

Tracking the Deployment of the Integrated Metropolitan ITS Infrastructure in Syracuse

FY99 Results

For additional information, please contact:

**Joseph I. Peters, Ph.D.
ITS Program Assessment Coordinator
ITS Joint Program Office, Room 3416
400 Seventh St., S.W.
Washington, D.C. 20590
(202) 366-2202
FAX: (202) 493-2027
E-mail: joe.peters@fhwa.dot.gov**

Table of Contents

Part 1 - Background and Purpose.....	1
Part 2 - Summary 1999 Survey Results	3
Part 3 - Detailed 1999 Survey Results	7
Freeway Management Component Indicators.....	9
Freeway Management Integration Indicators.....	11
Incident Management Component Indicators	13
Incident Management Integration Indicators	15
Arterial Management Component Indicators.....	17
Arterial Management Integration Indicators	19
Electronic Toll Collection Component Indicators	21
Electronic Toll Collection Integration Indicators.....	22
Transit Management Component Indicators	23
Transit Management Integration Indicators	24
Electronic Fare Payment Component Indicators.....	26
Electronic Fare Payment Integration Indicators.....	27
Highway-Rail Intersection Component Indicators.....	28
Highway-Rail Intersection Integration Indicators.....	29
Emergency Management Component Indicators	30
Emergency Management Integration Indicators	31
Regional Multimodal Traveler Information Component Indicators	32
Regional Multimodal Traveler Information Integration Indicators	33
Appendix A. Survey Coverage Area.....	A.1
Appendix B. Surveyed Agencies	B.1
Appendix C. Freeway Management Components.....	C.1
Appendix D. Freeway Management Integration	D.1
Appendix E. Freeway Management Information Collection and Dissemination	E.1
Appendix F. Arterial Management Components	F.1
Appendix G. Arterial Management Integration	G.1
Appendix H. Arterial Management Information Collection and Dissemination	H.1
Appendix I. Transit Management Components	I.1
Appendix J. Transit Management Integration.....	J.1
Appendix K. Transit Management Information Collection and Dissemination	K.1
Appendix L. Emergency Management.....	L.1

Part 1 - Background and Purpose

In January 1996, Secretary Peña set a goal of deploying the integrated metropolitan Intelligent Transportation System (ITS) infrastructure in 75¹ of the nation's largest metropolitan areas by 2006:

*"I'm setting a national goal: to build an intelligent transportation infrastructure across the United States to save time and lives, and improve the quality of life for Americans. I believe that what we do, we must measure . . . Let us set a very tangible target that will focus our attention . . . I want 75 of our largest metropolitan areas outfitted with a complete intelligent transportation infrastructure in 10 years."*²

-- Secretary Peña, 1996

In 1997, the U.S. Department of Transportation initiated an effort to track progress toward fulfillment of this goal by conducting a survey of deployment in the nation's largest metropolitan areas. Traditionally, the product of a transportation infrastructure investment consists of a fixed asset such as a highway, bridge, or public transportation vehicle developed, constructed, or purchased by a single agency. Tracking the level of deployment for such traditional fixed assets can be accomplished by simply counting the number of such assets deployed. Measuring the deployment of the metropolitan ITS infrastructure is more complex because it consists of a set of systems, often deployed by multiple agencies, and integrated through a combination of complex institutional and technical arrangements. In brief, it is often difficult to simply count the number of systems deployed without first devising a measurement approach that captures the essential features of such systems in a consistent fashion across many deployment environments.

In order to track progress toward fulfillment of the Secretary's goal for deployment, the U.S. Department of Transportation ITS Joint Program Office developed the metropolitan ITS deployment tracking methodology. This methodology tracks deployment of the nine components that make up the Metropolitan ITS infrastructure: Freeway Management; Incident Management; Arterial Management; Emergency Management; Transit Management; Electronic Toll Collection; Electronic Fare Payment; Highway-Rail Intersections; and Regional Multimodal Traveler Information. Through a set of indicators tied to the major functions of each component, the level of deployment is tracked for the nation's largest metropolitan areas. In addition, the integration links between agencies operating the infrastructure are also tracked. The details of

¹ Since Secretary Peña's speech, the number of metropolitan areas that DOT will measure has been increased from 75 to 78. However, to maintain reporting consistency across the 10-year goal period, this report considers only the original 75 metropolitan areas.

² Excerpt of a speech delivered by Secretary of Transportation Peña at the Transportation Research Board in Washington, DC on January 10, 1996.

the methodology are explained elsewhere.³

During the summer and fall of 1999, the U.S. DOT undertook a new data collection effort for the purpose of examining ITS deployment progress in the nation's largest metropolitan areas. The Syracuse metropolitan area was among the areas surveyed in 1997 and again in 1999. This report presents the results of the 1999 survey efforts and compares the results of the 1997 survey against those observed in 1999. The overall response rate for the surveys administered in the Syracuse region was 88% in 1997 and 83% in 1999.

Part 2 contains a summary of the 1999 survey results, and Part 3 provides a comparison of 1999 survey results and the 1997 survey results.

The report also contains a set of appendices containing a map of the survey area, the list of local contacts surveyed along with a status of their response to the survey and a summary of the data collected from the surveys.

Agencies are encouraged to review the data presented in this report for completeness and accuracy and to direct any comments or corrections to the data provided to the contacts listed below:

Steve Gordon
Oak Ridge National Laboratory
P.O. Box 2008, 4500N, MS-6207
Oak Ridge, TN 37831-6207
(865) 576-8416 (voice)
(865) 574-3895 (fax)
gordonsr@ornl.gov

Jeff Trombly
Science Applications International Corporation
301 Laboratory Road
Oak Ridge, TN 37831-2501
(865) 481-8563 (voice)
(865) 481-2941 (fax)
jeffrey.w.trombly@saic.com

³ Additional Resources: "Measuring ITS Deployment and Integration" (Electronic Document Number: 4372). U.S. Department of Transportation, Joint Program Office for Intelligent Transportation Systems, 400 Seventh St., SW (HVV-1), Washington, DC 20590, Phone: 202-366-9536, Fax: 202-366-3302, Web: <http://www.its.dot.gov>.

Part 2 - Summary 1999 Survey Results

Deployment indicators have been developed for two broad areas of interest: (1) the individual components, including their basic functions and characteristics and (2) integration of components, including how these components work together to provide coordinated regional service. As mentioned earlier, these indicators are expressed as percentages of the possible deployment opportunity and not necessarily what should be deployed based on local needs. Requirements for deployment and integration between each component will vary based on local conditions and cannot be assigned without extensive coordination with individual metropolitan areas.

The following two figures portray the surrogate indicators for each of the nine components in Syracuse and the same indicators at the national level. These are judged to be the single best representative of a component and are being used as summary indicator for component. The summary indicators are expressed as a percentage; however, because deployment goals have yet to be established, these indicators should not be read as a comparison of what is deployed versus eventual deployment goals. Instead, they only reflect what is deployed compared to full market saturation (i.e., opportunity for deployment).

Each component indicator was selected to reflect a critical function of the individual components. For example, in the case of Freeway Management, three basic functions were defined: surveillance, traffic control, and information display. The three indicators developed to reflect these functions are: percentage of freeway centerline miles under electronic surveillance (surveillance function), percentage of freeway entrance ramps managed by ramp meters (traffic control function), and percentage of freeway centerline miles covered by permanent VMS, HAR, or in-vehicle signing (information display function). The indicators are surrogates that do not necessarily reflect the full breadth of metropolitan ITS deployment activity.

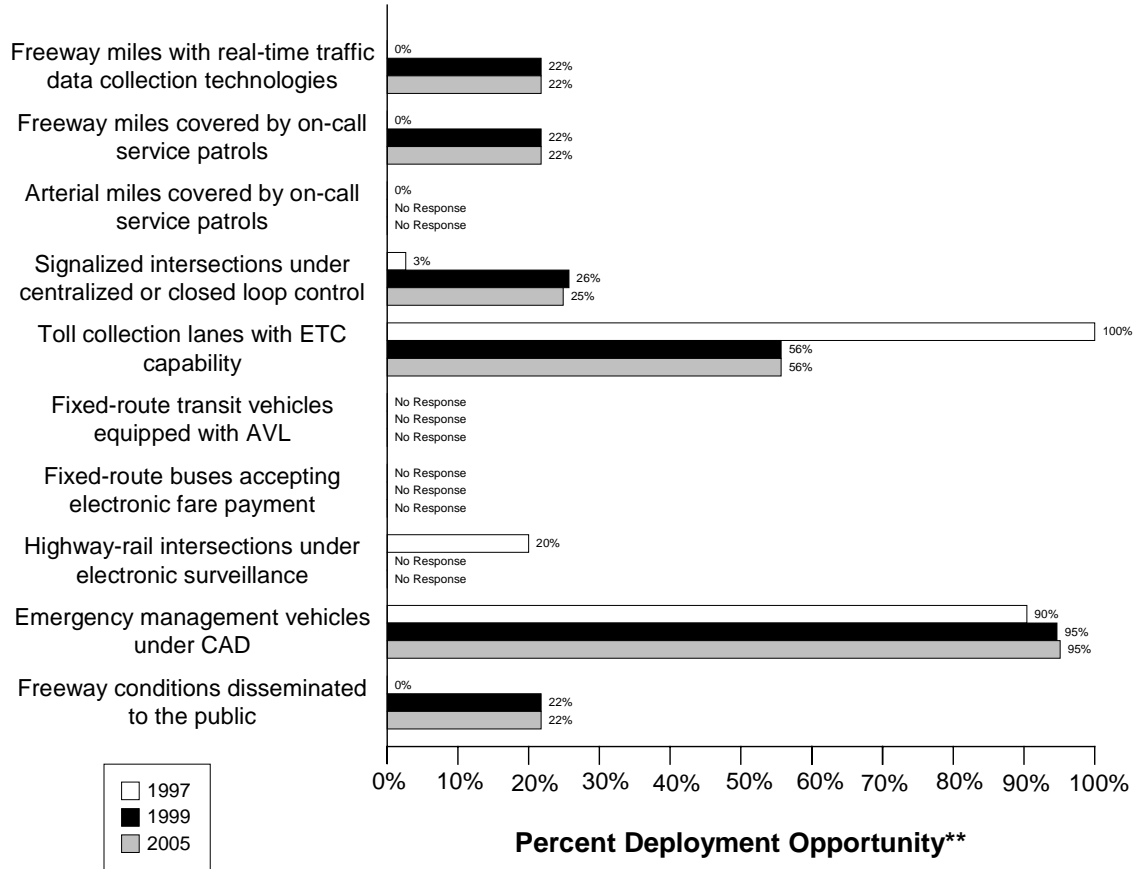
A critical aspect of ITS that provides much of its capability is the integration of individual components to form a unified regional traffic control system. Individual ITS components routinely collect information that is used for purposes internal to that component. For example, the Arterial Management component monitors arterial conditions to revise signal timing and to convey these conditions to travelers through such technologies as variable message signs and highway advisory radio. Other ITS components can make use of this information in formulating their control strategies. For example, Transit Management may alter routes and schedules based on real-time information on arterial traffic conditions, and Freeway Management may alter ramp metering or diversion recommendations based on the same information.

As with the component indicators, definitions for inter- and intra-component integration were developed for each component, and indicators, derived from these definitions, were produced for each component. A total of 34 individual integration indicators was specified and is portrayed in the third figure which follows. Each integration indicator has been assigned a number and an origin/destination path from one ITS infrastructure component to another. For example, the

integration of information from the Freeway Management component to the Regional Multimodal Traveler Information component is identified by the number “10.”

Data as of 5/1/00

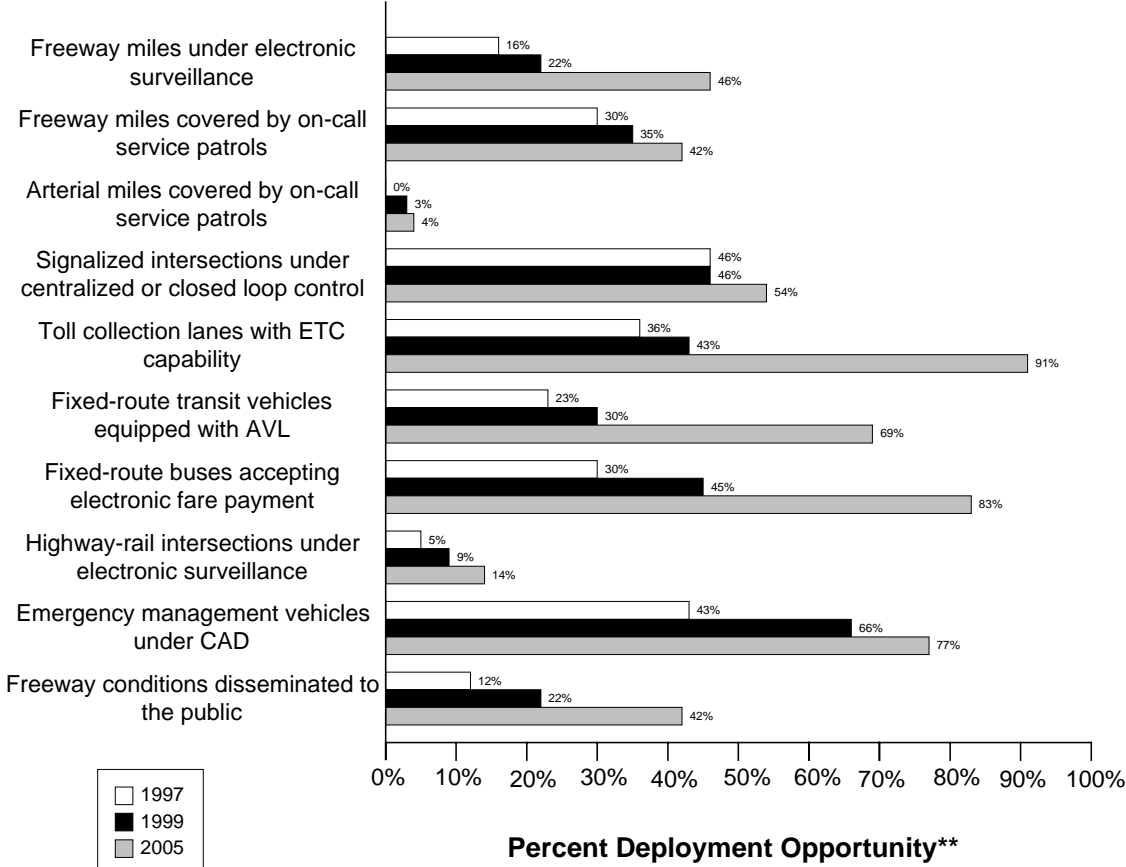
Syracuse Summary Indicators*



* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.

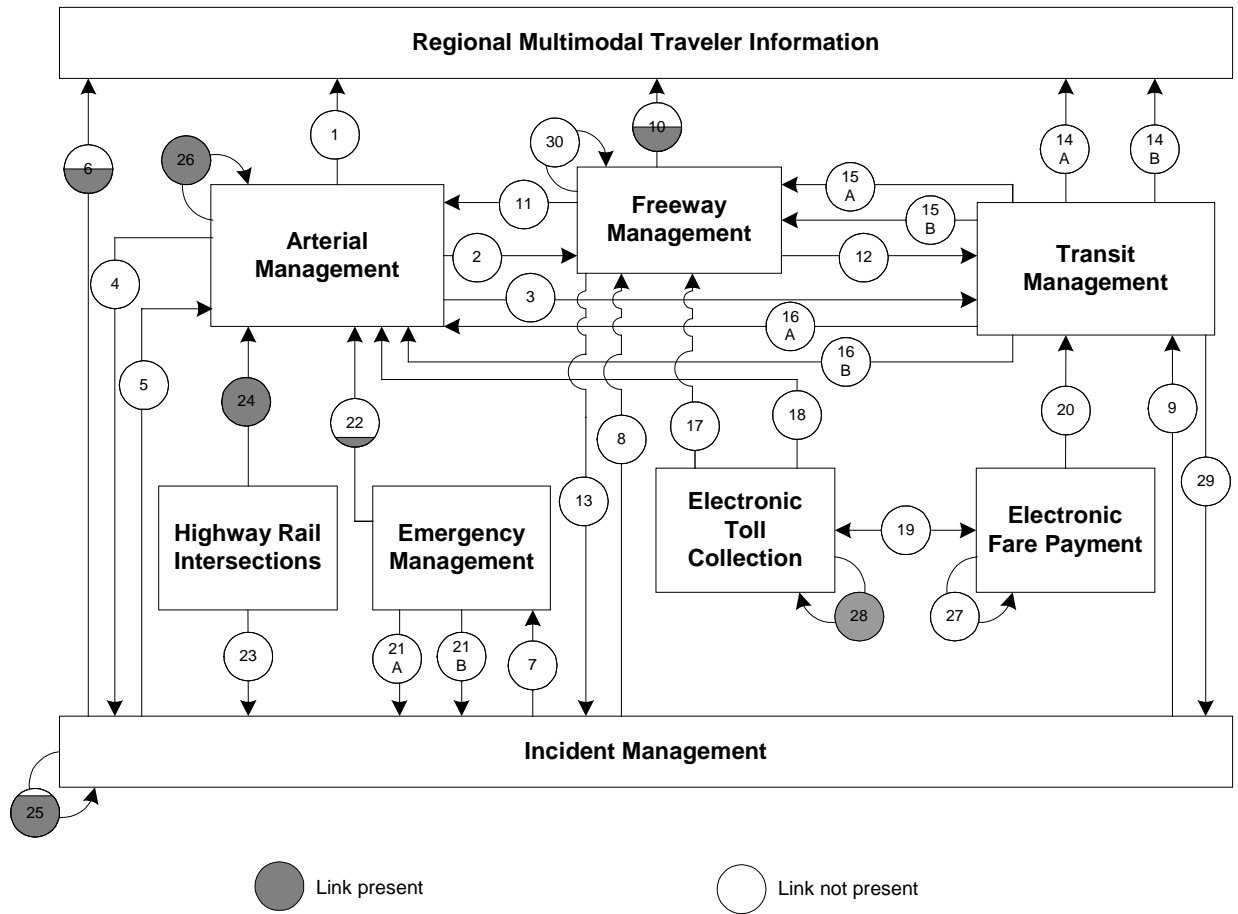
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

National Summary Indicators*



* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need

Syracuse Integration Links



Note: Shading indicates the value of the link. For example a circle half shaded equals 50%

Link	Description	Link	Description
1	Arterial Management to Regional Multimodal Traveler Information	2	Arterial Management to Freeway Management
3	Arterial Management to Transit Management	4	Arterial Management to Incident Management
5	Incident Management to Arterial Management	6	Incident Management to Regional Multimodal Traveler Information
7	Incident Management to Emergency Management.	8	Incident Management to Freeway Management
9	Incident Management to Transit Management	10	Freeway Management to Regional Multimodal Traveler Information
11	Freeway Management to Arterial Management	12	Freeway Management to Transit Management

Link	Description	Link	Description
13	Freeway Management to Incident Management	14a	Transit Management to Regional Multimodal Traveler Information (static route information)
		14b	Transit Management to Regional Multimodal Traveler Information (schedule adherence information)
15a	Transit Management to Freeway Management	16a	Transit Management to Arterial Management
15b	Transit Management to Freeway Management (transit vehicle probes)	16b	Transit Management to Arterial Management (transit vehicle probes)
17	Electronic Toll Collection to Freeway Management (ETC equipped probes)	18	Electronic Toll Collection to Arterial Management (ETC equipped probes)
19	Electronic Fare Payment and Electronic Toll Collection	20	Electronic Fare Payment to Transit Management
21a	Emergency Management to Incident Management (incident notification)	22	Emergency Management to Arterial Management
21b	Emergency Management to Incident Management (incident clearance)		
23	Highway-rail intersections to Incident Management (crossing status)	24	Highway-rail intersections to Arterial Management (crossing status)
25	Incident Management intra component	26	Arterial Management intra component
27	Electronic Fare Payment intra component.	28	Electronic Toll Collection intra component
29	Transit Management to Incident Management (incident reporting)	30	Freeway Management intra component

Part 3 - Detailed 1999 Survey Results

The following figures and tables summarize the complete set of component and integration indicators developed for the Syracuse metropolitan area. The figures summarizing the component indicators consist of a bar chart portraying the deployment levels for 1997, 1999, and 2005 accompanied by detailed tables of the data used to calculate each component indicator value (*Num* stands for numerator and *Den* stands for denominator; blank space indicates that no response was received.)

Example: Calculating Component Indicators for Freeway Management

Consider a metropolitan area with 100 miles of freeway and 25 freeway entrance ramps. The area has no ramp meters, 10 freeway miles for which traffic data are collected electronically, and 5 freeway miles, which are covered by highway advisory radio.

The component indicator for electronic surveillance is calculated as $(10/100)$ or 10%.

The component indicator for ramp meter control is calculated as $(0/25)$ or 0%.

The component indicator for HAR coverage is calculated as $(5/100)$ or 5%.

The summary indicator for the metropolitan area is calculated as $(10\%+0\%+5\%)/3 = 5\%$.

The figures summarizing the integration indicators consist of a diagram for each of the nine metropolitan ITS components portraying the integration level for 1999 (*italic*) and 2005 (**bold**), accompanied by tables providing an explanation of the data and calculations performed to develop each integration indicator value for 1999 and 2005. Each diagram portrays the proportion of agencies providing information to a component (e.g., the flow of incident information from Incident Management to Freeway Management) and the proportion of agencies providing information from one component to other components (e.g., the flow of freeway travel condition information from Freeway Management to Arterial Management).

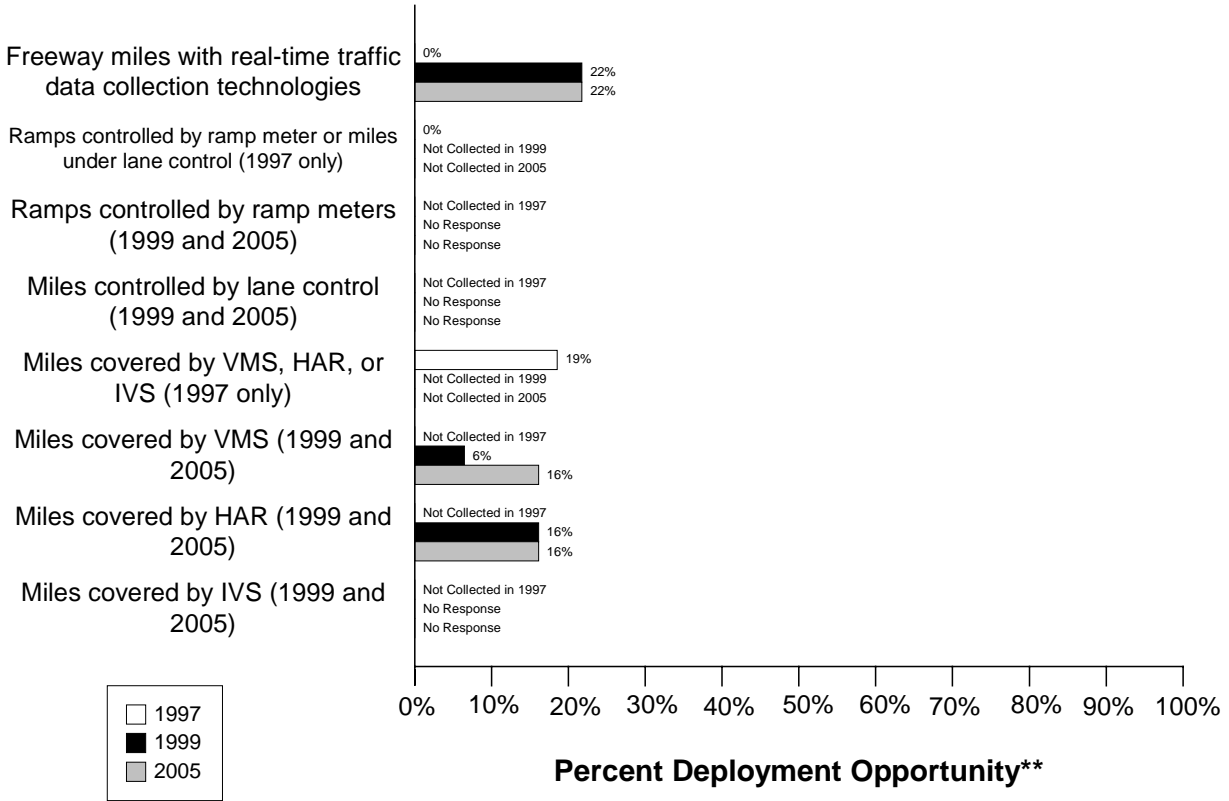
Example: Calculating Integration between Arterial Management and Regional Multimodal Traveler Information

Consider a metropolitan area with three arterial management agencies. One out of three provides information to the public using a Regional Multimodal Traveler Information Media (e.g., internet, kiosk, pager, etc...). The integration indicator is $1/3$ or 33%.

Freeway Management Component Indicators

Data as of 5/1/00

Syracuse Freeway Management*



* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
 ** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

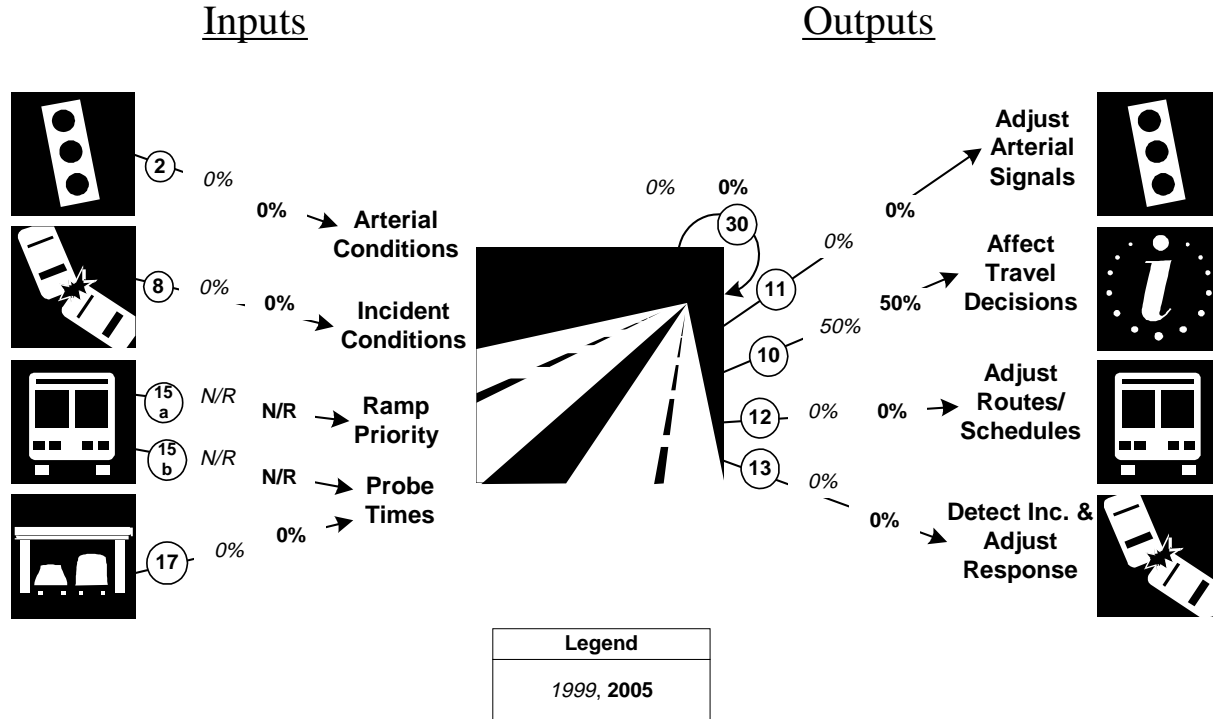
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway centerline miles are under electronic surveillance for monitoring traffic flow	0	124	0%	27	124	22%	27	124	22%
Freeway entrance ramps are controlled by ramp meters or miles under lane control	0	124	0%						

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway entrance ramps are controlled by ramp meters					100			100	
Freeway centerline miles will be controlled by lane control					124			124	
Freeway miles are covered by VMS, HAR, or IVS	23	124	19%						
Freeway miles are covered by VMS				8	124	6%	20	124	16%
Freeway miles are covered by HAR				20	124	16%	20	124	16%
Freeway miles are covered by IVS					124			124	

Freeway Management Integration Indicators

Syracuse

Freeway Management Integration*



* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

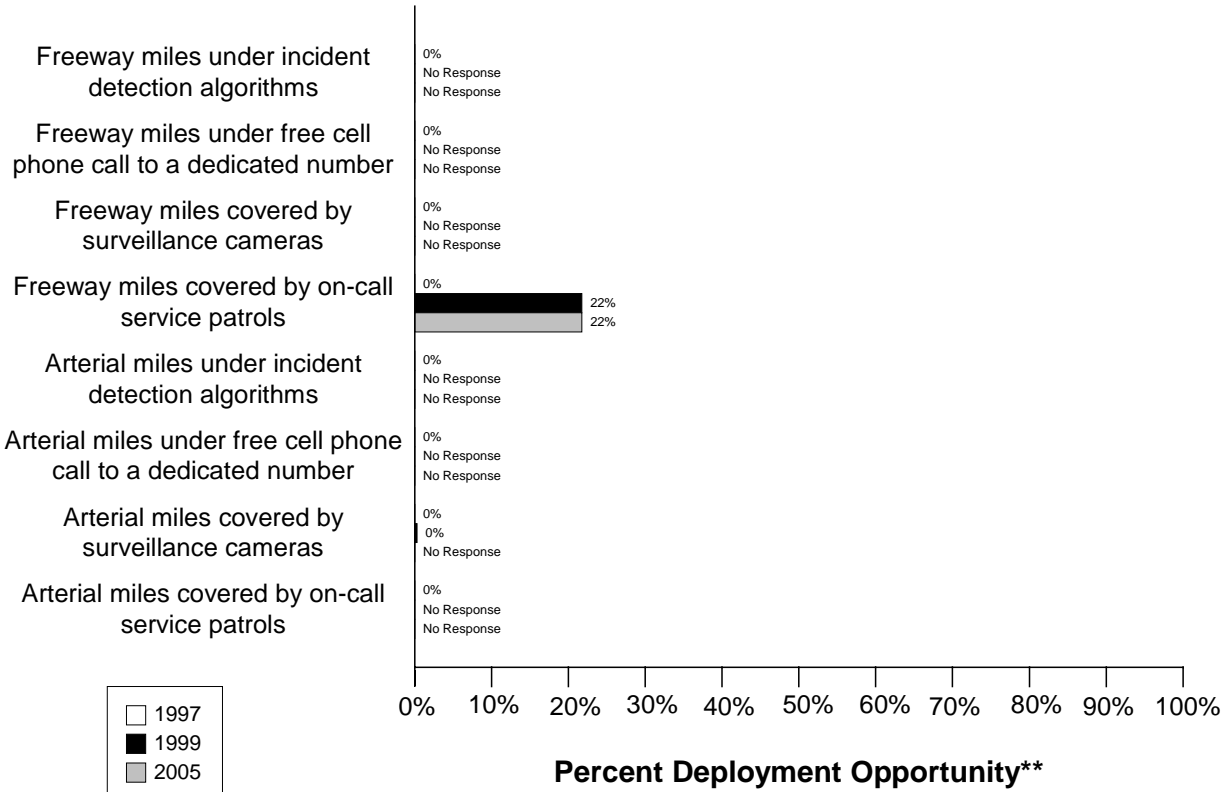
Link Description	1999	2005
2. Arterial Management agencies sending information to Freeway Management	(0 / 2) 0%	(0 / 2) 0%
8. Incident Management agencies sending information to Freeway Management	(0 / 2) 0%	(0 / 2) 0%
15a. Transit management agencies with vehicles equipped with ramp meter priority	(0 /)	(0 /)
15b. Transit Management agencies with vehicles equipped as probes	(0 /)	(0 /)
17. Freeway Management agencies receiving freeway conditions from vehicle probes	(0 / 2) 0%	(0 / 2) 0%
30. Freeway Management agencies sending information to another Freeway Management agency	(0 / 2) 0%	(0 / 2) 0%
11. Freeway Management agencies sending information to Arterial Management	(0 / 2) 0%	(0 / 2) 0%

Link Description	1999	2005
10. Freeway Management agencies disseminating freeway conditions to the public	(1/ 2) 50%	(1/ 2) 50%
12. Freeway Management agencies sending freeway conditions to Transit Management	(0/ 2) 0%	(0/ 2) 0%
13. Freeway Management agencies sending freeway conditions to Incident Management	(0/ 2) 0%	(0/ 2) 0%

Incident Management Component Indicators

Data as of 5/1/00

Syracuse Freeway and Arterial Incident Management*



* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.

** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

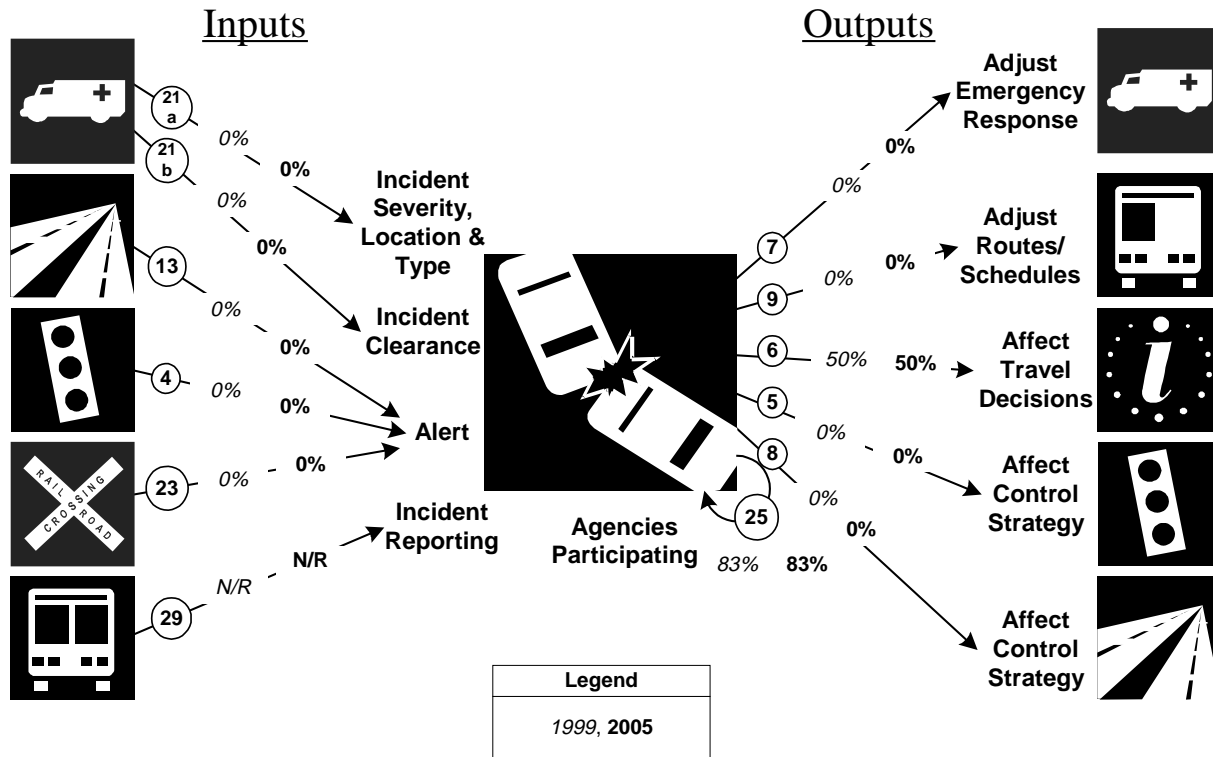
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by incident detection algorithms	0	124	0%		124			124	
Freeway miles are covered by free cellular phone calls to a dedicated number	0	124	0%		124			124	

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by surveillance cameras.	0	124	0%		124			124	
Freeway miles are covered by on-call publicly-sponsored service patrol or towing services.	0	124	0%	27	124	22%	27	124	22%
Arterial miles are covered by incident detection algorithms	0	339	0%		339			339	
Arterial miles are covered by free cellular phone calls to a dedicated number	0	339	0%		339			339	
Arterial miles are covered by surveillance cameras	0	339	0%	1	339	0%		339	
Arterial miles are covered by on-call publicly-sponsored service patrol or towing services	0	339	0%		339			339	

Incident Management Integration Indicators

Syracuse

Incident Management Integration*



* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

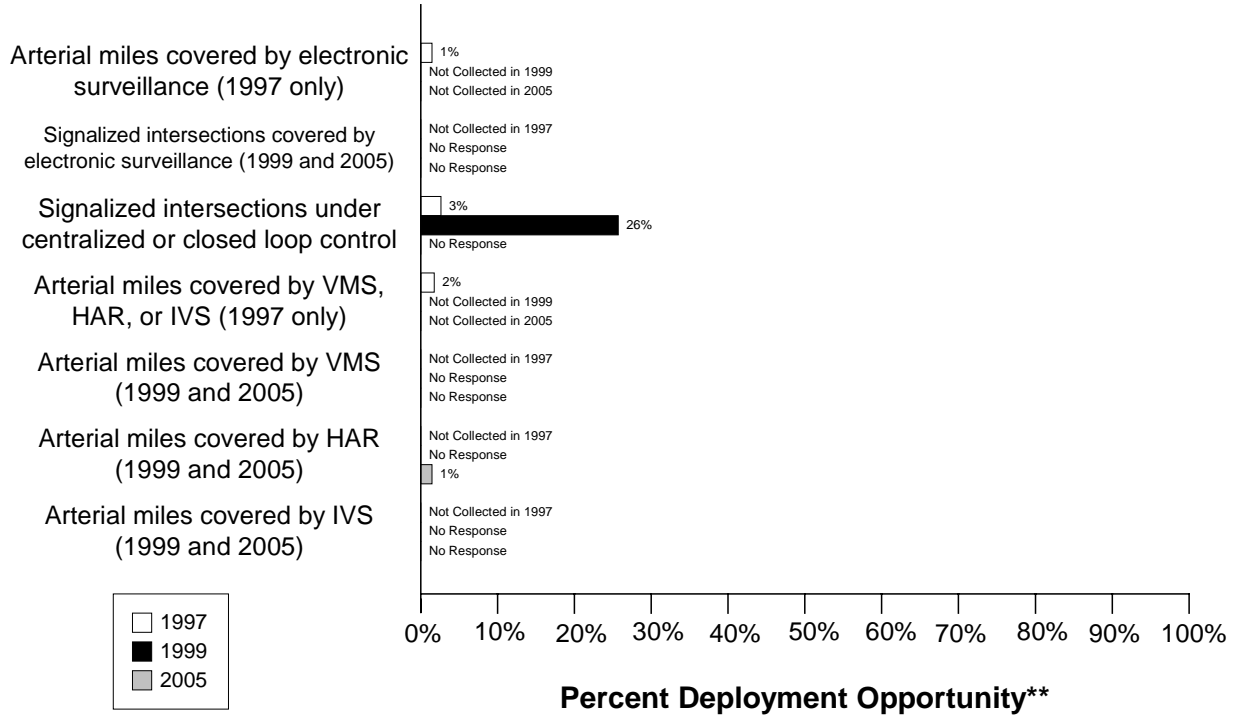
Link Description	1999	2005
21a. Incident management agencies receiving incident severity from Emergency Management	(0 / 2) 0%	(0 / 2) 0%
21b. Incident management agencies receiving incident clearance activities from Emergency Management	(0 / 2) 0%	(0 / 2) 0%
13. Freeway Management agencies sending freeway conditions to Incident Management	(0 / 2) 0%	(0 / 2) 0%
4. Arterial Management agencies sending arterial conditions to Incident Management	(0 / 2) 0%	(0 / 2) 0%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	(0 / 2) 0%	(0 / 2) 0%
29. Transit Management agencies report traffic incidents as part of an organized regional incident management program	(0 /)	(0 /)

Link Description	1999	2005
7. Incident management agencies transfer information describing incident severity, location, and type to Emergency Management agencies	(0/ 2) 0%	(0/ 2) 0%
9. Incident Management agencies transfer information describing incident severity, location, and type to Transit Management agencies	(0/ 2) 0%	(0/ 2) 0%
6. Incident Management agencies disseminate information describing incident severity, location, and type to the public	(1/ 2) 50%	(1/ 2) 50%
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management agencies	(0/ 2) 0%	(0/ 2) 0%
8. Incident Management agencies transfer information describing incident severity, location, and type to Freeway Management agencies	(0/ 2) 0%	(0/ 2) 0%
25. Police, fire, and EMS agencies participating in a formal incident management plan/team	(10/ 12) 83%	(10/ 12) 83%

Arterial Management Component Indicators

Data as of 5/1/00

Syracuse Arterial Management*



* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.

** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

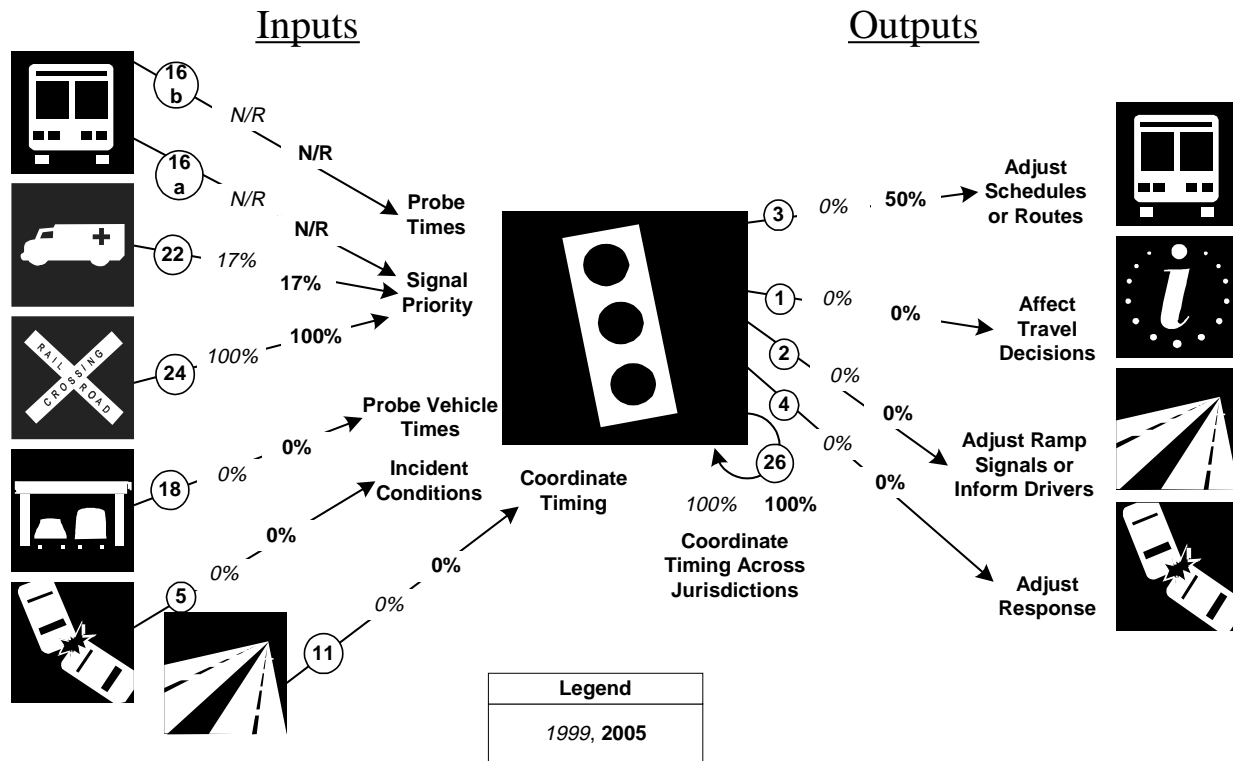
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles covered by electronic surveillance	5	339	1%						
Signalized intersections are covered by electronic surveillance for monitoring traffic flow					654			325	
Signalized intersections are under centralized or closed loop control	19	725	3%	168	654	26%		325	

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles are covered by VMS, HAR, or IVS	6	339	2%						
Arterial miles are covered by VMS					339			339	
Arterial miles are covered by HAR					339		5	339	1%
Arterial miles are covered by IVS					339			339	

Arterial Management Integration Indicators

Syracuse

Arterial Management Integration*



* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

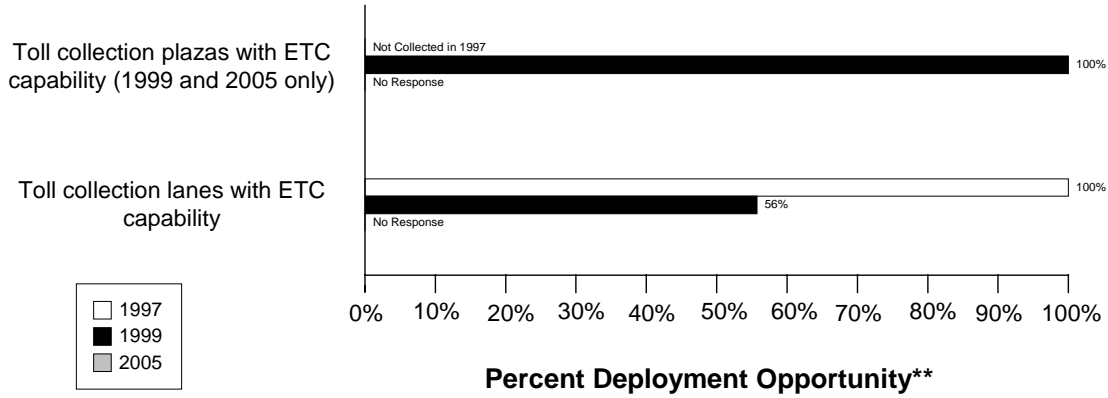
Link Description	1999	2005
16a. Transit management agencies with vehicles equipped with traffic signal priority	(0/)	(0/)
16b. Transit Management agencies have vehicles equipped as probes on arterials	(0/)	(0/)
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	(2/ 12) 17%	(2/ 12) 17%
24. Arterial Management agencies have traffic signals within 200 feet of a highway rail intersection with the capability of having their signal timing adjusted in response to a train crossing	(2/ 2) 100%	(2/ 2) 100%
18. Number of Arterial Management agencies receiving information from vehicle probes	(0/ 2) 0%	(0/ 2) 0%
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management	(0/ 2) 0%	(0/ 2) 0%
11. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Arterial Management agencies	(0/ 2) 0%	(0/ 2) 0%

Link Description	1999	2005
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	(0/ 2) 0%	(1/ 2) 50%
1. Arterial Management agencies disseminate arterial travel times, speeds, and conditions to the public	(0/ 2) 0%	(0/ 2) 0%
2. Arterial Management agencies send traffic condition information to Freeway Management	(0/ 2) 0%	(0/ 2) 0%
4. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Incident Management	(0/ 2) 0%	(0/ 2) 0%
26. Arterial Management agencies under cooperative agreement to share traffic signal timing for coordinated response	(2/ 2) 100%	(2/ 2) 100%

Electronic Toll Collection Component Indicators

Data as of 5/1/00

Syracuse Electronic Toll Collection*



* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.

** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

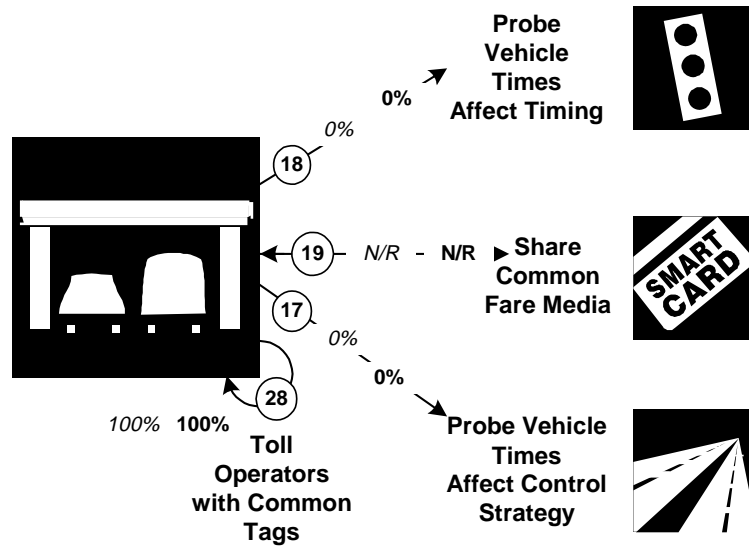
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Toll collection plazas with ETC capability				6	6	100%			
Toll collection lanes with ETC capability	35	35	100%	39	70	56%			

Electronic Toll Collection Integration Indicators

**Syracuse
Electronic Toll Collection Integration***

Inputs

Outputs



Legend
1999, 2005

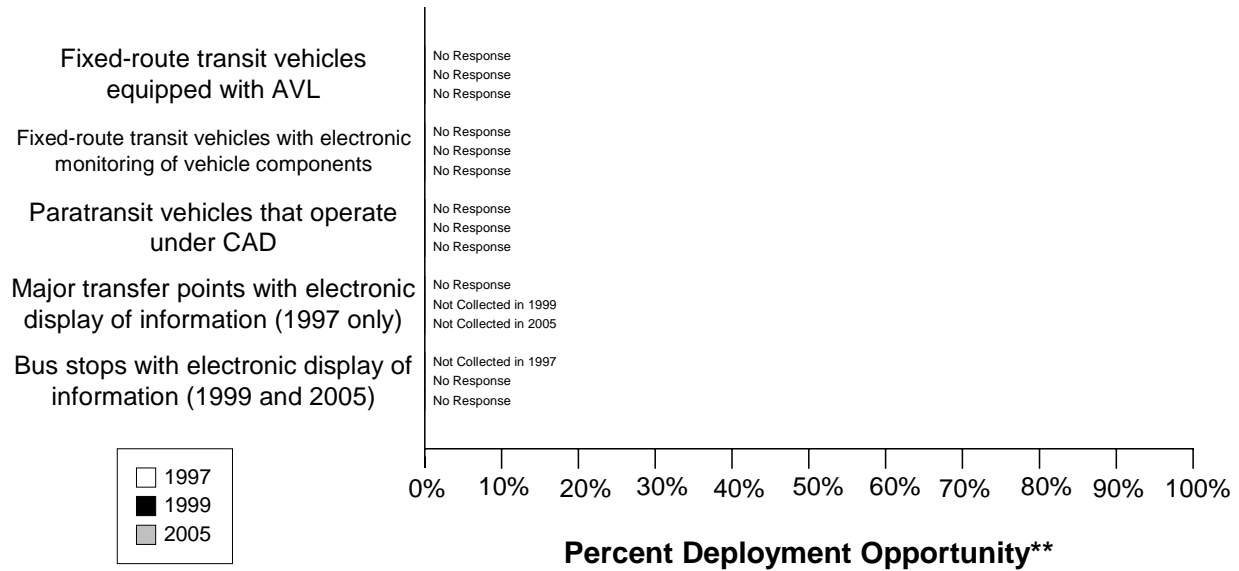
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
18. Number of Arterial Management agencies receiving information from vehicle probes	(0/ 2) 0%	(0/ 2) 0%
19. Transit agencies that accept electronic payment through the use of electronic toll collection media	(0/)	(0/)
17. Freeway Management agencies receiving information from vehicle probes	(0/ 2) 0%	(0/ 2) 0%
28. Toll operators using common toll tag technology	(1/ 1) 100%	(1/ 1) 100%

Transit Management Component Indicators

Data as of 5/1/00

Syracuse Transit Management*

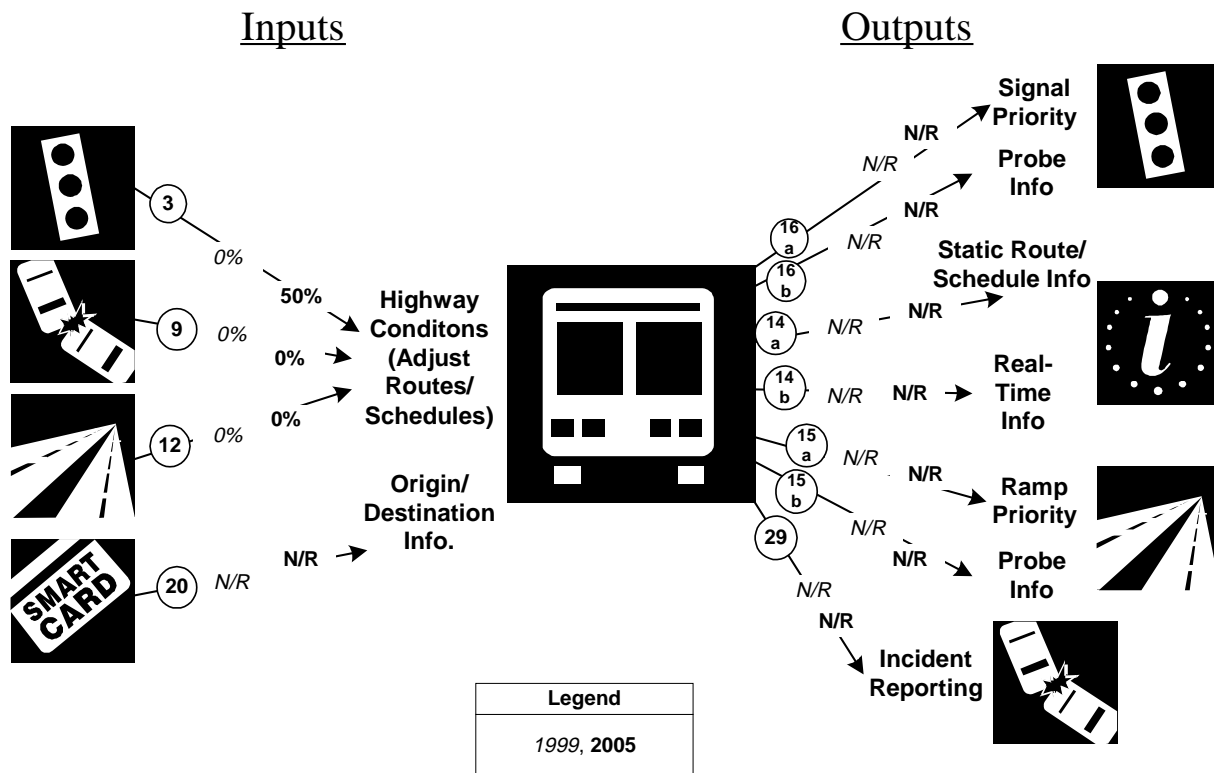


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
 ** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Fixed-route transit vehicles are equipped with AVL									
Fixed-route transit vehicles are equipped with electronic monitoring of vehicle component									
Paratransit vehicles operate under computer-aided dispatch									
Percent fixed-route transfer locations with electronic display of information									
Bus stops display information to the public									

Transit Management Integration Indicators

Syracuse Transit Management Integration*



* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

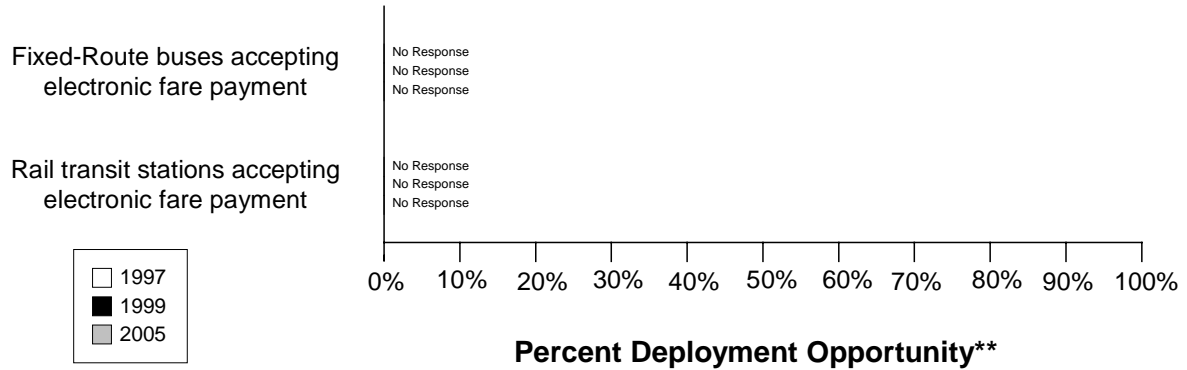
Link Description	1999	2005
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	(0 / 2) 0%	(1 / 2) 50%
9. Incident management agencies transfer information describing incident severity, location, and type to Transit Management	(0 / 2) 0%	(0 / 2) 0%
12. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Transit Management	(0 / 2) 0%	(0 / 2) 0%
20. Transit Management agencies using Electronic Fare Payment data in transit service planning	(0 /)	(0 /)
16a. Transit Management agencies have vehicles equipped with traffic signal priority capability	(0 /)	(0 /)
16b. Transit Management agencies have vehicles equipped as probes on arterials	(0 /)	(0 /)
14a. Transit Management agencies disseminate information describing transit routes, schedules, and fares to travelers	(0 /)	(0 /)

Link Description	1999	2005
14b. Transit Management agencies disseminate information describing schedule/route adherence to travelers	(0/)	(0/)
15a. Transit Management agencies have vehicles equipped with ramp meter priority capability	(0/)	(0/)
15b. Transit Management agencies have vehicles equipped as probes on freeways	(0/)	(0/)
29. Transit Management agencies that report traffic incidents as part of an organized regional Incident Management program	(0/)	(0/)

Electronic Fare Payment Component Indicators

Data as of 5/1/00

Syracuse
Electronic Fare Payment*



* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.

** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Fixed-route transit vehicles that accept electronic payment									
Rail transit stations that accept electronic payment									

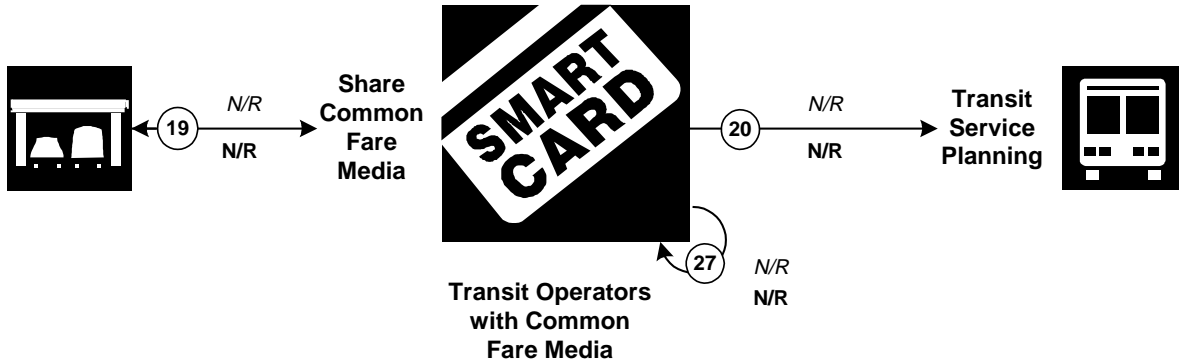
Electronic Fare Payment Integration Indicators

Syracuse

Electronic Fare Payment Integration*

Inputs

Outputs



Legend
1999
2005

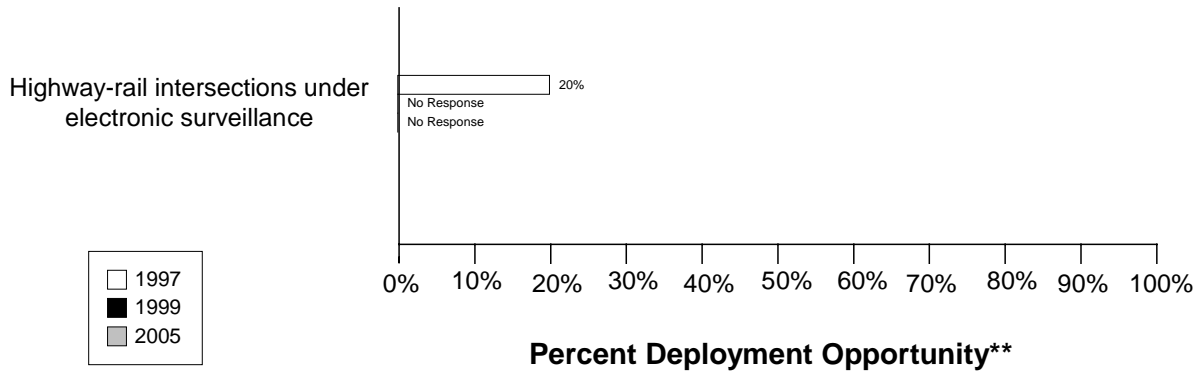
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
19. Transit agencies that accept electronic payment through the use of electronic toll collection media	(0/)	(0/)
20. Transit Management agencies use Electronic Fare Payment data in transit service planning	(0/)	(0/)
27. Transit Management agencies that use the same electronic payment system	(0/)	(0/)

Highway Rail Intersection Component Indicators

Data as of 5/1/00

Syracuse Highway-Rail Intersections*



* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.

** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Highway-rail intersections are under electronic surveillance	3	15	20%		16			16	

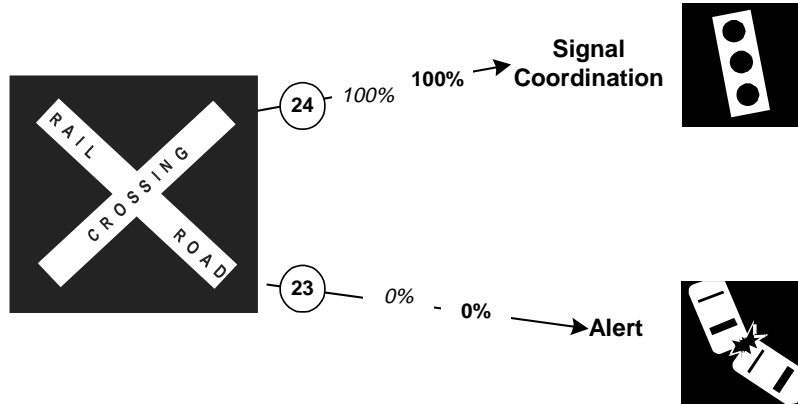
Highway Rail Intersection Integration Indicators

Syracuse

Highway Rail Intersections Integration*

Inputs

Outputs



Legend
1999, 2005

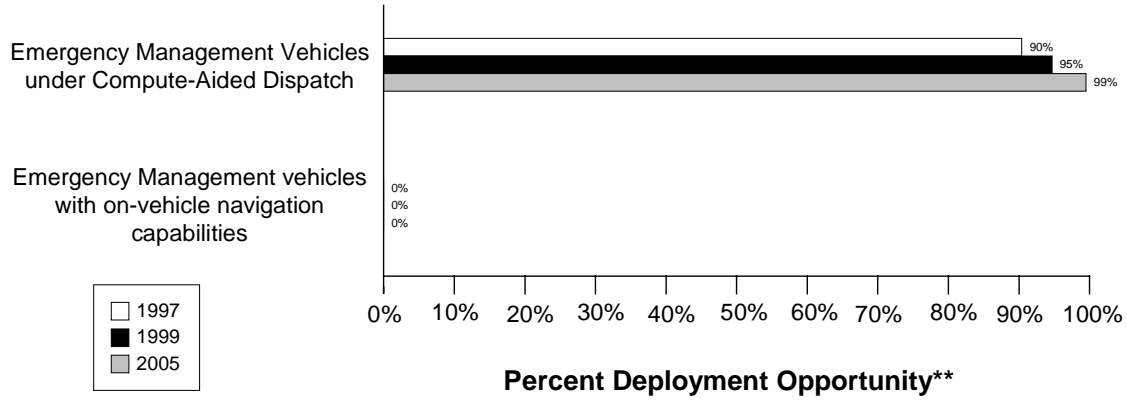
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
24. Arterial Management agencies with traffic signals within 200 feet of a highway rail intersection with the capability of having their signal timing adjusted in response to a train crossing	(2/ 2) 100%	(2/ 2) 100%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	(0/ 2) 0%	(0/ 2) 0%

Emergency Management Component Indicators

Data as of 5/1/00

Syracuse Emergency Management*



* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.

** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Public sector emergency vehicles that operate under computer-aided dispatch	1337	1479	90%	1439	1520	95%	1328	1335	99%
Public sector emergency vehicles that have in-vehicle route guidance capability	0	1479	0%	0	1520	0%	0	1335	0%

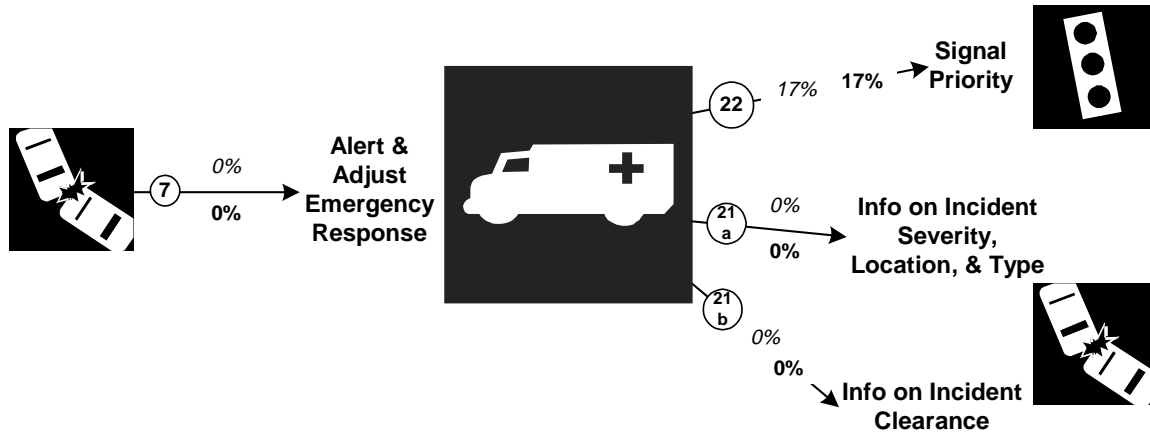
Emergency Management Integration Indicators

Syracuse

Emergency Management Integration*

Inputs

Outputs



Legend
1999, 2005

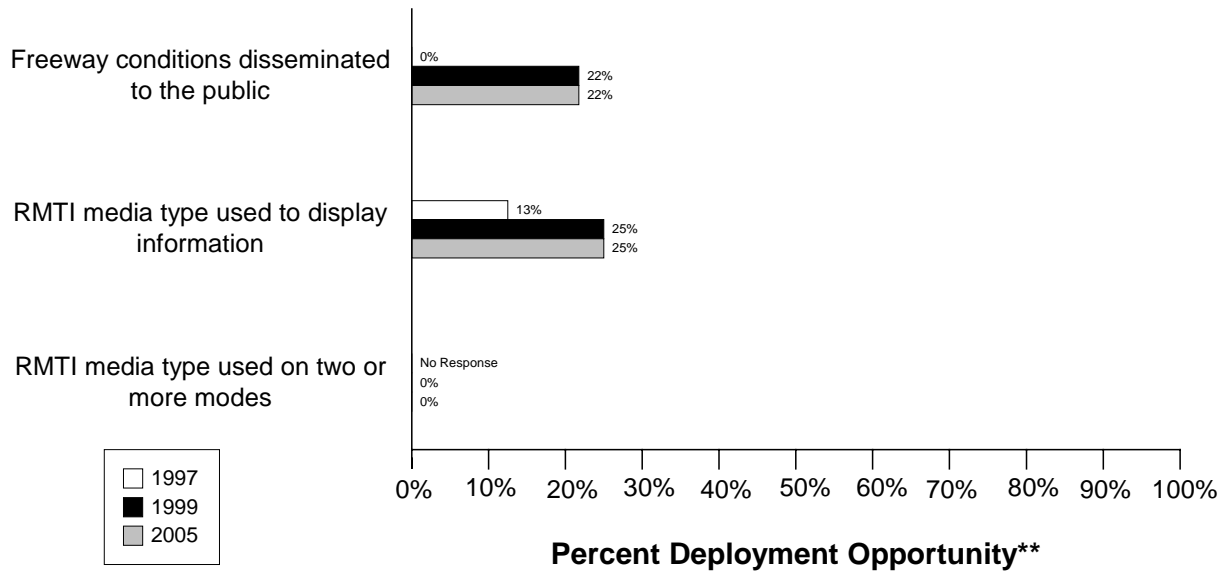
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
7. Freeway Management agencies transfer information describing incident severity, location, and type to Emergency Management agencies	(0/ 2) 0%	(0/ 2) 0%
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	(2/ 12) 17%	(2/ 12) 17%
21a. Freeway Management agencies receive incident severity, location, and type data from Emergency Management agencies	(0/ 2) 0%	(0/ 2) 0%
21b. Freeway Management agencies receive incident clearance activities information from Emergency Management agencies	(0/ 2) 0%	(0/ 2) 0%

Regional Multimodal Traveler Information Component Indicators

Data as of 5/1/00

Syracuse Regional Multimodal Traveler Information*



* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.

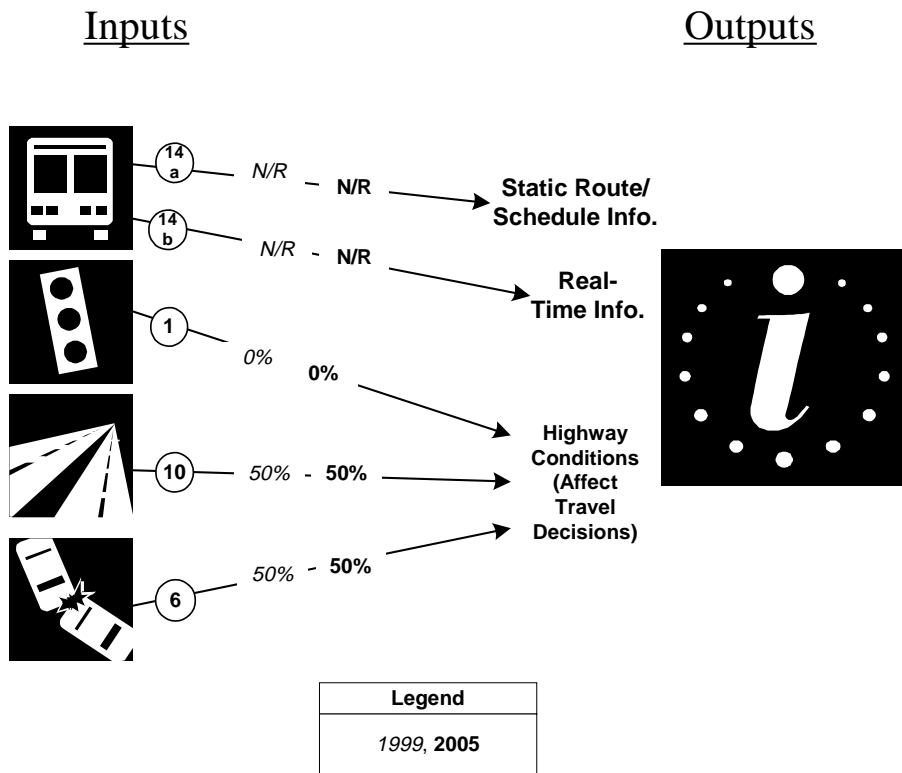
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway conditions disseminated to travelers	0	124	0%	27	124	22%	27	124	22%
Possible RMTI media types are used to display information to travelers	1	8	13%	2	8	25%	2	8	25%
Possible RMTI media are used to display information on <i>two or more modes</i> to travelers				0	8	0%	0	8	0%

Regional Multimodal Traveler Information Integration Indicators

Syracuse

Regional Multimodal Traveler Information Integration*

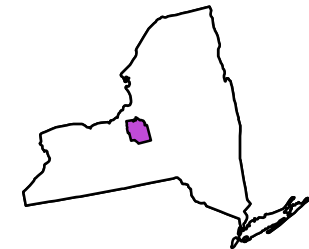
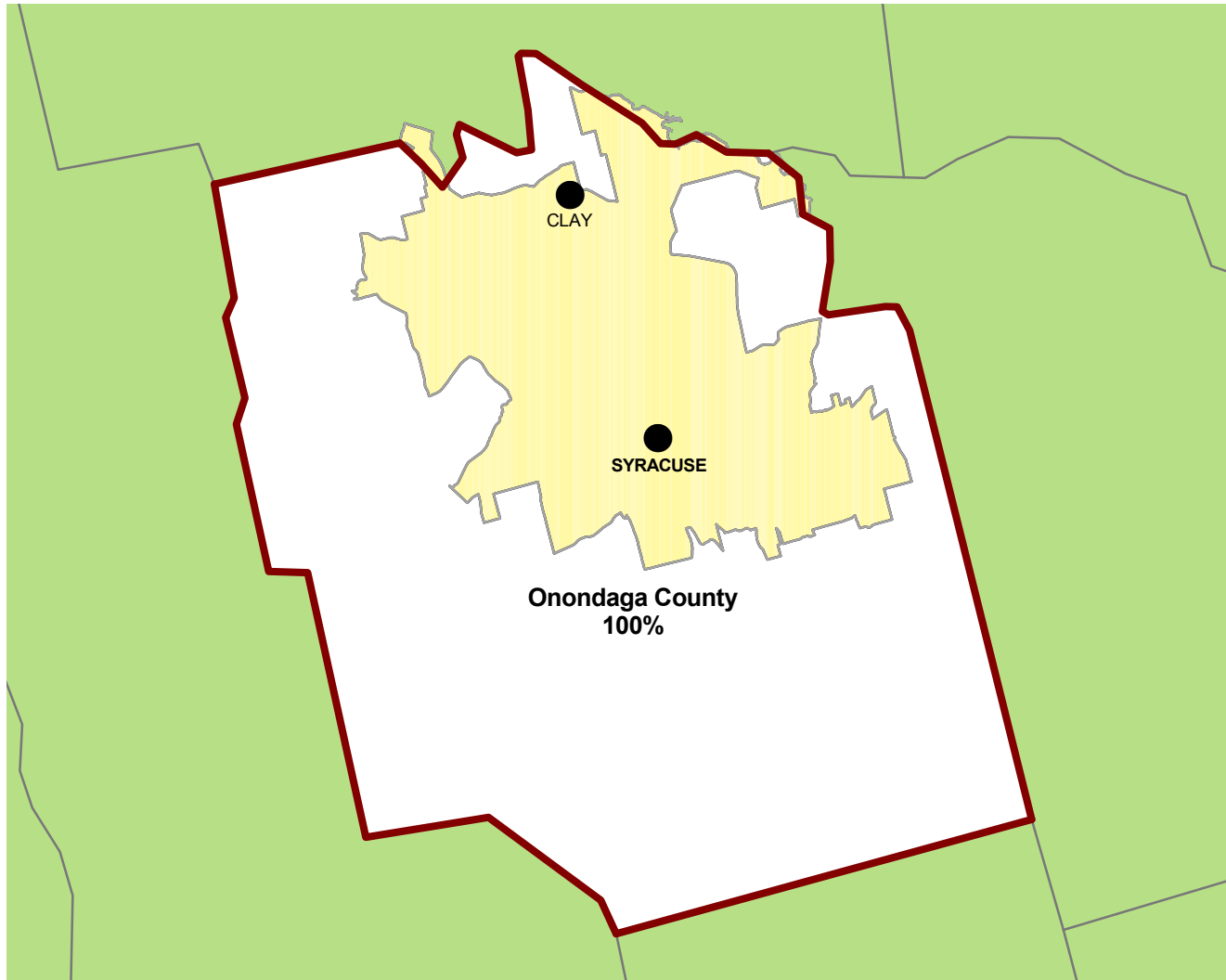


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
14a. Transit Management agencies that disseminate information describing transit routes, schedules, and fares to travelers	(0/)	(0/)
14b. Transit Management agencies that disseminate information describing schedule/route adherence to travelers	(0/)	(0/)
1. Arterial Management agencies that disseminate arterial travel times, speeds, and conditions to the public	(0/ 2) 0%	(0/ 2) 0%
10. Freeway Management agencies that disseminate freeway travel times, speeds, and conditions to travelers	(1/ 2) 50%	(1/ 2) 50%
6. Incident Management agencies that disseminate information describing incident severity, location, and type to the public	(1/ 2) 50%	(1/ 2) 50%

Appendix A
Survey Coverage Area

SYRACUSE METROPOLITAN TRANSPORTATION COUNCIL, NY



- City Included in Surveys
 - ⚡ Metropolitan Planning Area Boundary
 - ⚡ County Boundary
 - Urbanized Area
 - Outside Survey Area
- Percentage on the Map Represents Percentage of County Population Included within MPO Boundary

Appendix B
Surveyed Agencies

Surveyed Agencies

Agency Name	Phone	Fax	1999		1997	
			Out	In	Out	In
SYRACUSE						
Arterial Management						
Onondaga County	(315) 435-3205	(315) 435-5744	7/29/1999		8/13/1997	
New York State Department of Transportation	(315) 428-4380	(315) 428-4311	7/29/1999	8/27/1999	8/13/1997	9/22/1997
Syracuse City	(315) 448-8518	(315) 448-8531	7/29/1999	10/13/1999	8/13/1997	1/13/1998
Electronic Toll Collection						
New York State Thruway Authority	518-436-2805	518-436-2968	8/18/1999	9/8/1999	8/13/1997	10/10/1997
Emergency Management						
Moyers Corners Fire Department	(315) 652-3800	(315) 622-7259	6/23/1999	10/15/1999	7/15/1998	7/15/1998
Clay Volunteer Fire Department Incorporated	(315) 652-3800	(315) 622-7259	6/23/1999	10/15/1999	7/15/1998	7/15/1998
Caughdenoy Volunteer Fire Department	(315) 652-3800	(315) 622-7259	6/23/1999	10/15/1999	7/15/1998	7/15/1998
Syracuse City Fire Department	(315) 473-5525	(315) 422-7766	6/23/1999	7/15/1999	7/6/1998	7/6/1998
Onondaga Sheriff Department	(315) 435-1766	(315) 435-1789	6/23/1999	7/9/1999	7/20/1998	7/20/1998
Clay Town Police Department	(315) 652-3800	(315) 622-7259	6/23/1999	10/15/1999	7/6/1998	7/6/1998
Onondaga Emergency Management Department	(315) 435-2525	(315) 435-3309	6/23/1999	7/1/1999	9/25/1997	10/2/1997
Clay Town Fire Department	(315) 652-3800	(315) 622-7259	8/19/1999	8/25/1999	7/6/1998	7/6/1998
Brewerton Fire District	(315) 652-3800	(315) 622-7259	6/23/1999	10/15/1999		
North Syracuse Fire Department	(315) 652-3800	(315) 622-7259	6/23/1999	10/15/1999	7/6/1998	7/6/1998
Freeway Management						
New York State Department of Transportation	(315) 428-4380	(315) 428-4311	7/29/1999	8/27/1999	8/13/1997	9/22/1997
New York State Thruway Authority	(518) 436-2816	(518) 436-2968	7/29/1999	12/9/1999	8/14/1997	10/9/1997
MPO						
Syracuse Metropolitan Transportation Council	(315) 422-5716	(315) 422-7753	7/15/1999	9/24/1999		
Transit Management						
Central New York Regional Transit Authority	(315) 442-3362	(315) 442-3369	8/9/1999		8/14/1997	

Appendix C
Freeway Management Components

Freeway Management
Agencies for Metropolitan Area: Syracuse

	New York State Department of Transportation		New York State Thruway Authority		Totals	
	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		2	
FREEWAY MANAGEMENT SECTION						
Number of freeway centerline miles that agency owns or maintains	80		27		107	
Number of freeway centerline miles that is used for planning	63		27		90	
Number of freeway entrance ramps that agency owns, operates or maintains	76		6		82	
Number of freeway entrance ramps that is used for planning	68		6		74	
Type of facilities used to conduct freeway/incident management activities						
Activities housed in a free-standing dedicated building?	No		No		0	
Activities housed in a building shared with other activities?	No		No		0	
Activities conducted in a dedicated control room?	No		Yes		1	
Control room contains operator console(s)?	No		No		0	
Control room contains electronic wall map?	No		Yes		1	
Control room contains CCTV display(s)?	No		No		0	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		No		0	
Facilities are electronically linked to other transportation mgt facilities?	No		Yes		1	
Staffing and hours of operation of freeway/incident management activities						
Number of full-time agency staff members	NR		NR		0	
Number of full time contractor staff members	NR		NR		0	
Number of part-time agency staff members	NR		NR		0	
Number of part-time contractor staff members	NR		NR		0	
Staffed 24 hours day by agency staff or by others	NR		others		0	
Staffed during peak hours only by agency staff or by others	NR		NR		0	
Staffed by others during off-peak hours	No		No		0	
Agency staff perform transportation management as an ancillary duty	No		No		0	
Agency staff dedicated to transportation management duty	No		Yes		1	
Types of operations conducted for freeway/incident management						
Incident detection and management?	No		Yes		1	
This metropolitan area?	No		No		0	
Other metropolitan area?	No		No		0	
Statewide?	No		Yes		1	
Monitoring and troubleshooting status of system components?	No		No		0	
Manual override of ramp metering rates at freeway on-ramps?	No		No		0	
Operating transportation management roadside devices?	Yes		No		1	
Radio communications with other agencies?	No		No		0	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		No		0	

Freeway Management
Agencies for Metropolitan Area: Syracuse

	New York State Department of Transportation		New York State Thruway Authority		Totals	
	1999	2005	1999	2005	1999	2005
Real-Time Traffic Data Collection Technologies						
Total number of miles under surveillance with real-time data collection tech.	NR	NR	27	27	27	27
<u>Number of Stations with data collection technologies</u>						
Loop detectors	80	80	14	14	94	94
Video imaging detectors	0	0	0	0	0	0
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0	0	0	0	0
Microwave radar	0	0	0	0	0	0
Other (e.g., acoustic detectors)	0	0	0	0	0	0
<u>Number of Miles covered with data collection technologies</u>						
Loop detectors	0	0	27	27	27	27
Video imaging detectors	0	0	0	0	0	0
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0	0	0	0	0
Microwave radar	0	0	0	0	0	0
Other (e.g., acoustic detectors)	0	0	0	0	0	0
Variable Message Signs (VMS) on Freeways						
Candidate locations for deployment of VMS where VMS has been deployed	3	8	NR	NR	3	8
Candidate locations for deployment of VMS	5	8	NR	NR	5	8
Roadside Technologies used to Distribute Traveler Information						
Total number of miles where information is distributed	NR	NR	20	20	20	20
<u>Number deployed</u>						
Highway advisory radio	0	0	1	1	1	1
In-vehicle signing	0	0	0	0	0	0
Portable variable message signs	8	8	2	2	10	10
Other	0	0	0	0	0	0
<u>Miles covered</u>						
Highway advisory radio	0	0	20	20	20	20
In-vehicle signing	0	0	0	0	0	0
Portable variable message signs	NR	NR	NR	NR	0	0
Other	0	0	0	0	0	0
Ramp Meters on Freeways						
Number of entrance ramp meters operated under isolated control	NR	NR	NR	NR	0	0
Number of entrance ramp meters operated under central control	NR	NR	NR	NR	0	0
Number of entrance ramp meters that provide preemption for emergency vehicles	NR	NR	NR	NR	0	0
Number of entrance ramp meters that provide priority for transit vehicles	NR	NR	NR	NR	0	0
Total number of metered ramps	NR	NR	NR	NR	0	0
Freeway centerline miles under lane control	NR	NR	NR	NR	0	0
Communication Links						
<u>Freeway centerline miles covered by the following type of communication</u>						
Twisted pair cable	3	8	0	0	3	8
Coaxial cable	0	0	0	0	0	0

Freeway Management
Agencies for Metropolitan Area: Syracuse

	New York State Department of Transportation		New York State Thruway Authority		Totals	
	1999	2005	1999	2005	1999	2005
Fiber-optic cable	0	0	27	27	27	27
Microwave radio	0	0	0	0	0	0
Other	0	0	0	0	0	0
ITS Standards Used Related to Freeway Management						
ATMS Data Dictionary Sections 1 and 2 (ITE TM 1.01)	No		No		0	
ATMS Data Dictionary Sections 3 and 4 (ITE TM 1.02)	No		No		0	
Message Set for External TMC Communication (ITE-9604-1)	No		No		0	
NTCIP Class B Profile (AASHTO TS 3.3)	No		No		0	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		No		0	
NTCIP Object Definitions for Environmental Sensor Stations (AASHTO TS 3.7)	No		No		0	
NTICP Object Definitions for Dynamic Message Signs (AASHTO TS 3.6)	No		No		0	
NTICP Object Definitions for Highway Advisory Radio (AASHTO TS 3.HAR)	No		No		0	
NTICP Object Definitions for Ramp Meter Control (AASHTO TS 3.RMC)	No		No		0	
NTICP Object Definitions for Transportation Sensor Systems (AASHTO TS 3.TSS)	No		No		0	
NTICP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		No		0	
Would agency be willing to participate in testing of ITS Standards?	Yes		Yes		2	
Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?	No		No		0	
INCIDENT MANAGEMENT SECTION						
Use of Service Patrols to Assist in Detection and Response to Incidents						
Publicly operated service patrol vehicles	No		Yes		1	
Privately operated service patrol vehicles operated under public contract	No		No		0	
Total number of freeway miles patrolled by these services	NR	NR	27	27	27	27
Miles Covered by Methods to Detect and Verify Incidents						
Free cellular phone call to a dedicated phone number other than 911	NR	NR	NR	NR	0	0
Police patrols	NR	NR	27	27	27	27
Computer algorithms linked to traffic surveillance equipment	NR	NR	NR	NR	0	0
CCTV	NR	NR	NR	NR	0	0
Private sector sources (e.g., Shadow Traffic, SmartRoutes)	NR	NR	NR	NR	0	0
Other (e.g., free cell phone call to an area radio system, etc.)	NR	NR	NR	NR	0	0
Procedures in place for Freeway Incident Response?						
Working agreement(s)/arrangement(s) with other agencies	No		No		0	
Inter-agency incident management admin. team that meets regularly	No		No		0	
Major incident response team that responds to major incidents	No		Yes		1	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		Yes		1	
Central focal point for facilitating the two-way flow of information among agencies responding to an incident?						
The central focal point is a Freeway or Traffic Management Center	No		No		0	
The central focal point is a Police, Fire or joint dispatch center	No		No		0	
The central focal point is another center	No		No		0	

Freeway Management
Agencies for Metropolitan Area: Syracuse

	New York State Department of Transportation		New York State Thruway Authority		Totals	
	1999	2005	1999	2005	1999	2005
Methods of Communication Used On-Site at an Incident						
<u>Police</u>						
Two-way radio	Yes		Yes		2	
800 MHz trunked radio	No		No		0	
Cellular telephone	No		Yes		1	
Hand-held (i.e., walkie-talkie)	No		Yes		1	
Automated data systems (i.e., CAD)	No		No		0	
<u>Fire</u>						
Two-way radio	Yes		No		1	
800 MHz trunked radio	No		No		0	
Cellular telephone	No		No		0	
Hand-held (i.e., walkie-talkie)	No		No		0	
Automated data systems (i.e., CAD)	No		No		0	
<u>DOT</u>						
Two-way radio	Yes		Yes		2	
800 MHz trunked radio	No		No		0	
Cellular telephone	No		No		0	
Hand-held (i.e., walkie-talkie)	No		No		0	
Automated data systems (i.e., CAD)	No		No		0	
<u>Towing</u>						
Two-way radio	No		Yes		1	
800 MHz trunked radio	No		No		0	
Cellular telephone	Yes		Yes		2	
Hand-held (i.e., walkie-talkie)	No		Yes		1	
Automated data systems (i.e., CAD)	No		No		0	
Which police agencies typically respond to incidents on freeways?						
State Police	Yes		Yes		2	
County Police or Sheriff	No		No		0	
City Police	Yes		No		1	
Who provides on-site emergency medical response?						
Fire	No		Yes		1	
Emergency Management Service Agency	Yes		Yes		2	
Private hospital	No		No		0	
Has a multi-agency contact list been developed in area containing the names, phone numbers, etc. for the appropriate response personnel?						
	DK		No		0	
Is the Incident Command System used to manage incident scenes?						
	No		Yes		1	
Is there a legal specification by state law or formal agreement as to who is "in charge" at the incident scene?						
	No		Yes		1	

Freeway Management
Agencies for Metropolitan Area: Syracuse

	New York State Department of Transportation		New York State Thruway Authority		Totals	
	1999	2005	1999	2005	1999	2005
Formal agreement?	No		No		0	
Not specified or don't know?	Yes		No		1	
On-scene command post used to manage activities of responding agencies?	DK		Yes		1	
Are there communication linkages to a communications traffic/freeway mgt center?	NR		Yes		1	
Plan developed and adopted by responding agencies for staging and parking response vehicles and equip. at incident site that minimizes lane blockage and facilitates the re-opening of lanes?	DK		Yes		1	
Respondents protected through law or court opinion for liability claims for damages to vehicles or cargoes during clearance activities?	DK		Yes		1	
Are overturned tank trucks, which are intact and not leaking, uprighted without first off-loading?	NR		No		0	
Does your state or local jurisdiction have a law that requires drivers involved in property-damage-only accidents to move the vehicles from travel lanes to a safe location to exchange info and wait for police?	No		No		0	
Have laws or policies regarding the removal of stalled/abandoned vehicles from freeway shoulders?	No		Yes		1	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	DK		0-24		0	
Have policies or procedures for quick removal of vehicles?	No		Yes		1	
Is Total Station equipment used to investigate major incidents?	DK		No		0	
Handling of Towing Responses to Incidents						
Formal contract based on qualifications?	No		No		0	
Rotation with companies under contract?	No		No		0	
Separate lists kept for light and heavy response and for specialty recovery?	NR		NR		0	
Rotation list with minimal qualifications?	No		No		0	
In towing qualifications, do you require towers to be certified under the Towing and Recovery Ass. of America's National Drivers Cert. Program?	DK		No		0	
DK: Don't know						
NR: No Response						
Leg: Legislation or action being planned						

Appendix D
Freeway Management Integration

Freeway Management Integration
Agencies for Metropolitan Area: Syracuse

Agency Name	New York State Department of Transportation		New York State Thruway Authority	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Freeway Management Section				
Agencies your agency provides freeway travel times, speeds, and conditions information, share infrastructure or coordinates operation				
<i>Freeway Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<i>Incident Management Agencies</i>				
Provide Information	None listed	None listed	SEMO	SEMO
Share Infrastructure	None listed	None listed	SEMO	SEMO
Coordinate Operation	None listed	None listed	SEMO	SEMO
<i>Arterial Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<i>Public Transit Operators</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<u>Receiving real-time information via electronic means from others</u>				
<i>Incident Management agencies from which your agency receives incident severity, location, and type information</i>	None listed	None listed	None listed	None listed
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>	None listed	None listed	None listed	None listed
<i>Public Transit operators from which your agency receives freeway travel times derived from vehicle probes</i>	None listed	None listed	None listed	None listed
<i>Toll Collection agencies from which your agency receives freeway travel times derived from vehicles probes</i>	None listed	None listed	None listed	None listed
Freeway Incident Management Section				
Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation				
<i>Arterial Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed

Freeway Management Integration
Agencies for Metropolitan Area: Syracuse

Agency Name	New York State Department of Transportation		New York State Thruway Authority	
	1999	2005	1999	2005
<i>Emergency Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<i>Freeway Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<i>Public Transit Operators</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<u>Receiving real-time information via electronic means from others</u>				
<i>Emergency Management agencies from which your agency receives incident clearance and/or incident severity and type</i>				
Receive Arterial Incident Clearance Information	None listed	None listed	None listed	None listed
Receive Arterial Incident Severity Information	None listed	None listed	None listed	None listed
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>				
arterial travel times, speeds, and conditions	None listed	None listed	None listed	None listed
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>				
freeway travel times, speeds, and conditions	None listed	None listed	None listed	None listed

*short survey: Agency responded using a short survey. The survey did not include names of individual agencies, but only identified whether integration exists.

Appendix E
Freeway Management Information Collection and Dissemination

Data Collection and Dissemination: Freeway Management
Agencies for Metropolitan Area: Syracuse

Agency Name	New York State Department of Transportation	
	1999	2005
Agency Returned Survey?	Yes	
Freeway Management Section		
Data collected, archived, and/or transferred to another agency		
Collected by your agency	NR	NR
Archived by your agency	NR	NR
Transferred to another agency by your agency	NR	NR
Importance of making information available to the public		
Ranked High	NR	
Ranked Medium	NR	
Ranked Low	NR	
Groups that make requests for the data	NR	
What is the data used for?	NR	
Methods used to disseminate freeway information to the public		
Technologies your agency uses to disseminate:	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting freeway conditions	NR	
Telephone system for reporting freeway information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	
Freeway Incident Management Section		
Methods used to distribute incident location and severity information to the public		
Technologies your agency uses to disseminate:	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting incident information	NR	
Telephone system for reporting incident information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	

Data Collection and Dissemination: Freeway Management
Agencies for Metropolitan Area: Syracuse

Agency Name	New York State Thruway Authority	
	1999	2005
Agency Returned Survey?	Yes	
Freeway Management Section		
Data collected, archived, and/or transferred to another agency		
Collected by your agency	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Road conditions, Weather conditions, Incidents, Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Road conditions, Weather conditions, Incidents, Emergency/evacuation routes and procedures
Archived by your agency	Vehicle classification	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification
Transferred to another agency by your agency	NR	NR
Importance of making information available to the public		
Ranked High	Road conditions, Emergency/evacuation routes and procedures	
Ranked Medium	Traffic volumes, Traffic speeds, Lane occupancy	
Ranked Low	Vehicle classification	
Groups that make requests for the data	State DOT personnel, Media (I.e., TV stations, radio stations), MPOs, Consultants	
What is the data used for?	Traffic analysis, Construction impact determination, Planning, Roadway impact analysis, Dissemination to the public	
Methods used to disseminate freeway information to the public		
Technologies your agency uses to disseminate:	Telephone system, Internet Web sites	Telephone system, Internet Web sites
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting freeway conditions	www.thruway.state.ny.us	
Telephone system for reporting freeway information to the public	1-800-Thruway	
Organizations your agency sends information for dissemination to the public	NR	
Freeway Incident Management Section		
Methods used to distribute incident location and severity information to the public		
Technologies your agency uses to disseminate:	HAR	HAR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting incident information	NR	
Telephone system for reporting incident information to the public	1-800-Thruway	
Organizations your agency sends information for dissemination to the public	Not in this MPO	

Appendix F
Arterial Management Components

Arterial Management
Agencies for Metropolitan Area: Syracuse

	New York State Department of Transportation		Syracuse City		Totals	
	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		2	
ARTERIAL MANAGEMENT SECTION						
Number of arterial miles that agency owns or maintains	96		NR		96	
Number of arterial miles that is used for planning	1		NR		1	
Number of highway-rail intersections that agency maintains	13		3		16	
Number of highway-rail intersections that is used for planning	0		NR		0	
Type of facilities used to conduct arterial management activities						
Activities housed in a free-standing dedicated building?	No		No		0	
Activities housed in a building shared with other activities?	No		No		0	
Activities conducted in a dedicated control room?	No		No		0	
Control room contains operator console(s)?	No		No		0	
Control room contains electronic wall map?	No		No		0	
Control room contains CCTV display(s)?	No		No		0	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		No		0	
Facilities are electronically linked to other transportation mgt facilities?	No		No		0	
Staffing and hours of operation of arterial management activities						
Number of full-time agency staff members	NR		NR		0	
Number of full time contractor staff members	NR		NR		0	
Number of part-time agency staff members	NR		NR		0	
Number of part-time contractor staff members	NR		NR		0	
Staffed 24 hours day by agency staff or by others	NR		NR		0	
Staffed during peak hours only by agency staff or by others	NR		NR		0	
Staffed by others during off-peak hours	No		No		0	
Agency staff perform transportation management as an ancillary duty	No		No		0	
Agency staff dedicated to transportation management duty	No		No		0	
Types of operations conducted for arterial management						
Incident detection and management?	No		No		0	
This metropolitan area?	No		No		0	
Other metropolitan area?	No		No		0	
Monitoring and troubleshooting status of system components?	No		No		0	
Radio communications with other agencies?	No		No		0	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		No		0	
Manual override of traffic signal timing plans	No		No		0	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	Yes		No		1	
Describe agency's role in traffic signal control	State routes only		NR			
Traffic Signals Operated by Agency						
Number of signalized intersections operated and owned by agency	284	310	NR	NR	284	310

Arterial Management
Agencies for Metropolitan Area: Syracuse

	New York State Department of Transportation		Syracuse City		Totals	
	1999	2005	1999	2005	1999	2005
Number of signalized intersections operated by agency but owned by another	20	15	NR	NR	20	15
Total number of signalized intersections operated by agency	304	325	350	NR	654	325
<i>Characteristics of signalized intersections that agency operates</i>						
Under closed loop or central system control	23	NR	145	NR	168	0
Under real-time traffic adaptive control using advanced software	0	NR	0	NR	0	0
Using SCOOT	No		No		0	
Using SCATS	No		No		0	
Name of software	NR		NR			
Allow signal preemption for emergency vehicles	51	NR	350	NR	401	0
Allow signal priority for transit vehicles	0	NR	0	NR	0	0
Within 200 feet of a highway-rail intersection	7	NR	1	NR	8	0
Within 200 feet of a highway-rail intersection that adjust signal timing	10	NR	1	NR	11	0
Software used to control the signals agency operates						
Date of last upgrade to traffic signal control system software?	3/18/98		NR			
How often do you update signal timing?	5-7 years		NR			
Software used and number of signalized intersections under control (1999, 2005)	BiTran, 23, 93 NYS TAPS, 281, 395		NR			
Controllers used to control signals						
NEMA	28	28	0	0	28	28
170/179	276	310	0	0	276	310
2070 controller	0	20	0	0	0	20
Other	0	0	0	0	0	0
Technologies Associated with Highway-Rail Intersections						
Total number of highway-rail intersections under electronic surveillance	NR	NR	NR	NR	0	0
<i>Highway-Rail intersection capabilities</i>						
Video surveillance	0	0	0	0	0	0
Electronic surveillance other than video	0	0	0	0	0	0
Ability to predict train arrival electronically	0	0	0	0	0	0
Equipped with electronic traffic violator devices	0	0	0	0	0	0
Other	0	0	0	0	0	0
Real-Time Electronic Traffic Data Collection Technologies						
Total number of signalized intersections covered by electronic surveillance	NR	NR	NR	NR	0	0
<i>Number of signalized intersections with data collection technologies</i>						
Loop detectors	0	0	0	0	0	0
Video detection cameras	0	0	0	0	0	0
Probe readers reading toll tags	0	0	0	0	0	0
Probe readers reading license plates	0	0	0	0	0	0
Other	0	0	0	0	0	0
Roadside Technologies used to Distribute Traveler Information						
<i>Number deployed</i>						
Highway Advisory Radio	0	1	NR	NR	0	1

Arterial Management
Agencies for Metropolitan Area: Syracuse

	New York State Department of Transportation		Syracuse City		Totals	
	1999	2005	1999	2005	1999	2005
In-Vehicle Signing (IVS)	NR	NR	NR	NR	0	0
VMS controlling parking access	0	1	NR	NR	0	1
<u>Miles covered</u>						
Highway Advisory Radio	NR	5	NR	NR	0	5
In-Vehicle Signing (IVS)	NR	NR	NR	NR	0	0
Variable Message Signs (VMS) on Arterials						
Candidate locations for deployment of VMS where VMS has been deployed	NR	NR	NR	NR	0	0
Candidate locations for deployment of VMS	NR	NR	NR	NR	0	0
Communication Technologies						
<u>Signalized intersections communicated with by each type of communication</u>						
Twisted pair cable	23	93	0	0	23	93
Coaxial cable	0	0	0	0	0	0
Fiber-optic cable	0	0	0	0	0	0
Other (e.g., wireless, dial-up modems, leased lines, etc.)	2	35	0	0	2	35
Does agency convey information on highway-rail intersection crossing status to travelers via roadside media such as VMS or HAR?	No		No		0	
ITS Standards Used Related to Traffic Signal Control						
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		No		0	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		No		0	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		No		0	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		No		0	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		No		0	
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		No		0	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		No		0	
Would agency be willing to participate in testing of ITS Standards?	Yes		NR		1	
Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?	Yes		NR		1	
INCIDENT MANAGEMENT ON ARTERIAL STREETS						
Receive information on highway-rail intersection crossing blockages for the purpose of managing incident response?	No		No		0	
Use of Service Patrols to Assist in Detection and Response to Incidents						
Publicly operated service patrol vehicles	No		No		0	
Privately operated service patrol vehicles operated under public contract	No		No		0	
Total number of arterial miles patrolled by these services	NR	NR	NR	NR	0	0
Miles Covered by Methods to Detect and Verify Incidents						
Free cellular phone call to a dedicated phone number other than 911	0	0	0	0	0	0
Free cellular phone call to an area radio station	0	0	0	0	0	0
Police patrols	0	0	0	0	0	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	0	0	0
CCTV	0	0	1	NR	1	0
Private sector sources (e.g., Shadow Traffic, Smart Routes)	0	0	0	0	0	0

Arterial Management
Agencies for Metropolitan Area: Syracuse

	New York State Department of Transportation		Syracuse City		Totals	
	1999	2005	1999	2005	1999	2005
Other	0	0	0	0	0	0
Procedures in place for Arterial Incident Response?						
Working agreement(s)/arrangement(s) with other agencies	No		No		0	
Inter-agency incident management admin. team that meets regularly	No		No		0	
Major incident response team that responds to major incidents	No		No		0	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		No		0	
Methods of Communication Used On-Site at an Incident						
<u>Police</u>						
Two-way radio	No		No		0	
800 MHz trunked radio	No		No		0	
Cellular telephone	No		No		0	
Hand-held (i.e., walkie-talkie)	No		No		0	
Automated data systems (i.e., CAD)	No		No		0	
Other	No		No		0	
<u>Fire</u>						
Two-way radio	No		No		0	
800 MHz trunked radio	No		No		0	
Cellular telephone	No		No		0	
Hand-held (i.e., walkie-talkie)	No		No		0	
Automated data systems (i.e., CAD)	No		No		0	
Other	No		No		0	
<u>DOT</u>						
Two-way radio	No		No		0	
800 MHz trunked radio	No		No		0	
Cellular telephone	No		No		0	
Hand-held (i.e., walkie-talkie)	No		No		0	
Automated data systems (i.e., CAD)	No		No		0	
Other	No		No		0	
<u>Towing</u>						
Two-way radio	No		No		0	
800 MHz trunked radio	No		No		0	
Cellular telephone	No		No		0	
Hand-held (i.e., walkie-talkie)	No		No		0	
Automated data systems (i.e., CAD)	No		No		0	
Other	No		No		0	
Which police agencies typically respond to incidents on arterials?						
State Police	No		No		0	
County Police or Sheriff	No		No		0	

Arterial Management
Agencies for Metropolitan Area: Syracuse

	New York State Department of Transportation		Syracuse City		Totals	
	1999	2005	1999	2005	1999	2005
City Police	No		No		0	
Who provides on-site emergency medical response?						
Fire	No		No		0	
Emergency Management Service Agency	No		No		0	
Private hospital	No		No		0	
Has a multi-agency contact list been developed in area containing the names, phone numbers, etc. for the appropriate response personnel?	NR		NR		0	
Is the Incident Command System used to manage incident scenes?	NR		NR		0	
Is there a legal specification by state law or formal agreement as to who is "in charge" at the incident scene?						
Specified by state law?	No		No		0	
Formal agreement?	No		No		0	
Not specified or don't know?	No		No		0	
On-scene command post used to manage activities of responding agencies?	NR		NR		0	
Are there communication linkages to a communications traffic/freeway mgt center?	NR		NR		0	
Plan developed and adopted by responding agencies for staging and parking response vehicles and equip. at incident site that minimizes lane blockage and facilitates the re-opening of lanes?	NR		NR		0	
Respondents protected through law or court opinion for liability claims for damages to vehicles or cargoes during clearance activities?	NR		NR		0	
Are overturned tank trucks, which are intact and not leaking, uprighted without first off-loading?	NR		NR		0	
Does your state or local jurisdiction have a law that requires drivers involved in property-damage-only accidents to move the vehicles from travel lanes to a safe location to exchange info and wait for police?	NR		NR		0	
Have laws or policies regarding the removal of stalled/abandoned vehicles from freeway shoulders?	NR		NR		0	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	NR		NR		0	
Have policies or procedures for quick removal of vehicles?	NR		NR		0	
Is Total Station equipment used to investigate major incidents?	NR		NR		0	

Arterial Management
Agencies for Metropolitan Area: Syracuse

	New York State Department of Transportation		Syracuse City		Totals	
	1999	2005	1999	2005	1999	2005
Handling of Towing Responses to Incidents						
Formal contract based on qualifications?	No		No		0	
Rotation with companies under contract?	No		No		0	
Separate lists kept for light and heavy response and for specialty recovery?	NR		NR		0	
Rotation list with minimal qualifications?	No		No		0	
In towing qualifications, do you require towers to be certified under the						
Towing and Recovery Ass. of America's National Drivers Cert. Program?	NR		NR		0	
DK: Don't know						
NR: No Response						
Leg: Legislation or action being planned						

Appendix G
Arterial Management Integration

Arterial Management Integration
Agencies for Metropolitan Area: Syracuse

Agency Name	New York State Department of Transportation		Syracuse City	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Arterial Management Section				
<u>Arterial Mgt. agencies in metropolitan area with which you share info.</u>				
Share Timing Plans Information	Syracuse City	None listed	short survey	None listed
Coordinate Changes to Timing Plans	Syracuse City	None listed	short survey	None listed
Turn over Control of Signals	None listed	None listed	None listed	None listed
Agencies your agency provides arterial travel times, speeds, and conditions information, share infrastructure or coordinates operation				
<i>Freeway Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<i>Incident Management Agencies</i>				
Provide Information	New York State Police	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	New York State Police	None listed	None listed	None listed
<i>Public Transit Operators Agencies</i>				
Provide Information	None listed	Central New York Regional Transit Authority	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	Central New York Regional Transit Authority	None listed	None listed
<i>Arterial Management Agencies</i>				
Provide Information	Syracuse City	Onondaga County, Syracuse City	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	Syracuse City	Onondaga County, Syracuse City	None listed	None listed
<u>Receiving real-time information via electronic means from others</u>				
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>				
	None listed	None listed	None listed	None listed
<i>Public Transit operators from which your agency receives arterial travel times derived from vehicle probes</i>				
	None listed	None listed	None listed	None listed
<i>Incident Management agencies from which your agency receives incident clearance and/or incident severity, location, and type information</i>				
Receive information on Incident Clearance	None listed	None listed	None listed	None listed
Receive information on Incident Severity, Location, and Type	None listed	None listed	None listed	None listed
<i>Toll Collection agencies from which your agency receives arterial travel</i>				

Arterial Management Integration
Agencies for Metropolitan Area: Syracuse

Agency Name	New York State Department of Transportation		Syracuse City	
	1999	2005	1999	2005
<i>times derived from vehicles probes</i>	None listed	None listed	None listed	None listed
Arterial Incident Management Section				
Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation				
<i>Emergency Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<i>Freeway Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<i>Public Transit Operators</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<u>Receiving real-time information via electronic means from others</u>				
<i>Emergency Management agencies from which your agency receives arterial incident clearance and/or arterial incident severity</i>				
Receive Arterial Incident Clearance Information	None listed	None listed	None listed	None listed
Receive Arterial Incident Severity Information	None listed	None listed	None listed	None listed
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>				
Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions	None listed	None listed	short survey	None listed
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>				
Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions	None listed	None listed	None listed	None listed

*short survey: Agency responded using a short survey. The survey did not include names of individual agencies, but only identified whether integration exists.

Appendix H
Arterial Management Information Collection and Dissemination

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Syracuse

Agency Name	New York State Department of Transportation		Syracuse City	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Arterial Management Section				
Data collected, archived, and/or transferred to another agency				
Collected by your agency	NR	NR	NR	NR
Archived by your agency	NR	NR	NR	NR
Transferred to another agency by your agency	NR	NR	NR	NR
Importance of making information available to the public				
Ranked High	Route designations (snow emergency, etc.), Incidents		NR	
Ranked Medium	Road conditions, Current work zones, Scheduled work zones		NR	
Ranked Low	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Probe vehicles, Turning movements, Queues, Phasing/cycle lengths, Emergency vehicle signal preemption, Transit vehicle signal priority, Weather conditions, Intermodal (air, rail, water) connections, Highway operations coordination information, Emergency/evacuation routes and procedures		NR	
Groups that make requests for the data	NR		NR	
What is the data used for?	NR		NR	
Methods used to disseminate arterial information to the public				
Technologies your agency uses to disseminate:	NR	NR	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	NR
Internet web site reporting arterial conditions	NR		NR	
Telephone system for reporting arterial information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	
Arterial Incident Management Section				
Methods used to distribute incident location and severity information to the public				
Technologies your agency uses to disseminate:	NR	NR	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	NR
Internet web site reporting incident information	NR		NR	
Telephone system for reporting incident information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	

Appendix I
Transit Management Components

Appendix J
Transit Management Integration

Appendix K
Transit Management Information Collection and Dissemination

Appendix L
Emergency Management

Emergency Management Agencies for Metropolitan Area: Syracuse

Agency Name	Total Vehicles		Navigation Capabilities		AVL		CAD		CAD Equipped with Mobile Data Terminal		Vehicles Equipped with Preemption		Participate in Formal Incident Mgt Program	Send Incident Info to other agencies	List of agencies receiving data
	1999	2005	1999	2005	1999	2005	1999	2005	1999	2005	1999	2005			
Brewerton Fire District	15	NR	0	NR	0	NR	8	NR	0	NR	0	NR	No	No	None listed
Caughdenoy Volunteer Fire Department Incorporated	7	7	0	0	0	0	0	0	0	0	0	0	No	No	None listed
Clay Town Fire Department	13	13	0	0	0	0	9	13	1	4	0	0	Yes	No	None listed
Clay Town Police Department	5	NR	0	NR	0	NR	5	NR	5	NR	0	NR	Yes	No	None listed
Clay Volunteer Fire Department Incorporated	13	NR	0	NR	0	NR	11	NR	1	NR	0	NR	Yes	No	None listed
Moyers Corners Fire Department	19	22	0	0	0	0	19	22	19	22	0	0	Yes	Yes	New York State Office of Fire Prevention and Contr
North Syracuse Fire Department	13	13	0	0	0	0	12	13	3	3	0	0	Yes	Yes	New York State Office of Fire Prevention and Contr
Onondaga Emergency Management Department (Emergency Medical)	40	40	0	0	0	0	40	40	40	40	0	0	Yes	No	None listed
Onondaga Emergency Management Department (Fire)	860	860	0	0	0	860	860	860	860	860	60	60	Yes	No	None listed
Onondaga Emergency Management Department (Police)	350	380	0	0	0	0	350	380	350	380	0	0	Yes	No	None listed
Onondaga Sheriff Department	150	NR	0	NR	0	NR	100	NR	NR	NR	0	NR	Yes	No	None listed
Syracuse City Fire Department	35	NR	0	NR	0	NR	25	NR	25	NR	25	NR	Yes	No	None listed

Appendix M
Electronic Toll Collection

Electronic Toll Collection
 Agencies for Metropolitan Area: Syracuse

	New York State Thruway Authority	
	1999	2005
Agency Returned Survey?	Yes	
Number of toll Collection Plazas operated	6	NR
Number of toll collection plazas with dedicated ETC	6	NR
Number of toll collection plazas with both manual and ETC	6	NR
Number of toll collection lanes operated	70	NR
Number of toll collection lanes with dedicated ETC	8	NR
Number of toll collection lanes with both manual and ETC	31	NR
Number of toll collection tags issued	750,000	NR
Antennae Location Technologies		
In-Pavement?	No	
Focused Beam?	No	
Distributed Overhead?	Yes	
In-Vehicle Equipment Technologies		
Tag-based?	Yes	
Integrated circuit card-based?	No	
Are toll tags used by other toll operations in metro area?	Yes	
List of toll operators that use tags	MTA Bridges and Tunnels, Port Authority of New York and New Jersey, NYS Bridge Authority, South Jersey Transportation Authority, Delaware Department of Transportation	
Are toll tags used by operators of public transit to pay transit fares in metro area?	No	
List of transit operators that use tags	None	
NR: No Response		