Tracking the Deployment of the Integrated Metropolitan ITS Infrastructure in Milwaukee, Racine

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

In January 1996, Secretary Peña set a goal of deploying the integrated metropolitan Intelligent Transportation System (ITS) infrastructure in 75[1] 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 Milwaukee, Racine 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 Milwaukee, Racine region was 97% 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 (HVH-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.

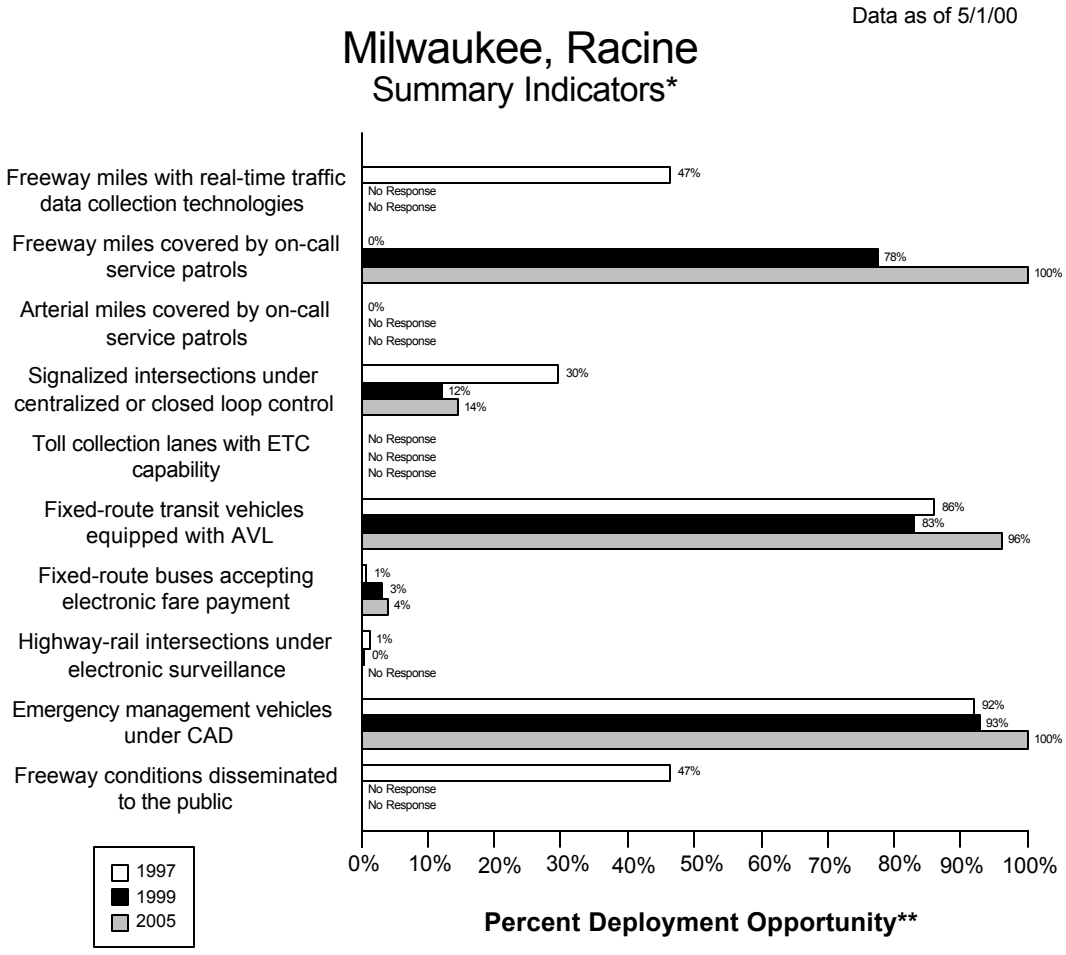
The following two figures portray the surrogate indicators for each of the nine components in Milwaukee, Racine and the same indicators at the national level. These are judged to be the single best representative of a component and are being used as summary indicator for component. The summary indicators 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."

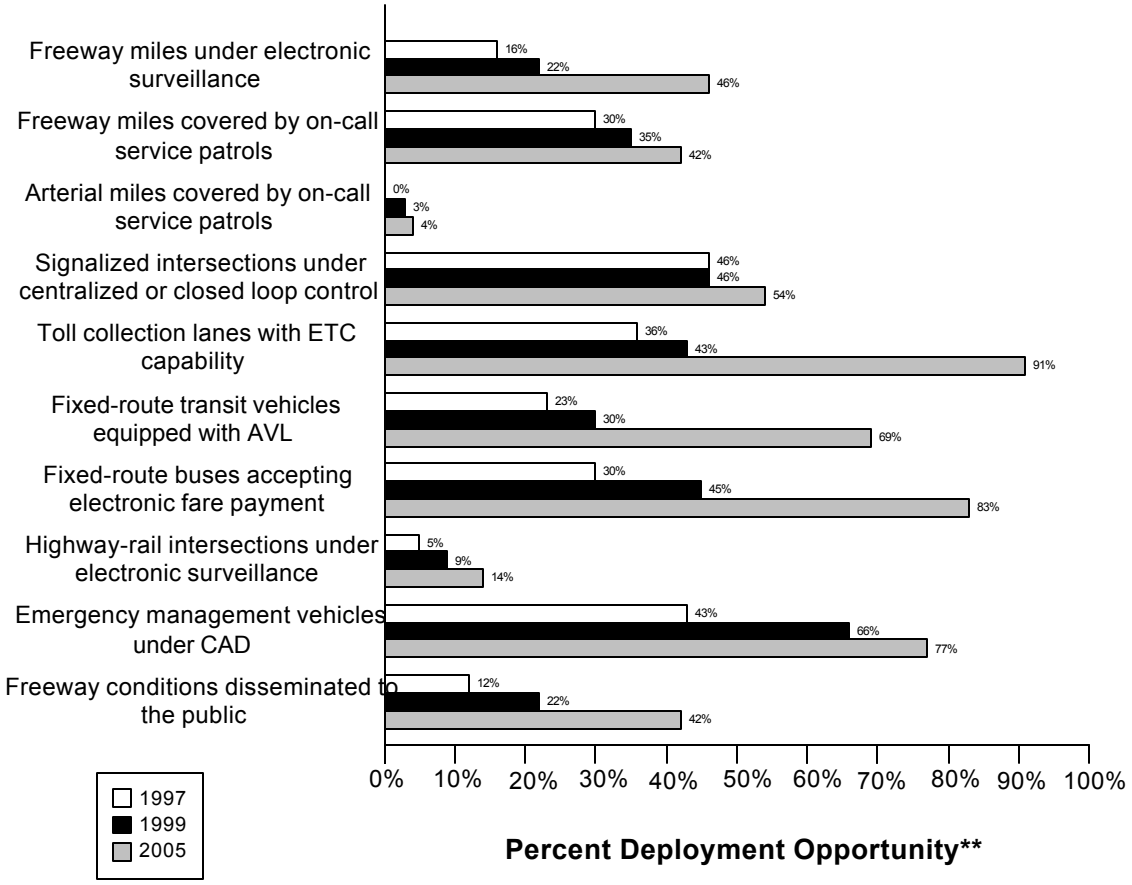


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Data as of 5/1/00

National

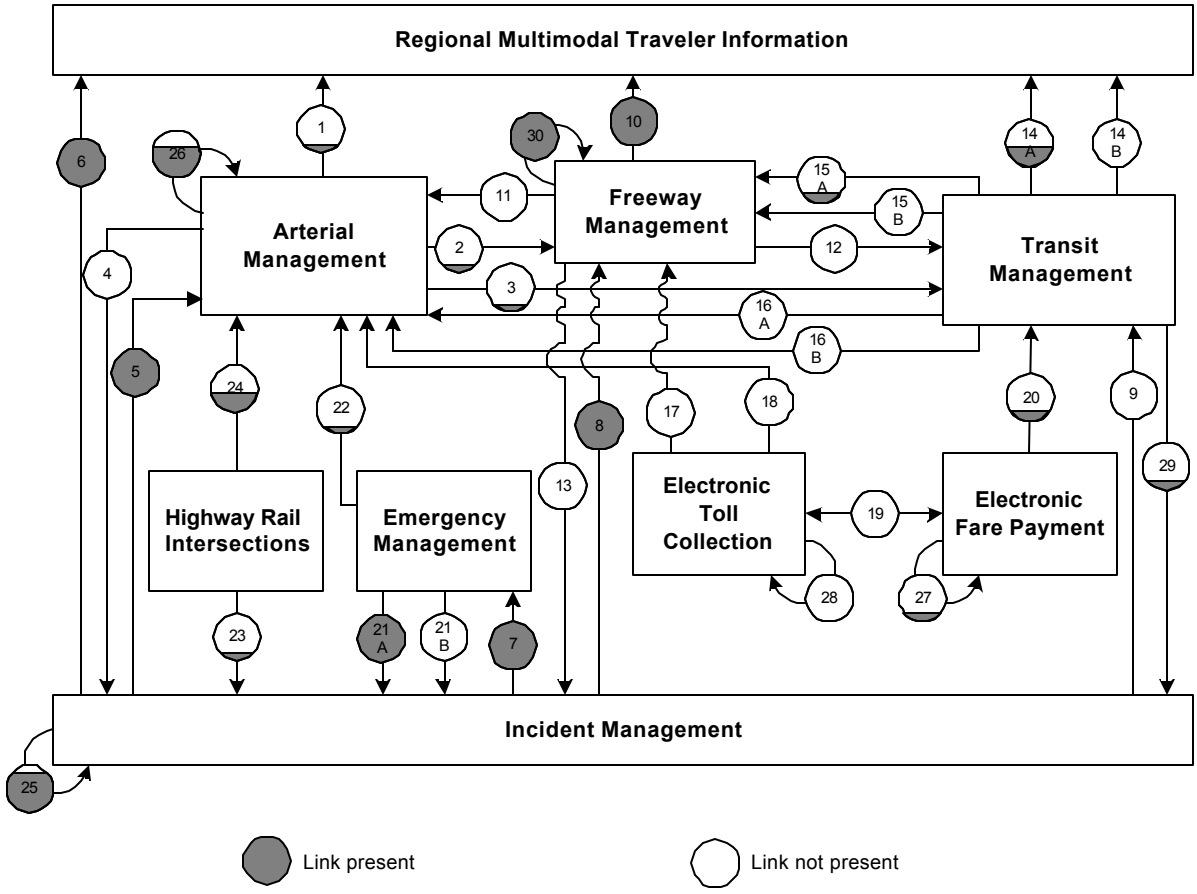
Summary Indicators*



* 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

Milwaukee, Racine 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 14b	Transit Management to Regional Multimodal Traveler Information (static route information) Transit Management to Regional Multimodal Traveler Information (schedule adherence information)
15a 15b	Transit Management to Freeway Management Transit Management to Freeway Management (transit vehicle probes)	16a 16b	Transit Management to Arterial Management 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 21b	Emergency Management to Incident Management (incident notification) Emergency Management to Incident Management (incident clearance)	22	Emergency Management to Arterial Management
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 Milwaukee, Racine 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%.

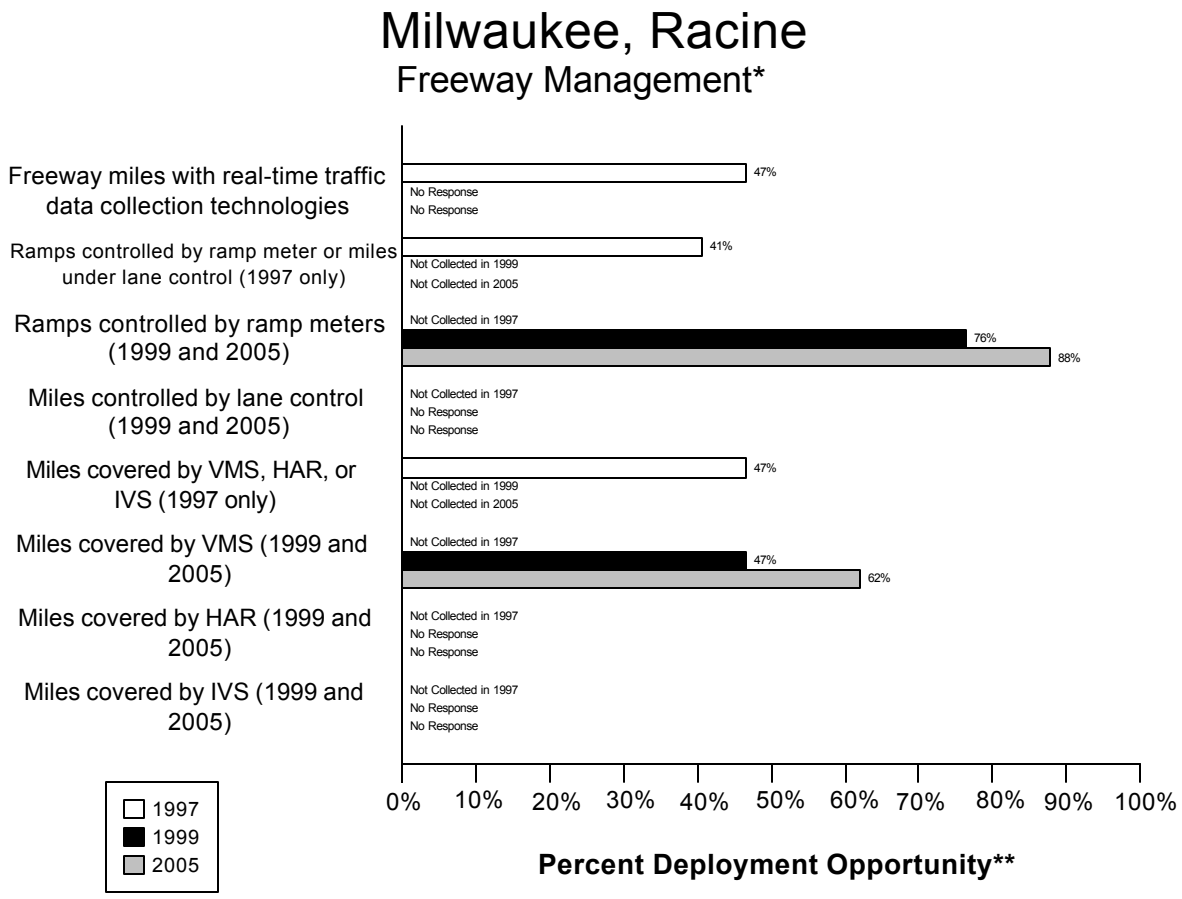
The figures summarizing the integration indicators consist of a diagram for each of the nine metropolitan ITS components portraying the integration level for 1999 (*italic*) and 2005 (**bold**), accompanied by tables providing an explanation of the data and calculations performed to develop each integration 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



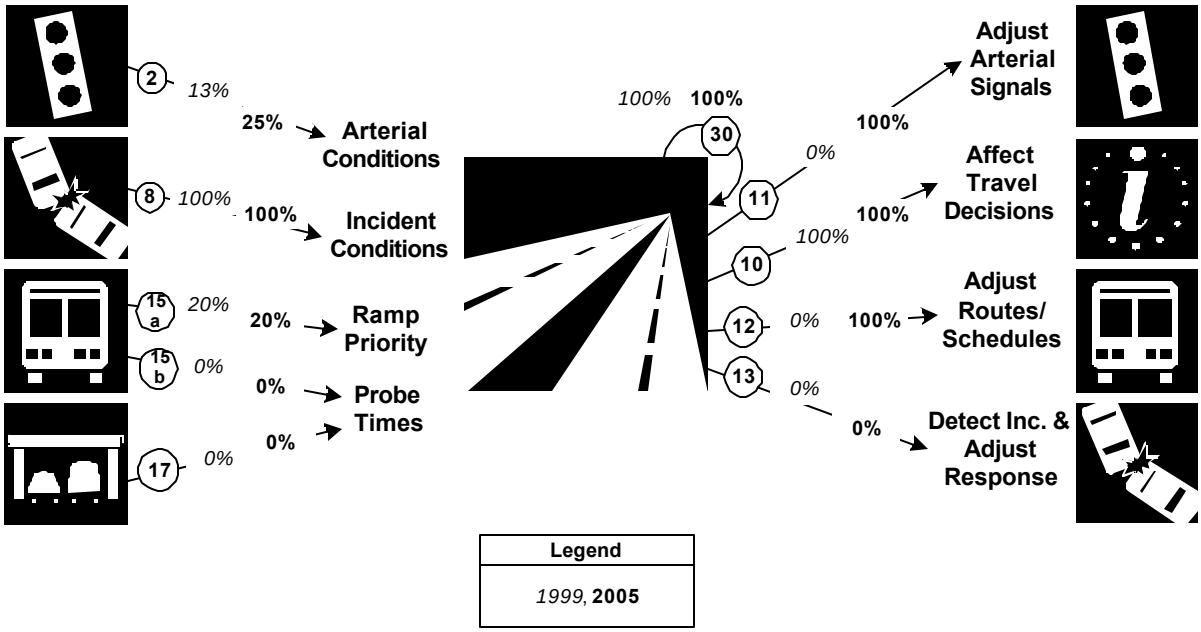
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway centerline miles are under electronic surveillance for monitoring traffic flow	60	129	47%		129			129	
Freeway entrance ramps are controlled by ramp meters or miles under lane control	60	148	41%						

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway entrance ramps are controlled by ramp meters				113	148	76%	130	148	88%
Freeway centerline miles will be controlled by lane control					129			129	
Freeway miles are covered by VMS, HAR, or IVS	60	129	47%						
Freeway miles are covered by VMS				60	129	47%	80	129	62%
Freeway miles are covered by HAR					129			129	
Freeway miles are covered by IVS					129			129	

Freeway Management Integration Indicators

Milwaukee, Racine
Freeway Management Integration*



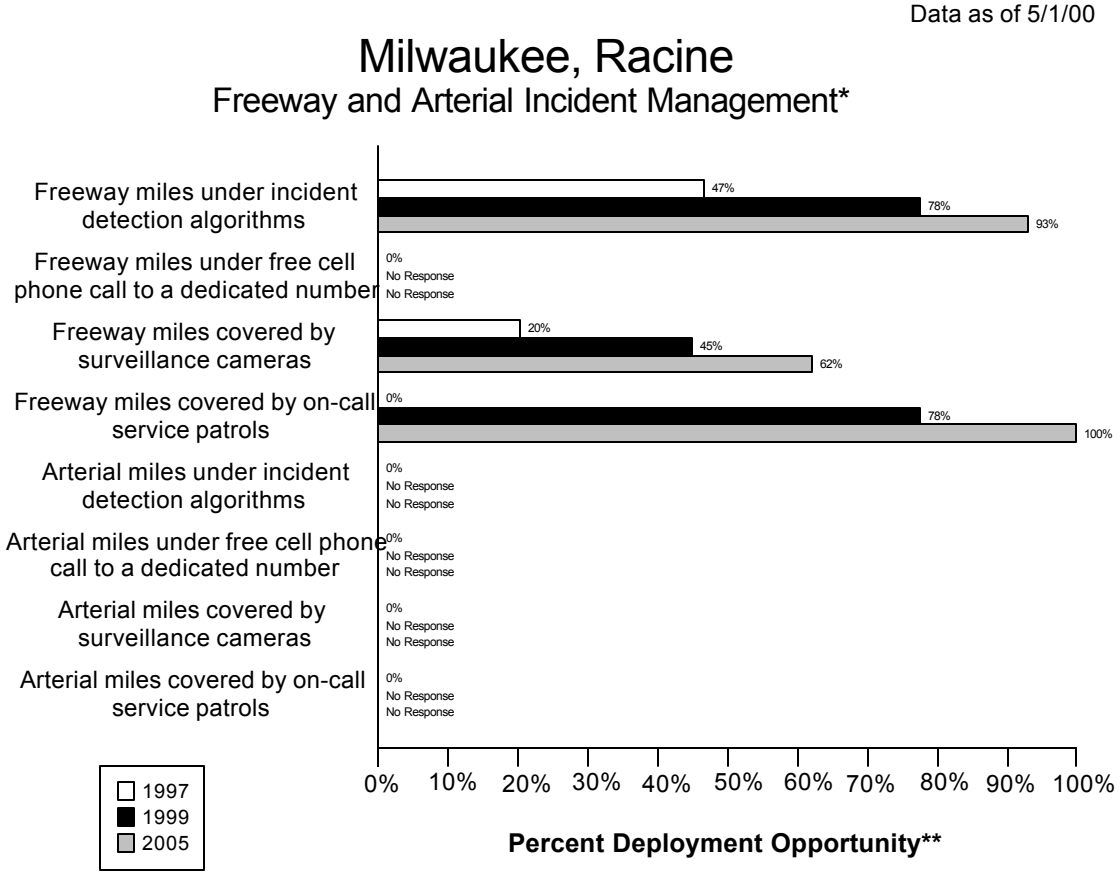
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
2. Arterial Management agencies sending information to Freeway Management	(1/ 8) 13%	(2/ 8) 25%
8. Incident Management agencies sending information to Freeway Management	(1/ 1) 100%	(1/ 1) 100%
15a. Transit management agencies with vehicles equipped with ramp meter priority	(1/ 5) 20%	(1/ 5) 20%
15b. Transit Management agencies with vehicles equipped as probes	(0/ 5) 0%	(0/ 5) 0%
17. Freeway Management agencies receiving freeway conditions from vehicle probes	(0/ 1) 0%	(0/ 1) 0%
30. Freeway Management agencies sending information to another Freeway Management agency	(1/ 1) 100%	(1/ 1) 100%
11. Freeway Management agencies sending information to Arterial Management	(0/ 1) 0%	(1/ 1) 100%

Link Description	1999	2005
10. Freeway Management agencies disseminating freeway conditions to the public	(1/ 1) 100%	(1/ 1) 100%
12. Freeway Management agencies sending freeway conditions to Transit Management	(0/ 1) 0%	(1/ 1) 100%
13. Freeway Management agencies sending freeway conditions to Incident Management	(0/ 1) 0%	(0/ 1) 0%

Incident Management Component Indicators

Data as of 5/1/00



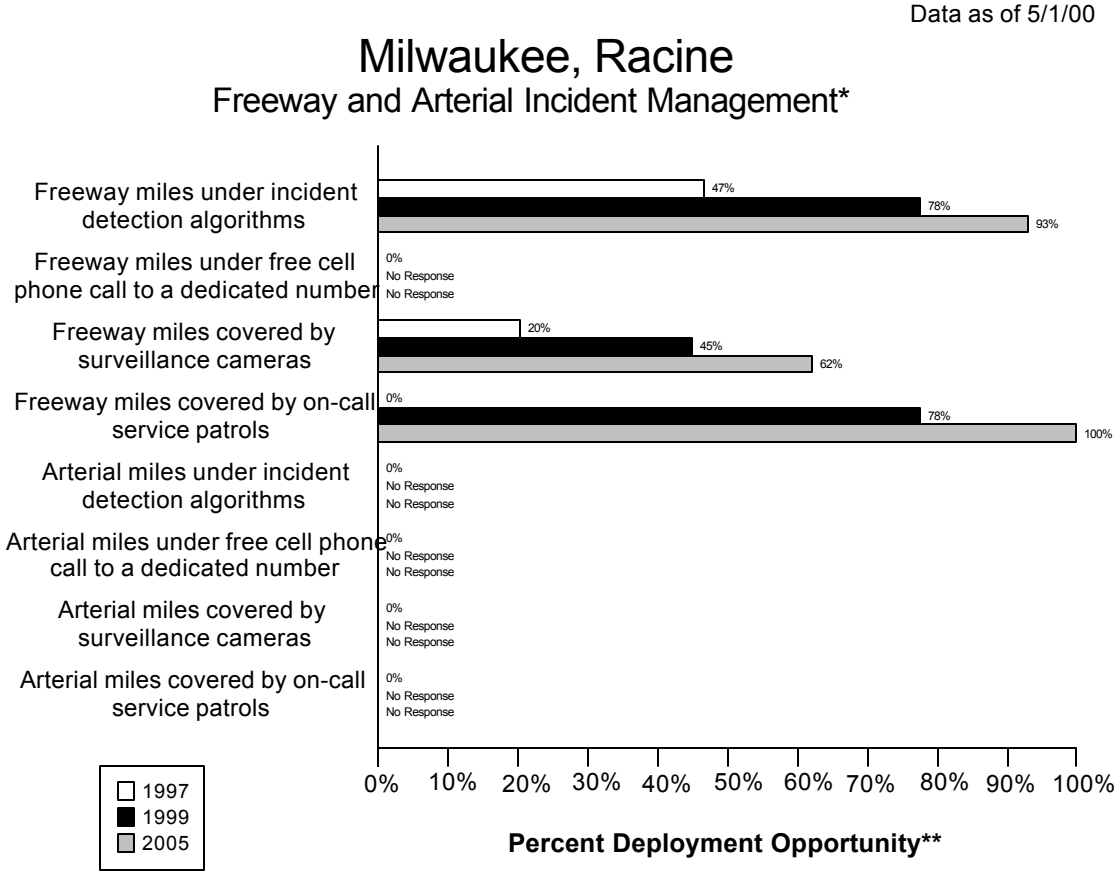
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by incident detection algorithms	60	129	47%	100	129	78%	120	129	93%
Freeway miles are covered by free cellular phone calls to a dedicated number	0	129	0%		129			129	
Freeway miles are covered by surveillance cameras.	26	129	20%	58	129	45%	80	129	62%

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by on-call publicly-sponsored service patrol or towing services.	0	129	0%	100	129	78%	129	129	100%
Arterial miles are covered by incident detection algorithms	0	1314	0%		1314			1314	
Arterial miles are covered by free cellular phone calls to a dedicated number	0	1314	0%		1314			1314	
Arterial miles are covered by surveillance cameras	0	1314	0%		1314			1314	
Arterial miles are covered by on-call publicly-sponsored service patrol or towing services	0	1314	0%		1314			1314	

Incident Management Integration Indicators

Data as of 5/1/00



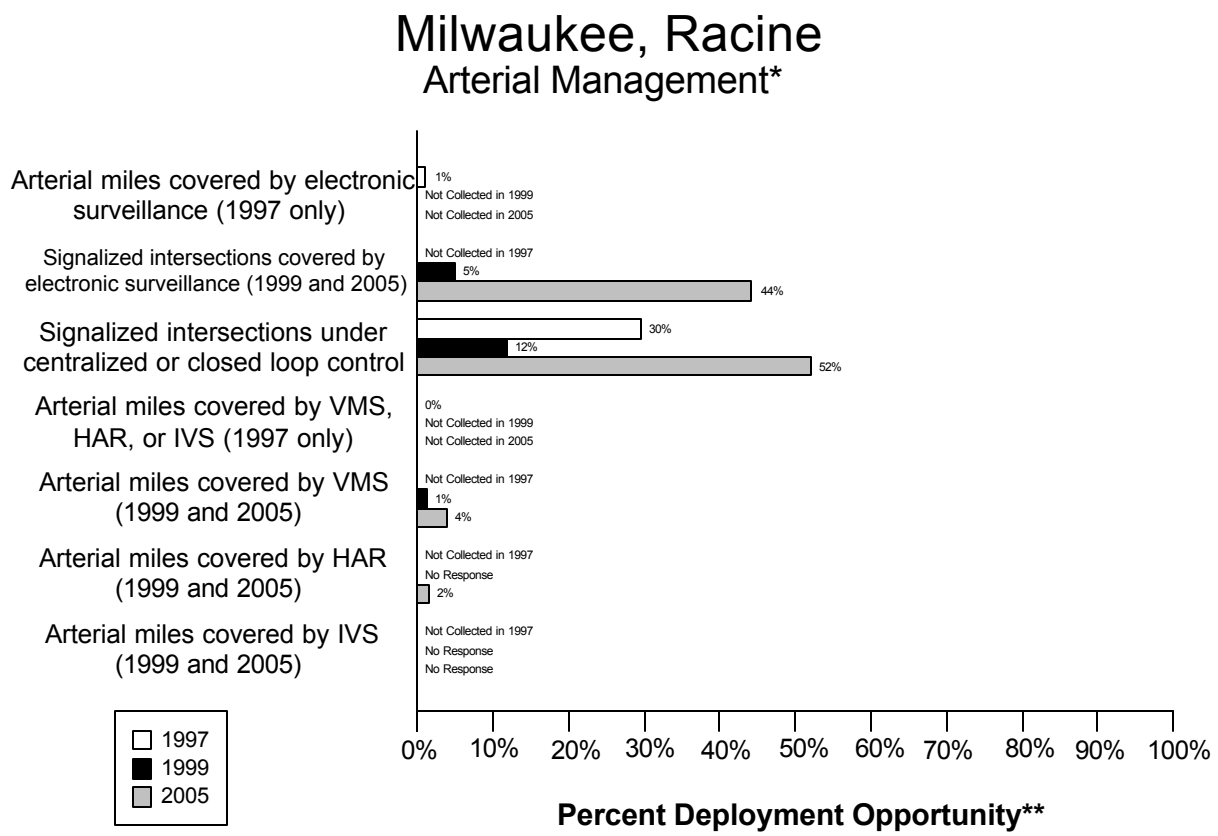
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Link Description	1999	2005
21a. Incident management agencies receiving incident severity from Emergency Management	(1/ 1) 100%	(1/ 1) 100%
21b. Incident management agencies receiving incident clearance activities from Emergency Management	(0/ 1) 0%	(1/ 1) 100%
13. Freeway Management agencies sending freeway conditions to Incident Management	(0/ 1) 0%	(0/ 1) 0%
4. Arterial Management agencies sending arterial conditions to Incident Management	(0/ 8) 0%	(1/ 8) 13%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	(1/ 8) 13%	(1/ 8) 13%
29. Transit Management agencies report traffic incidents as part of an organized regional incident management program	(1/ 5) 20%	(1/ 5) 20%

Link Description	1999	2005
7. Incident management agencies transfer information describing incident severity, location, and type to Emergency Management agencies	(1/ 1) 100%	(1/ 1) 100%
9. Incident Management agencies transfer information describing incident severity, location, and type to Transit Management agencies	(0/ 1) 0%	(0/ 1) 0%
6. Incident Management agencies disseminate information describing incident severity, location, and type to the public	(1/ 1) 100%	(1/ 1) 100%
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management agencies	(1/ 1) 100%	(1/ 1) 100%
8. Incident Management agencies transfer information describing incident severity, location, and type to Freeway Management agencies	(1/ 1) 100%	(1/ 1) 100%
25. Police, fire, and EMS agencies participating in a formal incident management plan/team	(15/ 18) 83%	(15/ 18) 83%

Arterial Management Component Indicators

Data as of 5/1/00



* 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.

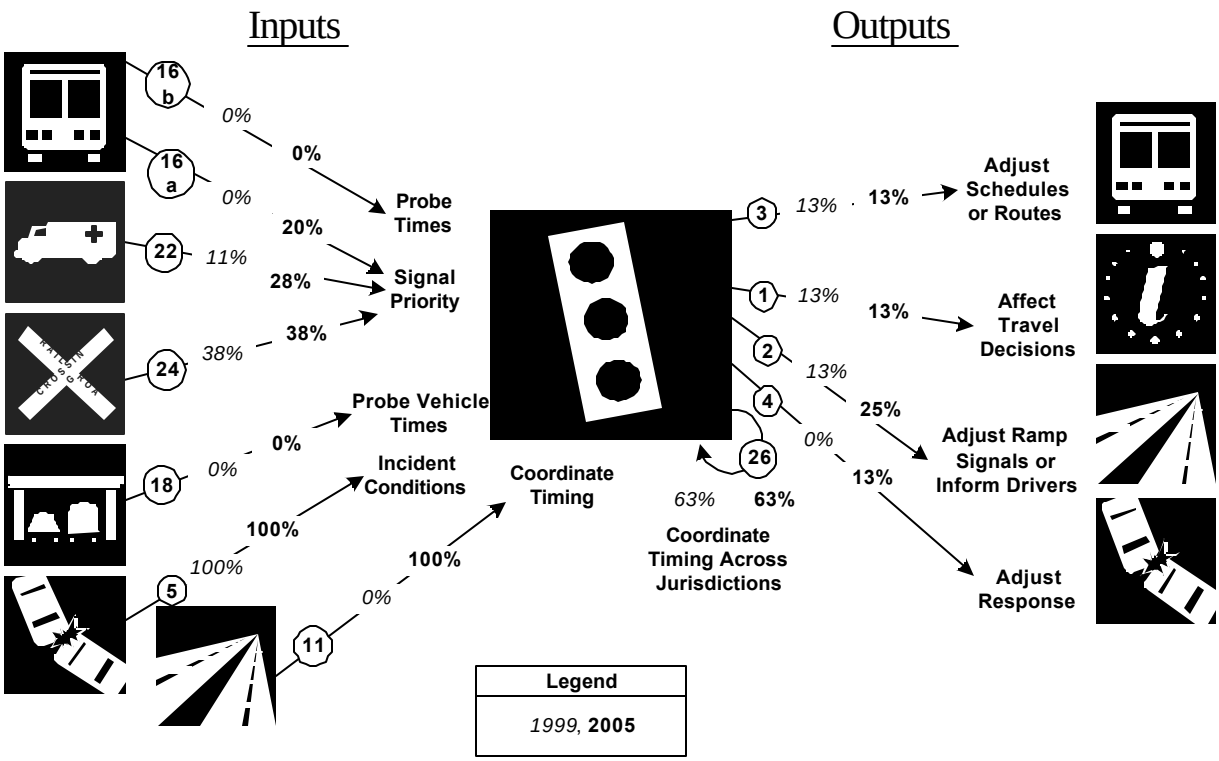
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles covered by electronic surveillance	15	1314	1%						
Signalized intersections are covered by electronic surveillance for monitoring traffic flow				70	1380	5%	96	217	44%
Signalized intersections are under centralized or closed loop control	157	531	30%	165	1380	12%	113	217	52%

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles are covered by VMS, HAR, or IVS	0	1314	0%						
Arterial miles are covered by VMS				18	1314	1%	52	1314	4%
Arterial miles are covered by HAR					1314		20	1314	2%
Arterial miles are covered by IVS					1314			1314	

Arterial Management Integration Indicators

Milwaukee, Racine

Arterial Management Integration*



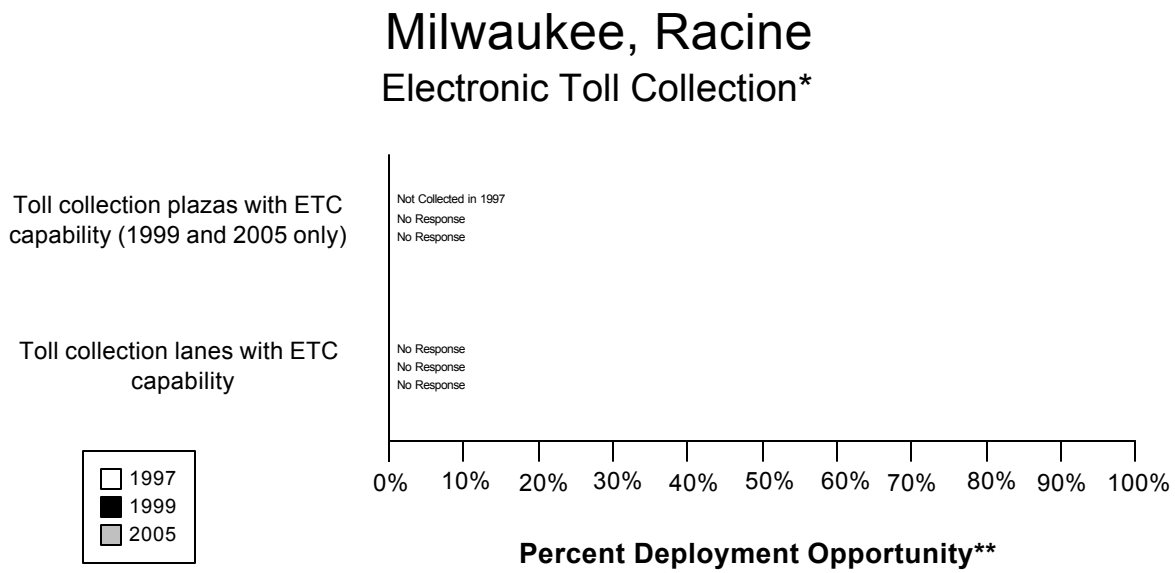
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
16a. Transit management agencies with vehicles equipped with traffic signal priority	(0/ 5) 0%	(1/ 5) 20%
16b. Transit Management agencies have vehicles equipped as probes on arterials	(0/ 5) 0%	(0/ 5) 0%
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	(2/ 18) 11%	(5/ 18) 28%
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	(3/ 8) 38%	(3/ 8) 38%
18. Number of Arterial Management agencies receiving information from vehicle probes	(0/ 8) 0%	(0/ 8) 0%
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management	(1/ 1) 100%	(1/ 1) 100%

Link Description	1999	2005
11. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Arterial Management agencies	(0/ 1) 0%	(1/ 1) 100%
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	(1/ 8) 13%	(1/ 8) 13%
1. Arterial Management agencies disseminate arterial travel times, speeds, and conditions to the public	(1/ 8) 13%	(1/ 8) 13%
2. Arterial Management agencies send traffic condition information to Freeway Management	(1/ 8) 13%	(2/ 8) 25%
4. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Incident Management	(0/ 8) 0%	(1/ 8) 13%
26. Arterial Management agencies under cooperative agreement to share traffic signal timing for coordinated response	(5/ 8) 63%	(5/ 8) 63%

Electronic Toll Collection Component Indicators

Data as of 5/1/00

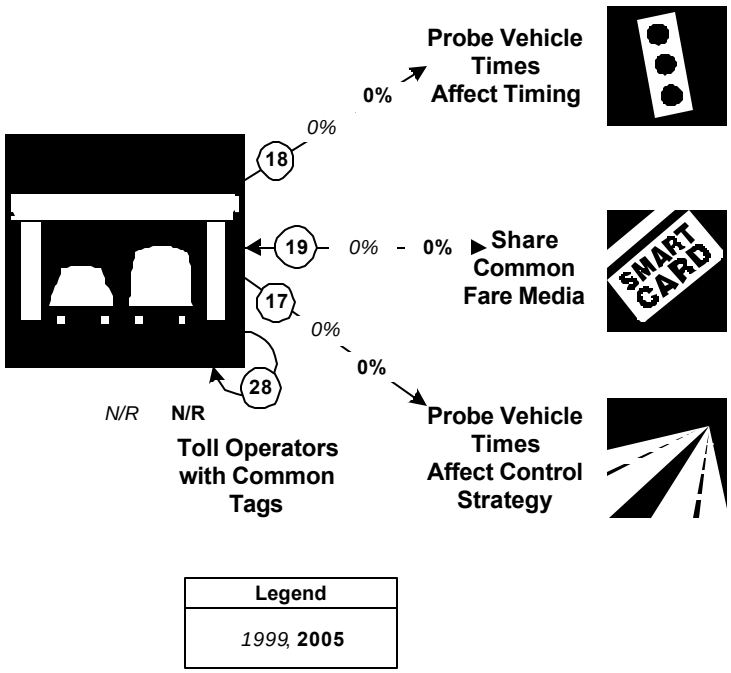


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Toll collection plazas with ETC capability									
Toll collection lanes with ETC capability									

Electronic Toll Collection Integration Indicators

Milwaukee, Racine
Electronic Toll Collection Integration*

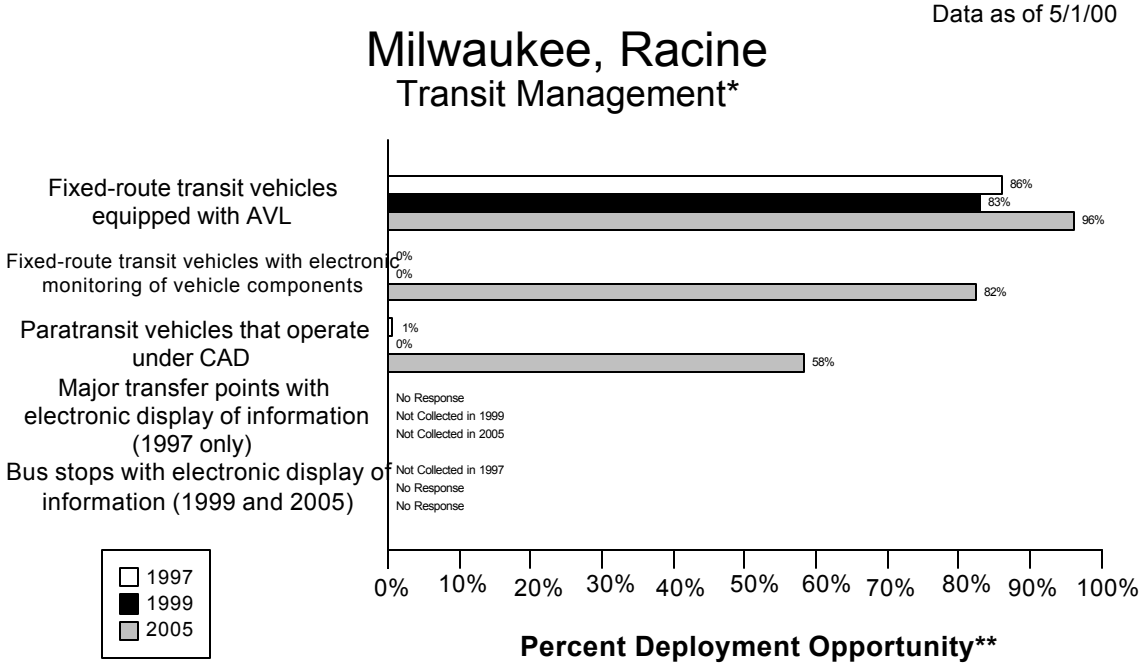


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
18. Number of Arterial Management agencies receiving information from vehicle probes	(0/ 8) 0%	(0/ 8) 0%
19. Transit agencies that accept electronic payment through the use of electronic toll collection media	(0/ 5) 0%	(0/ 5) 0%
17. Freeway Management agencies receiving information from vehicle probes	(0/ 1) 0%	(0/ 1) 0%
28. Toll operators using common toll tag technology	(0/)	(0/)

Transit Management Component Indicators

Data as of 5/1/00

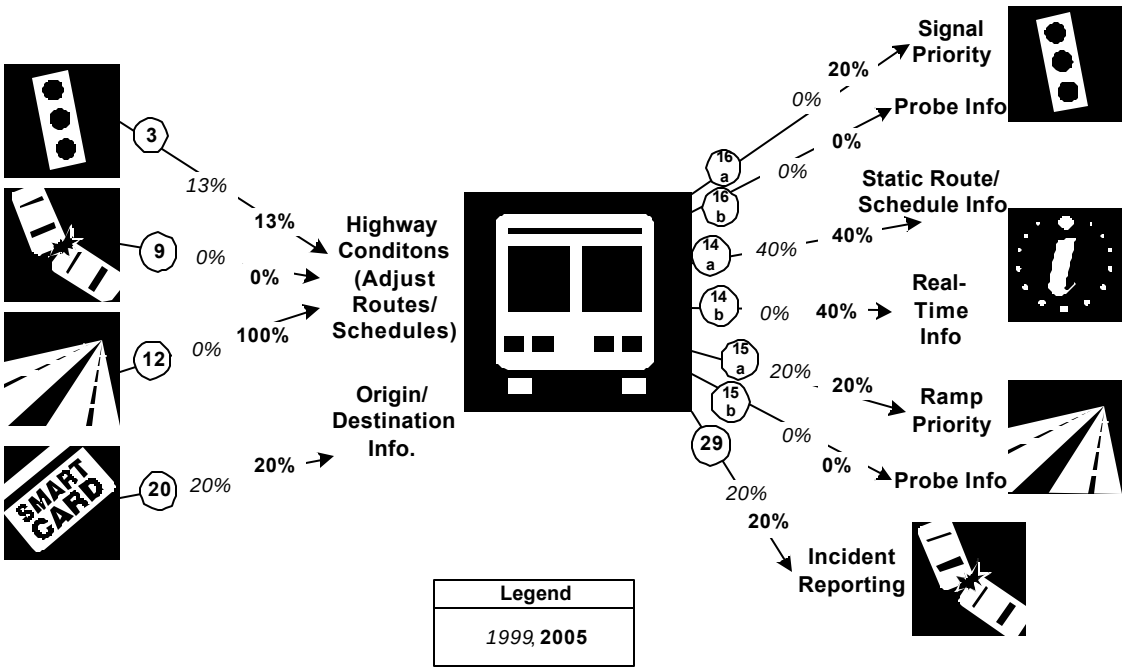


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Fixed-route transit vehicles are equipped with AVL	602	700	86%	545	657	83%	636	662	96%
Fixed-route transit vehicles are equipped with electronic monitoring of vehicle component	0	700	0%	0	657	0%	545	662	82%
Paratransit vehicles operate under computer-aided dispatch	3	436	1%	0	498	0%	306	525	58%
Percent fixed-route transfer locations with electronic display of information	0	0							
Bus stops display information to the public					1170 0			1190 0	

Transit Management Integration Indicators

Milwaukee, Racine
Transit Management Integration*



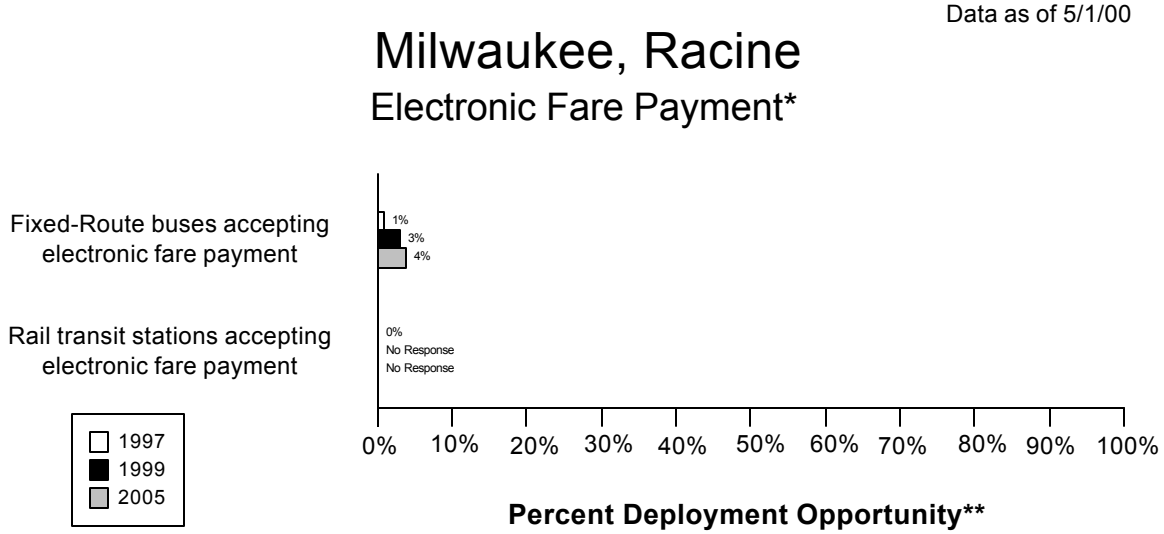
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	(1/ 8) 13%	(1/ 8) 13%
9. Incident management agencies transfer information describing incident severity, location, and type to Transit Management	(0/ 1) 0%	(0/ 1) 0%
12. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Transit Management	(0/ 1) 0%	(1/ 1) 100%
20. Transit Management agencies using Electronic Fare Payment data in transit service planning	(1/ 5) 20%	(1/ 5) 20%
16a. Transit Management agencies have vehicles equipped with traffic signal priority capability	(0/ 5) 0%	(1/ 5) 20%
16b. Transit Management agencies have vehicles equipped as probes on arterials	(0/ 5) 0%	(0/ 5) 0%
14a. Transit Management agencies disseminate information describing transit routes, schedules, and fares to travelers	(2/ 5) 40%	(2/ 5) 40%

Link Description	1999	2005
14b. Transit Management agencies disseminate information describing schedule/route adherence to travelers	(0/ 5) 0%	(2/ 5) 40%
15a. Transit Management agencies have vehicles equipped with ramp meter priority capability	(1/ 5) 20%	(1/ 5) 20%
15b. Transit Management agencies have vehicles equipped as probes on freeways	(0/ 5) 0%	(0/ 5) 0%
29. Transit Management agencies that report traffic incidents as part of an organized regional Incident Management program	(1/ 5) 20%	(1/ 5) 20%

Electronic Fare Payment Component Indicators

Data as of 5/1/00



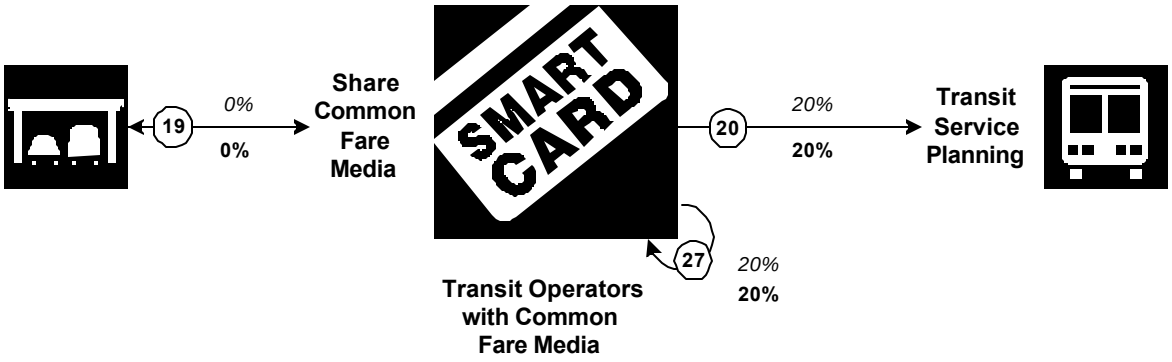
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Fixed-route transit vehicles that accept electronic payment	6	700	1%	20	657	3%	26	662	4%
Rail transit stations that accept electronic payment	0	1	0%						

Electronic Fare Payment Integration Indicators

Milwaukee, Racine
Electronic Fare Payment Integration*

Inputs Outputs



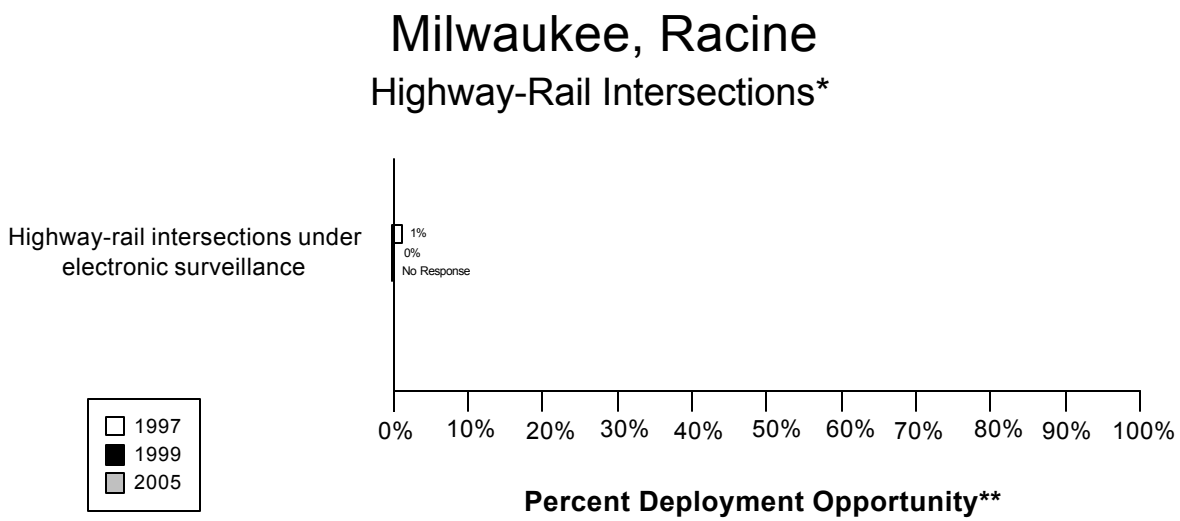
Legend
1999
2005

* 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/ 5) 0%	(0/ 5) 0%
20. Transit Management agencies use Electronic Fare Payment data in transit service planning	(1/ 5) 20%	(1/ 5) 20%
27. Transit Management agencies that use the same electronic payment system	(1/ 5) 20%	(1/ 5) 20%

Highway Rail Intersection Component Indicators

Data as of 5/1/00



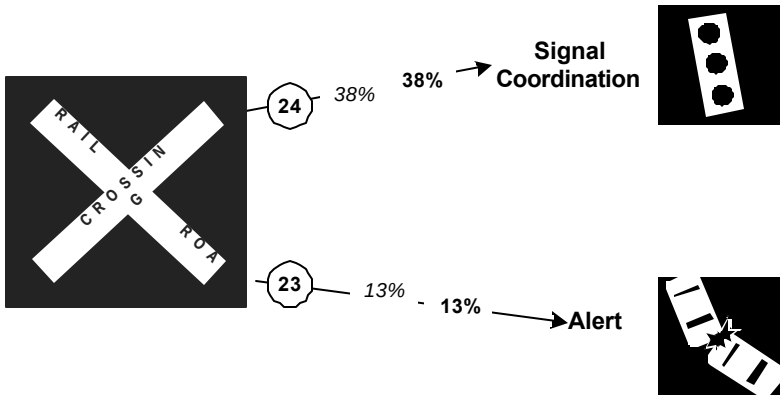
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Highway-rail intersections are under electronic surveillance	1	83	1%	1	272	0%		272	

Highway Rail Intersection Integration Indicators

Milwaukee, Racine
Highway Rail Intersections Integration*

Inputs Outputs



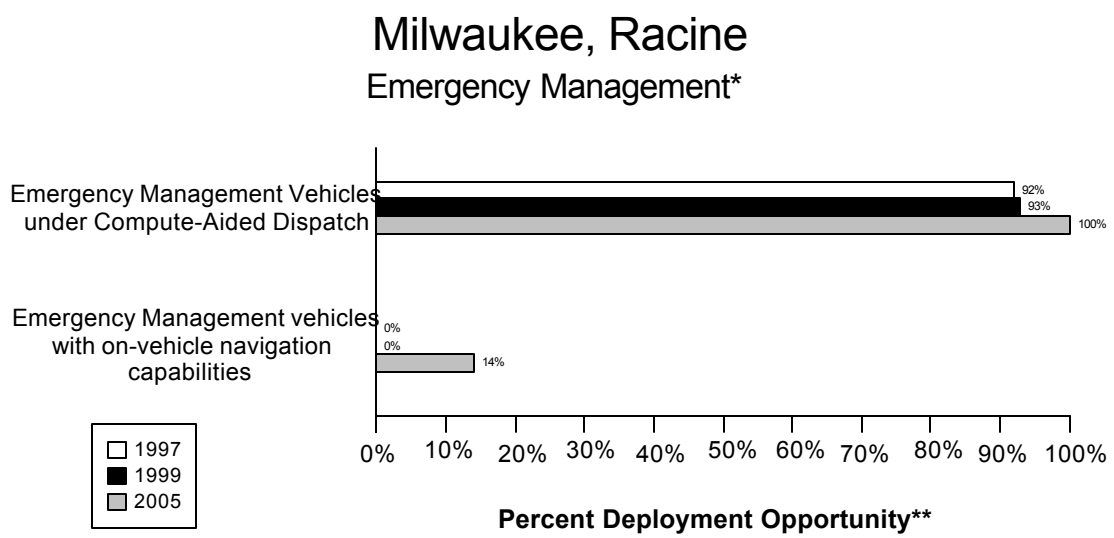
Legend
1999, **2005**

* 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	(3/ 8) 38%	(3/ 8) 38%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	(1/ 8) 13%	(1/ 8) 13%

Emergency Management Component Indicators

Data as of 5/1/00



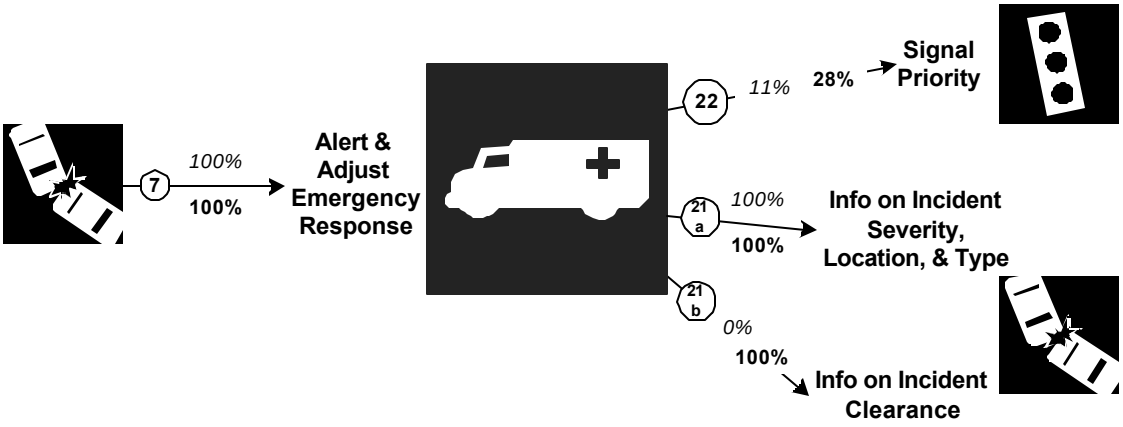
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Public sector emergency vehicles that operate under computer-aided dispatch	928	1009	92%	645	695	93%	516	516	100%
Public sector emergency vehicles that have in-vehicle route guidance capability	0	1009	0%	0	695	0%	73	516	14%

Emergency Management Integration Indicators

Milwaukee, Racine
Emergency Management Integration*

Inputs Outputs



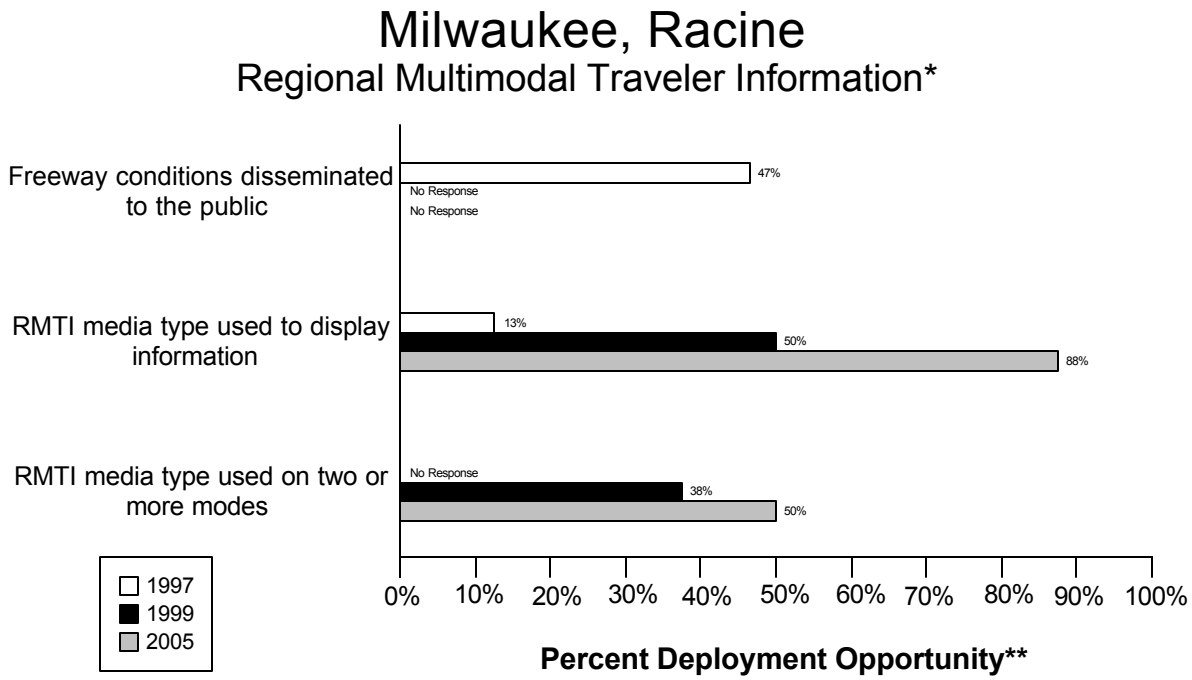
Legend
1999, **2005**

* 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	(1/ 1) 100%	(1/ 1) 100%
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	(2/ 18) 11%	(5/ 18) 28%
21a. Freeway Management agencies receive incident severity, location, and type data from Emergency Management agencies	(1/ 1) 100%	(1/ 1) 100%
21b. Freeway Management agencies receive incident clearance activities information from Emergency Management agencies	(0/ 1) 0%	(1/ 1) 100%

Regional Multimodal Traveler Information Component Indicators

Data as of 5/1/00

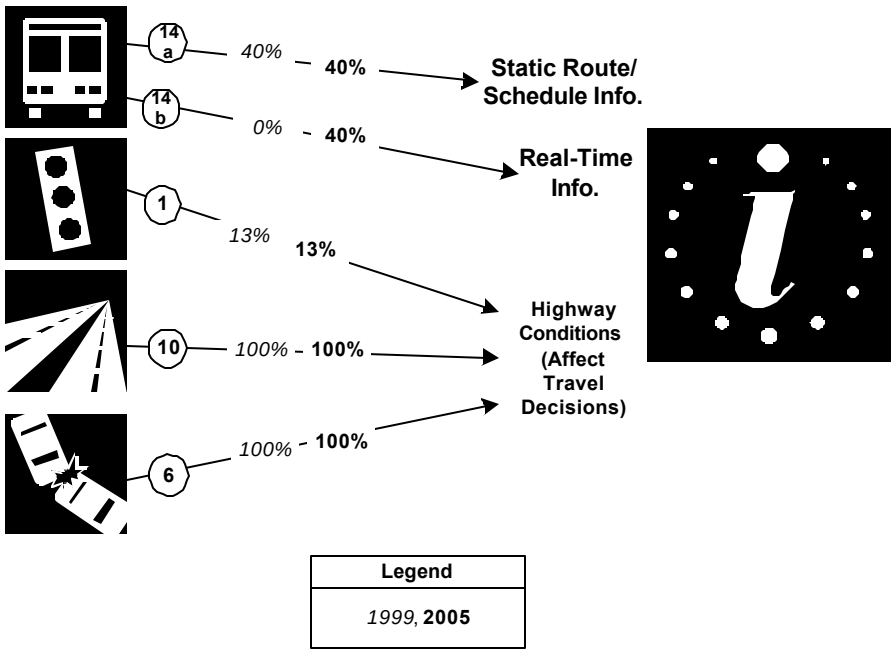


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Freeway conditions disseminated to travelers	60	129	47%		129			129	
Possible RMTI media types are used to display information to travelers	1	8	13%	4	8	50%	7	8	88%
Possible RMTI media are used to display information on *two or more modes* to travelers				3	8	38%	4	8	50%

Regional Multimodal Traveler Information Integration Indicators

Milwaukee, Racine
Regional Multimodal Traveler Information Integration*

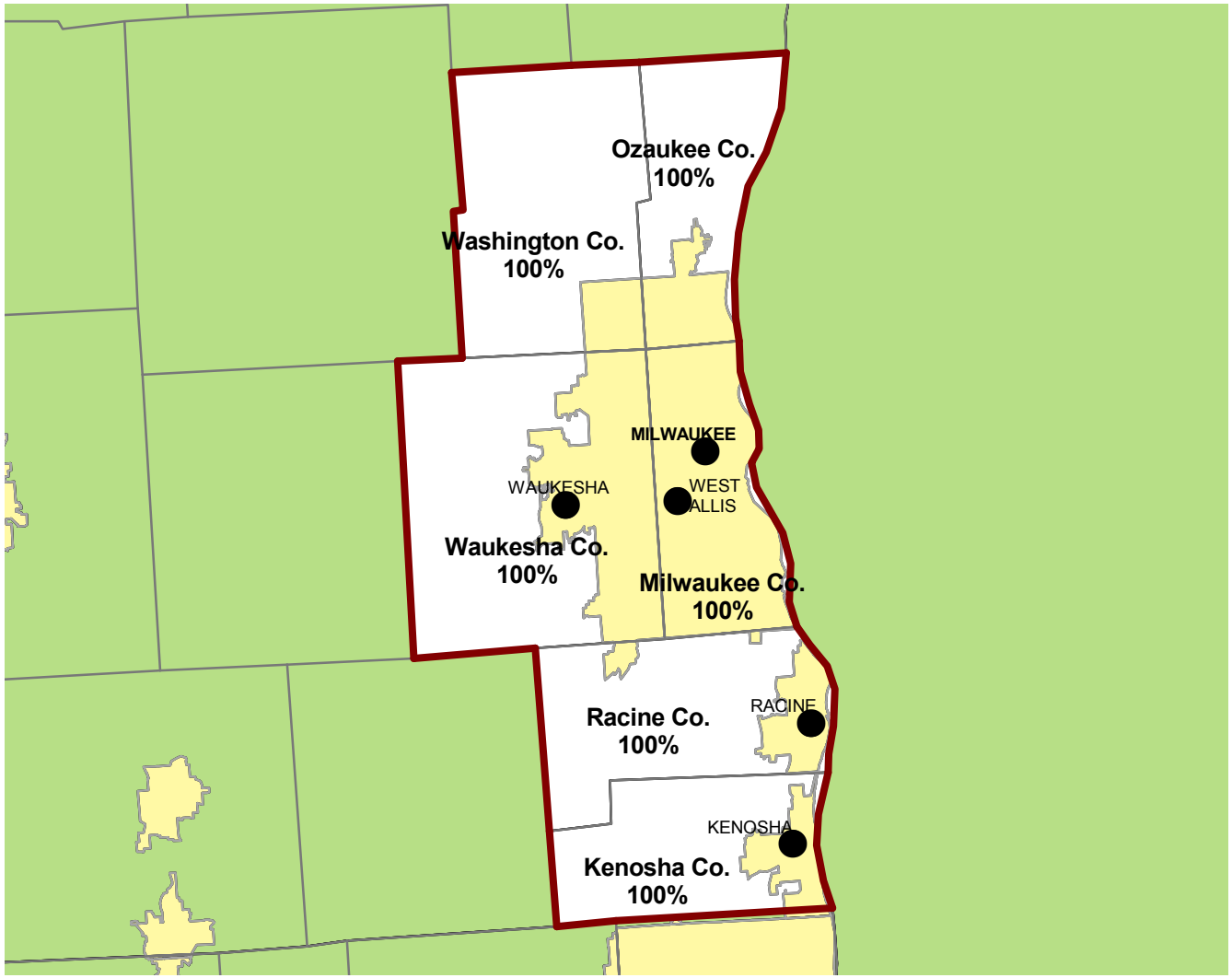


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
14a. Transit Management agencies that disseminate information describing transit routes, schedules, and fares to travelers	(2/ 5) 40%	(2/ 5) 40%
14b. Transit Management agencies that disseminate information describing schedule/route adherence to travelers	(0/ 5) 0%	(2/ 5) 40%
1. Arterial Management agencies that disseminate arterial travel times, speeds, and conditions to the public	(1/ 8) 13%	(1/ 8) 13%
10. Freeway Management agencies that disseminate freeway travel times, speeds, and conditions to travelers	(1/ 1) 100%	(1/ 1) 100%
6. Incident Management agencies that disseminate information describing incident severity, location, and type to the public	(1/ 1) 100%	(1/ 1) 100%

Appendix A
Survey Coverage Area

SOUTHEASTERN WISCONSIN
REGIONAL PLANNING COMMISSION, WI



City Included in Surveys

Metropolitan Planning Area Boundary

County Boundary

Urbanlized 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
MILWAUKEE, RACINE						
Arterial Management						
Racine City	(414) 636-9191	(414) 636-9545	8/5/1999	9/24/1999	07/31/1997	08/29/1997
Ozaukee County	262-284-8331	262-284-8343	8/5/1999	10/18/1999	07/25/1997	08/08/1997
West Allis City	(414) 302-8376	(414) 302-8366	8/5/1999		07/28/1997	10/20/1997
Waukesha City	(414) 524-3600	(414) 524-3898	8/5/1999	9/29/1999	07/28/1997	09/09/1997
Kenosha City	(414) 653-4050	(414) 653-4056	8/5/1999		07/28/1997	07/29/1997
Waukesha County	(414) 548-7740	(414) 896-8097	8/5/1999	8/20/1999	07/25/1997	07/28/1997
Kenosha County	(414) 857-1870	(414) 857-1885	8/5/1999	9/27/1999	07/28/1997	10/16/1997
Milwaukee City	(414) 286-2400	(414) 286-5994	8/5/1999	10/21/1999	07/28/1997	
Milwaukee County	414-278-5247	414-223-1850	8/5/1999	10/5/1999	07/25/1997	08/08/1997
Wisconsin Department of Transportation	262- 521-5348	262- 548-8655	8/5/1999	10/18/1999	07/28/1997	08/07/1997
Emergency Management						
Waukesha County Sheriff Department	(414) 548-7123	(414) 548-7887	6/25/1999		07/25/1997	07/28/1997
Waukesha Fire & EMS Department	(414) 524-3649	(414) 524-2010	6/25/1999	8/23/1999	07/28/1997	07/30/1997
West Allis City Fire & EMS Department	(414) 302-8910	(414) 302-8927	6/25/1999	7/2/1999	07/25/1997	08/04/1997
West Allis City Police Department	(414) 302-8000	(414) 302-8099	6/25/1999	7/2/1999	07/25/1997	07/28/1997
Wisconsin State Patrol	(414) 785-4700	(414) 785-4723	6/25/1999	6/25/1999	07/25/1997	07/28/1997
Racine County Sheriff Department	(414) 636-3214	(414) 637-5279	6/25/1999	8/11/1999	07/25/1997	05/22/1998
Ozaukee County Sheriff Department	(414) 238-8450	(414) 284-8490	6/25/1999	6/28/1999	07/25/1997	07/27/1997
Milwaukee County Sheriff	(414) 278-5030	(414) 454-4083	6/25/1999	8/24/1999	07/25/1997	07/30/1997
Washington County Sheriff	(414) 335-4391	(414) 335-4429	6/25/1999	7/1/1999	07/28/1997	05/21/1998
Racine City Police Department	(414) 635-7700	(414) 636-9332	6/25/1999	10/5/1999	07/25/1997	07/29/1997
West Allis City Fire Department (Emergency	(414) 302-8910	(414) 302-8927	6/25/1999	7/2/1999	07/25/1997	08/04/1997
Waukesha Fire Department (Emergency	(414) 524-3649	(414) 524-2010	6/25/1999	8/23/1999	07/28/1997	07/30/1997
Racine City Fire Department (Emergency	(414) 635-7925	(414) 635-7864	6/25/1999	6/28/1999	07/25/1997	05/21/1998
Milwaukee City Fire & EMS Department	(414) 286-5232	(414) 286-5270	6/25/1999	8/16/1999	07/25/1997	07/28/1997
Milwaukee City Police Department	(414) 935-7825	(414) 935-7841	6/25/1999		07/25/1997	07/31/1997
Kenosha City Fire & EMS Department	414-653-*4100	414-653-4107	8/10/1999	8/11/1999	07/28/1997	07/28/1997
Racine City Fire & EMS Department	(414) 635-7925	(414) 635-7864	6/25/1999	6/28/1999	07/25/1997	05/21/1998
Kenosha County Sheriff	(414) 605-5018	(414) 653-6903	6/25/1999	6/25/1999	07/28/1997	05/22/1998
Waukesha Police Department	(414) 524-3831	(414) 524-3897	6/25/1999	6/29/1999	07/28/1997	07/31/1997
Kenosha City Police Department	(414) 605-5200	(414) 653-6909	6/25/1999	6/28/1999	07/28/1997	08/08/1997

Agency Name	Phone	Fax	1999		1997	
			Out	In	Out	In
MILWAUKEE, RACINE						
Freeway Management						
Wisconsin Department of Transportation	(414) 227-2149	(414) 227-2164	7/29/1999	9/20/1999	07/25/1997	07/31/1997
MPO						
Southeastern Wisconsin Regional Planning	(414) 547-6721	(414) 547-1103	7/15/1999	9/2/1999		
Transit Management						
Waukesha County Transit System	(414) 548-7740	(414) 896-8097	8/9/1999	8/23/1999	07/16/1997	08/14/1997
Waukesha Metro Transit	(262) 524-3594	(262) 524-3646	8/9/1999	1/6/2000	07/17/1997	07/22/1997
Kenosha Transit	(414) 653-4287	(414) 653-4295	8/9/1999	12/9/1999	08/15/1997	10/06/1997
Belle Urban System-Racine	(414) 636-9166	(414) 636-9545	8/9/1999	8/20/1999	07/17/1997	07/25/1997
Milwaukee County Transit System	(414) 278-4888	(414) 223-1850	8/9/1999	9/13/1999	07/17/1997	07/21/1997

Appendix C
Freeway Management Components

Freeway Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Wisconsin Department of Transportation	
	1999	**2005**
Agency Returned Survey?	Yes	
FREEWAY MANAGEMENT SECTION		
Number of freeway centerline miles that agency owns or maintains	275	
Number of freeway centerline miles that is used for planning	130	
Number of freeway entrance ramps that agency owns, operates or maintains	250	
Number of freeway entrance ramps that is used for planning	125	
Type of facilities used to conduct freeway/incident management activities		
Activities housed in a free-standing dedicated building?	No	
Activities housed in a building shared with other activities?	Yes	
Activities conducted in a dedicated control room?	Yes	
Control room contains operator console(s)?	Yes	
Control room contains electronic wall map?	Yes	
Control room contains CCTV display(s)?	Yes	
Activities conducted in a room containing workstations or PCs that manage traffic?	Yes	
Facilities are electronically linked to other transportation mgt facilities?	No	
Staffing and hours of operation of freeway/incident management activities		
Number of full-time agency staff members	2	
Number of full time contractor staff members	1	
Number of part-time agency staff members	NR	
Number of part-time contractor staff members	NR	
Staffed 24 hours day by agency staff or by others	NR	
Staffed during peak hours only by agency staff or by others	agency	
Staffed by others during off-peak hours	No	
Agency staff perform transportation management as an ancillary duty	No	
Agency staff dedicated to transportation management duty	No	
Types of operations conducted for freeway/incident management		
Incident detection and management?	Yes	
This metropolitan area?	No	
Other metropolitan area?	No	
Statewide?	No	
Monitoring and troubleshooting status of system components?	Yes	
Manual override of ramp metering rates at freeway on-ramps?	Yes	
Operating transportation management roadside devices?	Yes	
Radio communications with other agencies?	Yes	
Exchange of electronic data with other agencies such as computer aided dispatch?	Yes	
Real-Time Traffic Data Collection Technologies		
Total number of miles under surveillance with real-time data collection tech.	NR	NR

	Wisconsin Department of Transportation	
	1999	**2005**
Number of Stations with data collection technologies		
Loop detectors	2,300	3,000
Video imaging detectors	0	0
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0
Microwave radar	48	55
Other (e.g., acoustic detectors)	0	0
Number of Miles covered with data collection technologies		
Loop detectors	NR	NR
Video imaging detectors	NR	NR
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0
Microwave radar	NR	NR
Other (e.g., acoustic detectors)	0	0
Variable Message Signs (VMS) on Freeways		
Candidate locations for deployment of VMS where VMS has been deployed	24	32
Candidate locations for deployment of VMS	NR	NR
Roadside Technologies used to Distribute Traveler Information		
Total number of miles where information is distributed	NR	NR
Number deployed		
Highway advisory radio	7	10
In-vehicle signing	0	0
Portable variable message signs	6	10
Other	0	0
Miles covered		
Highway advisory radio	NR	NR
In-vehicle signing	0	0
Portable variable message signs	NR	NR
Other	0	0
Ramp Meters on Freeways		
Number of entrance ramp meters operated under isolated control	1	0
Number of entrance ramp meters operated under central control	113	125
Number of entrance ramp meters that provide preemption for emergency vehicles	0	NR
Number of entrance ramp meters that provide priority for transit vehicles	42	70
Total number of metered ramps	113	130
Freeway centerline miles under lane control	NR	NR
Communication Links		
Freeway centerline miles covered by the following type of communication		
Twisted pair cable	32	70
Coaxial cable	0	0
Fiber-optic cable	40	70
Microwave radio	30	30
Other	0	0
ITS Standards Used Related to Freeway Management		

Freeway Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Wisconsin Department of Transportation	
	1999	**2005**
ATMS Data Dictionary Sections 1 and 2 (ITE TM 1.01)	No	
ATMS Data Dictionary Sections 3 and 4 (ITE TM 1.02)	No	
Message Set for External TMC Communication (ITE-9604-1)	No	
NTCIP Class B Profile (AASHTO TS 3.3)	No	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No	
NTCIP Object Definitions for Environmental Sensor Stations (AASHTO TS 3.7)	No	
NTICP Object Definitions for Dynamic Message Signs (AASHTO TS 3.6)	No	
NTICP Object Definitions for Highway Advisory Radio (AASHTO TS 3.HAR)	No	
NTICP Object Definitions for Ramp Meter Control (AASHTO TS 3.RMC)	No	
NTICP Object Definitions for Transportation Sensor Systems (AASHTO TS 3.TSS)	No	
NTICP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No	
Would agency be willing to participate in testing of ITS Standards?	No	
Have agreements in place with other agencies to use similar hardware		
and software to aid maintenance and interoperability?	Yes	
INCIDENT MANAGEMENT SECTION		
Use of Service Patrols to Assist in Detection and Response to Incidents		
Publicly operated service patrol vehicles	Yes	
Privately operated service patrol vehicles operated under public contract	Yes	
Total number of freeway miles patrolled by these services	100	150
Miles Covered by Methods to Detect and Verify Incidents		
Free cellular phone call to a dedicated phone number other than 911	NR	NR
Police patrols	200	200
Computer algorithms linked to traffic surveillance equipment	100	120
CCTV	58	80
Private sector sources (e.g., Shadow Traffic, SmartRoutes)	200	200
Other (e.g., free cell phone call to an area radio system, etc.)	200	200
Procedures in place for Freeway Incident Response?		
Working agreement(s)/arrangement(s) with other agencies	Yes	
Inter-agency incident management admin. team that meets regularly	Yes	
Major incident response team that responds to major incidents	No	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	Yes	
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	
The central focal point is a Police, Fire or joint dispatch center	Yes	
The central focal point is another center	No	
Methods of Communication Used On-Site at an Incident		
Police		
Two-way radio	Yes	
800 MHz trunked radio	Yes	
Cellular telephone	Yes	

	Wisconsin Department of Transportation	
	1999	**2005**
Hand-held (i.e., walkie-talkie)	Yes	
Automated data systems (i.e., CAD)	Yes	
Fire		
Two-way radio	Yes	
800 MHz trunked radio	No	
Cellular telephone	Yes	
Hand-held (i.e., walkie-talkie)	Yes	
Automated data systems (i.e., CAD)	No	
DOT		
Two-way radio	Yes	
800 MHz trunked radio	No	
Cellular telephone	Yes	
Hand-held (i.e., walkie-talkie)	Yes	
Automated data systems (i.e., CAD)	No	
Towing		
Two-way radio	Yes	
800 MHz trunked radio	No	
Cellular telephone	Yes	
Hand-held (i.e., walkie-talkie)	No	
Automated data systems (i.e., CAD)	No	
Which police agencies typically respond to incidents on freeways?		
State Police	Yes	
County Police or Sheriff	Yes	
City Police	No	
Who provides on-site emergency medical response?		
Fire	Yes	
Emergency Management Service Agency	Yes	
Private hospital	No	
Has a multi-agency contact list been developed in area containing the		
names, phone numbers, etc. for the appropriate response personnel?	Yes	
Is the Incident Command System used to manage incident scenes?	Yes	
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?	Yes	
Formal agreement?	No	
Not specified or don't know?	No	
On-scene command post used to manage activities of responding agencies?	Yes	
Are there communication linkages to a communications traffic/freeway mgt center?	Yes	
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?	Yes	
Respondents protected through law or court opinion for liability claims		

	Wisconsin Department of Transportation	
	1999	**2005**
for damages to vehicles or cargoes during clearance activities?	Yes	
Are overturned tank trucks, which are intact and not leaking, uprighted		
without first off-loading?	No	
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?	Yes	
Have laws or policies regarding the removal of stalled/abandoned vehicles		
from freeway shoulders?	Yes	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	0-24	
Have policies or procedures for quick removal of vehicles?	Yes	
Is Total Station equipment used to investigate major incidents?	Yes	
Handling of Towing Responses to Incidents		
Formal contract based on qualifications?	No	
Rotation with companies under contract?	Yes	
Separate lists kept for light and heavy response and for specialty recovery?	Yes	
Rotation list with minimal qualifications?	Yes	
In towing qualifications, do you require towers to be certified under the		
Towing and Recovery Ass. of America's National Drivers Cert. Program?	Considered	
_____		
DK: Don't know		
NR: No Response		
Leg: Legislation or action being planned		

Appendix D
Freeway Management Integration

Freeway Management
Integration: Milwaukee, Racine

	Wisconsin Department of Transportation	
	1999	**2005**
Agency Returned Survey?	Yes	
FREEWAY MANAGEMENT INTEGRATION		
Provides freeway travel times, speeds, and conditions		
Freeway Management	Wisconsin Department of Transportation	
Incident Management	Milwaukee County Sheriff	
Arterial Management		Milwaukee City West Allis City Milwaukee County
Public Transit Operator		Milwaukee County Paratransit System Milwaukee County Transit System
Share Infrastructure (building, computer system, communications)		
Freeway Management	Wisconsin Department of Transportation	
Incident Management	Milwaukee County Sheriff	
Arterial Management		Milwaukee City West Allis City Milwaukee County
Public Transit Operator		
Coordinate Operation		
Freeway Management	Wisconsin Department of Transportation	
Incident Management	Milwaukee County Sheriff	
Arterial Management		Milwaukee City Milwaukee County
Public Transit Operator		Milwaukee County Paratransit System Milwaukee County Transit System
Receive real-time information		
Incident severity, location, and type from Incident Management	Milwaukee County Sheriff	
Arterial travel times, speeds, and conditions from Arterial Management agencies	Wisconsin Department of Transportation	Milwaukee City
Freeway travel times, speeds, and conditions from vehicle probes from Transit agencies		Milwaukee County Paratransit System Milwaukee County Transit System
Freeway travel times, speeds, and conditions from vehicle probes from Toll agencies		
FREEWAY INCIDENT MANAGEMENT		
Provide incident severity, location, and type		

	Wisconsin Department of Transportation	
	1999	**2005**
Arterial Management agencies	Milwaukee City Milwaukee County Wisconsin Department of Transportation	Kenosha City Milwaukee City Waukesha City West Allis City Kenosha County Milwaukee County Ozaukee County Waukesha County Wisconsin Department of Transportation
Emergency Management agencies	Milwaukee City Police Department Milwaukee County Sheriff Ozaukee County Sheriff Department Racine County Sheriff Department Waukesha County Sheriff DepartmentWisconsin State Patrol	Milwaukee City Fire & EMS Department Racine Fire Department Racine Police Department Kenosha County Sheriff Kenosha City Fire & EMS Department Kenosha City Police Department Milwaukee County Sheriff Washington County Sheriff Waukesha Fire Department Waukesha Police Department West Allis City Fire Department West Allis City Police Department Wisconsin State Patrol
Freeway Management agencies	Wisconsin Department of Transportation	Wisconsin Department of Transportation
Public transit operators		
Share Infrastructure (building, computer system, communications)		
Arterial Management agencies	Milwaukee City Milwaukee County Wisconsin Department of Transportation	Racine County Milwaukee City Kenosha County Milwaukee County Ozaukee County Waukesha County Wisconsin Department of Transportation
Emergency Management agencies		Milwaukee City Police Department Kenosha County Sheriff Milwaukee County Sheriff Ozaukee County Sheriff Department Racine County Sheriff Department Washington County Sheriff Waukesha County Sheriff Department Wisconsin State Patrol
Freeway Management agencies	Wisconsin Department of Transportation	Wisconsin Department of Transportation

Freeway Management
Integration: Milwaukee, Racine

	Wisconsin Department of Transportation	
	1999	**2005**
Public transit operators		
Coordinate operation		
Arterial Management agencies	Racine County Milwaukee City West Allis City Kenosha County Milwaukee County Ozaukee County Waukesha County Wisconsin Department of Transportation	Racine County Kenosha City Milwaukee City Racine City Waukesha City West Allis City Kenosha County Milwaukee County Ozaukee County Waukesha County Wisconsin Department of Transportation
Emergency Management agencies	Milwaukee City Fire & EMS Department Milwaukee City Police Department Kenosha County Sheriff Milwaukee County Sheriff Ozaukee County Sheriff Department Racine County Sheriff Department Washington County Sheriff Waukesha County Sheriff Department Wisconsin State Patrol	Milwaukee City Fire & EMS Department Milwaukee City Police Department Racine Fire Department Racine Police Department Kenosha County Sheriff Milwaukee County Sheriff Ozaukee County Sheriff Department Racine County Sheriff Department Washington County Sheriff Waukesha County Sheriff Department Waukesha Fire Department Waukesha Police Department West Allis City Fire Department West Allis City Police Department Wisconsin State Patrol
Freeway Management agencies	Wisconsin Department of Transportation	Wisconsin Department of Transportation
Public transit operators	Milwaukee County Transit System	Milwaukee County Transit System
Receive real-time information		
Freeway incident clearance activities from Emergency Management agencies	Milwaukee County Sheriff	Milwaukee City Fire & EMS Department Milwaukee City Police Department Kenosha County Sheriff Milwaukee County Sheriff Ozaukee County Sheriff Department Racine County Sheriff Department Waukesha County Sheriff Department West Allis City Fire Department Wisconsin State Patrol

Freeway Management
Integration: Milwaukee, Racine

	Wisconsin Department of Transportation	
	1999	**2005**
Freeway incident severity information from Emergency Management agencies		Milwaukee City Fire & EMS Department Milwaukee City Police Department Kenosha County Sheriff Milwaukee County Sheriff Ozaukee County Sheriff Department Racine County Sheriff Department Waukesha County Sheriff Department West Allis City Fire Department Wisconsin State Patrol
Arterial travel times, speeds, and conditions from Arterial Management		Kenosha City Milwaukee City Racine City Waukesha City West Allis City Kenosha County Milwaukee County Ozaukee County Waukesha County Wisconsin Department of Transportation
Freeway travel times, speeds, and conditions from Freeway Management	Wisconsin Department of Transportation	Wisconsin Department of Transportation

Appendix E
Freeway Management Information Collection and Dissemination

Data Collection and Dissemination: Freeway Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Wisconsin 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	Traffic volumes, Traffic speeds, Lane occupancy, Ramp queues	Traffic volumes, Traffic speeds, Lane occupancy, Ramp queues
Archived by your agency	Traffic volumes, Traffic speeds, Lane occupancy	Traffic volumes, Traffic speeds, Lane occupancy, Ramp queues
Transferred to another agency by your agency	Traffic volumes, Traffic speeds, Lane occupancy	Traffic volumes, Traffic speeds, Lane occupancy, Ramp queues
Importance of making information available to the public		
Ranked High	Traffic Speeds, Lane occupancy	
Ranked Medium	Traffic volumes, Ramp queues	
Ranked Low	NR	
Groups that make requests for the data	Universities, State DOT personnel, Media (i.e., TV stations, radio stations), Consultants, International	
What is the data used for?	Traffic analysis, Planning, Incident detection algorithm development, Roadway impact analysis, Dissemenation to the public	
Technologies used to distribute freeway travel time, speeds, and conditions		
information to the public		
Technologies your agency uses to disseminate	Facsimile, E-mail or other direct PC communication, Internet Web sites	Facsimile, Kiosks, Internet Web sites, Telephone system
Technologies your agency indirectly (through another agency) uses to disseminate	Internet Web sites	Kiosks, Pagers or personal data assistants, Dedicated cable TV
Internet web site reporting freeway conditions	www.dot.state.wi.us/dtd/hdist2/monitor.html www.ai.eecs.uic.edu/gcm/milwaukee.html	
Telephone system for reporting freeway travel times, speeds and conditions to public	NR	
Organizations your agency sends information for dissemination to the public	*Gary-Chicago-Milwaukee ISTEA Priority Corridor Traffic Information Center *Metro Traffic *WISN-TV *WITI-TV *WTMJ-TV *Journal Broadcasting	
INCIDENT MANAGEMENT SECTION		
Methods used to disseminate incident location and severity to the public		

Data Collection and Dissemination: Freeway Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Wisconsin Department of Transportation	
	1999	**2005**
Technologies your agency uses to disseminate	Facsimile, Internet Web sites	Facsimile, Cell phone/voice, E-mail or other direct PC communication, Interactive TV, Pagers or personal data assistants, Internet Web sites, Telephone system
Technologies your agency indirectly (through another agency) uses to disseminate	NR	NR
Internet web site reporting incident information	www.dot.state.wi.us/dtd/hdist2/monitor.html	
Telephone system for reporting incident information to public	NR	
Organizations your agency sends information for dissemination to the public	NR	
_____		
NR: No Response		

Appendix F
Arterial Management Components

Arterial Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Kenosha County		Milwaukee City		Milwaukee County		Ozaukee County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes		Yes		Yes	
ARTERIAL MANAGEMENT SECTION								
Number of arterial miles that agency owns or maintains	8		NR		NR		289	
Number of arterial miles that is used for planning	0		NR		NR		0	
Number of highway-rail intersections that agency maintains	0		190		NR		7	
Number of highway-rail intersections that is used for planning	0		NR		NR		0	
Type of facilities used to conduct arterial management activities								
Activities housed in a free-standing dedicated building?	No		No		No		No	
Activities housed in a building shared with other activities?	Yes		No		Yes		No	
Activities conducted in a dedicated control room?	No		No		No		No	
Control room contains operator console(s)?	No		No		No		No	
Control room contains electronic wall map?	No		No		No		No	
Control room contains CCTV display(s)?	No		No		No		No	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		No		Yes		No	
Facilities are electronically linked to other transportation mgt facilities?	No		No		No		No	
Staffing and hours of operation of arterial management activities								
Number of full-time agency staff members	5		NR		NR		NR	
Number of full time contractor staff members	NR		NR		NR		NR	
Number of part-time agency staff members	NR		NR		NR		NR	
Number of part-time contractor staff members	NR		NR		NR		NR	
Staffed 24 hours day by agency staff or by others	NR		NR		NR		NR	
Staffed during peak hours only by agency staff or by others	NR		NR		NR		NR	
Staffed by others during off-peak hours	No		No		No		No	
Agency staff perform transportation management as an ancillary duty	No		No		Yes		No	
Agency staff dedicated to transportation management duty	No		No		No		No	
Types of operations conducted for arterial management								
Incident detection and management?	No		No		No		No	
This metropolitan area?	No		No		No		No	
Other metropolitan area?	No		No		No		No	
Monitoring and troubleshooting status of system components?	Yes		No		No		No	
Radio communications with other agencies?	No		No		No		No	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		No		No		No	
Manual override of traffic signal timing plans	No		No		No		No	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	No		No		No		No	

Arterial Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Kenosha County		Milwaukee City		Milwaukee County		Ozaukee County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Describe agency's role in traffic signal control	County routes only		NR		County routes only		County routes only	
Traffic Signals Operated by Agency								
Number of signalized intersections operated and owned by agency	2	NR	NR	NR	71	90	5	8
Number of signalized intersections operated by agency but owned by another	0	NR	NR	NR	0	0	NR	NR
Total number of signalized intersections operated by agency	2	NR	704	NR	71	90	5	8
Characteristics of signalized intersections that agency operates								
Under closed loop or central system control	0	NR	5	NR	50	70	5	8
Under real-time traffic adaptive control using advanced software	0	NR	0	NR	0	NR	0	0
Using SCOOT	No		No		No		No	
Using SCATS	No		No		No		No	
Name of software	NR		NR		NR		NR	
Allow signal preemption for emergency vehicles	0	NR	120	NR	0	NR	0	0
Allow signal priority for transit vehicles	0	NR	2	NR	0	NR	0	0
Within 200 feet of a highway-rail intersection	0	NR	4	NR	0	NR	0	0
Within 200 feet of a highway-rail intersection that adjust signal timing	0	NR	4	NR	NR	NR	0	0
Software used to control the signals agency operates								
Date of last upgrade to traffic signal control system software?	none		NR		1993		none	
How often do you update signal timing?	none		NR		as needed		contract with outside provider	
Software used and number of signalized intersections under control (1999, 2005)	NR		NR		LM System, NR, NR		NR	
Controllers used to control signals								
NEMA	2	NR	0	0	0	0	5	8
170/179	0	0	0	0	0	0	0	0
2070 controller	0	0	0	0	0	0	0	0
Other	0	0	0	0	70	90	0	0
Technologies Associated with Highway-Rail Intersections								
Total number of highway-rail intersections under electronic surveillance	NR	NR	NR	NR	NR	NR	NR	NR
Highway-Rail intersection capapbilities								
Video surveillance	0	0	0	0	0	0	0	0
Electronic surveillance other than video	0	0	0	0	0	0	0	0
Ability to predict train arrival electronically	0	0	0	0	0	0	0	0
Equipped with electronic traffic violator devices	0	0	0	0	0	0	0	0

	Kenosha County		Milwaukee City		Milwaukee County		Ozaukee County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Other	0	0	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	50	70	NR	NR
Number of signalized intersections with data collection technologies								
Loop detectors	0	0	0	0	50	70	0	0
Video detection cameras	0	0	0	0	0	0	0	0
Probe readers reading toll tags	0	0	0	0	0	0	0	0
Probe readers reading license plates	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Roadside Technologies used to Distribute Traveler Information								
Number deployed								
Highway Advisory Radio	NR	NR	NR	NR	NR	NR	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	NR	NR
VMS controlling parking access	NR	NR	NR	NR	NR	NR	NR	NR
Miles covered								
Highway Advisory Radio	NR	NR	NR	NR	NR	NR	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	NR	NR
VMS controlling parking access								
Variable Message Signs (VMS) on Arterials								
Candidate locations for deployment of VMS where VMS has been deployed	NR	NR	NR	NR	NR	NR	1	1
Candidate locations for deployment of VMS	NR	NR	NR	NR	NR	NR	NR	NR
Communication Technologies								
Signalized intersections communicated with by each type of communication								
Twisted pair cable	0	0	0	0	0	0	0	0
Coaxial cable	0	0	0	0	0	0	0	0
Fiber-optic cable	0	0	0	0	0	0	0	0
Other (e.g., wireless, dial-up modems, leased lines, etc.)	0	0	0	0	50	70	0	0
Does agency convey information on highway-rail intersection crossing								
status to travelers via roadside media such as VMS or HAR?	No		No		No		No	
ITS Standards Used Related to Traffic Signal Control								
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		No		No		No	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		No		No		No	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		No		No		No	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		No		No		No	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		No		No		No	
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		No		No		No	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		No		No		No	
Would agency be willing to participate in testing of ITS Standards?	No		NR		Yes		No	
Have agreements in place with other agencies to use similar hardware								
and software to aid maintenance and interoperability?	No		NR		No		No	
INCIDENT MANAGEMENT ON ARTERIAL STREETS								
Receive information on highway-rail intersection crossing blockages for								
the purpose of managing incident response?	No		No		No		No	

Arterial Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Kenosha County		Milwaukee City		Milwaukee County		Ozaukee County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Use of Service Patrols to Assist in Detection and Response to Incidents								
Publicly operated service patrol vehicles	No		No		No		No	
Privately operated service patrol vehicles operated under public contract	No		No		No		No	
Total number of arterial miles patrolled by these services	NR	NR	NR	NR	NR	NR	NR	NR
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	0	0
Free cellular phone call to an area radio station	0	0	0	0	0	0	0	0
Police patrols	0	0	0	0	0	0	0	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	0	0	0	0	0
CCTV	0	0	0	0	0	0	0	0
Private sector sources (e.g., Shadow Traffic, Smart Routes)	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Procedures in place for Arterial Incident Response?								
Working agreement(s)/arrangement(s) with other agencies	No		No		No		No	
Inter-agency incident management admin. team that meets regularly	No		No		No		No	
Major incident response team that responds to major incidents	No		No		No		No	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		No		No		No	
Methods of Communication Used On-Site at an Incident								
Police								
Two-way radio	No		No		No		No	
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No		No	
Automated data systems (i.e., CAD)	No		No		No		No	
Other	No		No		No		No	
Fire								
Two-way radio	No		No		No		No	
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No		No	
Automated data systems (i.e., CAD)	No		No		No		No	
Other	No		No		No		No	
DOT								
Two-way radio	No		No		No		No	
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No		No	
Automated data systems (i.e., CAD)	No		No		No		No	
Other	No		No		No		No	
Towing								

Arterial Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Kenosha County		Milwaukee City		Milwaukee County		Ozaukee County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Two-way radio	No		No		No		No	
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No		No	
Automated data systems (i.e., CAD)	No		No		No		No	
Other	No		No		No		No	
Which police agencies typically respond to incidents on arterials?								
State Police	No		No		No		No	
County Police or Sheriff	No		No		No		No	
City Police	No		No		No		No	
Who provides on-site emergency medical response?								
Fire	No		No		No		No	
Emergency Management Service Agency	No		No		No		No	
Private hospital	No		No		No		No	
Has a multi-agency contact list been developed in area containing the								
names, phone numbers, etc. for the appropriate response personnel?	NR		NR		NR		NR	
Is the Incident Command System used to manage incident scenes?	NR		NR		NR		NR	
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		No		No	
Formal agreement?	No		No		No		No	
Not specified or don't know?	No		No		No		No	
On-scene command post used to manage activities of responding agencies?	NR		NR		NR		NR	
Are there communication linkages to a communications traffic/freeway mgt center?	NR		NR		NR		NR	
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		NR		NR	
Respondents protected through law or court opinion for liability claims								
for damages to vehicles or cargoes during clearance activities?	NR		NR		NR		NR	
Are overturned tank trucks, which are intact and not leaking, uprighted								
without first off-loading?	NR		NR		NR		NR	
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		NR		NR	
Have laws or policies regarding the removal of stalled/abandoned vehicles								
from freeway shoulders?	NR		NR		NR		NR	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	NR		NR		NR		NR	
Have policies or procedures for quick removal of vehicles?	NR		NR		NR		NR	
Is Total Station equipment used to investigate major incidents?	NR		NR		NR		NR	
Handling of Towing Responses to Incidents								
Formal contract based on qualifications?	No		No		No		No	
Rotation with companies under contract?	No		No		No		No	

Arterial Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Kenosha County		Milwaukee City		Milwaukee County		Ozaukee County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Separate lists kept for light and heavy response and for specialty recovery?	NR		NR		NR		NR	
Rotation list with minimal qualifications?	No		No		No		No	
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		NR		NR	
_____								
DK: Don't know								
NR: No Response								
Leg: Legislation or action being planned								

Arterial Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Racine City		Waukesha City		Waukesha County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes		Yes	
ARTERIAL MANAGEMENT SECTION						
Number of arterial miles that agency owns or maintains	5,459		30		386	
Number of arterial miles that is used for planning	5,459		30		386	
Number of highway-rail intersections that agency maintains	17		19		12	
Number of highway-rail intersections that is used for planning	17		19		12	
Type of facilities used to conduct arterial management activities						
Activities housed in a free-standing dedicated building?	No		No		No	
Activities housed in a building shared with other activities?	Yes		Yes		No	
Activities conducted in a dedicated control room?	No		No		No	
Control room contains operator console(s)?	No		No		No	
Control room contains electronic wall map?	No		No		No	
Control room contains CCTV display(s)?	No		No		No	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		Yes		No	
Facilities are electronically linked to other transportation mgt facilities?	No		No		No	
Staffing and hours of operation of arterial management activities						
Number of full-time agency staff members	NR		NR		NR	
Number of full time contractor staff members	NR		NR		NR	
Number of part-time agency staff members	NR		NR		NR	
Number of part-time contractor staff members	NR		NR		NR	
Staffed 24 hours day by agency staff or by others	NR		NR		NR	
Staffed during peak hours only by agency staff or by others	NR		NR		NR	
Staffed by others during off-peak hours	No		No		No	
Agency staff perform transportation management as an ancillary duty	No		Yes		No	
Agency staff dedicated to transportation management duty	No		No		No	
Types of operations conducted for arterial management						
Incident detection and management?	Yes		Yes		No	
This metropolitan area?	Yes		Yes		No	
Other metropolitan area?	No		No		No	
Monitoring and troubleshooting status of system components?	Yes		No		No	
Radio communications with other agencies?	No		Yes		No	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		No		No	
Manual override of traffic signal timing plans	Yes		Yes		No	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	No		No		No	

Arterial Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Racine City		Waukesha City		Waukesha County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Describe agency's role in traffic signal control	All roads in incorporated area		Operate most signals in our incorporated area except WISDOT signals and some Waukesha County Signals. Also operate a signal in the Town of Waukesha.		County routes only	
Traffic Signals Operated by Agency						
Number of signalized intersections operated and owned by agency	78	NR	53	57	46	60
Number of signalized intersections operated by agency but owned by another	NR	NR	1	1	1	1
Total number of signalized intersections operated by agency	78	NR	54	58	47	61
Characteristics of signalized intersections that agency operates						
Under closed loop or central system control	56	NR	19	30	0	5
Under real-time traffic adaptive control using advanced software	NR	NR	0	0	0	0
Using SCOOT	No		No		No	
Using SCATS	No		No		No	
Name of software	NR		NR		NR	
Allow signal preemption for emergency vehicles	NR	NR	1	58	3	14
Allow signal priority for transit vehicles	1	NR	0	0	0	0
Within 200 feet of a highway-rail intersection	1	NR	0	0	0	0
Within 200 feet of a highway-rail intersection that adjust signal timing	1	NR	0	0	0	0
Software used to control the signals agency operates						
Date of last upgrade to traffic signal control system software?	May 1996		May 1999		We have no signal systems	
How often do you update signal timing?	Annually		Review approximate 3-5 years			
Software used and number of signalized intersections under control (1999, 2005)	MONARC, 56, 60		MARC, 27, 32		EAGLE MARC, NR, NR	
Controllers used to control signals						
NEMA	78	NR	55	58	47	61
170/179	0	0	0	0	0	0
2070 controller	0	0	0	0	0	0
Other	0	0	0	0	0	0
Technologies Associated with Highway-Rail Intersections						
Total number of highway-rail intersections under electronic surveillance	1	NR	NR	NR	NR	NR
Highway-Rail intersection capapbilities						
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	1	NR	0	0	0	0
Equipped with electronic traffic violator devices	0	0	0	0	0	0

	Racine City		Waukesha City		Waukesha County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
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	20	26	0	0
Number of signalized intersections with data collection technologies						
Loop detectors	0	0	20	26	45	59
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	1	1
Roadside Technologies used to Distribute Traveler Information						
Number deployed						
Highway Advisory Radio	NR	NR	NR	NR	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR
VMS controlling parking access	NR	NR	NR	NR	NR	NR
Miles covered						
Highway Advisory Radio	NR	NR	NR	NR	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR
VMS controlling parking access						
Variable Message Signs (VMS) on Arterials						
Candidate locations for deployment of VMS where VMS has been deployed	NR	NR	NR	NR	NR	NR
Candidate locations for deployment of VMS	NR	NR	NR	NR	NR	NR
Communication Technologies						
Signalized intersections communicated with by each type of communication						
Twisted pair cable	56	NR	20	26	0	5
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.)	0	0	3	4	0	0
Does agency convey information on highway-rail intersection crossing						
status to travelers via roadside media such as VMS or HAR?	No		No		No	
ITS Standards Used Related to Traffic Signal Control						
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		No		No	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		No		No	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		No		No	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		No		No	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		No		No	
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		No		No	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		No		No	
Would agency be willing to participate in testing of ITS Standards?	No		Yes		No	
Have agreements in place with other agencies to use similar hardware						
and software to aid maintenance and interoperability?	No		No		Yes	
INCIDENT MANAGEMENT ON ARTERIAL STREETS						
Receive information on highway-rail intersection crossing blockages for						
the purpose of managing incident response?	No		Yes		No	

	Racine City		Waukesha City		Waukesha County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Use of Service Patrols to Assist in Detection and Response to Incidents						
Publicly operated service patrol vehicles	No		No		No	
Privately operated service patrol vehicles operated under public contract	No		No		No	
Total number of arterial miles patrolled by these services	NR	NR	NR	NR	NR	NR
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	0	0	0	0
Private sector sources (e.g., Shadow Traffic, Smart Routes)	0	0	0	0	0	0
Other	0	0	0	0	0	0
Procedures in place for Arterial Incident Response?						
Working agreement(s)/arrangement(s) with other agencies	No		No		No	
Inter-agency incident management admin. team that meets regularly	No		No		No	
Major incident response team that responds to major incidents	No		No		No	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		No		No	
Methods of Communication Used On-Site at an Incident						
Police						
Two-way radio	No		No		No	
800 MHz trunked radio	No		No		No	
Cellular telephone	No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No	
Automated data systems (i.e., CAD)	No		No		No	
Other	No		No		No	
Fire						
Two-way radio	No		No		No	
800 MHz trunked radio	No		No		No	
Cellular telephone	No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No	
Automated data systems (i.e., CAD)	No		No		No	
Other	No		No		No	
DOT						
Two-way radio	No		No		No	
800 MHz trunked radio	No		No		No	
Cellular telephone	No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No	
Automated data systems (i.e., CAD)	No		No		No	
Other	No		No		No	
Towing						

	Racine City		Waukesha City		Waukesha County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Two-way radio	No		No		No	
800 MHz trunked radio	No		No		No	
Cellular telephone	No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No	
Automated data systems (i.e., CAD)	No		No		No	
Other	No		No		No	
Which police agencies typically respond to incidents on arterials?						
State Police	No		No		No	
County Police or Sheriff	No		No		No	
City Police	No		No		No	
Who provides on-site emergency medical response?						
Fire	No		No		No	
Emergency Management Service Agency	No		No		No	
Private hospital	No		No		No	
Has a multi-agency contact list been developed in area containing the						
names, phone numbers, etc. for the appropriate response personnel?	NR		NR		NR	
Is the Incident Command System used to manage incident scenes?	NR		NR		NR	
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		No	
Formal agreement?	No		No		No	
Not specified or don't know?	No		No		No	
On-scene command post used to manage activities of responding agencies?	NR		NR		NR	
Are there communication linkages to a communications traffic/freeway mgt center?	NR		NR		NR	
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		NR	
Respondents protected through law or court opinion for liability claims						
for damages to vehicles or cargoes during clearance activities?	NR		NR		NR	
Are overturned tank trucks, which are intact and not leaking, uprighted						
without first off-loading?	NR		NR		NR	
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		NR	
Have laws or policies regarding the removal of stalled/abandoned vehicles						
from freeway shoulders?	NR		NR		NR	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	NR		NR		NR	
Have policies or procedures for quick removal of vehicles?	NR		NR		NR	
Is Total Station equipment used to investigate major incidents?	NR		NR		NR	
Handling of Towing Responses to Incidents						
Formal contract based on qualifications?	No		No		No	
Rotation with companies under contract?	No		No		No	

Arterial Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Racine City		Waukesha City		Waukesha County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Separate lists kept for light and heavy response and for specialty recovery?	NR		NR		NR	
Rotation list with minimal qualifications?	No		No		No	
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		NR	
_____						
DK: Don't know						
NR: No Response						
Leg: Legislation or action being planned						

Arterial Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Wisconsin Department of Transportation		Totals	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		8	
ARTERIAL MANAGEMENT SECTION				
Number of arterial miles that agency owns or maintains	880		7052	
Number of arterial miles that is used for planning	44		5919	
Number of highway-rail intersections that agency maintains	27		272	
Number of highway-rail intersections that is used for planning	0		48	
Type of facilities used to conduct arterial management activities				
Activities housed in a free-standing dedicated building?	No		0	
Activities housed in a building shared with other activities?	No		4	
Activities conducted in a dedicated control room?	No		0	
Control room contains operator console(s)?	No		0	
Control room contains electronic wall map?	No		0	
Control room contains CCTV display(s)?	No		0	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		2	
Facilities are electronically linked to other transportation mgt facilities?	No		0	
Staffing and hours of operation of arterial management activities				
Number of full-time agency staff members	NR		5	
Number of full time contractor staff members	NR		0	
Number of part-time agency staff members	NR		0	
Number of part-time contractor staff members	NR		0	
Staffed 24 hours day by agency staff or by others	NR			
Staffed during peak hours only by agency staff or by others	NR			
Staffed by others during off-peak hours	No		0	
Agency staff perform transportation management as an ancillary duty	No		2	
Agency staff dedicated to transportation management duty	No		0	
Types of operations conducted for arterial management				
Incident detection and management?	No		2	
This metropolitan area?	No		2	
Other metropolitan area?	No		0	
Monitoring and troubleshooting status of system components?	No		2	
Radio communications with other agencies?	No		1	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		0	
Manual override of traffic signal timing plans	No		2	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	No		0	

	Wisconsin Department of Transportation		Totals	
	1999	**2005**	**1999**	**2005**
Describe agency's role in traffic signal control	State routes only			
Traffic Signals Operated by Agency				
Number of signalized intersections operated and owned by agency	419	NR	674	215
Number of signalized intersections operated by agency but owned by another	0	NR	2	2
Total number of signalized intersections operated by agency	419	NR	1380	217
Characteristics of signalized intersections that agency operates				
Under closed loop or central system control	30	NR	165	113
Under real-time traffic adaptive control using advanced software	0	NR	0	0
Using SCOOT	No		0	
Using SCATS	No		0	
Name of software	NR			
Allow signal preemption for emergency vehicles	25	NR	149	72
Allow signal priority for transit vehicles	0	NR	3	0
Within 200 feet of a highway-rail intersection	2	NR	7	0
Within 200 feet of a highway-rail intersection that adjust signal timing	2	NR	7	0
Software used to control the signals agency operates				
Date of last upgrade to traffic signal control system software?	NR			
How often do you update signal timing?	as needed based on traffic pattern			
Software used and number of signalized intersections under control (1999, 2005)	Eagle EPAC, 38, NR TCT LM 100, 88, NR			
Controllers used to control signals				
NEMA	419	NR	606	127
170/179	0	0	0	0
2070 controller	0	0	0	0
Other	0	0	70	90
Technologies Associated with Highway-Rail Intersections				
Total number of highway-rail intersections under electronic surveillance	NR	NR	1	0
Highway-Rail intersection capapbilities				
Video surveillance	0	0	0	0
Electronic surveillance other than video	0	0	0	0
Ability to predict train arrival electronically	0	0	1	0
Equipped with electronic traffic violator devices	0	0	0	0

	Wisconsin Department of Transportation		Totals	
	1999	**2005**	**1999**	**2005**
Other	0	0	0	0
Real-Time Electronic Traffic Data Collection Technologies				
Total number of signalized intersections covered by electronic surveillance	NR	NR	70	96
Number of signalized intersections with data collection technologies				
Loop detectors	0	0	115	155
Video detection cameras	0	0	0	0
Probe readers reading toll tags	0	0	0	0
Probe readers reading license plates	0	0	0	0
Other	0	0	1	1
Roadside Technologies used to Distribute Traveler Information				
Number deployed				
Highway Advisory Radio	NR	2	0	2
In-Vehicle Signing (IVS)	NR	NR	0	0
VMS controlling parking access	NR	NR	0	0
Miles covered				
Highway Advisory Radio	NR	20	0	20
In-Vehicle Signing (IVS)	NR	NR	0	0
VMS controlling parking access				
Variable Message Signs (VMS) on Arterials				
Candidate locations for deployment of VMS where VMS has been deployed	6	20	7	21
Candidate locations for deployment of VMS	NR	20	0	20
Communication Technologies				
Signalized intersections communicated with by each type of communication				
Twisted pair cable	0	0	76	31
Coaxial cable	0	0	0	0
Fiber-optic cable	0	0	0	0
Other (e.g., wireless, dial-up modems, leased lines, etc.)	30	0	83	74
Does agency convey information on highway-rail intersection crossing				
status to travelers via roadside media such as VMS or HAR?	No		0	
ITS Standards Used Related to Traffic Signal Control				
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		0	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		0	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		0	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		0	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		0	
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		0	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		0	
Would agency be willing to participate in testing of ITS Standards?	Yes		3	
Have agreements in place with other agencies to use similar hardware				
and software to aid maintenance and interoperability?	Yes		2	
INCIDENT MANAGEMENT ON ARTERIAL STREETS				
Receive information on highway-rail intersection crossing blockages for				
the purpose of managing incident response?	No		1	

	Wisconsin Department of Transportation		Totals	
	1999	**2005**	**1999**	**2005**
Use of Service Patrols to Assist in Detection and Response to Incidents				
Publicly operated service patrol vehicles	No		0	
Privately operated service patrol vehicles operated under public contract	No		0	
Total number of arterial miles patrolled by these services	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
Free cellular phone call to an area radio station	0	0	0	0
Police patrols	0	0	0	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	0
CCTV	0	0	0	0
Private sector sources (e.g., Shadow Traffic, Smart Routes)	0	0	0	0
Other	0	0	0	0
Procedures in place for Arterial Incident Response?				
Working agreement(s)/arrangement(s) with other agencies	No		0	
Inter-agency incident management admin. team that meets regularly	No		0	
Major incident response team that responds to major incidents	No		0	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		0	
Methods of Communication Used On-Site at an Incident				
Police				
Two-way radio	No		0	
800 MHz trunked radio	No		0	
Cellular telephone	No		0	
Hand-held (i.e., walkie-talkie)	No		0	
Automated data systems (i.e., CAD)	No		0	
Other	No		0	
Fire				
Two-way radio	No		0	
800 MHz trunked radio	No		0	
Cellular telephone	No		0	
Hand-held (i.e., walkie-talkie)	No		0	
Automated data systems (i.e., CAD)	No		0	
Other	No		0	
DOT				
Two-way radio	No		0	
800 MHz trunked radio	No		0	
Cellular telephone	No		0	
Hand-held (i.e., walkie-talkie)	No		0	
Automated data systems (i.e., CAD)	No		0	
Other	No		0	
Towing				

	Wisconsin Department of Transportation		Totals	
	1999	**2005**	**1999**	**2005**
Two-way radio	No		0	
800 MHz trunked radio	No		0	
Cellular telephone	No		0	
Hand-held (i.e., walkie-talkie)	No		0	
Automated data systems (i.e., CAD)	No		0	
Other	No		0	
Which police agencies typically respond to incidents on arterials?				
State Police	No		0	
County Police or Sheriff	No		0	
City Police	No		0	
Who provides on-site emergency medical response?				
Fire	No		0	
Emergency Management Service Agency	No		0	
Private hospital	No		0	
Has a multi-agency contact list been developed in area containing the				
names, phone numbers, etc. for the appropriate response personnel?	NR		0	
Is the Incident Command System used to manage incident scenes?	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		0	
Formal agreement?	No		0	
Not specified or don't know?	No		0	
On-scene command post used to manage activities of responding agencies?	NR		0	
Are there communication linkages to a communications traffic/freeway mgt center?	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		0	
Respondents protected through law or court opinion for liability claims				
for damages to vehicles or cargoes during clearance activities?	NR		0	
Are overturned tank trucks, which are intact and not leaking, uprighted				
without first off-loading?	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		0	
Have laws or policies regarding the removal of stalled/abandoned vehicles				
from freeway shoulders?	NR		0	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	NR		0	
Have policies or procedures for quick removal of vehicles?	NR		0	
Is Total Station equipment used to investigate major incidents?	NR		0	
Handling of Towing Responses to Incidents				
Formal contract based on qualifications?	No		0	
Rotation with companies under contract?	No		0	

Arterial Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Wisconsin Department of Transportation		Totals	
	1999	**2005**	**1999**	**2005**
Separate lists kept for light and heavy response and for specialty recovery?	NR		0	
Rotation list with minimal qualifications?	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		0	
_____				
DK: Don't know				
NR: No Response				
Leg: Legislation or action being planned				

Appendix G
Arterial Management Integration

Arterial Management
Integration: Milwaukee, Racine

	Kenosha County		Milwaukee City	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes	
INTER-AGENCY INTEGRATION				
Share timing plans information			Wisconsin Department of Transportation	
Coordinate changes to timing plans				
Turn over control of signals during non-peak hours or special events				
ARTERIAL MANAGEMENT				
Provide arterial travel times, speeds and conditions				
Freeway Management agencies				
Incident Management agencies				
Public transit operators				
Arterial management agencies				
Share Infrastructure (building, computer system, communications)				
Freeway Management agencies				
Incident Management agencies				
Public transit operators				
Arterial management agencies				
Coordinate operation				
Freeway Management agencies				

Arterial Management
Integration: Milwaukee, Racine

	Kenosha County		Milwaukee City	
	1999	**2005**	**1999**	**2005**
Incident Management agencies				
Public transit operators				
Arterial management agencies				
Receive real-time information				
Freeway travel times, speeds, and conditions from Freeway Management	Wisconsin Department of Transportation	Wisconsin Department of Transportation		
Arterial travel times, speeds, and conditions from vehicle probes from Transit agencies				
Incident clearance information from Incident Management agencies				
Incident severity and location from Incident Management agencies				
Arterial travel times, speeds, and conditions from vehicle probes from Toll agencies				
ARTERIAL INCIDENT MANAGEMENT				
Provide incident severity, location, and type				
Emergency Management agencies				
Freeway Management agencies				
Public transit operators				
Share Infrastructure (building, computer system, communications)				
Emergency Management agencies				
Freeway Management agencies				
Public transit operators				
Coordinate operation				
Emergency Management agencies				
Freeway Management agencies				
Public transit operators				
Receive real-time information				
Arterial incident clearance activities from Emergency Management agencies				
Arterial incident severity information from Emergency Management agencies				
Arterial travel times, speeds, and conditions from Arterial Management				
Freeway travel times, speeds, and conditions from Freeway Management				

Arterial Management
Integration: Milwaukee, Racine

	Milwaukee County		Ozaukee County		Racine City	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes		Yes	
INTER-AGENCY INTEGRATION						
Share timing plans information		Milwaukee City				
Coordinate changes to timing plans	Wisconsin Department of Transportation	Milwaukee City				
Turn over control of signals during non-peak hours or special events	Wisconsin Department of Transportation					
ARTERIAL MANAGEMENT						
Provide arterial travel times, speeds and conditions						
Freeway Management agencies						
Incident Management agencies						
Public transit operators						
Arterial management agencies						
Share Infrastructure (building, computer system, communications)						
Freeway Management agencies						
Incident Management agencies						
Public transit operators						
Arterial management agencies						
Coordinate operation						
Freeway Management agencies						

Arterial Management
Integration: Milwaukee, Racine

	Milwaukee County		Ozaukee County		Racine City	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Incident Management agencies						
Public transit operators						
Arterial management agencies						
Receive real-time information						
Freeway travel times, speeds, and conditions from Freeway Management	Wisconsin Department of Transportation					
Arterial travel times, speeds, and conditions from vehicle probes from Transit agencies						
Incident clearance information from Incident Management agencies						
Incident severity and location from Incident Management agencies						
Arterial travel times, speeds, and conditions from vehicle probes from Toll agencies						
ARTERIAL INCIDENT MANAGEMENT						
Provide incident severity, location, and type						
Emergency Management agencies						
Freeway Management agencies						
Public transit operators						
Share Infrastructure (building, computer system, communications)						
Emergency Management agencies						
Freeway Management agencies						
Public transit operators						
Coordinate operation						
Emergency Management agencies						
Freeway Management agencies						
Public transit operators						
Receive real-time information						
Arterial incident clearance activities from Emergency Management agencies						
Arterial incident severity information from Emergency Management agencies						
Arterial travel times, speeds, and conditions from Arterial Management						
Freeway travel times, speeds, and conditions from Freeway Management						

Arterial Management
Integration: Milwaukee, Racine

	Waukesha City		Waukesha County	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes	
INTER-AGENCY INTEGRATION				
Share timing plans information	Wisconsin Department of Transportation Waukesha County	Wisconsin Department of Transportation Waukesha County	Wisconsin Department of Transportation	Wisconsin Department of Transportation
Coordinate changes to timing plans	Wisconsin Department of Transportation	Wisconsin Department of Transportation	Wisconsin Department of Transportation	Wisconsin Department of Transportation
Turn over control of signals during non-peak hours or special events				
ARTERIAL MANAGEMENT				
Provide arterial travel times, speeds and conditions				
Freeway Management agencies		Wisconsin Department of Transportation		
Incident Management agencies		Wisconsin Department of Transportation		
Public transit operators	Waukesha County Transit System	Waukesha County Transit System		
Arterial management agencies		Wisconsin Department of Transportation Waukesha County		
Share Infrastructure (building, computer system, communications)				
Freeway Management agencies				
Incident Management agencies				
Public transit operators				
Arterial management agencies				
Coordinate operation				
Freeway Management agencies				

Arterial Management
Integration: Milwaukee, Racine

	Waukesha City		Waukesha County	
	1999	**2005**	**1999**	**2005**
Incident Management agencies				
Public transit operators				
Arterial management agencies				
Receive real-time information				
Freeway travel times, speeds, and conditions from Freeway Management				
Arterial travel times, speeds, and conditions from vehicle probes from Transit agencies				
Incident clearance information from Incident Management agencies				
Incident severity and location from Incident Management agencies				
Arterial travel times, speeds, and conditions from vehicle probes from Toll agencies				
ARTERIAL INCIDENT MANAGEMENT				
Provide incident severity, location, and type				
Emergency Management agencies				
Freeway Management agencies				
Public transit operators				
Share Infrastructure (building, computer system, communications)				
Emergency Management agencies				
Freeway Management agencies				
Public transit operators				
Coordinate operation				
Emergency Management agencies				
Freeway Management agencies				
Public transit operators				
Receive real-time information				
Arterial incident clearance activities from Emergency Management agencies				
Arterial incident severity information from Emergency Management agencies				
Arterial travel times, speeds, and conditions from Arterial Management				
Freeway travel times, speeds, and conditions from Freeway Management				

	Wisconsin Department of Transportation	
	1999	**2005**
Agency Returned Survey?	Yes	
INTER-AGENCY INTEGRATION		
Share timing plans information	Mequon City West Allis City Waukesha County Milwaukee County Milwaukee City	Waukesha City
Coordinate changes to timing plans	Mequon City West Allis City Waukesha County Milwaukee County Milwaukee City	Waukesha City
Turn over control of signals during non-peak hours or special events		Waukesha County
ARTERIAL MANAGEMENT		
Provide arterial travel times, speeds and conditions		
Freeway Management agencies	Wisconsin Department of Transportation	
Incident Management agencies		
Public transit operators		
Arterial management agencies		
Share Infrastructure (building, computer system, communications)		
Freeway Management agencies	Wisconsin Department of Transportation	
Incident Management agencies		
Public transit operators		
Arterial management agencies		
Coordinate operation		
Freeway Management agencies	Wisconsin Department of Transportation	

Arterial Management
Integration: Milwaukee, Racine

	Wisconsin Department of Transportation	
	1999	**2005**
Incident Management agencies		
Public transit operators		
Arterial management agencies		
Receive real-time information		
Freeway travel times, speeds, and conditions from Freeway Management	Wisconsin Department of Transportation	
Arterial travel times, speeds, and conditions from vehicle probes from Transit agencies		
Incident clearance information from Incident Management agencies		
Incident severity and location from Incident Management agencies		
Arterial travel times, speeds, and conditions from vehicle probes from Toll agencies		
ARTERIAL INCIDENT MANAGEMENT		
Provide incident severity, location, and type		
Emergency Management agencies		
Freeway Management agencies		
Public transit operators		
Share Infrastructure (building, computer system, communications)		
Emergency Management agencies		
Freeway Management agencies		
Public transit operators		
Coordinate operation		
Emergency Management agencies		
Freeway Management agencies		
Public transit operators		
Receive real-time information		
Arterial incident clearance activities from Emergency Management agencies		
Arterial incident severity information from Emergency Management agencies		
Arterial travel times, speeds, and conditions from Arterial Management		
Freeway travel times, speeds, and conditions from Freeway Management		

Appendix H
Arterial Management Information Collection and Dissemination

Appendix I
Transit Management Components

Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Belle Urban System-Racine		Kenosha Transit		Milwaukee County Transit System		Waukesha County Transit System	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes		Yes		Yes	
Number of vehicles used in revenue service								
Fixed Route Bus	42	40	47	51	545	545	NR	NR
Heavy or Rapid Rail	0	0	NR	NR	0	0	NR	NR
Light Rail	0	0	NR	5	0	0	NR	NR
Demand Responsive	16	16	3	3	476	500	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Have of plan to have an Automated Vehicle Location System?	Yes		Yes		Yes		No	
Primary and Secondary Location Technologies Used								
Primary Technologies								
GPS	No	Yes	No	Yes	No	No	No	No
Sign/Odometer	No	No	No	No	No	No	No	No
Dead-Reckoning	No	No	No	No	Yes	Yes	No	No
LORAN C	No	No	No	No	No	No	No	No
Other	No	No	No	No	Yes	Yes	No	No
Backup Technologies								
GPS	No	No	No	No	No	No	No	No
Sign/Odometer	No	No	No	No	No	No	No	No
Dead-Reckoning	No	No	No	No	Yes	Yes	No	No
LORAN C	No	Yes	No	No	No	No	No	No
Other	No	No	No	No	Yes	Yes	No	No
Number of Vehicles Equipped with AVL								
Fixed Route Bus	NR	40	NR	51	545	545	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	5	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	300	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Motor Buses Operated as Vehicle Probes								
Number of Motor Buses equipped as probes on freeways?	NR		NR		NR		NR	
Number of Motor Buses equipped as probes on arterials?	NR		NR		NR		NR	
Have Organized Regional Incident Management Program?	No		No		Yes		No	

Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Belle Urban System-Racine		Kenosha Transit		Milwaukee County Transit System		Waukesha County Transit System	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Have Automated Traveler Information System?	No		No		Yes		No	
Services Automated Traveler Info. System Applies:								
Fixed Route	No		No		Yes		No	
Heavy Rail	No		No		No		No	
Light Rail	No		No		No		No	
Demand Responsive	No		No		No		No	
Commuter Rail	No		No		No		No	
Ferry	No		No		No		No	
Locations where traveler information is displayed to public								
Number of bus stops on fixed transit routes	NR	NR	NR	NR	11,000	11,000	NR	NR
Bus stops on fixed transit routes that display traveler info to the public	NR	NR	NR	NR	NR	NR	NR	NR
Number of rail stations	NR	NR	NR	NR	NR	NR	NR	NR
Number of rail stations that display traveler information	NR	NR	NR	NR	NR	NR	NR	NR
Number of other locations that display traveler information to public	NR	NR	NR	NR	NR	NR	NR	NR
Number of vehicles the traveler information system has available								
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Deployment of Communications Technology								
Attributes of Radio System:								
Digital?	Yes		No		No		No	
Analog?	No		Yes		Yes		No	
Trunked?	No		No		Yes		No	
Regular?	Yes		Yes		No		No	
Services that use a Digital or Trunked Radio System								
Digital Only								
Fixed Route Bus	No	No	No	No	No	No	No	No
Heavy or Rapid Rail	No	No	No	No	No	No	No	No
Light Rail	No	No	No	No	No	No	No	No
Demand Responsive	No	No	No	No	No	No	No	No
Commuter Rail	No	No	No	No	No	No	No	No
Ferry Boat	No	No	No	No	No	No	No	No
Trunked Only								
Fixed Route Bus	No	No	No	No	Yes	No	No	No

Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Belle Urban System-Racine		Kenosha Transit		Milwaukee County Transit System		Waukesha County Transit System	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Heavy or Rapid Rail	No	No	No	No	No	No	No	No
Light Rail	No	No	No	No	No	No	No	No
Demand Responsive	No	No	No	No	No	Yes	No	No
Commuter Rail	No	No	No	No	No	No	No	No
Ferry Boat	No	No	No	No	No	No	No	No
Have of plan to have Automatic Passenger Counters (APCs)?	No		No		Yes		No	
Methods used to count passengers								
Treadle Mats	No		No		No		No	
Infrared Beams	No		No		Yes		No	
Primary and Secondary Location Technologies Used								
Primary Technologies								
GPS	No	No	No	No	No	No	No	No
Differential GPS	No	No	No	No	Yes	Yes	No	No
Signpost/Odometer	No	No	No	No	No	No	No	No
Dead_Reckoning	No	No	No	No	No	No	No	No
LORAN C	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No
Backup Technologies								
GPS	No	No	No	No	No	No	No	No
Differential GPS	No	No	No	No	No	No	No	No
Signpost/Odometer	No	No	No	No	No	No	No	No
Dead_Reckoning	No	No	No	No	Yes	Yes	No	No
LORAN C	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No
Number of Vehicles with APCs								
Fixed Route Bus	NR	NR	NR	NR	35	35	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Remote Real-Time Monitoring and Computer Assisted Dispatching								
Remote Real-Time Monitoring								
Fixed Route Bus	NR	NR	NR	NR	0	545	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR

Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Belle Urban System-Racine		Kenosha Transit		Milwaukee County Transit System		Waukesha County Transit System	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Automated Dispatching or Control Software								
Fixed Route Bus	NR	NR	NR	51	545	545	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	5	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	300	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Coordinate or plan to coordinate travel request and vehicle								
dispatching for multiple agencies?	No		No		No		No	
Is there or will there be a Transportation Management Center								
(TMC) in the region that controls transit and highway modes?	NR		No		Yes		No	
Modes that TMC currently controls:								
Highways	No	No	No	No	Yes	Yes	No	No
Fixed Route Bus	No	No	No	No	No	No	No	No
Heavy or Rapid Rail	No	No	No	No	No	No	No	No
Light Rail	No	No	No	No	No	No	No	No
Demand Responsive	No	No	No	No	No	No	No	No
Commuter Rail	No	No	No	No	No	No	No	No
Ferry Boat	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No
Priority at Traffic Signals and Ramp Meter Priority								
Priority at Traffic Signals								
Fixed Route Bus	NR	NR	NR	NR	NR	100	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR
Ramp Meter Priority								
Fixed Route Bus	NR	NR	NR	NR	60	80	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR
Number of Vehicles Equipped with Navigation Aids								
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR

Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Belle Urban System-Racine		Kenosha Transit		Milwaukee County Transit System		Waukesha County Transit System	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
ITS Standards Used Related to Transit Management								
TCIP On Boad Objects (TCIP-OB)	No		No		No		No	
TCIP Traffic Management Objects (TCIP-TM)	No		No		No		No	
TCIP Common Public Transportation Objects (TCIP-CPT)	No		No		No		No	
TCIP Passenger Information Objects (TCIP-PI)	No		No		Yes		No	
TCIP Incident Management Objects (TCIP-IM)	No		No		No		No	
TCIP Fare Collection Objects (TCIP-FC)	No		No		Yes		No	
TCIP Spatial Representation Objects (TCIP-SP)	No		No		No		No	
TCIP Control Center Objects (TCIP-CC)	No		No		Yes		No	
TCIP Scheduling/Runcutting Objects (TCIP-SCH)	No		No		Yes		No	
Send data communication between micro computer and heavy duty								
vehicle applications (SAE J1708)	No		No		Yes		No	
Would agency be willing to participate in testing of ITS Standards?	No		Yes		No		No	
Have agreements in place with other agencies to use similar hardware								
and software to aid maintenance and interoperability?	No		No		No		No	
Electronic Fare Payment								
Have full operational Electronic Fare Payment System?	No		No		No		No	
Methods of Fare Payment								
Stored value card with fare deducted for each trip								
Magnetic Stripe	No		No		No		No	
Smart Card	No		No		No		No	
Debit Card	No		No		No		No	
Billed by the month for trips taken								
Magnetic Stripe	No		No		No		No	
Smart Card	No		No		No		No	
Credit Card	No		No		No		No	
Monthly Pass								
Magnetic Stripe	No		No		No		No	
Smart Card	No		No		No		No	
Vehicles/Stations Equipped with Automated Payment Mechanism								
Magnetic Stripe Readers								
Fixed Route Bus Vehicles	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR

Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Belle Urban System-Racine		Kenosha Transit		Milwaukee County Transit System		Waukesha County Transit System	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR
Smart Card Readers								
Fixed Route Bus Vehicles	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR
Credit Card								
Fixed Route Bus Vehicles	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR
Debit Card								
Fixed Route Bus Vehicles	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR
_____								
NR: No Response								

Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Waukesha Metro Transit		Totals	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		5	
Number of vehicles used in revenue service				
Fixed Route Bus	23	26	657	662
Heavy or Rapid Rail	NR	NR	0	0
Light Rail	NR	NR	0	5
Demand Responsive	3	6	498	525
Commuter Rail	NR	NR	0	0
Ferry Boat	NR	NR	0	0
Have of plan to have an Automated Vehicle Location System?	No		3	
Primary and Secondary Location Technologies Used				
Primary Technologies				
GPS	No	No	0	2
Sign/Odometer	No	No	0	0
Dead-Reckoning	No	No	1	1
LORAN C	No	No	0	0
Other	No	No	1	1
Backup Technologies				
GPS	No	No	0	0
Sign/Odometer	No	No	0	0
Dead-Reckoning	No	No	1	1
LORAN C	No	No	0	1
Other	No	No	1	1
Number of Vehicles Equipped with AVL				
Fixed Route Bus	NR	NR	545	636
Heavy or Rapid Rail	NR	NR	0	0
Light Rail	NR	NR	0	5
Demand Responsive	NR	NR	0	300
Commuter Rail	NR	NR	0	0
Ferry Boat	NR	NR	0	0
Motor Buses Operated as Vehicle Probes				
Number of Motor Buses equipped as probes on freeways?	NR		0	
Number of Motor Buses equipped as probes on arterials?	NR		0	
Have Organized Regional Incident Management Program?	No		1	

Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Waukesha Metro Transit		Totals	
	1999	**2005**	**1999**	**2005**
Have Automated Traveler Information System?	Yes		2	
Services Automated Traveler Info. System Applies:				
Fixed Route	Yes		2	
Heavy Rail	No		0	
Light Rail	No		0	
Demand Responsive	Yes		1	
Commuter Rail	No		0	
Ferry	No		0	
Locations where traveler information is displayed to public				
Number of bus stops on fixed transit routes	700	900	11700	11900
Bus stops on fixed transit routes that display traveler info to the public	NR	NR	0	0
Number of rail stations	NR	NR	0	0
Number of rail stations that display traveler information	NR	NR	0	0
Number of other locations that display traveler information to public	NR	NR	0	0
Number of vehicles the traveler information system has available				
Fixed Route Bus	NR	NR	0	0
Heavy or Rapid Rail	NR	NR	0	0
Light Rail	NR	NR	0	0
Demand Responsive	NR	NR	0	0
Commuter Rail	NR	NR	0	0
Ferry Boat	NR	NR	0	0
Deployment of Communications Technology				
Attributes of Radio System:				
Digital?	No		1	
Analog?	Yes		3	
Trunked?	No		1	
Regular?	Yes		3	
Services that use a Digital or Trunked Radio System				
Digital Only				
Fixed Route Bus	No	No	0	0
Heavy or Rapid Rail	No	No	0	0
Light Rail	No	No	0	0
Demand Responsive	No	No	0	0
Commuter Rail	No	No	0	0
Ferry Boat	No	No	0	0
Trunked Only				
Fixed Route Bus	No	Yes	1	1

	Waukesha Metro Transit		Totals	
	1999	**2005**	**1999**	**2005**
Heavy or Rapid Rail	No	No	0	0
Light Rail	No	No	0	0
Demand Responsive	No	Yes	0	2
Commuter Rail	No	No	0	0
Ferry Boat	No	No	0	0
Have of plan to have Automatic Passenger Counters (APCs)?	No		1	
Methods used to count passengers				
Treadle Mats	No		0	
Infrared Beams	No		1	
Primary and Secondary Location Technologies Used				
Primary Technologies				
GPS	No	No	0	0
Differential GPS	No	No	1	1
Signpost/Odometer	No	No	0	0
Dead_Reckoning	No	No	0	0
LORAN C	No	No	0	0
Other	No	No	0	0
Backup Technologies				
GPS	No	No	0	0
Differential GPS	No	No	0	0
Signpost/Odometer	No	No	0	0
Dead_Reckoning	No	No	1	1
LORAN C	No	No	0	0
Other	No	No	0	0
Number of Vehicles with APCs				
Fixed Route Bus	NR	NR	35	35
Heavy or Rapid Rail	NR	NR	0	0
Light Rail	NR	NR	0	0
Demand Responsive	NR	NR	0	0
Commuter Rail	NR	NR	0	0
Ferry Boat	NR	NR	0	0
Remote Real-Time Monitoring and Computer Assisted Dispatching				
Remote Real-Time Monitoring				
Fixed Route Bus	NR	NR	0	545
Heavy or Rapid Rail	NR	NR	0	0
Light Rail	NR	NR	0	0
Demand Responsive	NR	NR	0	0
Commuter Rail	NR	NR	0	0

Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Waukesha Metro Transit		Totals	
	1999	**2005**	**1999**	**2005**
Ferry Boat	NR	NR	0	0
Automated Dispatching or Control Software				
Fixed Route Bus	0	26	545	622
Heavy or Rapid Rail	NR	NR	0	0
Light Rail	NR	NR	0	5
Demand Responsive	0	6	0	306
Commuter Rail	NR	NR	0	0
Ferry Boat	NR	NR	0	0
Coordinate or plan to coordinate travel request and vehicle				
dispatching for multiple agencies?	No		0	
Is there or will there be a Transportation Management Center				
(TMC) in the region that controls transit and highway modes?	NR		1	
Modes that TMC currently controls:				
Highways	No	No	1	1
Fixed Route Bus	No	No	0	0
Heavy or Rapid Rail	No	No	0	0
Light Rail	No	No	0	0
Demand Responsive	No	No	0	0
Commuter Rail	No	No	0	0
Ferry Boat	No	No	0	0
Other	No	No	0	0
Priority at Traffic Signals and Ramp Meter Priority				
Priority at Traffic Signals				
Fixed Route Bus	NR	NR	0	100
Light Rail	NR	NR	0	0
Demand Responsive	NR	NR	0	0
Ramp Meter Priority				
Fixed Route Bus	NR	NR	60	80
Demand Responsive	NR	NR	0	0
Number of Vehicles Equipped with Navigation Aids				
Fixed Route Bus	NR	NR	0	0
Heavy or Rapid Rail	NR	NR	0	0
Light Rail	NR	NR	0	0
Demand Responsive	NR	NR	0	0
Commuter Rail	NR	NR	0	0
Ferry Boat	NR	NR	0	0

Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Waukesha Metro Transit		Totals	
	1999	**2005**	**1999**	**2005**
ITS Standards Used Related to Transit Management				
TCIP On Boad Objects (TCIP-OB)	No		0	
TCIP Traffic Management Objects (TCIP-TM)	No		0	
TCIP Common Public Transportation Objects (TCIP-CPT)	No		0	
TCIP Passenger Information Objects (TCIP-PI)	No		1	
TCIP Incident Management Objects (TCIP-IM)	No		0	
TCIP Fare Collection Objects (TCIP-FC)	No		1	
TCIP Spatial Representation Objects (TCIP-SP)	No		0	
TCIP Control Center Objects (TCIP-CC)	No		1	
TCIP Scheduling/Runcutting Objects (TCIP-SCH)	No		1	
Send data communication between micro computer and heavy duty				
vehicle applications (SAE J1708)	No		1	
Would agency be willing to participate in testing of ITS Standards?	Yes		2	
Have agreements in place with other agencies to use similar hardware				
and software to aid maintenance and interoperability?	No		0	
Electronic Fare Payment				
Have full operational Electronic Fare Payment System?	Yes		1	
Methods of Fare Payment				
Stored value card with fare deducted for each trip				
Magnetic Stripe	No		0	
Smart Card	No		0	
Debit Card	No		0	
Billed by the month for trips taken				
Magnetic Stripe	No		0	
Smart Card	No		0	
Credit Card	No		0	
Monthly Pass				
Magnetic Stripe	Yes		1	
Smart Card	No		0	
Vehicles/Stations Equipped with Automated Payment Mechanism				
Magnetic Stripe Readers				
Fixed Route Bus Vehicles	20	26	20	26
Heavy or Rapid Rail Stations	NR	NR	0	0
Light Rail Stations	NR	NR	0	0
Demand Responsive Vehicles	0	6	0	6
Commuter Rail Stations	NR	NR	0	0

Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Waukesha Metro Transit		Totals	
	1999	**2005**	**1999**	**2005**
Ferry Boat Landings	NR	NR	0	0
Smart Card Readers				
Fixed Route Bus Vehicles	NR	NR	0	0
Heavy or Rapid Rail Stations	NR	NR	0	0
Light Rail Stations	NR	NR	0	0
Demand Responsive Vehicles	NR	NR	0	0
Commuter Rail Stations	NR	NR	0	0
Ferry Boat Landings	NR	NR	0	0
Credit Card				
Fixed Route Bus Vehicles	NR	NR	0	0
Heavy or Rapid Rail Stations	NR	NR	0	0
Light Rail Stations	NR	NR	0	0
Demand Responsive Vehicles	NR	NR	0	0
Commuter Rail Stations	NR	NR	0	0
Ferry Boat Landings	NR	NR	0	0
Debit Card				
Fixed Route Bus Vehicles	NR	NR	0	0
Heavy or Rapid Rail Stations	NR	NR	0	0
Light Rail Stations	NR	NR	0	0
Demand Responsive Vehicles	NR	NR	0	0
Commuter Rail Stations	NR	NR	0	0
Ferry Boat Landings	NR	NR	0	0
_____				
NR: No Response				

Appendix J
Transit Management Integration

Transit Management Integration
Agencies for Metropolitan Area: Milwaukee, Racine

Agency Name	Belle Urban System-Racine		Kenosha Transit	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes	
Transit operators in the region that use the same electronic payment system	None listed		None listed	
Toll operators from whom you accept electronic payment of transit				
fare through the use of ETC media	None listed		None listed	
Receiving real-time information via electronic means from others				
Freeway Management agencies from which your agency receives				
freeway travel times, speeds, and conditions				
Receive Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Arterial Management agencies from which your agency receives				
arterial travel times, speeds, and conditions				
Receive Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Incident Management agencies from which your agency receives				
incident severity, location, and type				
Receive Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed

Transit Management Integration
Agencies for Metropolitan Area: Milwaukee, Racine

Agency Name	Milwaukee County Transit System		Waukesha County Transit System	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes	
Transit operators in the region that use the same electronic payment system	None listed		None listed	
Toll operators from whom you accept electronic payment of transit				
fare through the use of ETC media	None listed		None listed	
Receiving real-time information via electronic means from others				
Freeway Management agencies from which your agency receives				
freeway travel times, speeds, and conditions				
Receive Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Arterial Management agencies from which your agency receives				
arterial travel times, speeds, and conditions				
Receive Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Incident Management agencies from which your agency receives				
incident severity, location, and type				
Receive Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed

Transit Management Integration
Agencies for Metropolitan Area: Milwaukee, Racine

Agency Name	Waukesha Metro Transit	
	1999	**2005**
Agency Returned Survey?	Yes	
Transit operators in the region that use the same electronic payment system	Milwaukee County Transit System	
Toll operators from whom you accept electronic payment of transit		
fare through the use of ETC media	None listed	
Receiving real-time information via electronic means from others		
Freeway Management agencies from which your agency receives		
freeway travel times, speeds, and conditions		
Receive Information	Wisconsin Department of Transportation	Wisconsin Department of Transportation
Share Infrastructure	None listed	None listed
Arterial Management agencies from which your agency receives		
arterial travel times, speeds, and conditions		
Receive Information	None listed	None listed
Share Infrastructure	None listed	None listed
Incident Management agencies from which your agency receives		
incident severity, location, and type		
Receive Information	Wisconsin Department of Transportation	Wisconsin Department of Transportation
Share Infrastructure	None listed	None listed

Appendix K
Transit Management Information Collection and Dissemination

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Belle Urban System- Racine		Kenosha Transit	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes	
Methods used to disseminate transit information to the public				
Technologies your agency uses to disseminate:				
Transit routes, schedules and fares	NR	NR	NR	NR
Real-time transit schedule adherence or arrival and departure times	NR	NR	NR	NR
Technologies employed by other organization receiving your data				
Transit routes, schedules and fares	NR	NR	NR	NR
Real-time transit schedule adherence or arrival and departure times	NR	NR	NR	NR
Internet web site reporting transit routes, schedules and fare, etc.	NR		NR	
Telephone system for reporting transit information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	
Data collected, archived, and/or transferred to another agency				
Collected by your agency	Vehicle time and location, Passenger count, Passenger information (e.g., surveys, O/D), Incidents	NR	NR	Vehicle time and location

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Belle Urban System- Racine		Kenosha Transit	
	1999	**2005**	**1999**	**2005**
Archived by your agency	NR	NR	NR	Vehicle time and location
Transferred to another agency by your agency	Passenger count, Passenger information (e.g., surveys, O/D)	NR	NR	NR
Importance of making information available to the public				
Ranked High	Vehicle time and location		NR	
Ranked Medium	Passenger count		NR	
Ranked Low	Passenger information (e.g., surveys, O/D), Incidents		NR	
Groups that make requests for the data	Universities, State DOT personnel, Federal DOT personnel, MPOs		NR	
What is the data used for?	Planning, Dissemination to the public, Routine Reporting Requirements		NR	

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Milwaukee County Transit System		Waukesha County Transit System	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes	
Methods used to disseminate transit information to the public				
Technologies your agency uses to disseminate:				
Transit routes, schedules and fares	Telephone System, Internet Web Sites	Telephone System, Internet Web Sites, Kiosks, E-mail or other direct PC communication, Audible Enunciators	NR	NR
Real-time transit schedule adherence or arrival and departure times	NR	Internet Web Sites, Kiosks	NR	NR
Technologies employed by other organization receiving your data				
Transit routes, schedules and fares	NR	Internet Web Sites, Kiosks	NR	NR
Real-time transit schedule adherence or arrival and departure times	NR	Internet Web Sites, Kiosks	NR	NR
Internet web site reporting transit routes, schedules and fare, etc.	currently being developed		NR	
Telephone system for reporting transit information to the public	414.344.6711		NR	
Organizations your agency sends information for dissemination to the public	none		NR	
Data collected, archived, and/or transferred to another agency				
Collected by your agency	Vehicle time and location, Passenger count, Weather conditions, Incidents, Current roadway work zones for transit, Scheduled roadway work zones for transit	Vehicle time and location, Passenger count, Vehicle monitoring status, Transit vehicle signal priority, Weather conditions, Incidents, Current roadway work zones for transit, Scheduled roadway work zones for transit	NR	NR

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Milwaukee County Transit System		Waukesha County Transit System	
	1999	**2005**	**1999**	**2005**
Archived by your agency	Vehicle time and location, Passenger count, Weather conditions, Incidents, Current roadway work zones for transit, Scheduled roadway work zones for transit	Vehicle time and location, Passenger count, Vehicle monitoring status, Transit vehicle signal priority, Weather conditions, Incidents, Current roadway work zones for transit, Scheduled roadway work zones for transit	NR	NR
Transferred to another agency by your agency	NR	Vehicle time and location	NR	NR
Importance of making information available to the public				
Ranked High	NR		NR	
Ranked Medium	Vehicle time and location		NR	
Ranked Low	NR		NR	
Groups that make requests for the data	State DOT personnel, Media (i.e., TV stations, radio stations)		NR	
What is the data used for?	Traffic analysis, Construction impact determination, Planning, Incident detection algorithm development		NR	

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Waukesha Metro Transit	
	1999	**2005**
Agency Returned Survey?	Yes	
Methods used to disseminate transit information to the public		
Technologies your agency uses to disseminate:		
Transit routes, schedules and fares	Telephone System, Internet Web Sites	Telephone System, Internet Web Sites, Kiosks, Monitors/VMS (not in vehicle)
Real-time transit schedule adherence or arrival and departure times	NR	Telephone System, Internet Web Sites, Kiosks, Monitors/VMS (not in vehicle)
Technologies employed by other organization receiving your data		
Transit routes, schedules and fares	NR	Telephone System, Internet Web Sites
Real-time transit schedule adherence or arrival and departure times	NR	Telephone System, Internet Web Sites
Internet web site reporting transit routes, schedules and fare, etc.	www.ci.waukesha.wi.us/dept/transit	
Telephone system for reporting transit information to the public	262-524-3636	
Organizations your agency sends information for dissemination to the public	Over 100 public and private organizations receive our	
Data collected, archived, and/or transferred to another agency		
Collected by your agency	Passenger information (e.g., surveys, O/D), Transit operations coordination information, Scheduled roadway work zones for transit, Current roadway work zones for transit	Passenger information (e.g., surveys, O/D), Trip itinerary planning records, Vehicle time and location, Transit operations coordination information, Scheduled roadway work zones for transit, Current roadway work zones for transit, Route designations (snow emergency, etc), Vehicle monitoring status

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Milwaukee, Racine

	Waukesha Metro Transit	
	1999	**2005**
Archived by your agency	Passenger information (e.g., surveys, O/D)	Passenger information (e.g., surveys, O/D), Trip itinerary planning records, Vehicle time and location, Vehicle monitoring status
Transferred to another agency by your agency	NR	NR
Importance of making information available to the public		
Ranked High	Passenger information (e.g., surveys, O/D), Vehicle time and location, Transit operations coordination information, Incidents, Weather conditions, Road conditions, Vehicle monitoring status	
Ranked Medium	Scheduled roadway work zones for transit, Current roadway work zones for transit, Route designations (snow emergency, etc), Transit vehicle signal priority	
Ranked Low	Trip itinerary planning records, Passenger count, Highway operations coordination information, Intermodal (air, rail, water) conditions, Emergency vehicle signal preemption	
Groups that make requests for the data	State DOT personnel, MPOs	
What is the data used for?	Planning, Dissemination to the public	

Appendix L
Emergency Management

	Total Vehicles		Navigation Capabilities		AVL		CAD		Equipped with Mobile Data Terminal		Traffic Signal Sys. Comm.		Participate in Formal Incident Mgt Program	Send Incident Info to other agencies	List of agencies receiving data
AgencyName	1999	2005	1999	2005	1999	2005	1999	2005	1999	2005	1999	2005			
Wisconsin State Patrol	75	NR	0	NR	0	NR	75	NR	73	NR	0	NR	Yes	Yes	None listed
West Allis City Fire & EMS Department	12	12	0	0	0	0	12	12	0	0	0	0	Yes	Yes	Wisconsin State Department of Commerce-Fire/Loss S
West Allis City Police Department	50	50	0	0	0	0	50	50	27	27	0	0	Yes	Yes	Wisconsin Department of Justice, Wisconsin Department of Transportation
Waukesha Police Department	46	50	0	0	0	0	46	50	17	20	0	20	No	No	None listed
Washington County Sheriff	36	40	0	0	0	0	36	40	20	30	0	0	No	No	None listed
Kenosha County Sheriff	75	80	0	0	0	0	75	80	39	45	0	0	Yes	No	None listed
Racine City Fire & EMS Department	11	12	0	8	0	8	11	12	0	8	0	0	Yes	No	None listed
West Allis City Fire Department (Emergency Medical)	5	6	0	0	0	0	5	6	0	0	0	0	Yes	No	None listed
Kenosha City Police Department	43	50	0	0	0	0	43	50	43	50	0	0	Yes	No	None listed
Racine City Police Department	56	58	0	40	0	40	56	58	30	40	0	0	Yes	No	None listed
Ozaukee County Sheriff Department	19	22	0	19	0	19	19	22	13	19	0	0	Yes	No	None listed
Waukesha Fire Department (Emergency Medical)	3	4	0	0	0	0	3	4	0	0	0	4	Yes	Yes	Waukesha Police Department
Waukesha Fire & EMS Department	7	7	0	0	0	0	7	7	0	0	0	7	Yes	Yes	Waukesha Police Department
Racine County Sheriff Department	40	46	0	NR	0	NR	40	46	20	40	0	0	Yes	Yes	Wisconsin State Patrol, Wisconsin Department of Transportation, Milwaukee County Sheriff, Kenosha County Sheriff
Kenosha City Fire & EMS Department	21	22	0	0	0	0	21	22	0	0	0	0	Yes	No	None listed
Milwaukee County Sheriff	50	50	0	0	0	50	0	50	40	50	50	50	No	Yes	Wisconsin Department of Transportation
Milwaukee City Fire & EMS Department	140	NR	0	NR	0	NR	140	NR	0	NR	107	NR	Yes	No	None listed
Racine City Fire Department (Emergency Medical)	6	7	0	6	0	0	6	7	0	6	0	0	Yes	No	None listed