hosting these plates on an ETC account, it may be necessary for the toll agencies to create a "plate type" for these plates.
		• No Type – lists states that do not have plate type. Note that NY is listed here as well with a note regarding the caveat above.

License Plate Country	License Plate State	License Plate Type	Plate Description
US	CT	All Terrain	All Terrain
US	CT	Ambulance	Ambulance
US	CT	Camp Trailer	Camp Trailer
US	CT	Camper	Camper
US	CT	Combination	Combination
US	CT	Commercial	Commercial
US	CT	Congressional Medal of Honor	Congressional Medal of Honor
US	CT	Construction	Construction
US	CT	Dealer	Dealer
US	CT	Experimental Test	Experimental Test
US	CT	Factory	Factory
US	CT	Farm	Farm
US	CT	Fire Apparatus	Fire Apparatus
US	CT	General Dist Bus	General District Bus
US	CT	Handicapped	Handicapped
US	CT	Handicapped COMB	Handicapped COMB
US	CT	Handicapped Motorcycle	Handicapped Motorcycle
US	CT	Hearse	Hearse
US	CT	Historical	Historical
US	CT	Interstate	Interstate
US	CT	Legislature	Legislature
US	CT	Livery	Livery
US	CT	Motorcycle	Motorcycle
US	CT	Municipal	Municipal
US	CT	Passenger	Passenger
US	CT	Permits	Permits
US	CT	POW CMPR	POW CMPR
US	CT	POW COMB	POW COMB
US	CT	POW Veteran	POW Veteran
US	CT	Public Service Bus	Public Service Bus
US	CT	School Bus	School Bus
US	CT	School Bus Livery	School Bus Livery
US	CT	Senate	Senate
US	CT	Service Bus	Service Bus
US	CT	Snowmobile	Snowmobile
US	CT	Special Mobile Equip	Special Mobile Equip
US	CT	State	State
US	CT	State Serv Bus	State Serv Bus
US	CT	State STV	State STV
US	CT	Student Transport - Comb	Student Transport - Comb
US	CT	Student Transport - Serv Bus	Student Transport - Serv Bus
US	CT	Taxi	Taxi
US	CT	Trailer	Trailer
US	CT	Transporter	Transporter
US	CT	US Congress	US Congress
US	CT	US Senate	US Senate
US	CT	Van Pool	Van Pool
US	CT	Veteran	Veteran
US	CT	Veteran CMPR	Veteran CMPR
US	CT	Veteran COMB	Veteran COMB

License Plate Country	License Plate State	License Plate Type	Plate Description
US	CT	Vol Firefighter COMB	Vol Firefighter COMB
US	CT	Vol Firefighter COMM	Vol Firefighter COMM
US	CT	Volunteer Firefighter	Volunteer Firefighter
US	CT	Wrecker	Wrecker
US	IL	0	Specialty, Motorcycle and all other not defined by other types
US	IL	1	Passenger Car
US	IL	1	Passenger Car - Vanity
US	IL	1	Passenger Car - Personalized
US	IL	2	Temporary Plate
US	IL	Not available for general lookup	Apportioned
US	IN	AM	Motorcycle - Antique
US	IN	AN	Antique Vehicle
US	IN	AR	Amateur Radio
US	IN	AT	Organizational - Indiana Arts Commission
US	IN	BA	Organizational - Boy Scouts
US	IN	BA	Motorcycle - Boy Scout Trust
US	IN	BH	Organizational - Lincoln's Boyhood Home
US	IN	BR	College/University - Indiana University
US	IN	BU	College/University - Ball State
US	IN	CB	Bus - Church
US	IN	CP	City Police
US	IN	CT	Organizational - Department of Child Services - Kids First
US	IN	CT	Motorcycle - Department of Child Services - Kids First
US	IN	DA	Organizational - D.A.R.E.
US	IN	DC	Motorcycle - Disabled Veteran (Blue)
US	IN	DF	Passenger - Disabled Veteran (Yellow)
US	IN	DH	Passenger - Disabled Veteran
US	IN	DM	Motorcycle - Disabled Veteran (Yellow)
US	IN	EO	Elected Official
US	IN	FA	Organizational - FFA Foundation
US	IN	FA	Motorcycle - FFA Trust
US	IN	GB	Bus
US	IN	GB	Bus - Other
US	IN	HL	Organizational - Health Foundation of Greater Indianapolis
US	IN	HM	Motorcycle - Disability
US	IN	HP	Passenger - Disability
US	IN	HS	Organizational - Hoosier Safety
US	IN	HS	Motorcycle - Secure Indiana
US	IN	HT	Organizational - Environment
US	IN	HT	Motorcycle - Health Trust
US	IN	IS	College/University - Indiana State University
US	IN	MC	Motorcycle
US	IN	MO	Passenger - Municipal
US	IN	NA	Organizational - Land of the Indians
US	IN	NA	Motorcycle - Native American Trust
US	IN	NG	Military - National Guard
US	IN	NG	Motorcycle - National Guard

License Plate Country	License Plate State	License Plate Type	Plate Description
US	IN	NH	Bus - Bus C Not for Hire (High Digit)
US	IN	Not available for general lookup	Governor
US	IN	Not available for general lookup	Apportioned
US	IN	Not available for general lookup	Permanent Trailer
US	IN	PA	Passenger
US	IN	PA	Passenger
US	IN	PH	Military - Purple Heart
US	IN	PL	Passenger - Vanity
US	IN	PM	Motorcycle - Purple Heart
US	IN	PS	Military - Pearl Harbor
US	IN	PU	College/University - Purdue University
US	IN	PW	Military - POW
US	IN	PW	Motorcycle - POW
US	IN	RV	Recreational Vehicle
US	IN	SB	Bus - School (High Digit)
US	IN	SE	Semi-Trailer Permanent
US	IN	SH	Organizational - Sheriff Association
US	IN	SI	College/University - University of Southern Indiana
US	IN	SP	In God We Trust
US	IN	SP	College/University - Ivy Tech
US	IN	SP	College/University - Butler University
US	IN	SP	College/University - De Pauw University
US	IN	SP	College/University - University of Evansville
US	IN	SP	College/University - Indiana University/Purdue University
US	IN	SP	College/University - Ivy Tech Community College
US	IN	SP	College/University - Indiana State University
US	IN	SP	College/University - University of Indianapolis
US	IN	SP	College/University - Notre Dame
US	IN	SP	College/University - Purdue University
US	IN	SP	Organizational - Go Colts
US	IN	SP	Organizational - Professional Firefighters
US	IN	SP	Organizational - Indiana Shriner
US	IN	SP	Organizational - Breast Cancer Awareness
US	IN	SP	Organizational - Freemason
US	IN	SP	Organizational - Choose Life
US	IN	SP	Organizational - Habitat for Humanity
US	IN	SP	Organizational - Black Expo
US	IN	SP	Organizational - Organization of Nursing Executives
US	IN	SP	Organizational - Fraternal Order of Police
US	IN	SP	Organizational - State Police
US	IN	SP	Organizational - Juvenile Diabetes
US	IN	SP	Organizational - Clark-Floyd Counties Convention and Tourism Bureau
US	IN	SP	Organizational - Riley Hospital
US	IN	SP	Organizational - 4H Foundation
US	IN	SP	Organizational - Speedway Hall of Fame
US	IN	SP	Military - Support Our Troops
US	IN	SP	Motorcycle - Other Specialty

License Plate Country	License Plate State	License Plate Type	Plate Description
US	IN	SR	Passenger -State Representative
US	IN	SS	Passenger - State Senator
US	IN	TK	Truck - Standard
US	IN	UC	Passenger - US Congressman
US	IN	US	Passenger - US Senator
US	IN	VT	College/University - Ivy Tech
US	IN	WR	Recovery Vehicle
US	IN	XM	Motorcycle - Municipal
US	IN	XS	Bus - Municipal School Bus
US	MA	AHN/R	Camper - Normal Series
US	MA	AHR/R	Camper - Reserved Series
US	MA	AHV/R	Camper - Vanity Series
US	MA	AMN/R	Ambulance - Normal Series
US	MA	AMN/R	Animal Ambulance
US	MA	AMR/R	Ambulance - Reserved Series
US	MA	APN/R	Apportioned
US	MA	ATN/A	Authority - MBTA Police
US	MA	ATN/A	Authority - Berkshire Regional Transit
US	MA	ATN/A	Authority - Brockton Area Transit
US	MA	ATN/A	Authority - Cape Ann Transit
US	MA	ATN/A	Authority - Cape Cod Regional Transit
US	MA	ATN/A	Authority - Franklin Regional Transit
US	MA	ATN/A	Authority - Greater Attleboro
US	MA	ATN/A	Authority - Greenfield Montague Transit
US	MA	ATN/A	Authority - Lowell Regional Transit
US	MA	ATN/A	Authority - Southeast Transit
US	MA	ATN/A	Authority - MBTA
US	MA	ATN/A	Authority - Mass Turnpike
US	MA	ATN/A	Authority - Merrimack Valley Regional
US	MA	ATN/A	Authority - Metro West Regional Transit
US	MA	ATN/A	Authority - Montachusett Regional Transit
US	MA	ATN/A	Authority - Nantucket Regional Transit
US	MA	ATN/A	Authority - Pioneer Valley Transit
US	MA	ATN/A	Authority - Southeastern Regional Transit
US	MA	ATN/A	Authority - Water Resources Authority
US	MA	ATN/A	Authority - Worcester Regional Transit
US	MA	AXN/A	Motorcycle - Authority - MBTA
US	MA	BUN/R	Bus - Normal Series
US	MA	BUR/R	Bus - Reserved Series
US	MA	BUV/R	Bus - Vanity Series
US	MA	CON/R	Commercial - Normal Series
US	MA	CON/R	Commercial -Electric Vehicle
US	MA	CON/R	Commercial - Hearse
US	MA	CON/R	Commercial - Snow Removal
US	MA	COR/R	Commercial - Reserved
US	MA	COR/R	Commercial - Reserved - Hearse
US	MA	COV/R	Commercial - Vanity Series
US	MA	DLN/B	Passenger - Car Dealer
US	MA	DLV/B	Passenger - Car Dealer Vanity
US	MA	DMN/B	Motorcycle - Dealer

License Plate Country	License Plate State	License Plate Type	Plate Description
US	MA	FAN/B	Farmer
US	MA	LVN/R	Livery - Normal Series
US	MA	LVR/R	Livery - Reserved Series
US	MA	LVV/R	Livery - Vanity Series
US	MA	MCN/B	Motorcycle-Normal Series
US	MA	MCR/B	Motorcycle-Reserved Series
US	MA	MCR/B	Motorcycle-Reserved Series-Antique
US	MA	MCR/B	Motorcycle-Reserved Series - Blue Knight
US	MA	MCR/B	Motorcycle-Reserved Series - Red Knight
US	MA	MCS/B	Motorcycle - Special Series-Disability
US	MA	MCS/B	Motorcycle - Special Series-Veteran
US	MA	MCS/B	Motorcycle - Special Series-Veteran - Gold Star Family
US	MA	MCS/B	Motorcycle - Special Series-Veteran - Cong. Medal of Honor
US	MA	MCS/B	Motorcycle - Special Series-Veteran - Legion of Valor
US	MA	MCS/B	Motorcycle - Special Series-Veteran - Silver Star
US	MA	MCS/B	Motorcycle - Special Series-Veteran - Bronze Star
US	MA	MCS/B	Motorcycle - Special Series-Veteran - Distinguished Flying Cross
US	MA	MCS/B	Motorcycle - Special Series-Veteran - Purple Heart
US	MA	MCS/B	Motorcycle - Special Series-Veteran - Pearl Harbor Survivor
US	MA	MCS/B	Motorcycle - Special Series-Veteran - Ex-POW
US	MA	MCV/B	Motorcycle - Vanity Series
US	MA	MVN/M	Municipal - Fire
US	MA	MVN/M	Municipal - Police
US	MA	MVN/M	Municipal - Normal
US	MA	MVN/M	Municipal - Boston
US	MA	MXN/M	Motorcycle - Municipal
US	MA	MXN/M	Motorcycle - Municipal
US	MA	OCN/B	Owner Contractor
US	MA	PAN/G	Passenger - Normal Series (Green characters)
US	MA	PAN/R	Passenger - Normal Series
US	MA	PAR/R	Passenger - Reserved Series
US	MA	PAS/R	Passenger - Special Series - Handicapped
US	MA	PAS/R	Passenger - Special Series - Nantucket Island
US	MA	PAS/R	Passenger - Special Series - Plymouth 400th Anniversary
US	MA	PAS/R	Passenger - Special Series - Blackstone Valley
US	MA	PAS/R	Passenger - Special Series - Cape & Islands
US	MA	PAS/R	Passenger - Special Series - Islands & Cape
US	MA	PAS/R	Passenger - Special Series - Electric Vehicle
US	MA	PAS/R	Passenger - Special Series - Fish & Wildlife
US	MA	PAS/R	Passenger - Special Series - Right Whale
US	MA	PAS/R	Passenger - Special Series - Invest in Children
US	MA	PAS/R	Passenger - Special Series - Animal Coalition
US	MA	PAS/R	Passenger - Special Series - Conquer Cancer
US	MA	PAS/R	Passenger - Special Series - Firefighter Memorial
US	MA	PAS/R	Passenger - Special Series - Breast Cancer
US	MA	PAS/R	Passenger - Special Series - United We Stand

License Plate Country	License Plate State	License Plate Type	Plate Description
US	MA	PAS/R	Passenger - Special Series - Basketball Hall of Fame
US	MA	PAS/R	Passenger - Special Series - Red Sox
US	MA	PAS/R	Passenger - Special Series - Jimmy Fund
US	MA	PAS/R	Passenger - Special Series - Olympic Spirit
US	MA	PAS/R	Passenger - Special Series - Bruins/Youth Hockey
US	MA	PAS/R	Passenger - Special Series - Patriots
US	MA	PAS/R	Passenger - Special Series - Mini Fenway Park
US	MA	PAS/R	Passenger - Special Series - Celtics/ Boston Children's
US	MA	PAS/R	Passenger - Special Series - Choose Life
US	MA	PAS/R	Passenger - Special Series - U Mass
US	MA	PAS/R	Passenger - Special Series - Medical Doctor
US	MA	PAS/R	Passenger - Special Series - Ham Radio Operator
US	MA	PAS/R	Passenger - Special Series - Antique
US	MA	PAS/R	Passenger - Special Series - Antique Vanity
US	MA	PAS/R	Passenger - Special Series - News Photographer
US	MA	PAS/R	Passenger - Special Series - Low Speed Vehicle
US	MA	PAS/R	Passenger - Special Series - Limited Use Vehicle
US	MA	PAS/R	Passenger - Special Series - Governor's Council
US	MA	PAS/R	Passenger - Special Series - Honorary Consular Corps.
US	MA	PAS/R	Passenger - Special Series - Foreign Organization
US	MA	PAS/R	Passenger - Special Series - Veteran
US	MA	PAS/R	Passenger - Special Series - Disabled Veteran
US	MA	PAS/R	Passenger - Special Series - Disabled Veteran
US	MA	PAS/R	Passenger - Special Series - Purple Heart
US	MA	PAS/R	Passenger - Special Series - Bronze Star
US	MA	PAS/R	Passenger - Special Series - Silver Star
US	MA	PAS/R	Passenger - Special Series - Support Veterans
US	MA	PAS/R	Passenger - Special Series - Pearl Harbor Survivor
US	MA	PAS/R	Passenger - Special Series - Medal of Honor
US	MA	PAS/R	Passenger - Special Series - Legion of Valor
US	MA	PAS/R	Passenger - Special Series - Ex POW
US	MA	PAS/R	Passenger - Special Series - Distinguished Flying Cross
US	MA	PAS/R	Passenger - Special Series - Gold Star Family
US	MA	PAS/R	Passenger - Special Series - National Guard
US	MA	PAS/R	Passenger - Special Series - Disaster/ Emergency Vehicle
US	MA	PAS/R	Passenger - Special Series - State Senate
US	MA	PAS/R	Passenger - Special Series - State House of Reps.
US	MA	PAS/R	Passenger - Special Series - US Congress
US	MA	PAS/R	Passenger - Special Series - US Senate
US	MA	PAV/R	Passenger - Vanity Series
US	MA	PAY/V	Passenger - Year of Manufacture Series
US	MA	PAY/V	Motorcycle -Year of Manufacture
US	MA	RPN/B	Repair
US	MA	RPV/B	Repair - Vanity
US	MA	SBN/R	School Bus - Normal Series
US	MA	SBR/R	School Bus - Reserved Series
US	MA	SMN/R	Semi Trailer - Normal Series

License Plate Country	License Plate State	License Plate Type	Plate Description
US	MA	SMR/R	Semi Trailer - Reserved Series
US	MA	SPN/Y	Pupil - Normal Series
US	MA	STN/S	State Trooper
US	MA	STN/S	State
US	MA	STN/S	Environmental Police
US	MA	SXN/S	Motorcycle - State Police/ Trooper
US	MA	SXN/S	Motorcycle - Environmental Police
US	MA	TAN/R	Taxi - Normal Series
US	MA	TAR/R	Taxi - Reserved Series
US	MA	TPN/B	Transporter
US	MA	TRN/R	Trailer - Normal Series
US	MA	TRR/R	Trailer - Reserved Series
US	MA	VPN/R	Vanpool - Normal Series
US	ME	AC	Agriculture Commercial
US	ME	AF	Agriculture Farm Vehicle
US	ME	AG	Agriculture Support
US	ME	AM	Ambulance/Hearse
US	ME	AP	Apportioned
US	ME	AQ	Antique Auto
US	ME	AW	Animal Welfare
US	ME	BB	Black Bear
US	ME	BC	Breast Cancer Support
US	ME	BH	Barbara Bush Children's Hospital
US	ME	BU	Bus
US	ME	CC	Conservation Commercial
US	ME	CD	Conservation Disability
US	ME	CI	Municipal
US	ME	CI	Municipal-Police
US	ME	CI	County Govt.
US	ME	CL	Conservation Trailer
US	ME	CM	Combination
US	ME	CO	Standard Commercial
US	ME	CR	Conservation
US	ME	CS	County Sheriff
US	ME	CV	Custom Vehicle
US	ME	DL	New Car Dealer
US	ME	DS	Special Veteran-Handicapped
US	ME	DV	Disabled Veteran
US	ME	DX	Disability
US	ME	ED	Equipment Dealer
US	ME	EM	EMS
US	ME	EX	Experiment
US	ME	FD	Fire Fighter
US	ME	FM	Farm Vehicle
US	ME	GS	Gold Star Family
US	ME	HF	Honorary Foreign Consul
US	ME	HL	Maine House
US	ME	HS	Maine Senate
US	ME	HT	Heavy Trailer Dealer
US	ME	HW	Heavy Wrecker

License Plate Country	License Plate State	License Plate Type	Plate Description
US	ME	LB	Lobster
US	ME	LC	Lobster Commercial
US	ME	LO	Loaner
US	ME	LT	Light Trailer Dealer
US	ME	MC	Motorcycle
US	ME	MD	Motorcycle Dealer
US	ME	MH	Motor Home
US	ME	MM	Municipal Motorcycle
US	ME	MO	Medal Of Honor
US	ME	MQ	Antique Motorcycle
US	ME	MX	Handicapped Motorcycle
US	ME	PC	Standard Passenger
US	ME	PH	Purple Heart
US	ME	PM	Purple Heart Motorcycle
US	ME	PO	Former POW
US	ME	PS	Pearl Harbor Survivor
US	ME	RV	Conservation Motor Home
US	ME	SE	Special Equipment
US	ME	SP	State Police
US	ME	SR	Street Rod
US	ME	ST	State Vehicle
US	ME	SW	Sportsman
US	ME	TD	Transporter
US	ME	TL	Trailer - Annual Renewal
US	ME	TL	Trailer - Long Term
US	ME	TR	Tractor
US	ME	TS	Support Troops
US	ME	TT	Commercial Tractor
US	ME	TX	Vehicle For Hire (Taxi)
US	ME	UC	Used Car Dealer
US	ME	UM	University Of Maine System
US	ME	VM	Special Veteran Motorcycle
US	ME	VT	Special Veteran
US	ME	VX	Disabled Veteran-Handicapped
US	ME	WB	Wabinaki
US	ME	WR	(Light) Wrecker
US	ME	WX	Handicapped Motor Home
US	ME	XV	Disabled Veteran Motorcycle
US	NH	AGRI	Agriculture
US	NH	AMBU	Ambulance
US	NH	AMOT	Motorcycle - Antique
US	NH	ANTI	Antique
US	NH	APRO	Apportioned
US	NH	COMM	Commercial
US	NH	CONEQ	Construction Equipment
US	NH	CPASS	Conservation Heritage - Moose (ends with C)
US	NH	DVETE	Disabled Veteran - Passenger
US	NH	FARM	Farm
US	NH	FPOW	Former POW
US	NH	HCAP	Handicap Passenger

License Plate Country	License Plate State	License Plate Type	Plate Description
US	NH	HMOTO	Motorcycle - Handicap
US	NH	HPASS	Conservation Heritage - Moose (ends with H)
US	NH	HRSE	Hearse
US	NH	IANTI	Antique - Vanity
US	NH	IAPRO	Apportioned - Vanity
US	NH	ICOMM	Commercial - Vanity
US	NH	ICPAS	Conservation Heritage - Moose - Vanity
US	NH	IDVET	Disabled Veteran - Passenger - Vanity
US	NH	IFPOW	Former POW - Vanity
US	NH	IHCAP	Handicap Passenger - Vanity
US	NH	IHMOTO	Motorcycle - Handicap - Vanity
US	NH	IMOTO	Motorcycle - Vanity
US	NH	INGNH	National Guard - Vanity
US	NH	INPUR	Passenger - Purple Heart - Vanity
US	NH	IPASS	Initial Passenger - Vanity
US	NH	IPMOT	Motorcycle - Purple Heart - Vanity
US	NH	ISPCPS	Moose (Conservation) Park - Vanity
US	NH	ISPPS	Passenger - State Park - Vanity
US	NH	ISROD	Street Rod - Vanity
US	NH	ITRAI	Trailer - Vanity
US	NH	IVMOT	Motorcycle - Veteran - Vanity
US	NH	IVVET	Passenger - Veteran - Vanity
US	NH	MOTO	Motorcycle
US	NH	NGNH	National Guard
US	NH	NHNG	National Guard
US	NH	Not available for general lookup	Supreme Court
US	NH	Not available for general lookup	Superior Court
US	NH	Not available for general lookup	State Police
US	NH	Not available for general lookup	Municipal Police
US	NH	Not available for general lookup	Motor Vehicle Department
US	NH	Not available for general lookup	State Senate
US	NH	Not available for general lookup	State House of Representatives
US	NH	Not available for general lookup	Governor's Council
US	NH	Not available for general lookup	US Congress
US	NH	Not available for general lookup	US Senate
US	NH	Not available for general lookup	Attorney General
US	NH	Not available for general lookup	US Attorney
US	NH	Not available for general lookup	Governor
US	NH	NPHBR	Pearl Harbor Survivor - Vanity
US	NH	NPURP	Passenger - Purple Heart
US	NH	PADMN	Permanent - State - ADMINISTRATION
US	NH	PAGRI	Permanent - State - AGRICULTURE

License Plate Country	License Plate State	License Plate Type	Plate Description
US	NH	PASS	Standard Passenger
US	NH	PBANK	Permanent - State - BANKING
US	NH	PCIVIL	Permanent - State - CIVIL DEFENSE
US	NH	PDRED	Permanent - State - DRED
US	NH	PEDUC	Permanent - State - EDUCATION
US	NH	PENVS	Permanent - State - ENV SVC/POLICE STAND
US	NH	PERM	Permanent - City of Town
US	NH	PESE	Permanent - State - PEASE AIRFORCE
US	NH	PFISH	Permanent - State - FISH & GAME
US	NH	PHBR	Pearl Harbor Survivor
US	NH	PHGWY	Permanent - State - HIGHWAY
US	NH	PHMOT	Motorcycle - Purple Heart
US	NH	PHWEL	Permanent - State - NH HOSPITAL & WELFARE
US	NH	PJUDL	Permanent - State - JUDICIAL
US	NH	PLABR	Permanent - State - LABOR
US	NH	PLIBR	Permanent - State - LIBRARY
US	NH	PLIQR	Permanent - State - LIQUOR
US	NH	PMISC	Permanent - State - MISCELLANEOUS
US	NH	PMOTR	Permanent - State - LOCAL GVT MOTORCYCLE
US	NH	PNATG	Permanent - State - NATIONAL GUARD
US	NH	PPLOT	Permanent - State - POLICE STAND TRAINING
US	NH	PPRIS	Permanent - State - PRISON
US	NH	PREVN	Permanent - State - REVENUE ADMINISTRATOR
US	NH	PSAFTY	Permanent - State - SAFETY/HIGHWAY ENFORCEMENT
US	NH	PSWEP	Permanent - State - SWEEPSTAKES
US	NH	PTRAL	Permanent - State - STATE GOVERNMENT TRAILERS
US	NH	PUNIV	Permanent - State - UNIVERSITY WATER POLLUTION/CONTROL
US	NH	PYDEV	Permanent - State - YOUTH DEVELOPMENT
US	NH	SBUS	School Bus
US	NH	SCOMM	Special Commercial
US	NH	SPCPS	Moose (Conservation) Park
US	NH	SPPAS	Passenger - State Park
US	NH	SROD	Street Rod
US	NH	TRAI	Trailer
US	NH	VMOTO	Motorcycle - Veteran
US	NH	VVETE	Passenger - Veteran
US	NY	ARG	Air National Guard
US	NY	AYG	Army National Guard
US	NY	BOB	Birthplace of Baseball
US	NY	CCK	County Clerk
US	NY	CCK	County Clerk President Plate
US	NY	CME	Coroner
US	NY	CME	Medical Examiner
US	NY	CMH	Congressional Medal of Honor
US	NY	DLR	Dealer
US	NY	FAR	Farm
US	NY	GAC	Governor's Additional Car
US	NY	GSC	Governor's Second Car
US	NY	GSM	Gold Star Mothers

License Plate Country	License Plate State	License Plate Type	Plate Description
US	NY	JCA	Court of Appeals
US	NY	JCL	Court of Claims
US	NY	JSC	Supreme Court-Appelate Div
US	NY	JWV	Jewish War Veterans
US	NY	LMA	Limited Use Motorycycle - type A
US	NY	LMB	Limited Use Motorycycle - type B
US	NY	LMC	Limited Use Motorycycle - type C
US	NY	MED	Medical Doctor
US	NY	MOT	Motorcycle Handicap
US	NY	NLM	Naval Militia
US	NY	NYA	New York State Assembly
US	NY	NYA	NYS Assembly Second Plate
US	NY	NYC	New York Council
US	NY	NYS	New York State Senate
US	NY	NYS	NYS Senate-Second Plate
US	NY	PAS	Passenger Handicap
US	NY	PHS	Pearl Harbor Survivors
US	NY	SOS	Survivors of the Shield
US	NY	SRN	Justice Supreme Crt Appl Term
US	NY	STA	State Pair
US	NY	STA	State Single
US	NY	STG	State National Guard
US	NY	SUP	Supreme Court Justice
US	NY	TRA	Transporter
US	NY	USC	U.S. Congress
US	NY	USS	U.S. Senate
US	NY	VAS	Volunteer Ambulance Services
US	RI	1	Private Passenger
US	RI	2	Commercial
US	RI	3	Trailer
US	RI	4	Motorcycle
US	RI	5	Public Service
US	RI	6	Camper
US	RI	7	Suburban
US	RI	8	School Bus
US	RI	9	Jitney
US	RI	10	State
US	RI	11	City
US	RI	12	Town
US	RI	13	Police
US	RI	14	State Police
US	RI	15	Fire Apparatus
US	RI	16	House
US	RI	17	Senate
US	RI	18	Radio Operator
US	RI	19	Antique
US	RI	20	Disabled Veteran
US	RI	21	Farm
US	RI	22	Taxi
US	RI	23	New Car Dealer

License Plate Country	License Plate State	License Plate Type	Plate Description
US	RI	24	Used Car Dealer
US	RI	25	In-Transit
US	RI	26	Transporter
US	RI	27	Bailee
US	RI	28	Manufacturer
US	RI	29	Racer Tow
US	RI	30	State Police Cycle
US	RI	31	Police Cycle
US	RI	32	Cycle Dealer
US	RI	33	Ex-POW
US	RI	34	Boat Dealer
US	RI	35	40 & 8
US	RI	36	Purple Heart
US	RI	37	Veteran
US	RI	38	National Guard
US	RI	39	Combination
US	RI	99	Special Design Plate
US	VT	A	Pleasure Car
US	VT	A	Vanity
US	VT	A	Amateur Radio Operator
US	VT	A	American Legion
US	VT	A	Antique
US	VT	A	Building Bright Futures
US	VT	A	Conservation - Catamount
US	VT	A	Conservation - Peregrine Falcon
US	VT	A	Emergency Medical Service
US	VT	A	Exhibition
US	VT	A	Ex-POW
US	VT	A	Fire/ Rescue Association
US	VT	A	Freemason
US	VT	A	Gold Star Family
US	VT	A	Handicap
US	VT	A	Lion's Club
US	VT	A	Low Numbers
US	VT	A	National Guard
US	VT	A	Pearl Harbor Survivor
US	VT	A	Purple Heart
US	VT	A	Rotary
US	VT	A	Street Rod
US	VT	A	Veteran
US	VT	A	Veteran - Handicap
US	VT	A	Veteran - Afghanistan Campaign
US	VT	A	Veteran - Foreign Wars
US	VT	A	Veteran - Vietnam War
US	VT	A	Veteran - World War II
US	VT	A	Vietnam Veterans of America
US	VT	A	State - House Speaker
US	VT	A	State - House of Representative
US	VT	A	State - Senate
US	VT	A	US House

License Plate Country	License Plate State	License Plate Type	Plate Description
US	VT	A	US Senate
US	VT	B	Trailer - Vanity
US	VT	B	Federal Program
US	VT	B	Off Highway Tractor
US	VT	B	Zone Plate
US	VT	B	Truck
US	VT	B	Truck - Amateur Radio Operator
US	VT	B	Truck - American Legion
US	VT	B	Truck - Antique
US	VT	B	Truck - Apportioned
US	VT	B	Truck - Conservation
US	VT	B	Truck - Emergency Medical Service
US	VT	B	Truck - Exhibition
US	VT	B	Truck - Ex-POW
US	VT	B	Truck - Fire/ Rescue Association
US	VT	B	Truck - Freemason
US	VT	B	Truck - Gold Star Family
US	VT	B	Truck - Handicap
US	VT	B	Truck - Lion's Club
US	VT	B	Truck - National Guard
US	VT	B	Truck - Pearl Harbor Survivor
US	VT	B	Truck - Purple Heart
US	VT	B	Truck - Rotary
US	VT	B	Truck - Special Purpose
US	VT	B	Truck - Veteran
US	VT	B	Truck - Veteran - Handicap
US	VT	B	Truck - Veteran - Foreign Wars
US	VT	B	Truck - Veteran - Gulf War
US	VT	B	Truck - Veteran - Iraq Campaign
US	VT	B	Truck - Veteran - Korean War
US	VT	B	Truck - Vietnam Veterans of America
US	VT	C	Trailer - Apportioned
US	VT	C	Trailer - Contractor
US	VT	C	Trailer - Heavy
US	VT	C	Trailer - Light
US	VT	D	Agriculture
US	VT	E	Auction Car Dealer
US	VT	E	Farm Machinery Dealer
US	VT	E	Finance Car Dealer
US	VT	E	Highway Building Equipment Dealer
US	VT	E	New Car Dealer
US	VT	E	Used Car Dealer
US	VT	E	Transporter
US	VT	E	Trailer - Dealer
US	VT	E	Motorcycle - Dealer
US	VT	G	Motorcycle
US	VT	G	Motorcycle - Antique
US	VT	G	Motorcycle - Handicap
US	VT	I	Bus
US	VT	I	Bus - Local Transit

License Plate Country	License Plate State	License Plate Type	Plate Description
US	VT	J	Volunteer
US	VT	J	Municipal (Local Government)
US	VT	J	Municipal - Sheriff
US	VT	K	DMV
US	VT	K	Driver Education
US	VT	K	Game Warden
US	VT	K	State - State Colleges
US	VT	K	State - State Government
US	VT	K	State - State Officers
US	VT	K	State - State Police

License Plate Country	License Plate State	License Plate Type	Plate Description

License Plate Country	License Plate State	Notes
US	DC	
US	DE	
US	FL	
US	MD	
US	NC	
US	NJ	
US	OH	
US	PA	
US	WV	
US	NY	Plate type is only required for all numeric plates consisting of 1-5 digits. Entries on the "Plate Type" tab are the most common ones with that pattern.

The Central US Region Supplement
to the Interface Control Document for National Interoperability
Version 1.10

Table of Contents

Modification History

Date	Version	Modifications
December 2018	1.00	Created from the SSIOP ICD after the final draft of the NIOP ICD Version 1.00 was distributed.
October 2019	1.10	Updated based on the CUSIOP decision to make the Date/Time w/Time zone fields optional, until transactions are to be sent to the first NIOP Hub. Added Section 1.2 Implementation Considerations in order to document the NIOP Implementation phases.

1   Introduction

1.1   General

The purpose of this document is to describe and record salient ICD-related items specific to Central US Interoperability (CUSIOP) that are different from the National Interoperability (NIOP) ICD or the original SSIOP ICD.

The italicized print in this document is text that is re-instated from SSIOP ICD for the purposes of Central US Interoperability.

The blue print in this document is where changes were made in the NIOP ICD Specifications that affect Central US Interoperability.

The red print in this document is where changes were made based on the Central US Agencies' agreement to the recommended ICD modifications or additional content to this document.

This document, together with the NIOP ICD, is the ICD for Central US Interoperability and replaces the Southern States IOP (SSIOP) ICD.

1.2   Implementation Considerations

The modifications required to become NIOP compliant will be implemented in two phases.

Phase 1: Testing for this phase will begin as part of the E-470 Public Highway Authority testing.

1) Guaranteed Transactions for Other Hubs – 30 Days
   NIOP Transaction Guarantee: 30 Days
   CUSIOP Transaction Guarantee: 10 Days
   Both time frames will be in effect when the first NIOP Hub is connected to the CUSIOP Hub.

2) Transaction Data Reconciliation – 48 Hours
   NIOP Transaction Data Reconciliation: 48 Hours
   CUSIOP Transaction Data Reconciliation: 24 Hours
   Both time frames will be in effect when the first NIOP Hub is connected to the CUSIOP Hub.

3) Exit and Entry Date/Time Fields, with Time Zone – additional fields
   Transactions that originate at a CUSIOP Agency and are destined for a NIOP Agency shall contain the additional fields or risk being rejected.
   Transactions that originate at a CUSIOP Agency and are destined for another CUSIOP Agency do not require these additional fields.

4) Vehicle Classification in Transaction – Optional 4 Characters
   The Vehicle Classification in the Transaction Data is not required to be populated and has been change from 4 digits to 4 characters.

5) Multiple TVLs – One per Hub
   When the first NIOP Hub is connected to the CUSIOP Hub, each CUSIOP Agency will receive an additional TVL (one per each connected hub).

Phase 2: Testing for this phase will begin when the EZHub testing commences.
1) Field Size Changes:
    I.   Tag Serial Number – increased from 8 to 10 digits.
    II.   License Plate Type – increased from 20 to 30 characters.
    III.   TVL Record Count – increased from 9 to 10 characters.
2) License Plate State Codes – Add "GS" as a State Code.

2 General Data Requirements

2.1 SFTP File Transfer Guidelines

2.1.1 Central US Region-Specific File Transfer Guidelines

When transferring files between the CUSIOP Hub and its Agencies via SFTP, the guidelines in this section should be followed.

Inbound Files to the CUSIOP Hub from the CUSIOP Agencies:

1. Each CUSIOP Agency connects to the CUSIOP Hub's SFTP server with their credentials.

2. Each CUSIOP Agency shall have their own "Inbound" directories on the CUSIOP Hub SFTP server based on each submission type:
a. STRAN
b. STRAN_ACK
c. SRECON
d. SRECON_ACK
e. SCORR
f. SCORR_ACK
g. STVL
h. STVL_ACK

    For example:
    /HCTRA/{env}/inbound/STVL/

    Where {env} = PROD or PREPROD

3. Each CUSIOP Agency shall copy (SFTP) files from their local directories to the appropriate CUSIOP Hub SFTP server Inbound "/temp" directory.

    For example:
    /HCTRA/{env}/inbound/STVL/temp

4. Each CUSIOP Agency shall make sure that their SFTP file transfer is successful.
a. Compare the Local file size and the Remote file size
b. If both are equal, it is a successful transfer

5. If the file transfer is successful, the CUSIOP Agency shall "move" the file from the "/temp" directory to the "/current" directory.

    For example:
        Move from:

/HCTRA/{env}/inbound/STVL/temp

To:
/HCTRA/{env}/inbound/STVL/current

6. *If the file transfer fails, the CUSIOP Agency shall delete the file from the "/temp" directory.*

Outbound Files from the CUSIOP Hub to the CUSIOP Agencies:

1. *Each CUSIOP Agency connects to the CUSIOP Hub SFTP server with their credentials.*

2. *Each CUSIOP Agency shall have their own "Outbound" directories on the CUSIOP Hub SFTP server based on each submission type:*
   a. *STRAN*
   b. *STRAN_ACK*
   c. *SRECON*
   d. *SRECON_ACK*
   e. *SCORR*
   f. *SCORR_ACK*
   g. *STVL*
   h. *STVL_ACK*

   For example:
      /HCTRA/{env}/outbound/STVL/

   Where {env} = PROD or PREPROD

3. *The CUSIOP Hub shall "move" files from the CUSIOP Hub SFTP server Outbound "/stage" directory to the "/current" directory.*

   For example:
      Move from:
      /HCTRA/{env}/outbound /STVL/stage

      To:
      /HCTRA/{env}/outbound/STVL/current

4. *Each CUSIOP Agency shall copy (SFTP) files from the "/current" directory to their local directories.*

5. *Each CUSIOP Agency shall make sure that their SFTP file transfer is successful.*
   a. *Compare the Local file size and the Remote file size*
   b. *If both are equal, it is a successful transfer*

6. *If the file transfer is successful, the CUSIOP Agency shall "delete" the file from the "/current" directory.*

7. *If the file transfer fails, the CUSIOP Agency can try to download the file from the "/current" directory again.*

3   Tag Validation List (TVL) Data

3.1   Data Records/Fields

The fields below contain additional information in the description for the Central US Region.

Tag Validation List Header Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
NIOP Hub ID	Char	4	Required	The ID assigned to the Home Hub when transmitting the Tag Validation Data from the Home Hub to the Away Hub. *The ID assigned to the Away SSIOP Hub when transmitting the Tag Validation Data from the Away SSIOP Hub to the Away Agency.* Refer to NIOP ICD Appendix A for valid values.
Record Count	Num	10	Required	The number of detail records contained in this file. Values: 0 – 9999999999 November, 2018: The Max Length for Record Count was changed from 9 to 10 (numeric field).

Tag Validation List Detail Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
NIOP Tag Agency ID	Char	4	Required	An identifier used by NIOP that corresponds to one or more Region and/or Agency field values read directly from a transponder. The Region/Agency fields encoded in a transponder represent the entity that originally issued the transponder. Refer to NIOP Appendix C, NIOP Tag Agency ID column for valid values and how they map to actual data encoded on the transponder. November 2018: Appendix C reference was changed to NIOP Appendix C. Field (in this table) was changed from "Tag Agency ID to NIOP Tag Agency ID.
Tag Serial Number	Char	10	Required	Serial Number that may be read from the transponder. Leading zeroes are included and required. 10 decimal digits 0 – 9 converted to a character field. November 2018: The Max Length for Tag Serial Number was changed from 8 to 10 characters and the Description was modified in the NIOP ICD.

Tag Validation List Detail Record				
Field	Type	Max Length	Required/ Optional	Description

License Plate State	Char	2	Optional	Standard Postal Service State abbreviation (or Province abbreviation for Canada). For Mexico, this field would contain MX. Values:
				
				Publication 28, Appendix B – US State abbreviations
				    http://pe.usps.com/text/pub28/28apb.htm
				Publication 28, Appendix A.A32 – Canadian Province abbreviations
				    http://pe.usps.com/text/pub28/28apa_005.htm
				"GS" – Used for plates issued by any Federal agency.
				"-" – Used for plates not in the referenced documentation.
				
				If a License Plate Number is provided, the License Plate State must be provided.
				
				November 2018: "GS" was added to the NIOP ICD as a valid value for LP State.

License Plate Type	Char	30	Optional	Plate type as required for DMV lookups. If Home Agency provides License Plate Type, Away Agency must match to that License Plate Type and must include License Plate Type in any plate based transactions. November 2018: The Max Length for LP Type was changed from 20 to 30 characters in the NIOP ICD.

3.2   Processing Requirements

3.2.1   *CUSIOP Specific Processing Requirements*

1. *Exchange of TVL Data will be via SFTP.*

2. *The CUSIOP Hub will send a consolidated TVL to the SSIOP Hub(s).*

3. *The CUSIOP Hub will send consolidated TVLs for each Hub (1 TVL per Hub) to local Agencies.*

4. *Consolidated TVLs will have a Home Agency ID of the Home Hub in the file name and header record.*

5. *The local Agencies shall filter their tags from the TVL based on the business rules at the local Agency.*

6. *The local Agencies will receive one consolidated TVL from each IOP Hub.*

7. *If any Agency is late with a TVL, the CUSIOP Hub will use the last ACKed (with Return Code = 00 or 02) Bulk TVL from the Agency and apply the last ACKed (with Return Code = 00 or 02) Differential to the Bulk and create the Bulk for the Agency to include in the consolidated TVL. The next Differential created by a Home Agency should reflect the tags that are different from the last good Bulk TVL sent by the Hub.*

8. *If the CUSIOP Hub receives a Bulk TVL from an Agency after the cut-off time, the CUSIOP Hub will reject the Bulk TVL and send an ACK (with Return Code = 12) to the CUSIOP Agency/SSIOP Hub.*

9. *The CUSIOP Hub will not filter tags when the same Tag Agency Code and Tag Identifier is received from multiple Agencies.*

10. *The CUSIOP will use the Submission Date/Time (UTC) in the TVL to local Agencies as the Activation Date/Time for the CUSIOP Hub.*

1. *The CUSIOP Hub will use the 2ⁿᵈ ACK Date/Time (UTC) as the Activation Date/Time of the TVLs distributed between Hubs.*

2. *There may be 1 tag with multiple associated license plates and 1 license plate associated with multiple tags.*

3. *When a Tag is replaced in an existing vehicle, two line items should be included in the next Differential TVL: one for the existing Tag becoming invalid (showing the plate association ended by setting the License Plate Effective To value); the second for the new Tag (showing the plate association by setting the License Plate Effective From value). The next Bulk TVL would include only the new Valid Tag with the associated plate.*

4. *When a tag is included in a differential all the active license plates should be included with that tag that would have been included in the bulk. If active license plates are not included in the differential with that tag, any previous supplied active license plates will be considered to be expired.*

4   Transaction Data

4.1   File Data Exchange over SFTP

File Name:

{SSIOP_HUB_ID}_{AWAY_AGENCY_ID}_{HOME_AGENCY_ID}_YYYYMMDDHHMMSS.STRAN

Example: If FTE transaction (0035) for NTTA (0041) goes through the Southeast Hub (9001) to the Central US Hub (9002), the name would be 9001_0035_0041_20150820122115.STRAN

4.2   Data Records/Fields

The fields below contain additional information in the description for the Central US Region.

Transaction Data Header Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
Submission Date/Time	Date/Time	20	Required	The date/time (UTC) the submission was created or the web service request was submitted. *Shall match the date/time in the file name for data file exchange over SFTP.*
NIOP Hub ID	Char	4	Required	*As Applicable:* *The ID assigned to the Away SSIOP Hub when transmitting Transaction Data from the Away Agency to the Away SSIOP Hub* The ID assigned to the Away Hub when transmitting Transaction Data from the Away Hub to the Home Hub. *The ID assigned to the Home Hub when transmitting Transaction Data from the Home Hub to the Home Agency.* Refer to NIOP ICD Appendix A for valid values.
Away Agency ID	Char	4	Required	The Agency ID of the Away Agency. This is the agency on whose facility the transaction took place. Refer to NIOP Appendix B *and Appendix B in this document* for valid values.

Transaction Data Header Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
Home Agency ID	Char	4	Required	*As Applicable:* *The ID assigned to the Home Agency when transmitting Transaction Data from the Home Hub to the Home Agency.* The ID assigned to the Home Agency when transmitting Transaction Data from the Away Hub to the Home Hub. *'0000' when transmitting Transaction Data from the Away* *Agency to the Away Hub and the Away Agency has not determined the Home Agency.* *The ID assigned to the Home Agency when transmitting Transaction Data from the Away Agency to the Away SSIOP Hub and the Away Agency already determined the Home Agency.* Refer to NIOP ICD Appendix B for valid values.
Transaction Data Sequence Number	Num	12	Required	A sequence number generated by the entity creating the Transaction Data unique to that entity across all Transaction Data and Correction Data submissions. Used to correlate the Transaction Data and Reconciliation Data. *As Applicable:* *The Away Agency generates their unique number when sending Transaction Data to the Away SSIOP Hub.* *The Away SSIOP Hub generates their unique number when sending Transaction Data to the Home SSIOP Hub, associating their number to the Away Agency's number.* *The Home SSIOP Hub generates their unique number when sending Transaction Data to the Home Agency, associating their number to the Away SSIOP Hub's number.*

				Transaction Data Detail Record
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
NIOP Tag Agency ID	Char	4	Required	An identifier used by NIOP that corresponds to one or more Region and/or Agency field values read directly from a transponder. The Region/Agency fields encoded in a transponder represent the entity that originally issued the transponder. Refer to NIOP Appendix C, NIOP Tag Agency ID column for valid values and how they map to actual data encoded on the transponder. *If the LVL is used to look-up license plate information for a video transaction, the Tag Agency ID, Tag Serial Number, and Tag Status will not be populated by the Away Agency.* November 2018: Appendix C reference was changed to NIOP Appendix C. Field (in this table) was changed from "Tag Agency ID to NIOP Tag Agency ID.
Tag Serial Number	Char	10	Required	Serial Number that may be read from the transponder. Leading zeroes are included and required. 10 decimal digits 0 – 9 converted to a character field. *If the LVL is used to look-up license plate information for a video transaction, the Tag Agency ID, Tag Serial Number, and Tag Status will not be populated by the Away Agency.* November 2018: The Max Length for Tag Serial Number was changed from 8 to 10 characters and the Description was modified in the NIOP ICD.

Tag Status	Char	1	Required	Tag Status associated with the Exit Date/Time as determined by the Away Agency from the then active TVL.
				If the TVL is used to look-up license plate information for a video transaction, the Tag Agency ID, Tag Serial Number, and Tag Status shall be populated by the Away Agency.
				
				If the LVL is used to look-up license plate information for a video transaction, the Tag Agency ID, Tag Serial Number, and Tag Status will not be populated by the Away Agency.
				
				Values:
				  V – Valid
				  I – Invalid
				  Z – Zero/Negative Balance

Vehicle Classification	Char	4	Optional	Classification of the vehicle based on the Away Agency's classification structure/rules and used to calculate the Toll Amount. This field does not require validation by the Home Agency. November 2018: The Type for Vehicle Classification was changed from Num to Char and from Required to Optional.

Transaction Data Detail Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
License Plate State	Char	2	Optional	Standard Postal Service State abbreviation (or Province abbreviation for Canada). For Mexico, this field would contain MX. Values: Publication 28, Appendix B – US State abbreviations http://pe.usps.com/text/pub28/28apb.htm Publication 28, Appendix A.A32 – Canadian Province abbreviations http://pe.usps.com/text/pub28/28apa_005.htm "GS" – Used for plates issued by any Federal agency. "-" – Used for plates not in the referenced documentation. If a License Plate Number is provided, the License Plate State must be provided. November 2018: "GS" was added to the NIOP ICD as a valid value for LP State.
License Plate Type	Char	30	Optional	Plate type as required for DMV lookups. If Home Agency provides License Plate Type, Away Agency must match to that License Plate Type and must include License Plate Type in any plate based transactions. November 2018: The Max Length for LP Type was changed from 20 to 30 characters in the NIOP ICD.
Exit Date/Time w/TZ	Char	25	Required *Optional until transactions are sent from the Away Agency for consumption outside of the CUSIOP Region	The date/time with TZ the vehicle exited the facility. For Barrier type transactions, this is the date/time the vehicle used the facility. For Unmatched type transactions, this may be inferred information. Format shall be "YYYY-MM-DDThh:mm:ss±HH:MM. November 2018: Added field. September 2019: Added "Optional" clause.
Entry Date/Time w/TZ	Char	25	Required if the Entry Date/Time is provided *Optional until transactions are sent from the Away Agency for consumption outside of the CUSIOP Region	The date/time with TZ the vehicle entered the facility. For Barrier type transactions, this is the date/time the vehicle used the facility. For Unmatched type transactions, this may be inferred information. Format shall be "YYYY-MM-DDThh:mm:ss±HH:MM. For example: 2018-10-05T08:15:30-05:00 2018-06-06T06:14:30-04:00 November 2018: Added field. September 2019: Added "Optional" clause.

4.3   Processing Requirements

4.3.1   Central US Region-Specific Processing Requirements

1. *Exchange of Transaction Data will be via SFTP.*

2. *When the Home Agency ID within the Transaction Data Header has been specified as other than '0000' by the Away Agency (that is, the ID of the Home Agency has already been determined by the Away Agency), the value specified shall be honored by the Away SSIOP Hub.*

3. *If the LVL is used to look-up license plate information for a video transaction, the Tag Agency ID, Tag Serial Number, and Tag Status will not be populated by the Away Agency. These fields are optional when processing transactions using the LVL for Central US Interoperability transaction processing.*

4. *Spare 1 is used by the CUSIOP Hub to specify whether the transaction is guaranteed or not. If the Tag was Valid in the transaction, the CUSIOP Hub will determine if the Tag was Valid in the TVL based on the Away Agency's Hub's Active TVL as long as the transaction is received within 10 days of the transaction date. If the Tag was Valid, the transaction is guaranteed (1). If not, the transaction is not guaranteed (0). Transactions with Invalid or Zero/Negative Balance Tags will not be guaranteed (0).*

5. *Spare 2 is used by the CUSIOP Hub to specify the Activation Date/Time (UTC) of the TVL used to determine the Guaranteed Flag in the Spare 1 field. The Activation Date time is the TVL Activation Date Time for the Hub where the transaction originated. This fields will be formatted as a typical Date/Time (UTC) field.*

6. *The frequency of the transaction submission by each Away Agency is at the discretion of the Away Agency.*

5   Adjustment/Correction Data

5.1   File Data Exchange over SFTP

File Name:

{SSIOP_HUB_ID}_{AWAY_AGENCY_ID}_{HOME_AGENCY_ID}_YYYYMMDDHHMMSS.SCORR

   Example: 9001_0035_0040_20171201001015.SCORR

5.2   Data Records/Fields

The fields below contain additional information in the description for the Central US Region.

Adjustment/Correction Data Header Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
Submission Date/Time	Date/Time	20	Required	The date/time (UTC) the submission was created or web service request was submitted. *Shall match the date/time in the file name for data file exchange over SFTP.*

Adjustment/Correction Data Header Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
NIOP Hub ID	Char	4	Required	*As Applicable:* *The ID assigned to the Away SSIOP Hub when transmitting Transaction Data from the Away Agency to the Away SSIOP Hub* The ID assigned to the Away Hub when transmitting Transaction Data from the Away Hub to the Home Hub. *The ID assigned to the Home Hub when transmitting Transaction Data from the Home Hub to the Home Agency.* Refer to NIOP ICD Appendix A for valid values.
Away Agency ID	Char	4	Required	The Agency ID of the Away Agency. This is the agency on whose facility the transaction took place. Refer to NIOP Appendix B *and Appendix B in this document* for valid values.
Home Agency ID	Char	4	Required	The Agency ID of the Home Agency. This is the Home Agency ID assigned where the Correction Data will be sent. The Away Agency should specify the Home Agency ID that was returned on the Reconciliation Data submission corresponding to the Transaction Data submission that originally contained the transaction. In the event the Hub provided the Reconciliation Data for a transaction where the Reconciliation Data was late or had transaction/content format error, The Home Agency ID should be the Hub ID who provided the Reconciliation Data unless the Away Agency specified the Home Agency to begin with. Refer to NIOP ICD Appendix B for valid values.

5.3 Processing Requirements

5.3.1 *Central US Region-Specific Processing Requirements*

1. *Each Away Agency should specify where the adjustment, correction or resubmittal should be sent based on the prior Reconciliation Data.*

2. *In the event the Hub provided the Reconciliation Data for a transaction where the Reconciliation Data was late or had transaction/content format error, the Home Agency ID should be the Hub who provided the Reconciliation Data unless the Away Agency specified the Home Agency to begin with.*

6 Reconciliation Data

6.1 *File Data Exchange over SFTP*

File Name:

{SSIOP_HUB_ID}_{HOME_AGENCY_ID}_{AWAY_AGENCY_ID}_YYYYMMDDHHMMSS.SRECON

Example: 9001_0035_0040_20171201041015.SRECON

6.2   Data Records/Fields

The fields below contain additional information in the description for the Central US Region.

Reconciliation Data Header Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Description**
Submission Date/Time	Date/Time	20	Required	The date/time (UTC) the submission was created or web service request was submitted. *Shall match the date/time in the file name for data file exchange over SFTP.*
NIOP Hub ID	Char	4	Required	*As Applicable: The ID assigned to the Away SSIOP Hub when transmitting Transaction Data from the Away Agency to the Away SSIOP Hub* The ID assigned to the Away Hub when transmitting Transaction Data from the Away Hub to the Home Hub. *The ID assigned to the Home Hub when transmitting Transaction Data from the Home Hub to the Home Agency.* Refer to NIOP ICD Appendix A for valid values.
Home Agency ID	Char	4	Required	*As Applicable: The ID assigned to the Home Agency when transmitting Transaction Data from the Home Hub to the Home Agency.* The ID assigned to the Home Agency when transmitting Transaction Data from the Away Hub to the Home Hub. *'0000' when transmitting Transaction Data from the Away* *Agency to the Away Hub and the Away Agency has not determined the Home Agency.* *The ID assigned to the Home Agency when transmitting Transaction Data from the Away Agency to the Away SSIOP Hub and the Away Agency already determined the Home Agency.* Refer to NIOP ICD Appendix B for valid values.
Away Agency ID	Char	4	Required	The Agency ID of the Away Agency. This is the agency on whose facility the transaction took place. Refer to NIOP Appendix B *and Appendix B in this document* for valid values.

Reconciliation Data Detail Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Comment**
Spare 1	Char	20	Optional	Spare field for future growth. *Defined by the CUSIOP Hub as Spare 1 from the Transaction Data; the Guaranteed Transaction flag, where 1 = Guaranteed, 0 = Not Guaranteed, blank = not used.*
Spare 2	Char	20	Optional	Spare field for future growth. *Defined by the CUSIOP Hub as Spare 1 from the Transaction Data; the Activation Date and Time (UTC) of the TVL used to determine the Guaranteed Flag. This field will be in a Date/Time (UTC) format.*

6.3 Processing Requirements

6.3.1 Central US Region-Specific Processing Requirements

1. *Spare 1 is used by the CUSIOP Hub to specify whether the transaction is guaranteed or not. If the Tag was Valid in the transaction, the CUSIOP Hub will determine if the Tag was Valid in the TVL based on the Away Agency's Hub's Active TVL as long as the transaction is received within 10 days of the transaction date. If the Tag was Valid, the transaction is guaranteed (1). If not, the transaction is not guaranteed (0). Transactions with Invalid or Zero/Negative Balance Tags will not be guaranteed (0).*

2. *Spare 2 is used by the CUSIOP Hub to specify the Activation Date/Time (UTC) of the TVL used to determine the Guaranteed Flag in the Spare 1 field. The Activation Date time is the TVL Activation Date Time for the Hub where the transaction originated. This fields will be formatted as a typical Date/Time field.*

7 Acknowledgement Data

7.1 Usage

Acknowledgment data shall be created by the Hub/*Agency* which received the file or web service request to inform the Hub/*Agency* which sent it that the data transmitted was received in its entirety. Acknowledgement data shall be sent for each of the previously referenced files or web service requests.

The Acknowledgment Data shall be returned using the same delivery method of the submission being acknowledged.

7.2 *File Data Exchange over SFTP*

File Name: {NIOP HUB_ID}_{FROM_AGENCY_ID}_{FILE_NAME_{RETURN CODE}}_FILE_TYPE}.ACK

First ACK for a TVL:
Example: 9001_9001_9002_9002_20171201001015_00_BTVL.ACK
Second ACK for a TVL:
Example: 9001_9001_9002_9002_20171201001015_10_BTVL.ACK

First ACK for an SRECON:
Example: 9002_9002_9001_0035_0040_20171201041015_00_SRECON.ACK

Second ACK for an SRECON:
Example: 9002_9002_9001_0035_0040_20171201041015_13_SRECON.ACK

7.3 Data Record/Fields

Acknowledgement Data Detail Record				
Field	**Type**	**Max Length**	**Required/ Optional**	**Comment**
NIOP Hub ID	Char	4	Required	*As Applicable:* *The ID assigned to the Away SSIOP Hub when transmitting Transaction Data from the Away Agency to the Away SSIOP Hub* The ID assigned to the Away Hub when transmitting Transaction Data from the Away Hub to the Home Hub. *The ID assigned to the Home Hub when transmitting Transaction Data from the Home Hub to the Home Agency.* Refer to NIOP ICD Appendix A for valid values.
From Agency ID	Char	4	Required	The Agency/Hub generating the acknowledgement. Refer to NIOP Appendix A and B for valid values.
To Agency ID	Char	4	Required	The Agency/Hub that originated the file or submission being acknowledged. Refer to NIOP Appendix A and B for valid values.

Appendix B: Agency IDs

The following table supplements the NIOP ICD Appendix B.

Table B-1: Agency IDs

SSIOP Agency ID	NIOP Agency ID	Assigned IOP Hub	Agency Description
	0000		*Home or Away Agency not specified.*
1001	9002		*Tolling Services Agreements: LBJ, NTE Segment 1&2, NTE 3a/3b (Cintra)*
1002	9002		*Tolling Services Agreements: DFW Region (TxDOT)*

Appendix D: Tag Validation List Schedule

The Tag Validation List schedules for the Central US Region are included in this section. These schedules may change from time to time.

D-2: CUSIOP Hub and Agency Tag Validation List Schedule

The times noted are times when the CUSIOP Hub will initiate the TVL Process for the CUSIOP Hub for local Agencies. TVLs from CUSIOP Agencies should be created and transferred to the CUSIOP Hub 1 hour before the CUSIOP Hub scheduled time.

CUSIOP Schedule:

TVL	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Bulk	8 PM						
Differential	2 AM		2 AM	2 AM	2 AM	2 AM	2 AM

	8 AM	8 AM	8 AM	8 AM	8 AM	8 AM	8 AM
	2 PM	2 PM	2 PM	2 PM	2 PM	2 PM	2 PM
	8 PM	8 PM	8 PM	8 PM	8 PM	8 PM	8 PM

ATTACHMENT B: CTRMA BUSINESS RULES

- The Mobility Authority Business Rules - Lane Systems 1.0 FINAL DRAFT - CLEAN

LANE SYSTEM BUSINESS RULES

Version 1.0
December 2019

FINAL DRAFT

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Revision History

Date	Version	Author	Description of Modifications
November – December 2019	1.0	B. Jewell, MBI Consulting, Inc. on behalf of Fagan Consulting.	Created from Central Texas Regional Mobility Authority - 45SW-290E-183S Open Road Tolling Kapsch Business Rules V2.0 and sections 2.0, 2.1, 2.2, 2.3 and 2.4 of the Toll Collection Business Rules Version 2.5.

Business rules that are the same as in the Toll Collection Business Rules have the same business rule number as in the Toll Collection Business Rule document. |

Document References

Title and Description	Version
CUSIOP Business Rule Supplement	Most current version.
NIOP Business Rules	Most current version.
Failure to Pay Toll Statute From the Texas Transportation Code Regional Mobility Authorities

(Also found in the CTRMA, NET RMA PBM RFP Appendix G dated March 31, 2017) | Added by Acts 2003, 78th Leg., ch. 1325, § 2.01, eff. June 21, 2003. Amended by Acts 2005, 79th Leg., ch. 23, § 2, eff. Sept. 1, 2005; Acts 2005, 79th Leg., ch. 281, § 2.70, eff. June 14, 2005. |
| CTRMA The Mobility Authority Business Rules – Draft. Prepared For Central Texas Regional Mobility Authority By MBI Consulting, Inc. | Version 1.1, March 23-27, 2012 |
| CTRMA Violation Processing Business Rules -Draft. Prepared For Central Texas Regional Mobility Authority By MSB | Version 0.4, June 14, 2011 |

1 Introduction

The purpose of this document is to record the business rules of Central Texas Regional Mobility Authority (CTRMA) as they relate to lane systems and transactions.

1.1 Purpose

The purpose of this document is to track and maintain the Mobility Authority's business rules. This document is a living document. When a business rule is changed, the "Last Update/Verification" date will be updated with the date the rule was recorded or verified. Any additional notes may be maintained in the revision history. **Values stated in the "Value" column of the rules are understood to be user configurable and not system-related changes.**

1.2 Definitions, Acronyms, Abbreviations

Term	Definition
Automatic Vehicle Classification (AVC)	The toll lane system that detects and classifies vehicles based on the number of axles.
Automatic Vehicle Identification (AVI)	The radio frequency system that identifies vehicles using transponders as they pass fixed antennas or readers to automatically charge the toll to the Customer.
AVI Transaction	Each electronic record of a toll that constitutes one toll payable from a customer, respecting a vehicle that (a) passes through a toll lane, (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 the applicable toll in full.
Away Agency (a.k.a. Visited Authority)	An Interoperable Agency that is not the Customer's Home Agency.
Back Office System (BOS)	The toll processing system that contains the Central Host, Image Review, Customer Service and Violations Processing subsystems.
CTRMA	Central Texas Regional Mobility Authority
Exempt Vehicle	A vehicle that qualifies for non-revenue travel on the toll road.
Home Agency	An Interoperable Agency which owns and maintains the customer account of vehicle(s) and transponder(s) to which interoperable toll transactions are posted based on the respective interoperability business rules.
Image-based Transaction	Each electronic record of a toll and image(s) of license plates and other video data with respect to a vehicle without a valid Transponder read.
iToll	Term used for a Video Transaction that is sent for posting, or is posted to a Customer Account.
License Plate Validation List (LVL)	A comprehensive list of registered license plate accounts in use by a toll authority together with the current status (e.g., active, invalid) of the underlying customer account.
MOPAC	MOPAC Express Lanes
Optical Character Recognition (OCR)	Optical Character Recognition is software that extracts the number and jurisdiction from an image of a vehicle's front or rear license plate.
Pay By Mail (PBM)	An Account option for Customers that post-pay for their toll road usage based solely on their license plate(s).

Term	Definition
Processing Hub	Hub where AVI Transactions and Video Transactions are processed when a match is found in the TVL or LVL for the vehicle.
Transaction	An event that occurs when a vehicle travels through a tolling location where the event may or may not be associated with a transponder read. Refers to both an AVI and Video Transaction.
Transponder	A device placed on or within a motor vehicle that is capable of transmitting or receiving information used to assess or collect tolls that results in recognizable vehicle identification for tolling purposes.
Transponder Validation List (TVL)	A comprehensive list of transponders in use by a toll authority together with its' current status (e.g., Valid, Invalid).
Video Processing Center (VPC)	Location where Video Transactions are processed and posted to Pay By Mail accounts.
Video Transaction	Each electronic record of a toll and video image(s) of license plates and other video data with respect to a vehicle without a valid Transponder read and processed through Pay By Mail.
Violation	A Video Transaction that is not matched to a Transponder account and remains unpaid after initial invoicing.
Variable Toll Message Sign (VTMS)	Indicates a pricing sign.
Zone Controller	Refers to the Zone Controller, image capture and sign process.

2 Business Rules

2.1 General Business Rules

General business rules are applicable to every transaction, unless superseded by a rule within the Express Lanes Business Rules section.

2.1.1 Transaction Pricing Business Rules

The business rules in this section address the aspects of applying toll rates to transactions.

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
LBR-TR-01	Time of Day Pricing	Toll rates are variable based on a pre-defined time of day pricing that is configurable per hour of day and day of week.	December 2019
BR-1	Axle-based Classification	Vehicle classification methodology used at the Mobility Authority. Toll rates are variable based on the pre-defined Axle-based classification scheme.	December 2019
BR-2	2 through 6	Allowable vehicle classifications.	December 2019
BR-3	<= 2 axles	Number of axles on a class 2 vehicle.	December 2019
BR-4	3 axles	Number of axles on a class 3 vehicle.	December 2019
BR-5	4 axles	Number of axles on a class 4 vehicle.	December 2019
BR-6	5 axles	Number of axles on a class 5 vehicle.	December 2019
BR-7	6+ axles	Number of axles on a class 6 vehicle.	December 2019
LBR-TR-02	Toll Rate Configuration	Toll rates may be configured based on how the transaction originated (AVI, Video), and how the transaction is pursued (Processing Hub based on the TVL or LVL, or Toll Bill process (Pay by Mail) and the vehicle's Axle-based Classification.	December 2019
BR-8	AVI Toll Rate	Toll rate applied for AVI Transactions that match to a valid entry in the TVL, the toll rate applied will be the AVI Rate.	December 2019
BR-500	AVI Toll Rate	Toll rate applied to Image-based Transactions that match to a valid entry in the TVL.	December 2019
BR-9	PBM Toll Rate	Toll Rate applied to Image-based Transactions matched to a valid entry in the LVL.	December 2019
BR-10	PBM Toll Rate	Toll Rate applied to Image-based Transactions that do not match to a valid entry in the TVL or LVL and are pursued through the Toll Bill process in the back office system (BOS).	December 2019
LBR-TR-03	Toll Rate Implementation	A new rate will go into effect immediately following the scheduled time or day as dictated according to the pre-defined time of day schedule.	December 2019

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
BR-18	$0.00	Toll Rate when the lane is closed.	December 2019

2.1.2 In-Lane Transaction Processing Business Rules

This section describes the business rules related to transaction processing at the lane level.

Business Rule Number	Value/Term	Condition	Last Update/ Verification
BR-11	Vehicle presence (every vehicle's image is saved)	Reasons for saving an image of the vehicle in the lane.	December 2019
BR-12	Front and Rear	Images saved for each vehicle in the lane.	December 2019
BR-13	1 image	Number of images saved of the front of the vehicle.	December 2019
BR-14	1 image	Number of images saved of the rear of the vehicle.	December 2019
BR-15	AVC	Default vehicle classification (unless the vehicle classification system is degraded).	December 2019
BR-16	Transponder class (if tag is present) or Class 2 (2 axles)	Default vehicle classification if the AVC is degraded. Transactions created when the vehicle classification system is degraded are flagged and reported.	December 2019
BR-19	Spurious Tag Read	Transponders that were sent from the Reader to the Zone Controller properly but were unable to be correlated to a vehicle/transaction are recorded as a spurious tag read and not used for any further processing. Spurious Tag Reads are reported to assist in measuring lane performance for all tolling points.	December 2019
BR-501	Buffered Tag Read	Transponders that were not sent from the Reader to the Zone Controller properly (delayed), are recorded as a Buffered Tag Reads and not used for any further processing. Buffered Tag Reads are reported to assist in measuring lane performance for all tolling points.	December 2019
BR-502	Normal Tag Read	Transponders that were successfully sent from the Reader to the Zone Controller and correlated to vehicle/transactions are recorded as a "Normal" Tag Read Transaction and processed in accordance with approved business rules and workflows.	December 2019

Business Rule Number	Value/Term	Condition	Last Update/ Verification
		Normal AVI Transactions are reported to assist in measuring lane performance for all tolling points.	
BR-17	Multi-transponder Reads	If multiple Transponders are read in the lane for 1 vehicle, the first Valid Tag with the most recently updated tag status is used. All other Transponder reads are recorded and associated to the transaction, but not used for billing purposes. The Transponder used for payment or billing is marked as such.	December 2019
LBR-TP-01	Date/Time the vehicle exits the toll point	Transaction Date/Time. The timestamp of the transaction. The format of the timestamp is to the millisecond: HH:MM:SS.000. Note: The following timestamps are available for reporting: 1. entry (when the transaction enters the tolling zone,) 2. tag acquisition (when the tag is read), and 3. exit (when the transaction exits the tolling zone.)	December 2019
BR-22	Tag Status	Transponders that are read and included in AVI Transactions are compared to the Tag Validation List in the Central Host to determine tag status. The tag status is recorded in the Transaction.	December 2019

2.1.3 Image Review Business Rules

This section describes the business rules related to image review.

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
BR-40	Unlimited	Number of times an image can be reviewed.	December 2019
BR-45	100%	Percentage of transactions and images requiring review after the transactions and images enter the Image Review process.	December 2019
BR-41	OCR Review	Each image of a transaction will go through OCR review first, and be assigned an OCR confidence value.	December 2019
LBR-IR-01	Manual Review	Manual Review is performed at the transaction level. Individual transactions are sent for manual review and one result is returned for the transaction (rather than one result per image).	December 2019
LBR-IR-02	Front Image	Image selected when the vehicle classification is > 2 axles.	December 2019

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
LBR-IR-03	Every Image (configurable)	Image confidence requiring manual image review.	December 2019
LBR-IR-04	Manual Review Result	If a transaction is sent to manual review, the result of this review will take precedent over any other reviews performed by OCR. In other words, the manual review result is always the license plate value that will be applied to the transaction.	December 2019
BR-46	No Plate, Motorcycle, Out-of-State, Temporary Plate, Unreadable Plate, Camera Issue	Manual Image "Code offs" during Image Review.	December 2019
LBR-IR-05	Supervisor Escalation	A manual review will be escalated to a supervisor for review if one of the following conditions is met: 1. Transaction is marked as a code-off 2. Transaction has had 4 (configurable) reviews without 2 (configurable) matching reviews	December 2019
BR-42	2	Number of times an image review must match before the review is accepted (includes being coded off).	December 2019
BR-43	14 days from the Transaction Date	Maximum amount of time an image should be in Image Review.	December 2019
LBR-IR-06	Image Review Complete Criteria	Image review will be considered complete when one of the following conditions is met: 1. Transaction has two independent matching reviews 2. Transaction has been reviewed by a supervisor	December 2019
LBR-IR-07	OCR Review Qualification	The result of OCR will be counted as one of the 4 (configurable) allowable reviews when the confidence level is >= 90 (configurable).	December 2019
LBR-IR-08	Rejected Transaction Finalization	Transactions that are rejected (coded-off) during image review will not be pursued further.	
BR-44		At any time, a supervisor may override the image review results prior to transaction exiting the Image Review process and the review will be accepted.	December 2019
BR-32		After Image Review, rejected images (a.k.a. "code offs") will not be pursued further.	December 2019

2.1.4 Central Host Processing Business Rules

This section describes the business rules related to the processing of Transactions at the Central Host.

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
BR-35		An Exempt Vehicle List (containing license plates and tags) is maintained so that vehicles, in accordance with the Mobility Authority's non-revenue policy, are allowed non-revenue access. For example, First Responders are maintained on this list.	December 2019
BR-36		Exempt Vehicle List may be used for quarantining transactions from license plates that have special billing arrangements with the Mobility Authority.	December 2019
BR-33	Exempt Vehicle Processing, TVL, LVL	Order in which Transactions are processed. Every Transaction should be compared to 1. the Exempt Vehicle List before any payment processing takes place. If the vehicle exists in good standing within the Exempt Vehicle List, the transaction should be marked as non-revenue, and no further processing take place. 2. If there is no match to the Exempt Vehicle List, the Transaction is compared to the TVL 3. And, then the LVL. If the transaction matched the TVL or the LVL the transaction is sent to the Processing Hub.	December 2019
BR-505	Duplicate Transaction	Multiple transactions for the same vehicle shall not be processed. This may consist of: 1. An AVI Transaction and Video Transaction for the same vehicle at the same location, direction and time (within a threshold (parameter)). 2. Multiple AVI Transactions for the same vehicle at the same location, direction and time (within a threshold (parameter)). 3. Multiple Video Transactions for the same vehicle at the same location, direction and time (within a threshold (parameter)).	December 2019
BR-23	All, irrespective of status	AVI Transactions are sent to the Processing Hub to determine if they will post to Home Agency customer accounts or be accepted by the Home Agency.	December 2019
BR-24		Transactions with a disposition of "Posted" from the Processing Hub will not be processed further.	December 2019
BR-37		Transactions rejected by the Processing Hub that have already been through Image Review will be compared against the Non-Revenue list (again) before being sent for Toll Bill processing.	December 2019
BR-25	999	Number of times a transaction can be re-submitted to the Processing Hub. It is expected that the time limit for resubmitting transactions will expire before the number of retries.	December 2019
BR-503	10	Number of times a transaction is resubmitted when a "System/Communication Error" (S) is returned from the Processing Hub.	December 2019

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
BR-504	3	Number of times a Transaction is resubmitted when a "Not Posted" (N) is returned from the Processing Hub.	December 2019
BR-26	60 days from the transaction date	Amount of time the Central Host must submit or re-submit a transaction to the Processing Hub for processing.	December 2019
BR-27		AVI Transactions must have a rejected Processing Hub disposition before being sent to image review.	December 2019
BR-28	96 hours	Amount of time the Central Host should wait for a disposition from the Processing Hub before alerting the Mobility Authority of a potential problem.	December 2019
BR-29	15 days	Maximum amount of time the Central Host should wait for a disposition from Image Review before alerting the Mobility Authority of a potential problem.	December 2019
BR-39	5 days from the transaction date	Transactions must be sent to VPC for processing within this amount of time.	December 2019
LBR-CH-01	25 Days	Number of days from the transaction date that the transactions must be sent for billing.	December 2019
LBR-CH-02	Pay by Mail Sending Allowance	Pay by Mail transactions must be sent for billing within 60 (configurable) days of transaction timestamp.	December 2019
LBR-CH-03	Tag Transaction Image Review	Valid Tag-based transactions must have a final rejected HUB disposition (after being resubmitted, if applicable) prior to being sent for image review.	December 2019
LBR-CH-04	iToll Processing	After Image Review, the plate will be compared against the TVL and License Plate Validation List (LVL) for qualification as an iToll transaction.	December 2019
LBR-CH-05	LVL Matching	A transaction qualifies as matching a plate within the LVL if the plate assigned to the transaction matches a plate within the LVL that is either current or has expired in the last 30 (configurable) days.	December 2019

2.1.5   Data Retention Business Requirements

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
BR-30	7 (configurable) months from transaction date.	The maximum amount of time images will be stored for paid transactions.	December 2019
BR-31	2.5 years from transaction date	Maximum amount of time images will be stored for transactions that have not been paid.	December 2019
LBR-DR-01	30 Days	Minimum number of days data must be stored in the Lane Controllers.	December 2019

2.2 Express Lane Business Rules

The business rules described in this Section will take precedence over those described in the "General Business Rules" section.

2.2.1 Express Lane Usage Business Rules

This section describes the business rules governing the use of the Express Lane by drivers.

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
LBR-XU-01	Express Lane Access	Access to the express lanes is only allowed at designated entry and/or exit locations.	December 2019
LBR-XU-02	Express Lane Separation	The express lanes will be separated from the general-purpose lanes by barrier sticks.	December 2019
LBR-XU-03	Segment Definition	The travel facility is divided into segments. Each segment consists of a single corresponding toll point. The northbound facility consists of the segments: Enfield, Far West The southbound facility consists of the segments: RM2222, Parmer	December 2019
LBR-XU-04	Toll Point Definition	A toll point is a physical location where vehicles are detected by transponder and/or license plate number.	December 2019

2.2.2 Express Lane Operations Business Rules

This section describes the business rules for operating the Express Lanes.

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/Verification
LBR-XO-01	Tolling Operation	Express lane hours of operation shall be configured on a per-segment basis to a maximum of 24 hours a day/7 days a week/365 days a year.	December 2019
LBR-XO-02	Non-Tolling Operation	During non-tolling operations, the express lanes shall be either closed or open to all vehicles.	December 2019
LBR-XO-03	Non-Tolling Data Collection	During non-tolling operations, the system will continue to gather information, read transponders, and capture license plates images, but the collected data will not be utilized for billing purposes.	December 2019
LBR-XO-04	Manual Overrides	The system may be manually placed in a non-tolling mode (as described in MOPAC-ELO-2), and the system will continue to gather data as described in LBR-XO-3.	December 2019
LBR-XO-05	VTMS Pricing Display	Each VTMS will display a maximum of 2 destinations at a time and the associated toll rates.	December 2019
LBR-XO-06	VTMS Pricing Lock	During normal operations, a customer will be charged the price displayed on the VTMS at the point the customer enters the express lane.	December 2019
LBR-XO-07	VTMS Non-Tolling Display	During non-tolling operation, the General Message LED Panel of the VTMS will display a configurable message up to 7 characters in length including blanks.	December 2019
LBR-XO-08	VTMS Comms Failure	In the event of a communications failure to the VTMS, the affected VTMS will display locally stored rates which are stored directly on the VTMS. The VTMS will initially display the last published message/toll rate for 10 minutes (configurable) before failing over to the locally stored rates.	December 2019
LBR-XO-09	VTMS Display Failure	In the event of a display failure in which a VTMS is partially or completely blank, customers will be charged $0.00.	December 2019
LBR-XO-10	VTMS Incident Display	In the event of a traffic incident or lane closure, the toll rate message on the VTMS can be manually overridden by an authorized express lane operator with a message from a pre-determined set of allowable messages.	December 2019

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/Verification
LBR-XO-11	VTMS Incorrect Fare	In the event that a VTMS does not display the expected fare, the displayed fare shall be charged, and the system will immediately attempt to publish the correct rate.	December 2019
LBR-XO-12	VTMS Toll Display	During normal operational state, the VTMS will display toll rates determined by the following hierarchy: 1. Value Manually overridden/Selected 2. Dynamic Pricing Algorithm 3. Time of Day Rate Schedule 4. Default Rates 5. Locally Stored Rates	December 2019
LBR-XO-13	Toll Rate Adjustment (Traffic Incident)	In the event of an incident or accident, Toll Rates for the entire Travel Facility or individual segment can be manually overridden by an authorized express lane operator. This override can be applied to the entire travel facility or to one or more segments for a specified period of time and can include a past time period (i.e., retroactively).	December 2019
LBR-XO-14	ELO Toll Management	Authorized express lane operators will have the capability to manually set a toll rate or select the use of rate schedule pricing.	December 2019
LBR-XO-15	Lane Closure (Maintenance)	The Express Lane may be placed in closed mode by Segment as necessary to perform preventive and corrective maintenance on tolling equipment in the lane and on the roadside. During closures, VTMS will display a "CLOSED" message and transaction data will be captured with a rate of $0.00.	December 2019
LBR-XO-16	VTMS Allowable Messages	The following approved messages are allowable when performing manual overrides of the VTMS: CLOSED FREE	December 2019

2.2.3 Express Lane Pricing Business Rules

The business rules in this section address all the aspects of traffic data collection/usage and setting/applying Toll Rates.

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
LBR-XP-01	Dynamic Pricing Definition	Toll rates are dynamically priced using a controller algorithm. The algorithm can consider only the Express Lane or a combination of both the Express Lane and the General-Purpose lanes traffic density and/or volumes and/or vehicle speeds to evaluate demand and determine the corresponding toll rate.	December 2019
LBR-XP-02	Pricing Hardware Configuration (Express Lane)	The traffic detection devices shall feed the dynamic pricing controller algorithm traffic data from the Express Lane no less than every 30 seconds. (configurable)	December 2019
LBR-XP-03	Pricing Hardware Configuration (General Purpose Lane)	The traffic detection devices shall feed the dynamic pricing controller algorithm traffic data from the General-Purpose lanes no less than every 30 seconds. (configurable)	December 2019
LBR-XP-04	Rate Calculation (Default Config)	For each Segment, all data from the traffic detection devices within the direction of travel of the entire Facility may be used for the algorithm's calculation.	December 2019
LBR-XP-05	Rate Calculation (Required Data)	Based upon the traffic detection device mappings, 50% of temporal coverage is needed and no more than 1.5 miles of spatial coverage can be missing in order for the algorithm to calculate the Toll Rate.	December 2019
LBR-XP-06	Rate Calculation (Insufficient Data)	If the configurable number of mapped traffic detection devices are not available at the required interval or do not have data, the Toll Rate will be based upon the volume at the toll plaza points.	December 2019
LBR-XP-07	Rate Calculation (Discarded Data)	If data from any specific traffic detection device is degraded or not available at the required interval to feed the algorithm, it will not be considered during the algorithm calculation.	December 2019
LBR-XP-08	Rate Calculation (Subsegment Config)	Segments may have multiple traffic detection devices that take priority and have a higher value for the algorithm to consider.	December 2019
LBR-XP-09	Minimum Toll Rate	The Minimum Toll Rate for any one segment trip is $0.25. (Configurable) The minimum Toll Rate for any multi segment trip is $0.50. (Configurable)	December 2019
LBR-XP-10	Maximum Toll Rate Facility	The Maximum Toll Rate allowed on the Express Lane during Hours of operation will be $99.99 for the entire facility. (Configurable)	December 2019

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
LBR-XP-11	Toll Rate Display Interval	The Toll Rate displayed on the VTMS signs shall be automatically updated every 4 minutes. (Configurable)	December 2019
LBR-XP-12	Toll Rate Increase Config	For each rate cycle, the Toll Rate will not automatically increase by more than $1.00 per segment.	December 2019
LBR-XP-13	Toll Rate Decrease Config	For each rate cycle, the Toll Rate will not automatically decrease by more than $1.00 per segment.	December 2019
LBR-XP-14	Full Trip Toll Rate	The entire Travel Facility price should never be less than an individual segment.	December 2019
LBR-XP-15	Displayed Rate	Rate displayed on the VTMS will reflect the base price for an Automatic Vehicle Identification (AVI) transaction.	December 2019
LBR-XP-16	Toll Scheduling	Dynamic Pricing will have configurable parameters (called toll schedules) and there can be numerous such toll schedules which can be used for different traffic/anomaly conditions.	December 2019
LBR-XP-17	Manual Override & TOD Dynamic Pricing Impact	Dynamic Pricing will continue to run in the background when pricing is in time of day or manual mode.	December 2019
LBR-XP-18	Maximum Manual Override Toll Rate Increase	The maximum toll rate increase implemented by a manual override shall be $10.00.	December 2019
LBR-XP-19	Maximum Manual Override Toll Rate Decrease	The maximum toll rate decrease implemented by a manual override shall be $10.00.	December 2019

2.2.4   Trip Building Business Rules

This section focuses on how Lane Transactions from tolling points are associated into Trips using the Trip Building process.

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
BR-21	Within 72 hours of the Transaction Date	Amount of time in which Trips must be built.	December 2019
LBR-XTB-01	Trip Transaction	Lane Transactions in the same direction of travel along the entire Travel Facility or a combination of Segments will be assembled into Trip Transactions in the Central Host.	December 2019

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
LBR-XTB-02	Trip Direction Restriction	Only transactions from the same direction of travel can be included in a trip per Facility. The Mopac Express Lanes have northbound or southbound direction of travel.	December 2019
LBR-XTB-03	Lane Transaction to Trip Transaction Relationship	A single unique Lane Transaction will not be included in more than one Trip Transaction. The relationship should be one or many Lane Transactions to a single Trip Transaction, not many Trip Transactions to a single Lane Transaction.	December 2019
LBR-XTB-04	Trip Travel Time	The allowable travel time for the northbound direction of travel shall be 1 hour and southbound shall be 1 hour, both configurable. The travel time will establish the length of time for which transactions can be formed into a trip.	December 2019
LBR-XTB-05	Segment Travel Time	The allowable travel time for a given Segment shall be configurable.	December 2019
LBR-XTB-06	Lane Transaction Association to a Trip Transaction	Lane Transactions received at the Central Host shall be associated with the same Trip Transaction if the Lane Transactions meet the following criteria: 1. Transponder ID and/or license plate number identification is sufficient for association. 2. Geographically possible sequence of segment transactions (for example, northbound progression). 3. Transaction is part of the defined trip definition of the trip transaction 4. Allowable Trip/Segment travel time.	December 2019
LBR-XTB-07	Non-AVI Lane Transaction Association to a Trip Transaction	For vehicles with no transponder, the Lane Transactions will be associated to the same Trip if the license plate numbers are determined to be for the same vehicle.	December 2019
LBR-XTB-08	AVI Lane Transaction Association to a Trip Transaction	If a Transponder ID is detected at all Toll Segments during a vehicle's travel, a Trip Transaction will be formed based on the common Transponder ID.	December 2019
LBR-XTB-09	Hybrid Lane Transaction Association to a Trip Transaction	If the same Transponder ID is not detected at all Toll Segment, a Trip Transaction will be formed by mapping Transponder ID and license plate information from all the Lane Transactions. Transponder ID, if valid, will be associated to the Trip for billing purposes.	December 2019
LBR-XTB-10	Trip Type Assignment Hierarchy	Once is trip is fully formed, the type of trip will be based on the following hierarchy: 1. Presence of Valid Tag 2. Image Based Trip Note: all tags referenced above refer to Tolling Tags.	December 2019

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
LBR-XTB-11	Transaction Segments	If a Transaction Segment is received after the Trip for which the segment belongs is built, the transaction segment will be saved and reported, but not processed.	December 2019
LBR-XTB-12	Trip Toll Point Duplicate	A single trip cannot contain more than one transaction for each unique Toll Point/segment within the trip.	December 2019
LBR-XTB-13	Consolidation of Trips	No more than a single Trip Transaction shall be sent for processing for every unique Express Lane Trip. Each Trip Transaction is unique in composition – no two trips can contain the same transaction(s).	December 2019
LBR-XTB-14	Trip Definitions	The Central Host shall define a set of configurable Trip Definitions which specify the various combinations of Toll Segment transactions that can be included in a single Trip.	December 2019
LBR-XTB-15	Split Trips	If a customer exits the Express Lane and decides to re-enter after the configurable allowable travel time for the entire Travel Facility has passed, two separate trips shall be constructed and the Toll Rate from the initial entry is considered expired.\n\nTrips are formed through the detection and inclusion of transactions at each Toll Segment in a given Trip Definition. The occurrence of a transaction at Toll Segments within a given Trip Definition shall not be assumed; a valid transaction must be recorded at every Toll Point in the Trip Definition, otherwise the transactions will form separate Trips.	December 2019
LBR-XTB-16	Orphan Trips	If an image-based transaction cannot be identified by Optical Character Recognition (OCR)/Manual Image Review, the transaction will form a single point trip filtered as unidentifiable.	December 2019

2.2.5 Transaction Rating Business Rules

This section describes the business rules related to transaction rating.

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
LBR-XTR-01	Transaction Tag Status	Transponder status determined at the Central Host will be maintained throughout the life of the transaction until transmission to BOS.	December 2019

Business Rule Number	Value/Term	Condition/Rule Description	Last Update/ Verification
LBR-XTR-02	Trip Tag Status	If transponder-based trips contain transactions with both Valid and Invalid tag statuses, the Valid tag status will be applied to the trip.	December 2019
LBR-XTR-03	Toll Rate Assignment	The toll rate applied to a trip will be the toll rate seen by the customer at the first VTMS that applies to that trip definition, and this toll rate is locked for the duration of the trip.	December 2019
LBR-XTR-04	Sign Travel time	Sign Travel time will be used to calculate the time after a rate is posted for when the rate will become effective for billing. This time is configurable, and sign-based.	December 2019
LBR-XTR-05	Toll Rate Increase Implementation	A toll rate increase will go into effect after one of the following is met: 1. Two tags have been seen at both the sign tag reader and the plaza tag reader 2. Sign travel time has elapsed.	December 2019
LBR-XTR-06	Rate Decrease Implementation	A toll rate decrease will go into effect immediately after the rate is posted to the sign.	December 2019
LBR-XTR-07	Closed Pricing	The toll rate for a closed segment will be $0.00 (configurable).	December 2019
LBR-XTR-08	Open to All Pricing	The toll rate for an "FREE" segment will be $0.00 (Configurable).	December 2019

ATTACHMENT C: REPORT REQUIREMENTS

- Data Platform Release 3 Report Requirements v1.2

Statement of Work

**Data Platform Release 3
Report Requirements**

Version 1.2

March 16, 2022

Updated May 24, 2022

Table of Contents

Document Control

Date	Version	Author	Changes
3/16/2022	v. 1.0	Amy Aamold, Atkins	Initial Version
	v. 1.1	Amy Aamold, Atkins	• Global requirements updated • Agency and Product updated to reference Product Group • Report requirements updated following review with CTRMA and Deloitte
5/24/2022	v. 1.2	Amy Aamold, Atkins	• Global requirements updated

1. Overview

Reports are necessary for the validation of Release 3 databases and processes, and for integration and certification testing with other agencies and partners. Report samples are provided as an example of the existing reports. Where there are discrepancies between the description and the image, the description takes precedence.

Global reporting requirements are as follows:

1. Product Group selection should be for all or multiselect wherever possible.
2. Product selection should be for all or multi-select, associated with any selected Product Group.
3. Selected Report Criteria should be display on printed and downloaded details
4. Current system reports have a search box available to filter displayed results across any field (for example "519" will find transaction IDs, product names, license plate, dollar amounts, etc.) This existing functionality would be helpful.
5. All reports should be exportable to PDF, CSV, and Excel.
6. Selection criteria should be printed and exported at the top of every report.
7. The report run date and time should be printed and exported at the top of every report.

2. Transaction Search

Was delivered in Release 1-2. This should be tested in Release 3, but no changes have been requested.

3. CSC Pending Reconciliation

This is an existing report in the current system, presented as a sample. Key criteria and data elements are identified. This report includes four types or results, detailed below.

3.1.   CSC Pending Reconciliation: Summary Counts

Data Source	Real-Time Data
Report Criteria	• Transaction Date Range (Start Date, End Date, no times) • Product Group (All, Multi-select)
Summarization	Total transaction counts are provided for each of the statuses identified.
Report Results	• Total Unsubmitted Count • Total Recon Status "S" • Total Recon Status "N" • Total Recon Status "T" • Total Recon Status "C" • Total Recon Status "P" • Total Recon Status "D" • Total Recon Status "I" • Total Recon Status "O" • Total Transaction Status "T" (Tag) Total Transaction Status "I" (Image)

Example:

```
Total Unsubmitted Count: 70076
Total RECN Status 'S': 509
Total RECN Status 'N': 69567
Total RECN Status 'T': 0
Total RECN Status 'C': 0
Total RECN Status 'P': 0
Total Transaction Status 'T': 130
Total Transaction Status 'I': 69946
```

3.2.   CSC Pending Reconciliation: Product Group Counts

Data Source	Real-Time Data
Report Criteria	*Same report criteria and data is used as Summary Counts*
Summarization	Transaction Count is totaled per transaction date, reconciliation status, and transaction type.
Report Results	• Product Group *(existing report has Turnpike and Plaza)* • Transaction Date • Reconciliation Status • Transaction Type • Transaction Count *(calculated total)*

Example:

Turnpike	Plaza	Transaction Timestamp	Reconciliation Status	Count
US290 E	183 Entry	01/01/2022 CST	S	6
US290 E	183 Entry	01/01/2022 CST	S	1
US290 E	183 Entry	01/02/2022 CST	S	6
US290 E	183 Entry	01/02/2022 CST	S	1
US290 E	183 Entry	01/03/2022 CST	S	5
US290 E	183 Entry	01/03/2022 CST	S	1
US290 E	183 Entry	01/04/2022 CST	S	4
US290 E	183 Entry	01/05/2022 CST	S	7
US290 E	183 Entry	01/06/2022 CST	S	4
US290 E	183 Entry	01/06/2022 CST	S	2
US290 E	183 Entry	01/07/2022 CST	S	11
US290 E	183 Entry	01/07/2022 CST	S	1
US290 E	183 Entry	01/08/2022 CST	S	3
US290 E	183 Entry	01/09/2022 CST	S	5
US290 E	183 Entry	01/09/2022 CST	S	1

Showing 1 to 50 of 4,884 records   Previous 1 2 3 4 5 … 98 Next

3.3.   CSC Pending Reconciliation: Transaction Level Detail

Data Source	Real-Time Data
Report Criteria	Transaction Date *Current functionality is to navigate to this report by selected a single day on the graphical heat map.*
Summarization	Sent Count is totaled per transaction id.
Report Results	• Transaction Endpoint *(existing report has Plaza ID and Lane)* • Transaction Date and Time • Transaction ID • Reconciliation Status • Last Sent Time *(time transaction was sent to the HUB)* • Last Received Time *(from the HUB)* • Sent Count *(calculated total)*

Example:

Plaza ID	Lane	Transaction Timestamp	Plaza Trx ID	Recon Status	Last Sent Time	Last Received Time	Sent Count	Transaction Type
2	14	02/28/2022 20:07:20 CST	2128713884	N	03/02/2022 02:04:08	03/02/2022 01:01:14	1	I
2	13	02/28/2022 23:38:29 CST	2128780789	N	03/02/2022 02:04:08	03/02/2022 01:01:14	1	I
2	13	02/28/2022 23:32:54 CST	2128779895	N	03/02/2022 02:04:08	03/02/2022 01:01:14	1	I
2	13	02/28/2022 23:31:22 CST	2128779580	N	03/02/2022 02:04:08	03/02/2022 01:01:14	1	I
2	13	02/28/2022 23:31:07 CST	2128779561	N	03/02/2022 02:04:08	03/02/2022 01:01:14	1	I
2	13	02/28/2022 23:29:00 CST	2128779188	N	03/02/2022 02:04:08	03/02/2022 01:01:14	1	I
2	13	02/28/2022 23:27:40 CST	2128778971	N	03/02/2022 02:04:08	03/02/2022 01:01:14	1	I
2	13	02/28/2022 23:26:53 CST	2128778830	N	03/02/2022 02:04:08	03/02/2022 01:01:14	1	I
2	13	02/28/2022 23:24:28 CST	2128778357	N	03/02/2022 02:04:08	03/02/2022 01:01:14	1	I
2	13	02/28/2022 23:24:03 CST	2128778280	N	03/02/2022 02:04:08	03/02/2022 01:01:14	1	I

Showing 1 to 10 of 63,751 entries   Previous 1 2 3 4 5 ... 6376 Next

3.4.   CSC Pending Reconciliation: Chronological Status

Data Source	Real-Time Data
Report Criteria	Hyperlink from Transaction ID in the CSC Pending Reconciliation: Transaction Level Detail
Summarization	None
Report Results	• Transaction Endpoint *(existing report has Plaza ID and Lane)* • Posted Date and Time • Reconciliation Date and Time • Status Description

Example:

| 2 | 13 | 02/28/2022 14:27:57 CST | 2128209945 | S | | 03/02/2022 06:04:15 | 03/02/2022 05:43:02 | 2 | I |

Chronological Status

Plaza	Lane	Posted	Reconciliation	Status
2	13		2022-02-28 14:27:57	Transaction Occurred - Tag: TEX.04297185
2	13		2022-02-28 20:48:17	Transaction sent to Image Review
2	13	2022-03-01 00:32:27	2022-03-01 00:32:27	Transaction received from Image Review
2	13		2022-03-01 02:00:02	iToll Transaction sent to IOPHUB for payment
2	13	2022-03-01 15:50:02	2022-03-01 20:48:40	System Failure - posting failed
2	13		2022-03-01 22:04:28	Transaction Resubmit to IOPHUB for payment
2	13	2022-03-02 03:43:04	2022-03-02 05:43:11	System Failure - posting failed
2	13		2022-03-02 06:04:18	Transaction Resubmit to IOPHUB for payment

| 2 | 13 | 02/28/2022 11:25:51 CST | 2128022458 | S | | 03/02/2022 06:04:15 | 03/02/2022 05:43:02 | 2 | I |

4. Pending Workflow Stages Report

Identify transactions that may not be proceeding through the workflow. This report provides a snapshot of transactions and their current state in the workflow. It helps to identify issues in the workflow.

Data Source	Real-Time Data
Report Criteria	Transaction Date Range (Start Date, End Date, no times)
Summarization	Data is summarized and reported by Receive Date *Receive Date = date transaction is received in DPS*

Report Results	• Receive Date
	• Total Received (count of transactions)
	• In Transit
	    ○ *DPS Workflow statuses displayed*
	• Rejected
	    ○ *DPS Workflow statuses displayed*
	• Posted
	    ○ *DPS Workflow statuses displayed*

Example:

					In Transit						Reject			Posted	
Received Counts															
Receive Date	Total Received	Queued for Image D/L	Queued for XLPR	Queued for Human Review	Queued for Posting	Queued for DMV Response	Queued for IOP File	Pending IOP Disposition	No Image Found	Codeoff in Image Review	Bad/No DMV Response	IOP Reject (Away on Home)	Home on Home Posted	Away on Home Posted
6/1/2017	1000	0	0	0	0	0	0	0	50	50	300	100	300	200
6/2/2017	1100	0	0	0	0	0	0	0	55	65	290	110	310	270
6/3/2017	1200	0	0	0	0	0	0	0	100	90	340	100	250	320
6/4/2017	1300	0	0	0	0	0	0	0	44	55	348	120	350	383
6/5/2017	1000	0	0	0	0	0	0	0	40	50	75	100	300	435
6/6/2017	1100	0	0	0	0	250	395	200	0	50	5	60	90	50
6/7/2017	1200	0	0	0	0	256	110	100	0	90	4	0	440	200
6/8/2017	1300	0	0	0	0	330	150	200	0	60	5	100	250	205
6/9/2017	1000	0	0	0	0	345	200	300	0	0	4	0	75	76
6/10/2017	1100	0	0	200	30	365	100	100	0	60	5	0	220	220
6/11/2017	1200	0	0	101	50	345	50	0	0	50	4	0	0	0
6/12/2017	1300	0	0	65	0	500	0	0	0	30	5	0	0	0
6/13/2017	1000	0	100	197	600	0	0	0	0	99	4	0	0	0
6/14/2017	1100	0	100	0	0	995	0	0	0	0	5	0	0	0
6/15/2017	1200	0	250	100	400	450	0	0	0	0	4	0	0	0
6/16/2017	1300	98	105	200	327	675	0	0	0	0	5	0	0	0
6/17/2017	1000	194	150	156	0	500	0	0	0	0	4	0	0	0
6/18/2017	1100	195	0	239	0	660	0	0	0	0	6	0	0	0
6/19/2017	1200	200	0	0	0	330	0	0	0	0	1	0	0	0
6/20/2017	1300	225	0	0	0	450	0	0	0	0	3	0	0	0
6/21/2017	1000	250	0	0	0	300	0	0	0	0	0	0	0	0
6/22/2017	1100	300	0	0	800	0	0	0	0	0	0	0	0	0
6/23/2017	1200	425	0	0	775	0	0	0	0	0	0	0	0	0
6/24/2017	1300	450	0	0	850	0	0	0	0	0	0	0	0	0
6/25/2017	1000	650	0	300	50	0	0	0	0	0	0	0	0	0
6/26/2017	1100	430	0	400	270	0	0	0	0	0	0	0	0	0
6/27/2017	1000	575	50	300	75	0	0	0	0	0	0	0	0	0
6/28/2017	1100	500	190	410	0	0	0	0	0	0	0	0	0	0
6/29/2017	1200	560	210	430	0	0	0	0	0	0	0	0	0	0
6/30/2017	1300	575	725	0	0	0	0	0	0	0	0	0	0	0

5. HUB Reconciliation

Existing Report: CSC Payment Reconciliation

Settlement details with CUSIOP. Captures date of valid response (typically the date/time we acknowledge the SRECON). Report shows what agencies owe to CTRMA.

Data Source	Real-Time Data

Report Criteria	• Transaction Date Range (Start Date, End Date, no times)
	• Date Type (Transaction Date or Reconciliation Date)
	    ○ Transaction Date – when it occurred in the lane
	    ○ Reconciliation Date – date CTRMA acknowledged the SRECON
	• Product Group (All, Multi-select)
	• Agency *(the agency that responded SRECON)*

Summarization	Data is summarized by Date and by Product Group

Report Results	• Tolls Posted/Paid (P status, transaction type T)
	    ○ Transaction count (summary total)
	    ○ Total Revenue
	    ○ Total Fee (Flat Fees + Percent Fee)
	• iTolls Posted/Paid (P status, transaction type I)
	    ○ Transaction count
	    ○ Total Revenue
	    ○ Total Fee (Flat Fees + Percent Fee)
	• Tolls and iTolls Paid – totals
	    ○ Total Count
	    ○ Total Revenue

Report Totals	• Tolls Posted/Paid Count • Tolls Posted/Paid Revenue • Tolls Posted/Total Fee • iTolls Posted/Paid Count • iTolls Posted/Paid Revenue • iTolls Posted/Paid Revenue • Tolls and iTolls Paid Count • Tolls and iTolls Paid Revenue • Tolls and iTolls Paid Fee

Example:

CSC Payment Reconciliation

Start Date: 02/01/2022   End Date: 02/28/2022   Date Type: RECNTMST   Turnpike: 183-A

Agency: TxDOT

PDF   CSV   Excel   Preview Report

Parameters - Date Type: RECNTMST   Turnpike: 183-A   Start Date: 02/01/2022   End Date: 02/28/2022   Agency: TxDOT

Display 50 records per page   Search:

			Tolls Posted/Paid								ITolls Posted/Paid						Tolls and I	
Date	Agency	Rev Date	Count	Rev	Invalid Count	Invalid Rev	N + 1 Count	N + 1 Rev	Flat Fees	Pctfee	Count	Rev	N + 1 Count	N + 1 Rev	Flat Fees	Pctfee	Count	Rev	N + 1 Count
02/01/2022	TxDOT		63,427	$78,216.65		$0.00	0	$0.00	$3,171.35	$2,648.69	4,194	$5,430.00		$0.00	$209.70	$182.08	67,621	$83,646.65	
02/02/2022	TxDOT		76,554	$96,686.92		$0.00	0	$0.00	$3,827.70	$3,259.28	7,414	$9,954.24		$0.00	$370.70	$331.78	83,968	$106,641.16	
02/03/2022	TxDOT		77,146	$96,901.50		$0.00	0	$0.00	$3,857.30	$3,268.25	16,116	$21,704.48		$0.00	$805.80	$723.18	93,262	$118,605.98	
02/04/2022	TxDOT		3,308	$3,985.23		$0.00	0	$0.00	$165.40	$136.46	942	$1,265.31		$0.00	$47.10	$42.32	4,250	$5,250.54	
02/05/2022	TxDOT		26,408	$31,908.52		$0.00	0	$0.00	$1,320.40	$1,085.54	3,229	$4,032.62		$0.00	$161.45	$136.52	29,637	$35,941.14	
02/06/2022	TxDOT		65,694	$80,283.15		$0.00	0	$0.00	$3,284.70	$2,721.01	7,968	$9,893.43		$0.00	$398.40	$333.83	73,662	$90,176.58	
02/07/2022	TxDOT		50,676	$61,653.48		$0.00	0	$0.00	$2,533.80	$2,093.39	6,056	$7,601.03		$0.00	$302.80	$257.08	56,732	$69,254.51	
02/08/2022	TxDOT		74,631	$94,429.99		$0.00	0	$0.00	$3,731.55	$3,183.61	16,632	$17,821.14		$0.00	$831.60	$653.42	91,263	$112,251.13	
02/09/2022	TxDOT		79,114	$100,714.95		$0.00	0	$0.00	$3,955.70	$3,391.42	6,212	$8,578.70		$0.00	$310.60	$284.88	85,326	$109,293.65	
02/10/2022	TxDOT		80,842	$103,305.31		$0.00	0	$0.00	$4,042.10	$3,475.74	7,921	$11,222.04		$0.00	$396.05	$371.14	88,763	$114,527.35	
02/11/2022	TxDOT		82,683	$105,717.39		$0.00	0	$0.00	$4,134.15	$3,555.53	10,899	$15,023.74		$0.00	$544.95	$498.63	93,582	$120,741.13	
02/12/2022	TxDOT		89,000	$113,027.24		$0.00	0	$0.00	$4,450.00	$3,803.51	18,556	$24,999.32		$0.00	$927.80	$833.14	107,556	$138,026.56	
Total			1,853,496	$2,328,003.46					$92,674.80	$78,581.09	243,210	$321,054.34			$12,160.50	$10,776.45	2,096,706	$2,649,057.80	

Showing 1 to 24 of 24 records   Previous 1 Next

6. Reconciliation Summary

Provides a summary view of transactions by month as they proceed through the workflow process.

Data Source	Summarized Data (possibly daily summary)
Report Criteria	- Product Group - Transaction Date Range (Start Date, End Date, no times) - Summarization Level (Month or Day)
Summarization	Data is summarized by Month and by Product Group
Report Results	- Product Group - Month (Mon-YY) - Lane –total number of transactions recorded by the ETCS. Source data in current PHS reports is the "Transaction Summary Report" - AVI – total number of transactions recorded by the ETCS with a valid "V" transponder status - PBM – total number of transactions recorded by the ETCS with a invalid "Z", "I" or no transponder status - Total – total number of AVI and PBM transactions recorded by the ETCS - AVI – total number of transactions processed through CUSIOP and received payment (posted). Source data in current PHS reports is the "Payment Reconciliation" - Toll – total number of transactions posted through CUSIOP as valid transponder reads - Toll Dupes – total number of transactions rejected as transponder-based duplicates - Toll % - total transactions that are processed as valid CUSIOP transponder reads compared to Lane Total transactions - AVI Difference – difference between the Lane-AVI total and AVI-Toll totals representing the number of valid status transponders submitted to CUSIOP and not posted - iToll – total number of transactions posted through CUSIOP as valid plate reads - iToll Dupes – total number of transactions rejected as plate duplicates - iToll % - total number of transactions processed as valid CUSIOP plates compared to Lane PBM transactions - SCORR – total number of transactions processed and posted with a SCORR file - True Penetration – percentage of all transactions that have either valid CUSIOP accounts (transponder + plate) - Image Review - number of transactions in image review and current pending image review backlog - Pending Image – total number of transactions received by the ETCS where no associated image has been retrieved by the DPS - Image unavailable – total number of transactions where no image has been retrieved from the ETCS after 30 days. - PBM Images Sent – total number of transactions sent to image review by the ETCS

- o PBM Images Received – total number of transactions that have received image review results (license plate extracted or code-offs)
  - o Image review pending / Image Review backlog – total number of transactions sent to image review and pending image review results.
- Filters
  - o PBM Filtered Duplicates – total number of transactions where a duplicate status was received from PBM (PRECON disposition = "D")
  - o Buffered Tag Reads – total number of transactions marked as a buffered tag status by the ETCS
  - o Spurious Tag reads – total number of transactions marked as a spurious tag status by the ETCS
  - o Do Not Pursue – total number of transactions marked as Do Not Pursue (permanent hold)

- Non-Revenue
  - o NR Plate – total transactions processed as non-revenue (exempt) based on plate
  - o NR Tag – total transactions processed as non-revenue (exempt) based on tag
  - o NR Total – total number of tag and plate transactions processed as non-revenue (exempt)
  - o NR Plate % - percentage of lane PBM transactions processed as non-revenue (exempt) plate compared to Lane transactions
  - o NR Tag % - percentage of lane AVI transactions processed as non-revenue (exempt) tag compared to Lane AVI
- Code Offs
  - o Preventable – transactions with a code-off result classified as "System based or caused" (unclear image, missing images, blurry image, etc.)
  - o Preventable % - percentage of Lane PBM transactions with a preventable code off result
  - o Non-Preventable – transactions with a code-off results classified s "Vehicle based or caused" (missing plate, blocked plate, etc.)
  - o Non-Preventable % - percentage of Lane PBM transactions with a non-preventable code off result
  - o Total – total number of transactions that received a preventable or non-preventable code-off results
  - o % Coded Off – percentage of transactions that received a preventable or non-preventable code-off results compared to Lane PBM transactions
- Placements
  - o To PBM – transactions submitted to PBM
  - o From PBM – transactions that have received a Phase I disposition from PBM
  - o PBM Pending – transactions that have not received a Phase I disposition from PBM
- Total
  - o Processed – transactions processed as AVI, iToll, Non-Revenue, PBM, Code-offs
  - o Other Processed – transactions held or halted by filters (duplicates, Do Not Pursue, etc.)

	o Unprocessed – Difference between Lane Total transactions and total processed and other processed. o Unprocessed % - Difference between unprocessed and Lane Total transactions • Zerofare – transactions processed with a $0.00 toll amount. (excluding Non-Revenue • Status_C – Transactions with a status "C" (plate not found) response from CUSIOP
Report Totals	• All columns are totaled

Example:

Reconciliation Summary ⌄

Turnpike: All ⌄   Year: 2022 ⌄

📄 PDF   📄 CSV   📄 Excel   📄 Preview Report

Parameters - Turnpike: 183-A/US290 E/SH550/Toll 49/Loop 375/MoPac/MoPac TRIPS/SH-71/45 SW/183-S   Year: 2022

Display 50 ⌄ records per page   Search: [   ]

		Lane						AVI						Image Review				Filters			
Turnpike	Month	AVI	PBM	Total	Toll	Toll Dupes	Toll %	AVI Difference	I-Toll	I-Toll Dupes	I-Toll %	$CORR	True Penetration	Pending Image	PBM Images Sent	PBM Images Received	Delta	PBM Filtered Duplicates	Buffered Tag Reads	DNP	Other Du
183-A	Jan	2,430,328	2,516,129	4,946,457	2,390,177	0	48.32%	40,151	434,476	0	8.78%	4,534	57.10%	489	2,504,529	2,504,529	0	247	0	0	
183-A	Feb	2,334,407	2,410,187	4,744,594	2,287,545	0	48.21%	46,862	415,992	0	8.77%	47,406	56.98%	275	2,399,453	2,397,578	1,875	240	0	0	
183-A	Mar	97,244	99,447	196,691	0	0	0.00%	97,244	0	0	0.00%	1,955	0.00%	2	90,833	74,879	15,954	1	0	0	
NETRMA-Raytheon	Jan	49,834	40,084	89,918	49,759	0	55.34%	75	9,833	0	10.94%	46	66.28%	9	40,013	40,013	0	2	0	0	
NETRMA-Raytheon	Feb	46,403	36,927	83,330	46,223	0	55.47%	180	8,436	0	10.12%	571	65.59%	17	36,867	36,834	33	6	0	0	
NETRMA-Raytheon	Mar	2,110	1,726	3,836	0	0	0.00%	2,110	0	0	0.00%	18	0.00%	1	1,619	1,351	268	0	0	0	
NETRMA	Jan	482,175	528,118	1,010,293	479,574	0	47.47%	2,601	107,995	0	10.69%	790	58.16%	1,506	526,399	525,821	578	10,517	0	0	
NETRMA	Feb	445,334	482,760	928,094	442,248	0	47.65%	3,086	94,185	0	10.15%	4,865	57.80%	1,982	480,560	479,440	1,120	9,301	0	0	
NETRMA	Mar	18,121	19,655	37,776	0	0	0.00%	18,121	0	0	0.00%	251	0.00%	824	17,877	15,053	2,824	14	0	0	
SH550	Jan	95,327	68,122	163,449	65,707	0	40.20%	29,620	33,231	0	20.33%	23,434	60.53%	192	0	0	0	6	0	0	
SH550	Feb	58,076	49,058	107,134	40,077	0	37.41%	17,999	25,084	0	23.41%	14,087	60.82%	8	0	0	0	6	0	0	
US290 E	Jan	1,192,748	1,722,293	2,915,041	1,178,851	0	40.44%	13,897	272,246	0	9.34%	2,047	49.78%	17	1,717,269	1,717,269	0	362	0	0	
US290 E	Feb	1,168,997	1,672,703	2,841,700	1,150,932	0	40.50%	18,065	263,857	0	9.29%	26,309	49.79%	12	1,667,870	1,666,565	1,305	314	0	0	
US290 E	Mar	49,260	71,059	120,319	0	0	0.00%	49,260	0	0	0.00%	1,704	0.00%	7	65,301	54,149	11,152	3	0	0	
MoPac	Jan	321,609	343,949	665,558	0	0	0.00%	321,609	0	0	0.00%	0	0.00%	0	0	0	0	0	0	0	
		13,392,222	17,115,074	30,507,296	12,215,346	137	40.04%	1,176,876	2,757,427	29	9.04%	183,925	49.08%	7,130	15,654,842	15,595,090	59,752	22,120	0	614	

Showing 1 to 20 of 28 records   Previous 1 Next

7. Pay By Mail Reconciliation Report

Existing Report: CSC Placement Reconciliation.

Confirm what was sent to Pay by Mail and see the dispositions of those transactions across various statuses.

Sent Date is the date CTRMA submitted the transactions to Pay by Mail system (regardless of transaction date).

Transaction Date is the date the transaction occurred on the roadway.

IOP Reject Phase 1 Responses are the responses from the PRECON, in columns based on the response received. Sent should equal the total of Accepted, Duplicate, Too Old, Missing Image, and Format Error.

IOP Reject Phase 2 Responses should equal the total of the Accepted column, with the additional of an Unpaid column. (Paid, Waived, Discounted, AVI, Unpaid).

Placement Phase 1 Responses are the transactions sent from CTRMA to PBM. Sent should equal the total of Accepted, Duplicate, Too Old, Missing Image, and Format Error.

Placement Phase 2 Responses should equal the total of the Accepted column, with the additional of an Unpaid column. (Paid, Waived, Discounted, AVI, Unpaid).

Data Source	Real-Time Data
Report Criteria	• Transaction Date Range (Start Date, End Date, no times)Date Type (Transaction Date or Sent Date) • Product Group (All, Multi-select)
Summarization	Summarized by Date (Transaction or Sent)

Report Results	IOP Reject Table
	• Product Group
	• Date (Transaction or Sent Date, based on selection)
	• Sent (Count of transactions sent)
	• IOP Reject Phase 1 Responses
	  o Accepted count
	  o Duplicate count
	  o Too old count
	  o Missing image count
	  o Format error
	• IOP Reject Phase 2 Responses
	  o Paid
	  o Waived
	  o Discounted
	  o Reduced payment (paid AVI)
	  o Unpaid
	
	PBM Table
	• Product Group
	• Date

	• Sent
	• PBM Phase 1 Responses
	   ○ Accepted count
	   ○ Duplicate count
	   ○ Too old count
	   ○ Missing image count
	   ○ Format error
	• PBM Phase 2 Responses
	   ○ Paid
	   ○ Waived
	   ○ Discounted
	   ○ Reduced payment (paid AVI)
	   ○ Unpaid

Report Totals	n/a

Example report provided. This report example has known errors. The descriptions above represent the intention of the report.

CSC Placement Reconciliation ⌄

Start Date: 02/01/2022   End Date: 02/28/2022   Date Type: SENTDATE ⌄   Turnpike: 7 selected ⌄

TRANSTMST
SENTDATE

PDF   CSV   Excel   Preview Report

Parameters - Date Type: SENTDATE   Turnpike: 183-A/US290 E/Toll 49/MoPac TRIPS/SH-71/45 SW/183-S   Start Date: 02/01/2022   End Date: 02/28/2022

Display 50 ⌄ records per page   Search:

			IOP Reject Phase 1 Responses					IOP Reject Phase 2 Responses			
Turnpike	Date	Sent	Accepted	Duplicate	Too Old	Missing Image	Format Error	Paid	Waived	Discounted	AVI
SH-71	02/16/2022	0	0	0	0	0	0	735	0	0	0
SH-71	02/17/2022	0	0	0	0	0	0	1,178	0	0	0
SH-71	02/18/2022	0	0	0	0	0	0	699	0	0	0
SH-71	02/20/2022	0	0	0	0	0	0	194	0	0	0
SH-71	02/21/2022	0	0	0	0	0	0	187	0	0	0
SH-71	02/22/2022	0	0	0	0	0	0	361	0	0	0
SH-71	02/23/2022	0	0	0	0	0	0	627	0	0	0
SH-71	02/24/2022	0	0	0	0	0	0	1,772	0	0	0
SH-71	02/25/2022	0	0	0	0	0	0	560	0	0	0
SH-71	02/26/2022	0	0	0	0	0	0	447	0	0	0
SH-71	02/27/2022	0	0	0	0	0	0	115	0	0	0
SH-71	02/28/2022	0	0	0	0	0	0	4,071	0	0	0
US290 E	02/01/2022	0	0	0	0	0	0	4,101	0	0	0
US290 E	02/02/2022	0	0	0	0	0	0	3,476	0	0	0
US290 E	02/03/2022	0	0	0	0	0	0	4,456	0	0	0
US290 E	02/04/2022	0	0	0	0	0	0	3,240	0	0	0
US290 E	02/05/2022	0	0	0	0	0	0	6,058	0	0	0

Showing 151 to 189 of 189 records   Previous 1 2 3 **4** Next

Turnpike	Date	Sent	Placement Phase 1 Responses					Placement Phase 2 Responses			
			Accepted	Duplicate	Too Old	Missing Image	Format Error	Paid	Waived	Discounted	AVI
183-A	02/01/2022	45,639	39,007	0	0	0	6	40,443	15	0	515
183-A	02/02/2022	45,872	47,257	0	0	0	6	37,140	15	0	512
183-A	02/03/2022	12,122	41,714	0	0	0	13	28,067	148	0	595
183-A	02/04/2022	46,380	34,441	0	0	0	11	30,161	15	0	321
183-A	02/05/2022	38,004	22,864	0	0	0	6	57,308	18	0	772
183-A	02/06/2022	35,206	40,117	0	0	0	3	17,410	6	0	242
183-A	02/07/2022	43,177	33,199	0	0	0	5	16,332	5	0	446
183-A	02/08/2022	45,353	48,139	0	0	0	6	91,138	32	0	816
183-A	02/09/2022	48,729	47,495	0	0	0	5	42,758	12	0	569
183-A	02/10/2022	47,932	49,424	0	0	0	5	37,815	10	0	519
183-A	02/11/2022	51,191	49,801	0	0	0	5	48,048	49	0	1,731
183-A	02/12/2022	57,030	52,162	0	0	0	4	122,252	48	0	2,100
183-A	02/13/2022	38,119	49,201	0	0	0	5	15,562	15	0	451
183-A	02/14/2022	45,024	37,637	0	0	0	3	13,780	12	0	625
183-A	02/15/2022	47,605	49,405	0	0	0	5	41,191	12	0	513
183-A	02/16/2022	50,607	48,749	0	0	0	6	37,437	11	0	545
183-A	02/17/2022	46,577	47,902	0	0	0	4	64,750	20	0	1,070

Showing 1 to 50 of 196 records

Previous 1 2 3 4 Next

8. Non-Revenue by Agency

Report provides total transaction count and waived toll amount for transactions related to the Exempt List.

Data Source	Real-Time Data
Report Criteria	• Date Range (Start Date, End Date, no times) by Transaction Date • Product Group (All, Multi-select)
Summarization	Summarize by Agency and Exempt Type (Plate or Tag)
Report Results	• Agency Name • Transaction Type (from the transaction – plate or tag) • Total Transaction Count ○ Hyperlink on Trx Count to show detailed transactions with the ability to download the results. • Total Revenue Waived

Non Revenue by Agency ⌄

Start Date: 02/01/2022 📅   End Date: 02/28/2022 📅   Turnpike: 183-A ⌄

📄 PDF   📄 CSV   📄 Excel   📄 Preview Report

Parameters - Turnpike: 183-A   Start Date: 02/01/2022   End Date: 02/28/2022

Display 50 ⌄ records per page   Search: [   ]

Agency	Exempt Type	Trx Count	Total Toll
Acadian Ambulance Service	Plate	344	$638.53
Acadian Ambulance Service	Tag	9	$13.08
Allegiance Ambulance	Plate	139	$265.26
Alvin Police Department	Plate	4	$6.90
American Medical Response	Plate	387	$725.62
Austin Community College District Campus Police	Plate	95	$153.83
Austin EMS	Plate	484	$849.84
Austin Fire Department	Plate	472	$778.53
Austin ISD Police	Plate	686	$1,194.59
Austin Office of Medical Director	Plate	36	$62.62
Austin Police Department	Plate	5,934	$10,241.71
Bastrop County Sheriff	Plate	11	$19.90
Brazoria County Sheriff's Office	Plate	6	$10.48
Brazos County Sheriff's Office	Plate	3	$5.24
Burnet County Sheriff's Office	Plate	67	$122.70
Burnet Fire Department	Plate	110	$193.15
Burnet Police Department	Plate	76	$134.47
Total:		96,887	$138,996.70

Showing 1 to 50 of 133 records   Previous 1 2 3 Next

9. Transaction Summary

Axle Count is the original count at the time of capture and should not change if the axle count is adjusted.

Data Source	Real-Time Data
Report Criteria	- Transaction Date - Product Group (All, Multi-select) - Product (All, Multi-select, based on products associated with the selected Product Group) - Direction of Travel - Weekdays, Weekends, All Week - Reporting Range - Transaction Day - Transaction Day's Week – summarizes all data by day for the week pertaining to the Revenue Date selected - Transaction Day's Month – summarizes all data by day for the month pertaining to the Revenue Date selected - Transaction Day's Year – summarizes all data by day for the calendar year to the Revenue Date selected (ytd) - Transaction Day's Fiscal Year – summarizes all data by day for the fiscal year to the Revenue Date selected (July – June, ytd)
Summarization	Data is summarized by Product Group and by Day
Report Results	First Table - Product Group *(Agency, Location, Plaza in current report)* - Transaction Date - AVI Count 2 Axle 3 Axle 4 Axle 5 Axle 6 Axle 7+ Axle - Total - PBM Count 2 Axle 3 Axle 4 Axle 5 Axle 6 Axle 7+ Axle - Total - Total Count Second Table - Product Group *(Agency, Location, Plaza in current report)*

- Transaction Date
- AVI Revenue
  - 2 Axle
  - 3 Axle
  - 4 Axle
  - 5 Axle
  - 6 Axle
  - 7+ Axle
  - Total
- PBM Revenue
  - 2 Axle
  - 3 Axle
  - 4 Axle
  - 5 Axle
  - 6 Axle
  - 7+ Axle
  - Total
- Total Count

Example

Transaction Summary ⌄

Revenue Date: 03/02/2022 📅 Turnpike: 183-A ⌄ Plaza: All ⌄ Select reporting range: Revenue Date's Year ⌄

📄 PDF   📄 CSV   📄 Excel   📄 Preview Report

Parameters - Turnpike: 183-A   Plaza: Brushy Creek NB/Brushy Creek SB/Crystal Mainline/Crystal Parkway NB/Crystal Parkway SB/Lakeline Plaza NB/Lakeline Plaza SB/Park Street Mainline/Scottsdale Drive NB   Revenue Date: 03/02/2022   Reporting range: Yearly

Display 50 ⌄ records per page   Search: [   ]

Plaza				AVI Revenue							PBM Revenue							Total Rev
Agency	Location	Plaza	Date	2	3	4	5	6	7+	Total	2	3	4	5	6	7+	Total	Total Rev
CTRMA	183-A	Brushy Creek NB	01/01	$652.74	$3.96	$0.00	$2.64	$0.00	$0.00	$659.34	$908.82	$3.96	$8.91	$0.00	$0.00	$0.00	$921.69	$1,581.03
CTRMA	183-A	Brushy Creek SB	01/01	$419.76	$1.32	$3.96	$0.00	$0.00	$0.00	$425.04	$693.99	$1.98	$5.94	$0.00	$0.00	$0.00	$701.91	$1,126.95
CTRMA	183-A	Crystal Mainline	01/01	$15,076.11	$171.36	$381.99	$238.00	$11.90	$5.95	$15,885.31	$24,909.64	$196.90	$408.12	$264.92	$0.00	$0.00	$25,779.58	$41,664.89
CTRMA	183-A	Crystal Parkway NB	01/01	$107.16	$0.00	$2.82	$1.88	$0.00	$0.00	$111.86	$156.91	$1.42	$4.26	$0.00	$0.00	$0.00	$162.59	$274.45
CTRMA	183-A	Crystal Parkway SB	01/01	$93.06	$0.00	$1.41	$0.00	$0.00	$0.00	$94.47	$125.67	$0.00	$4.26	$0.00	$0.00	$0.00	$129.93	$224.40
CTRMA	183-A	Lakeline Plaza NB	01/01	$4,499.34	$32.24	$70.68	$76.88	$0.00	$0.00	$4,679.14	$7,226.10	$52.86	$97.65	$89.28	$0.00	$0.00	$7,465.11	$12,144.25
CTRMA	183-A	Lakeline Plaza SB	01/01	$3,806.18	$44.64	$106.02	$62.00	$6.20	$6.20	$4,031.24	$6,143.58	$74.40	$100.44	$70.68	$0.00	$4.65	$6,393.75	$10,424.99
CTRMA	183-A	Park Street Mainline	01/01	$30,947.28	$315.84	$660.24	$436.80	$0.00	$8.40	$32,368.56	$50,624.28	$453.60	$703.88	$493.92	$0.00	$0.00	$52,274.88	$84,643.44
CTRMA	183-A	Scottsdale Drive NB	01/01	$275.22	$1.32	$0.00	$2.64	$0.00	$0.00	$279.18	$425.70	$0.00	$2.97	$0.00	$0.00	$0.00	$428.67	$707.85
CTRMA	183-A	Brushy Creek NB	01/02	$687.20	$0.00	$1.98	$0.00	$0.00	$0.00	$609.18	$892.98	$1.98	$5.94	$0.00	$0.00	$0.00	$900.90	$1,510.08
CTRMA	183-A	Brushy Creek SB	01/02	$410.52	$0.00	$0.00	$5.28	$0.00	$0.00	$415.80	$631.62	$3.96	$2.97	$0.00	$0.00	$0.00	$646.47	$1,062.27
CTRMA	183-A	Crystal Mainline	01/02	$15,301.02	$149.94	$396.27	$333.20	$0.00	$0.00	$16,180.43	$25,244.37	$175.42	$553.11	$386.64	$0.00	$0.00	$26,359.54	$42,539.97
CTRMA	183-A	Crystal Parkway NB	01/02	$90.24	$0.94	$1.41	$0.00	$0.00	$0.00	$92.59	$146.26	$0.00	$2.13	$0.00	$0.00	$0.00	$148.39	$240.98
CTRMA	183-A	Crystal Parkway SB	01/02	$98.70	$0.00	$0.00	$0.00	$0.00	$0.00	$98.70	$142.00	$0.00	$4.26	$0.00	$0.00	$0.00	$146.26	$244.96
CTRMA	183-A	Lakeline Plaza NB	01/02	$4,364.80	$17.36	$52.08	$111.00	$0.00	$0.00	$4,545.24	$7,108.92	$42.78	$122.76	$111.60	$0.00	$4.65	$7,390.71	$11,935.95
CTRMA	183-A	Lakeline Plaza SB	01/02	$4,258.16	$48.36	$100.44	$129.00	$21.70	$3.10	$4,560.76	$6,435.60	$74.40	$170.19	$104.16	$32.55	$0.00	$6,816.90	$11,377.66
		Total		$5,645,115.75	$123,514.10	$204,538.53	$246,176.88	$19,361.55	$7,968.50	$6,246,675.31	$8,711,905.86	$221,845.76	$418,530.84	$521,506.68	$40,566.95	$11,519.10	$9,925,875.19	$16,172,550.50

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