Metropolitan Intelligent Transportation Systems (ITS) 2004 Deployment Tracking Freeway Management Survey

Preliminary Results

Prepared for:

ITS Joint Program Office
Federal Highway Administration
Washington, D.C.

Table of Contents

FREEWAY SURVEILLANCE:

Total number of agencies: 147

	Total miles in 2004	Estimated total miles by 2005
1a. Total number of freeway centerline miles with real-time traffic data collection technologies (does not include CCTV):......................................	6,245	7,894

Traffic data collection technologies deployed: **Miles Covered**

	Total miles in 2004	Estimated total miles by 2005
Loop detectors:	3,943	4,193
Video imaging detectors:	589	1,282
Probe readers using ETC tags:	1,211	1,927
Probe readers using other technology:	11	236
Probe readers for transit vehicles:	21	499
Acoustic detectors:	171	372
Microwave radar:	1,371	2,431
Other:	See Appendix A	

RAMP CONTROL:

1b. Please describe the spacing of your detectors   See Appendix B

1c. Please describe the average percent of detectors in service.   See Appendix C

	Total miles in 2004	Estimated total miles by 2005
2a. Total number of ramp meters...	2,320	2,480
Number of isolated (or stand-alone) ramp meters:	624	183
Number of centrally controlled ramp meters:	1,255	1,839
Number of pretimed ramp meters:	547	583
Number of traffic responsive ramp meters:	2,061	2,167
Number of HOV bypass lanes at ramp meters:	576	686
Number of ramp meters that provide preemption for emergency vehicles:	0	28
Number of ramp meters that provide priority for transit vehicles:	68	304
Number of freeway to freeway ramp meters:	89	115

2b. Under what circumstances do you meter traffic or close ramps as a traffic management strategy?

	Number of agencies	
	Ramp Metering	Ramp Closure
Time of day (recurrent congestion)	31	3
Traffic incidents	15	36
Planned special events	15	26
Other:	See Appendix D	

RAMP CONTROL (Cont.):

3. If your agency has not deployed Ramp Metering and has no plans to do so by 2008, has a feasibility study been conducted on the use of Ramp Metering?

| 15 | Yes, indicate the reason(s) for not deploying Ramp Metering:

Not feasible	6
Lack of perceived need	22
Lack of institutional support	10
Lack of funding	5

Other: See Appendix E

| 64 | No. If a study is planned, when will it be conducted?   See Appendix F

LANE MANAGEMENT:

	Total miles in 2004	Estimated total miles by 2005
4. Total number of freeway centerline miles under lane control......................	1,184	1,339

5. Please provide the number of centerline miles and the time of operation for each type of lane control:

	Freeway centerline miles
Occupancy control (HOV):	989
Express lanes (reversible flow):	85
Lane open/closed (traffic incidents, roadway maintenance, etc.):	151
Truck only:	0
Variable speeds:	45
Pricing or tolls:	87
Other:	See Appendix G

6. Do you have any variable speed limit signs?

| 8 | Yes, how many? | 194 |
| 29 | No |

ROADSIDE TECHNOLOGIES USED TO DISTRIBUTE EN-ROUTE TRAVELER INFORMATION:

	Total Miles in 2004	Estimated total Miles by 2005
7. Number of centerline miles covered by Highway Advisory Radio (HAR)	4,027	5,164
8. Number of centerline miles covered by other roadside technologies:	10,971	10,842

Other: See Appendix H

Dynamic Message Signs (DMS)

	Total in 2004	Estimated total by 2005
9. Total number of Permanent DMS deployed on freeways.............................	2,941	3,429
10. Total number of Portable DMS deployed on freeways...............................	944	1,000

11. Do you have established formal policies or procedures

       that govern the operation of the DMS?

          Number of agencies

94	Yes
10	No

       that govern the display of messages on the DMS?

          Number of agencies

93	Yes
10	No

       that govern how messages are developed prior to being displayed on the DMS?

          Number of agencies

88	Yes
16	No

12. Approximatelly, how many hours a day is a message display on the DMS?   See Appendix I

13. What type of information is displayed? (Check all that apply)

                                    Number of agencies

Congestion	76
Diversion	69
Accident sites	93
Transit operations	6
Maintenance and construction work site information	97
Roadway status	62
Special events	82
Parking availability	12
Speed warnings	19
Weather alerts	56

                        Other: See Appendix J

DISSEMINATION OF INFORMATION TO THE PUBLIC:

14a. Please check all the methods that your agency uses, or will use, to distribute information to the public.

	Number of agencies	
	In 2004	By 2005
Dedicated cable TV:	27	36
Automated telephone system:	57	57
Internet Web sites	116	115
Pagers or personal data assistants:	43	51
Interactive TV:	3	5
Kiosks:	25	40
E-mail or other direct PC communication:	70	72
In-vehicle navigation systems:	1	10
Cell phone/automated voice:	35	38
Facsimile:	56	54
Video feed to the media:	7	9
Do not distibute information:	7	5
Other:	See Appendix K	

14b. Please check all the types of information that your agency distributes, or will distribute, to the PUBLIC and/or MEDIA.

	Number of agencies			
	to the PUBLIC		to the MEDIA	
	In 2004	By 2005	In 2004	By 2005
Freeway travel times:	26	36	15	28
Freeway travel speeds:	22	34	21	32
Incident information:	78	64	77	62
Special events:	69	52	61	47
Work zones/construction events:	94	70	97	68
Parking:	9	7	8	7
Weather:	47	36	33	28
Road surface conditions:	59	41	47	30
Road closures:	90	65	94	67
Detours:	72	51	73	50
Alternate routes:	52	39	57	42
Road restrictions:	62	45	60	40
Congestion:	64	46	56	43
CCTV images:	58	53	62	63
Travel and Tourist information:	23	21	27	18
Real-time construction information:	55	44	53	41
Other:	See Appendix L			

15. Does your agency have or plan to have an operational 511 system?

41   No, there are no plans to implement 511 at this time

84   Yes

Status:

28   Operational

56   Planned (Deployment date)   See Appendix M

Content:

| 61 | Basic service provided free of charge |

31	Traveler and tourist information
61	Roadway information
26	Public transportation

| 5 | Operational content (premium service) for specific users provided for a fee |

Describe optional component.   See Appendix N

Does the system incorporate a Voice Recognition Service?

| 43 | Yes |
| 12 | No |

Is the system multilingual?

| 6 | Yes |
| 40 | No |

Operating hours:

| 51 | 24 hours |
| 5 | Other |

What are the sources of data for your 511 system?

| 38 | Public safety (incident information) |

| 38 | State police |
| 29 | Local agencies |

| 51 | Traffic management |

| 47 | Operations and maintenance |

| 20 | Construction contractors |
| 36 | DOT Project Managers |

| 45 | Incident management service patrols |

| 15 | Private traveler information |

| 11 | Cellular phone calls |

| 10 | Information service providers, please name: See Appendix O |

12	News media
21	National weather service
13	Weather sensor data
16	Road surface condition detectors
16	Public transportation
15	Inductive loop detectors
30	CCTV
15	Microwave radar detectors
26	Maintenance road patrols
20	Snow and ice removal services
29	Work zone areas
8	Private meteorological services

Other: See Appendix P

Freeway Management

REAL-TIME INFORMATION TRANSFER AND RECEIPT:

16. Does your agency receive, in real-time, freeway travel times derived from vehicle probes from any toll collection agency?

Number of agencies

12	Yes
75	No
41	No toll collection:

17. Does your agency receive, in real-time, incident information (e.g., clearance activities, type, severity, etc.) from any Public Safety agency?

Number of agencies

	Yes	No
Incident clearance:	84	46
Incident severity and type:	84	46

18. Does your agency provide, in real-time, incident information (e.g., type, severity, etc.) and/or freeway information(e.g., travel times, speed, and conditions) to the following types of agencies?

	incident information (e.g. type, severity, etc.)		freeway information (e.g. travel times, speed, and conditions)	
	Number of agencies			
	Yes	No	Yes	No
Freeway Management Agencies:	72	60	66	65
Arterial Management Agencies:	55	76	56	77
Public Transit Agencies:	38	92	38	93
Public Safety Agencies:	79	51	68	63
Emergency Management Agencies:	55	29	54	32

SERVICE PATROLS:

	Total miles in 2004	Estimated total miles by 2005
19. Total number of freeway centerline miles patrolled by service patrols	8,283	9,316
20. Number of vehicles...	983	1,045

21. Service Hours

37	Peak hours only
18	24/7

Other: See Appendix Q

INCIDENT DETECTION AND VERIFICATION METHODS:

Please provide the miles covered by the following incident detection/verification methods.

	Total miles in 2004	Estimated total miles by 2005
22. Free cellular phone call to a dedicated phone number other than 911.......	6,035	5,629
23. Computer algorithms..	3,052	4,572
24. CCTV...	5,699	7,844
25. Call boxes...	3,008	3,266

26. Are the images from your CCTV cameras available to the public?

Number of agencies

77	Yes
35	No
10	No CCTV

DATA COLLECTION AND ARCHIVING:

27. Does your agency archive any operations data?

Number of agencies

63	Yes, how long have you been archiving? See Appendix R
15	No, but we plan to begin archiving data in the next year
16	No, but we plan to begin archiving data within the next two years
8	No, but we plan to begin archiving data in the future (five to ten years)
18	No, we do not plan to begin archiving data

28. How are data archived? (Check all that apply)

Number of agencies

55	Computer database - Store raw data. (e.g., sensor feed)
32	Computer database - Store processed data (e.g., traffic conditions)

What is the size of the database?   See Appendix S

Other: See Appendix T

29. Are you aware of the Standard Guide for Archiving and Retrieving Intelligent Transportation System - Generated Data (ASTM E2259-03)?

Number of agencies

49	Yes, are you using it?

4	Yes
47	No

64	No

30. Please check all the methods your agency uses to make the archived data available.

Number of agencies

27	On-Line (Web)
34	CD
46	Paper reports

Other: See Appendix U

31. For what portion of your region/transportation network is ITS data archived?

Number of agencies

15	Freeway system within the central business district
53	Freeway system within the metropolitan region
15	Freeway system in rural areas within the MPO planning boundary
3	Congested areas only

Other: See Appendix V

32. Please check the information your agency collects/archives from sensors.

Number of agencies

	Collect	Archive
Traffic volumes:	90	77
Traffic speeds:	79	64
Lane occupancy:	65	53
Vehicle classification:	63	53
Travel time:	27	21
Road conditions (e.g., wet, icy, etc.):	39	28
Weather conditions (e.g., snow, fog, rain, etc.):	38	27
Video surveillance:	16	4

Other: See Appendix W

DATA COLLECTION AND ARCHIVING (Cont.):

33. What is the time spacing of readings from sensors?

Number of agencies

9	Every second
8	Every five seconds
26	Every twenty seconds
	Other: See Appendix X

34. What is the time resolution of archived sensor data?

Number of agencies

29	Archived as it is received from sensors
12	Aggregated using one minute intervals
	Other: See Appendix Y

35. Please check the information your agency collects/archives from other sources

Number of agencies

	Collect	Archive
Route designations (snow emergency, etc.):	23	14
Current work zones:	62	42
Scheduled work zones:	53	33
Intermodal (air, rail, water) connections:	3	3
Emergency/evacuation routes and procedures:	27	16
Vehicle occupancy:	18	13
Violation rates for HOV lanes:	4	2
Incident location:	9	7
Incident type:	39	29
Incident detection time:	29	24
Incident response time:	24	18
Incident clearance time:	32	25
Metering rates	3	1
Do not collect/archive information:	13	14
Other:	See Appendix Z	

36. What are the data used for?

Number of agencies

Do not know:	4
Traffic analysis:	81
Construction impact determination:	24
Capital planning/analysis:	38
Operation planning/analysis:	64
Incident detection algorithm	32
Roadway impact analysis:	41
Accident prediction models:	19
Dissemination to the public:	59
Monitor system performance:	54
Safety analysis:	41
Traffic simulation modeling:	39
Traffic control:	43
Travel time prediction:	22
Other:	See Appendix AA

OPERATIONAL PLANS AND PROCEDURES:

Special Events:

37. Does your agency participate in a formal multi-agency initiative to proactively plan for and coordinate activities regionally related to special events?

| 87 | Yes, what are the associated components of this effort?

| 83 | Agencies plan and coordinate
| 62 | Documented traffic management plans
| 72 | Specific traffic control plans
| 68 | Established operational procedures and protocols
| 56 | Day of event multiagency traffic management team
Other: See Appendix AB

Please check the special events included in this effort (Check all that apply):

| 45 | Street use events
| 24 | Rural event
| 66 | Recurring events at permanent venue
| 52 | Non-recurring events at permanent
| 42 | Events at temporary venues
Other: See Appendix AC

| 35 | No, will your agency participate by 2008?

| 39 | Yes
| 13 | No

Alternate Route Plans:

38. Does your agency have pre-planned alternate route plans to implement for certain sections of your freeway system?

| 80 | Yes, please check the type of event that requires the implementation of the plan:

Event	Number of Agencies	Number of Freeway Centerline Miles
Roadway construction	37	1,020
Roadway maintenance	31	1,097
Roadway closure - weather	51	2,998
Major traffic incident	72	5,599
Planned special events	41	1,046
Other: See Appendix AD		

| 38 | No

39. What criteria must be met to implement the alternate route plan?

Number of Agencies

| 75 | Type of incident
| 78 | Incident duration
| 69 | Incident location
| 72 | Number of freeway lanes blocked
| 46 | Time of day
Other: See Appendix AE

SYSTEM PERFORMANCE MONITORING, EVALUATION, AND REPORTING:

40. How often does your agency report on the performance of the freeway system?

Number of Agencies

| 21 | Monthly
| 36 | Annually
Other: See Appendix AF

41. Which of the following performance measures are used to report on the performance for the specified portions of the freeway system?

	travel time	travel time reliability	vehicles per lane per mile	vehicles per hour	person throughput per lane per hour	person throughput per hour	average auto occupancy
				Number of agencies			
Spot location....................	15	3	18	27	4	5	4
Corridor............................	13	4	11	17	4	3	4
System wide....................	12	8	17	16	7	6	6

42. Who receives this performance report?

Number of agencies

37	Agency traffic operations
44	Management
30	Executive management
10	Elected officials
17	MPOs
	Other See Appendix AG

43. What formats are used to present these measures?

Number of agencies

45	Tables
42	Graphics/Charts
28	Maps
32	Text
	Other See Appendix AH

44. Have you used ITS at Work Zones?

Number of agencies

| 86 | Yes. What types of deployments are these? |

82	Temporary
31	Permanent
15	Temporary deployments to take over functions of permanent systems that degraded or were made inoperative by construction activities
	Other See Appendix AI

What technologies are employed?

1	Intrusion alarm
11	Dynamic lane merge system
27	Queue detection and alert system
15	Travel time system
20	Advanced speed information system (ASIS)
	Other See Appendix AJ

What are the reasons for deployment?

68	Reduce crashes
69	Improve workers safety
66	Reduce congestion
61	Provide traveler information to reduce frustation
	Other See Appendix AK

| 38 | No |

OTHER TECHNOLOGIES:

45. Has your agency deployed over-height warning systems?

> Number of agencies

29	Yes
97	No

46. Does your agency operate automated and/or manual freeway ramp gates?

> Number of agencies

12	Yes
115	No

47. Does your agency have any accident investigation sites?

> Number of agencies

21	Yes. How many?	379
99	No

48. Does your agency have any Reference Location Signs (1/10 or 2/10 mile markers)?

> Number of agencies

74	Yes
49	No

49. Does your agency have any Dynamic Curve Warning System?

> Number of agencies

19	Yes, how many?	35
	22	Number of urban freeway ramps with Truck only warning:
	7	Number of urban freeway ramps with warning for all vehicles:
105	No	

NATIONAL ITS STANDARDS

List of standards to consider when deploying freeway management projects:

Traffic Management

Number of agencies

Using	Considering	
16	24	NTCIP 1202 - Object Definitions for Actuated Traffic Signal Controller Units
11	22	NTCIP 1210 - Objects for Signal Systems Master
8	24	NTCIP 1211 - Objects for Signal Control Priority

Freeway Management

Using	Considering	
58	27	NTCIP 1203 - Object Definitions for Dynamic Message Signs
11	29	NTCIP 1204 - Object Definitions for Environmental Sensor Stations
18	48	NTCIP 1205 - Objects for CCTV Camera Control
8	37	NTCIP 1206 - Object Definitions for Data Collection and Monitoring (DCM) Devices
6	21	NTCIP 1207 - Object Definitions for Ramp Meter Control
9	36	NTCIP 1208 - Object Definitions for Video Switches
8	30	NTCIP 1209 - Object Definitions for Transportation Sensor System
2	18	NTCIP 1213 - Electrical and Lighting Mgmt System Interoperability & Intercommunications Std
2	26	NTCIP 1301 - Weather Report Message Set for ESS

Advanced Transportation Controller

Using	Considering	
7	23	ITE 9603-1 - Application Programming Interface (API) Standard for the Advanced Transportation Controller (ATC)
7	24	ITE 9603-2 - Advanced Transportation Controller (ATC) Cabinet
5	24	ITE 9603-3 - Advanced Transportation Controller (ATC) Standard Specification for the Type 2070 Controller

Profiles and Base Standards

Using	Considering	
29	23	NTCIP 1201 - Global Object Definitions
6	14	NTCIP 1102 - Octet Encoding Rules (OER)
7	16	NTCIP 1103 - Transportation Management Protocol
9	12	NTCIP 1104 - CORBA Naming Convention Specification
8	10	NTCIP 1105 - CORBA Security Service Specification
8	10	NTCIP 1106 - CORBA Near-Real Time Data Service Specification
12	22	NTCIP 2101 - Point to Multi-Point Protocol Using RS-232 Subnetwork Profile
6	15	NTCIP 2102 - Subnetwork Profile for PMPP using FSK Modems
9	21	NTCIP 2103 - Subnet Profile for Point-to-Point Protocol using RS 232
6	24	NTCIP 2104 - Subnetwork Profile for Ethernet
5	15	NTCIP 2201 - Transportation Transport Profile
11	22	NTCIP 2202 - Transport Profile for Internet (TCP/IP and UDP)
12	16	NTCIP 2301 - Application Profile for Simple Transportation Management Framework (STMF)
3	10	NTCIP 2302 - Application Profile for Trivial File Transfer Protocol
4	15	NTCIP 2303 - Application Profile for File Transfer Protocol (FTP)
4	11	NTCIP 2304 - Application Profile for Data Exchange ASN.1 (DATEX)
4	14	NTCIP 2305 - Application Profile for Common Object Request Broker Architecture (CORBA)

Number of agencies

Using	Considering	
2	9	NTCIP 8003 - Profiles - Framework and Classification of Profiles
6	22	NTCIP 9010 - XML Standard for Center-to-Center Communications
5	21	IEEE P1488 - IEEE Standard for Message Set Template for Intelligent Transportation Systems
4	18	IEEE P1489 - IEEE Standard for Data Dictionaries for Intelligent Transportation Systems - Part 1 Functional Area Data Dictionaries

Center-to-Center Communications

Using	Considering	
17	33	ITE TM 1.03 - Standard for Functional Level Traffic Management Data Dictionary (TMDD)
8	28	ITE TM 2.01 - Message Sets for External TMC Communication (MS/ETMCC)
3	25	NTCIP 1602 - Generic Reference Model for C2C Communications

Incident Management

Using	Considering	
5	30	IEEE 1512-2000 Standard for Common Incident Management Message Sets for use by Emergency Management Centers
3	34	IEEE P1512.1 - Standard for Traffic Incident Management Message Sets for Use by EMCs
2	27	IEEE P1512.2 - Standard for Public Safety Incident Management Message Sets for Use by EMCs
2	21	IEEE 1512.3-2000 - Standard for Hazardous Material Incident Management Message Sets for Use by Emergency Management Centers
3	20	IEEE 1512.4 - Standard for Emergency Management to Emergency Vehicle Subsystems Use by Emergency Management Centers
1	15	IEEE P1556 - Standard for Security and Privacy of Vehicle/Roadside Communication Including Smart Card Comm.

Advanced Traveler Information System

Using	Considering	
4	29	SAE J2354 - Message Set for Advanced Traveler Information System (ATIS)
2	18	SAE J2540-2 - ITIS Phrase Lists (International Traveler Information Systems)
2	19	SAE J2630 - Converting ATIS Message Standards from ASN.1 to XML

Transit

Using	Considering	
0	5	APTA - TCIP Dialogs
4	5	NTCIP 1400 - TCIP - Framework Standard
1	5	NTCIP 1401 - TCIP - Common Public Transportation (CPT) Business Area Standard
4	6	NTCIP 1402 - TCIP - Incident Management (IM) Business Area Standard
1	5	NTCIP 1403 - TCIP - Passenger Information (PI) Business Area Standard
2	5	NTCIP 1404 - TCIP - Scheduling/Runcutting (SCH) Business Area Standard
1	5	NTCIP 1405 - TCIP - Spatial Representation (SP) Business Area Standard
1	5	NTCIP 1406 - TCIP - Onboard (OB) Business Area Standard
1	6	NTCIP 1407 - TCIP - Control Center (CC) Business Area Standard
1	5	NTCIP 1408 - TCIP - Fare Collection (FC) Business Area Standard

Commercial Vehicle Operations

Using	Considering	
5	8	ANSI TS284 - Commercial Vehicle Safety Reports
5	7	ANSI TS285 - Commercial Vehicle Safety and Credentials Information Exchange
5	9	ANSI TS286 - Commercial Vehicle Credentials

Dedicated Short Range Communications

Number of agencies

Using   Considering

Using	Considering	
1	15	IEEE 1609.1 - Standard for Dedicated Short Range Communications (DSRC) Resource Manager
1	15	IEEE 1609-2 - Standard for Dedicated Short Range Communications (DSRC) Application Layer
1	15	IEEE 1609.3 - Standard for IP Interface for Dedicated Short Range Communications (DSRC)
1	11	IEEE 1609.4 - Standard for Dedicated Short Range Communications (DSRC) Medium Access Control (MAC) Layer
1	11	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
1	14	SAE J2xxx - Standard for Data Dictionary and Message Sets for Dedicated Short Range Communications (DSRC)
1	8	E2158-01 Standard Specification for Dedicated Short Range Communication (DSRC) Physical Layer using Microwave in the 902 to 928 MHz Band
2	9	ASTM E17.54.00.1 - Standard Guidelines for Archiving ITS-Generated Data
1	7	PS 105-99: Standard Provisional Specification for Dedicated Short Range Communication (DSRC) Data Link Layer

Archived Data User Service (ADUS)

Using   Considering

Using	Considering	
1	26	ASTM E2259-03 -Standard Guidelines for Archiving
1	21	ASTM E-17.54.02.1 Standard Specifications for Metadata Content for ITS-Generated Data
1	23	ASTM E-17.54.02.2 Standard Specifications for Archiving ITS-Related Traffic Monitoring Data

Location Referencing

Using   Considering

Using	Considering	
3	15	SAE J2266 - Location Referencing Message Specification

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

Number of agencies

1	2	3	
2	8	3	Options offered in the standards
7	5	14	Products employ standards
10	12	6	Regional architecture document requirements
2	3	3	Additional funding provided
27	16	5	Integration opportunities
3	5	14	Consultant or integrator's recommendation
2	6	4	My agency's participation on standard committees
0	4	1	Training and Technical Assistance support provided by US DOT
14	11	15	Responding to the rule to use ITS Standards
7	1	3	Compliance testing is readily available

52. 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   See Appendix AL

Somewhat   See Appendix AM

Not exactly   See Appendix AN

53. 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).

Number of agencies

1	2	3	
31	3	4	We are already committed to using standards when they are complete
6	8	4	Vendors provide standard-compliant products
6	8	9	Standards being accepted by the ITS community and being used in deployments
2	4	6	Training and technical support being provided to my agency
3	3	6	Standards are developed that apply to my system
4	3	6	Additional funding being provided to use the standards
4	10	4	Standards use enables interoperability of systems

Other   See Appendix AO

54. What tool, resource, or support mechanism was/would be most helpful for implementing the standards? Please pick top three, check only one item in each column.

Number of agencies

1	2	3	
21	4	8	Training courses
23	7	2	Published standards provided for free
11	7	3	Published standards are easily available
4	15	16	Support documents (i.e. procurement and implementation guides) are available
5	7	6	Workshops
5	10	6	Standards Web site
0	3	2	Standards forum
6	7	8	Software tools to assist with correctly specifying and procuring the standard
0	0	1	E-mail bulletins
3	7	2	Resource documents (i.e., user guides and reference notebooks)
0	11	13	Testing tools
6	5	11	Case studies of other similar projects that used standards successfully

Other   See Appendix AP

TRAFFIC INCIDENT MANAGEMENT:

55. Does your agency participate in a formal multi-agency regional or statewide program to coordinate management of traffic incidents that contains all of the following elements?

> Strategic Planning - A mutually agreed to statement of multi-agency program goals and measurable objectives.

> Program Plan - A multi-year, multi-agency program plan that maps out the process toward meeting program goals and identifying initiatives, tasks and funding sources.

> Annual Work Plan - A plan of tasks, projects, or initiatives for participating agencies to be done during the current year with funding secured.

Number of agencies

66	Yes
31	No
16	Don't know

56. Does your agency participate in a team that meets on a regular basis to evaluate and improve coordinated incident response and to address traffic problems as well?

Number of agencies

83	Yes
21	No
13	Don't know

57. Does your agency have formal established call-out procedures for responding to traffic incidents?

Number of agencies

103	Yes, when are these procedures in

> Procedures are in place: (Check all that apply)

95	24 hours a day, 7 days a week, 365 days a year
5	Peak periods only
7	Normal business hours only
6	Weekends
5	Holidays
	Other See Appendix AQ

> Whom do they affect: (Check all that apply)

87	Traffic control
95	Roadway maintenance
54	Bridges/Tunnels (structures)
	Other See Appendix AR

7	No
6	Don't know

58. Are on-call supervisors permitted to take public vehicles or equipment home in order to facilitate their response to traffic incidents?

Number of agencies

83	Yes
25	No
10	Don't know

59. Has a multi-agency contact list been developed in your area containing names, phone numbers, pager numbers, and other pertinent information for the appropriate response personnel?

Number of agencies

101	Yes
7	No
11	Don't know

TRAFFIC INCIDENT MANAGEMENT (Cont.):

60. With what types of agencies does your agency electronically share real-time and/or after-the-fact reporting information on traffic incidents?

Real-Time Data	After-The-Fact Data	
Number of agencies		
46	37	Other transportation agencies
38	35	Law enforcement (local)
54	39	Law enforcement (state)
31	28	Fire and rescue agencies
18	20	Do not electronically exchange information
7	7	Do not know
		Other See Appendix AS

61. Is an Incident Management (Incident Command) System used on-scene to manage traffic incidents?

Number of agencies

32	Yes, specified by state law
45	Yes, through agreement
23	No
20	Don't know

62. Is there a legal specification by state law or formal agreement as to who is in charge at the scene of a traffic incident (Incident Commander)?

Number of agencies

66	Yes, Who? See Appendix AT
17	No
32	Don't know

63. Has a plan been developed and adopted by responding agencies for staging and parking response vehicles and equipment at a traffic incident site in a manner that minimizes lane blockage and facilitates the re-opening of lanes?

Number of agencies

42	Yes
40	No
31	Don't know

64. Are respondents protected through law or court opinion for liability claims for damages to vehicles or cargoes during clearance activities so long as the removal was not done in a careless or grossly negligent manner?

Number of agencies

44	Yes
10	No
6	Legislation or action being planned
54	Don't know

65. Does your state or local jurisdiction have a law that requires drivers involved in a property-damage only accident (where vehicles can be driven) to move the vehicles from travel lanes to a safe location to exchange information or wait for police?

Number of agencies

68	Yes
12	No
3	Legislation planned or in progress
27	Don't know

66. How long are abandoned vehicles allowed to remain on a freeway shoulder (assuming they are not an imminent hazard)?

Number of agencies

25	0 to 4 hours
22	4 to 24 hours
42	More than 24 hours. Describe: See Appendix AU
26	Don't know

67. Are there any laws or policies regarding the removal of stalled or abandoned vehicles from freeway shoulders in your metropolitan area?

Number of agencies

56	Yes	Describe: See Appendix AV
15	No	
40	Don't know	

68. Are there any policies and procedures to facilitate quick removal of heavily damaged vehicles and non-hazardous cargoes in your metropolitan area?

Number of agencies

43	Yes	Describe: See Appendix AW
27	No	
36	Don't know	

69. What agency usually directs traffic on scene at major traffic incidents in your area? (select only one)

Number of agencies

77	Law enforcement
1	Fire and rescue
34	Transportation
0	Auxiliary or reserves (fire or police)
5	Don't know

70. Are on-scene responders to traffic incidents from your agency familiar with standards for traffic control specified in the Manual on Uniform Traffic Control Devices (MUTCD)?

Number of agencies

86	Yes
6	No
21	Don't know

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

Number of agencies

88	**Yes**
4	**No**
21	Don't know

72. Does your agency operate a Traffic Management Center (TMC)?

Number of agencies

93	Yes
22	No

73. Does your agency operate weather systems (e.g., anti-icing/deicing systems, Road Weather Information Systems [RWIS], motorist warning systems) within your metropolitan area?

Number of agencies

75	Yes
40	No

Appendix A: Other traffic collection technologies.

Agency	Technology	Miles Covered	
		in 2004	by 2005
Boise City			
Ada County Highway District	3M Microloops	0	3
Chicago, Gary, Lake County			
Indiana Department of Transportation Highway Operations	RTMS Sidefire Detectors	16	25
Los Angeles, Anaheim, Riverside			
Caltrans District 8	radar	1	1
Providence, Pawtucket, Fall River			
Rhode Island Department of Transportation	MOBILITY TECHNOLOGY	40	
Youngstown, Warren			
Ohio Department of Transportation-District 4	We do have Automatic Traffic Recorders	4	4

Appendix B: Spacing of detectors

Agency	Description
Albany, Schenectady, Troy	
New York State Department of Transportation	There are a couple of strategic exit areas, but we generally install them mid-stream so that the speed data is not affected by ramp conditions.
Albuquerque	
New Mexico State Highway Transportation	Detectors will be placed approximately every mile and at interchanges
Allentown, Bethlehem, Easton	
Pennsylvania Department of Transportation-Allentown	Placed between interchanges. Either two or three sets are in place between each interchange.
Pennsylvania Turnpike Commission	Detectors are located at a service plaza and an Interchange aprox. 20 miles from each other. Presentlty used as spot checks.
Atlanta	
Georgia Department of Transportation	VDS technologies: 1/3 mile. Probe readers: approx 5 mi Microwave radars: 1/2 mile
Austin	
Texas Department of Transportation Austin District	Varies at points of likely congestion (approx. 0.25 mile) but not more than 0.5 mile.
Bakersfield	
Caltrans District 6	At every major interchange
Bellingham	
Washington State Department of Transportation	Varies from about 500 ft between stations at border crossing up to a mile in Bellingham
Boise City	
Ada County Highway District	1/2 mile spacing
Boston, Lawrence, Salem	
Massachusetts Highway Department	1/2 mile to 1 mile apart
Buffalo, Niagara Falls	
New York State Department of Transportation	At key ramp locations.

Appendix B: Spacing of detectors

Agency	Description
Charlotte, Gastonia, Rock Hill	
Metrolina Regional Transportation Management Center (North Carolina DOT)	~1/2 mile, closer at larger interchanges to determine movements
Chicago, Gary, Lake County	
Indiana Department of Transportation Highway Operations	Approximately every 1/2 mile. RTMS detectors supplement the microloops.
Indiana Department of Transportation La Porte District	INDOT has 3M micro-loops at spacing of 1 mile. INDOT also has Wavetronics sensors at 1 mile spacing that is off set 1/2 mile. This means INDOT has sensors approximately sensors every 1/2 mile.
ISTHA	Spacing of RTMS Units vary from 1/2 mile to 2 1/2 miles depending on the geography of the roadway. ETC probes are located at all toll collection facilities both on mainline and ramps. Mainline toll plazas vary from 15 to 20 miles apart; sometimes more than 20 miles. Distances for ramp plazas vary from 1 to 2 miles in urban areas to greater than 20 miles in rural areas.
Cincinnati, Hamilton	
TRW/ARTIMIS OCC for Ohio Department of Transportation	1/2 to 1/3 of a mile on main interstates, up to 1 to 3 miles on other freeway type roads. We are currently analyzing the need for 1/2 mile spacing to determine if it should be increased to 1 mile or more
Columbia	
South Carolina DOT	N/A
Columbus	
Ohio Department of Transportation	1/3 of a mile spacing for 16 miles and 1 mile spacing for 25 miles
Dallas, Fort Worth	
Texas Department of Transportation Dallas District	1/2 to 3/4 mile spacing on loop and video imaging 2.5 mile spacing on microware (funding limitations)
Texas Department of Transportation Fort Worth District (TransVISION)	Loop detector is 1/2 mile Radar detector is 1 mile
Daytona Beach	
Florida DOT	Approximately every mile in rural areas and half a mile in urban.

Appendix B: Spacing of detectors

Agency	Description
Des Moines	
Iowa DOT	Ramp terminals at each interchange
Detroit, Ann Arbor	
Michigan Department of Transportation	Approximately every 1/2 mile. Spacing varies throughout the system. Some locations are closer (1/10 of a mile), others are more widely spaced (1-2 miles).
El Paso	
Texas Department of Transportation-El Paso District	Existing: loop detectors spaced about 1.2 miles apart. Proposed: microwave radar spaced about 1/2 mile apart.
Fresno	
Caltrans District 6	Major Interhanges
Grand Rapids	
Michigan Department of Transportation	N/A
Hampton Roads	
Virginia Department of Transportation	every 1 mile
Hartford, New Britain, Middletown	
Connecticut Department of Transportation	one-half mile to one mile
Houston, Galveston, Brazoria	
Texas Department of Transportation-Houston District	varies - antenna for AVI spaced on basis of available structures
Huntsville	
Alabama DOT	unknown
Indianapolis	
Indiana Department of Transportation	Generally every 1/2 mile.
Jacksonville	
Florida Department of Transportation	1/3 to 1/2 miles. On and off ramps at major interchanges

Appendix B: Spacing of detectors

Agency	Description
Janesville-Beloit	
Wisconsin Department of Transportation District 1	Detectors at system interchanges.
Kansas City	
Kansas Department of Transportation	We place them at 1/2 mile increments.
Missouri Department of Transportation	.5 miles or approximately every half mile
Las Vegas	
Nevada Department of Transportation	1/3 of a mile for radar, 1 mile for loop detectors
Los Angeles, Anaheim, Riverside	
Caltrans District 12	3500 feet
Caltrans District 7 - Los Angeles Transportation Management Center	Roughly 1/4 mile increments, and at every on-ramp.
Caltrans District 8	Vary from 1/2 mile to a mile in urban areas. For rural areas, it can go up to couple of miles.
Louisville	
Kentucky Transportation Cabinet, District 5	early on 0.3 mile - next phase 0.5 mile - latest between interchanges
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	about 1 detector station every 0.20 of a mile; about 1 detector station every 0.25 of a mile.
Milwaukee, Racine	
Wisconsin Department of Transportation	two detectors together spaced 16 feet
Nashville	
Tennessee Department of Transportation	1/3 MILE
New Haven, Meriden	
Connecticut Department of Transportation	Microwave detectors are installed at every other camera site, approx. 1 mile spacing.
New London	
Connecticut DOT	1/2 to 1 mile

Appendix B: Spacing of detectors

Agency	Description
New York, Northern New Jersey, Southwestern Connecticut	
Connecticut Department of Transportation(CT)	1/2 mile to 1 mile
New York State DOT-Hudson Valley Region 8	1/2 MILE SPACING ON THE MAINLINE, AND AT RAMPS. ETC readers on strategic links.
Palisades Interstate Park Commission	n/a
Port Authority of New York and New Jersey	Roughly every 400 - 600 feet
Transcom	From 1/2 to 5 miles
Oklahoma City	
Oklahoma Department of Transportation	We are in the testing on stage of RTMS and radar units. We are proeparing for a 45 mile coverage in 2006 deployment.
Omaha	
Nebraska Department of Roads - District 2	We are currently planning detector deployment and spacing for 2005, probably .3-.5 mi.
Orlando	
Florida Department of Transportation	Loop - rural areas 1 mile + spacing; urban prior to interchanges - limited access roadways
Philadelphia, Wilmington, Trenton	
New Jersey Turnpike -Traffic Operations Center	0.5 miles
Pennsylvania Department of Transportation District 6-0	every 1/2 mile
Pennsylvania Turnpike Commission	TFDS located at interchange Maneline and ramps ECT tags at interchanges
South Jersey Transportation Authority/Atlantic City Expressway	Loop detectors are placed at every toll plaza. A system of permanent count stations are being installed currently to provide a closed system of loop counts. Combined these counts will enable us to build a complete model of roadway traffic patterns.
Phoenix	
Arizona Department of Transportation	one mile spacing
Pittsburgh, Beaver Valley	
Pennsylvania DOT- Pittsburgh Regional Traffic Management Center	At each CCTV Location - 1/2 mile
Pennsylvania Turnpike Commission	For now they are located at interchanges, but will be located on the mainline at approximatly 2 to 3 miles apart.

Appendix B: Spacing of detectors

Agency	Description
Portland, Vancouver	
Oregon Department of Transportation	Varies, placed at on-ramp locations
Providence, Pawtucket, Fall River	
Rhode Island Department of Transportation	63 DETECTORS IN METROPOLITAN AREA
Roanoke	
Virginia DOT	between interchanges and in locations near areas with High incident/congestion rates
Salt Lake City, Ogden	
Utah Department of Transportation-Region 1	0.2 to 0.7 miles
Utah Department of Transportation-Region 2	0.2 to 0.7 miles
San Antonio	
Texas Department of Transportation - TransGuide Operations Center	Loops- 1/2 mile VIVDS- 2 mile Radar- 1/2 mile for
San Francisco, Oakland, San Jose	
Caltrans District 4	1/3 to 1/2 mile
Sarasota-Bradenton	
Sarasota/Manatee Metro Planning Organization	N/A- Done by local jurisdictions
Scranton, Wilkes-Barre	
Pennsylvania Turnpike Commission	located at interchange lanes
Seattle, Tacoma	
Washington State Department of Transportation Northwest Region	Detectors are clusterred arround a ramp meter or traffic data station. Typically, these stations are located at interchanges. Detectors are immediately at both upstream and downstream of the interchanges, on mainline as well as on ramp so we can have a better understanding of traffic flow in and out as well as through the system.
Washington State DOT - Olympic Region Traffic Management Center	Detector spaced about every 1/2 mile

Appendix B: Spacing of detectors

Agency	Description
Spokane	
Washington State Department of Transportation Eastern Region	Approximately every mile
St. Louis	
Illinois Department of Transportation	Approximately 1/2 mile spacing. Will be increased to 1 mile for future installations due to cost. 1 mile spacing has been proven successful for developing accurate travel times.
Missouri Department of Transportation	Currently decectors are in locations to dectect known recurring backups. Projects currently under construction and all future projects will cover all major interstates with detection at 1 mile spacing (maximum). Arterial ITS systems (several in design and construction) will use loop detectors (mostly at signalized intersections) to monitor traffic flow.
Stockton	
Caltrans	20 ft leading edge to leading edge
Syracuse	
New York State Department of Transportation	7 radar detectors in a 10 mile section of Interstate. Detectors will be installed at locations with identified operational problems.
Tampa, St. Petersburg, Clearwater	
Florida Department of Transportation	1 mile between sensors
Washington	
Virginia DOT - NOVA Smart Traffic Center	1/2 - 1 mile apart
West Palm Beach, Boca Raton, Delray	
Florida Department of Transportation-District 4	every half mile

Appendix C: Average percent of detectors in service

Agency	Description
Albany, Schenectady, Troy	
New York State Department of Transportation	85%
Allentown, Bethlehem, Easton	
Pennsylvania Department of Transportation-Allentown	100% are in service. Down time is minimal.
Pennsylvania Turnpike Commission	100%
Atlanta	
Georgia Department of Transportation	85% of detectors are operational.
Austin	
Texas Department of Transportation Austin District	approximately 94% average in service
Bakersfield	
Caltrans District 6	100
Baton Rouge	
Louisiana Department of Transportation	95%
Bellingham	
Washington State Department of Transportation	95%
Boise City	
Ada County Highway District	90%
Boston, Lawrence, Salem	
Massachusetts Highway Department	25%
Buffalo, Niagara Falls	
New York State Department of Transportation	99% up time is the goal.
Charlotte, Gastonia, Rock Hill	
Metrolina Regional Transportation Management Center (North Carolina DOT)	100

Appendix C: Average percent of detectors in service

Agency	Description
Chicago, Gary, Lake County	
Indiana Department of Transportation Highway Operations	95%
Indiana Department of Transportation La Porte District	At the present monent because of major construction, 50% of the sensors are in service.
ISTHA	95% to 100%
Cincinnati, Hamilton	
TRW/ARTIMIS OCC for Ohio Department of Transportation	25%
Columbia	
South Carolina DOT	N/A
Columbus	
Ohio Department of Transportation	The average percentage of detectors in service for our system is 98%.
Dallas, Fort Worth	
Texas Department of Transportation Dallas District	80%
Daytona Beach	
Florida DOT	95%
Des Moines	
Iowa DOT	Expect full deployment by this fall
Detroit, Ann Arbor	
Michigan Department of Transportation	90% are in service at any given time.
El Paso	
Texas Department of Transportation-El Paso District	60%
Fresno	
Caltrans District 6	100
Grand Rapids	
Michigan Department of Transportation	N/A

Appendix C: Average percent of detectors in service

Agency	Description
Hampton Roads	
Virginia Department of Transportation	62%
Hartford, New Britain, Middletown	
Connecticut Department of Transportation	98%
Huntsville	
Alabama DOT	90
Indianapolis	
Indiana Department of Transportation	Still in first phase of deployment - N/A
Jacksonville	
Florida Department of Transportation	Currently 10%
Kansas City	
Kansas Department of Transportation	100 % at this time.
Missouri Department of Transportation	85% in ground loops, 60% of microwave radar
Las Vegas	
Nevada Department of Transportation	All detectors should be on line in 05
Los Angeles, Anaheim, Riverside	
Caltrans District 12	85%. Remainder not in service due to lack of communication, construction, maintenance.
Caltrans District 7 - Los Angeles Transportation Management Center	80%
Caltrans District 8	80%
Louisville	
Kentucky Transportation Cabinet, District 5	80%
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	about 50 per cent

Appendix C: Average percent of detectors in service

Agency	Description
Minneapolis, St. Paul	
Minnesota Department of Transportation	About 80 percent
Nashville	
Tennessee Department of Transportation	95
New London	
Connecticut DOT	99%
New York, Northern New Jersey, Southwestern Connecticut	
Connecticut Department of Transportation(CT)	not yet installed
Palisades Interstate Park Commission	n/a
Port Authority of New York and New Jersey	95% or better
Transcom	95%
Oklahoma City	
Oklahoma Department of Transportation	0% Just testing now.
Orlando	
Florida Department of Transportation	80 to 90%
Philadelphia, Wilmington, Trenton	
New Jersey Turnpike -Traffic Operations Center	20%
Pennsylvania Department of Transportation District 6-0	Data on failure rates has not been archived. Currently working on installing new software.
Pennsylvania Turnpike Commission	all
South Jersey Transportation Authority/Atlantic City Expressway	85%
Phoenix	
Arizona Department of Transportation	65%
Pittsburgh, Beaver Valley	
Pennsylvania DOT- Pittsburgh Regional Traffic Management Center	90%
Pennsylvania Turnpike Commission	90%

Appendix C: Average percent of detectors in service

Agency	Description
Portland, Vancouver	
Oregon Department of Transportation	other than construction projects on the freeway itself about 95%
Providence, Pawtucket, Fall River	
Rhode Island Department of Transportation	99%
Salt Lake City, Ogden	
Utah Department of Transportation-Region 1	90%
Utah Department of Transportation-Region 2	90%
San Antonio	
Texas Department of Transportation - TransGuide Operations Center	95% are usually in service, all types
San Francisco, Oakland, San Jose	
Caltrans District 4	75%
Sarasota-Bradenton	
Sarasota/Manatee Metro Planning Organization	N/A- Done by local jurisdictions
Seattle, Tacoma	
Washington State Department of Transportation Northwest Region	more than 90 percent of the detectors are functioning.
Washington State DOT - Olympic Region Traffic Management Center	90%
Spokane	
Washington State Department of Transportation Eastern Region	None currently; active construction project to bring them online by end of summer 2004.
St. Louis	
Illinois Department of Transportation	90%
Missouri Department of Transportation	Communications issues at the detector location have caused problems to several of the initial detector units being monitored from the TMC. Current and future projects will replace the malfunctioning detectors. At any one time currently, 50% of the detector units (ones from the initial ITS build) are able to be monitored from the TMC.

Appendix C: Average percent of detectors in service

Agency	Description
Syracuse	
New York State Department of Transportation	8/4/04 - 0% Project to install dectors (I-81 ITS, Phase 1)is under construction, with estimated completion scheduled for Spring 2005.
Tampa, St. Petersburg, Clearwater	
Florida Department of Transportation	95%
Washington	
Virginia DOT - NOVA Smart Traffic Center	80%

Appendix D: Circumstances for metering traffic or closing ramps

Agency	Circumstance
Allentown, Bethlehem, Easton	
Pennsylvania Department of Transportation-Allentown	presently not in operation
Austin	
Texas Department of Transportation Austin District	gated for incident
Birmingham	
Alabama Department of Transportation	Hurricane Evacuation Route
El Paso	
Texas Department of Transportation-El Paso District	construction/maintenance projects
Grand Rapids	
Michigan Department of Transportation	Freeway Closure due to crash
Los Angeles, Anaheim, Riverside	
Caltrans District 8	For construction when warranted.
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	queue detection method
New Haven, Meriden	
Connecticut Department of Transportation	ramps are closed due to traffic incidents and diversion of traffic
New Orleans	
Greater New Orleans Expressway Commission	Severe inclement weather
New York, Northern New Jersey, Southwestern Connecticut	
Palisades Interstate Park Commission	Studies
Portland, Vancouver	
Oregon Department of Transportation	construction projects
San Antonio	
Texas Department of Transportation - TransGuide Operations Center	maintenance and construction activities

Appendix D: Circumstances for metering traffic or closing ramps

Agency	Circumstance
San Juan	
Puerto Rico Highway and Transportation Authority	not apply in PR
Sarasota-Bradenton	
Sarasota/Manatee Metro Planning Organization	None
Scranton, Wilkes-Barre	
Pennsylvania Department of Transportation	NA
Syracuse	
New York State Department of Transportation	construction activity

Appendix E: Other reasons for not deploying ramp metering

Agency	Reason
Albany, Schenectady, Troy	
New York State Department of Transportation	Feasibility will be address during the development of strategic plans.
Austin	
Texas Department of Transportation Austin District	some studies in the past, none recent
Buffalo, Niagara Falls	
New York State Department of Transportation	Currently, ramp meters are not deployed but future regional architectures and strategic plans will evaluated the opportunities for ramp metering.
Chicago, Gary, Lake County	
Indiana Department of Transportation Highway Operations	We will be conducting a study in Indy to determine if ramp metering can work. If so, it could be expanded to other areas of the state.
Detroit, Ann Arbor	
Michigan Department of Transportation	We currently have ramp metering installed on many of our freeways but we dont use it. We are evaluating options to begin using it again in the near future.
Kansas City	
Kansas Department of Transportation	Fear of public opinion. Project has been approved but not constructed.
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Hudson Valley Region 8	PERCEIVED POLITICAL RAMIFICATIONS. FUTURE STRATEGIC PLANS WILL ADDRESS RAMP METERING ALTERNATIVES TO SOME EXTENT.
San Juan	
Puerto Rico Highway and Transportation Authority	Enough space on our highways to implement that technology
Youngstown, Warren	
Ohio Department of Transportation-District 4	May be used in future if need determined by Interchange Modification Study.

Appendix F: Time when the ramp meter study will be conducted

Agency	Time
Boise City	
Ada County Highway District	2006
Chicago, Gary, Lake County	
Indiana Department of Transportation Highway Operations	In the next year or two.
El Paso	
Texas Department of Transportation-El Paso District	2006
Indianapolis	
Indiana Department of Transportation	2005 or 2006
Modesto	
Caltrans	A study has been conducted and ramp metering will be in place by 2008.
Orlando	
Florida Department of Transportation	unknown about study
Scranton, Wilkes-Barre	
Pennsylvania Department of Transportation	?
St. Louis	
Missouri Department of Transportation	2010
Stockton	
Caltrans	Ramp metering wil be in place by 2008
Tampa, St. Petersburg, Clearwater	
Florida Department of Transportation	9/04 to 6/05
Toledo	
Ohio Department of Transportation District 2	within 2 years

Appendix G: Other types of lane control

Agency	Type	Miles	Hours
Charlotte, Gastonia, Rock Hill			
Metrolina Regional Transportation Management Center (North Carolina DOT)	transit/ emergency	3	24
Greensboro, Winston-Salem, High Point			
North Carolina Department of Transportation-Greensboro	no trucks left lane	15	24/7
Honolulu			
Hawaii Department of Transportation	Contra-flow	8	AM peak period
New Orleans			
Greater New Orleans Expressway Commission	construction activities	24	as required
Tampa, St. Petersburg, Clearwater			
Florida Department of Transportation	tracks restricted to 2 right lanes	25	24/7
Washington			
Maryland State Highway Administration	Bus Lanes	20	24 Hrs

Appendix H: Other roadside technologies

Agency	Technology	Miles in 2004	by 2005
Charlotte, Gastonia, Rock Hill			
Metrolina Regional Transportation Management Center (North Carolina DOT)	Highway Advisory CB	8	8
Chicago, Gary, Lake County			
Indiana Department of Transportation Highway Operations	DMS	30	30
ISTHA	DMS	225	274
Cincinnati, Hamilton			
TRW/ARTIMIS OCC for Ohio Department of Transportation	Wizard (CB transmitter to transmit curve advisory)	4	4
Dallas, Fort Worth			
Texas Department of Transportation Fort Worth District (TransVISION)	DMS technology	80	100
Kansas City			
Kansas Department of Transportation	17 DMS	30	35
Las Vegas			
Nevada Department of Transportation	call boxes along I-15 LV to CA border	30	30
Minneapolis, St. Paul			
Minnesota Department of Transportation	CMS	10	10
New Orleans			
Greater New Orleans Expressway Commission	variable message signs	24	30
Oklahoma City			
Oklahoma Department of Transportation	CCTV and Web Cameras	18	22
Omaha			
Nebraska Department of Roads - District 2	511 system	10000	10000

Appendix H: Other roadside technologies

Agency	Technology	Miles in 2004	by 2005
Portland, Vancouver			
Oregon Department of Transportation	VMS	50	60
Providence, Pawtucket, Fall River			
Rhode Island Department of Transportation	MOBILITY TECHNOLOGY	40	
Scranton, Wilkes-Barre			
Pennsylvania Department of Transportation	VMS	200	
Tulsa			
Oklahoma Department of Transportation	6	6	12

Appendix I: Hours per day a message is displayed on the DMS

Agency	Hours per day
Albany, Schenectady, Troy	
New York State Thruway Authority	0
Albuquerque	
New Mexico State Highway Transportation	Less than 1 hour/day
Allentown, Bethlehem, Easton	
Pennsylvania Department of Transportation-Allentown	2
Pennsylvania Turnpike Commission	depends on the event
Asheville	
North Carolina DOT	1
Atlanta	
Georgia Department of Transportation	15
Bakersfield	
Caltrans District 6	2
Baltimore	
Maryland State Highway Administration	Depends on Incident Type
Baton Rouge	
Louisiana Department of Transportation	4
Beaumont-Port Arthur	
Texas Department of Transportation	12
Bellingham	
Washington State Department of Transportation	8
Birmingham	
Alabama Department of Transportation	Messages are only displayed during incidents
Boise City	
Ada County Highway District	.25

Appendix I: Hours per day a message is displayed on the DMS

Agency	Hours per day
Boston, Lawrence, Salem	
Massachusetts Highway Department	varies
Buffalo, Niagara Falls	
New York State Thruway Authority	12
Charlotte, Gastonia, Rock Hill	
Metrolina Regional Transportation Management Center (North Carolina DOT)	2
Chicago, Gary, Lake County	
Indiana Department of Transportation Highway Operations	12
ISTHA	24
Cincinnati, Hamilton	
TRW/ARTIMIS OCC for Ohio Department of Transportation	Varies up to 24 hours for construction
Cleveland, Akron, Lorain	
Ohio Department of Transportation District 12	1
Ohio Turnpike Commission	2
Columbia	
South Carolina DOT	.5
Columbus	
Ohio Department of Transportation	13 hrs. per weekday
Dallas, Fort Worth	
Texas Department of Transportation Dallas District	16
Daytona Beach	
Florida DOT	Only for incidents.
Denver, Boulder	
Colorado Department of Transportation	varies

Appendix I: Hours per day a message is displayed on the DMS

Agency	Hours per day
Des Moines	
Iowa DOT	varies greatly, typically will be on for 4-6 hours
Detroit, Ann Arbor	
Michigan Department of Transportation	24
El Paso	
Texas Department of Transportation-El Paso District	1-2 hrs, 2-4 months
Fort Wayne	
Indiana DOT	less than 1
Fresno	
Caltrans District 6	4
Greensboro, Winston-Salem, High Point	
North Carolina Department of Transportation-Greensboro	1-2
North Carolina Department of Transportation-Winston-Salem	varies
Hampton Roads	
Virginia Department of Transportation	Lane Control 24/7
Harrisburg, Lebanon, Carlisle	
Pennsylvania Turnpike Commission	2 to 12 hours
Hartford, New Britain, Middletown	
Connecticut Department of Transportation	12
Honolulu	
Hawaii Department of Transportation	0
Houston, Galveston, Brazoria	
Texas Department of Transportation-Houston District	5
Indianapolis	
Indiana Department of Transportation	4

Appendix I: Hours per day a message is displayed on the DMS

Agency	Hours per day
Kansas City	
Kansas Department of Transportation	2
Missouri Department of Transportation	varies, only for incidents and severe impacts
Las Vegas	
Nevada Department of Transportation	as needed
Little Rock, North Little Rock	
Arkansas State Highway and Transportation Department	12
Los Angeles, Anaheim, Riverside	
Caltrans District 12	1.2
Louisville	
Kentucky Transportation Cabinet, District 5	6
Miami, Fort Lauderdale	
Florida Department of Transportation Turnpike District	variable
Florida DOT-District 6 - SunGuide Transportation Management Center	message displayed throughout incident duration
Milwaukee, Racine	
Wisconsin Department of Transportation	24
Minneapolis, St. Paul	
Minnesota Department of Transportation	10
Nashville	
Tennessee Department of Transportation	17
New London	
Connecticut DOT	3
New Orleans	
Greater New Orleans Expressway Commission	24

Appendix I: Hours per day a message is displayed on the DMS

Agency	Hours per day
New York, Northern New Jersey, Southwestern Connecticut	
Connecticut Department of Transportation(CT)	10
New York State DOT-Hudson Valley Region 8	VARIES
New York State DOT-Region 11	24
New York State Thruway Authority	0
Port Authority of New York and New Jersey	3
Oklahoma City	
Oklahoma Department of Transportation	4
Omaha	
Nebraska Department of Roads - District 2	not known
Orlando	
Florida Department of Transportation	4-8, depends on the incident or congestion
Philadelphia, Wilmington, Trenton	
New Jersey Turnpike -Traffic Operations Center	it varies
Pennsylvania Department of Transportation District 6-0	N/A
South Jersey Transportation Authority/Atlantic City Expressway	24
Pittsburgh, Beaver Valley	
Pennsylvania DOT- Pittsburgh Regional Traffic Management Center	24
Pennsylvania Turnpike Commission	2 to 12 hours
Portland, Vancouver	
Oregon Department of Transportation	average <1 hr per sign
Providence, Pawtucket, Fall River	
Rhode Island Department of Transportation	2
Provo - Orem	
Utah Department of Transportation Region 3	This is all done centrally from out traffic contro

Appendix I: Hours per day a message is displayed on the DMS

Agency	Hours per day
Raleigh-Durham	
North Carolina Department of Transportation	2
Roanoke	
Virginia DOT	varies
Rochester	
New York State Department of Transportation	2 hours a day total
San Antonio	
Texas Department of Transportation - TransGuide Operations Center	20 hours
San Diego	
Caltrans District 11	2
San Juan	
Puerto Rico Highway and Transportation Authority	not on operation yet, only remote VMS for MOT
Sarasota-Bradenton	
Sarasota/Manatee Metro Planning Organization	Not Deployed Yet
Scranton, Wilkes-Barre	
Pennsylvania Department of Transportation	3 hours
Seattle, Tacoma	
Washington State Department of Transportation Northwest Region	4 hrs
Washington State DOT - Olympic Region Traffic Management Center	3
Spokane	
Washington State Department of Transportation Eastern Region	2
Springfield(MO)	
Missouri DOT	0.25

Appendix I: Hours per day a message is displayed on the DMS

Agency	Hours per day
St. Louis	
Illinois Department of Transportation	24
Missouri Department of Transportation	2.33
Syracuse	
New York State Department of Transportation	varies by need
New York State Thruway Authority	0
Tampa, St. Petersburg, Clearwater	
Florida Department of Transportation	2
Toledo	
Ohio Department of Transportation District 2	0
Tucson	
Arizona Department of Transportation	varies
Tulsa	
Oklahoma Department of Transportation	4
Washington	
Maryland State Highway Administration	Depends on Incident Type
Washington	
Virginia DOT - NOVA Smart Traffic Center	24

Appendix J: Other types of information displayed

Agency	Information displayed
Albany, Schenectady, Troy	
New York State Department of Transportation	Amber alerts.
Albuquerque	
New Mexico State Highway Transportation	Amber alerts
Atlanta	
Georgia Department of Transportation	trip times, AMBER alerts, ozone alerts, safety campaigns.
Baltimore	
Maryland State Highway Administration	Amber Alert and Hurricane Evacuation
Beaumont-Port Arthur	
Texas Department of Transportation	Traffic Safety Messages Hurricane Evacuation Information Amber Alert Information Emergency Situation called by the Governor (Shuttle Explosion)
Boise City	
Ada County Highway District	Air Quality Alerts
Charlotte, Gastonia, Rock Hill	
Metrolina Regional Transportation Management Center (North Carolina DOT)	Amber, Ozone, Move Over and Fender Bender laws
Chicago, Gary, Lake County	
Indiana Department of Transportation Highway Operations	AMBER Alerts as well as carpooling messages as a part of the Chicago area carpooling effort.
Indiana Department of Transportation La Porte District	Amber Alerts
ISTHA	Amber Alerts
Cincinnati, Hamilton	
TRW/ARTIMIS OCC for Ohio Department of Transportation	AMBER Alerts, and Public Service Announcements when authorized by FHWA, and /or the jurisdictional state Department of Transportation
Columbia	
South Carolina DOT	Amber Alerts
Columbus	
Ohio Department of Transportation	Travel times
Dallas, Fort Worth	
Texas Department of Transportation Fort Worth District (TransVISION)	Amber Alert, Emergency Event
Denver, Boulder	
Colorado Department of Transportation	Fire danger/fire bans
Des Moines	
Iowa DOT	Amber Alerts

Appendix J: Other types of information displayed

Agency	Information displayed
Detroit, Ann Arbor	
Michigan Department of Transportation	Safety messages from office of highway safety planning (drink and drive messages, etc.).
El Paso	
Texas Department of Transportation-El Paso District	AMBER Alert
Houston, Galveston, Brazoria	
Texas Department of Transportation-Houston District	travel times, amber alerts
Indianapolis	
Indiana Department of Transportation	AMBER Alerts on occasion.
Kansas City	
Kansas Department of Transportation	AMBER, National and Ozone alerts.
Missouri Department of Transportation	ozone, amber alerts
Las Vegas	
Nevada Department of Transportation	Amber alerts
Los Angeles, Anaheim, Riverside	
Caltrans District 12	amber alert, public safety
Caltrans District 8	Amber Alerts
Miami, Fort Lauderdale	
Florida Department of Transportation Turnpike District	Amber Alerts
Florida DOT-District 6 - SunGuide Transportation Management Center	AMBER Alert(missing children) information
Milwaukee, Racine	
Wisconsin Department of Transportation	travel times
Modesto	
Caltrans	Amber Alert, Chain Control
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Hudson Valley Region 8	AMBERT ALERTS, SEAT BELT CAMPAIGNS, GRIDLOCK ALTERS
New York State DOT-Long Island Region 10	Amber alert.
New York State DOT-Region 11	Child abduction(Amber)Alerts Ozone action day alerts
Orlando	
Florida Department of Transportation	abmer alerts / child abductions
Philadelphia, Wilmington, Trenton	
South Jersey Transportation Authority/Atlantic City Expressway	Tunnel is open or closed. Overheight detection, also.
Phoenix	
Arizona Department of Transportation	amber alerts, air quality

Appendix J: Other types of information displayed

Agency	Information displayed
Provo - Orem	
Utah Department of Transportation Region 3	Amber alert
Raleigh-Durham	
North Carolina Department of Transportation	Amber Alerts Ozone Alerts
Rochester	
New York State Department of Transportation	Amber Alert, Ozone Alert, NYS Police Seat Belt Campaign, Targeted Enforcement Campaigns
Salt Lake City, Ogden	
Utah Department of Transportation-Region 1	AMBER Alerts
Utah Department of Transportation-Region 2	AMBER Alerts, Traffic Regs such as 4x4 or Chains Required
San Antonio	
Texas Department of Transportation - TransGuide Operations Center	Travel times
San Francisco, Oakland, San Jose	
Caltrans District 4	Amber alerts
Scranton, Wilkes-Barre	
Pennsylvania Department of Transportation	Education and safety type messages.
Seattle, Tacoma	
Washington State Department of Transportation Northwest Region	AMBER alert (child abduction alert)
Washington State DOT - Olympic Region Traffic Management Center	Amber Alerts
Springfield(MO)	
Missouri DOT	Currently the DMS only displays information regarding a train crossing.
St. Louis	
Illinois Department of Transportation	Amber alerts
Stockton	
Caltrans	Amber Alert, Chain Control
Syracuse	
New York State Department of Transportation	Amber alerts, Buckle Up campaigns.
Washington	
Maryland State Highway Administration	Amber Alert, Hurricane Evacuation
Washington	
Virginia DOT - NOVA Smart Traffic Center	HOV regulations

Appendix K: Other methods used to distribute information to the public

Agency	Method	Distribure in 2004	by 2005
Albany, Schenectady, Troy			
New York State Department of Transportation	Web based access to traffic video will be provided via central server.	☑	☑
Austin			
Texas Department of Transportation Austin District	HAR	☑	☑
Beaumont-Port Arthur			
Texas Department of Transportation	Radio, newspaper, HAR, DMSs.	☑	☑
Buffalo, Niagara Falls			
New York State Department of Transportation	Web based access to traffic video will be provided via central server.	☐	☑
Cincinnati, Hamilton			
TRW/ARTIMIS OCC for Ohio Department of Transportation	Wizard (CB radio transmitter to trasmit curve warning)	☑	☑
Columbia			
South Carolina DOT	working on 511	☐	☐
Dallas, Fort Worth			
Texas Department of Transportation Fort Worth District (TransVISION)	Video feed to 911 Operation center	☑	☑
Indianapolis			
Indiana Department of Transportation	Video feed to local TV stations	☐	☑
Little Rock, North Little Rock			
Arkansas State Highway and Transportation Department	Media	☐	☐
New Orleans			
Greater New Orleans Expressway Commission	highway advisory radio	☑	☑
New York, Northern New Jersey, Southwestern Connecticut			
New York State DOT-Hudson Valley Region 8	Shadow traffic / CMS	☐	☐
Omaha			
Nebraska Department of Roads - District 2	511, Highway Condition and Reporting System	☐	☐
Orlando			
Florida Department of Transportation	amber alerts	☑	☑
Scranton, Wilkes-Barre			
Pennsylvania Department of Transportation	AAA and Focus 81 community groups	☑	☐
Syracuse			
New York State Department of Transportation	kiosks located in Interstate rest area	☐	☐

Appendix L: Other types of information distributed to the public/media

Agency	Information	to the Public		to the Media	
		in 2004	by 2005	in 2004	by 2005
Albany, Schenectady, Troy					
New York State Department of Transportation	Emergency response information.	☐	☑	☑	☐
Buffalo, Niagara Falls					
New York State Department of Transportation	Emergency response information.	☐	☑	☐	☑
Cincinnati, Hamilton					
TRW/ARTIMIS OCC for Ohio Department of Transportation	AMBER Alerts	☑	☑	☑	☑
New York, Northern New Jersey, Southwestern Connecticut					
New York State DOT-Long Island Region 10	Other transportation safety and optimization information.	☑	☐	☑	☐
Phoenix					
Arizona Department of Transportation	Amber Alerts	☑	☑	☑	☑
Rochester					
New York State Department of Transportation	Amber Alert	☐	☐	☑	☐
Sarasota-Bradenton					
Sarasota/Manatee Metro Planning Organization	N/A	☐	☐	☐	☐
Scranton, Wilkes-Barre					
Pennsylvania Department of Transportation	Safety and education	☑	☑	☑	☑

Appendix M: Planned deployment dates for the 511 system

Agency	Date
Albany, Schenectady, Troy	
New York State Department of Transportation	statewide deployment planned late 2005, but not local to the survey area
Albuquerque	
New Mexico State Highway Transportation	November 2004
Allentown, Bethlehem, Easton	
Pennsylvania Turnpike Commission	Dependent on PennDOT
Atlanta	
Georgia Department of Transportation	2005
Austin	
Texas Department of Transportation Austin District	undetermined
Baton Rouge	
Louisiana Department of Transportation	6/2005
Birmingham	
Alabama Department of Transportation	2006
Boise City	
Ada County Highway District	2005
Boston, Lawrence, Salem	
Massachusetts Highway Department	2005
Buffalo, Niagara Falls	
New York State Department of Transportation	Late 2005
Charlotte, Gastonia, Rock Hill	
Metrolina Regional Transportation Management Center (North Carolina DOT)	Sept 04
Chattanooga	
Tennessee DOT	2005
Chicago, Gary, Lake County	
Indiana Department of Transportation Highway Operations	Sometime in 2005
Columbia	
South Carolina DOT	2006
Denver, Boulder	
Colorado Department of Transportation	October 2004
El Paso	
Texas Department of Transportation-El Paso District	2009
Fort Myers	
Florida DOT	2006/2007

Appendix M: Planned deployment dates for the 511 system

Agency	Date
Greensboro, Winston-Salem, High Point	
North Carolina Department of Transportation-Winston-Salem	summer 2004
Hampton Roads	
Virginia Department of Transportation	11/04
Hartford, New Britain, Middletown	
Connecticut Department of Transportation	2007
Indianapolis	
Indiana Department of Transportation	Sometime in 2005
Jacksonville	
Florida Department of Transportation	2006
Kansas City	
Kansas Department of Transportation	January 2004
Missouri Department of Transportation	TBD
Knoxville	
Tennessee Department of Transportation	2005
Las Vegas	
Nevada Department of Transportation	12/2005
Los Angeles, Anaheim, Riverside	
Caltrans District 8	Working on FSR
Memphis	
Tennessee Department of Transportation	2005
Milwaukee, Racine	
Wisconsin Department of Transportation	05/2005
Nashville	
Tennessee Department of Transportation	2005
New Haven, Meriden	
Connecticut Department of Transportation	pending
New London	
Connecticut DOT	2007-2008
New York, Northern New Jersey, Southwestern Connecticut	
Connecticut Department of Transportation(CT)	2006
New York State DOT-Hudson Valley Region 8	Not sure.
New York State DOT-Long Island Region 10	Late 2005
Oklahoma City	
Oklahoma Department of Transportation	2007

Appendix M: Planned deployment dates for the 511 system

Agency	Date
Omaha	
Nebraska Department of Roads - District 2	2002
Pittsburgh, Beaver Valley	
Pennsylvania Turnpike Commission	based on PADOT
Providence, Pawtucket, Fall River	
Rhode Island Department of Transportation	2004
Raleigh-Durham	
North Carolina Department of Transportation	August 2004
Richmond, Petersburg	
Virginia DOT - Richmond Smart Traffic Center	February 2005
Rochester	
New York State Department of Transportation	See Main Office Albany for info
San Antonio	
Texas Department of Transportation - TransGuide Operations Center	will be part of statewide deployment, currently in early planning stages
Seattle, Tacoma	
Washington State Department of Transportation Northwest Region	October 2003
Springfield	
Massachusetts Highway	2005
St. Louis	
Illinois Department of Transportation	2006
Missouri Department of Transportation	2005
Tulsa	
Oklahoma Department of Transportation	2007
Washington	
Maryland State Highway Administration	Late 2005
Washington	
Virginia DOT - NOVA Smart Traffic Center	2006

Appendix N: 511 premium service optional component

Agency	Component
Albany, Schenectady, Troy	
New York State Department of Transportation	Winning bidder for service will establish fee structure for services. No fee services will be available via the internet and multicast broadcast on demand.
Austin	
Texas Department of Transportation Austin District	content is undetermined
Buffalo, Niagara Falls	
New York State Department of Transportation	Winning bidder for service will establish fee structure for services. No fee services will be available via the internet and multicast broadcasts on demand.
Kansas City	
Missouri Department of Transportation	TBD
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Hudson Valley Region 8	Wining bidder for service will establish fee structure for services. No fee services will be available via the internet and multcast broadcasts on demand.
New York State DOT-Long Island Region 10	Winning bidder for service will establish fee structure for services. No fee services will be available at least by internet and multicast broadcast on demand.
Orlando	
Florida Department of Transportation	Specia Event Info, Amber Alerts

Appendix O: 511 Information Service Provider

Agency	ISP
Boston, Lawrence, Salem	
Massachusetts Highway Department	Smart Route Systems
Phoenix	
Arizona Department of Transportation	Mobility Tech, Metro Network, Total Traffic
Springfield	
Massachusetts Highway	Smart Routes Systems
Tampa, St. Petersburg, Clearwater	
Florida Department of Transportation	Mobility Technologies, aka Traffic Pulse Network

Appendix P: 511 other sources of information

Agency	Source
Albany, Schenectady, Troy	
New York State Department of Transportation	Scope of services to be negotiated with bidders to provide the service.
Buffalo, Niagara Falls	
New York State Department of Transportation	Scope of services to be negotiated with bidders to provide the service.
Eugene	
Oregon Department of Transportation	Contact Dan Dollar 503-378-
Indianapolis	
Indiana Department of Transportation	State Department of Tourism
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Hudson Valley Region 8	Scope of services to be negotiated with bidders to provide the service.
New York State DOT-Long Island Region 10	Scope of services to be negotiated with bidders to provide the service.
Seattle, Tacoma	
Washington State DOT - Olympic Region Traffic Management Center	Video detectors
Spokane	
Washington State Department of Transportation Eastern Region	Agency Public Information Officer for construction project information

Appendix Q: Other service patrol service hours

Agency	Service hours
Albany, Schenectady, Troy	
New York State Department of Transportation	peak hours and start/end of major holiday weekends
Albuquerque	
New Mexico State Highway Transportation	6:00 - 19:00
Austin	
Texas Department of Transportation Austin District	6 a - 10 p
Baltimore	
Maryland State Highway Administration	wkdays 5:00AM to 9:00PM; Any other time-On Call
Baton Rouge	
Louisiana Department of Transportation	16 hours
Charlotte, Gastonia, Rock Hill	
Metrolina Regional Transportation Management Center (North Carolina DOT)	0530-1930
Chattanooga	
Tennessee DOT	5am-10pm m-f,8am-8pm s-s
Chicago, Gary, Lake County	
ISTHA	M-F 5am-8pm
Cincinnati, Hamilton	
TRW/ARTIMIS OCC for Ohio Department of Transportation	6 AM to 7 PM (3 veh. AM shift and 3 veh. PM Shift)
Cleveland, Akron, Lorain	
Ohio Department of Transportation District 12	5:am to 8:30 am
Columbia	
South Carolina DOT	peak hrs: 7am-7pm 7 days/wk.
Columbus	
Ohio Department of Transportation	5 am - 8 pm
Dallas, Fort Worth	
Texas Department of Transportation Dallas District	17 hours/day
Des Moines	
Iowa DOT	5:30 AM to 8:00 PM Monday thru Friday
Detroit, Ann Arbor	
Michigan Department of Transportation	6a - 11p M-F
El Paso	
Texas Department of Transportation-El Paso District	M-F 6:30 am - 7:30 pm
Eugene	
Oregon Department of Transportation	on call 24/7
Fort Wayne	
Indiana DOT	whenever available

Appendix Q: Other service patrol service hours

Agency	Service hours
Greensboro, Winston-Salem, High Point	
North Carolina Department of Transportation-Greensboro	6am until 6pm
North Carolina Department of Transportation-Winston-Salem	m-f, 6a-9p
Hampton Roads	
Virginia Department of Transportation	15 hours/day M-F
Hartford, New Britain, Middletown	
Connecticut Department of Transportation	6 AM to 7 PM
Houston, Galveston, Brazoria	
Texas Department of Transportation-Houston District	M-F, 6AM-10PM
Indianapolis	
Indiana Department of Transportation	5 a.m. to 8 p.m. in three shifts
Las Vegas	
Nevada Department of Transportation	14 hrs. M-F 6 hrs. Sat.
Memphis	
Tennessee Department of Transportation	5am-10pm m-f,8am-8pm s-s
Minneapolis, St. Paul	
Minnesota Department of Transportation	Peak/off peak weekdays; limited on weekends
Nashville	
Tennessee Department of Transportation	5-10 M-F,8-8 S-S
New Haven, Meriden	
Connecticut Department of Transportation	5:30 am - 7:00 pm
New London	
Connecticut DOT	7 AM - 7 PM
New York, Northern New Jersey, Southwestern Connecticut	
Connecticut Department of Transportation(CT)	7 AM to 7 PM
Philadelphia, Wilmington, Trenton	
Pennsylvania Department of Transportation District 6-0	15hrs
Provo - Orem	
Utah Department of Transportation Region 3	7am to 7pm, on-call, special events
Raleigh-Durham	
North Carolina Department of Transportation	M-F 0600-2100
Salt Lake City, Ogden	
Utah Department of Transportation-Region 1	7am to 7pm, on-call, special events
Utah Department of Transportation-Region 2	7am to 7pm & on-call & special events
Spokane	
Washington State Department of Transportation Eastern Region	M-F 5:30a-10:30p; Sa-Su 7a-5:30p

Appendix R: How long have you been archiving?

Agency	Time
Albany, Schenectady, Troy	
New York State Department of Transportation	5 years
Atlanta	
Georgia Department of Transportation	1996
Austin	
Texas Department of Transportation Austin District	1999
Baton Rouge	
Louisiana Department of Transportation	2 years
Bellingham	
Washington State Department of Transportation	2 years
Boise City	
Ada County Highway District	5 months
Buffalo, Niagara Falls	
New York State Department of Transportation	year++
Charlotte, Gastonia, Rock Hill	
Metrolina Regional Transportation Management Center (North Carolina DOT)	4 years
Chicago, Gary, Lake County	
Indiana Department of Transportation Highway Operations	2 years
Indiana Department of Transportation La Porte District	3 years
ISTHA	1 year
Cincinnati, Hamilton	
TRW/ARTIMIS OCC for Ohio Department of Transportation	since 1997
Dallas, Fort Worth	
Texas Department of Transportation Dallas District	1-1/2 years
Texas Department of Transportation Fort Worth District (TransVISION)	Since 2000
Dayton, Springfield	
Ohio Department of Transportation District 7	10+ years
Daytona Beach	
Florida DOT	1994
Detroit, Ann Arbor	
Michigan Department of Transportation	3 years
El Paso	
Texas Department of Transportation-El Paso District	September 2000
Fresno	
Caltrans District 6	6 Years

Appendix R: How long have you been archiving?

Agency	Time
Hampton Roads	
Virginia Department of Transportation	5 years
Hartford, New Britain, Middletown	
Connecticut Department of Transportation	six months
Houston, Galveston, Brazoria	
Texas Department of Transportation-Houston District	7 yrs.
Indianapolis	
Indiana Department of Transportation	2 years
Kansas City	
Kansas Department of Transportation	January 2004
Missouri Department of Transportation	since 1/1/04
Los Angeles, Anaheim, Riverside	
Caltrans District 12	3 years
Caltrans District 7 - Los Angeles Transportation Management Center	October 1997
Caltrans District 8	4 years
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	from the start (since 1997) weve been archiving operations data
Milwaukee, Racine	
Wisconsin Department of Transportation	1 year
Minneapolis, St. Paul	
Minnesota Department of Transportation	10-15 years
New London	
Connecticut DOT	over 20 years
New Orleans	
Greater New Orleans Expressway Commission	10 years
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Long Island Region 10	Years++
New York State DOT-Region 11	depends when system installed
Port Authority of New York and New Jersey	3 years
Transcom	1987
Orlando	
Florida Department of Transportation	early 1990s

Appendix R: How long have you been archiving?

Agency	Time
Philadelphia, Wilmington, Trenton	
New Jersey DOT- Traffic Operations Center South	10 years
New Jersey Turnpike -Traffic Operations Center	since 1952
South Jersey Transportation Authority/Atlantic City Expressway	3 years
Phoenix	
Arizona Department of Transportation	10 years
Portland, Vancouver	
Oregon Department of Transportation	Since 2000
Provo - Orem	
Utah Department of Transportation Region 3	5 years
Rochester	
New York State Department of Transportation	10 yrs
Salt Lake City, Ogden	
Utah Department of Transportation-Region 1	5 years
Utah Department of Transportation-Region 2	5 years
San Antonio	
Texas Department of Transportation - TransGuide Operations Center	9 years
San Diego	
Caltrans District 11	3 yrs
San Francisco, Oakland, San Jose	
Caltrans District 4	3 years
Scranton, Wilkes-Barre	
Pennsylvania Department of Transportation	4 years
Seattle, Tacoma	
Washington State Department of Transportation Northwest Region	20 years
St. Louis	
Illinois Department of Transportation	1 year
Missouri Department of Transportation	1 year
Washington	
Maryland State Highway Administration	1997
Washington	
Virginia DOT - NOVA Smart Traffic Center	1 year

Appendix S: Size of the data archive database

Agency	Database size
Bellingham	
Washington State Department of Transportation	52 MB
Columbus	
Ohio Department of Transportation	12 GB
Dallas, Fort Worth	
Texas Department of Transportation Fort Worth District (TransVISION)	300 GB - projected for 5 years
Dayton, Springfield	
Ohio Department of Transportation District 7	I do not know
Hampton Roads	
Virginia Department of Transportation	?
Houston, Galveston, Brazoria	
Texas Department of Transportation-Houston District	5 GB
Kansas City	
Missouri Department of Transportation	terrabytes
New London	
Connecticut DOT	unknown
San Antonio	
Texas Department of Transportation - TransGuide Operations Center	2 terra bytes, capability of 8 terrabytes of storage
Seattle, Tacoma	
Washington State Department of Transportation Northwest Region	giga bites ;-)

Appendix T: Other methods used for archiving data

Agency	Method
Allentown, Bethlehem, Easton	
Pennsylvania Department of Transportation-Allentown	PAPER FORM
Chicago, Gary, Lake County	
ISTHA	RTMS data are archived by Mobility Technologies as part of the ITIP Grant.
Cincinnati, Hamilton	
TRW/ARTIMIS OCC for Ohio Department of Transportation	flat files
Columbus	
Ohio Department of Transportation	We have Dynac ITS system provided by Transdyn Control Inc. The History file system is capable of storing data up to 1 year. Also we have a sperate Sybase server, but it is not user frindly.
El Paso	
Texas Department of Transportation-El Paso District	E-mail sent for Incident Management
Houston, Galveston, Brazoria	
Texas Department of Transportation-Houston District	RIMS - Regional Inc. Mgmt. Sys.
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	Incident and Road Ranger Data
New York, Northern New Jersey, Southwestern Connecticut	
Palisades Interstate Park Commission	n/a
Philadelphia, Wilmington, Trenton	
South Jersey Transportation Authority/Atlantic City Expressway	Keep traffic volumes, E-ZPass data and other traffic data in Excel spreadsheets. Data is analyzed to observe and recognize trends for future planning.
Scranton, Wilkes-Barre	
Pennsylvania Department of Transportation	ITS useage is record by hand on a paper worksheet then entered into an ACCESS computer data base. Likewise O&M costs, and equipment inventory is captured in basically the same way.
St. Louis	
Missouri Department of Transportation	Hard Copies of data for Motorist Assist Patrols, US 67 Tunnel Incidents, DMS Usage. No sensor data is archived from ITS sensors at this time.

Appendix U: Other methods used to make archived data available

Agency	Method
Albany, Schenectady, Troy	
New York State Department of Transportation	As needed based on request.
Boise City	
Ada County Highway District	Direct user interface to state universities, University of Idaho and Boise State University.
Buffalo, Niagara Falls	
New York State Department of Transportation	Floppy, CD or other method depending on request and FOIL guidelines.
Columbus	
Ohio Department of Transportation	Excel spreadsheet format.
Houston, Galveston, Brazoria	
Texas Department of Transportation-Houston District	electronic
Kansas City	
Missouri Department of Transportation	Plan to make info available
Los Angeles, Anaheim, Riverside	
Caltrans District 12	text, rtf, pdf
Caltrans District 7 - Los Angeles Transportation Management Center	Tape
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	hard drive stored data
Milwaukee, Racine	
Wisconsin Department of Transportation	written request
Minneapolis, St. Paul	
Minnesota Department of Transportation	Access databases
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Long Island Region 10	Format consistent with request where feasible.
Palisades Interstate Park Commission	n/a
Provo - Orem	
Utah Department of Transportation Region 3	Through secured network access to archived database
Rochester	
New York State Department of Transportation	Data is limited to traffic volume and classification reports, available on the web (I think) and RWIS data, available via paper report
Salt Lake City, Ogden	
Utah Department of Transportation-Region 1	Through secured network access to archived database
Utah Department of Transportation-Region 2	Through secured network access to archived database
St. Louis	
Missouri Department of Transportation	Monthly Documentation of the above data.

Appendix V: Other portion of transportation network where data is archived

Agency	Portion
Bellingham	
Washington State Department of Transportation	Border crossings
Buffalo, Niagara Falls	
New York State Department of Transportation	For selection incident and operations data and locations.
Chicago, Gary, Lake County	
ISTHA	All data processed through the TIMS is archived on a 30 day basis.
Daytona Beach	
Florida DOT	Interstates
Detroit, Ann Arbor	
Michigan Department of Transportation	The entire portion of the network that has sensors installed (180-200 miles of freeway)
Greensboro, Winston-Salem, High Point	
North Carolina Department of Transportation-Winston-Salem	motorist patrol assists, dms and har activations
Houston, Galveston, Brazoria	
Texas Department of Transportation-Houston District	where available
Kansas City	
Missouri Department of Transportation	entire system
Los Angeles, Anaheim, Riverside	
Caltrans District 7 - Los Angeles Transportation Management Center	Entire freeway system
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	freeway system in District 6s jurisdiction
Modesto	
Caltrans	State highway system only
New York, Northern New Jersey, Southwestern Connecticut	
Palisades Interstate Park Commission	n/a
Port Authority of New York and New Jersey	One specific bridge facility at this time
Omaha	
Nebraska Department of Roads - District 2	Interstate and state system
Orlando	
Florida Department of Transportation	interstate roads
Pittsburgh, Beaver Valley	
Pennsylvania Turnpike Commission	Will be in the future for rural and metropolitan regions
Sarasota-Bradenton	
Sarasota/Manatee Metro Planning Organization	N/A

Appendix V: Other portion of transportation network where data is archived

Agency	Portion
Stockton	
Caltrans	State highway system only
Washington	
Maryland State Highway Administration	All Interstate highways, US Routes and State highways.
Washington	
Virginia DOT - NOVA Smart Traffic Center	archived the data of the whole system

Appendix W: Other information being collected/archived

Agency	Information	Collect	Archive
Scranton, Wilkes-Barre			
Pennsylvania Department of Transportation	ITS equiptment useage and O&M costs	☐	☐

Appendix X: Other time spacing of sensor readings

Agency	Time spacing
Albany, Schenectady, Troy	
New York State Department of Transportation	every 30 seconds
New York State Thruway Authority	daily
Chicago, Gary, Lake County	
Indiana Department of Transportation La Porte District	30 seconds
ISTHA	Data is collected for 5 minutes and updated every minute.
Cincinnati, Hamilton	
TRW/ARTIMIS OCC for Ohio Department of Transportation	every 30 seconds from loop and radar sensors and 1 minute from video sensors
Dayton, Springfield	
Ohio Department of Transportation District 7	various
Daytona Beach	
Florida DOT	15 seconds
Des Moines	
Iowa DOT	Every 30 seconds
Detroit, Ann Arbor	
Michigan Department of Transportation	1 minute
Grand Rapids	
Michigan Department of Transportation	Uncertain. This is covered by another unit of the Michigan Department of Transportation, Transportation Planning.
Hartford, New Britain, Middletown	
Connecticut Department of Transportation	30 seconds
Houston, Galveston, Brazoria	
Texas Department of Transportation-Houston District	depends on data and source
Huntsville	
Alabama DOT	unknown
Indianapolis	
Indiana Department of Transportation	Some sensors will be on-line later this year - still in first phase of deployment.
Kansas City	
Missouri Department of Transportation	30 seconds
Los Angeles, Anaheim, Riverside	
Caltrans District 12	30 seconds
Caltrans District 7 - Los Angeles Transportation Management Center	every 30 seconds
Caltrans District 8	30 seconds

Appendix X: Other time spacing of sensor readings

Agency	Time spacing
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	every 60 seconds
Modesto	
Caltrans	per vehicle
New London	
Connecticut DOT	unknown. data is gathered and collected for planning purposes
New York, Northern New Jersey, Southwestern Connecticut	
Palisades Interstate Park Commission	n/a
Oklahoma City	
Oklahoma Department of Transportation	every 10 seconds
Omaha	
Nebraska Department of Roads - District 2	Currently planning sensor spacing and deployment
Orlando	
Florida Department of Transportation	every 15 seconds
Philadelphia, Wilmington, Trenton	
New Jersey DOT- Traffic Operations Center South	Every 30 seconds
Pittsburgh, Beaver Valley	
Pennsylvania DOT- Pittsburgh Regional Traffic Management Center	Every Minute
Providence, Pawtucket, Fall River	
Rhode Island Department of Transportation	60 SECONDS
Richmond, Petersburg	
Virginia DOT - Richmond Smart Traffic Center	5 minutes
Rochester	
New York State Department of Transportation	Do not know.
San Diego	
Caltrans District 11	30 seconds
San Francisco, Oakland, San Jose	
Caltrans District 4	30 seconds
Sarasota-Bradenton	
Sarasota/Manatee Metro Planning Organization	Not Involved
Scranton, Wilkes-Barre	
Pennsylvania Department of Transportation	NA
Spokane	
Washington State Department of Transportation Eastern Region	Parameter can be set; no decision yet made on time spacing.

Appendix X: Other time spacing of sensor readings

Agency	Time spacing
St. Louis	
Missouri Department of Transportation	every 30 seconds
Stockton	
Caltrans	per vehicle, every 3 minutes
Tucson	
Arizona Department of Transportation	daily
Tulsa	
Oklahoma Department of Transportation	every 10 seconds
Washington	
Maryland State Highway Administration	Every Five Minutes

Appendix Y: Other time resolutions of archived data

Agency	Time resolution
Albany, Schenectady, Troy	
New York State Department of Transportation	archived resolution is 15 minute intervals for the detectors
Atlanta	
Georgia Department of Transportation	aggregated using 5 minute intervals
Bellingham	
Washington State Department of Transportation	Aggregated using 5 minute intervals
Buffalo, Niagara Falls	
New York State Department of Transportation	Frequencies have changed over time based on available storage on servers and available media.
Charlotte, Gastonia, Rock Hill	
Metrolina Regional Transportation Management Center (North Carolina DOT)	5 minute
Cincinnati, Hamilton	
TRW/ARTIMIS OCC for Ohio Department of Transportation	15 minute intervals
Dayton, Springfield	
Ohio Department of Transportation District 7	various
Grand Rapids	
Michigan Department of Transportation	Same as #33
Los Angeles, Anaheim, Riverside	
Caltrans District 8	5 min/15 min/hour/day
Louisville	
Kentucky Transportation Cabinet, District 5	15 MINUTE intervals
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	not archiving
Modesto	
Caltrans	1 hour intervals or 15 minute intervals
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Hudson Valley Region 8	15 minute intervals.
New York State DOT-Long Island Region 10	Available on request.
Port Authority of New York and New Jersey	Aggregated to 15 minute samples
Transcom	15 minutes
Oklahoma City	
Oklahoma Department of Transportation	hourly
Philadelphia, Wilmington, Trenton	
New Jersey DOT- Traffic Operations Center South	Data can be collected in increments as small as 5 minutes.

Appendix Y: Other time resolutions of archived data

Agency	Time resolution
Portland, Vancouver	
Oregon Department of Transportation	Previously 15 minute aggregate. Now 20 second data archived.
Provo - Orem	
Utah Department of Transportation Region 3	15 minutes
Richmond, Petersburg	
Virginia DOT - Richmond Smart Traffic Center	5 minute intervals
Rochester	
New York State Department of Transportation	Do not know
Salt Lake City, Ogden	
Utah Department of Transportation-Region 1	15 minutes
Utah Department of Transportation-Region 2	15 minutes
Sarasota-Bradenton	
Sarasota/Manatee Metro Planning Organization	N/A
Scranton, Wilkes-Barre	
Pennsylvania Department of Transportation	NA
Stockton	
Caltrans	1 hour intervals, 15 minute intervals
Tulsa	
Oklahoma Department of Transportation	in to hourly data
Washington	
Maryland State Highway Administration	Every Five Minutes

Appendix Z: Other information being collected/archived from other sources

Agency	Information	Collect	Archive
New York, Northern New Jersey, Southwestern Connecticut			
New York State DOT-Long Island Region 10	Multi-agency organization coordinates collection distribution and archiving.	☑	☐

Appendix AA: Other uses of data

Agency	Use
Daytona Beach	
Florida DOT	Clearance Times of incidents
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	N/A

Appendix AB: Other components of a formal multi-agency initiative

Agency	Component
Albany, Schenectady, Troy	
New York State Department of Transportation	Plan deployments based on regional architectures.
Buffalo, Niagara Falls	
New York State Department of Transportation	Diversion route alternatives.
Dallas, Fort Worth	
Texas Department of Transportation Fort Worth District (TransVISION)	Traffic Management Team (TMT), Informal Event Team.
Philadelphia, Wilmington, Trenton	
New Jersey DOT- Traffic Operations Center South	Provide pre-event information to public using CMS and media.

Appendix AC: Other special events

Agency	Special event
Buffalo, Niagara Falls	
New York State Department of Transportation	Truck acces routes.
El Paso	
Texas Department of Transportation-El Paso District	Snow/ice plan
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	special events/emergencies
Spokane	
Washington State Department of Transportation Eastern Region	air shows, road races, parades

Appendix AD: Other events that require the implementation of the plan

Agency	Event	Require	Miles
El Paso			
Texas Department of Transportation-El Paso District	Potential jumper	☑	
Janesville-Beloit			
Wisconsin Department of Transportation District 1	congestion greater then 45 minutes	☐	
New York, Northern New Jersey, Southwestern Connecticut			
New York State DOT-Hudson Valley Region 8	Hazardous facility evacuation routes.	☑	10

Appendix AE: Other criteria that must be met to implement the alternate route plan

Agency	Criteria
Detroit, Ann Arbor	
Michigan Department of Transportation	No alternate route plans exist.
Fort Wayne	
Indiana DOT	total blockage
Janesville-Beloit	
Wisconsin Department of Transportation District 1	Delay of greater of 45 Minutes
Kansas City	
Missouri Department of Transportation	Coordination with city entities
Philadelphia, Wilmington, Trenton	
New Jersey DOT- Traffic Operations Center South	Day of Week.
Pittsburgh, Beaver Valley	
Pennsylvania DOT- Pittsburgh Regional Traffic Management Center	Limited Access
Salt Lake City, Ogden	
Utah Department of Transportation-Region 2	Situation, location, impact
Tucson	
Arizona Department of Transportation	Districts discretion
Youngstown, Warren	
Ohio Department of Transportation-District 4	Incident that closes the interstate. However, alternate route signs exist and can be used at any time.

Appendix AF: Other intervals when agency reports performance of the freeway system

Agency	Interval
Albany, Schenectady, Troy	
New York State Department of Transportation	Congestion reports; As needed / after incidents
Austin	
Texas Department of Transportation Austin District	not reported
Bellingham	
Washington State Department of Transportation	None
Boston, Lawrence, Salem	
Massachusetts Highway Department	never
Buffalo, Niagara Falls	
New York State Department of Transportation	Online performance data available real time.
Columbus	
Ohio Department of Transportation	Quarterly
Dallas, Fort Worth	
Texas Department of Transportation Fort Worth District (TransVISION)	As needed or requested
Dayton, Springfield	
Ohio Department of Transportation District 7	Not currently required
Grand Rapids	
Michigan Department of Transportation	unknown
Huntsville	
Alabama DOT	unknown
Indianapolis	
Indiana Department of Transportation	When requested
Jacksonville	
Florida Department of Transportation	As requested. DMS usage
Kansas City	
Kansas Department of Transportation	Kansas City Only
Missouri Department of Transportation	Consultant is starting performance reporting
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	no reports provided
Minneapolis, St. Paul	
Minnesota Department of Transportation	semi-annually
New Orleans	
Greater New Orleans Expressway Commission	periodically obtained by the consultant

Appendix AF: Other intervals when agency reports performance of the freeway system

Agency	Interval
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Hudson Valley Region 8	Blank.
New York State DOT-Long Island Region 10	Real time.
Palisades Interstate Park Commission	As needed
Raleigh-Durham	
North Carolina Department of Transportation	n/a
Roanoke	
Virginia DOT	QTRLY
Rochester	
New York State Department of Transportation	When queried
Seattle, Tacoma	
Washington State Department of Transportation Northwest Region	quarterly
Spokane	
Washington State Department of Transportation Eastern Region	not formally reported
Springfield(MO)	
Missouri DOT	Decided by Central Office
St. Louis	
Missouri Department of Transportation	Baseline Report by University of Missouri-Columbia
Washington	
Virginia DOT - NOVA Smart Traffic Center	only the incident detection report

Appendix AG: Other agencies that receive the performance review

Agency	Agency
Allentown, Bethlehem, Easton	
Pennsylvania Turnpike Commission	Internal departments- Traffic, Operations, Finance
Atlanta	
Georgia Department of Transportation	FHWA
Buffalo, Niagara Falls	
New York State Department of Transportation	Corridor and system wide measures are developed in conjunction with traffic count and strategic planning initiatives. Those measures are included in s
Chattanooga	
Tennessee DOT	website
Dallas, Fort Worth	
Texas Department of Transportation Fort Worth District (TransVISION)	As needed or requested
Dayton, Springfield	
Ohio Department of Transportation District 7	None
Kansas City	
Kansas Department of Transportation	ITS Unit
Knoxville	
Tennessee Department of Transportation	website
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	n/a
Nashville	
Tennessee Department of Transportation	WEBSITE
New Orleans	
Greater New Orleans Expressway Commission	consultant
New York, Northern New Jersey, Southwestern Connecticut	
Palisades Interstate Park Commission	n/a
Oklahoma City	
Oklahoma Department of Transportation	Basic ADT Maps and reports
Philadelphia, Wilmington, Trenton	
New Jersey DOT- Traffic Operations Center South	Traffic Engineers
Pennsylvania Turnpike Commission	Internal departments
Pittsburgh, Beaver Valley	
Pennsylvania Turnpike Commission	Internal departments - Traffic, Operations, Finance
Roanoke	
Virginia DOT	State Police
Scranton, Wilkes-Barre	
Pennsylvania Turnpike Commission	Internal Departments

Appendix AG: Other agencies that receive the performance review

Agency	Agency
Spokane	
Washington State Department of Transportation Eastern Region	N/A

Appendix AH: Other formats used to present performance measures

Agency	Format
Dayton, Springfield	
Ohio Department of Transportation District 7	None
El Paso	
Texas Department of Transportation-El Paso District	Presentations
Harrisburg, Lebanon, Carlisle	
Pennsylvania Turnpike Commission	software database package
Oklahoma City	
Oklahoma Department of Transportation	Basic ADT Maps and reports
Philadelphia, Wilmington, Trenton	
New Jersey DOT- Traffic Operations Center South	Raw Data.

Appendix AI: Other types of ITS deployments at work zones

Agency	Deployment type
Hampton Roads	
Virginia Department of Transportation	CCTV and Portable CMS
New York, Northern New Jersey, Southwestern Connecticut	
Palisades Interstate Park Commission	n/a
Raleigh-Durham	
North Carolina Department of Transportation	Utilized permanent devices to detect incidents in active work zones

Appendix AJ: Other technologies employed at work zones

Agency	Technology
Albany, Schenectady, Troy	
New York State Department of Transportation	Signals; HAR; Incident verification imaging;...
Allentown, Bethlehem, Easton	
Pennsylvania Turnpike Commission	HARs to advice travels of construction activities, web cams on a construction web site embeded in the PA. Turnpikes web site.
Austin	
Texas Department of Transportation Austin District	cctv
Beaumont-Port Arthur	
Texas Department of Transportation	DMS
Bellingham	
Washington State Department of Transportation	Portable HAR
Boise City	
Ada County Highway District	CCTV
Buffalo, Niagara Falls	
New York State Department of Transportation	Notice of construction and route guidance.
Chicago, Gary, Lake County	
Indiana Department of Transportation Highway Operations	Use of CCTV and pavement sensors to monitor traffic flow and detect incidents.
Cincinnati, Hamilton	
TRW/ARTIMIS OCC for Ohio Department of Transportation	portable Variable Message Signs (VMS), portable HAR, permanent HAR
Cleveland, Akron, Lorain	
Ohio Department of Transportation District 12	Radar emitters to wake trucker up to avoid rear end accidents at the beginning of a work zone.
Columbia	
South Carolina DOT	DMS, HAR, video
Columbus	
Ohio Department of Transportation	Portable DMS
Dallas, Fort Worth	
Texas Department of Transportation Fort Worth District (TransVISION)	DMS portable and permanent
Denver, Boulder	
Colorado Department of Transportation	DMS (portable)
El Paso	
Texas Department of Transportation-El Paso District	Fiber communication
Grand Rapids	
Michigan Department of Transportation	Use both permanent and protable changable message signs

Appendix AJ: Other technologies employed at work zones

Agency	Technology
Hartford, New Britain, Middletown	
Connecticut Department of Transportation	video surveillance, traveler information systems (VMS, HAR)
Indianapolis	
Indiana Department of Transportation	CCTV
Kansas City	
Kansas Department of Transportation	We have used a number of test deployments. Lane merge system, travel time, speed trailers, CB Wizard, and portable HAR.
Los Angeles, Anaheim, Riverside	
Caltrans District 12	CMS
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	dynamic message signs advisories
Nashville	
Tennessee Department of Transportation	HAR
New London	
Connecticut DOT	VMS, HAR, CCTV
New Orleans	
Greater New Orleans Expressway Commission	variable message signs, highway advisory radio, hazard incident lights
New York, Northern New Jersey, Southwestern Connecticut	
Connecticut Department of Transportation(CT)	VMS, CCTV
New York State DOT-Hudson Valley Region 8	Portable and permanent VMS, Video.
New York State DOT-Region 11	Radar vehicle detectors
Palisades Interstate Park Commission	n/a
Orlando	
Florida Department of Transportation	DMS, loop detector / radar detectors, CCTV
Philadelphia, Wilmington, Trenton	
New Jersey DOT- Traffic Operations Center South	CMS and Highway Advisory Radios. Messages broadcast to public based on field observations from Emergency Service Patrol drivers. Also, broadcast pre-construction info.
Pennsylvania Department of Transportation District 6-0	CCTV/cms and highway patrol vehicles
Pennsylvania Turnpike Commission	HARs to advise travelers of construction activities, web cams on a construction web site embedded in the PA. turnpike web site
Pittsburgh, Beaver Valley	
Pennsylvania Turnpike Commission	HARs to advice travelers of construction patters and conditions, web cams which can be veiwed on the PTC web site.
Raleigh-Durham	
North Carolina Department of Transportation	CCTV for surveillance and DMS for motorist information

Appendix AJ: Other technologies employed at work zones

Agency	Technology
Rochester	
New York State Department of Transportation	DMS, permanent and protable, and HAR
San Antonio	
Texas Department of Transportation - TransGuide Operations Center	1. Portable traffic management systems featuring cameras, speed detection device and DMS, communication using spread spectrum. 2. Aerial mounting of fiber optic cable through construction zone. Placement of temporary cameras using spread spectrum.
San Luis Obispo	
Caltrans	CMS
Scranton, Wilkes-Barre	
Pennsylvania Turnpike Commission	HARs to advise traverlers of construction activities, web cams on web site embeded in the PA. Turnpike web site.
Seattle, Tacoma	
Washington State Department of Transportation Northwest Region	Highway Advisory Radio, Variable Message Signs, Ramp meters, CCTV
Syracuse	
New York State Department of Transportation	Portable DMS
New York State Thruway Authority	VMS HAR
Tampa, St. Petersburg, Clearwater	
Florida Department of Transportation	Video Monitoring
Tucson	
Arizona Department of Transportation	DMS
West Palm Beach, Boca Raton, Delray	
Florida Department of Transportation-District 4	CCTV, DMS

Appendix AK: Other reasons for deploying ITS at work zones

Agency	Reason
Albany, Schenectady, Troy	
New York State Department of Transportation	Monitor incidents.
Buffalo, Niagara Falls	
New York State Department of Transportation	Provide opportunity for use of other modes of transporation.
Indianapolis	
Indiana Department of Transportation	Allow TMC to monitor traffic in the work zone.
Louisville	
Kentucky Transportation Cabinet, District 5	politicaL
Milwaukee, Racine	
Wisconsin Department of Transportation	test segment with university
New Orleans	
Greater New Orleans Expressway Commission	commuter safety
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Hudson Valley Region 8	Give people options/route choice.
Palisades Interstate Park Commission	n/a

Appendix AL: Projects where using standards absolutely helped with the integration needs

Agency	Project
Allentown, Bethlehem, Easton	
Pennsylvania Turnpike Commission	Yes, standards helped reduce cost associated with our deployment of a central software. Projects in this region included the installation of a Roadway Weather information system and traffic flow detection systems at various locations.
Atlanta	
Georgia Department of Transportation	DMS standard very useful, cost-effective
Boise City	
Ada County Highway District	Treasure Valley ATMS Installation
Chicago, Gary, Lake County	
ISTHA	Yes - DMS Yes - Center to Center Communications
Dallas, Fort Worth	
Texas Department of Transportation Fort Worth District (TransVISION)	Provides more stability in available productd and more longevity for system and software integration expenditures.
El Paso	
Texas Department of Transportation-El Paso District	N/A
Jacksonville	
Florida Department of Transportation	Yet to be determined
Kansas City	
Missouri Department of Transportation	Being able to use several vendors with inter-changeability is the primary reason to develop the ITC
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	SR 826 East/West and Upper Florida Keys ITS Projects
New York, Northern New Jersey, Southwestern Connecticut	
Transcom	TRANSCOM Regional Architecture project TRANSCOM Regional Architecture web project
Philadelphia, Wilmington, Trenton	
Pennsylvania Turnpike Commission	Standards have helped costs associated with our deployment of a central software. Projects in this region included the installation of traffic flow detectors at various locations
Pittsburgh, Beaver Valley	
Pennsylvania DOT- Pittsburgh Regional Traffic Management Center	SR376-A08
Pennsylvania Turnpike Commission	Yes, standards helped reduce cost associated with deployment of our central software.
Richmond, Petersburg	
Virginia DOT - Richmond Smart Traffic Center	Variable Message Signs - Phase 2 - 11 signs Richmond and Fredericksburg

Appendix AL: Projects where using standards absolutely helped with the integration needs

Agency	Project
Salt Lake City, Ogden	
Utah Department of Transportation-Region 2	CAD-FOT
Sarasota-Bradenton	
Sarasota/Manatee Metro Planning Organization	Automated Traffic Management System
Scranton, Wilkes-Barre	
Pennsylvania Turnpike Commission	Standards have helped costs associated with our deployment of a central software. Projects have included RWIS, TFDS, and Cameras.
Spokane	
Washington State Department of Transportation Eastern Region	Spokane Regional TMC Integration -- new DMS installation would not have communicated with our central TMC software without NTCIP.
Tucson	
Arizona Department of Transportation	DMS deployments. HCRS deployment

Appendix AM: Projects where using standards somewhat helped with the integration needs

Agency	Project
Albany, Schenectady, Troy	
New York State Department of Transportation	The standards as documented above provide good documentation of many requirements for system deployment but seem to be inconsistent with commercial off the shelf data base and networking technologies.
Austin	
Texas Department of Transportation Austin District	Integration of combined transportation, emergency, and communication center. Few standards are actually balloted and approved. Many more are only for comment.
Boise City	
Ada County Highway District	Downtown Boise Signal System Upgrade
Boston, Lawrence, Salem	
Massachusetts Highway Department	not there yet
Buffalo, Niagara Falls	
New York State Department of Transportation	The standards as documented above provide good documentation of many requirements for system deployment but seem to be inconsistent with commercial off the shelf data base and networking technologies.
El Paso	
Texas Department of Transportation-El Paso District	N/A
Minneapolis, St. Paul	
Minnesota Department of Transportation	We are able to deploy CMSs from two different manufacturers on the same comm lines. Also, we were able to have sign controllers tested easily.
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Long Island Region 10	The standards as documented above provide good documentation of many requirements for system deployment but seem to be inconsistent with commercial off the shelf data base and networking technoliges.
Oklahoma City	
Oklahoma Department of Transportation	yes, for intregration of Devices. Not sure what you want on Projects.
Rochester	
New York State Department of Transportation	Rt 590/ Rt 104 - DMS I-490, Barge Canal to Genesee River - DMS Monroe County DOT CCTV Project - CCTV
Salt Lake City, Ogden	
Utah Department of Transportation-Region 1	Ramp Metering
Utah Department of Transportation-Region 2	Ramp Metering

Appendix AM: Projects where using standards somewhat helped with the integration needs

Agency	Project
San Antonio	
Texas Department of Transportation - TransGuide Operations Center	may help in the future. Most standards came to late, and we already have systems deployed. Have to pay additional cost to retro-fit with standards. Were publishing our communications protocols and requiring compliance with those from begining.
Springfield	
Massachusetts Highway	Have not got that far yet.
Syracuse	
New York State Department of Transportation	I-81 ITS, Phase 1 This is the first NYSDOT to use NTCIP Standards and wireless communication. Integration success will be measured when installation is complete (Spring 2005) and system components are integrated. Future phases are being designed using the same standards.
Tampa, St. Petersburg, Clearwater	
Florida Department of Transportation	I-275 DMSS, St. Petersburg - 403266-1

Appendix AN: Projects where using standards not exactly helped with the integration needs

Agency	Project
Chicago, Gary, Lake County	
Indiana Department of Transportation La Porte District	The standard are not the same across different vendors.
Cincinnati, Hamilton	
TRW/ARTIMIS OCC for Ohio Department of Transportation	The ARTIMIS system predates many of these standards.
El Paso	
Texas Department of Transportation-El Paso District	N/A

Appendix AO: Other factors that will ensure agency uses ITS standards

Agency	First	Second	Third
Albany, Schenectady, Troy			
New York State Department of Transportation	Standards consistent with main stream technologies and testing methods.		
Buffalo, Niagara Falls			
New York State Department of Transportation	Standard consistent with main stream technologies and testing methods.		
New York, Northern New Jersey, Southwestern Connecticut			
New York State DOT-Hudson Valley Region 8	Standards consistent with main stream technologies and testing methods.	Standards use enables interoperability of systems	Standards being accepted by the ITS community and being used in deployments
New York State DOT-Long Island Region 10	Standards consisten with main stream technologies and testing methods.		
Palisades Interstate Park Commission	Demonstrated Need	Standards are developed that apply to my system	Additional funding being provided to use the standards

Appendix AP: Other tools, resources, or support mechanisms that was or will be helpful for implementing standards

Agency	First	Second	Third
Albany, Schenectady, Troy			
New York State Department of Transportation	Standards inplementation procedure are concise and document commercial products that can be used for implementation.	Testing tools	Support documents (i.e., procurement and implementation guides) are available
Buffalo, Niagara Falls			
New York State Department of Transportation	Standards implementation procedure are concise and document commercial products that can be used for implementation.	Testing tools	Support documents (i.e., procurement and implementation guides) are available
New York, Northern New Jersey, Southwestern Connecticut			
New York State DOT-Hudson Valley Region 8	Standards implementation procedure are concise and document commercial products that can be used for implementation.	Testing tools	Support documents (i.e., procurement and implementation guides) are available
New York State DOT-Long Island Region 10	Standards implementation procedure are concise and document commercial products that can be used for implementation.	Testing tools	Support documents (i.e., procurement and implementation guides) are available
Rochester			
New York State Department of Transportation	Training courses	Published standards are easily available	Specialist Available to guide designer/ implementer (eg. FHWA rep)

Appendix AQ: Other periods when formal established call-out procedures are in place

Agency	Period
Albany, Schenectady, Troy	
New York State Department of Transportation	Procedures are in place to attempt to respond to situations on major highways, but no recall for maintenance forces off-hours outside of snow/ice season.
Buffalo, Niagara Falls	
New York State Thruway Authority	Regional response to incidents that effect our agency
Kansas City	
Missouri Department of Transportation	5:30 - 8:30 pm
Knoxville	
Tennessee Department of Transportation	5am-10pm m-f 8-8 ss
Minneapolis, St. Paul	
Minnesota Department of Transportation	RTMC Operations Center policies are in effect during operating hours.
Rochester	
New York State Department of Transportation	M-F 6AM to 7PM and major incidents off-hours

Appendix AR: Others affected by the formal established call-out procedures

Agency	Item
Albany, Schenectady, Troy	
New York State Department of Transportation	Other staff as needed.
Albuquerque	
New Mexico State Highway Transportation	Freeway Courtesy Patrol
Allentown, Bethlehem, Easton	
Pennsylvania Turnpike Commission	PEMA
Baltimore	
Maryland State Highway Administration	State Emergency Response Units
Buffalo, Niagara Falls	
New York State Department of Transportation	Other staff as needed.
Cleveland, Akron, Lorain	
Ohio Department of Transportation District 12	Motorist Assistance
Ohio Turnpike Commission	Safety Services
Grand Rapids	
Michigan Department of Transportation	Transportation Service Center Managers, Region Management, and Maintenance coordinators
Minneapolis, St. Paul	
Minnesota Department of Transportation	Public Affairs
Modesto	
Caltrans	Public Information Officer
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Hudson Valley Region 8	Other staff as needed.
New York State DOT-Long Island Region 10	Other staff as needed.
Palisades Interstate Park Commission	Parkway Police
Orlando	
Florida Department of Transportation	service patrol
Philadelphia, Wilmington, Trenton	
New Jersey DOT- Traffic Operations Center South	Traffic Operations, which includes Emergency Service Patrols and/or Incident Management Response personnel.
New Jersey Turnpike -Traffic Operations Center	Toll Plazas
Pittsburgh, Beaver Valley	
Pennsylvania Turnpike Commission	PEMA
San Antonio	
Texas Department of Transportation - TransGuide Operations Center	public information

Appendix AR: Others affected by the formal established call-out procedures

Agency	Item
Seattle, Tacoma	
Washington State DOT - Olympic Region Traffic Management Center	INCIDENT RESPONSE TEAM
St. Louis	
Missouri Department of Transportation	Incident Responders and Motorist Assist
Stockton	
Caltrans	Public Information Officer
Syracuse	
New York State Department of Transportation	traffic signal crew

Appendix AS: Other types of agencies where real-time/after-the-fact reporting information on traffic incidents is shared

Agency	Agency type	Real-time	After-the-fact
Dallas, Fort Worth			
Texas Department of Transportation Dallas District	per request	☐	☑
El Paso			
Texas Department of Transportation-El Paso District	Office of Emergency Management	☑	☑
Miami, Fort Lauderdale			
Florida DOT-District 6 - SunGuide Transportation Management Center	511 Information Provider	☑	☐
New York, Northern New Jersey, Southwestern Connecticut			
New York State DOT-Hudson Valley Region 8	Main Office	☐	☑
Richmond, Petersburg			
Virginia DOT - Richmond Smart Traffic Center	MPO	☐	☑
St. Louis			
Missouri Department of Transportation	911 Dispatch and Info Service Proivers	☑	☐

Appendix AT: Who is in charge at the scene of a traffic incident

Agency	In charge
Albany, Schenectady, Troy	
New York State Department of Transportation	For major incidents the State Emergency Management Office is in command, but for smaller incidents the command structure is dependent on the size of the incident. Documentation and references can be provided as needed.
Allentown, Bethlehem, Easton	
Pennsylvania Department of Transportation-Allentown	Unified Command System is used.
Pennsylvania Turnpike Commission	State Police
Bakersfield	
Caltrans District 6	CHP
Birmingham	
Alabama Department of Transportation	State Troopers on Interstate, US Route, & State Route
Boise City	
Ada County Highway District	Idaho State Police
Boston, Lawrence, Salem	
Massachusetts Highway Department	fire, then state police
Buffalo, Niagara Falls	
New York State Department of Transportation	Yes. For major incidents the State Emergency Management Office is in command but smaller incidents the command strucutre is dependent on the size of the incident. Documentation can be provided if needed.
Chicago, Gary, Lake County	
Indiana Department of Transportation La Porte District	Indiana State Police
ISTHA	Fire Departments in control if fire protection is required. State Police is in control for property damage.
Cincinnati, Hamilton	
TRW/ARTIMIS OCC for Ohio Department of Transportation	incident commander varies as incident responsibility changes
Cleveland, Akron, Lorain	
Ohio Department of Transportation District 12	Fire Chief
Ohio Department of Transportation District 4	Fire Chief
Ohio Turnpike Commission	Fire
Columbia	
South Carolina DOT	Fire
Columbus	
Ohio Department of Transportation	Police or, in rescue situations, Fire
Denver, Boulder	
Colorado Department of Transportation	First on Scene
Detroit, Ann Arbor	
Michigan Department of Transportation	I know it is a law, but I dont know who it is.
Eugene	
Oregon Department of Transportation	changes

Appendix AT: Who is in charge at the scene of a traffic incident

Agency	In charge
Fort Wayne	
Indiana DOT	police
Fresno	
Caltrans District 6	CHP
Greensboro, Winston-Salem, High Point	
North Carolina Department of Transportation-Greensboro	law enforcement
North Carolina Department of Transportation-Winston-Salem	fire marshall
Hampton Roads	
Virginia Department of Transportation	State Police, if there is a fire or Hazmat then Fire Chief
Los Angeles, Anaheim, Riverside	
Caltrans District 12	chp on the freeway system
Caltrans District 7 - Los Angeles Transportation Management Center	California Highway Patrol
Caltrans District 8	SEMS
Louisville	
Kentucky Transportation Cabinet, District 5	See the KY Revised Statutes
McAllen	
Texas DOT	Texas Dept. of Public Safety
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	Incident specific
Modesto	
Caltrans	Highway Patrol
New London	
Connecticut DOT	Fire Captain
New Orleans	
Greater New Orleans Expressway Commission	Greater New Orleans Expressway Commission
New York, Northern New Jersey, Southwestern Connecticut	
Connecticut Department of Transportation(CT)	fire department
New York State DOT-Hudson Valley Region 8	For major incidents the State Emergency Management Office is in command but for smaller incidents the command structure is dependent on the size of the incident. Documentation and references can be provided as needed.
Palisades Interstate Park Commission	Parkway Police
Port Authority of New York and New Jersey	Tour Manager
Orlando	
Florida Department of Transportation	law enforcement
Philadelphia, Wilmington, Trenton	
New Jersey DOT- Traffic Operations Center South	Local fire chief, for fires. State or local police for all other incidents.
New Jersey Turnpike -Traffic Operations Center	The NJ State Police Troop D
Pennsylvania Turnpike Commission	State Police
South Jersey Transportation Authority/Atlantic City Expressway	State Police

Appendix AT: Who is in charge at the scene of a traffic incident

Agency	In charge
Phoenix	
Arizona Department of Transportation	We use Unified incident command
Pittsburgh, Beaver Valley	
Pennsylvania Turnpike Commission	State Police
Raleigh-Durham	
North Carolina Department of Transportation	Varies by each county
Richmond, Petersburg	
Virginia DOT - Richmond Smart Traffic Center	Local Fire Department
Roanoke	
Virginia DOT	Depends on type of incident and at what stage incident is in
San Antonio	
Texas Department of Transportation - TransGuide Operations Center	Police are in charge unless it is a Hazmat scene, when the fire department takes charge
San Diego	
Caltrans District 11	State Highway Law Enforcement (CHP)
San Francisco, Oakland, San Jose	
Caltrans District 4	CAlifornia Highway Patrol (CHP)
Scranton, Wilkes-Barre	
Pennsylvania Turnpike Commission	State Police
Seattle, Tacoma	
Washington State Department of Transportation Northwest Region	State Patrol officer (primary) WSDOT personnels (alternate)
Washington State DOT - Olympic Region Traffic Management Center	WASHINGTON STATE PATROL SENIOR OFFICER ON THE SCENE
Spokane	
Washington State Department of Transportation Eastern Region	Washington State Patrol
Springfield	
Massachusetts Highway	Fire, then State Police
Stockton	
Caltrans	Highway Patrol
Toledo	
Ohio Turnpike Commission	State Fire Marshal is in charge of incidents involving HAZMAT.
Washington	
Virginia DOT - NOVA Smart Traffic Center	first respond. fire and rescue, state police

Appendix AU: Other times that abandoned vehicles are allowed to remain on a freeway shoulder

Agency	Time
Albany, Schenectady, Troy New York State Department of Transportation	See NYS Vehicle and Traffic Law for defined terms of abandonment.
Albuquerque New Mexico State Highway Transportation	24 to 48 hours
Atlanta Georgia Department of Transportation	72
Austin Texas Department of Transportation Austin District	72 hours by ordinance
Boston, Lawrence, Salem Massachusetts Highway Department	24 hours
Buffalo, Niagara Falls New York State Department of Transportation	See NYS Vehicle and Traffic Law for defined terms of abandonment.
Charlotte, Gastonia, Rock Hill Metrolina Regional Transportation Management Center (North Carolina DOT)	48
Chicago, Gary, Lake County Indiana Department of Transportation Highway Operations	Up to 72 hours. This is how state police interpret state statute. INDOT interprets it differently but we are now working to get state statute clarified to limit this time to no more than 6 hours.
Indiana Department of Transportation La Porte District	2 hours
Cleveland, Akron, Lorain Ohio Department of Transportation District 12	Ohio 72 hours
Columbia South Carolina DOT	48
Detroit, Ann Arbor Michigan Department of Transportation	18 hours
Greensboro, Winston-Salem, High Point North Carolina Department of Transportation-Greensboro	up to 48 hours
Indianapolis Indiana Department of Transportation	We are working on legislation to reduce the time to 2-4 hours before being towed. Right now its 72 hours.
Kansas City Kansas Department of Transportation	This is very random and not controlled by the DOT.
Los Angeles, Anaheim, Riverside Caltrans District 12	4 hours max
Caltrans District 8	72 hours
McAllen Texas DOT	72 hours
Miami, Fort Lauderdale Florida DOT-District 6 - SunGuide Transportation Management Center	24 hours

Appendix AU: Other times that abandoned vehicles are allowed to remain on a freeway shoulder

Agency	Time
Milwaukee, Racine	
Wisconsin Department of Transportation	2 hours
New York, Northern New Jersey, Southwestern Connecticut	
Connecticut Department of Transportation(CT)	48 hours
New York State DOT-Hudson Valley Region 8	See NYS Vehicle and Traffic Law for defined terms of abandonment.
Palisades Interstate Park Commission	With proper notification of Parkway Police for self help.
Philadelphia, Wilmington, Trenton	
New Jersey DOT- Traffic Operations Center South	48 hours, as long as the vehicle is in a safe place.
Raleigh-Durham	
North Carolina Department of Transportation	If not in a work zone, they can remain for 7 days.
Rochester	
New York State Department of Transportation	No Clear the Road policy
Seattle, Tacoma	
Washington State DOT - Olympic Region Traffic Management Center	IMMEDIATE TOW IN UNBAN AREA; 24 HOURS IN OTHER AREAS OF THE FREEWAY
Springfield	
Massachusetts Highway	24 hours
Toledo	
Ohio Turnpike Commission	More than 24 hours unless weather event (snow) predicted.
Tulsa	
Oklahoma Department of Transportation	72 hours before being able to tow.

Appendix AV: Description of laws or policies regarding the removal of stalled or abandoned vehicles

Agency	Description
Albany, Schenectady, Troy	
New York State Department of Transportation	Specified as part of the freeway towing program and program contract. Also, see NYS Vehicle and Traffic Law for defined terms of abandonment.
Allentown, Bethlehem, Easton	
Pennsylvania Turnpike Commission	24 hours and if vehicle is impeding operations
Atlanta	
Georgia Department of Transportation	After 72 hours, vehicles can be ordered to be towed.
Austin	
Texas Department of Transportation Austin District	local ordinance
Baltimore	
Maryland State Highway Administration	There is the-clear the road-policy, which is an agreement between the State Highway Administration and the Maryland State Police to provide guidance in the removal of vehicles from the roadway in certain situations to maintain safe and orderly traffic flow.
Boise City	
Ada County Highway District	Within 24hrs.
Boston, Lawrence, Salem	
Massachusetts Highway Department	removed immediately when located in a hazardous area.
Buffalo, Niagara Falls	
New York State Department of Transportation	Specified as part of freeway towing program and program contract. Also, see NYS Vehicle and Traffic Law for defined terms of abandonment.
New York State Thruway Authority	See NYS Thruway Authority Rules and Regulations
Chicago, Gary, Lake County	
Indiana Department of Transportation Highway Operations	INDOT Freeway Service Patrol vehicles as well as state police tag vehicles. The clock starts from that time. State Police have a towers list from which they call the next tower on the list when time comes to tow the vehicle.
Indiana Department of Transportation La Porte District	2 hour parking restriction
ISTHA	State Police must complete a tow sheet and authorize the towing of an abandoned vehicle.
Cleveland, Akron, Lorain	
Ohio Turnpike Commission	24 hr. unless hazard
Columbia	
South Carolina DOT	48 hours

Appendix AV: Description of laws or policies regarding the removal of stalled or abandoned vehicles

Agency	Description
Columbus	
Ohio Department of Transportation	Columbus Police policy is 3 hrs.
Dallas, Fort Worth	
Texas Department of Transportation Fort Worth District (TransVISION)	If it is hazard to the public, PD will pull at TxDOT request.
Daytona Beach	
Florida DOT	FL State Statute 316.194
El Paso	
Texas Department of Transportation-El Paso District	10 hours before being removed
Grand Rapids	
Michigan Department of Transportation	Vehicles are to be moved from any freeway after they have been along the shoulder more than 18 hours after tagging by the law enforcement agency.
Greensboro, Winston-Salem, High Point	
North Carolina Department of Transportation-Greensboro	If vehicle is hazardous, remove immediately. If not, 48 hours.
North Carolina Department of Transportation-Winston-Salem	no parking ordinances
Houston, Galveston, Brazoria	
Texas Department of Transportation-Houston District	safe clear - remove all stalled vehicles from roadway and shoulder. By tow operator. Required call to police rather than police presence.
Indianapolis	
Indiana Department of Transportation	State statute, but it is interpreted differently by INDOT and State Police. Legislation is planned to clear this up.
Kansas City	
Missouri Department of Transportation	After 24 hours they are towed
Los Angeles, Anaheim, Riverside	
Caltrans District 12	same as above
Caltrans District 8	Will be tow after 72 Hours. In case of emergency (safety), it can be tow right away.
Miami, Fort Lauderdale	
Florida DOT-District 6 - SunGuide Transportation Management Center	FL Statutes (FS) 316.061
New Orleans	
Greater New Orleans Expressway Commission	No shoulders exist on the bridge - vehicles are moved or towed immediately. On the crossovers, wait 24 hours and then tow vehicle.

Appendix AV: Description of laws or policies regarding the removal of stalled or abandoned vehicles

Agency	Description

New York, Northern New Jersey, Southwestern Connecticut

New York State DOT-Hudson Valley Region 8	Specified as part of the freeway towing program and program contract. Also, see NYS Vehicle and Traffic Law for defined terms of abandonment.
New York State DOT-Long Island Region 10	Specified as part of the freeway towing program contract. Also, see NYS Vehicle and Traffic Law for defined terms of abandonment.

Orlando

Florida Department of Transportation	No more than 6 hours, but again, due to understaffing of law enforcement, they remain on roadways longer.

Philadelphia, Wilmington, Trenton

New Jersey DOT- Traffic Operations Center South	Same as question #68. Abandoned vehicle can remain on shoulder for 48 hours, as long as vehicle is in a safe place. After 48 hours, state police can have vehicle removed.
Pennsylvania Turnpike Commission	24 hours and if vehicle is impeding traffic
South Jersey Transportation Authority/Atlantic City Expressway	If they are there longer than 2 hours, they may be towed.

Pittsburgh, Beaver Valley

Pennsylvania Turnpike Commission	24 hours and if vehicle is impeding traffic

Provo - Orem

Utah Department of Transportation Region 3	After several hours the car can be towed

Salt Lake City, Ogden

Utah Department of Transportation-Region 1	After several hours the vehicle can be towed
Utah Department of Transportation-Region 2	After Several Hours the vehicle will be towed

San Antonio

Texas Department of Transportation - TransGuide Operations Center	City ordinance provides for tagging and removal of stalled vehicles in 24 hours of initial tagging. Vehicles that pose an immediate hazard are removed immediately.

San Diego

Caltrans District 11	According to Ca. Veh Code Sec 22523, no vehicles are to be abandoned on any highway.

Scranton, Wilkes-Barre

Pennsylvania Turnpike Commission	24 hours and if vehicle is impeding traffic

Appendix AV: Description of laws or policies regarding the removal of stalled or abandoned vehicles

Agency	Description
Seattle, Tacoma	
Washington State Department of Transportation Northwest Region	We established a tow-away zone in the urban boundaries. Disable or abandoned vehicles in this zone will be towed off the freeway system.
Washington State DOT - Olympic Region Traffic Management Center	Immediate Tow
Spokane	
Washington State Department of Transportation Eastern Region	8 mile section of freeway designated as a tow-away zone
Springfield	
Massachusetts Highway	If they are in a hazardous area, they are removed immediately. Otherwise they are tagged and given 24 hours to be removed.
St. Louis	
Missouri Department of Transportation	Tagged by Motorist Assist or Law Enforcement. Missouri Highway Patrol or local PD order tow.
Tucson	
Arizona Department of Transportation	Quick clearance law in place. Also, abandoned vehicles in 2 hours or less.
Tulsa	
Oklahoma Department of Transportation	Quick Clearance Law
Washington	
Virginia DOT - NOVA Smart Traffic Center	If vehicles are in traveling lane, creates a safety hazard, state police can move it.

Appendix AW: Description of policies and procedures to facilitate quick removal of heavily damaged vehicles

Agency	Description
Allentown, Bethlehem, Easton	
Pennsylvania Turnpike Commission	imediate removal
Atlanta	
Georgia Department of Transportation	Wrecker companies with capabilities to handle wrecked vehicles are assigned (contracted) to certain zones. They have exclusive right to pick up vehicles in that zone.
Austin	
Texas Department of Transportation Austin District	staging tow trucks during peak period in local urban area
Baltimore	
Maryland State Highway Administration	This is also covered by the-clear the road policy-previously referred.
Buffalo, Niagara Falls	
New York State Department of Transportation	Quick cleance policy was design to assure safe and efficient facility clearance while limiting liability of the clearance staff. See I-95 corridor quick clearance guidance and TRB documents for additional alternatives.
New York State Thruway Authority	same as 69 and Thruway Operations bulletins
Chicago, Gary, Lake County	
ISTHA	Certain personnel are authroized to call for a tow through our dispatch system who inturn, contact tow service companies who have an agreement with the tollway.
Cincinnati, Hamilton	
TRW/ARTIMIS OCC for Ohio Department of Transportation	Ohio Quick Clearance Initiative (MOU in process)
Cleveland, Akron, Lorain	
Ohio Turnpike Commission	DVS contracts
Columbia	
South Carolina DOT	if in the roadway
Columbus	
Ohio Department of Transportation	Columbus Police Quick Clear Policy
Daytona Beach	
Florida DOT	Open Roads Policies
Detroit, Ann Arbor	
Michigan Department of Transportation	I dont know the policy...
El Paso	
Texas Department of Transportation-El Paso District	Police Department towing contract service

Appendix AW: Description of policies and procedures to facilitate quick removal of heavily damaged vehicles

Agency	Description
Greensboro, Winston-Salem, High Point	
North Carolina Department of Transportation-Greensboro	rotation wrecker, remove as quickly as possible
Houston, Galveston, Brazoria	
Texas Department of Transportation-Houston District	Freeway Incident Management contract - removes heavy trucks/cargos blocking travel lanes. Must be part of accident scene. TxDOT authorized.
Indianapolis	
Indiana Department of Transportation	Unwritten policy to clear the road ASAP. Working to formalize this policy.
Los Angeles, Anaheim, Riverside	
Caltrans District 12	owner must remove cargo or damaged vehicles from roadway, or state forces will do it then charge for time. If a vehicle or items can be moved to the shoulder, they then have 4 hours.
New Orleans	
Greater New Orleans Expressway Commission	towing (tow truck is kept parked on the bridge)
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Hudson Valley Region 8	Quick clearance policy was design to assure safe and efficient facility clearance while limiting liability of the clearance staff. See I-95 cooridor quick clearance guidance and TRB documents for additional alternatives.
New York State DOT-Long Island Region 10	Quick clearance polict was designed to assure safe and efficien facility clearance while limiting liability of the clearance staff. See I-95 corridor quick clearance guidance and TRB documents for additioal alternatives.
Philadelphia, Wilmington, Trenton	
New Jersey DOT- Traffic Operations Center South	Do not know specifics.
Pennsylvania Department of Transportation District 6-0	All vehicles are removed by private towing as requested by police
Pennsylvania Turnpike Commission	imediate removal
South Jersey Transportation Authority/Atlantic City Expressway	Vehicle will be towed if there is major damage and impeding flow of traffic on mainline roadway.
Pittsburgh, Beaver Valley	
Pennsylvania Turnpike Commission	imediate removal
San Antonio	
Texas Department of Transportation - TransGuide Operations Center	City has a contract with one towing company that is called out for removal of vehicles involved in incidents. The towing company is always on call and can be dispatched by the police officer in the Traffic Operations Center.

Appendix AW: Description of policies and procedures to facilitate quick removal of heavily damaged vehicles

Agency	Description
San Diego	
Caltrans District 11	The Dept, in coordination with others, endeavors to remove damaged or non-hazardous materials as soon as possible through both public and private resources.
Seattle, Tacoma	
Washington State Department of Transportation Northwest Region	- Damaged loads will be pushed off the travel way for later recovery - No recovery effort is allowed during peak travel hours
Washington State DOT - Olympic Region Traffic Management Center	Immediate Tow
Spokane	
Washington State Department of Transportation Eastern Region	Recently enacted state law recognized costs of traffic congestion and allows for large and heavily damaged vehicles to be removed without regard to the cargo. Generally this would result in the vehicle being pushed off the road by heavy equipment (such as a front end loader) for full recovery at an off peak time or at night.
Toledo	
Ohio Turnpike Commission	Contracts with towing companies specifying response times and minimum equipment levels.
Tucson	
Arizona Department of Transportation	same
Tulsa	
Oklahoma Department of Transportation	Quick Clearance Law