

Metropolitan Intelligent Transportation Systems (ITS)
Infrastructure 2004 Electronic Toll Collection Survey

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SECTION I

ELECTRONIC TOLL COLLECTION FACILITIES:

Please enter the current information for 2004 and the current estimate for 2005 in the boxes provided. We have entered the information your agency provided in 2002 to assist you.

	Total in 2002	2002 Estimated Total by 2005	Total in 2004	2004 Estimated Total by 2005
1. Total number of toll collection plazas operated.....	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2. Total number of toll collection plazas with Electronic Toll Collection (ETC) capabilities.....	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3. Total number of toll collection lanes.....	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
4. Total number of toll collection lanes with Electronic Toll Collection (ETC) capabilities.....	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

INTEGRATION:

	2002 Response	2004 Response
5. Are your tags used by other toll operators in your metropolitan area?	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

NATIONAL ITS STANDARDS

6. Please check the ITS standards that you are using (deployed or in current RFP) or considering (assessing for use) in your operational freeway management systems. The U.S. DOT ITS Standards Program recognizes that there may be other ITS standards surveys being conducted by other entities. If this is the case, please pardon any overlap; however, your input to these surveys will help the U.S. DOT ITS Standards Program better serve your needs and requirements. If no standards are used, skip to the question 9.

List of standards to consider when deploying freeway management projects:

Traffic Management

Using Considering

- NTCIP 1202 - Object Definitions for Actuated Traffic Signal Controller Units
- NTCIP 1210 - Objects for Signal Systems Master
- NTCIP 1211 - Objects for Signal Control Priority

Freeway Management

Using Considering

- NTCIP 1203 - Object Definitions for Dynamic Message Signs
- NTCIP 1204 - Object Definitions for Environmental Sensor Stations
- NTCIP 1205 - Objects for CCTV Camera Control
- NTCIP 1206 - Object Definitions for Data Collection and Monitoring (DCM) Devices
- NTCIP 1207 - Object Definitions for Ramp Meter Control
- NTCIP 1208 - Object Definitions for Video Switches
- NTCIP 1209 - Object Definitions for Transportation Sensor System
- NTCIP 1213 - Electrical and Lighting Mgmt System Interoperability & Intercommunications Std
- NTCIP 1301 - Weather Report Message Set for ESS

NATIONAL ITS STANDARDS (cont.)

Advanced Transportation Controller

Using Considering

- ITE 9603-1 - Application Programming Interface (API) Standard for the Advanced Transportation Controller (ATC)
- ITE 9603-2 - Advanced Transportation Controller (ATC) Cabinet
- ITE 9603-3 - Advanced Transportation Controller (ATC) Standard Specification for the Type 2070 Controller

Profiles and Base Standards

Using Considering

- NTCIP 1201 - Global Object Definitions
- NTCIP 1102 - Octet Encoding Rules (OER)
- NTCIP 1103 - Transportation Management Protocol
- NTCIP 1104 - CORBA Naming Convention Specification
- NTCIP 1105 - CORBA Security Service Specification
- NTCIP 1106 - CORBA Near-Real Time Data Service Specification
- NTCIP 2101 - Point to Multi-Point Protocol Using RS-232 Subnetwork Profile
- NTCIP 2102 - Subnetwork Profile for PMPP using FSK Modems
- NTCIP 2103 - Subnet Profile for Point-to-Point Protocol using RS 232
- NTCIP 2104 - Subnetwork Profile for Ethernet
- NTCIP 2201 - Transportation Transport Profile
- NTCIP 2202 - Transport Profile for Internet (TCP/IP and UDP)
- NTCIP 2301 - Application Profile for Simple Transportation Management Framework (STMF)
- NTCIP 2302 - Application Profile for Trivial File Transfer Protocol
- NTCIP 2303 - Application Profile for File Transfer Protocol (FTP)
- NTCIP 2304 - Application Profile for Data Exchange ASN.1 (DATEX)
- NTCIP 2305 - Application Profile for Common Object Request Broker Architecture (CORBA)
- NTCIP 8003 - Profiles - Framework and Classification of Profiles
- NTCIP 9010 - XML Standard for Center-to-Center Communications
- IEEE P1488 - IEEE Standard for Message Set Template for Intelligent Transportation Systems
- IEEE P1489 - IEEE Standard for Data Dictionaries for Intelligent Transportation Systems - Part 1 Functional Area Data Dictionaries

Center-to-Center Communications

Using Considering

- ITE TM 1.03 - Standard for Functional Level Traffic Management Data Dictionary (TMDD)
- ITE TM 2.01 - Message Sets for External TMC Communication (MS/ETMCC)
- NTCIP 1602 - Generic Reference Model for C2C Communications

Incident Management

Using Considering

- IEEE 1512-2000 Standard for Common Incident Management Message Sets for use by Emergency Management Centers
- IEEE P1512.1 - Standard for Traffic Incident Management Message Sets for Use by EMCs
- IEEE P1512.2 - Standard for Public Safety Incident Management Message Sets for Use by EMCs
- IEEE 1512.3-2000 - Standard for Hazardous Material Incident Management Message Sets for Use by Emergency Management Centers
- IEEE 1512.4 - Standard for Emergency Management to Emergency Vehicle Subsystems Use by Emergency Management Centers

NATIONAL ITS STANDARDS (cont.)

Using Considering

- IEEE P1556 - Standard for Security and Privacy of Vehicle/Roadside Communication Including Smart Card Comm.

Advanced Traveler Information System

Using Considering

- SAE J2354 - Message Set for Advanced Traveler Information System (ATIS)
 SAE J2540-2 - ITIS Phrase Lists (International Traveler Information Systems)
 SAE J2630 - Converting ATIS Message Standards from ASN.1 to XML

Transit

Using Considering

- APTA - TCIP Dialogs
 NTCIP 1400 - TCIP - Framework Standard
 NTCIP 1401 - TCIP - Common Public Transportation (CPT) Business Area Standard
 NTCIP 1402 - TCIP - Incident Management (IM) Business Area Standard
 NTCIP 1403 - TCIP - Passenger Information (PI) Business Area Standard
 NTCIP 1404 - TCIP - Scheduling/Runcutting (SCH) Business Area Standard
 NTCIP 1405 - TCIP - Spatial Representation (SP) Business Area Standard
 NTCIP 1406 - TCIP - Onboard (OB) Business Area Standard
 NTCIP 1407 - TCIP - Control Center (CC) Business Area Standard
 NTCIP 1408 - TCIP - Fare Collection (FC) Business Area Standard

Commercial Vehicle Operations

Using Considering

- ANSI TS284 - Commercial Vehicle Safety Reports
 ANSI TS285 - Commercial Vehicle Safety and Credentials Information Exchange
 ANSI TS286 - Commercial Vehicle Credentials

Dedicated Short Range Communications

Using Considering

- IEEE 1609.1 - Standard for Dedicated Short Range Communications (DSRC) Resource Manager
 IEEE 1609.2 - Standard for Dedicated Short Range Communications (DSRC) Application Layer
 IEEE 1609.3 - Standard for IP Interface for Dedicated Short Range Communications (DSRC)
 IEEE 1609.4 - Standard for Dedicated Short Range Communications (DSRC) Medium Access Control (MAC) Layer
 E2213-02 Standard Specification for Telecommunications and Information Exchange Between Roadside and Vehicle Systems - 5 GHz Band Dedicated Short Range Communications (DSRC) Medium Access Control (MAC) and Physical Layer (PHY) Specifications
 SAE J2xxx - Standard for Data Dictionary and Message Sets for Dedicated Short Range Communications (DSRC)
 E2158-01 Standard Specification for Dedicated Short Range Communication (DSRC) Physical Layer using Microwave in the 902 to 928 MHz Band
 ASTM E17.54.00.1 - Standard Guidelines for Archiving ITS-Generated Data
 PS 105-99: Standard Provisional Specification for Dedicated Short Range Communication (DSRC) Data Link Layer

Location Referencing

Using Considering

- SAE J2266 - Location Referencing Message Specification

NATIONAL ITS STANDARDS (cont.)

Archived Data User Service (ADUS)

Using Considering

- ASTM E2259-03 -Standard Guidelines for Archiving
- ASTM E-17.54.02.1 Standard Specifications for Metadata Content for ITS-Generated Data
- ASTM E-17.54.02.2 Standard Specifications for Archiving ITS-Related Traffic Monitoring Data

7. What factors helped your agency decide to use ITS standards? Please pick top three factors, check only one item in each column.

- | 1 | 2 | 3 |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Options offered in the standards |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Products employ standards |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Regional architecture document requirements |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Additional funding provided |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Integration opportunities |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Consultant or integrator's recommendation |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> My agency's participation on standard committees |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Training and Technical Assistance support provided by US DOT |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Responding to the rule to use ITS Standards |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Compliance testing is readily available |

8. Do you feel that using the standards helped with the integration needs for your agency? Please list project name(s) next to each option.

Absolutely

Somewhat

Not exactly

9. If no ITS standards are currently used, what factors will ensure that your agency uses ITS standards? Please pick top three factors, check only one item in each column (if your are using standards, please move to the next question).

- | 1 | 2 | 3 |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> We are already committed to using standards when they are complete |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Vendors provide standard-compliant products |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Standards being accepted by the ITS community and being used in deployments |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Training and technical support being provided to my agency |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Standards are developed that apply to my system |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Additional funding being provided to use the standards |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Standards use enables interoperability of systems |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Other: <div style="border: 1px solid black; display: inline-block; width: 600px; height: 20px; vertical-align: middle;"></div> |

10. What tool, resource, or support mechanism ___was or ___would be most helpful for implementing the standards? Please pick top three, check only one item in each column.

1	2	3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Training courses
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Published standards provided for free
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Published standards are easily available
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Support documents (i.e. procurement and implementation guides) are available
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Workshops
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Standards Web site
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Standards forum
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Software tools to assist with correctly specifying and procuring the standard
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> E-mail bulletins
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Resource documents (i.e., user guides and reference notebooks)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Testing tools
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Case studies of other similar projects that used standards successfully
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Other: <input type="text"/>

11. Who can we contact in your agency regarding ITS standards?

Name:

Affiliation:

Phone:

E-mail:

12. May FHWA follow up with this agency contact for possible peer networking?

- Yes
- No

EMERGENCY PREPAREDNESS

13. Does your agency participate in a statewide disaster planning program?

- Yes
- No
- Don't know

EVALUATION:

14. The U.S. DOT is interested in networking with evaluators of Intelligent Transportation Systems (ITS) nationwide. Is there a point of contact in your state for ITS evaluations?

- Yes. Please provide the name, e-mail, and phone number

- No
- Don't know

15. The U.S. DOT ITS JPO actively collects data on the benefits and costs of ITS implementations and makes this information available at the following URL: <http://www.benefitcost.its.dot.gov/>. Are you aware of any locally produced and funded evaluations that could be added to this national database?

Yes. Please provide a point of contact (name, phone number and e-mail) or reference (e.g., URL) for the evaluation report.

No
 Don't know

COST AND BENEFITS:

16. Is your agency willing to share COST information on ITS-related equipment and projects (i.e., capital and O&M cost, project component breakdown, and brief description)? This information will be used to update the ITS JPO sponsored ITS costs database.

Yes. Please provide name, phone number, and e-mail of the cost information contact if different from respondent. This person will be contacted for the cost information at a later date.

No

17. Is your agency willing to share BENEFITS information from ITS deployments? This information will be used to update the ITS JPO sponsored ITS benefits database.

Yes. Please provide name and phone number of the benefits information contact if different from respondent. This person will be contacted for the benefits information at a later date.

No