

Metropolitan Intelligent Transportation Systems (ITS) Infrastructure 2004 Arterial Management Survey

Preliminary Results

Prepared for:

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

Table of Contents

CHARACTERISTICS OF SIGNALIZED INTERSECTIONS	3
ROADSIDE TECHNOLOGIES TO DISTRIBUTE EN-ROUTE TRAVELER INFORMATION	4
HIGHWAY-RAIL INTERSECTIONS	4
METHODS USED TO DISTRIBUTE INFORMATION TO THE PUBLIC	5
INTEGRATION.....	6
TRAFFIC INCIDENT MANAGEMENT	6
WORK ZONES.....	7
SAFETY AND WEATHER	8
NATIONAL ITS STANDARDS.....	11
DATA COLLECTION AND ARCHIVING.....	15
EMERGENCY PREPAREDNESS.....	16

CHARACTERISTICS OF SIGNALIZED INTERSECTIONS:

Total number of agencies

	Total in 2004	Estimated Total by 2005
1. Total number of signalized intersections operated by your agency	152,106	154,289
2. Number of signalized intersections operated by your agency under closed loop or central system control	75,817	87,641
3. Number of signalized intersections operated by your agency that allow signal preemption for emergency vehicles	30,964	35,346
4. Number of signalized intersections operated by your agency that allow signal priority for transit vehicles	2,888	6,053
5. Number of signalized intersections operated by your agency within 200 feet of a highway-rail intersection that adjust signal timing in response to train crossing to avoid vehicle entrapment	2,698	2,953
6. Total number of signalized intersections with automated photo red light running enforcement	1,276	1,722
7. Total number of signalized intersections that are progressively interconnected	47,986	51,579
8. Total number of signalized intersections under real-time traffic adaptive control using SCOOT/SCATS or other similar advanced software	5,576	7,307
9. Total number of signalized intersections that are fully or semi actuated	81,338	83,132
10. Total number of signalized intersections with "Dilemma Zone" protection	24,825	26,307

Real-time electronic traffic data collection:

	Total in 2004	Estimated Total by 2005
11. Total number of signalized intersections with electronic data collection capabilities.....	52,261	58,563

Please indicate the number of signalized intersections that have the following data collection technologies:

Number of Signalized Intersections with data collection technologies

	Total in 2004	Estimated Total by 2005
Loop detectors (for volumes, speed, and density)	37,366	41,393
Video detection cameras (for volume, speed, and density)	4,161	6,357
Radar	119	278
Other (please specify) see Appendix A		

12. What is the time interval between signal timing plan modification?

8 years or more	32
4 years or more	53
2 years or more	49
annual	26
as needed	284
Other (please specify):	see Appendix B

13. What software do you use to manage signals?

see Appendix C

14. Does your agency participate in regional coordination of traffic signal timing plans?

Yes	208
No	243
Don't know	27

15. What is the scope of signal timing plan modifications?

System wide	211
Central business district	16
Major intersection	135
Other (please specify):	see Appendix D

ROADSIDE TECHNOLOGIES TO DISTRIBUTE EN-ROUTE TRAVELER INFORMATION:

	Total in 2004	Estimated Total by 2005
16. Total centerline miles covered by Highway Advisory Radio (HAR)	3,230	4,567
17. Total number of permanent Changeable Message Signs (CMS) deployed on arterials:	1,620	2,227

HIGHWAY-RAIL INTERSECTIONS:

	Total in 2004	Estimated Total by 2005
18. Total number of highway-rail intersections	14,182	13,843
19. Total number of highway-rail intersections under electronic surveillance	641	519
20. Total number of highway-rail intersections with vehicle intrusion detection devices	56	62

METHODS USED TO DISTRIBUTE INFORMATION TO THE PUBLIC:

21a. Please check all the methods that your agency uses, or will use, to distribute information to the public.

	In 2004	By 2005
Dedicated cable TV:	110	104
Automated telephone system:	63	67
Internet Web sites:	262	276
Pagers or personal data assistants:	42	52
Interactive TV:	15	15
Kiosks:	43	59
E-mail or other direct PC communication:	128	135
In-vehicle navigation systems:	3	14
Facsimile:	113	101
511 Telephone System:	37	62
Do not distribute information:	89	69
Other (please specify):	see Appendix E	

21b. Please check all the types of information that your agency distributes, or will distribute by 2005, to the public.

	In 2004	By 2005
Arterial travel times:	13	36
Arterial travel speeds:	16	41
Incident information:	105	116
Special events:	172	169
Work zones/construction events:	243	241
Parking:	35	40
Weather:	45	47
Road surface conditions:	60	54
Road closures:	240	227
Detours:	196	200
Alternate routes:	113	114
Road restrictions:	119	120
Congestion:	47	56
CCTV images:	71	111
Travel and Tourist information:	33	46
Real-time construction information:	40	47
Other (please specify):	see Appendix F	

INTEGRATION:

22. Does your agency provide arterial travel time, speed, and condition information in real-time to the following type of agencies?

	Yes	No
Agencies involved in highway incident	69	428
Freeway Management Agencies:	63	432
Arterial Management Agencies:	54	439
Public Transit Agencies:	43	450

23. Does your agency receive information on highway-rail intersection crossing blockages for the purpose of managing incident response? Yes
No

24. Does your agency share, in real-time, timing plans with another agency, coordinate changes to timing plans with another agency, and/or turn over control of signals to another agency?

	Yes	No
Share timing plans information in real-time:	141	356
Coordinate changes to timing plans:	228	270
Turn over control of signals:	118	381

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

Yes	<input type="text" value="5"/>
No toll collection	<input type="text" value="230"/>
No	<input type="text" value="253"/>

25a. If no, are there future plans for vehicle probes in:

1 year?	<input type="text" value="5"/>
2 years?	<input type="text" value="7"/>
more than 2 years?	<input type="text" value="40"/>
No future plans.	<input type="text" value="291"/>

TRAFFIC INCIDENT MANAGEMENT:

Service Patrols:

	Total in 2004	Estimated Total by 2005
26. Total number of arterial miles patrolled by service patrols	<input type="text" value="10,228"/>	<input type="text" value="11,105"/>
27. Total number of vehicles operated	<input type="text" value="978"/>	<input type="text" value="1,075"/>
28. Service Hours		

 Peak hours only

 24/7

 Other: see Appendix G

Incident Detection and Verification Methods:

Please provide the miles covered by each of the following incident detection/verification methods:

	Miles Covered in 2004	Estimated Miles Covered by 2005
29. Free cellular phone call to a dedicated phone number other than 911	14,493	15,947
30. Computer algorithms	1,618	2,498
31. CCTV	4,759	7,178
32. Other:	see Appendix H	

33. Are the CCTV images made available to the public?

Yes	93
No	140
Don't know	19
No CCTV	168

34. Does your agency operate a Traffic Operation Center (TOC) or Traffic Management Center (TMC)?

Yes	194
No	262

WORK ZONES

35. Has your agency deployed ITS technology at work zones to take over the function of permanent systems that are degraded or made inoperative by construction activities?

Yes	86
No	377
Don't know	16

36. Does your agency use ITS within, or in advance of, work zones to improve mobility, enhance safety, and/or to manage incidents?

Yes	133
No	335
Don't know	11

SAFETY AND WEATHER:

37. Do you have a Pedestrian Safety Program to reduce fatalities, injuries, or conflicts to pedestrians?

Yes, formal	57
Yes, informal	192
No	159
Don't Know	49

38. Do you use electronic devices to collect Pedestrian data (e.g. pedestrian crossing or walking on the sidewalk)?

Yes. What types of devices are used? 35

Infrared detection	2
Ultrasonic detection	0
Doppler radar detection	0
Microwave detection	1
Piezometric detection	1
Video imaging	10
Push button related	44
Other:	see Appendix I

No 407

39. Do you use electronic technologies to improve the safety and mobility of pedestrians?

Yes. What types of technologies are used? 175

Countdown pedestrian signals	149
Automatic pedestrian detection	21
"Smart" lighting (brightens when pedestrians are present)	4
Animated eyes	2
Dynamic "No Right Turn on Red Signs"	26
In-roadway flashing lights	64
Pedestrian-activated flashing beacons	86
Other:	see Appendix J

No 236

40. Does your agency use electronic devices to detect the presence of pedestrians (e.g., pedestrian crossing or walking on the sidewalk)?

Yes. What types of devices are used? 27

Infrared detection	7
Ultrasonic detection	2
Doppler radar detection	0
Microwave detection	10
Piezometric detection	2
Video imaging	10
Other:	see Appendix K

No 421

41. If your agency does not have any pedestrian-related ITS devices, would it consider using them to improve safety and mobility?

Yes	195
No	59
Maybe	164

SAFETY AND WEATHER (Cont.):

42. Does your agency use automated enforcement in facilities under its jurisdiction?

Yes. What types of automated enforcement are used?

Speeding	10
Red-light running	46
Rail Road crossings	3
Other:	see Appendix L

No

43. With which agencies are the automated enforcement data shared?

44. With which agencies are the automated enforcement data coordinated?

45. Do you have a program for setting speed limits on arterials?

Yes. What is it based on?

The 85th percentile	295
Engineering judgment	251
Speed studies	269
Radar studies	144
Type of arterial	149
Other:	see Appendix O

No

46. Does your agency have traffic signal plans designed specifically for inclement weather or slick pavement?

Yes. What criteria are used to implement weather-related signal timing?

Light precipitation	0
Heavy precipitation	7
Slick pavement (due to water, snow or ice)	15
Low visibility (due to fog, wind-blown snow/dust, smoke, etc.)	6
Traffic volume	20
Time of day	16
Other:	see Appendix P

No

47. Does your agency modify incident detection algorithms due to inclement weather or slick pavement?

Yes. What criteria are used to implement weather-related incident detection?

Light precipitation	0
Heavy precipitation	4
Slick pavement (due to water, snow or ice)	2
Low visibility (due to fog, wind-blown snow/dust, smoke, etc.)	3
Traffic volume	5
Time of day	5
Other:	see Appendix Q

No

SAFETY AND WEATHER (Cont.):

48. Does your agency have any Dynamic Curve Warning Systems?

Yes

How many has your agency deployed?

How many on 2-lane, 2-way road curves?

Does your agency have any documentation of the effectiveness of these systems?

Yes

No

Don't know

No

49. Does your agency have any in-pavement sensors to detect the condition of the roadway?

Yes, what conditions are measured?

Temperature

Presence of water

Presence of ice

Anti-icing chemical

Other: see Appendix R

No

50. Has your agency deployed any Road Weather Information Systems (RWIS)?

Yes Number deployed:

What information is collected? (Check all that apply)

Temperature

Humidity

Wind speed

Wind direction

Precipitation (rain)

Precipitation (snow)

Other: see Appendix S

No

51. Does your agency receive weather products tailored to your particular requirements?

Yes

No

Don't know

NATIONAL ITS STANDARDS

List of standards to consider when deploying arterial management projects:

Traffic Management

Number of agencies

Using Considering

46	92	NTCIP 1202 - Object Definitions for Actuated Traffic Signal Controller Units
19	86	NTCIP 1210 - Objects for Signal Systems Master
18	82	NTCIP 1211 - Objects for Signal Control Priority

Freeway Management

Using Considering

44	47	NTCIP 1203 - Object Definitions for Dynamic Message Signs
6	34	NTCIP 1204 - Object Definitions for Environmental Sensor Stations
20	74	NTCIP 1205 - Objects for CCTV Camera Control
7	46	NTCIP 1206 - Object Definitions for Data Collection and Monitoring (DCM) Devices
7	22	NTCIP 1207 - Object Definitions for Ramp Meter Control
7	58	NTCIP 1208 - Object Definitions for Video Switches
6	37	NTCIP 1209 - Object Definitions for Transportation Sensor System
3	34	NTCIP 1213 - Electrical and Lighting Mgmt System Interoperability & Intercommunications Std
2	24	NTCIP 1301 - Weather Report Message Set for ESS

Advanced Transportation Controller

Using Considering

15	70	ITE 9603-1 - Application Programming Interface (API) Standard for the Advanced Transportation Controller (ATC)
15	68	ITE 9603-2 - Advanced Transportation Controller (ATC) Cabinet
30	58	ITE 9603-3 - Advanced Transportation Controller (ATC) Standard Specification for the Type 2070 Controller

Profiles and Base Standards

Using Considering

25	39	NTCIP 1201 - Global Object Definitions
7	25	NTCIP 1102 - Octet Encoding Rules (OER)
9	39	NTCIP 1103 - Transportation Management Protocol
2	31	NTCIP 1104 - CORBA Naming Convention Specification
1	29	NTCIP 1105 - CORBA Security Service Specification
2	30	NTCIP 1106 - CORBA Near-Real Time Data Service Specification
18	38	NTCIP 2101 - Point to Multi-Point Protocol Using RS-232 Subnetwork Profile
10	26	NTCIP 2102 - Subnetwork Profile for PMPP using FSK Modems
13	31	NTCIP 2103 - Subnet Profile for Point-to-Point Protocol using RS 232
12	37	NTCIP 2104 - Subnetwork Profile for Ethernet
6	28	NTCIP 2201 - Transportation Transport Profile
19	41	NTCIP 2202 - Transport Profile for Internet (TCP/IP and UDP)
9	32	NTCIP 2301 - Application Profile for Simple Transportation Management Framework (STMF)
2	25	NTCIP 2302 - Application Profile for Trivial File Transfer Protocol
4	35	NTCIP 2303 - Application Profile for File Transfer Protocol (FTP)
6	30	NTCIP 2304 - Application Profile for Data Exchange ASN.1 (DATEX)
0	25	NTCIP 2305 - Application Profile for Common Object Request Broker Architecture (CORBA)

Number of agencies

Using Considering

0	22	NTCIP 8003 - Profiles - Framework and Classification of Profiles
1	47	NTCIP 9010 - XML Standard for Center-to-Center Communications
8	39	IEEE P1488 - IEEE Standard for Message Set Template for Intelligent Transportation Systems
8	33	IEEE P1489 - IEEE Standard for Data Dictionaries for Intelligent Transportation Systems - Part 1 Functional Area Data Dictionaries

Center-to-Center Communications

Using Considering

14	61	ITE TM 1.03 - Standard for Functional Level Traffic Management Data Dictionary (TMDD)
4	58	ITE TM 2.01 - Message Sets for External TMC Communication (MS/ETMCC)
5	55	NTCIP 1602 - Generic Reference Model for C2C Communications

Incident Management

Using Considering

8	46	IEEE 1512-2000 Standard for Common Incident Management Message Sets for use by Emergency Management Centers
1	47	IEEE P1512.1 - Standard for Traffic Incident Management Message Sets for Use by EMCs
1	41	IEEE P1512.2 - Standard for Public Safety Incident Management Message Sets for Use by EMCs
1	38	IEEE 1512.3-2000 - Standard for Hazardous Material Incident Management Message Sets for Use by Emergency Management Centers
1	36	IEEE 1512.4 - Standard for Emergency Management to Emergency Vehicle Subsystems Use by Emergency Management Centers
1	29	IEEE P1556 - Standard for Security and Privacy of Vehicle/Roadside Communication Including Smart Card Comm.

Advanced Traveler Information System

Using Considering

4	44	SAE J2354 - Message Set for Advanced Traveler Information System (ATIS)
2	30	SAE J2540-2 - ITIS Phrase Lists (International Traveler Information Systems)
2	34	SAE J2630 - Converting ATIS Message Standards from ASN.1 to XML

Transit

Using Considering

0	16	APTA - TCIP Dialogs
0	15	NTCIP 1400 - TCIP - Framework Standard
0	14	NTCIP 1401 - TCIP - Common Public Transportation (CPT) Business Area Standard
0	16	NTCIP 1402 - TCIP - Incident Management (IM) Business Area Standard
0	13	NTCIP 1403 - TCIP - Passenger Information (PI) Business Area Standard
0	12	NTCIP 1404 - TCIP - Scheduling/Runcutting (SCH) Business Area Standard
0	10	NTCIP 1405 - TCIP - Spatial Representation (SP) Business Area Standard
1	11	NTCIP 1406 - TCIP - Onboard (OB) Business Area Standard
0	12	NTCIP 1407 - TCIP - Control Center (CC) Business Area Standard
1	11	NTCIP 1408 - TCIP - Fare Collection (FC) Business Area Standard

Commercial Vehicle Operations

Using Considering

2	13	ANSI TS284 - Commercial Vehicle Safety Reports
2	12	ANSI TS285 - Commercial Vehicle Safety and Credentials Information Exchange
2	12	ANSI TS286 - Commercial Vehicle Credentials

Dedicated Short Range Communications

Number of agencies

Using Considering

1	28	IEEE 1609.1 - Standard for Dedicated Short Range Communications (DSRC) Resource Manager
1	28	IEEE 1609-2 - Standard for Dedicated Short Range Communications (DSRC) Application Layer
1	29	IEEE 1609.3 - Standard for IP Interface for Dedicated Short Range Communications (DSRC)
1	26	IEEE 1609.4 - Standard for Dedicated Short Range Communications (DSRC) Medium Access Control (MAC) Layer
1	22	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
2	29	SAE J2xxx - Standard for Data Dictionary and Message Sets for Dedicated Short Range Communications (DSRC)
3	25	E2158-01 Standard Specification for Dedicated Short Range Communication (DSRC) Physical Layer using Microwave in the 902 to 928 MHz Band
2	23	ASTM E17.54.00.1 - Standard Guidelines for Archiving ITS-Generated Data
1	22	PS 105-99: Standard Provisional Specification for Dedicated Short Range Communication (DSRC) Data Link Layer

Archived Data User Service (ADUS)

Using Considering

2	33	ASTM E2259-03 -Standard Guidelines for Archiving
2	28	ASTM E-17.54.02.1 Standard Specifications for Metadata Content for ITS-Generated Data
1	34	ASTM E-17.54.02.2 Standard Specifications for Archiving ITS-Related Traffic Monitoring Data

Location Referencing

Using Considering

4	18	SAE J2266 - Location Referencing Message Specification
---	----	--

53. 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	
14	9	13	Options offered in the standards
17	19	12	Products employ standards
27	20	15	Regional architecture document requirements
18	17	13	Additional funding provided
36	24	31	Integration opportunities
4	12	18	Consultant or integrator's recommendation
2	6	4	My agency's participation on standard committees
6	5	9	Training and Technical Assistance support provided by US DOT
9	16	14	Responding to the rule to use ITS Standards
4	5	2	Compliance testing is readily available

54. 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 T

Somewhat see Appendix U

Not exactly see Appendix V

55. 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	
66	7	11	We are already committed to using standards when they are complete
40	38	23	Vendors provide standard-compliant products
26	25	29	Standards being accepted by the ITS community and being used in deployments
18	45	34	Training and technical support being provided to my agency
36	27	29	Standards are developed that apply to my system
45	35	29	Additional funding being provided to use the standards
12	17	23	Standards use enables interoperability of systems
see Appendix W			Other

56. 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	
122	38	24	Training courses
30	28	22	Published standards provided for free
23	34	19	Published standards are easily available
13	36	26	Support documents (i.e. procurement and implementation guides) are available
26	52	37	Workshops
7	12	32	Standards Web site
2	6	4	Standards forum
14	22	27	Software tools to assist with correctly specifying and procuring the standard
1	2	5	E-mail bulletins
12	14	23	Resource documents (i.e., user guides and reference notebooks)
6	8	17	Testing tools
27	20	28	Case studies of other similar projects that used standards successfully
see Appendix X			Other

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

Yes	242
No	64

DATA COLLECTION AND ARCHIVING:

58. Does your agency archive any operational data?

Yes, how long have you been archiving? see Appendix Y

No, but we plan to begin archiving data in the next year	20
No, but we plan to begin archiving data within the next two years	36
No, but we plan to begin archiving data in the future (five to ten years)	54
No, we do not plan to begin archiving data	139

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

Computer database - Store raw data. (e.g., sensor feed)	109
Computer database - Store processed data (e.g., traffic conditions)	62

What is the size of the database? see Appendix Z

Other see Appendix AA

Do not archive data

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

Yes, are you using it?

Yes	5
No	71

No

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

On-Line (Web)	26
CD	37
Paper reports	87
Do not make archive data available/do not archive data	188
Other	see Appendix AB

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

Arterial streets within the central business district	29
Arterial streets within the metropolitan region	62
Arterial streets in rural areas within the MPO planning boundary	17
Congested areas only	16
Other	see Appendix AC

63. Please check the information that your agency collects/archives in real-time

	Collect	Archive
Traffic volumes	204	145
Traffic speeds	131	81
Lane occupancy	75	48
Vehicle classification	69	50
Travel time	38	21
Turning movements	93	66

DATA COLLECTION AND ARCHIVING (Cont.):

	Collect	Archive
Queues	23	16
Phasing/cycle lengths	133	92
Road conditions (e.g. wet, icy, etc.)	22	15
Emergency vehicle signal preemption	85	50
Transit vehicle signal priority	21	12
Weather conditions (e.g. snow, fog, rain, etc.)	28	21
Incidents	59	46

64. Please check the information that your agency collects/archives electronically

	Collect	Archive
Route designations (snow emergency, etc.)	16	13
Current work zones	56	37
Scheduled work zones	58	36
Intermodal (air, rail, water) connections	3	1
Emergency/evacuation routes and procedures	18	15
Incident status	35	20
Traffic video surveillance	42	10
Do not collect/archive information	95	71
Other:	see Appendix AD	

65. What are the data used for?

Do not know	5
Traffic analysis	201
Construction impact determination	91
Capital planning/analysis	97
Operation planning/analysis	120
Incident detection algorithm development	21
Roadway impact analysis	81
Accident prediction models	24
Dissemination to the public	84
Traffic Management	137
Measurement of performance	85
Safety analysis	92
Traffic simulation modeling	94
Travel time prediction	23
Other:	see Appendix AE

EMERGENCY PREPAREDNESS:

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

Yes	224
No	54
Don't know	142

Appendix A: Other data collection technologies

Agency	Technology	Signalized Intersections	
		in 2004	by 2005
Baltimore			
Howard County	Laser	4	7
Boston, Lawrence, Salem			
Massachusetts Highway Department	EIS RTMS	25	65
Hartford, New Britain, Middletown			
Hartford City	phase/cycle data	235	238
Kansas City			
Independence City	video for presence	4	
Los Angeles, Anaheim, Riverside			
Pasadena City	Microwave Sensor	2	2
New York, Northern New Jersey, Southwestern Connecticut			
New York State DOT-Hudson Valley Region 8	Acoustic detectors	4	30
Pensacola			
City of Pensacola Public Works	MICROWAVE	1	1
Phoenix			
Chandler City	RTMS	10	10
Santa Barbara			
Santa Maria City Public Works	Pre-emption actuations	2	3
Sarasota-Bradenton			
Manatee County	microwave	2	2
Sarasota County	Groundhog	15	17
Seattle, Tacoma			
King County	Permanent Traffic Counters, Groundhog	2	6
Tampa, St. Petersburg, Clearwater			
Hillsborough County	Radar detection trial	1	6
Pasco County	Microwave	2	2

Appendix B: Other time intervals between signal timing plan modification

Agency	Time interval
Atlanta	
Atlanta City	BITran QuicNet/4 Eagle Actra
Georgia Department of Transportation	For high volume areas - annually Others - 2 years or more
Gwinnett County	Annual and as-needed on major arterials and corridors. Two years of more on remaining coordinated locations.
Cleveland, Akron, Lorain	
Cleveland City	As of 2000 the City of Cleveland had a little over 120 intersections upgraded from a mechanical controller to a solid state controller. Since that time we have upgraded by end of 2005 roughly to just over 750 intersections. We are also in the process of eliminating traffic lights and have removed 60 over the past 2 years and will continue. Our plan is to have all major signal corridors changed out to Solid State semi activated interconnected facilities by end of 2005. We will have changed out roughly 750-800 traffic signals over the past 5 years. This effort has changed out facilities that were between 20 and 30 years old. Upon completion we will look to upgraded every 8 - 10 years.
Ohio Department of Transportation District 3	5 years
Dallas, Fort Worth	
Dallas City	We do not have internal staff or funding (for external resources) to do comprehensive signal coordination designs as often as needed. We do respond to citizen requests to update signal timings at site specific locations and do approximately 1000 field adjustments per year.
Denver, Boulder	
Arvada City	Periodically review selected corridors as need arises or in concert with other projects or coordinations efforts with MPO.
Douglas County	It has been mostly every three-five years, going to every two to three years now with as needed for some corridors.
Jefferson County	Four years for major updates, continually monitored and adjusted as needed.
Detroit, Ann Arbor	
Oakland County Road Commission (RCOC)	In process of completing a 4 year program to do all non SCATS signals. RCOC plans to update signals every five to eight years in future.
Eugene	
Eugene City Public Works	As resources allow and as road projects dictate. Typically a change needs to take place before signal timing review and modifications are done.

Appendix B: Other time intervals between signal timing plan modification

Agency	Time interval
Fort Myers	
Florida DOT	Most signal timing plans are updated as needed by in-house staff. Wholesale timing plan changes in an area are generally made when signals are incorporated into an ATMS computer system project. Occasionally, we have retiming projects for an area scheduled into our work program.
Lee County DOT, Traffic Section	And as funding/resources become available to complete other signal timing plan reviews and modifications.
Greenville	
North Carolina DOT	Our goal is to check timing annually. However timing is only modified as needed.
Hampton Roads	
Newport News City	3 year program City wide; Annual for seasonal timings such as school timing plans and shopping centers at Christmas time.
Norfolk City	when data is collected 2-10 yrs
Hartford, New Britain, Middletown	
Hartford City	No regular program. Individual intersections, arterials or network sub-groups modified to address critical needs.
Jacksonville	
Clay County	Countys intersection are modified as needed. States intersection are under their jurisdiction.
Knoxville	
Knox County	Try every 3 years
Las Vegas	
Las Vegas Computer Traffic System	As often as Once a year to every years depending on conditions changing.
Los Angeles, Anaheim, Riverside	
Santa Ana City	Citywide - 4 years or more individual intersection - as needed
Louisville	
Clark County	INDOT provided signal timings
Miami, Fort Lauderdale	
Miami-Dade County	Staffing is insufficient to schedule such. Instead, staff responds to the need for re-timing on a priority basis. Some locations get re-timed often. Some get re-timed rarely.

Appendix B: Other time intervals between signal timing plan modification

Agency	Time interval
Minneapolis, St. Paul	
Dakota County	We are looking for some recommendations on staffing and update time frames for the future.
Minnesota Department of Transportation	Until recently Mn/DOT didnt have a set retiming schedule (most plans were in the +10 years). Presently we are on a +5 year scgedule.
New York, Northern New Jersey, Southwestern Connecticut	
Brookhaven Town	Suffolk County modifies there traffic signals timings, As per our agreement, Town Maintains the timing set by Suffolk County.
Norwalk City(CT)	Most times as needed, be with no staff this is done by intersection not as a system due to staffing
Westchester County	In the process of implmenting singal retimign recommendations, 1st update after many, many years. Plan on conducting similar update every 3-5 years but will likely be more frequent for intersections conected to our central system.
Omaha	
Omaha City	As needed and as time and people are available.
Orlando	
Orange County	3 years or as needed.
Orlando City	3 years or more
Philadelphia, Wilmington, Trenton	
Trenton City	we do not modify timing
Phoenix	
Mesa City	MUTCD 2003 just adopted - requires citywide analysis
Scottsdale City	Where ITS is implemented, modifications occur whenever it is noticed that they are needed - sometimes, daily, weekly, or monthly. At all other locations, average time between modifications is 2 years
Richmond, Petersburg	
Virginia DOT - Richmond Smart Traffic Center	Depending on the number of intersections in the system the time could range from one to two years.
Roanoke	
Virginia DOT	At least twice per year
Rochester	
Monroe County	Higher growth areas get signal timings checked more frequently than lower growth areas. Number shown is an average.

Appendix B: Other time intervals between signal timing plan modification

Agency	Time interval
Sacramento	
Sacramento County	Intersection timing is on a three year interval. Coordination timing plans are as needed.
San Diego	
Caltrans District 11	twice/year
Chula Vista City	2 years or more OR as needed
Seattle, Tacoma	
Bellevue City	managed corridors are annually or sooner as construction requires. minor arterials average every 2 years. Isolated intersections are as needed.
Snohomish County	Varies by volume/complexity of route.
Spokane	
Washington State Department of Transportation Eastern Region	Rural isolated low volume, low speed (35 mph) 3yr Rural isolated high volume, high speed 2 yr Urban isolated low volume, low speed (35 mph) 3yr Urban isolated high volume, high speed 2 yr Coordinated Arterial 2yr
St. Louis	
Franklin County	We have no signalized intersections.
Tampa, St. Petersburg, Clearwater	
Hillsborough County	We have 3 signal timing tech's. Ongoing process.
Toledo	
Ohio Department of Transportation District 2	As needed for signal systems, 2 years or more for isolated intersections.

Appendix C: Software used to manage signals

Agency	Software
Albany, Schenectady, Troy	
Albany City	CLMats; SYNCHRO
New York State Department of Transportation	BiTrans closed loop traffic control; Synchro traffic optimization program; In-house inventory and management application; Castle Rock Incident Management Application.
Albuquerque	
Albuquerque City	VMS,icons
Bernalillo County	ARIES
City of Rio Rancho for Sandoval County	ICONS -- Advanced Traffic Management System Software for 21 Signals in 2004 Synchro -- Modifications to signal timing.
Allentown, Bethlehem, Easton	
Allentown City	HCS
Asheville	
Asheville City Public Works	Traconet
Atlanta	
Cherokee County	Syncro
Clayton County	Quicnet, Transyt, Actra
Cobb County	1. Smartway 2. Actra
DeKalb County	Synchro
Fulton County	ACTRA
Georgia Department of Transportation	ACTRA SEPAC/SEMARC
Gwinnett County	Signal Databases: Eable Marc, Bitran QuicNet 4, and Eagle Actra Timing Software: Synchro 5
Henry County	Actra
Austin	
Austin City	NextPhase for local controllers and i2tms for central.
Bakersfield	
Bakersfield City	simtraffic
Caltrans District 6	CT Net

Appendix C: Software used to manage signals

Agency	Software
Baltimore	
Anne Arundel County	Marc NX, this is software created by Eagle System for their controllers
Howard County	Monarch
Maryland State Highway Administration	Econolite ARIES program, SYNCHRO software
Baton Rouge	
Baton Rouge/East Baton Rouge Parish	Naztec streetwise central end traffic signal controller software, TEPAC, Fourtream, HCS, TSPPDraft
Louisiana Department of Transportation Division District 61	SIGCINEMA, TSPPDRAFT
Louisiana Department of Transportation Division District 62	Streetwise, synchro6, Sig Cinema, TSPP Draft
Beaumont-Port Arthur	
Beaumont City Public Works	Software provided in the Naztec Model 920 Controller and Naztec Seriec 500 Conflict Monitor
Texas Department of Transportation	PASSER
Bellingham	
Bellingham City Public Works	Aries, Synchro, CLMats
Birmingham	
Birmingham City	MTCS.pc by Computran Systems Corp.
Shelby County	Done by contract consultant at this time.
Boise City	
Ada County Highway District	Synchro, HCS 2000
Boston, Lawrence, Salem	
Boston City	UTCS
Cambridge City	synchro, marcnx
Framingham Town	it will be actra once installed
Malden City	N/A
Massachusetts Highway Department	none
Newton City	Synchro, MarcNX, Excel, ArcMap GIS
Somerville City	old version of HCS (dos version) and trial & error method
Waltham City	Eagle Software

Appendix C: Software used to manage signals

Agency	Software
Buffalo, Niagara Falls	
New York State Department of Transportation	BiTrans Closed Loop traffic control; Synchro traffic optimization program ; In-house inventory and maintenance management application; Castle Rock Incident Management Application
Niagara Falls City	none
Charleston	
Charleston City	BI-Trans 200SA
North Charleston City	Translink 32
South Carolina Department of Transportation	TransLink32
Chattanooga	
Chattanooga City Public Works	Marc NX PCTNET
Hamilton County Public Works	n/a
Chicago, Gary, Lake County	
Chicago City	Varies, new systems are operated on the M.I.S.T. system. Other closed loop systems are operated by CLMATS.
Cook County	Aires, Marcnt
DuPage County	Econolite Aries Trafficware Synchro
Evanston City	None
Gary City	none
Hammond City	Econolite Zone Monitor
Illinois Department of Transportation	Synchro, PASSER, HCS
Joliet City	Aires
Lake County -Illinois	Aries
Naperville City	Marc NX, Aries, Autoscope
Oak Park Village	Zone master
Porter County Highway Dept.	none
Schaumburg Village	Econolite Zone Monitor
Waukegan City	Consultant Selection
Wheaton City	eagle

Appendix C: Software used to manage signals

Agency	Software
Cincinnati, Hamilton	
Butler County	CLMATS and MARK NX
Cincinnati City	Computran System Inc. Version of UTCS.
Clermont County	None
Hamilton City	hcs,t7f,others
Hamilton County	Translink, WAPITI W2UCS
Kentucky Transportation Cabinet	Transcore
Warren County	Wapiti
Cleveland, Akron, Lorain	
Akron City	TSPPD, Synchro
Cleveland City	at this time we use 3 systems Eagle Marc system Econolite system Peak system
Cleveland Heights City	Wapiti dos based traffic view
Euclid City	ARIES
Lake County	NONE
Ohio Department of Transportation District 12	Transyt, Synchro
Ohio Department of Transportation District 3	Synchro 6
Ohio Department of Transportation District 4	HCS Synchro
Columbia	
City of Columbia	Eagle Actra, AECOM
South Carolina DOT	AECOM, Translink 32
Columbus	
Columbus City	Synchro
Franklin County	Synchro and Signal 2000
Ohio Department of Transportation	SYNCHRO

Appendix C: Software used to manage signals

Agency	Software
Dallas, Fort Worth	
Arlington City	Synchro and ACTRA
Carrollton City	Eagle Monarc System. Synchro PASSER III
Dallas City	ESCORT - owned by Kimley-Horn
Denton City	Synchro and Passer
Fort Worth City	Synchro
Grand Prairie City	ACTRA
Irving City	We are implementing Siemens software. It was named ICONS, then I2TMS, and now I believe its changing again.
Mesquite City	I do not understand your question? The controllers use proprietary software. The central system will use proprietary software appropriate for the controllers. For timing: Synchro, Passer II, Passer III, Transyt-7F, TSIS.
Plano City	Naztec Streetwise
Richardson City	Synchro & Nastel
Texas Department of Transportation Dallas District	Synchro and Passer II-2000
Texas Department of Transportation Fort Worth District (TransVISION)	PASSER, SYNCHRO
Dayton, Springfield	
Dayton City	TEAPAC, HCS, Passer, TRANSYT 7F
Greene County	ARIES - ECONOLITE
Kettering City	Mark NX, smartways
Miami County	NA
Montgomery County	Syncho
Ohio Department of Transportation District 7	Synchro, Passer III, SWISS, OSIS
Springfield City	ACTRA
Daytona Beach	
Volusia County Public Works	Excel spreadsheets

Appendix C: Software used to manage signals

Agency	Software
Denver, Boulder	
Adams County	Econolite Aries
Arapahoe County	Econolite Aries
Aurora City	Siemens ACTRA
Boulder City	Sychro, TS/PP-Draft
Denver City	Syncro, Vissim
Douglas County	pyramids
Jefferson County	TranLink 32
Lakewood City	TransCore Series 2000
Longmont City	Econolite Aries Software
Thornton City	Wapiti
Westminster City	ARIES
Detroit, Ann Arbor	
Ann Arbor City	Excel, Synchron
Livingston County	HCS2000
Macomb County	MARC NX for closed loop systems.
Oakland County Road Commission (RCOC)	Syncro
Pontiac City	none
Washtenaw County Road Commission	Marc NX
Wayne County	Do not use a software management package.
El Paso	
El Paso City	Timing - Synchron, Passer; System - QuicNet (BITran)
Texas Department of Transportation-El Paso District	streetwise
Eugene	
Eugene City Public Works	QuickNet 4.1, transit, paser, syncro
Lane County Public Works	Trafficview
Oregon Department of Transportation	WAPATI
Springfield City Public Works	BiTran QuicNet/4

Appendix C: Software used to manage signals

Agency	Software
Fort Myers	
Cape Coral City Public Works	This procedure has been done in the past by State or County.
Florida DOT	The FDOT does not operate or manage signals. A variety of different manufacturers of controllers/software are used by the various agencies within our district. In the Lee County area, Econolite controllers and software are used.
Lee County DOT, Traffic Section	Aries/Econolite
Fort Wayne	
Fort Wayne Public Works	ITS Siemens ACTRA software
Indiana DOT	Synchro 6.0
Fresno	
Caltrans District 6	CT Net
Fresno City	bitrans-cityprogram
Grand Rapids	
Grand Rapids City including Kent County	Actra, Synchro
Ottawa County	Use HCS2000 for evaluating operation.
Wyoming City	Acra - Eagle Signals
Greensboro, Winston-Salem, High Point	
Greensboro City	Passer II Synchro
High Point City	CLMATS (peek traffic)
North Carolina Department of Transportation for Randolph County	Econolite Aries, Oasis/OSM, main frame proprietary (high point system - US#311 in Archdale)
Winston-Salem City	Protocol 90 (MTCS Software)
Greenville, Spartanburg	
Greenville City	Eagle Actra System along with Synchro/SimTraffic
South Carolina Department of Transportation	Translink/Wapiti
Spartanburg City	Synchro for timing

Appendix C: Software used to manage signals

Agency	Software
Hampton Roads	
Chesapeake City	MIST AND ARIES
Hampton City	Naztec Streetwise
Newport News City	Traffic Control Technologies, LMSYSTEM for Peek Controllers; MARCNX for Eagle Controllers
Norfolk City	Bitran Quicknet 4
Portsmouth City	SYNCHRO
Suffolk City	SYNCHRO
Virginia Beach City	Synchro v6 Passer V
Harrisburg, Lebanon, Carlisle	
Harrisburg City	N/A
Hartford, New Britain, Middletown	
Connecticut Department of Transportation	control - Naztec closed loop system. Retiming - Passer-II and Synchro
Hartford City	Econolite Pyramids
Manchester Town	None
Honolulu	
Honolulu City and County	Bitrans
Houston, Galveston, Brazoria	
Galveston City	Naztec Streetwise
Harris County	Nextphase for local control. IZTMS for central.
Houston City	TSPPD, Syncro, NextPhase,PASSER 2000
Montgomery County	STREETWISE
Texas Department of Transportation-Houston District	Eagle Closed Loop System , Naztec Closed Loop System , Econolite Closed Loop System , Garner Icons
Huntsville	
Madison County	wapiti programs
Indianapolis	
Hancock County	none
Indianapolis City and Marion County	ICONS (Econolite); Aires Zone Monitor;
Jackson	
Jackson City Public Works	ACTRA

Appendix C: Software used to manage signals

Agency	Software
Jacksonville	
Clay County	Peek (MATS)
Duval County (includes Jacksonville City)	Synchro, Passer - *time-space diagrams*
St. Johns County	Smartway by Peek and Aries by Econolite
Janesville-Beloit	
Wisconsin Department of Transportation District 1	TCT & Eagle
Kansas City	
Independence City	MARC by Eagle
Kansas City - Kansas DPW	FHWA AAP
Kansas City - Missouri DPW	Synchro, Signal, TSPPD
Missouri Department of Transportation	Synchro, Vission, Copsim
Olathe City	Synchro & HCS
Overland Park City	Traffic View (Wapiti Closed Loop DOS Software)
Knoxville	
Blount County	None
Knox County	CLMATS
Knoxville City	Synchro for timing Simtraf for simulation Cartegraph Workdirector for workorder, inventory and data management to be installed this year.
Las Vegas	
Las Vegas Computer Traffic System	i2tms/NextPhase from SiemensITS
Little Rock, North Little Rock	
Little Rock City	ACTRA, MARC
North Little Rock	Eagle -Marc System

Appendix C: Software used to manage signals

Agency	Software
Los Angeles, Anaheim, Riverside	
Anaheim City	Synchro, our own Access database
Caltrans District 8	Caltrans C8, TSCP, TRFM, FM210
Costa Mesa City	Multisonics VMS
Garden Grove City	ARIES
Glendale City	Bitran Quicnet
Huntington Beach City	quicknet 4
Inglewood City	QuicNet4 of Bi Tran Systems
Long Beach City	Synchro
Los Angeles City	ATCS Synchro
Los Angeles County	We are planning to install the KITS system within the next 18 months.
Pasadena City	Synchro
Riverside City	Quicknet
San Bernardino City	Quicnet
Santa Ana City	Existing : US Traffic - VMS 2005 : PB Farradyne - MIST
Louisville	
Clark County	unknown
Floyd County	none
Louisville Jefferson County Metro Government	Pyramids - by Econolite
McAllen	
McAllen City Public Works	Synchro
Memphis	
Memphis City	Syncro, Passer, HCS, Marc, Actra
Shelby County	N/A
Miami, Fort Lauderdale	
Broward County	UTCS
Miami-Dade County	UTCS 1st Generation, heavily modified by in-house and consultant programmers during the past couple decades.

Appendix C: Software used to manage signals

Agency	Software
Milwaukee, Racine	
Kenosha City	passer,,t-7f
Kenosha County	None, completed by various consulting engineers
Milwaukee County	timing / optimization - synchro / SimTraffic; system / network - Mark NX / Actra (Eagle)
Racine City	ACTRA, TEAPAC for timings
Waukesha City	MareNX software
West Allis City	N/A
Minneapolis, St. Paul	
Anoka County	Econolite Aries and cordination synchro& sims traffic
Bloomington City	Econolite, Eagle
Burnsville City	Dakota County Transportation Manages all City Signals
Dakota County	Primarily Aeries -- we have one Eagle system that will be switched over. Anlysis is done with HCM and Synchro software.
Hennepin County	Synchro, Passer II, Transyt-7F
Minneapolis City	Fastracs, Marc NX
Minnesota Department of Transportation	Econolite - Aries Trafficware - Synchro/SimTraffic - timing
Ramsey County	Synchro w/ SimTraffic
Scott County	Aries, Synchro 5
St. Paul City	Econolite TCS-II Central System (Soon to be upgraded to Econolite Pyramids) Synchro SimTraffic
Washington County	Econolite Aries, Synchro and SimTraffic
Modesto	
Modesto City Public Works	Syncro
Turlock City Public Works	BI-Trans 200CA and BI-Trans System Field Master Program 210 Passer II and Synchor 3
Montgomery	
Montgomery City Public Works	Eagle Marc
Nashville	
Davidson Metro	MIST(c) Smartways(c)

Appendix C: Software used to manage signals

Agency	Software
New Haven, Meriden	
Connecticut Department of Transportation	Control & monitoring: Naztec closed loop Retiming & optimization: Passer-II and Synchro
Meriden City	HCS
New Haven City	TRANSCORE 2000 Series and Naztec StreetWise
New Orleans	
Jefferson Parish	VISSIM
Louisiana Department of Transportation District 02	HCS, CORSIM, PASSER III
Louisiana Department of Transportation District 62	STREETWISE,SIGCINEMA, TSPP DRAFT, SYNCHRO

Appendix C: Software used to manage signals

Agency	Software
New York, Northern New Jersey, Southwestern Connecticut	
Babylon Town	TAPS, BiTrans, Kentron
Bridgeport City(CT)	QUICNET 4 , by BiTrans
Brookhaven Town	None, At This Time.
Clarkstown Town	NYS ITAPS
Clifton City(NJ)	none
Connecticut Department of Transportation(CT)	Control and monitoring - Naztec closed loop systems. Retiming - Passer II and Synchro
East Orange City(NJ)	none
Elizabeth City(NJ)	n/a
Essex County(NJ)	Aries
Greenburgh Town	New York TAPS
Greenwich Town(CT)	Peek Tansyt "Smartways", will be ungrading to CLMATS within the next year
Hudson County(NJ)	Smartsigns Multiones
Hunterdon County	County does not maintain or manage signals, done by other agencies
Irvington Township(NJ)	N/A
Jersey City(NJ)	Smartway
Middlesex County(NJ)	HCS, SIMTRAFFIC-SYNCHRO
Monmouth County(NJ)	Cartegraph, Synco, HCS
Nassau County	Modified UTCS
New Jersey Department of Transportation(NJ) Traffic Operations North	Streetwise, MATS
New Rochelle City	MIST
New York State DOT-Hudson Valley Region 8	BiTrans closed loop traffic control; Synchro traffic optimization program; In-house inventory and management application; Castle Rock Incident Management Application. Misc. system interfaces.
New York State DOT-Long Island Region 10	BiTrans closed loop traffic control; Synchro traffic optimization program; In-house inventory and management application; Castle Rock Incident Management Application.
Newark City(NJ)	Multisonic Closed Loop System and MIST
Norwalk City(CT)	Close loop MATS from PEEK Traffic
Ocean County(NJ)	HCS & Synco
Parkway Traffic Operations Center	Econolite Aries

Appendix C: Software used to manage signals

Agency	Software
Patterson City(NJ)	NCTIP
Ramapo Town(NJ)	NYS ITAPS
Smithtown Town	HCM
Somerset County	Peek Corp. Closed Loop System software
Stamford City(CT)	Synchro, Transyt 7F
Union City - New Jersey	none
Warren County	highway capacity software
Oklahoma City	
Edmond City	PASSER IV 02, PASSER II 96, CINEMA 2000
Norman City	Passer, Transit, Teapac and Synchro
Oklahoma City	We use Synchro 5.0 and TEAPAC to time signals. We use system called Vehicle Management System (VMS) by US Traffic to manage approximately 200 signals, mostly in the downtown area.
Omaha	
Council Bluffs City	Marc, Synchro
Omaha City	N/A
Orlando	
Orange County	ACTRA for Central/Closed Loop Control & SCOOT for Adaptive Control
Orlando City	Naztec Streetwise
Osceola County	HCS, Synchro
Seminole County	Streetwise (Naztec)
Pensacola	
City of Pensacola Public Works	SYNCHRO
Escambia County Public Works	Smartways and CLMats

Appendix C: Software used to manage signals

Agency	Software
Philadelphia, Wilmington, Trenton	
Bensalem Township	Aries
Lower Merion Township	EAGLE SIGNAL MARX NX
Mercer County	Mercer County maintains electronic files of traffic signal timings. This software is provided for Multisonics controllers. The software is provided by General Highway Products.
New Jersey DOT- Traffic Operations Center South	MATS created by PEEK. ON-TIME created by Control Technologies.
Philadelphia Streets Department	In-house software
Trenton City	Quick Load 4.0
Wilmington City	none
Phoenix	
Arizona Department of Transportation	Icons, Passer, Synchro.
Chandler City	Synchro V5
Glendale City	Beginning to use Synchro and i2TMS.
Maricopa County	Icons by Siemens
Mesa City	Passer, Synchro, icons
Phoenix City	Synchro
Scottsdale City	TransCore Series 2000, Wapiti signal software, MS Excel for timing plans.
Tempe City	Computran MTCS
Town of Gilbert	ICONS By Econolite
Pittsburgh, Beaver Valley	
Westmoreland County	PA DOT MANAGES OUR SIGNALS
Portland, Vancouver	
Beaverton City	Translink wapati software, 170 type controller software
Clackamas County	Translink used with W4IKs signal software. Will be adding some signals to Portlands central computer system, which is Transcore
Clark County	US Traffic Traconet Econolite Zone Monitor & Aries
Multnomah County	Series 2000
Oregon Department of Transportation	Tranlink
Portland City	W4IKS+ and W9FT - Wapiti MicroSystems

Appendix C: Software used to manage signals

Agency	Software
Providence, Pawtucket, Fall River	
Cranston City	None
East Providence City	none
Providence City	Windows 2000 Professional
Provo - Orem	
Provo City Public Works	Teapac suite synchro
Utah Department of Transportation Region 3	i2TMS, synchro, Symtraffic, CORSIM,
Raleigh-Durham	
Durham City	Synchro - Timing
Raleigh City	Synchro, TSPPD, Vax software for the UTCS
Reno	
Sparks City Public Works	Synchro, Actra, VMS
Richmond, Petersburg	
Henrico County	Synchro 6
Petersburg City	none
Virginia DOT - Richmond Smart Traffic Center	Synchro, TSPP DRAFT, PASSER-90, MARC PC and MARC NX
Roanoke	
Roanoke City Public Works	Streetwise
Virginia DOT	Eagle Signal MARC NX
Rochester	
Monroe County	Synchro
Sacramento	
Sacramento County	The signal management programs used are the Multisonics VMS 330 and Eagle ACTRA systems. SYNCHRO 6.0 and PASSER II is used for system modelling and timing plans.
Salinas	
Monterey County Public Works	BI Tran Systems, Inc. 233 program (phasing out 200 program), and QuicLoad. We plan on using BI Tran Systems QuicNet 4 when funding permits.
Salinas City Public Works	SYNCHRO
Seaside City Public Works	Transit 7F

Appendix C: Software used to manage signals

Agency	Software
Salt Lake City, Ogden	
Utah Department of Transportation-Region 1	i2TMS, Synchro, Simtraffic, CORSIM, Marc
Utah Department of Transportation-Region 2	i2TMS, Synchro, Simtraffic, CORSIM, MARC, Aries
West Valley City	Contracted out.
San Antonio	
San Antonio City	Synchro, PASSER
San Diego	
Caltrans District 11	QuicNet4
Carlsbad City	Synchro.
Chula Vista City	Bitran z33 - Traffic Program & Synchro /Sim Traffic
El Cajon City	BI-Trans quicknet 4+
Escondido City	BI Tran QuicNet 4, Synchro v. 4
San Diego City	QuicNet 4 is our signal master system. We use Synchro 5 to optimize traffic signal timing on signal systems.
San Diego County	Our local software is BiTrans 200SA. Next year we will have QuicNet4 for interconnected signals.
San Francisco, Oakland, San Jose	
Caltrans District 4	Caltrans HQ Developed software.
Fremont City	We use a central signal system (ATMS) to manage signal timing information. We use Synchro to develop coordinated signal timing plans.
Redwood City	Integrated Control of Traffic Networks (ICONS), Econolite/Gardener Systems
San Francisco City & County	Signal records are kept in Access. Signal timing is done with Synchro. Our 2070 software is D4. We are currently selecting a central system software.
San Jose City	Series 2000 and ICONS
Santa Clara County	Transit, Passser
San Luis Obispo	
San Luis Obispo City Public Works	BiTrans/Quicknet
San Luis Obispo County Public Works	Bitrans Controller
Santa Barbara	
Santa Barbara City Public Works	Bitran, SCOOT, Actra
Santa Barbara County Public Works	Bitrans
Santa Maria City Public Works	Bi trans 200CA Bi trans Quicnet

Appendix C: Software used to manage signals

Agency	Software
Sarasota-Bradenton	
Sarasota County	LM System Software
Scranton, Wilkes-Barre	
Scranton City	NONE
Seattle, Tacoma	
Bellevue City	Our signal central system is Computran MTCS. We use Synchro/simtraffic to provide a starting point for signal timing plans.
Everett City	Multisonics VMS and ATMS
Federal Way City	Aries
King County	Synchro, SimTraffic
Kitsap County	Aries, Synchro #6
Pierce County	Synchro
Seattle City	Synchro Actra system by Seimens MIST by Faradyne
Snohomish County	QuicNet
Tacoma City	Synchro
Washington State Department of Transportation	- I2TMS - Synchro
Washington State DOT - Olympic Region Traffic Management Center	Tranconet (J.3)
Spokane	
Spokane City Public Works	SIEMENS ACTRA SYSTEM
Washington State Department of Transportation Eastern Region	Wapiti on 170 and 2070 controllers
Springfield(MO)	
Greene County Public Works	signals run on free operation
Missouri DOT	BiTrans QuicNet4
Springfield City Public Works	BI Tran QuicNet/4

Appendix C: Software used to manage signals

Agency	Software
St. Louis	
Illinois Department of Transportation	Econolite Aries
Jefferson County	none
Missouri Department of Transportation	Synchro & TS/PPD
St Charles County Highway Department	done by contract
St. Charles City	N/A
St. Louis City	Synchro, Mare, Actra
St. Louis County	TSPPD, Syncro, Actra
Stockton	
Caltrans	Caltrans developed software
Lodi City Public Works	Consultants use Synchro.
Manteca City Public Works	Caltrans C8
Stockton City Public Works	Passer, Synchro
Syracuse	
New York State Department of Transportation	TAPS, BiTrans, Peek
Onondaga County	SYNCHRO
Syracuse City	MIST
Tampa, St. Petersburg, Clearwater	
Clearwater City	MTCS
Florida Department of Transportation	LM System (Peek)
Hillsborough County	Presently MIST 2, upgrade to MIST 4 will take place this year
Pasco County	Sychro
Pinellas County	- central UTCS based control software (computran MTCS-PC) - synchro 6.1 - TSDRAFT
St. Petersburg City	TS Draft Computran Protocol 90
Tampa City	MTCS - This is a revision of the old UTCS sytem done by Computran. Second by second control. Also used CLMATS closed loop system (30 intersections) (PEEK TRAFFIC)
Toledo	
Lucas County	none
Ohio Department of Transportation District 2	Peek CLMats, Eagle Mark NX, Econolite Aires
Toledo City	Central System - Siemens ACTRA Timing - Synchro Plus

Appendix C: Software used to manage signals

Agency	Software
Tucson	
Arizona Department of Transportation	Icons
Pima County	Synchro, ICONS
Tucson City	-
Tulsa	
Tulsa City	Synchro, SimTraffic, CORSIM, HCS. Our centralized system uses Bi-Trans QuickNet
Washington	
Arlington County	Synchro
Washington	
District of Columbia Transportation Management Center	We USE BITRAN QuicNet Advanced Traffic Management
Washington	
Montgomery County	Custom written Advanced Transportation Management System software, Synchro, Sim Traffic
Prince Georges County	Streetwise from Naztec Inc.
West Palm Beach, Boca Raton, Delray	
Boca Raton City	Naztec Streetwise
Palm Beach County Public Works	Streetwise (Naztec), Synchro, Corsim, Transyt7F, Passer
Wichita	
Sedgwick County	Eagle MARC
Wichita City	TCS-II closed loop
Youngstown, Warren	
Ohio Department of Transportation-District 4	HCS Synchro
Warren City	Actra Central System Software from Eagle Traffic Control Systems
Youngstown City	Highway Capacity Manual

Appendix D: Other scope of signal timing

Agency	Scope
Albany, Schenectady, Troy	
New York State Department of Transportation	On state system control plan modifications prepared in response to permits and planned event demand models.
Albuquerque	
Albuquerque City	Question is vague - What are you referring to?
City of Rio Rancho for Sandoval County	Corridors
Atlanta	
Georgia Department of Transportation	Is tailored to individual requirements.
Baton Rouge	
Baton Rouge/East Baton Rouge Parish	as needed
Boston, Lawrence, Salem	
Cambridge City	by corridor
Newton City	Primarily complaint-driven
Buffalo, Niagara Falls	
New York State Department of Transportation	On state system control plan modifications prepared in response to permits and planned event demand models.
Niagara Falls City	as needed
Chicago, Gary, Lake County	
Aurora City	AS NEEDED.
Chicago City	as needed or as part of roadway improvements
Cook County	Time systems as needed, may be one or more.
Gary City	city wide traffic study due to influx of business and conversion of traffic flow directions; e.g., from one-way to 2-way and vice versa.
Illinois Department of Transportation	Systems are re-optimized based upon need. New traffic counts are taken, before and after studies are performed, and operations fine tuned based upon field investigations.
Kane County	As needed
Waukegan City	Major Arterial Corridors
Cleveland, Akron, Lorain	
Cleveland City	We are constantly changing timins and modifying intersections throughout the city. As we are upgradding we are modifying the traffic patterns and often reasses the timings a few months after implementation.
Columbia	
South Carolina DOT	Central business district, Major intersection, and as needed.

Appendix D: Other scope of signal timing

Agency	Scope
Columbus	
Columbus City	CBD and Arterial Systems
Dallas, Fort Worth	
Carrollton City	Signal timing adjustments for zones within sectors of the city. Small adjustments are made at individual locations
Dallas City	We do approximately 1000 adjustments per year. The adjustments vary from adjustments to the green distributions within the same cycle pattern to completely new cycle lengths and offsets.
Garland City	System wide, also on as needed basis due to traffic patterns
Grand Prairie City	2004 City wide.
Mesquite City	As needed at any intersection for coordination or queue management.
Dayton, Springfield	
Dayton City	System wide and major intersection
Miami County	NA
Denver, Boulder	
Arapahoe County	Major Corridors
Des Moines	
Polk County Public Works	Only when a problem exists.
Detroit, Ann Arbor	
Royal Oak City	The City participated in Oakland County's county wide signal system optimization program.
Wayne County	Intersections that are boarder with another county that currently does retiming on a bi-annual basis.
Eugene	
Lane County Public Works	As needed
Fort Myers	
Cape Coral City Public Works	The timing plans for the City of Cape Coral are to accommodate the heavy commuter traffic exiting and entering the city each day. The City of Cape Coral is mostly residential and the work based trips need to commute across a river with three bridges to utilize. Each bridge handles 40,000 – 50,000 work based trips per day.
Florida DOT	See response to question 12.
Lee County DOT, Traffic Section	Primarily on major aterials, progression along entire arterial and major roads spanning several signal systems.

Appendix D: Other scope of signal timing

Agency	Scope
Grand Rapids	
Grand Rapids City including Kent County	Major Corridors
Greensboro, Winston-Salem, High Point	
Winston-Salem City	depends on where intersection is located
Greenville	
North Carolina DOT	yes to all
Hampton Roads	
Norfolk City	corridor
Hartford, New Britain, Middletown	
Connecticut Department of Transportation	corridor-based
Hartford City	Intersection or arterial basis.
Manchester Town	As needed at local intersections; recent regional planning agency consultant retimed 2 arterials
Houston, Galveston, Brazoria	
Fort Bend County	No such plan at this time.
Harris County	System wide and across jurisdictional boundaries
Texas Department of Transportation-Houston District	Regional coordination is done when systems cross jurisdictional boundaries
Indianapolis	
Hendricks County	not specified
Jacksonville	
Duval County (includes Jacksonville City)	Arterial based
St. Johns County	Corridor or Segments Areas
Kansas City	
Kansas City - Kansas DPW	targeted corridors
Missouri Department of Transportation	System wide and Major intersection (depending on the corridor)
Knoxville	
Knoxville City	I am not quite sure what you are asking but we modify timing plans for special events on several of the major arterials in the City.

Appendix D: Other scope of signal timing

Agency	Scope
Los Angeles, Anaheim, Riverside	
Huntington Beach City	Varies based on corridors and individual intersections where modification have become necessary due to changes in conditions
Long Beach City	major intersections and corridor-based
Pasadena City	City-Wide regions/districts
Miami, Fort Lauderdale	
Miami-Dade County	See the answer to No. 12 above.
Minneapolis, St. Paul	
Brooklyn Park City	major arterial /corridor
Hennepin County	We have closed-loop Systems
Scott County	I don't understand this question.
Modesto	
Modesto City Public Works	Two sections Centra Business (downtown) and outside of downtown
Nashville	
Davidson Metro	Retime major corridors and the CBD on an as-needed basis.
New Haven, Meriden	
Connecticut Department of Transportation	corridor-based
New London	
Norwich City Public Works	as needed through complaints
New York, Northern New Jersey, Southwestern Connecticut	
Babylon Town	Plans modified for each individual coordinated (progressive) system.
Brookhaven Town	Suffolk County modifies there traffic signals timings, As per our agreement, Town Maintains the timing set by Suffolk County.
Clifton City(NJ)	as needed
Connecticut Department of Transportation(CT)	corridor-based
New Rochelle City	Cooridor
New York State DOT-Hudson Valley Region 8	On state system and select local system control plan modifications prepared in response to permits and planned event demand models.
New York State DOT-Long Island Region 10	On state system and local system control plan modifications prepared in response to permits and planned event demand models.

Appendix D: Other scope of signal timing

Agency	Scope
Omaha	
Nebraska Department of Roads (NDOR)	metro urban interstate signal phasing on arterials to accommodate alternate routing as per TIM
Omaha City	As needed and as time and people are available.
Orlando	
Osceola County	Arterial, 3-4 yr Major intersection, 2-3x per year
Seminole County	Major corridors periodically
Pensacola	
Escambia County Public Works	Timing plan modifications are performed for all signals within a closed loop or for a specific intersection when not interconnected.
Philadelphia, Wilmington, Trenton	
Burlington County	System wide, Central business district and Major intersection
New Jersey DOT- Traffic Operations Center South	We modify one arterial at a time.
Phoenix	
Peoria City	As needed and when regional issues arrive with adjoining Cities.
Phoenix City	wherever needed
Portland, Vancouver	
Beaverton City	corridors and/or major intersections
Clackamas County	We coordinate with State highway intersections and are creating the capability to do coordination across jurisdictional boundaries.
Clark County	Local master and even master-to-master plans are used.
Provo - Orem	
Utah Department of Transportation Region 3	Needed Corridors
Salinas	
Monterey County Public Works	Upgrade to BITran Systems 233 program, install direct wire interconnect, install emergency vehicle preemption, retime signals as traffic volumes and roadway conditions change.
Salt Lake City, Ogden	
Utah Department of Transportation-Region 1	Corridors
Utah Department of Transportation-Region 2	Needed Corridors
West Valley City	As needed on any signalized intersection.

Appendix D: Other scope of signal timing

Agency	Scope
San Diego	
Caltrans District 11	major arterials
Escondido City	As required by signal modifications that add protected left turn phasing, public complaints, etc. Do not have resources to be "proactive."
San Diego County	We are putting in volume-density timing at all I/S
San Francisco, Oakland, San Jose	
Oakland City	Major intersection AND Central business district
San Francisco City & County	Typically by arterial
Seattle, Tacoma	
King County	Both Major Intersections and corridors.
Snohomish County	Major Corridor
Spokane	
Spokane City Public Works	group
Springfield	
Chicopee City	As needed
Stockton	
Stockton City Public Works	As needed - System Wide
Tampa, St. Petersburg, Clearwater	
Tampa City	our system is broken into traffic sections. We have 63 sections and retime by section.
Toledo	
Toledo City	Am not sure I understand the question. We sometimes only modify an intersection (considering the impact on traffic flow on adjacent segments and adjacent intersections; sometimes "Sub-System-wide" - we operate 9 separate subsystems on our system.
Tulsa	
Tulsa City	We have just done individual intersections or corridors as needed. However, we are working on hiring more staff so we can work on re-timing all our signals on an annual basis focusing on major corridors and the CBD.

Appendix E: Other methods that are used, or will be used by 2005, to distribute information to the public

Agency	Method	in 2004	by 2005
Atlanta			
Georgia Department of Transportation	Plasma screens at Welcome Centers and major public and private buildings. Test messaging (SMS) to all SMS enabled cell phones	<input type="checkbox"/>	<input type="checkbox"/>
Baltimore			
Baltimore County	news media	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Baton Rouge			
Baton Rouge/East Baton Rouge Parish	newspaper	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Beaumont-Port Arthur			
Texas Department of Transportation	Radio and Newspapers, Portable DMSs, HAR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Birmingham			
Shelby County	Reporting to local news agencies and papers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Buffalo, Niagara Falls			
Cheektowaga Town	telephone to NITTEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Charlotte, Gastonia, Rock Hill			
Metrolina Regional Transportation Management Center (North Carolina DOT)	video to media	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Chattanooga			
Hamilton County Public Works	media advisory on closures or new construction	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Chicago, Gary, Lake County			
Aurora City	NEWSPAPER, MAIL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Illinois Department of Transportation	HAR, DMS, Internet	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Mount Prospect	resident information bulletin	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cincinnati, Hamilton			
Warren County	Newspaper	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cleveland, Akron, Lorain			
Cuyahoga County	news release	<input type="checkbox"/>	<input type="checkbox"/>
Dallas, Fort Worth			
Dallas City	DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mesquite City	Local & metro newspapers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Appendix E: Other methods that are used, or will be used by 2005, to distribute information to the public

Agency	Method	in 2004	by 2005
Dayton, Springfield			
Dayton City	press releases of road closures and detours	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Greene County	NEWSPAPER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Miami County	Phone & News Media	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Denver, Boulder			
Boulder City	Nextbus	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Detroit, Ann Arbor			
Livingston County	RADIO & NEWSPAPER	<input type="checkbox"/>	<input type="checkbox"/>
Washtenaw County Road Commission	Press Releases	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Eugene			
Springfield City Public Works	News media	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Greensboro, Winston-Salem, High Point			
North Carolina Department of Transportation for Randolph County	Statewide 511 telephone system	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Greenville			
Greenville City Public Works (NC)	news releases	<input type="checkbox"/>	<input type="checkbox"/>
Houston, Galveston, Brazoria			
Harris County	TranStar Infrastructure	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Jacksonville			
Clay County	Signs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Kansas City			
Independence City	newspaper	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Knoxville			
Blount County	Media radio, newspapers	<input type="checkbox"/>	<input type="checkbox"/>
Los Angeles, Anaheim, Riverside			
Anaheim City	CMS/VMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Long Beach City	newspaper	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Memphis			
Shelby County	radio/TV	<input type="checkbox"/>	<input type="checkbox"/>

Appendix E: Other methods that are used, or will be used by 2005, to distribute information to the public

Agency	Method	in 2004	by 2005
Milwaukee, Racine			
Kenosha City	newspaper	<input type="checkbox"/>	<input type="checkbox"/>
Kenosha County	news releases to newspaper	<input type="checkbox"/>	<input type="checkbox"/>
Milwaukee County	WisDOT traffic operations center & media	<input checked="" type="checkbox"/>	<input type="checkbox"/>
New London			
Norwich City Public Works	newspapers/radio/tv	<input type="checkbox"/>	<input type="checkbox"/>
New York, Northern New Jersey, Southwestern Connecticut			
Greenburgh Town	Local Radio Stations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Patterson City(NJ)	cable TV if needed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Somerset County	public information meetings	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stamford City(CT)	local radio/newspaper	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Oklahoma City			
Oklahoma City	TV media	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Philadelphia, Wilmington, Trenton			
Mercer County	Newspaper	<input type="checkbox"/>	<input type="checkbox"/>
Phoenix			
Glendale City	CMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Scottsdale City	radio, vms	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Reno			
Sparks City Public Works	news release	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Roanoke			
Roanoke City Public Works	Newspaper and other media outlets	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Salinas			
Salinas City Public Works	local paper	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Seaside City Public Works	newspaper advertisements	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
San Antonio			
Texas Department of Transportation - TransGuide Operations Center	Paging	<input checked="" type="checkbox"/>	<input type="checkbox"/>
San Diego			
Caltrans District 11	radio correspondence	<input checked="" type="checkbox"/>	<input type="checkbox"/>
San Diego City	DMS signs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Appendix E: Other methods that are used, or will be used by 2005, to distribute information to the public

Agency	Method	in 2004	by 2005
San Francisco, Oakland, San Jose			
San Francisco City & County	Variable Message Sign	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Santa Barbara			
Santa Barbara County Public Works	brochures	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Scranton, Wilkes-Barre			
Scranton City	RADIO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Seattle, Tacoma			
King County	Media	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Washington State DOT - Olympic Region Traffic Management Center	VMS signs / HAR radios / CCTV	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Spokane			
Washington State Department of Transportation Eastern Region	Traffic Camera video is made available to media and broadcast during AM / PM peak on City cable channel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Stockton			
Lodi City Public Works	RADIO station	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Stockton City Public Works	Newspaper	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Syracuse			
Onondaga County	press releases	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tampa, St. Petersburg, Clearwater			
Tampa City	We contact METRO Traffic to distribute info for traffic problems.	<input type="checkbox"/>	<input type="checkbox"/>
Tucson			
Pima County	News Releases and roadside signing	<input type="checkbox"/>	<input type="checkbox"/>
Tucson City	Partnership with METRO Networks Traffic Reporters covering 22 radio and TV stations giving metro traffic news	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Youngstown, Warren			
Warren City	NEWSPAPER	<input type="checkbox"/>	<input type="checkbox"/>

Appendix F: Other types of information distributed, or that will be distributed by 2005 to the public

Agency	Method	in 2004	by 2005
Atlanta			
Georgia Department of Transportation	Freeway travel times.	<input type="checkbox"/>	<input type="checkbox"/>
Buffalo, Niagara Falls			
Niagara Falls City	none	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Chicago, Gary, Lake County			
McHenry County Highway Department	traffic counts	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cincinnati, Hamilton			
Butler County	ADT volumes	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Dallas, Fort Worth			
Plano City	traffic volumes, information about department services and programs, responses to citizen requests and inquiries, information about selected projects	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Dayton, Springfield			
Dayton City	press release workzone/closures/detours	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Denver, Boulder			
Boulder City	Bus Arrival Time	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Houston, Galveston, Brazoria			
Harris County	see TranStar website	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Kansas City			
Olathe City	None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
New York, Northern New Jersey, Southwestern Connecticut			
Middlesex County(NJ)	do not distribute information	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
New York State DOT-Long Island Region 10	Public safety information.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tucson			
Pima County	Traffic volumes, accident statistics	<input type="checkbox"/>	<input type="checkbox"/>
Tucson City	Emergency Information	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Appendix G: Other service hours for service patrols

Agency	Service hours
Atlanta	
DeKalb County	16 hrs/day, 7 days/week
Georgia Department of Transportation	Freeways only.
Baton Rouge	
Louisiana Department of Transportation Division District 61	12/7
Birmingham	
Birmingham City	N/A
Charleston	
Charleston City	daily
Charlotte, Gastonia, Rock Hill	
Metrolina Regional Transportation Management Center (North Carolina DOT)	0530-2130
Chicago, Gary, Lake County	
Chicago City	special events only - managed by police
Wheaton City	?
Cincinnati, Hamilton	
Ohio Department of Transportation	6 AM to 7 PM (3 veh AM Shift and 3 veh PM Shift)
Warren County	N/A
Cleveland, Akron, Lorain	
Ohio Department of Transportation District 3	Major Holidays
Columbia	
City of Columbia	N/A
Columbus	
Ohio Department of Transportation	5:30 - 7:30
Dallas, Fort Worth	
Denton City	N/A
Grand Prairie City	N/A
Plano City	None
Detroit, Ann Arbor	
St. Clair County	seasonal

Appendix G: Other service hours for service patrols

Agency	Service hours
Eugene	
Oregon Department of Transportation	ON CALL 24/7
Greensboro, Winston-Salem, High Point	
Davidson County	6 AM - 9 PM
Forsyth County	6 AM - 9 PM
Guilford County	5:30 AM to 9:30 PM
Greenville	
Greenville City Public Works (NC)	No incident management program in place
Hampton Roads	
Portsmouth City	none
Honolulu	
Honolulu City and County	Still in planning stage
Houston, Galveston, Brazoria	
Harris County	handled by TranStar and HC Sheriff
Indianapolis	
Indianapolis City and Marion County	0
Jacksonville	
St. Johns County	N/A
Kansas City	
Olathe City	n/a
Los Angeles, Anaheim, Riverside	
Pasadena City	city provides own.
Milwaukee, Racine	
Kenosha County	none
Waukesha City	N/A
West Allis City	N/A
Wisconsin Department of Transportation	peak and weekend
Minneapolis, St. Paul	
Scott County	None
New Orleans	
Louisiana Department of Transportation District 02	6 AM - 10 PM 7 days

Appendix G: Other service hours for service patrols

Agency	Service hours
New York, Northern New Jersey, Southwestern Connecticut	
Middlesex County(NJ)	none
New Jersey Department of Transportation(NJ) Traffic Operations North	M-F 4:00 AM to 8:30 PM
New York State DOT-Hudson Valley Region 8	Weekend peaks are being considered
Orlando	
Orange County	None
Philadelphia, Wilmington, Trenton	
Mercer County	Mercer County does not provide service patrols
Phoenix	
Peoria City	N/A
Pittsburgh, Beaver Valley	
Westmoreland County	NO PATROLS
Portland, Vancouver	
Clackamas County	on-call
Providence, Pawtucket, Fall River	
New Bedford City	none
Rhode Island Department of Transportation	DOT vehicles/personnel
Raleigh-Durham	
North Carolina Department of Transportation for Orange County	6 AM - 9 PM
San Luis Obispo	
San Luis Obispo City Public Works	NONE
Sarasota-Bradenton	
Sarasota County	Service Patrols performed by FDOT, not Sarasota Co
Seattle, Tacoma	
Washington State DOT - Olympic Region Traffic Management Center	peak hours only, but on call 24/7
Spokane	
Washington State Department of Transportation Eastern Region	16 / 7
Stockton	
Caltrans	none

Appendix G: Other service hours for service patrols

Agency	Service hours
Tampa, St. Petersburg, Clearwater	
Hillsborough County	24/7 Traffic Operations only
Pinellas County	FDOT

Appendix H: Other incident detection/verification methods

Agency	Method	in 2004	by 2005
Birmingham			
Birmingham City	Aretrial CCTV is about to begin design stage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Kansas City			
Olathe City	n/a	<input type="checkbox"/>	<input type="checkbox"/>
Knoxville			
Blount County	0	<input type="checkbox"/>	<input type="checkbox"/>
Los Angeles, Anaheim, Riverside			
Los Angeles City	CCTV = number of cameras	<input type="checkbox"/>	<input type="checkbox"/>
New York, Northern New Jersey, Southwestern Connecticut			
New Jersey Department of Transportation(NJ) Traffic Operations North	RTMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Phoenix			
Chandler City	Major arterial intersections	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Seattle, Tacoma			
Washington State DOT - Olympic Region Traffic Management Center	Statewide cell phone number	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
St. Louis			
Illinois Department of Transportation	Call boxes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Appendix I: Other electronic devices used to collect pedestrian data

Agency	Electronic device
El Paso	
El Paso City	jamar data collection counters
Jacksonville	
St. Johns County	None
Raleigh-Durham	
Raleigh City	Traffic Counters
San Luis Obispo	
San Luis Obispo City Public Works	Beam
Seattle, Tacoma	
Kitsap County	intersection counts
Stockton	
Stockton City Public Works	Manual

Appendix J: Other electronic technologies used to improve safety and mobility of pedestrians

Agency	Technology
Albuquerque	
Albuquerque City	Pedestrian signals
Asheville	
Asheville City Public Works	Leading pedestrian interval at several intersections. It gives 3 sec. head start for pedestrians to cross the street during all red.
Atlanta	
Atlanta City	Audible Pedstraian Unit
Cobb County	Audio for Blind Persons
Baltimore	
Anne Arundel County	Blind impaired APS signals
Maryland State Highway Administration	Audible ped signals
Birmingham	
Birmingham City	Audible pushbuttons for visually impaired.
Boston, Lawrence, Salem	
Cambridge City	leading pedestrian intervals
Chattanooga	
Chattanooga City Public Works	Audible Pedestrian Crossing Signals
Chicago, Gary, Lake County	
Aurora City	STANDARD PUSH-TO-WALK TRAFFIC SIGNAL TECHNOLOGY.
Cincinnati, Hamilton	
Kentucky Transportation Cabinet	Audible pedestrian signals
Dallas, Fort Worth	
Dallas City	We just implemented count down timers at 2 locations. We plan to implement in-roadway flashing lights at 2 locations this fall.
Denton City	Audible ped crossings
Denver, Boulder	
Denver City	Phase pre-emption on ped actuation. Detection confrimation pushbutton.
Detroit, Ann Arbor	
Ann Arbor City	Leading pedestrian phase
Royal Oak City	ped signals
El Paso	
El Paso City	pedestrian signals w/push buttons

Appendix J: Other electronic technologies used to improve safety and mobility of pedestrians

Agency	Technology
Eugene	
Eugene City Public Works	Audible ped signal for sight impaired.
Oregon Department of Transportation	audible pedestrian signals
Greenville, Spartanburg	
Greenville City	Audible pedestrian signals.
Hampton Roads	
Virginia Beach City	Audible Ped Signals
Harrisburg, Lebanon, Carlisle	
Harrisburg City	audible peds for the visually impaired
Los Angeles, Anaheim, Riverside	
Garden Grove City	Radar Feed Back Speed Signs
Santa Ana City	the above devices were installed only at none signal controlled crosswalks
Miami, Fort Lauderdale	
Broward County	Audible Ped Signals
Minneapolis, St. Paul	
Scott County	1 Pedestrian activated traffic signal (at a crosswalk)
New York, Northern New Jersey, Southwestern Connecticut	
Babylon Town	Audible pedestrian signals for the blind.
New York State DOT-Hudson Valley Region 8	Full pedestrian phase.
Parkway Traffic Operations Center	Used at Toll Plazas only.
Orlando	
Orange County	Radar speed signs.
Philadelphia, Wilmington, Trenton	
Camden City	Solar Flashing School Beacons
Philadelphia Streets Department	Audible signals
Portland, Vancouver	
Beaverton City	audible ped signals/buttons
Clark County	Pushbuttons sound beeps when pushed and display a red LED confirmation light until WALK is energized.
Provo - Orem	
Utah Department of Transportation Region 3	tactile & audible ped buttons
Salinas	
Salinas City Public Works	Radar Speed Feedback Signs with Changeable Message

Appendix J: Other electronic technologies used to improve safety and mobility of pedestrians

Agency	Technology
Salt Lake City, Ogden	
Utah Department of Transportation-Region 1	tactile & audible ped buttons
Utah Department of Transportation-Region 2	Tactile & audible ped buttons
San Diego	
El Cajon City	signals, push buttons for blind, etc.
San Diego City	In-roadway flashing lights will be installed by 2005.
San Francisco, Oakland, San Jose	
Fremont City	Audible Pedestrian Signals
San Jose City	School Zone Flashing Beacons
Seattle, Tacoma	
King County	Audible and Tactile Push Buttons
Kitsap County	planning to install in-roadway lights
Pierce County	Pedestrian signals with pushbuttons
Washington State DOT - Olympic Region Traffic Management Center	ped. automated signals (2)
Tucson	
Tucson City	PELICAN, TOCAN and HAWK crossing devices, Traffic Safe-Kid Traffic program in coordination with Safe Kids Fire Department, coloring books cartoon characters etc
Washington	
Maryland State Highway Administration	Audible Ped Signals
Montgomery County	accessible pedestrian signals (APS)

Appendix K: Other electronic devices used to detect presence of pedestrians

Agency	Devices
Baton Rouge	
Louisiana Department of Transportation Division District 61	push button
Beaumont-Port Arthur	
Beaumont City Public Works	push button related
Boston, Lawrence, Salem	
Somerville City	push buttons
Columbus	
Columbus City	Audible Pedestrian Signals
Dallas, Fort Worth	
Texas Department of Transportation Fort Worth District (TransVISION)	manual push buttons
El Paso	
El Paso City	push buttons
Grand Rapids	
Wyoming City	Pedestrian Pushbuttons are at most crossings
Houston, Galveston, Brazoria	
Harris County	push buttons and signals
Los Angeles, Anaheim, Riverside	
Los Angeles City	A combination of video detection and infrared
Santa Ana City	the above devices were installed only at none signal controlled crosswalks
Orlando	
Orange County	Push buttons.
Osceola County	Photocell
San Luis Obispo	
San Luis Obispo City Public Works	Beam
Stockton	
Stockton City Public Works	Only at 2 locations near the College

Appendix L: Other types of automated enforcement

Agency	Type of enforcement
Albany, Schenectady, Troy	
New York State Department of Transportation	Access and surveillance data.
Atlanta	
Gwinnett County	Beginning Red-Light Running Program (RFP prior to end of the year)
Buffalo, Niagara Falls	
New York State Department of Transportation	Access and surveillance.
Charleston	
Charleston City	The red light running program that we have is still in the testing phase.
Chicago, Gary, Lake County	
Gary City	regulatory signage
Cincinnati, Hamilton	
Cincinnati City	City Council is currently considering red light enforcement and we expect to implement next year.
Denver, Boulder	
Colorado Department of Transportation	Overheight detectors for tunnels
Denver City	Police Dept. uses photo radar for speed enforcement.
New Orleans	
Louisiana Department of Transportation District 02	Toll booth enforcement
Omaha	
Nebraska Department of Roads (NDOR)	not legal in NE
San Francisco, Oakland, San Jose	
Santa Clara County	Red Light Detector (RAT Box)
Tampa, St. Petersburg, Clearwater	
Hillsborough County	Requires alteration of State Statutes
Pinellas County	Red Light Enforcement Indicators (White Lights)
Tucson	
Tucson City	No not at this time, however Mayor and Council considering RED light enforcement cameras and speed control cameras for school zones and neighborhood streets

Appendix M: Agencies that get automated enforcement data

Agency	Agency
Albany, Schenectady, Troy	
New York State Department of Transportation	Police.
Atlanta	
DeKalb County	public safety
Baltimore	
Howard County	Police and Public Works
Maryland State Highway Administration	Local Governments
Boston, Lawrence, Salem	
Massachusetts Highway Department	None to date
Buffalo, Niagara Falls	
New York State Department of Transportation	Police.
Chicago, Gary, Lake County	
Chicago City	Police and CDOT get detailed info. Statistics are made public.
Gary City	police department and code enforcement
Wheaton City	does not apply
Dallas, Fort Worth	
Garland City	Police Dept., city attorneys office
Denver, Boulder	
Colorado Department of Transportation	Internal only
Denver City	Public Works, Traffic Engineering, Police
Detroit, Ann Arbor	
Dearborn City	Police
Fresno	
Fresno City	caltrans, clovis, city of fresno
Greensboro, Winston-Salem, High Point	
High Point City	High Point Police Department
Greenville	
Greenville City Public Works (NC)	Red light cameras under contract. No data collected yet. Project coordinated with NCDOT.
Hampton Roads	
Virginia Beach City	Program is run by the City of Virginia Beach Police Department

Appendix M: Agencies that get automated enforcement data

Agency	Agency
Los Angeles, Anaheim, Riverside	
Caltrans District 8	Cities of Indian Wells and Upland
Costa Mesa City	California Department of Transportation
Garden Grove City	Police, County
Inglewood City	Inglewood Police Department
Los Angeles City	Los Angeles Police Department (LAPD) Los Angeles County Metropolitan Transportation Authority (MTA)
Los Angeles County	LAW ENFORCEMENT (CHP) COURTS
Santa Ana City	Police Department oversees the operation - data are not shared
Miami, Fort Lauderdale	
Miami-Dade County	NA
New Orleans	
Louisiana Department of Transportation District 02	None.
New York, Northern New Jersey, Southwestern Connecticut	
East Orange City(NJ)	not applicable
Omaha	
Nebraska Department of Roads (NDOR)	not legal in Ne
Phoenix	
Chandler City	None.
Phoenix City	media, conferences
Portland, Vancouver	
Beaverton City	speeding - collected by police department; red light - collected by vendor, sent to police department
Portland City	Police
Sacramento	
Sacramento County	County Sheriffs Department & California Highway Patrol.
San Diego	
San Diego City	San Diego Police Department (same agency as transportation engineering)

Appendix M: Agencies that get automated enforcement data

Agency	Agency
San Francisco, Oakland, San Jose	
Fremont City	None, automated enforcement data strictly resides with the Police Dept.
San Francisco City & County	Police Department
San Jose City	San Jose Police Department
Santa Clara County	Local Police departments
San Luis Obispo	
San Luis Obispo City Public Works	No
Stockton	
Stockton City Public Works	CHP
Tampa, St. Petersburg, Clearwater	
Hillsborough County	Requires alteration of State Statutes
Tucson	
Tucson City	Managed by Police Department
Washington	
District of Columbia Transportation Management Center	Automated enforcement is managed by law enforcement
Washington	
Montgomery County	Police, Department of Transportation

Appendix N: Agencies with which enforcement data is coordinated

Agency	Agency
Albany, Schenectady, Troy	
New York State Department of Transportation	State emergency management center and state police.
Atlanta	
DeKalb County	state DOT
Baltimore	
Howard County	Maryland State Highway Administration
Maryland State Highway Administration	Local Governments
Boston, Lawrence, Salem	
Massachusetts Highway Department	None to date
Buffalo, Niagara Falls	
New York State Department of Transportation	The state emergency management center and state police.
Chicago, Gary, Lake County	
Gary City	police department
Wheaton City	does not apply
Dallas, Fort Worth	
Garland City	Police, city attorney
Denver, Boulder	
Colorado Department of Transportation	Internal/State Patrol
Detroit, Ann Arbor	
Dearborn City	Police
Fresno	
Fresno City	caltrans, clovis, city of fresno
Greensboro, Winston-Salem, High Point	
High Point City	High Point Police Department
Los Angeles, Anaheim, Riverside	
Caltrans District 8	Cities of Indian Wells and Upland
Costa Mesa City	California Department of Transportation
Garden Grove City	City of Santa Ana
Los Angeles City	Los Angeles Police Department (LAPD)
Los Angeles County	LAW ENFORCEMENT (CHP) COURTS
Santa Ana City	Police Department oversees the operation - data are not shared

Appendix N: Agencies with which enforcement data is coordinated

Agency	Agency
Miami, Fort Lauderdale	
Miami-Dade County	NA
New Orleans	
Louisiana Department of Transportation District 02	None.
New York, Northern New Jersey, Southwestern Connecticut	
East Orange City(NJ)	not applicable
Omaha	
Nebraska Department of Roads (NDOR)	not legal in NE
Phoenix	
Chandler City	We are in partnership with Redflex, the manufacturer and operator of the cameras.
Phoenix City	vendor, police dept.
Portland, Vancouver	
Beaverton City	internal police, mayors office may get involved if needed
Sacramento	
Sacramento County	County Sheriffs Department, California Highway Patrol, & City of Sacramento Police Department.
San Diego	
San Diego City	San Diego Police Department
San Francisco, Oakland, San Jose	
Fremont City	Police Department
San Francisco City & County	Police Department
San Jose City	San Jose Police Department
Santa Clara County	Local cities
Tampa, St. Petersburg, Clearwater	
Hillsborough County	Requires alteration of State Statutes
Tucson	
Tucson City	Police, Courts, Transportation is the current plan for coordination
Washington	
District of Columbia Transportation Management Center	Law enforcement
Washington	
Montgomery County	Police, Department of Transportation

Appendix O: Other criteria used to set speed limits on arterials

Agency	Criteria
Albany, Schenectady, Troy	
New York State Department of Transportation	Evaluation results of public outreach.
Atlanta	
Fulton County	GDOT controls
Baltimore	
Anne Arundel County	Design Speed
Boston, Lawrence, Salem	
Newton City	Complaint driven speed studies. Speed zone changes require State approval.
Somerville City	Massachusetts Highway Department approval required
Buffalo, Niagara Falls	
New York State Department of Transportation	Evaluation of results of public outreach.
Chattanooga	
Hamilton County Public Works	combination: judgement/radar/%ile
Chicago, Gary, Lake County	
Will County	TOP 10MPH PACE, ACCIDENT RATE
Cincinnati, Hamilton	
Hamilton County	Speed limits set by Ohio Department of Transportation (ODOT)
Cleveland, Akron, Lorain	
Cleveland City	We are currently reviewing all of our speed limits, Most of our speed limits will be changed based on land use and questionable arterials have had the 85th percentile speed calculated.
Elyria City	Ohio Traffic Manual
Ohio Department of Transportation District 12	State Law
Ohio Department of Transportation District 3	Pace Speed, Crash History, Roadside Development, Roadway Geometry, Test Run Speed Data.
Dallas, Fort Worth	
Mesquite City	Engineering study prescribed by the State Administrative Code based on the 85th percentile speed unless modified by other factors.
Plano City	roadway conditions
Texas Department of Transportation Fort Worth District (TransVISION)	accident records and history

Appendix O: Other criteria used to set speed limits on arterials

Agency	Criteria
Dayton, Springfield	
Greene County	CONTROLLED BY OHIO DEPARTMENT OF TRANSPORTATION
Kettering City	All the above depending on situation
Denver, Boulder	
Adams County	Roadway characteristics, frequency and type of access, intersection spacing, and accident rate and types of accidents.
Aurora City	Combination of all of the above factors
Denver City	City ordinance.
Des Moines	
Polk County Public Works	We also review the development in the area.
Eugene	
Springfield City Public Works	Speed limits are set by state board with City input.
Greensboro, Winston-Salem, High Point	
North Carolina Department of Transportation for Randolph County	statewide guidelines; speed studies (above) include development levels and roadway characteristics.
Hartford, New Britain, Middletown	
East Hartford Town	By state statute, this is function is under the jurisdiction of the state traffic commission. The town may request and suggest speed limits to be established by the STC.
West Hartford Town	Visibility, adjacent land use, on-street parking, accident history
Jacksonville	
St. Johns County	Type of Roadway, Width, School ect.
Kansas City	
Kansas City - Kansas DPW	Geometric Design (AASHTO)
Las Vegas	
Las Vegas Computer Traffic System	Political intervention
Little Rock, North Little Rock	
North Little Rock	Political considerations
Los Angeles, Anaheim, Riverside	
Costa Mesa City	accidents, geometrics, engineering judgment
Milwaukee, Racine	
Milwaukee County	geomatrics and functional characteristics

Appendix O: Other criteria used to set speed limits on arterials

Agency	Criteria
Minneapolis, St. Paul	
Burnsville City	Speeds set by Minnesota Department of Transportation
Dakota County	The state, not counties are the legal authority for setting speed zones.
Scott County	Speed studies and authorization administered by state DOT
New London	
Norwich City Public Works	Connecticut Department of transportation
New Orleans	
Louisiana Department of Transportation District 02	Roadside culture, numbers of driveways, lateral clearance to obstructions, width of shoulders
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Hudson Valley Region 8	Evaluation of results of public outreach.
New York State DOT-Long Island Region 10	Lane widths, shoulders, site distance ...
Smithtown Town	town roads at 30 MPH, county roads 30, 35 or 40 MPH
Oklahoma City	
Oklahoma City	Decision sight distances, based on AASHTO, are routinely reviewed and speed limits adjusted accordingly.
Omaha	
Nebraska Department of Roads (NDOR)	empirically supported
Phoenix	
Glendale City	Level of development and characteristics of the street.
Portland, Vancouver	
Clark County	While the prevailing (85th percentile) speed has the most influence, accident history, roadside development & proximity, and geometrics all factor into the recommended speed.
Salinas	
Monterey County Public Works	California Vehicle Code and Chapter of the California State Department of Transportation Traffic Manual
Salinas City Public Works	accident information
San Diego	
Escondido City	California Vehicle Code requirements ("Speed Trap Law") are adhered to, however limited consideration of certain circumstances other than 85th percentile is allowed ("Goulet ruling").
San Diego City	Special conditions such as no sidewalk, stopping sight distance, accident history, superelevation, profile conditions, residential density, commercial driveways, pedestrian and bicyclist safety.

Appendix O: Other criteria used to set speed limits on arterials

Agency	Criteria
Sarasota-Bradenton	
Sarasota County	Traffic Advisory Council
Seattle, Tacoma	
Federal Way City	Politics
King County	All of the above.
Toledo	
Lucas County	ODOT speed limit criteria
Tucson	
Tucson City	Signal progression speeds
Tulsa	
Tulsa City	Combination of Engineering judgement, speed studies, and 85th percentile speed.

Appendix P: Other criteria used to implement inclement weather signal timing plans

Agency	Criteria
Albany, Schenectady, Troy	
New York State Department of Transportation	Closed loop system and optimization program infra-structure available for use. Also MIST traffic management application available.
Buffalo, Niagara Falls	
New York State Department of Transportation	The availability of infra-structure limits the implementaiton of these types of operations procedures.
Fort Myers	
Cape Coral City Public Works	Hurricane Evacuation
Hampton Roads	
Chesapeake City	Hurricane Evacuation
Los Angeles, Anaheim, Riverside	
Anaheim City	Event related
Louisville	
Louisville Jefferson County Metro Government	Heavy snows...
Miami, Fort Lauderdale	
Miami-Dade County	Hurricane Evacuation Orders issued by the Weather Service
New Orleans	
Jefferson Parish	MAJOR STREET FLOODING
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Hudson Valley Region 8	Snow/Ice
New York State DOT-Long Island Region 10	Snow
Richmond, Petersburg	
Virginia DOT - Richmond Smart Traffic Center	Traffic patterns as detected by system detectors.
Tampa, St. Petersburg, Clearwater	
Tampa City	Hurricane evacuations
Tucson	
Tucson City	Activate Warning Flashers at flodded crossings

Appendix Q: Other criteria used to modify incident detection algorithms due to inclement weather

Agency	Criteria
Albany, Schenectady, Troy	
New York State Department of Transportation	Manual monitoring frequency of imagery increased during bad weather. Automated monitoring enhancements anticipated for the near future. Real time system optimization also anticipated for the near future.
Buffalo, Niagara Falls	
New York State Department of Transportation	Manual monitoring frequency of imagery increased during bad weather. Automated monitoring anticipated for the near future. Also, real time system optimizations anticipated for the near future.
Greensboro, Winston-Salem, High Point	
North Carolina Department of Transportation for Randolph County	N/A
New York, Northern New Jersey, Southwestern Connecticut	
New York State DOT-Hudson Valley Region 8	Snow/Ice
New York State DOT-Long Island Region 10	Snow.
Tucson	
Tucson City	Coordinate with State for major storms (Dust, and broadcast warning to radio and TV stations) Coordinate with County on Flood warnings

Appendix R: Other conditions measured by in-pavement sensors

Agency	Condition
Birmingham	
Birmingham City	The City has a project approved in the Transportation Improvement Program for the installation of roadway weather stations. The State agreed to install these 3 years ago but no action so far.
Buffalo, Niagara Falls	
New York State Department of Transportation	National and local weather data and treatment programs provide guidance on roadway treatment programs. See question 51 - National weather data is anticipated for use in program management. Commercial sources for the data have been identified.
Cincinnati, Hamilton	
Ohio Department of Transportation	I am not sure.
Denver, Boulder	
Douglas County	2 SSI full units
Houston, Galveston, Brazoria	
Harris County	see Houston TranStar website
Seattle, Tacoma	
Washington State DOT - Olympic Region Traffic Management Center	see question #50
Syracuse	
New York State Department of Transportation	Salinity

Appendix S: Other information collected by RWIS

Agency	Information
Birmingham	
Birmingham City	See question 49. Four stations are approved.
Houston, Galveston, Brazoria	
Harris County	see Houston TranStar website
Stockton	
Caltrans	Fog
Syracuse	
New York State Department of Transportation	Dew Point

Appendix T: Projects where standards absolutely helped with integration needs

Agency	Project
Albuquerque	
City of Rio Rancho for Sandoval County	NM 528 Widening Project. Upgrade traffic signal system to ICONS ATMS -- uses NTCIP protocol. Will allow interagency coordination of traffic signal system in the future.
Atlanta	
Atlanta City	Intersection upgrade, with communication and detection devices
DeKalb County	Candlen Road Project
Georgia Department of Transportation	Interoperability and interchangeability - benefits yet to be determined.
Chicago, Gary, Lake County	
Lake County -Illinois	Lake County Passage
Dallas, Fort Worth	
Plano City	Controller change from 179 to 2070 with associated controller and system software (currently underway)
Detroit, Ann Arbor	
Oakland County Road Commission (RCOC)	Not doing much yet
El Paso	
Texas Department of Transportation-El Paso District	N/A
Fort Myers	
Lee County DOT, Traffic Section	Yes, Planning to utilize the FDOTs statewide SunGuide TMC software to improve regional ITS coordination and communications for Lee County IMS.
Hampton Roads	
Virginia Beach City	City wide traffic signal system upgrade
Houston, Galveston, Brazoria	
Harris County	Yes, with long term O&M cost and personnel needs reductions for our entire system.
Kansas City	
Kansas City - Kansas DPW	MODOT/KDOT -- Kansas City Scout Mid America Regional Council -- Operation Green Light
Los Angeles, Anaheim, Riverside	
Costa Mesa City	CCTV expansion project; TOC upgrade project in development
Inglewood City	Inglewood ITS deployment and Integration Project
Pasadena City	Rogan Bill- 710 Traffic Control and Monitoring Systems

Appendix T: Projects where standards absolutely helped with integration needs

Agency	Project
Milwaukee, Racine	
Milwaukee County	Yes. ICOP - Integrated Corridor Operations Project
Wisconsin Department of Transportation	2070 ramp meters
New Haven, Meriden	
New Haven City	Absolutely
New York, Northern New Jersey, Southwestern Connecticut	
Middlesex County(NJ)	N/A
Newark City(NJ)	Extension of UTCS Traffic Control System
Portland, Vancouver	
Clackamas County	We are about to implement phase 1 of our its plan. The standards are helping guide us with respect to products and interagency coordination.
Portland City	yes Barbur Bouleverd/I-5 ITS Test Corridor.
Provo - Orem	
Utah Department of Transportation Region 3	Traveler Advisory
Reno	
Reno City Public Works	SIGNAL SYSTEM UPGRADE
Rochester	
Monroe County	Traffic Signal System replacement - NTCIP brought in more capabilities and flexibility in operation due to its more robust communications standards.
Sacramento	
Sacramento County	Sacramento Transportation Areawide Network (STARNET) Project. Arden Way Smart Corridor Project.
Salt Lake City, Ogden	
Utah Department of Transportation-Region 1	Traveler Advisory
Utah Department of Transportation-Region 2	Traveler Advisory
San Diego	
San Diego City	Mission Valley (Jack Murphy) monitoring and information system
San Francisco, Oakland, San Jose	
Oakland City	still pending implementation testing
Santa Clara County	County of Santa Clara Traffic Operations System
Sarasota-Bradenton	
Sarasota County	Yes.

Appendix T: Projects where standards absolutely helped with integration needs

Agency	Project
Seattle, Tacoma	
King County	NE 124th St. ITMS TransValley ITS
Syracuse	
New York State Department of Transportation	SMARTNET Information sharing network. Use of standards in SMARTNET allowed integration with Onondaga Co. 911 data base. A text copy of each transportation related 911 call is automatically downloaded from 911 to SMARTNET giving location, incident type, severity, etc.
Washington	
District of Columbia Transportation Management Center	Regional Integration
West Palm Beach, Boca Raton, Delray	
Boca Raton City	Traffic Signal System

Appendix U: Projects where standards somewhat helped with integration needs

Agency	Project
Atlanta	
Georgia Department of Transportation	CM - 285 - 1 (360) Standard determination of CMS NTCIP varies between manufacturers.
Baton Rouge	
Baton Rouge/East Baton Rouge Parish	Yes, our current computerized traffic signal system will be more flexible and able to communicate with more devices in the future
Boise City	
Ada County Highway District	Treasure Valley ATMS software deployment - 2004 Downtown Boise Signal System Upgrade - 1999
Boston, Lawrence, Salem	
Massachusetts Highway Department	Have not used enough to make this determination.
Denver, Boulder	
Denver City	Yes
Lakewood City	Advanced Traffic Management System using NTCIP for actuated controllers
El Paso	
Texas Department of Transportation-El Paso District	N/A
Kansas City	
Olathe City	Olathe ATMS
Milwaukee, Racine	
Wisconsin Department of Transportation	DMS procurement DMS refurbishment
Minneapolis, St. Paul	
Minneapolis City	Light Rail Line, Fiber Optic interconnection
New Orleans	
Louisiana Department of Transportation District 02	Interim ITS deployment for the New Orleans Metropolitan Area (Phase 1b)
New York, Northern New Jersey, Southwestern Connecticut	
Middlesex County(NJ)	N/A
Stamford City(CT)	Have not used yet
Omaha	
Council Bluffs City	Keeps everyone in the same working arena.
Orlando	
Orange County	Orange County ATMS Project.
Orlando City	Regional Computerized Signal System

Appendix U: Projects where standards somewhat helped with integration needs

Agency	Project
Phoenix	
Chandler City	X
Glendale City	Signal System Software - i2TMS ADDCO Smart Zone Trailer Deployment
Scottsdale City	VMS integration with ADOT, however, not enough integration opportunities exist
Provo - Orem	
Utah Department of Transportation Region 3	Traffic Signal Control
Rochester	
Monroe County	Camera Deployment project - too early to tell (not deployed yet), but should have ensured we are getting more state of the art equipment. Not much difference in overall features or functions.
Sacramento	
Sacramento County	Watt Avenue Transit Signal Priority and Multi-modal Enhancement Demonstration Project.
Salt Lake City, Ogden	
Utah Department of Transportation-Region 1	Traffic Signal Control
Utah Department of Transportation-Region 2	Traffic Signal Control
San Francisco, Oakland, San Jose	
San Francisco City & County	SFgo Initial Phase
Stockton	
Manteca City Public Works	somewaht
Tampa, St. Petersburg, Clearwater	
Florida Department of Transportation	US 19 ATMS, Pasco County, City of Tampa Video Monitoring; Pinellas Countywide ATMS - 408419-1 & 406255-1
Toledo	
Toledo City	Central Computer System Replacement - Various Phases
West Palm Beach, Boca Raton, Delray	
Boca Raton City	Communications

Appendix V: Projects where standards did not exactly help with integration needs

Agency	Project
Albany, Schenectady, Troy	
New York State Department of Transportation	Standards are used in any design but the evolution of the standards noted above at times are inconsistent with existing infra-structure and commercially available technologies that have extensive testing resources available for the technologies.
Baltimore	
Howard County	Have not established the direction of the ITS Program; as yet.
Buffalo, Niagara Falls	
New York State Department of Transportation	Standards are used in any design but the evolution of the standards noted above at times are inconsistent with existing infra-structures and commercially available technologies that have extensive testing resources available for the technologies....
Cincinnati, Hamilton	
Ohio Department of Transportation	The ARTIMIS system predates many of these standards
El Paso	
Texas Department of Transportation-El Paso District	N/A
Hampton Roads	
Norfolk City	Norfolk ATMS did not adopt any standards when it was deployed
Miami, Fort Lauderdale	
Miami-Dade County	Miami-Dade County ATMS Project
New York, Northern New Jersey, Southwestern Connecticut	
Brookhaven Town	Projects still in process - not sure
Middlesex County(NJ)	N/A
New York State DOT-Long Island Region 10	Standards are used in any design but the evolution of the standards noted above at times are inconsistent with existing infra-structure and commercially available technologies that have extensive testing resources available.
Westchester County	2070 Controller Standards not developed at a pace that would meet the needs of my agency. Problems with Software/Hardware compatibility, the need for multiple device drivers, the failure to have units approved by CalTrans since 2002 have made a good premise fail in practice.
San Francisco, Oakland, San Jose	
Fremont City	Even though the correct and necessary standards are specified and used, the individual standards still leave a great deal of interpretation up to the individual manufacturers/vendors. As a result, there is still a bit of proprietary-ness and integration efforts still required additional expenses, fees, and coordination to get different manufacturers/vendors to work with each other so their NTCIP-compliant products can talk to each other.

Appendix V: Projects where standards did not exactly help with integration needs

Agency	Project
Tucson	
Tucson City	Technology changes very quickly and the standards need to keep up and many of the stds seem to not be complete
Washington	
Montgomery County	No specific projects to mention, but our software is being written to be compatible with as many standards as we can work with.
West Palm Beach, Boca Raton, Delray	
Boca Raton City	Monitoring Cameras

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

Agency	First	Second	Third
Albany, Schenectady, Troy			
New York State Department of Transportation	We are already committed to using standards when they are complete	Tested commercially available products exist with usable test plans.	
Buffalo, Niagara Falls			
New York State Department of Transportation	We are already committed to using standards when they are complete	Tested commercially available products exist with usable test plans.	
Chicago, Gary, Lake County			
Aurora City	Additional funding being provided to use the standards	Training and technical support being provided to my agency	WHEN ITS STANDARDS OVER-RULE THE MUTCD STANDARDS.
Dallas, Fort Worth			
Dallas City	standards do not degrade the performance of the system using existing communications bandwidth and field controllers	Standards are developed that apply to my system	Standards use enables interoperability of systems
Grand Rapids			
Grand Rapids City including Kent County	Meet our needs	Additional funding being provided to use the standards	Standards are developed that apply to my system
Greensboro, Winston-Salem, High Point			
North Carolina Department of Transportation for Randolph County	These decisions are made in Raleigh by our traffic engr. branch		
Kansas City			
Olathe City	n/a	n/a	n/a
Los Angeles, Anaheim, Riverside			
Los Angeles County	Standards being accepted by the ITS community and being used in deployments	Additional funding being provided to use the standards	COST OF IMPLEMENTING STANDARDS GOES DOWN.

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

Agency	First	Second	Third
New York, Northern New Jersey, Southwestern Connecticut			
Hunterdon County	NJDOT requires them	Additional funding being provided to use the standards	Standards are developed that apply to my system
New York State DOT-Hudson Valley Region 8	We are already committed to using standards when they are complete	Standards use enables interoperability of systems	Tested commercially available products exist with usable test plans.
New York State DOT-Long Island Region 10	We are already committed to using standards when they are complete	Tested commercially available products exist with usable test plans.	
Ocean County(NJ)	NJDOT and NJTPA developing standards		
San Diego			
San Diego County	Additional funding being provided to use the standards	Training and technical support being provided to my agency	Education on how these standards would benefit a small agency with mostly rural I/S

Appendix X: Other tools that were or will be helpful for implementing standards

Agency	First	Second	Third
Albany, Schenectady, Troy			
New York State Department of Transportation	Tested commercially available products exist with usable test plans.	Published standards are easily available	Training courses
Albuquerque			
Albuquerque City	\$ Money, Personnel		
Buffalo, Niagara Falls			
New York State Department of Transportation	Tested commercially available products exist with usable test plans.	Published standards are easily available	Training courses
New York, Northern New Jersey, Southwestern Connecticut			
New York State DOT-Hudson Valley Region 8	Tested commercially available products exist with usable test plans.	Published standards are easily available	Workshops
New York State DOT-Long Island Region 10	Tested commercially available products exist with usable test plans.	Testing tools	Training courses
Phoenix			
Phoenix City	guaranteed compliance	Training courses	Workshops
Reno			
Sparks City Public Works	funding	Published standards are easily available	Published standards provided for free
San Francisco, Oakland, San Jose			
San Francisco City & County	FHWA resource center staff	Training courses	Published standards provided for free
Seattle, Tacoma			
Federal Way City	Funding	Case studies of other similar projects that used standards successfully	Software tools to assist with correctly specifying and procuring the standard

Appendix Y: Length of time date has been archived

Agency	Length of time
Albany, Schenectady, Troy	
New York State Department of Transportation	Months
Saratoga County	1983
Albuquerque	
Albuquerque City	Several months
Atlanta	
Atlanta City	FileMakerPro
Clayton County	20 years
Georgia Department of Transportation	Eight years
Rockdale County	1999
Bakersfield	
Caltrans District 6	6 years
Baltimore	
Howard County	5 years
Baton Rouge	
Louisiana Department of Transportation Division District 62	5 years
Beaumont-Port Arthur	
Texas Department of Transportation	3 Years
Bellingham	
Bellingham City Public Works	20 years
Birmingham	
Birmingham City	25 years
Boise City	
Ada County Highway District	4 months
Boston, Lawrence, Salem	
Somerville City	~15 years
Weymouth Town	unknown
Buffalo, Niagara Falls	
New York State Department of Transportation	Months.
Charlotte, Gastonia, Rock Hill	
Metrolina Regional Transportation Management Center (North Carolina DOT)	4 years

Appendix Y: Length of time date has been archived

Agency	Length of time
Chicago, Gary, Lake County	
Lake County -Illinois	15 Years
Cincinnati, Hamilton	
Hamilton City	?
Kentucky Transportation Cabinet	30 years
Ohio Department of Transportation	1997
Cleveland, Akron, Lorain	
Akron City	30+ years (?)
Dallas, Fort Worth	
Garland City	over 15 years
Plano City	9 years
Richardson City	5 years
Dayton, Springfield	
Greene County	20 YEARS
Kettering City	7years
Montgomery County	1980
Ohio Department of Transportation District 7	5+ years
Daytona Beach	
Volusia County Public Works	10 years
Denver, Boulder	
Arvada City	5 years
Boulder County	10 years
Colorado Department of Transportation	10 years
Denver City	2 years
Lakewood City	2001
Longmont City	Since 1997
Thornton City	1 year
Westminster City	15 years
Detroit, Ann Arbor	
Ann Arbor City	10 years
Detroit City Public Works	20 years
Oakland County Road Commission (RCOC)	4 years

Appendix Y: Length of time date has been archived

Agency	Length of time
Eugene	
Oregon Department of Transportation	forever
Fort Wayne	
Fort Wayne Public Works	2 years
Fresno	
Fresno City	30 days
Greenville	
Greenville City Public Works (NC)	2 years
Hampton Roads	
Newport News City	20 + years
Norfolk City	4 years
Harrisburg, Lebanon, Carlisle	
Harrisburg City	since 1991
Hartford, New Britain, Middletown	
Hartford City	15 yrs
West Hartford Town	5 years
Houston, Galveston, Brazoria	
Houston City	5
Indianapolis	
Hancock County	16 years
Jacksonville	
Duval County (includes Jacksonville City)	8 years
Florida Department of Transportation	5
Kansas City	
Kansas City - Missouri DPW	As in 2002
Knoxville	
Blount County	10 years
Los Angeles, Anaheim, Riverside	
Costa Mesa City	10 years
Los Angeles City	1 year
Santa Ana City	5

Appendix Y: Length of time data has been archived

Agency	Length of time
Louisville	
Louisville Jefferson County Metro Government	4 years
Miami, Fort Lauderdale	
Miami-Dade County	25 years
Milwaukee, Racine	
Milwaukee County	since mid 2003
Wisconsin Department of Transportation	2
Minneapolis, St. Paul	
Dakota County	varies depending on data
Hennepin County	Signal Timing records go back 40 years plus
Minneapolis City	7+ years
Ramsey County	many years
Scott County	Since December 2002
Washington County	20+ years
Montgomery	
Montgomery City Public Works	10 Years
New London	
Connecticut DOT	over 20 years
New York, Northern New Jersey, Southwestern Connecticut	
Essex County(NJ)	30 years
Greenwich Town(CT)	1995
Hunterdon County	15 years
Monmouth County(NJ)	5 years
Nassau County	35 years
New Jersey Department of Transportation(NJ) Traffic Operations North	4 years
New York State DOT-Long Island Region 10	Years++
Newark City(NJ)	12 years
Ocean County(NJ)	1980
Parkway Traffic Operations Center	indefinite
Warren County	13 years
Oklahoma City	
Edmond City	since 1987

Appendix Y: Length of time date has been archived

Agency	Length of time
Omaha	
Council Bluffs City	controller data logs
Orlando	
Orange County	3 years
Philadelphia, Wilmington, Trenton	
Bensalem Township	3 yr.
Bristol Township	5 yrs
Camden City	11 years
New Jersey DOT- Traffic Operations Center South	10 years
Phoenix	
Maricopa County	3 years
Provo - Orem	
Utah Department of Transportation Region 3	5 years
Raleigh-Durham	
Durham City	14 years
Reno	
Reno City Public Works	10 years
Richmond, Petersburg	
Virginia DOT - Richmond Smart Traffic Center	Eight years
Sacramento	
Sacramento County	2 years
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	10 years

Appendix Y: Length of time date has been archived

Agency	Length of time
San Diego	
Caltrans District 11	3 years
Carlsbad City	15 years
El Cajon City	25+ years
San Diego City	2 years
San Diego County	30 years
San Francisco, Oakland, San Jose	
Oakland City	since signal installation date
Santa Clara County	1990
San Luis Obispo	
San Luis Obispo City Public Works	5 Yrs
Santa Barbara	
Caltrans	7 yds
Santa Barbara County Public Works	over 5 years
Sarasota-Bradenton	
Sarasota County	3-4 years
Seattle, Tacoma	
Bellevue City	1999
Everett City	15 years
Federal Way City	1992
Seattle City	30 years
Springfield	
Chicopee City	15 years
Springfield(MO)	
Springfield City Public Works	6 Years
St. Louis	
Illinois Department of Transportation	Only when needed
Stockton	
Caltrans	long time
Manteca City Public Works	15 yrs.
Tampa, St. Petersburg, Clearwater	
Clearwater City	since 1970s

Appendix Y: Length of time date has been archived

Agency	Length of time
Toledo	
Ohio Department of Transportation District 2	1 yr
Tucson	
Arizona Department of Transportation	5 yrs
Pima County	Unknown
Tucson City	7 years
Tulsa	
Tulsa City	Years
Washington	
Arlington County	7 years
Montgomery County	14 years
West Palm Beach, Boca Raton, Delray	
Boca Raton City	2
Wichita	
Sedgwick County	18 years

Appendix Z: Size of the data archiving database

Agency	Size
Atlanta	
Clayton County	dont know
Georgia Department of Transportation	Very large
Bakersfield	
Caltrans District 6	do know
Chattanooga	
Hamilton County Public Works	unknown
Denver, Boulder	
Denver City	40 gig
Fort Wayne	
Fort Wayne Public Works	3 Gig
Hampton Roads	
Norfolk City	10GB
Harrisburg, Lebanon, Carlisle	
Harrisburg City	10 MB
Knoxville	
Blount County	(?)
Los Angeles, Anaheim, Riverside	
Los Angeles City	15 GB
Miami, Fort Lauderdale	
Miami-Dade County	huge
New London	
Connecticut DOT	unknown
Philadelphia, Wilmington, Trenton	
Camden City	18 megs
Phoenix	
Maricopa County	400 MB per year
Stockton	
Caltrans	huge
Tampa, St. Petersburg, Clearwater	
Hillsborough County	1TB

Appendix Z: Size of the data archiving database

Agency	Size
Tucson	
Pima County	Unknown

Appendix AA: Other methods used to archive data

Agency	Method
Albany, Schenectady, Troy	
New York State Department of Transportation	Select data consistent with in house systems is archived.
Saratoga County	hard copy files
Atlanta	
Clayton County	We store timing data for all signal operations
Baton Rouge	
Louisiana Department of Transportation Division District 62	Hardcopies - work orders and daily reports
Bellingham	
Bellingham City Public Works	Paper Timing Sheets
Birmingham	
Birmingham City	Certain operational data about the central traffic signal system is archived by the traffic signal software. This does not include data such as volume, speed, etc.
Boston, Lawrence, Salem	
Somerville City	work orders - paper copies (recently implementing computer database) - maintenance history, NOT volume, speed, travel time data
Buffalo, Niagara Falls	
New York State Department of Transportation	Select data consistent with current system configuration is archived.
Chicago, Gary, Lake County	
Oak Lawn Village	N/A
Cincinnati, Hamilton	
Hamilton City	box
Hamilton County	Accident data is recorded in a computer database.
Ohio Department of Transportation	Flat file
Cleveland, Akron, Lorain	
Akron City	Paper files.
Dallas, Fort Worth	
Garland City	hard copies and on disk and CD
Dayton, Springfield	
Greene County	WE ONLY ARCHIVE ACCIDENT DATA

Appendix AA: Other methods used to archive data

Agency	Method
Denver, Boulder	
Boulder County	Hardcopy Archive
Colorado Department of Transportation	Hard copy road/weather conditions. one year time limit
Detroit, Ann Arbor	
Ann Arbor City	electronic cabinet
Eugene	
Oregon Department of Transportation	hardcopies
Hampton Roads	
Norfolk City	nightly report to VDOT
Houston, Galveston, Brazoria	
Harris County	CLAIRE Database
Jackson	
Jackson City Public Works	paper copy
Knoxville	
Blount County	Data is related to maintenance of roads-Not traffic related
Miami, Fort Lauderdale	
Broward County	Signal System relational databases are archived on tape drives for back-up only.
Minneapolis, St. Paul	
Hennepin County	Paper Copies
Washington County	paper copy
New York, Northern New Jersey, Southwestern Connecticut	
Hunterdon County	speed, volume, type - written database
Newark City(NJ)	Archiving ceased in 1999 due to downsizing of TOC, and decommissioning of UTCS system (the UTCS system was not Y2K compliant).
Ocean County(NJ)	paper
Orlando	
Osceola County	Do not archive data; Regional archiving available (CATSS)
Portland, Vancouver	
Clark County	Some system detector traffic summary data was archived in the 1990's, but the system information has not been updated. The archival medium was electronic (DOS files) and hard copies.

Appendix AA: Other methods used to archive data

Agency	Method
Salt Lake City, Ogden	
West Valley City	All operations are contracted out. We do not archive.
San Diego	
Carlsbad City	Hard copies
El Cajon City	hard copy, summaries
San Diego City	Date, time, and messages implemented on CMS signs are archived in a database.
San Diego County	folders, notebooks
San Francisco, Oakland, San Jose	
Oakland City	hard copy
Seattle, Tacoma	
Federal Way City	Hardcopy
Springfield	
Chicopee City	paper files
Tampa, St. Petersburg, Clearwater	
Clearwater City	paper files
Hillsborough County	The Transportation Information System deployment will begin next month
Toledo	
Ohio Department of Transportation District 2	signal logs
Tucson	
Tucson City	Archive only traffic signal operations. Camera images are not recorded
Wichita	
Sedgwick County	ADTs kept in Excel spreadsheet.

Appendix AB: Other methods used to make archived data available

Agency	Method
Albany, Schenectady, Troy	
New York State Department of Transportation	See other regional survey results.
Atlanta	
Georgia Department of Transportation	Intranet within GDOT. Realtime data available to applicants. Incident data available to applicants.
Boise City	
Ada County Highway District	Have direct fiber link to Universities so they can access data for research.
Boston, Lawrence, Salem	
Somerville City	available upon written request
Buffalo, Niagara Falls	
New York State Department of Transportation	As the cost for providing the data decreases more of the data will be provided via any of the methods noted depending on the demand for the data. Web services seems to be the most promising technology for the future.
Chattanooga	
Hamilton County Public Works	mainframe IT server
Chicago, Gary, Lake County	
Lake County -Illinois	as needed
Cincinnati, Hamilton	
Hamilton County	computer database
Cleveland, Akron, Lorain	
Cleveland City	signal timings and phases and when they were modified
Dayton, Springfield	
Kettering City	Backing up the data on the server
Detroit, Ann Arbor	
Oakland County Road Commission (RCOC)	Only available to engineers on servers
Los Angeles, Anaheim, Riverside	
Costa Mesa City	data tape
Miami, Fort Lauderdale	
Miami-Dade County	dial-up modem; email upon request
Milwaukee, Racine	
Wisconsin Department of Transportation	by request

Appendix AB: Other methods used to make archived data available

Agency	Method
New York, Northern New Jersey, Southwestern Connecticut	
Jersey City(NJ)	database in computer
New York State DOT-Long Island Region 10	As needed based on requests.
Newark City(NJ)	TOC had to be downsized and UTCS system decommissioned. The UTCS system used reels of magnetic tape for archive, but they have been destroyed. Some of data that has been summarized on paper reports and copied to floppy disks are still available.
Provo - Orem	
Utah Department of Transportation Region 3	Through secured network access to archive database
Richmond, Petersburg	
Petersburg City	Can contact state transportation agency
Salt Lake City, Ogden	
Utah Department of Transportation-Region 1	Through secured network access to archive database
Utah Department of Transportation-Region 2	Through secured network access to archived database
San Diego	
Carlsbad City	Computer database
El Cajon City	phone, fax, email
San Diego County	shared drive on network
San Luis Obispo	
San Luis Obispo County Public Works	not specified
Washington	
Montgomery County	Dedicated private data paths established to different sister agencies for data sharing
Wichita	
Sedgwick County	email ADT file to consultants, other govt agencies

Appendix AC: Other portions of transportation network where ITS data is archived

Agency	Portion
Albany, Schenectady, Troy	
New York State Department of Transportation	Reported incident locations.
Albuquerque	
Albuquerque City	Intersections on Arterial system
Atlanta	
Clayton County	All signal timings.
Cobb County	Not Applicable
Georgia Department of Transportation	Freeway - statewide
Baton Rouge	
Louisiana Department of Transportation Division District 61	Interstate in metro area
Bellingham	
Bellingham City Public Works	Signalized Intersections
Boise City	
Ada County Highway District	Currently only freeway data
Boston, Lawrence, Salem	
Somerville City	All streets under our control (our dept. only deals w/signs + signals), not potholes, etc.
Buffalo, Niagara Falls	
New York State Department of Transportation	Arterials and freeways were ATMS is operated.
Charlotte, Gastonia, Rock Hill	
Metrolina Regional Transportation Management Center (North Carolina DOT)	Freeway
Chicago, Gary, Lake County	
Hammond City	none
Oak Lawn Village	N/A
Cincinnati, Hamilton	
Hamilton County	ARterial roads: collector roads in the unincorporated area of Hamilton County, Ohio
Ohio Department of Transportation	freeway system
Warren County	N/A
Cleveland, Akron, Lorain	
Ohio Department of Transportation District 12	The whole system for traffic count data.

Appendix AC: Other portions of transportation network where ITS data is archived

Agency	Portion
Columbus	
Ohio Department of Transportation	NONE
Dallas, Fort Worth	
Plano City	City wide - traffic signal system operational parameters
Dayton, Springfield	
Greene County	NO ITS DATA IS ARCHIVED
Kettering City	The whole city.
Denver, Boulder	
Colorado Department of Transportation	Statewide conditions are archived
Detroit, Ann Arbor	
Oakland County Road Commission (RCOC)	Arteial with SCATS
El Paso	
El Paso City	all signalized intersections
Hampton Roads	
Norfolk City	All intersections with central communication
Harrisburg, Lebanon, Carlisle	
Harrisburg City	none
Hartford, New Britain, Middletown	
West Hartford Town	Random, based on where intersections have been rebuilt & signals redesigned
Houston, Galveston, Brazoria	
Fort Bend County	TxDOT & cities
Jacksonville	
St. Johns County	N/A
Janesville-Beloit	
Wisconsin Department of Transportation District 1	Interstate Mainline
Kansas City	
Olathe City	Undetermined at this time.
Overland Park City	We will archive data on a as needed basis for special studies
Knoxville	
Blount County	No ITS data archived!

Appendix AC: Other portions of transportation network where ITS data is archived

Agency	Portion
Los Angeles, Anaheim, Riverside	
Costa Mesa City	citywide
Santa Ana City	none
Miami, Fort Lauderdale	
Broward County	Signal timing databases for arterial streets within the central computer control. Traffic volumes, speeds, travel time and TMC are all collected based on various projects needs.
Miami-Dade County	all signalized locations
Milwaukee, Racine	
West Allis City	N/A
Wisconsin Department of Transportation	freeway segments with detection
Minneapolis, St. Paul	
Hennepin County	All County Signal Systems
Minnesota Department of Transportation	Arterial roads under Mn/DOTs jurisdiction
Scott County	On one of our principal arterials, which is the only corridor with this capability.
New Orleans	
Louisiana Department of Transportation District 02	Construction zones for queue analysis and incident response evaluation
New York, Northern New Jersey, Southwestern Connecticut	
Middlesex County(NJ)	N/A
Omaha	
Nebraska Department of Roads (NDOR)	state highway system and interstate, circa 10,000 miles
Orlando	
Orange County	Arterial Streets in the Tourist District.
Philadelphia, Wilmington, Trenton	
Mercer County	N/A
Wilmington City	none
Phoenix	
Phoenix City	N/A
Pittsburgh, Beaver Valley	
Westmoreland County	N/A

Appendix AC: Other portions of transportation network where ITS data is archived

Agency	Portion
Reno	
Reno City Public Works	residential streets
San Diego	
Escondido City	Do not archive data.
San Diego City	Areas where the City of San Diego has CMS signs. Four CMS signs located on Friars Rd approaching old baseball/football stadium. Five signs in central business district.
San Luis Obispo	
San Luis Obispo City Public Works	None
San Luis Obispo County Public Works	not specified
Seattle, Tacoma	
Bellevue City	All controllers on central system.
Federal Way City	Anything we have
Tampa, St. Petersburg, Clearwater	
Clearwater City	none
Hillsborough County	Targeted data archive will be system wide
Tucson	
Pima County	Arterials, collectors and intersections
Tucson City	Signal operations only
Wichita	
Sedgwick County	All county maintained roads and highways.

Appendix AD: Other information collected/archived

Agency	Information	Collected	Archived
Baton Rouge			
Louisiana Department of Transportation Division District 61	DMS messages	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Hampton Roads			
Norfolk City	signal phase green time (split monitor)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Kansas City			
Olathe City	n/a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Milwaukee, Racine			
Milwaukee County	volume counts	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
New London			
Norwich City Public Works	we dont archive	<input type="checkbox"/>	<input type="checkbox"/>
New York, Northern New Jersey, Southwestern Connecticut			
Union Township(NJ)	state and county studies	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Provo - Orem			
Utah Department of Transportation Region 3	dont know	<input type="checkbox"/>	<input type="checkbox"/>

Appendix AE: Other uses of data

Agency	Use
Baton Rouge	
Louisiana Department of Transportation Division District 62	Payroll & material tracking
Boston, Lawrence, Salem	
Somerville City	keep parking ticket records for appeals (snow emergency)
Los Angeles, Anaheim, Riverside	
Long Beach City	legal protection
Tucson	
Tucson City	Traveler Information