

Tracking the Deployment of the Integrated Metropolitan ITS Infrastructure in Miami, Fort Lauderdale

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**

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Part 1 - Background and Purpose

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

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

-- Secretary Peña, 1996

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

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

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

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

the methodology are explained elsewhere.³

During the summer and fall of 1999, the U.S. DOT undertook a new data collection effort for the purpose of examining ITS deployment progress in the nation's largest metropolitan areas. The Miami, Fort Lauderdale 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 Miami, Fort Lauderdale region was 97% in 1997 and 72% in 1999.

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

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

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

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

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

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

Part 2 - Summary 1999 Survey Results

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

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

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

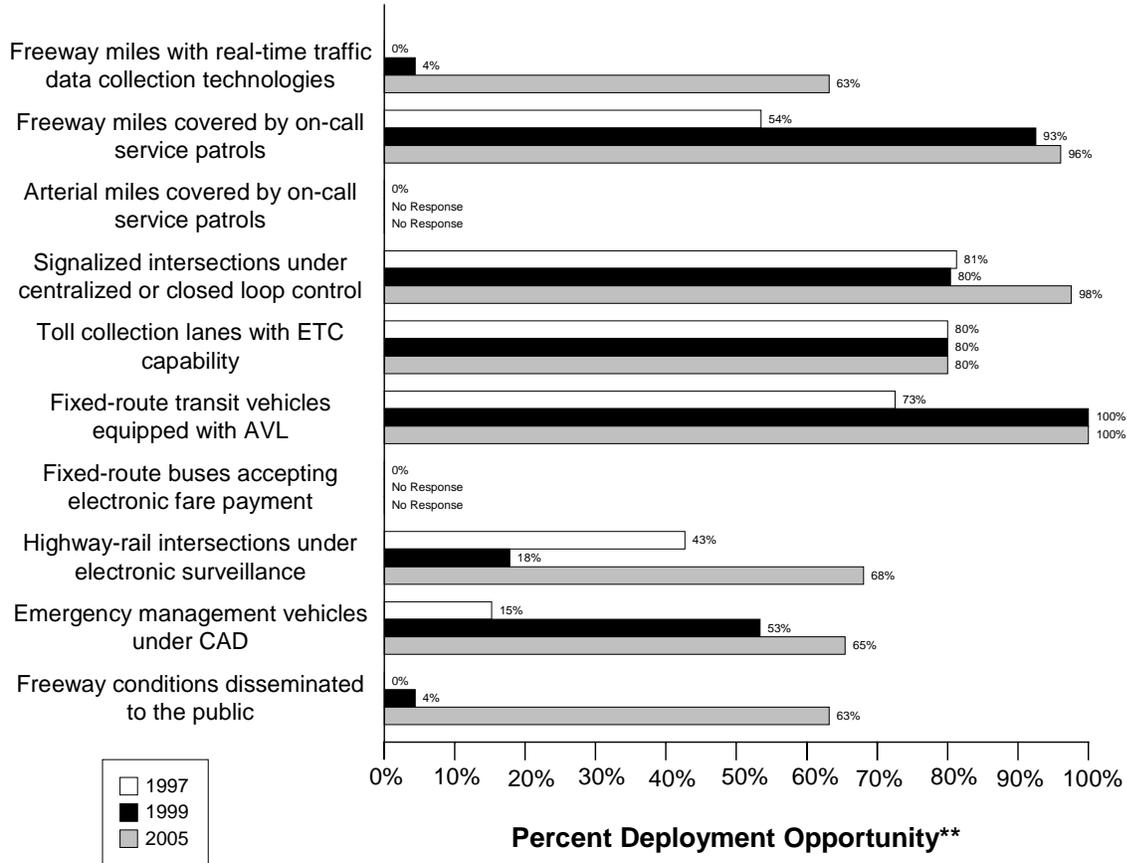
A critical aspect of ITS that provides much of its capability is the integration of individual components to form a unified regional traffic control system. Individual ITS components routinely collect information that is used for purposes internal to that component. For example, the Arterial Management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

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

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

Data as of 5/1/00

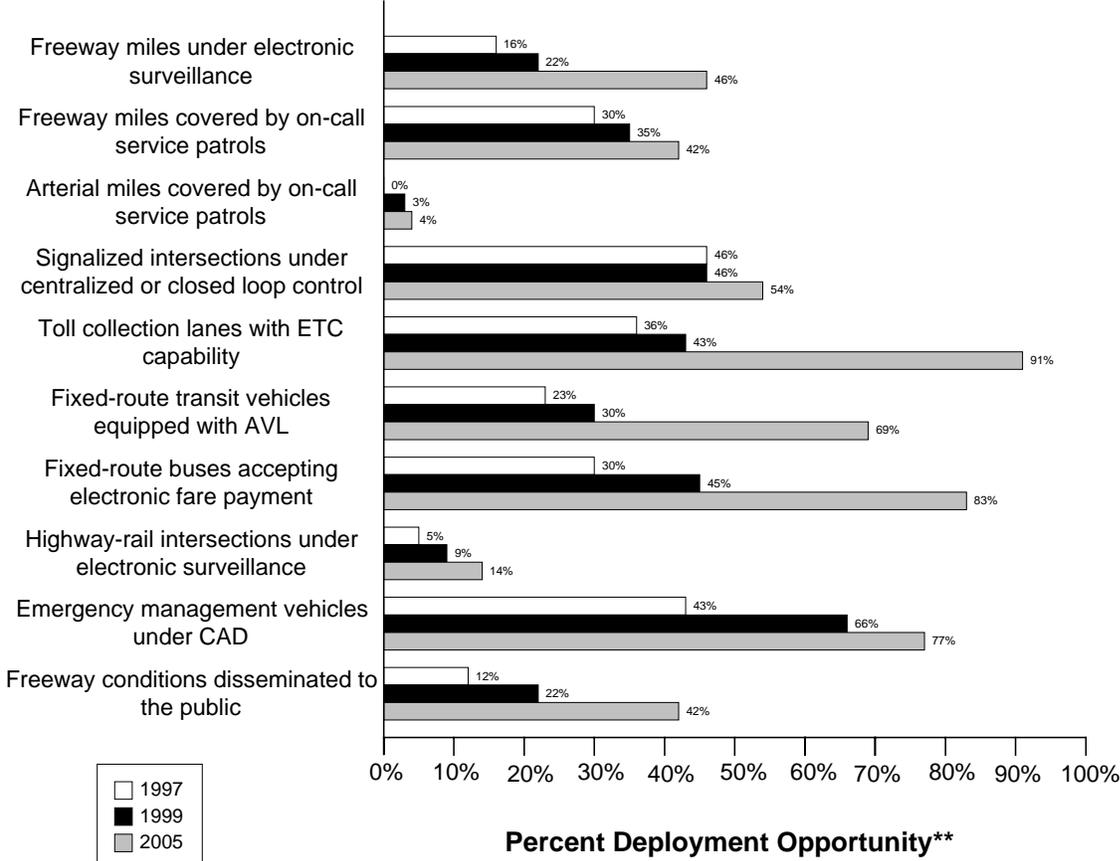
Miami, Fort Lauderdale Summary Indicators*



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

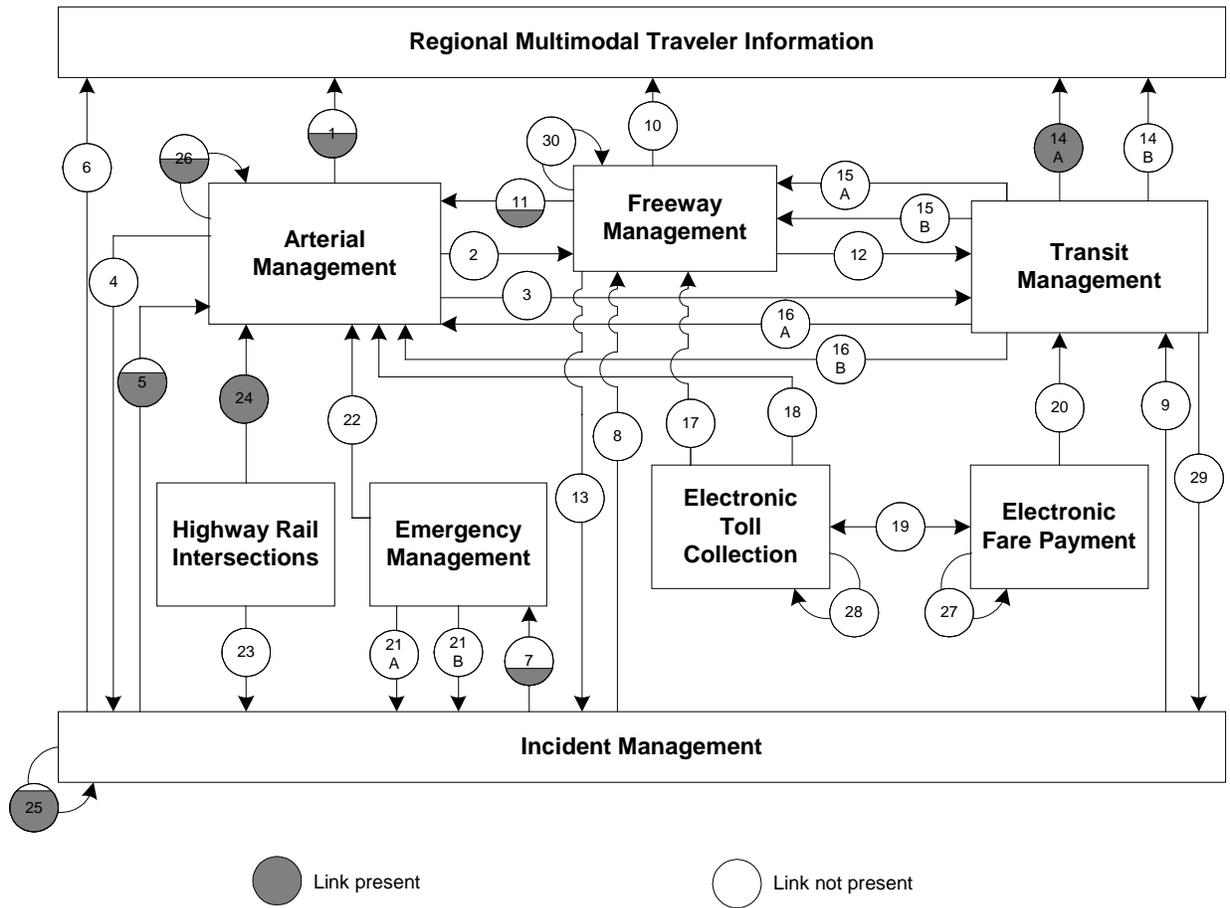
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

National Summary Indicators*



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

Miami, Fort Lauderdale Integration Links



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

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

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

Part 3 - Detailed 1999 Survey Results

The following figures and tables summarize the complete set of component and integration indicators developed for the Miami, Fort Lauderdale 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).

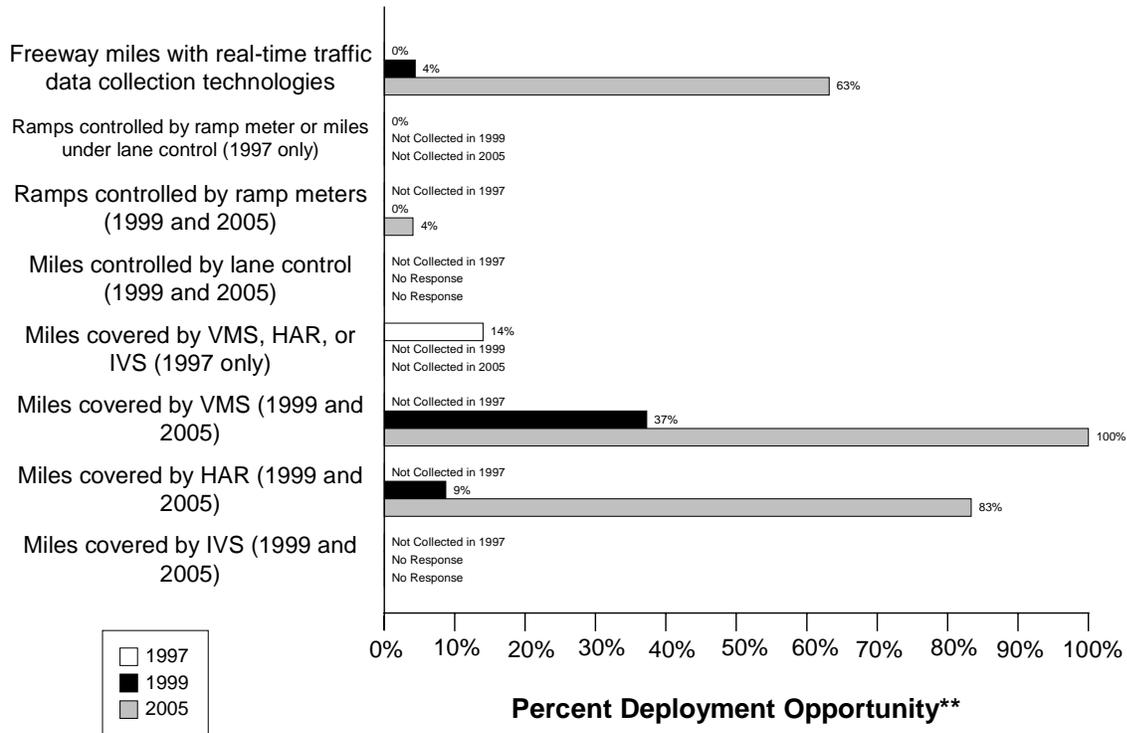
Example: Calculating Integration between Arterial Management and Regional Multimodal Traveler Information

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

Miami, Fort Lauderdale Freeway Management*



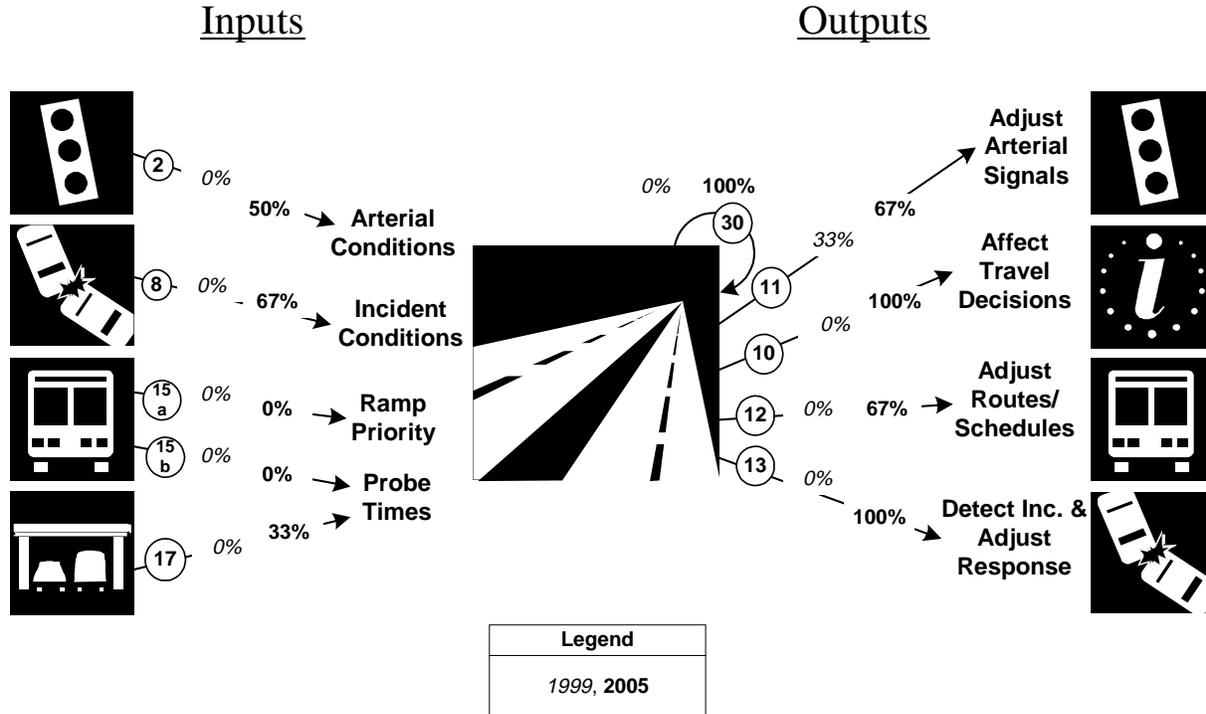
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Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway centerline miles are under electronic surveillance for monitoring traffic flow	0	228	0%	10	228	4%	144	228	63%
Freeway entrance ramps are controlled by ramp meters or miles under lane control	0	228	0%						
Freeway entrance ramps are controlled by ramp meters				0	560	0%	23	560	4%

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway centerline miles will be controlled by lane control					228			228	
Freeway miles are covered by VMS, HAR, or IVS	32	228	14%						
Freeway miles are covered by VMS				85	228	37%	228	228	100%
Freeway miles are covered by HAR				20	228	9%	190	228	83%
Freeway miles are covered by IVS					228			228	

Freeway Management Integration Indicators

Miami, Fort Lauderdale Freeway Management Integration*



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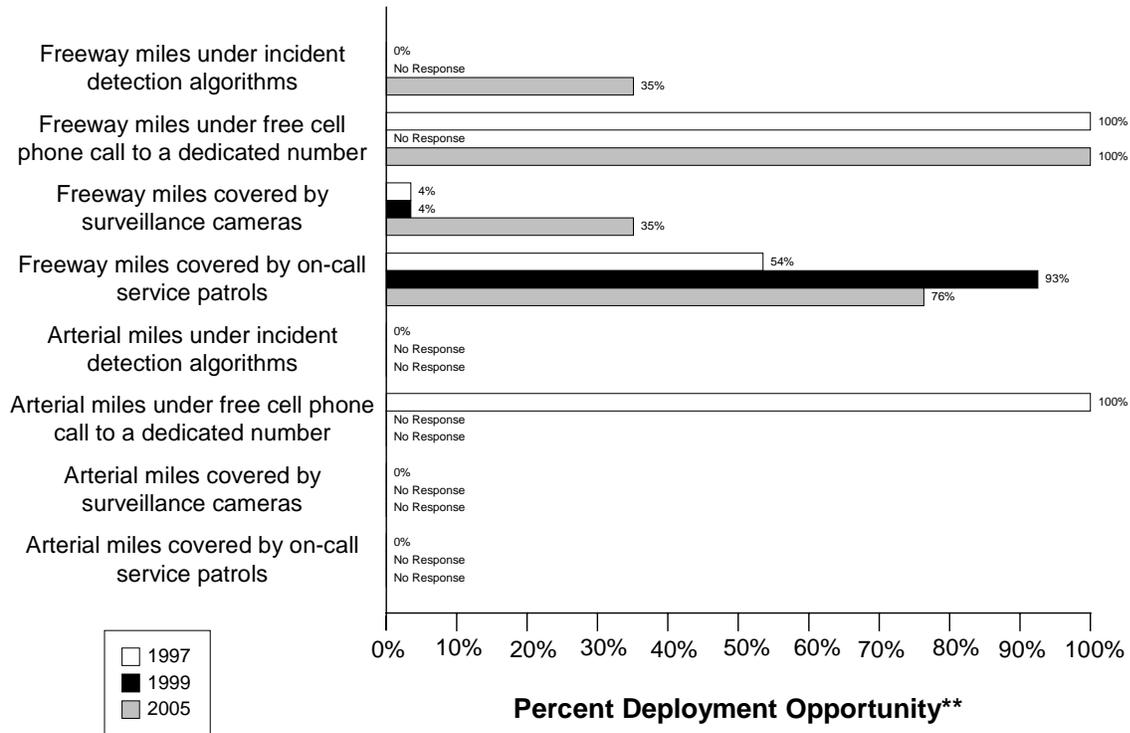
Link Description	1999	2005
2. Arterial Management agencies sending information to Freeway Management	(0 / 2) 0%	(1 / 2) 50%
8. Incident Management agencies sending information to Freeway Management	(0 / 3) 0%	(2 / 3) 67%
15a. Transit management agencies with vehicles equipped with ramp meter priority	(0 / 1) 0%	(0 / 1) 0%
15b. Transit Management agencies with vehicles equipped as probes	(0 / 1) 0%	(0 / 1) 0%
17. Freeway Management agencies receiving freeway conditions from vehicle probes	(0 / 3) 0%	(1 / 3) 33%
30. Freeway Management agencies sending information to another Freeway Management agency	(0 / 3) 0%	(3 / 3) 100%
11. Freeway Management agencies sending information to Arterial Management	(1 / 3) 33%	(2 / 3) 67%

Link Description	1999	2005
10. Freeway Management agencies disseminating freeway conditions to the public	(0/ 3) 0%	(3/ 3) 100%
12. Freeway Management agencies sending freeway conditions to Transit Management	(0/ 3) 0%	(2/ 3) 67%
13. Freeway Management agencies sending freeway conditions to Incident Management	(0/ 3) 0%	(3/ 3) 100%

Incident Management Component Indicators

Data as of 5/1/00

Miami, Fort Lauderdale Freeway and Arterial Incident Management*



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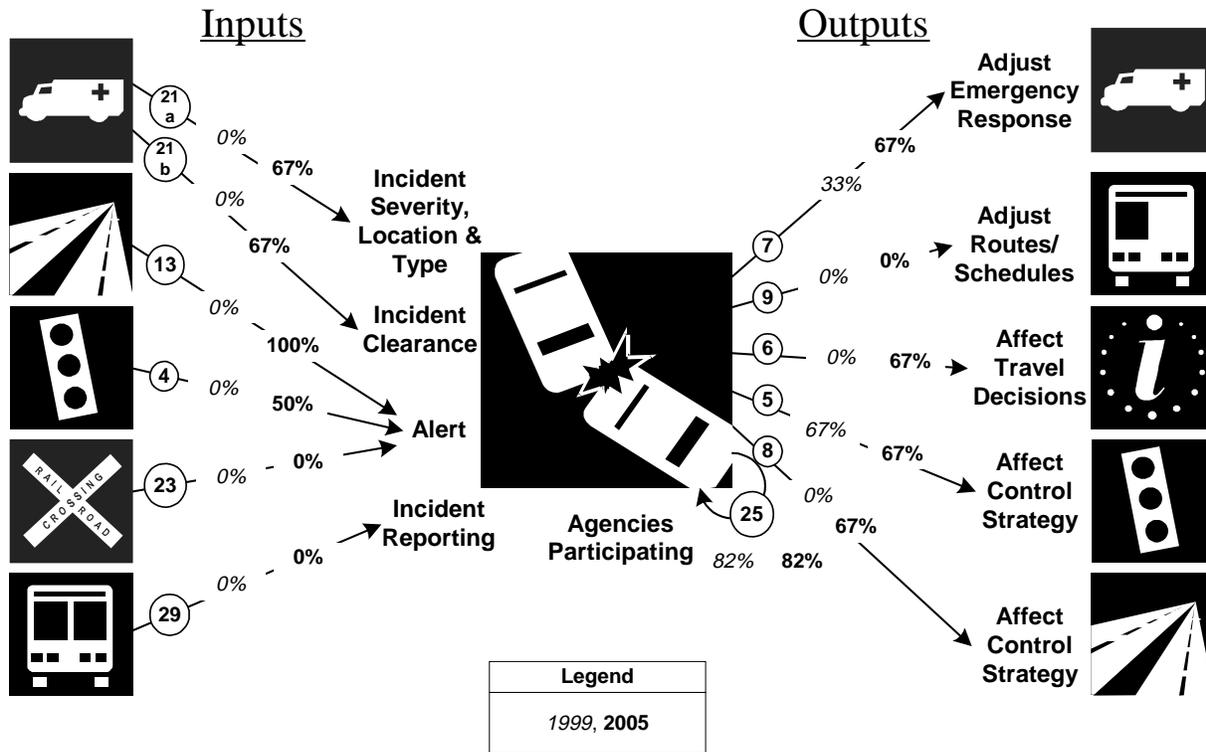
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by incident detection algorithms	0	228	0%		228		80	228	35%
Freeway miles are covered by free cellular phone calls to a dedicated number	228	228	100%		228		228	228	100%
Freeway miles are covered by surveillance cameras.	8	228	4%	8	228	4%	80	228	35%

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by on-call publicly-sponsored service patrol or towing services.	122	228	54%	211	228	93%	174	228	76%
Arterial miles are covered by incident detection algorithms	0	1071	0%		1071			1071	
Arterial miles are covered by free cellular phone calls to a dedicated number	1071	1071	100%		1071			1071	
Arterial miles are covered by surveillance cameras	0	1071	0%		1071			1071	
Arterial miles are covered by on-call publicly-sponsored service patrol or towing services	0	1071	0%		1071			1071	

Incident Management Integration Indicators

Miami, Fort Lauderdale

Incident Management Integration*



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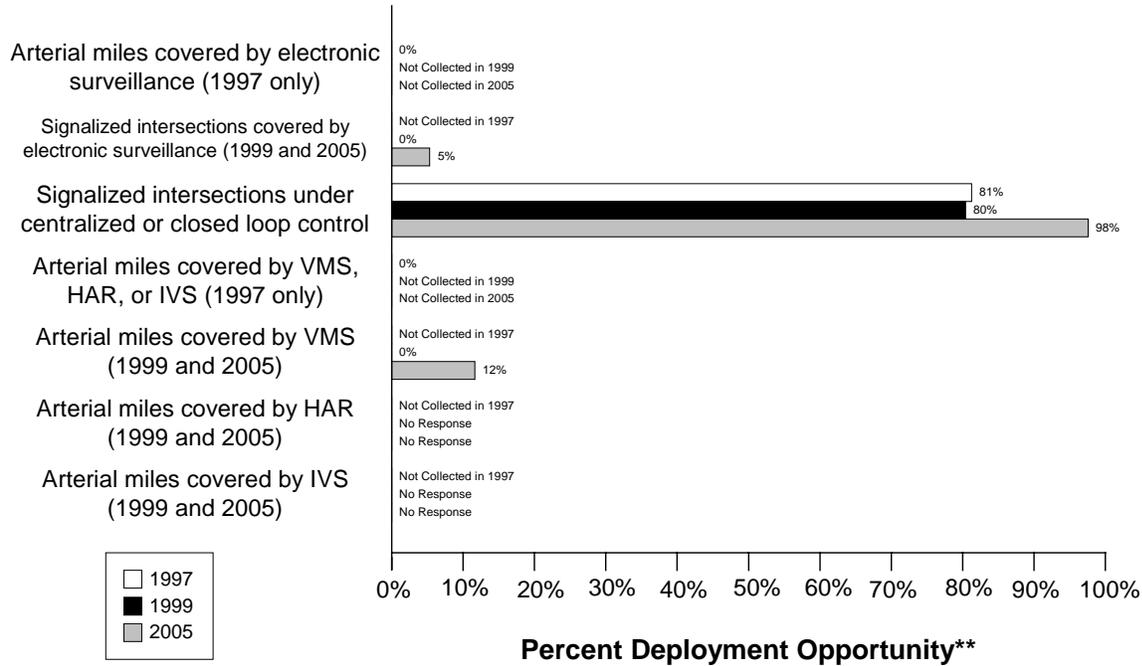
Link Description	1999	2005
21a. Incident management agencies receiving incident severity from Emergency Management	(0 / 3) 0%	(2 / 3) 67%
21b. Incident management agencies receiving incident clearance activities from Emergency Management	(0 / 3) 0%	(2 / 3) 67%
13. Freeway Management agencies sending freeway conditions to Incident Management	(0 / 3) 0%	(3 / 3) 100%
4. Arterial Management agencies sending arterial conditions to Incident Management	(0 / 2) 0%	(1 / 2) 50%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	(0 / 2) 0%	(0 / 2) 0%
29. Transit Management agencies report traffic incidents as part of an organized regional incident management program	(0 / 1) 0%	(0 / 1) 0%

Link Description	1999	2005
7. Incident management agencies transfer information describing incident severity, location, and type to Emergency Management agencies	(1/ 3) 33%	(2/ 3) 67%
9. Incident Management agencies transfer information describing incident severity, location, and type to Transit Management agencies	(0/ 3) 0%	(0/ 3) 0%
6. Incident Management agencies disseminate information describing incident severity, location, and type to the public	(0/ 3) 0%	(2/ 3) 67%
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management agencies	(2/ 3) 67%	(2/ 3) 67%
8. Incident Management agencies transfer information describing incident severity, location, and type to Freeway Management agencies	(0/ 3) 0%	(2/ 3) 67%
25. Police, fire, and EMS agencies participating in a formal incident management plan/team	(18/ 22) 82%	(18/ 22) 82%

Arterial Management Component Indicators

Data as of 5/1/00

Miami, Fort Lauderdale Arterial Management*



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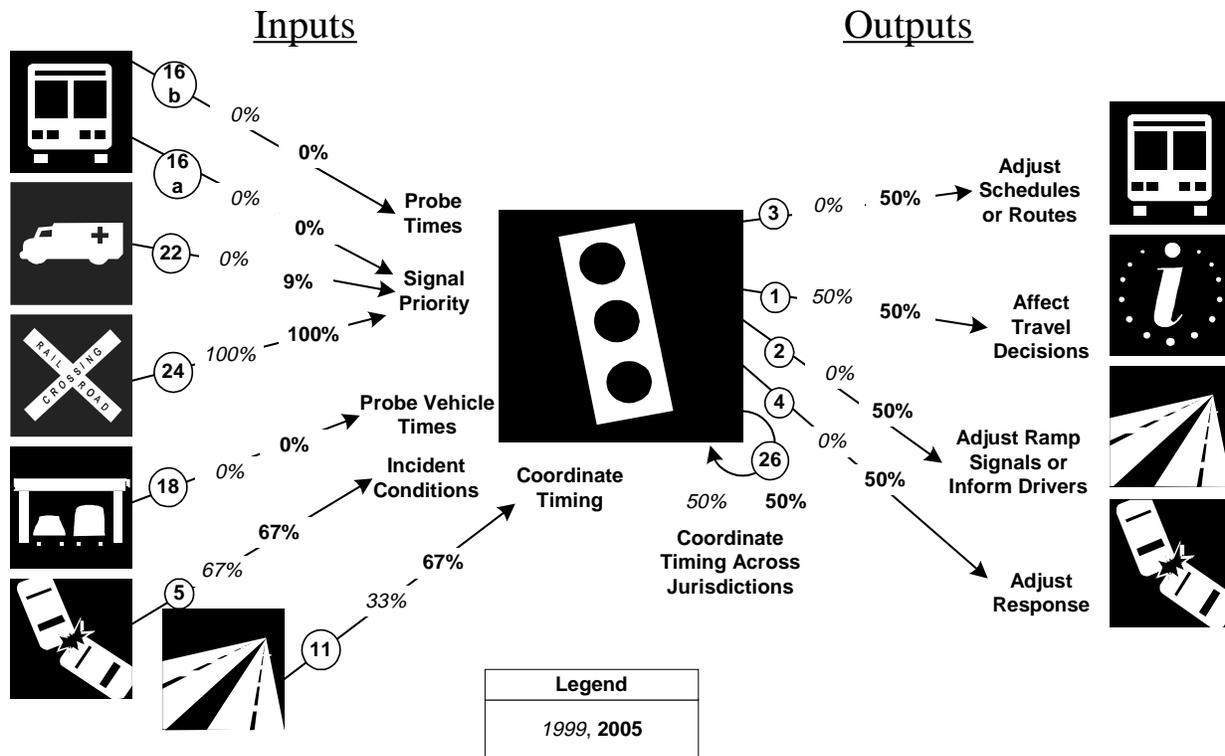
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles covered by electronic surveillance	0	1071	0%						
Signalized intersections are covered by electronic surveillance for monitoring traffic flow				1	3700	0%	220	4100	5%
Signalized intersections are under centralized or closed loop control	2975	3661	81%	2975	3700	80%	4000	4100	98%
Arterial miles are covered by VMS, HAR, or IVS	0	1071	0%						

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles are covered by VMS				0	1071	0%	125	1071	12%
Arterial miles are covered by HAR					1071			1071	
Arterial miles are covered by IVS					1071			1071	

Arterial Management Integration Indicators

Miami, Fort Lauderdale

Arterial Management Integration*



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

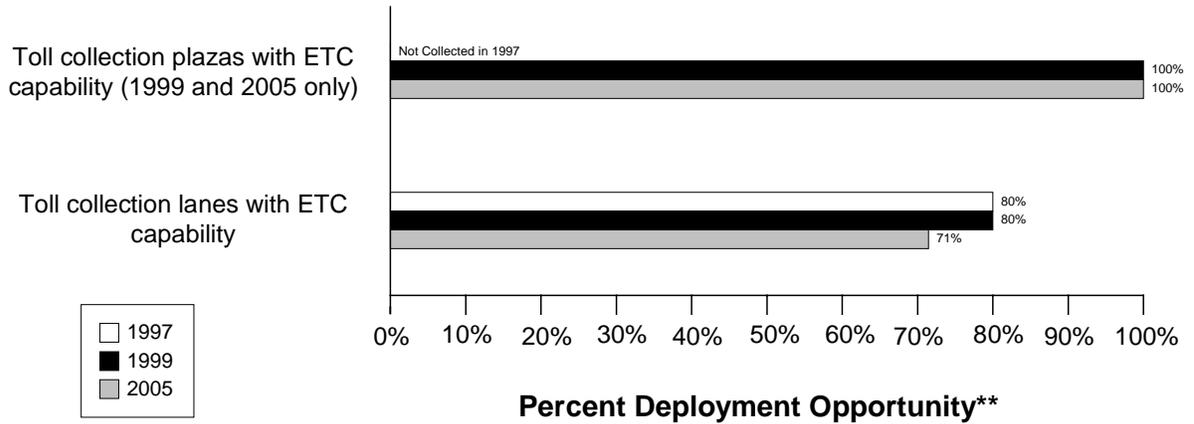
Link Description	1999	2005
16a. Transit management agencies with vehicles equipped with traffic signal priority	(0 / 1) 0%	(0 / 1) 0%
16b. Transit Management agencies have vehicles equipped as probes on arterials	(0 / 1) 0%	(0 / 1) 0%
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	(0 / 22) 0%	(2 / 22) 9%
24. Arterial Management agencies have traffic signals within 200 feet of a highway rail intersection with the capability of having their signal timing adjusted in response to a train crossing	(2 / 2) 100%	(2 / 2) 100%
18. Number of Arterial Management agencies receiving information from vehicle probes	(0 / 2) 0%	(0 / 2) 0%
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management	(2 / 3) 67%	(2 / 3) 67%
11. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Arterial Management agencies	(1 / 3) 33%	(2 / 3) 67%

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

Electronic Toll Collection Component Indicators

Data as of 5/1/00

Miami, Fort Lauderdale Electronic Toll Collection*



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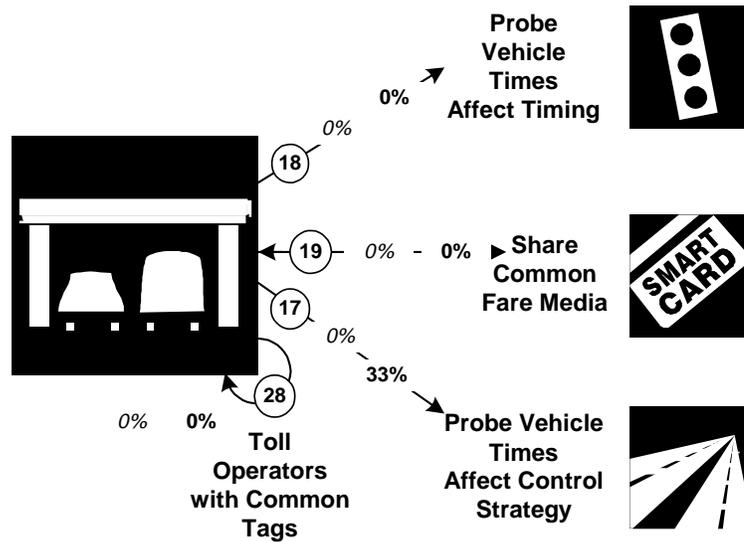
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Toll collection plazas with ETC capability				2	2	100%	2	2	100%
Toll collection lanes with ETC capability	16	20	80%	16	20	80%	10	14	71%

Electronic Toll Collection Integration Indicators

**Miami, Fort Lauderdale
Electronic Toll Collection Integration***

Inputs

Outputs



Legend
1999, 2005

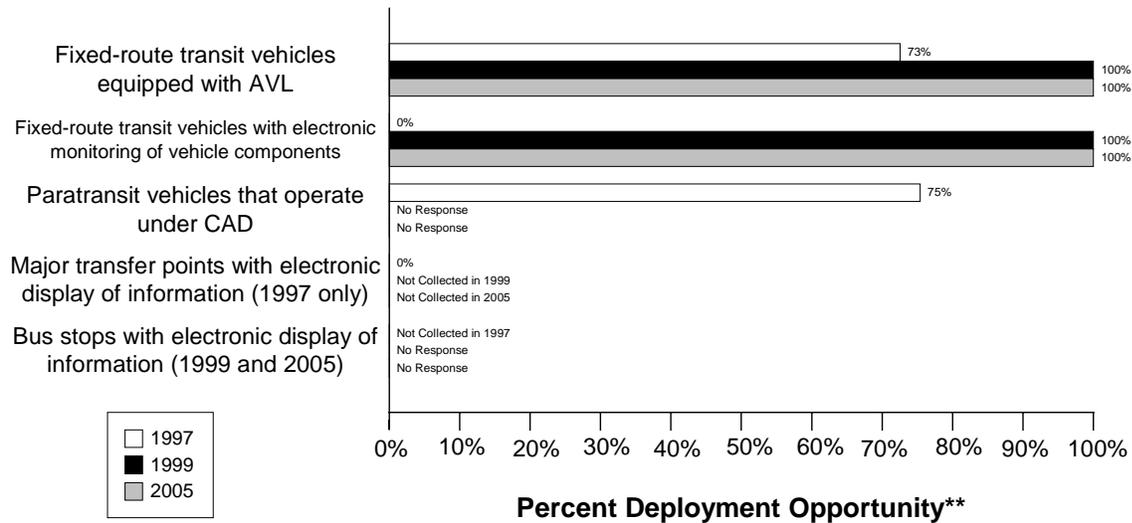
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Link Description	1999	2005
18. Number of Arterial Management agencies receiving information from vehicle probes	(0/ 2) 0%	(0/ 2) 0%
19. Transit agencies that accept electronic payment through the use of electronic toll collection media	(0/ 1) 0%	(0/ 1) 0%
17. Freeway Management agencies receiving information from vehicle probes	(0/ 3) 0%	(1/ 3) 33%
28. Toll operators using common toll tag technology	(0/ 3) 0%	(0/ 3) 0%

Transit Management Component Indicators

Data as of 5/1/00

Miami, Fort Lauderdale Transit Management*

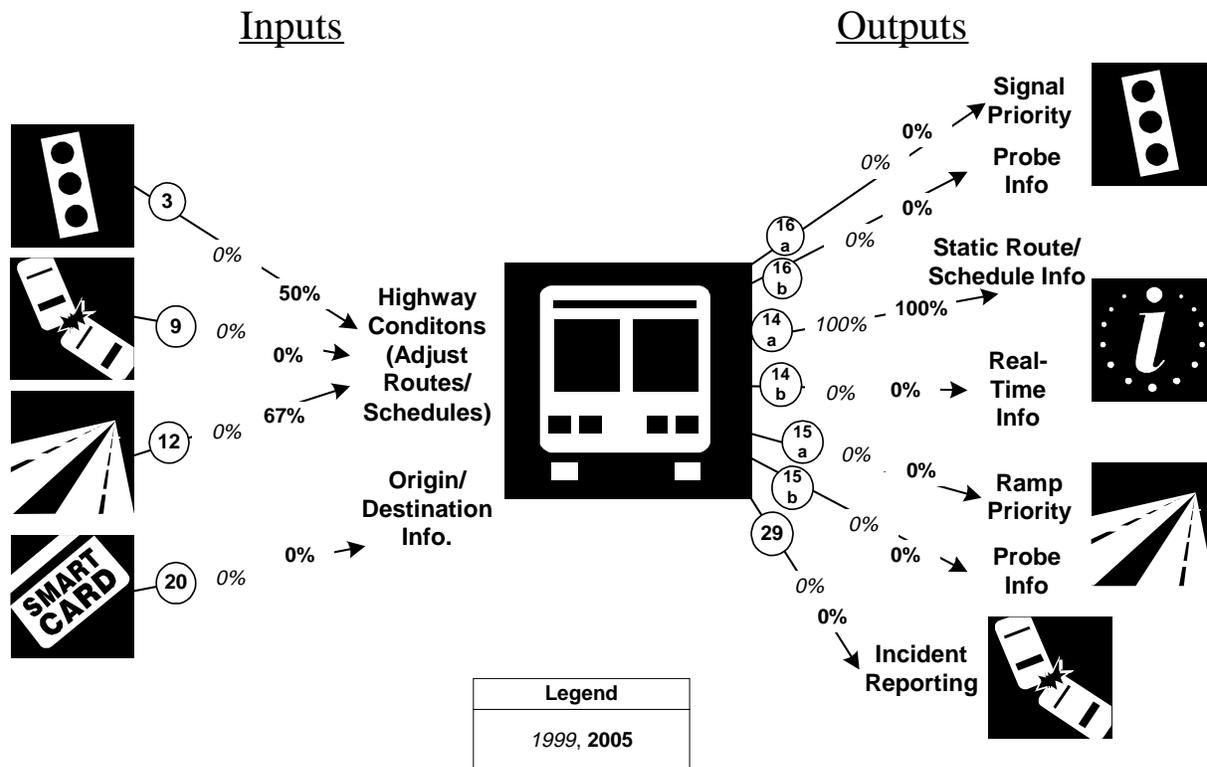


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Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Fixed-route transit vehicles are equipped with AVL	634	874	73%	202	202	100%	244	244	100%
Fixed-route transit vehicles are equipped with electronic monitoring of vehicle component	0	874	0%	202	202	100%	244	244	100%
Paratransit vehicles operate under computer-aided dispatch	800	1061	75%		480			525	
Percent fixed-route transfer locations with electronic display of information	0	21	0%						
Bus stops display information to the public									

Transit Management Integration Indicators

Miami, Fort Lauderdale Transit Management Integration*



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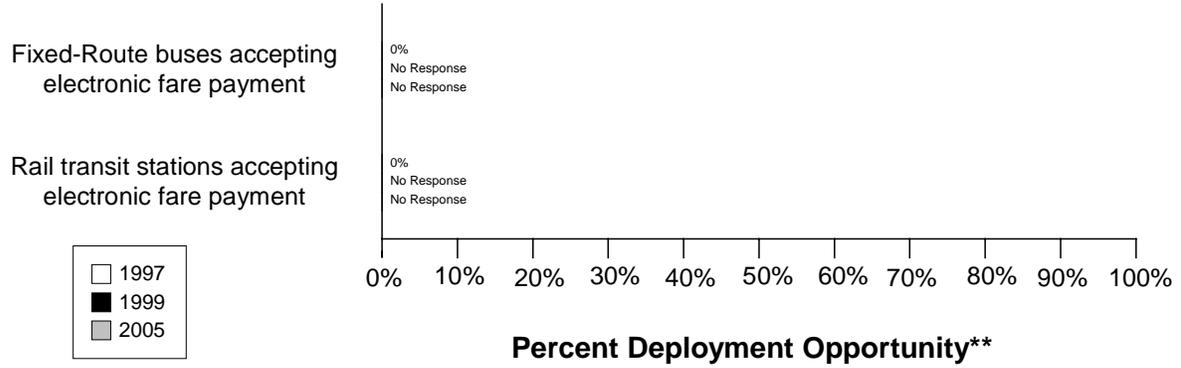
Link Description	1999	2005
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	(0 / 2) 0%	(1 / 2) 50%
9. Incident management agencies transfer information describing incident severity, location, and type to Transit Management	(0 / 3) 0%	(0 / 3) 0%
12. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Transit Management	(0 / 3) 0%	(2 / 3) 67%
20. Transit Management agencies using Electronic Fare Payment data in transit service planning	(0 / 1) 0%	(0 / 1) 0%
16a. Transit Management agencies have vehicles equipped with traffic signal priority capability	(0 / 1) 0%	(0 / 1) 0%
16b. Transit Management agencies have vehicles equipped as probes on arterials	(0 / 1) 0%	(0 / 1) 0%
14a. Transit Management agencies disseminate information describing transit routes, schedules, and fares to travelers	(1 / 1) 100%	(1 / 1) 100%

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

Electronic Fare Payment Component Indicators

Data as of 5/1/00

**Miami, Fort Lauderdale
Electronic Fare Payment***



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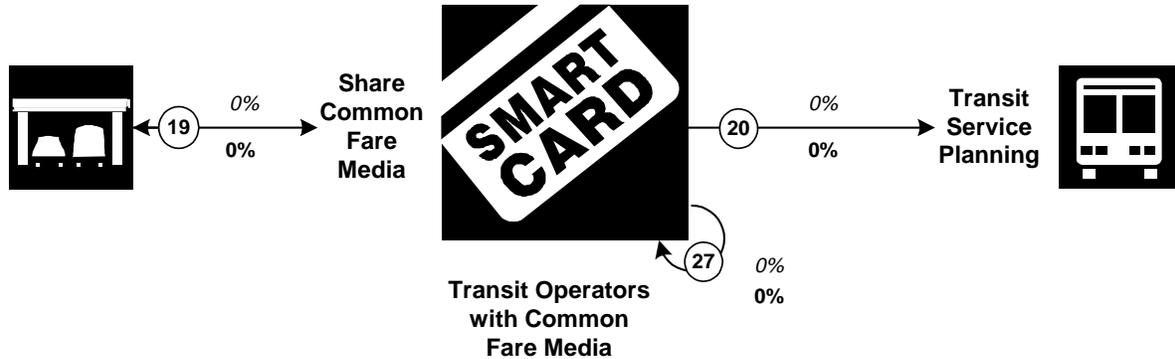
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Fixed-route transit vehicles that accept electronic payment	0	874	0%		202			244	
Rail transit stations that accept electronic payment	0	40	0%						

Electronic Fare Payment Integration Indicators

**Miami, Fort Lauderdale
Electronic Fare Payment Integration***

Inputs

Outputs



Legend
1999
2005

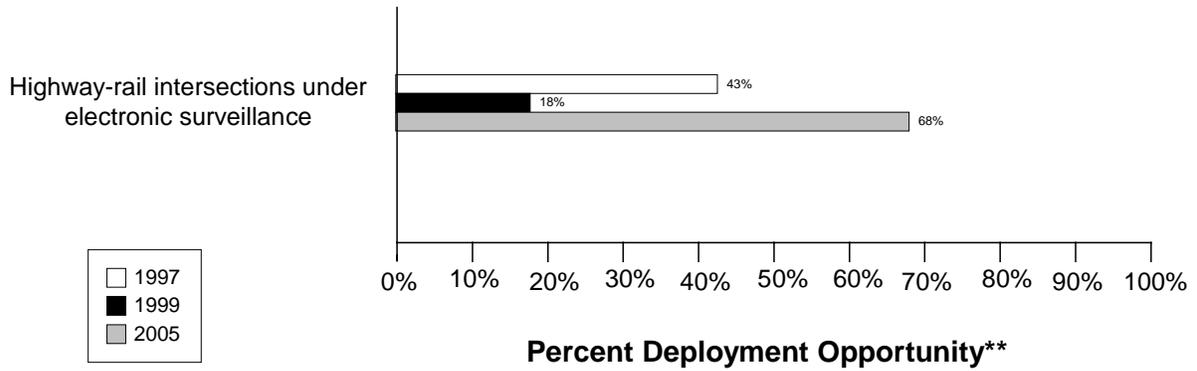
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
19. Transit agencies that accept electronic payment through the use of electronic toll collection media	(0/ 1) 0%	(0/ 1) 0%
20. Transit Management agencies use Electronic Fare Payment data in transit service planning	(0/ 1) 0%	(0/ 1) 0%
27. Transit Management agencies that use the same electronic payment system	(0/ 1) 0%	(0/ 1) 0%

Highway Rail Intersection Component Indicators

Data as of 5/1/00

Miami, Fort Lauderdale Highway-Rail Intersections*



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

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

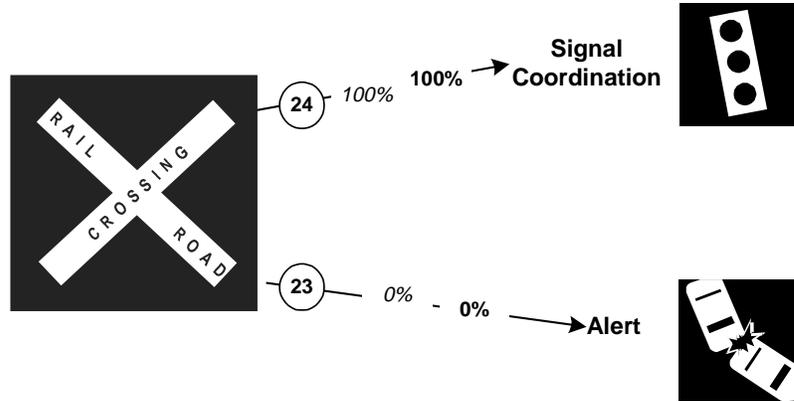
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Highway-rail intersections are under electronic surveillance	35	82	43%	38	213	18%	145	213	68%

Highway Rail Intersection Integration Indicators

**Miami, Fort Lauderdale
Highway Rail Intersections Integration***

Inputs

Outputs



Legend
1999, 2005

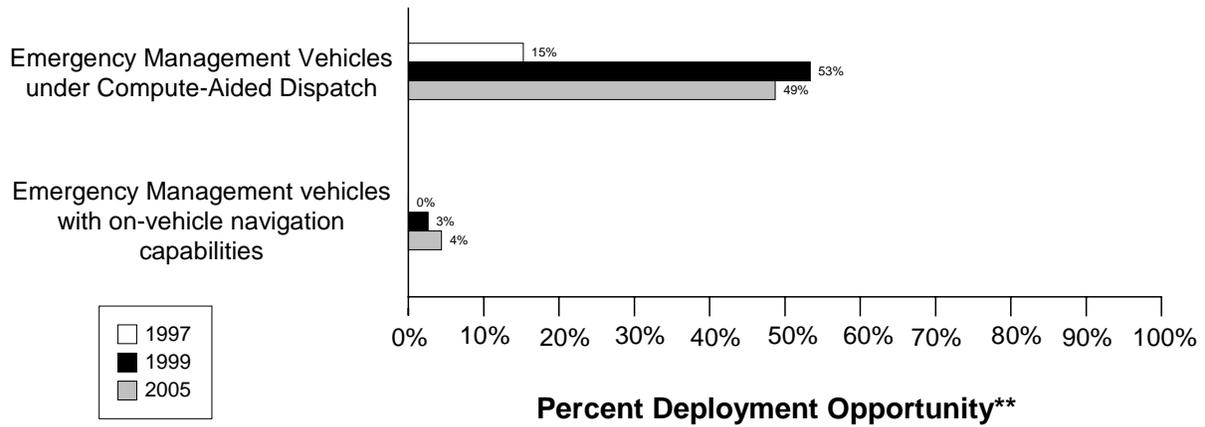
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

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

Emergency Management Component Indicators

Data as of 5/1/00

Miami, Fort Lauderdale Emergency Management*



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

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

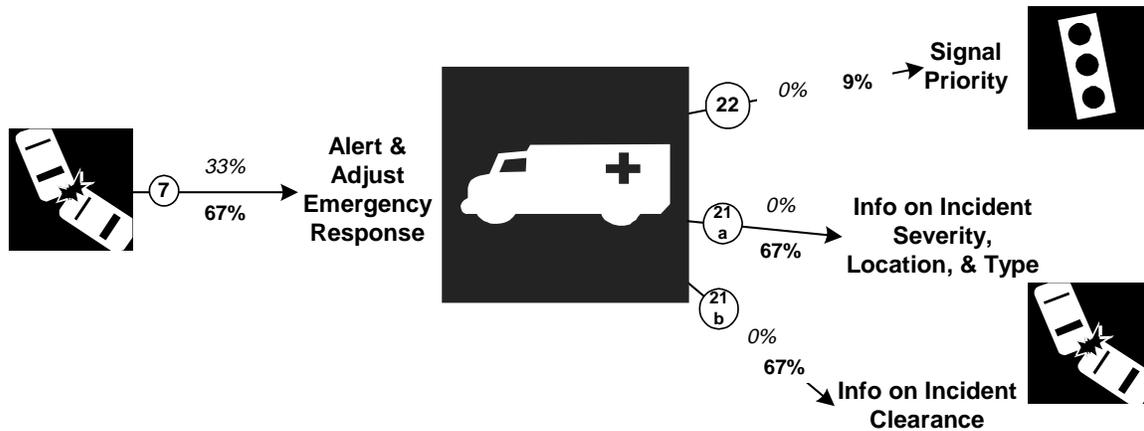
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Public sector emergency vehicles that operate under computer-aided dispatch	1063	6966	15%	2628	4925	53%	2843	5836	49%
Public sector emergency vehicles that have in-vehicle route guidance capability	0	6966	0%	128	4925	3%	255	5836	4%

Emergency Management Integration Indicators

Miami, Fort Lauderdale Emergency Management Integration*

Inputs

Outputs



Legend
1999, 2005

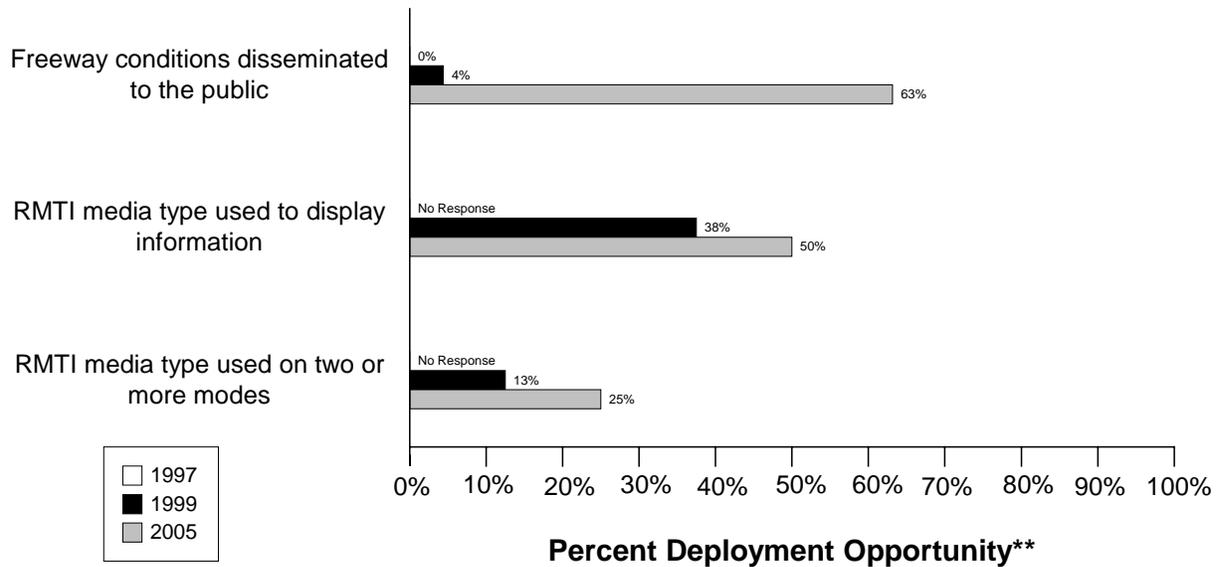
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
7. Freeway Management agencies transfer information describing incident severity, location, and type to Emergency Management agencies	(1/ 3) 33%	(2/ 3) 67%
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	(0/ 22) 0%	(2/ 22) 9%
21a. Freeway Management agencies receive incident severity, location, and type data from Emergency Management agencies	(0/ 3) 0%	(2/ 3) 67%
21b. Freeway Management agencies receive incident clearance activities information from Emergency Management agencies	(0/ 3) 0%	(2/ 3) 67%

Regional Multimodal Traveler Information Component Indicators

Data as of 5/1/00

Miami, Fort Lauderdale Regional Multimodal Traveler Information*



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

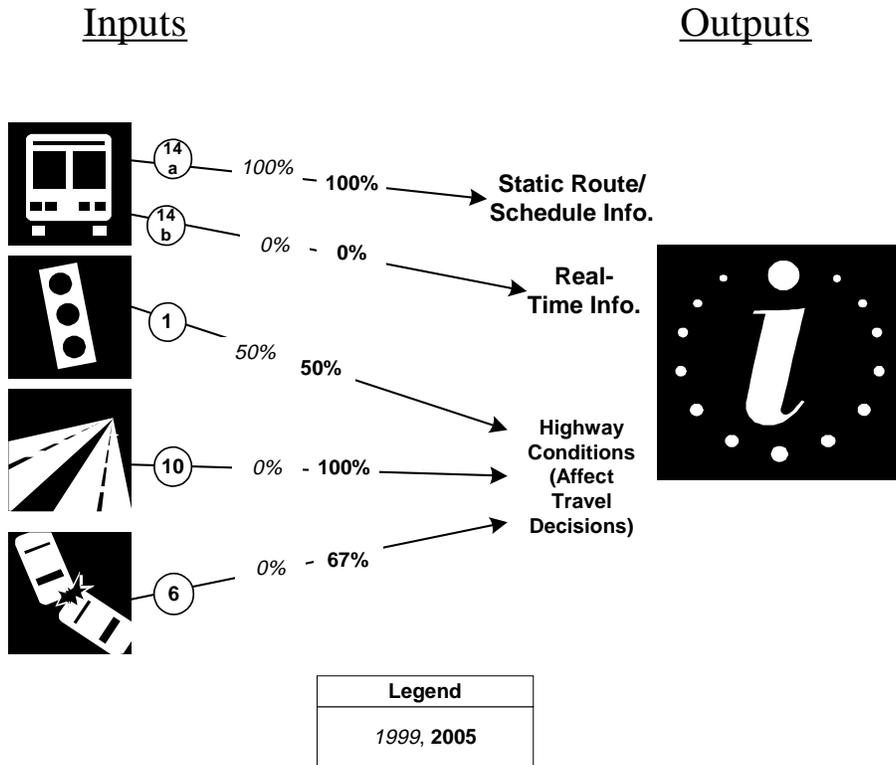
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway conditions disseminated to travelers	0	228	0%	10	228	4%	144	228	63%
Possible RMTI media types are used to display information to travelers				3	8	38%	4	8	50%
Possible RMTI media are used to display information on <i>two or more modes</i> to travelers				1	8	13%	2	8	25%

Regional Multimodal Traveler Information Integration Indicators

Miami, Fort Lauderdale

Regional Multimodal Traveler Information Integration*

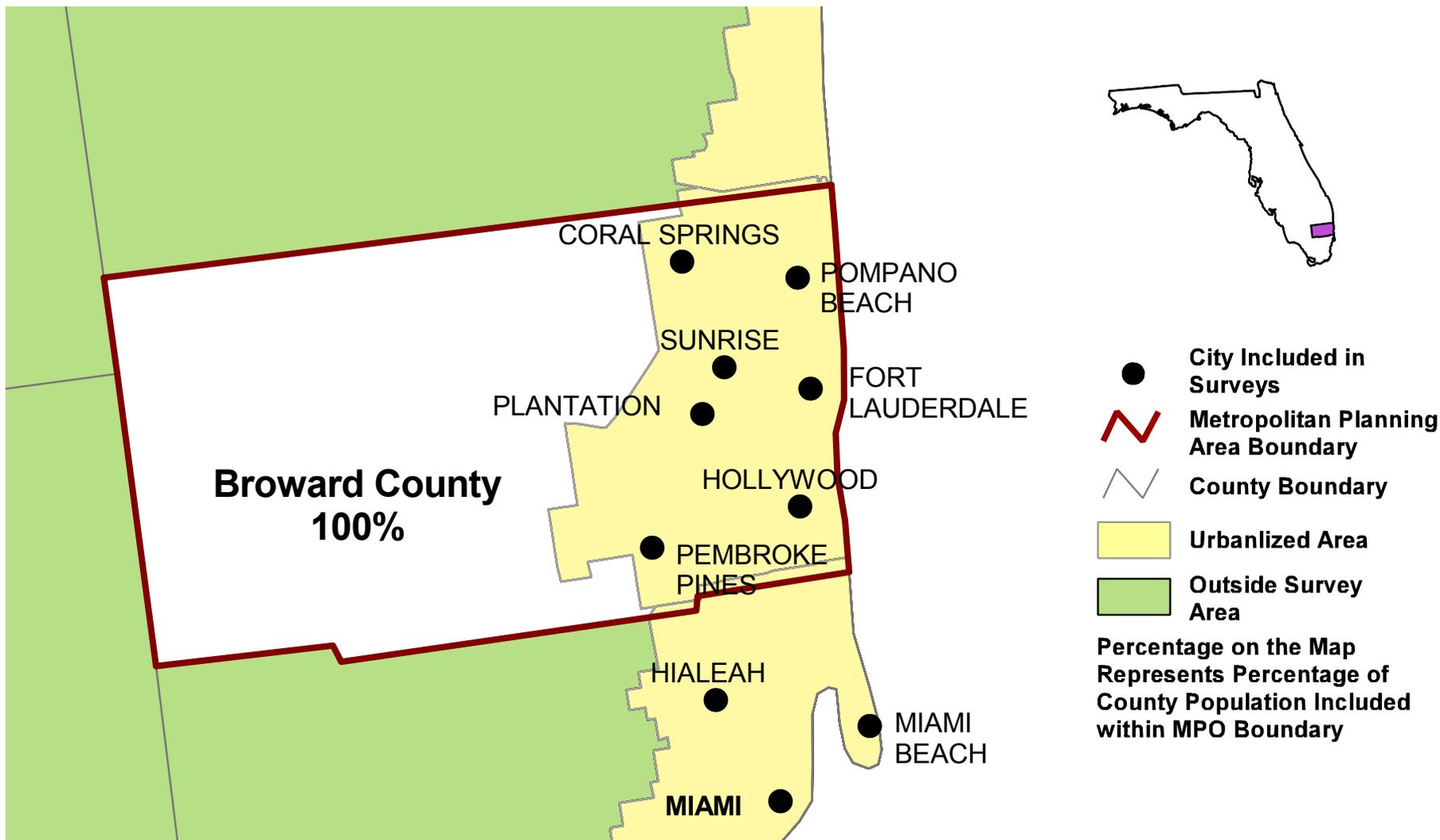


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

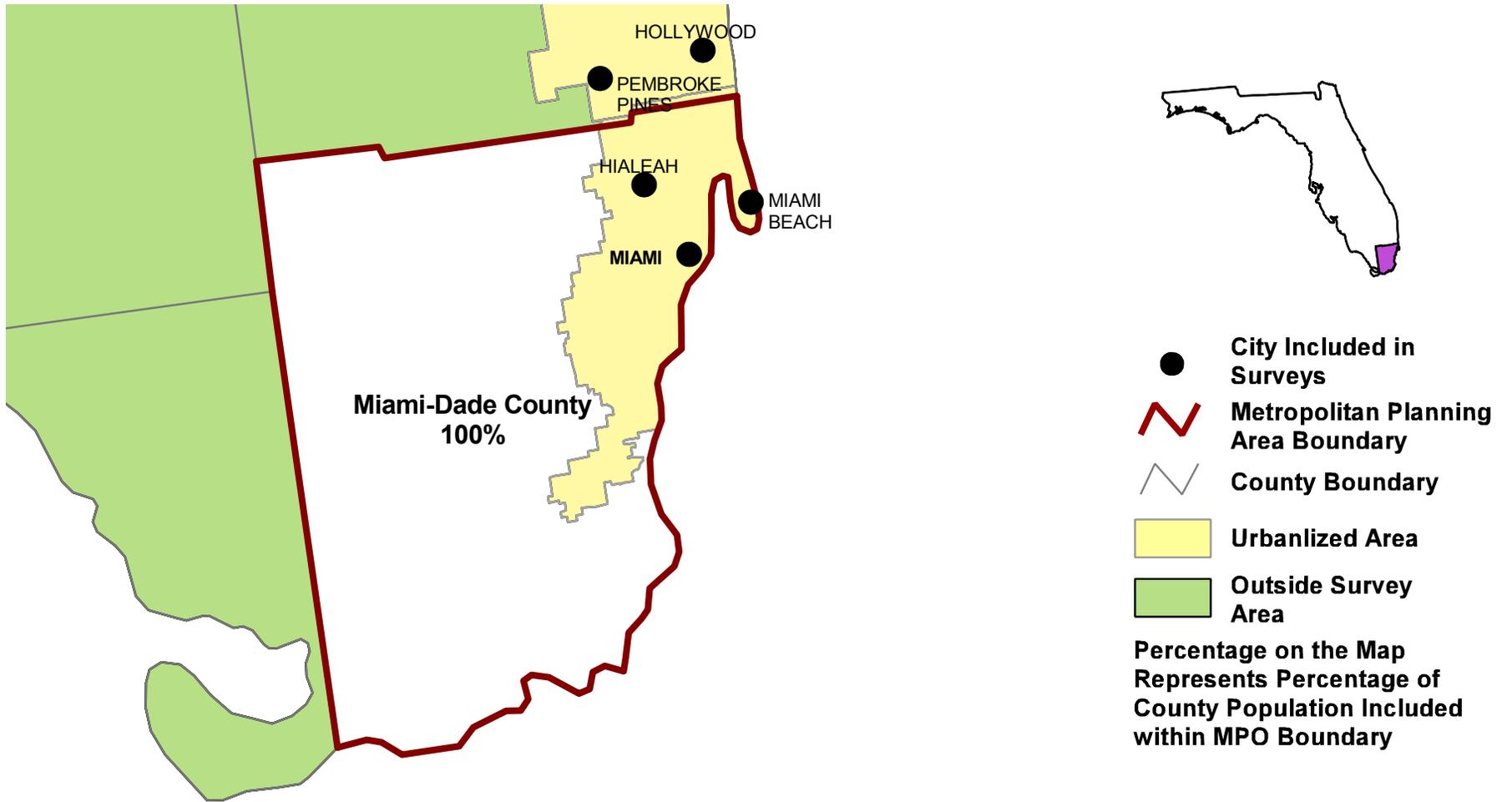
Link Description	1999	2005
14a. Transit Management agencies that disseminate information describing transit routes, schedules, and fares to travelers	(1/ 1) 100%	(1/ 1) 100%
14b. Transit Management agencies that disseminate information describing schedule/route adherence to travelers	(0/ 1) 0%	(0/ 1) 0%
1. Arterial Management agencies that disseminate arterial travel times, speeds, and conditions to the public	(1/ 2) 50%	(1/ 2) 50%
10. Freeway Management agencies that disseminate freeway travel times, speeds, and conditions to travelers	(0/ 3) 0%	(3/ 3) 100%
6. Incident Management agencies that disseminate information describing incident severity, location, and type to the public	(0/ 3) 0%	(2/ 3) 67%

Appendix A
Survey Coverage Area

BROWARD COUNTY PLANNING OFFICE, FL



MIAMI URBANIZED AREA MPO, FL



Appendix B
Surveyed Agencies

Surveyed Agencies

Agency Name	Phone	Fax	1999		1997	
			Out	In	Out	In
MIAMI, FORT LAUDERDALE						
Arterial Management						
Broward County	(954) 484-9600	(954) 735-8564	8/5/1999	9/27/1999	8/4/1997	8/11/1997
Dade County	(305) 592-8925	(305) 594-0364	8/5/1999	10/4/1999	8/5/1997	8/18/1997
Electronic Toll Collection						
Dade County/Rickenbacker Causeway	(305) 375-1909	(305) 375-2931	6/30/1999	7/1/1999		
Dade County/Venetial Causeway	(305) 375-1909	(305) 375-2931	6/30/1999	7/1/1999		
Bay Harbor Island City	(305) 866-6241	(305) 866-4863	6/30/1999	7/7/1999		
Emergency Management						
Miami-Dade County Fire Department	(305) 596-8503	(305) 596-8891	6/3/1999	10/1/1999	5/21/1998	5/21/1998
Sunrise City Police Department	(954) 746-3600	(954) 746-3589	6/4/1999	6/16/1999	8/5/1997	9/3/1997
Hollywood Fire & EMS Department	954-967-4555	954-967-4558	8/13/1999		8/5/1997	8/6/1997
Miami-Dade Police Department	(305) 471-2520	(305) 471-2534	6/3/1999	6/10/1999	8/5/1997	10/7/1997
Plantation City Police Department	(954) 797-2795	(954) 797-2777	6/17/1999	6/22/1999	8/5/1997	8/5/1997
Pembroke Pines City Police Department	(954) 431-2200	(954) 436-3203	6/3/1999	6/4/1999	8/5/1997	8/14/1997
Miami City Fire Department	305-416-1600	305-416-1680	6/3/1999	6/18/1999	8/5/1997	8/12/1997
Broward County Sheriff	(954) 321-4301	(954) 797-0927	6/3/1999	8/24/1999	8/4/1997	9/24/1997
Pompano Beach City Police Department	(954) 786-4204	(954) 786-4314	6/3/1999	6/10/1999	8/5/1997	8/14/1997
Pompano Beach City Fire Rescue	(954) 786-4510	(954) 786-4347	6/3/1999	6/9/1999	8/5/1997	8/11/1997
North Miami Beach City Police Department	(305) 949-5500	(305) 948-2969	6/17/1999	6/21/1999	8/5/1997	8/26/1997
Plantation City Fire & EMS Department	(954) 797-2150	(954) 797-2136	6/3/1999	8/17/1999	8/5/1997	8/6/1997
Miami City Police Department	(305) 579-6573	(305) 579-6162	6/3/1999	9/13/1999	8/5/1997	8/19/1997
Coral Springs Fire & EMS Department	(954) 344-5934	(954) 346-1387	6/3/1999	9/30/1999	8/6/1997	9/29/1997
Sunrise City Fire & EMS Department	(954) 746-3400	(954) 746-3455	6/3/1999	8/17/1999	8/5/1997	8/8/1997
Pompano Beach City Fire Rescue (Emergency	(954) 786-4510	(954) 786-4347	6/3/1999	6/9/1999	8/5/1997	8/11/1997
Hialeah City Police Department	(305) 953-5300	(305) 953-5330	6/3/1999	9/1/1999	8/5/1997	9/30/1997
Coral Springs City Police Department	(954) 346-1201	(954) 346-1210	6/17/1999	6/25/1999	8/5/1997	8/15/1997
Hollywood City Police Department	954-967-4555	954-967-4558	8/13/1999		8/5/1997	8/6/1997
Pembroke Pines City Fire/Rescue (Emergency	(954) 435-6700	(954) 435-6713	6/3/1999	6/8/1999	8/5/1997	8/14/1997
Fort Lauderdale City Police Department	(954) 761-5824	(954) 761-5552	6/3/1999	9/30/1999	8/5/1997	10/13/1997
Fort Lauderdale City Fire Department	(954) 761-5324	(954) 761-5416	6/3/1999	6/8/1999	8/5/1997	10/13/1997
Norman Regional Hospital (EMS)	(305) 416-1603	(305) 416-1683	6/3/1999			
Hialeah City Fire Department	305-883-6900	305-883-5991	6/2/1999	6/8/1999	8/5/1997	9/30/1997
Norman Police Department	305-579-6125	305-000-0000	6/3/1999			

Agency Name	Phone	Fax	1999		1997	
			Out	In	Out	In
Hollywood Rescue Department - Beach Safety	954-967-4555	954-967-4558	8/13/1999			
Norman Fire Department	(305) 416-1603	(305) 416-1683	6/3/1999			
Miami City Fire Rescue (Emergency Medical)	305-416-1600	305-416-1680	6/3/1999	6/18/1999	8/5/1997	8/12/1997
Freeway Management						
Florida Department of Transportation-District 6	(305) 470-5341	(305) 470-5815	7/29/1999	8/23/1999	8/4/1997	10/13/1997
Florida Department of Transportation Turnpike	(850) 488-4671	(850) 487-6679	7/29/1999	8/24/1999	8/5/1997	10/10/1997
Florida Department of Transportation-District 4	(954) 777-4366	(954) 777-4398	7/29/1999	9/20/1999	8/5/1997	8/18/1997
MPO						
Broward County Transportation Planning	(954) 357-6608	(954) 357-6228	7/15/1999	9/20/1999		
Miami -Dade County Urbanized Area MPO	(305) 375-4507	(305) 375-4950	7/15/1999	9/24/1999		
Transit Management						
Broward County Mass Transit	(954) 357-8360	(954) 357-8305	8/9/1999	11/22/1999	8/14/1997	8/26/1997
Coach USA	(305)871-2887	(305) 681-8134	8/9/1999		8/15/1997	
Miami-Dade Transit Authority	(305)637-3727	(305) 637-3719	8/9/1999		7/21/1997	7/31/1997
COMSIS Mobility Services	(305)265-3310	(305)265-0745	8/9/1999		7/21/1997	7/21/1997
Tri County Commuter Rail Authority	(954) 942-7245	(954) 788-7878	8/9/1999		7/21/1997	7/23/19097

Appendix C
Freeway Management Components

Freeway Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Florida Department of Transportation Turnpike District		Florida Department of Transportation-District 4		Florida Department of Transportation-District 6		Totals	
	1999	2005	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		Yes		3	
FREEWAY MANAGEMENT SECTION								
Number of freeway centerline miles that agency owns or maintains	96		40		78		214	
Number of freeway centerline miles that is used for planning	96		40		48		184	
Number of freeway entrance ramps that agency owns, operates or maintains	NR		NR		140		140	
Number of freeway entrance ramps that is used for planning	NR		33		85		118	
Type of facilities used to conduct freeway/incident management activities								
Activities housed in a free-standing dedicated building?	No		No		No		0	
Activities housed in a building shared with other activities?	Yes		No		Yes		2	
Activities conducted in a dedicated control room?	No		Yes		Yes		2	
Control room contains operator console(s)?	No		Yes		Yes		2	
Control room contains electronic wall map?	No		Yes		No		1	
Control room contains CCTV display(s)?	No		Yes		Yes		2	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		No		No		0	
Facilities are electronically linked to other transportation mgt facilities?	No		No		No		0	
Staffing and hours of operation of freeway/incident management activities								
Number of full-time agency staff members	NR		1		NR		1	
Number of full time contractor staff members	NR		2		2		4	
Number of part-time agency staff members	NR		NR		4		4	
Number of part-time contractor staff members	NR		NR		NR		0	
Staffed 24 hours day by agency staff or by others	NR		NR		NR		0	
Staffed during peak hours only by agency staff or by others	NR		NR		NR		0	
Staffed by others during off-peak hours	No		No		No		0	
Agency staff perform transportation management as an ancillary duty	Yes		No		No		1	
Agency staff dedicated to transportation management duty	No		No		Yes		1	
Types of operations conducted for freeway/incident management								
Incident detection and management?	No		No		Yes		1	
This metropolitan area?	No		Yes		Yes		2	
Other metropolitan area?	No		No		No		0	
Statewide?	No		No		No		0	
Monitoring and troubleshooting status of system components?	No		No		Yes		1	
Manual override of ramp metering rates at freeway on-ramps?	No		No		No		0	
Operating transportation management roadside devices?	No		Yes		Yes		2	
Radio communications with other agencies?	Yes		No		No		1	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		No		Yes		1	
Real-Time Traffic Data Collection Technologies								

Freeway Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Florida Department of Transportation Turnpike District		Florida Department of Transportation-District 4		Florida Department of Transportation-District 6		Totals	
	1999	2005	1999	2005	1999	2005	1999	2005
Total number of miles under surveillance with real-time data collection tech.	0	77	0	25	10	42	10	144
<i>Number of Stations with data collection technologies</i>								
Loop detectors	0	0	0	0	12	150	12	150
Video imaging detectors	0	150	0	25	6	50	6	225
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0	0	0	0	0	0	0
Microwave radar	0	0	0	3	0	0	0	3
Other (e.g., acoustic detectors)	0	0	0	0	0	0	0	0
<i>Number of Miles covered with data collection technologies</i>								
Loop detectors	0	0	0	0	10	42	10	42
Video imaging detectors	0	75	0	25	10	42	10	142
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0	0	0	0	0	0	0
Microwave radar	0	0	NR	NR	0	0	0	0
Other (e.g., acoustic detectors)	0	0	0	0	0	0	0	0
Variable Message Signs (VMS) on Freeways								
Candidate locations for deployment of VMS where VMS has been deployed	6	8	NR	33	28	50	34	91
Candidate locations for deployment of VMS	6	8	NR	33	28	75	34	116
Roadside Technologies used to Distribute Traveler Information								
Total number of miles where information is distributed	20	40	NR	NR	0	150	20	190
<i>Number deployed</i>								
Highway advisory radio	2	4	0	0	0	1	2	5
In-vehicle signing	0	0	0	0	0	0	0	0
Portable variable message signs	0	0	0	0	6	6	6	6
Other	0	0	0	0	0	0	0	0
<i>Miles covered</i>								
Highway advisory radio	20	40	0	0	0	150	20	190
In-vehicle signing	0	0	0	0	0	0	0	0
Portable variable message signs	0	0	0	0	NR	NR	0	0
Other	0	0	0	0	0	0	0	0
Ramp Meters on Freeways								
Number of entrance ramp meters operated under isolated control	NR	NR	NR	NR	0	0	0	0
Number of entrance ramp meters operated under central control	NR	NR	NR	NR	0	23	0	23
Number of entrance ramp meters that provide preemption for emergency vehicles	NR	NR	NR	NR	0	NR	0	0
Number of entrance ramp meters that provide priority for transit vehicles	NR	NR	NR	NR	0	NR	0	0
Total number of metered ramps	NR	NR	NR	NR	0	23	0	23
Freeway centerline miles under lane control	NR	NR	NR	NR	NR	NR	0	0
Communication Links								
<i>Freeway centerline miles covered by the following type of communication</i>								
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	96	0	40	2	20	2	156
Microwave radio	0	0	0	0	0	0	0	0

Freeway Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Florida Department of Transportation Turnpike District		Florida Department of Transportation-District 4		Florida Department of Transportation-District 6		Totals	
	1999	2005	1999	2005	1999	2005	1999	2005
Other	0	0	0	0	10	10	10	10
ITS Standards Used Related to Freeway Management								
ATMS Data Dictionary Sections 1 and 2 (ITE TM 1.01)	No		Yes		No		1	
ATMS Data Dictionary Sections 3 and 4 (ITE TM 1.02)	No		No		No		0	
Message Set for External TMC Communication (ITE-9604-1)	No		No		No		0	
NTCIP Class B Profile (AASHTO TS 3.3)	No		Yes		No		1	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		Yes		No		1	
NTCIP Object Definitions for Environmental Sensor Stations (AASHTO TS 3.7)	No		No		No		0	
NTICP Object Definitions for Dynamic Message Signs (AASHTO TS 3.6)	No		Yes		No		1	
NTICP Object Definitions for Highway Advisory Radio (AASHTO TS 3.HAR)	No		No		No		0	
NTICP Object Definitions for Ramp Meter Control (AASHTO TS 3.RMC)	No		No		No		0	
NTICP Object Definitions for Transportation Sensor Systems (AASHTO TS 3.TSS)	No		No		No		0	
NTICP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		Yes		No		1	
Would agency be willing to participate in testing of ITS Standards?	No		Yes		Yes		2	
Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?								
	Yes		No		No		1	
INCIDENT MANAGEMENT SECTION								
Use of Service Patrols to Assist in Detection and Response to Incidents								
Publicly operated service patrol vehicles	No		No		No		0	
Privately operated service patrol vehicles operated under public contract	Yes		Yes		No		2	
Total number of freeway miles patrolled by these services	96	96	45	NR	70	78	211	174
Miles Covered by Methods to Detect and Verify Incidents								
Free cellular phone call to a dedicated phone number other than 911	NR	NR	NR	NR	NR	150	0	150
Police patrols	96	96	NR	NR	NR	NR	96	96
Computer algorithms linked to traffic surveillance equipment	NR	NR	NR	NR	NR	80	0	80
CCTV	NR	NR	NR	45	8	35	8	80
Private sector sources (e.g., Shadow Traffic, SmartRoutes)	0	96	NR	45	NR	150	0	291
Other (e.g., free cell phone call to an area radio system, etc.)	96	96	NR	NR	NR	NR	96	96
Procedures in place for Freeway Incident Response?								
Working agreement(s)/arrangement(s) with other agencies	No		Yes		Yes		2	
Inter-agency incident management admin. team that meets regularly	No		Yes		Yes		2	
Major incident response team that responds to major incidents	Yes		No		No		1	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		No		Yes		1	
Central focal point for facilitating the two-way flow of information among agencies responding to an incident?								
The central focal point is a Freeway or Traffic Management Center	No		Yes		Yes		2	
The central focal point is a Police, Fire or joint dispatch center	No		No		No		0	
The central focal point is another center	No		No		No		0	
Methods of Communication Used On-Site at an Incident								
<u>Police</u>								

Freeway Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Florida Department of Transportation Turnpike District		Florida Department of Transportation-District 4		Florida Department of Transportation-District 6		Totals	
	1999	2005	1999	2005	1999	2005	1999	2005
Two-way radio	No		No		No		0	
800 MHz trunked radio	Yes		No		No		1	
Cellular telephone	No		No		No		0	
Hand-held (i.e., walkie-talkie)	No		No		No		0	
Automated data systems (i.e., CAD)	No		No		No		0	
<u>Fire</u>								
Two-way radio	No		No		No		0	
800 MHz trunked radio	Yes		No		No		1	
Cellular telephone	No		No		No		0	
Hand-held (i.e., walkie-talkie)	No		No		No		0	
Automated data systems (i.e., CAD)	No		No		No		0	
<u>DOT</u>								
Two-way radio	Yes		No		No		1	
800 MHz trunked radio	No		No		No		0	
Cellular telephone	No		Yes		Yes		2	
Hand-held (i.e., walkie-talkie)	No		No		No		0	
Automated data systems (i.e., CAD)	No		No		No		0	
<u>Towing</u>								
Two-way radio	No		No		No		0	
800 MHz trunked radio	No		No		No		0	
Cellular telephone	No		No		Yes		1	
Hand-held (i.e., walkie-talkie)	No		No		No		0	
Automated data systems (i.e., CAD)	No		No		No		0	
Which police agencies typically respond to incidents on freeways?								
State Police	Yes		Yes		Yes		3	
County Police or Sheriff	Yes		Yes		Yes		3	
City Police	No		No		Yes		1	
Who provides on-site emergency medical response?								
Fire	Yes		Yes		No		2	
Emergency Management Service Agency	Yes		Yes		No		2	
Private hospital	No		No		No		0	
Has a multi-agency contact list been developed in area containing the names, phone numbers, etc. for the appropriate response personnel?								
	DK		Yes		Yes		2	
Is the Incident Command System used to manage incident scenes?								
	DK		Yes		Yes		2	
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		Yes		1	
Formal agreement?	No		No		No		0	
Not specified or don't know?	Yes		Yes		No		2	
On-scene command post used to manage activities of responding agencies?								
	No		Yes		Yes		2	

Freeway Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Florida Department of Transportation Turnpike District		Florida Department of Transportation-District 4		Florida Department of Transportation-District 6		Totals	
	1999	2005	1999	2005	1999	2005	1999	2005
Are there communication linkages to a communications traffic/freeway mgt center?	NR		No		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?	No		DK		Yes		1	
Respondents protected through law or court opinion for liability claims for damages to vehicles or cargoes during clearance activities?	DK		DK		Yes		1	
Are overturned tank trucks, which are intact and not leaking, uprighted without first off-loading?	No		No		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?	Yes		No		Yes		2	
Have laws or policies regarding the removal of stalled/abandoned vehicles from freeway shoulders?	Yes		Yes		Yes		3	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	DK		DK		DK		0	
Have policies or procedures for quick removal of vehicles?	No		Yes		Yes		2	
Is Total Station equipment used to investigate major incidents?	No		No		No		0	
Handling of Towing Responses to Incidents								
Formal contract based on qualifications?	No		Yes		Yes		2	
Rotation with companies under contract?	No		No		No		0	
Separate lists kept for light and heavy response and for specialty recovery?	NR		NR		Yes			
Rotation list with minimal qualifications?	No		No		Yes		1	
In towing qualifications, do you require towers to be certified under the Towing and Recovery Ass. of America's National Drivers Cert. Program?	DK		Considered		DK		0	
DK: Don't know								
NR: No Response								
Leg: Legislation or action being planned								

Appendix D
Freeway Management Integration

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation Turnpike District	
	1999	2005
Agency Returned Survey?	Yes	
Freeway Management Section		
Agencies your agency provides freeway travel times, speeds, and conditions information, share infrastructure or coordinates operation		
Freeway Management Agencies		
Provide Information	None listed	Florida Department of Transportation Turnpike Dist
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	Florida Department of Transportation Turnpike Dist
Incident Management Agencies		
Provide Information	None listed	Florida Department of Transportation Turnpike Dist
Share Infrastructure	None listed	None listed

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation Turnpike District	
	1999	2005
Coordinate Operation	None listed	Florida Department of Transportation Turnpike Dist
Arterial Management Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Public Transit Operators		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Receiving real-time information via electronic means from others		
Incident Management agencies from which your agency receives incident severity, location, and type information		
	None listed	None listed
Arterial Management agencies from which your agency receives		

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation Turnpike District	
	1999	2005
<i>arterial travel times, speeds, and conditions</i>	None listed	None listed
<i>Public Transit operators from which your agency receives freeway travel times derived from vehicle probes</i>		
	None listed	None listed
<i>Toll Collection agencies from which your agency receives freeway travel times derived from vehicles probes</i>		
	None listed	None listed
Freeway Incident Management Section		
Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation		
Arterial Management Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Emergency Management Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation Turnpike District	
	1999	2005
Coordinate Operation	None listed	None listed
Freeway Management Agencies		
Provide Information	None listed	Florida Department of Transportation Turnpike Dist
Share Infrastructure	None listed	Florida Department of Transportation Turnpike Dist
Coordinate Operation	None listed	Florida Department of Transportation Turnpike Dist
Public Transit Operators		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation Turnpike District	
	1999	2005
Coordinate Operation	None listed	None listed
<u>Receiving real-time information via electronic means from others</u>		
<i>Emergency Management agencies from which your agency receives incident clearance and/or incident severity and type</i>		
Receive Arterial Incident Clearance Information	None listed	None listed

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation Turnpike District	
	1999	2005
Receive Arterial Incident Severity Information	None listed	None listed
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>		
	None listed	None listed
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>		
	None listed	Florida Department of Transportation Turnpike Dist

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

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 4	
	1999	2005
Agency Returned Survey?	Yes	
Freeway Management Section		
Agencies your agency provides freeway travel times, speeds, and conditions information, share infrastructure or coordinates operation		
Freeway Management Agencies		
Provide Information	None listed	Florida Department of Transportation-District 6, Florida Department of Transportation Turnpike Dist
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	Florida Department of Transportation-District 6, Florida Department of Transportation Turnpike Dist
Incident Management Agencies		
Provide Information	None listed	Florida Department of Transportation-District 6, Florida Department of Transportation Turnpike Dist
Share Infrastructure	None listed	None listed

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 4	
	1999	2005
Coordinate Operation	None listed	Florida Department of Transportation-District 6, Florida Department of Transportation Turnpike Dist
Arterial Management Agencies		
Provide Information	Broward County Traffic Engineering Division	None listed
Share Infrastructure	Broward County Traffic Engineering Division	None listed
Coordinate Operation	None listed	Broward County Traffic Engineering Division
Public Transit Operators		
Provide Information	None listed	Broward County Mass Transit
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Receiving real-time information via electronic means from others		
Incident Management agencies from which your agency receives incident severity, location, and type information		
	None listed	Florida Department of Transportation Turnpike Dist
Arterial Management agencies from which your agency receives		

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 4	
	1999	2005
<i>arterial travel times, speeds, and conditions</i>	Broward County Traffic Engineering Division	Palm Beach County Traffic Signals
<i>Public Transit operators from which your agency receives freeway travel times derived from vehicle probes</i>	None listed	None listed
<i>Toll Collection agencies from which your agency receives freeway travel times derived from vehicles probes</i>	None listed	None listed
Freeway Incident Management Section		
Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation		
Arterial Management Agencies		
Provide Information	Broward County Traffic Engineering Division	None listed
Share Infrastructure	None listed	Broward County Traffic Engineering Division
Coordinate Operation	None listed	Broward County Traffic Engineering Division
Emergency Management Agencies		
Provide Information	None listed	Broward County Sheriff
Share Infrastructure	None listed	None listed

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 4	
	1999	2005
Coordinate Operation	None listed	None listed
Freeway Management Agencies		
Provide Information	None listed	Florida Department of Transportation, Florida Department of Transportation Turnpike Dist
Share Infrastructure	None listed	Florida Department of Transportation
Coordinate Operation	None listed	Florida Department of Transportation, Florida Department of Transportation Turnpike Dist
Public Transit Operators		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 4	
	1999	2005
Coordinate Operation	None listed	None listed
<u>Receiving real-time information via electronic means from others</u>		
<i>Emergency Management agencies from which your agency receives incident clearance and/or incident severity and type</i>		
Receive Arterial Incident Clearance Information	None listed	Broward County Sheriff

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 4	
	1999	2005
Receive Arterial Incident Severity Information	None listed	Broward County Sheriff
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>		
	Broward County Traffic Engineering Division	Palm Beach County
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>		
	None listed	Florida Department of Transportation, Florida Department of Transportation Turnpike Dist

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

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 6	
	1999	2005
Agency Returned Survey?	Yes	
Freeway Management Section		
Agencies your agency provides freeway travel times, speeds, and conditions information, share infrastructure or coordinates operation		
Freeway Management Agencies		
Provide Information	None listed	Turnpike Dist, Florida Department of Transportation-District 4, Florida Department of Transportation-District 6, Florida Highway Patrol Troops, Fire and Safety
Share Infrastructure	None listed	Florida Department of Transportation Turnpike Dist, Florida Department of Transportation-District 4, Florida Department of Transportation-District 6, Florida Highway Patrol Troops, Fire and Safety
Coordinate Operation	None listed	Florida Department of Transportation Turnpike Dist, Florida Department of Transportation-District 4, Florida Department of Transportation-District 6, Florida Highway Patrol Troops, Fire and Safety
Incident Management Agencies		
Provide Information	None listed	Florida Department of Transportation Turnpike Dist, Florida Department of Transportation-District 4, Florida Department of Transportation-District 6, Florida Highway Patrol Troops, Fire and Safety
Share Infrastructure	None listed	Florida Department of Transportation Turnpike Dist, Florida Department of Transportation-District 4, Florida Department of Transportation-District 6, Florida Highway Patrol Troops, Fire and Safety

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 6	
	1999	2005
Coordinate Operation	None listed	Florida Department of Transportation Turnpike Dist, Florida Department of Transportation-District 4, Florida Department of Transportation-District 6, Florida Highway Patrol Troops, Fire and Safety
Arterial Management Agencies		
Provide Information	None listed	Broward County Traffic Engineering Division, Dade County Public Works, Florida Department of Transportation-District 4
Share Infrastructure	None listed	Broward County Traffic Engineering Division, Dade County Public Works, Florida Department of Transportation-District 4
Coordinate Operation	None listed	Broward County Traffic Engineering Division, Dade County Public Works, Florida Department of Transportation-District 4
Public Transit Operators		
Provide Information	None listed	Broward County Mass Transit, Coach USA, COMSIS Mobility Services, Miami-Dade Transit Authority, Tri County Commuter Rail Authority
Share Infrastructure	None listed	Broward County Mass Transit, Coach USA, COMSIS Mobility Services, Miami-Dade Transit Authority, Tri County Commuter Rail Authority
Coordinate Operation	None listed	Broward County Mass Transit, Coach USA, COMSIS Mobility Services, Miami-Dade Transit Authority, Tri County Commuter Rail Authority
Receiving real-time information via electronic means from others		
Incident Management agencies from which your agency receives incident severity, location, and type information		
	None listed	Florida Department of Transportation Turnpike Dist, Florida Department of Transportation-District 4, Florida Department of Transportation-District 6, Florida Highway Patrol Troops, Emergency Management Agencies
Arterial Management agencies from which your agency receives		

Freeway Management Integration
Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 6	
	1999	2005
<i>arterial travel times, speeds, and conditions</i>	None listed	Broward County Traffic Engineering Division, Dade County Public Works
<i>Public Transit operators from which your agency receives freeway travel times derived from vehicle probes</i>	None listed	Broward County Mass Transit, Coach USA, COMSIS Mobility Services, Miami-Dade Transit Authority, Tri County Commuter Rail Authority
<i>Toll Collection agencies from which your agency receives freeway travel times derived from vehicles probes</i>	None listed	Works/Rickenbacker Causeway, Dade County Public Works/Venetial Causeway, Bay Harbor Island City, TPK, MDX
Freeway Incident Management Section		
Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation		
Arterial Management Agencies		
Provide Information	Dade County Public Works	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	Dade County Public Works, Broward County Traffic Engineering Division, Florida Department of Transportation-District 4
Emergency Management Agencies		
Provide Information	Miami City Fire Department, Miami City Police Department, Miami-Dade County Fire Department, Miami-Dade Police Department	None listed
Share Infrastructure	None listed	None listed

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 6	
	1999	2005
Coordinate Operation	None listed	Broward County Sheriff, Coral Springs City Fire Department, Coral Springs City Police Department, Fort Lauderdale City Fire Department, Fort Lauderdale City Police Department, Hialeah City Fire Department, Hialeah City Police Department, Hollywood City Police Department, Hollywood Fire & EMS Department, Hollywood Rescue Department - Beach Safety, Norman Fire Department, Norman Police Department, Norman Regional Hospital (EMS), Miami City Fire Department, Miami City Police Department, Miami-Dade County Fire Department, Miami-Dade Police Department, North Miami Beach City Police Department, Pembroke Pines City Fire/Rescue, Pembroke Pines City Police Department, Plantation City Fire & EMS Department, Plantation City Police Department, Pompano Beach City Fire Rescue, Pompano Beach City Police Department, Sunrise City Fire & EMS Department, Sunrise City Police Department
Freeway Management Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	Florida Department of Transportation Turnpike Dist, Florida Department of Transportation-District 4, Florida Department of Transportation-District 6, All Local Public Agencies
Public Transit Operators		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 6	
	1999	2005
Coordinate Operation	None listed	Broward County Mass Transit, Coach USA, COMSIS Mobility Services, Miami-Dade Transit Authority, Tri County Commuter Rail Authority
<u>Receiving real-time information via electronic means from others</u>		
<i>Emergency Management agencies from which your agency receives incident clearance and/or incident severity and type</i>		
Receive Arterial Incident Clearance Information	None listed	Broward County Sheriff, Coral Springs City Fire Department, Coral Springs City Police Department, Fort Lauderdale City Fire Department, Fort Lauderdale City Police Department, Hialeah City Fire Department, Hialeah City Police Department, Hollywood City Police Department, Hollywood Fire & EMS Department, Hollywood Rescue Department - Beach Safety, Miami City Fire Department, Miami City Police Department, Miami-Dade County Fire Department, Miami-Dade Police Department, Norman Fire Department, Norman Police Department, Norman Regional Hospital (EMS), North Miami Beach City Police Department, Pembroke Pines City Fire/Rescue, Pembroke Pines City Police Department, Plantation City Fire & EMS Department, Plantation City Police Department, Pompano Beach City Fire Rescue, Pompano Beach City Police Department, Sunrise City Fire & EMS Department, Sunrise City Police Department

Freeway Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 6	
	1999	2005
Receive Arterial Incident Severity Information	None listed	Broward County Sheriff, Coral Springs City Fire Department, Coral Springs City Police Department, Fort Lauderdale City Fire Department, Fort Lauderdale City Police Department, Hialeah City Fire Department, Hialeah City Police Department, Hollywood City Police Department, Hollywood Fire & EMS Department, Hollywood Rescue Department - Beach Safety, Miami City Fire Department, Miami City Police Department, Miami-Dade County Fire Department, Miami-Dade Police Department, Norman Fire Department, Norman Police Department, Norman Regional Hospital (EMS), North Miami Beach City Police Department, Pembroke Pines City Fire/Rescue, Pembroke Pines City Police Department, Plantation City Fire & EMS Department, Plantation City Police Department, Pompano Beach City Fire Rescue, Pompano Beach City Police Department, Sunrise City Fire & EMS Department, Sunrise City Police Department
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>		
	None listed	None listed
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>		
	None listed	None listed

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

Appendix E
Freeway Management Information Collection and Dissemination

Data Collection and Dissemination: Freeway Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation Turnpike District		Florida Department of Transportation-District 4	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Freeway Management Section				
Data collected, archived, and/or transferred to another agency				
Collected by your agency	NR	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Road conditions, Incidents	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Current work zones	Road conditions, Incidents, Emergency/evacuation routes and procedures, Highway operations coordination information
Archived by your agency	NR	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Road conditions, Incidents	NR	Road conditions, Incidents
Transferred to another agency by your agency	NR	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Road conditions, Weather conditions, Incidents, Current work zones, Emergency/evacuation routes and procedures	NR	NR
Importance of making information available to the public				
Ranked High		Traffic speeds, Weather conditions, Incidents, Current work zones, Emergency/evacuation routes and procedures	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Road conditions, Incidents, Current work zones, Scheduled work zones	

Data Collection and Dissemination: Freeway Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation Turnpike District		Florida Department of Transportation-District 4	
	1999	2005	1999	2005
Ranked Medium	Road conditions		NR	
Ranked Low	Traffic volumes, Lane occupancy, Vehicle classification		NR	
Groups that make requests for the data	State DOT personnel, Media (i.e., TV stations, radio stations), Advanced Traveler Information Systems (ATIS) provi		Consultants, Advanced Traveler Information Systems (ATIS) provi	
What is the data used for?	Traffic analysis, Planning, Dissemination to the public		Traffic analysis, Planning, Dissemination to the public	
Methods used to disseminate freeway information to the public				
Technologies your agency uses to disseminate:	NR	Telephone system, Internet Web sites, E-mail or other direct PC communication, Facsimile	NR	Internet Web sites
Technologies your agency (through another agency or org.) uses to disseminate:	NR	Internet Web sites	NR	Pagers or personal data assistants, Kiosks, E-mail or other direct PC communication, Cell phone/voice, Facsimile
Internet web site reporting freeway conditions	NR		NR	
Telephone system for reporting freeway information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	
Freeway Incident Management Section				
Methods used to distribute incident location and severity information				

Data Collection and Dissemination: Freeway Management
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation Turnpike District		Florida Department of Transportation-District 4	
	1999	2005	1999	2005
to the public				
Technologies your agency uses to disseminate:	NR	Internet Web sites, HAR, VMS	NR	Internet Web sites, Telephone system
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	Dedicated cable TV, Telephone system, Pagers or personal data assistants, Kiosks, E-mail or other direct PC communication, Cell phone/voice, Cell phone/data, Cell phone/data
Internet web site reporting incident information	NR		NR	
Telephone system for reporting incident information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	

Data Collection and Dissemination: Freeway Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 6	
	1999	2005
Agency Returned Survey?	Yes	
Freeway Management Section		
Data collected, archived, and/or transferred to another agency		
Collected by your agency	Traffic volumes, Scheduled work zones	NR
Archived by your agency	Traffic volumes, Scheduled work zones	NR
Transferred to another agency by your agency	NR	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Probe vehicles, Ramp queues, Ramp meter preemption's, Metering rate, Road conditions, Route designations (snow emergency, etc.), Weather conditions, Incidents, Current work zones, Scheduled work zones, Intermodal (air, rail, water) connections, Emergency/evacuation routes and procedures, Highway operations coordination information
Importance of making information available to the public		
Ranked High	Ramp queues, Road conditions, Weather conditions, Incidents, Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures, Highway operations coordination information	

Data Collection and Dissemination: Freeway Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 6	
	1999	2005
Ranked Medium	Traffic volumes, Traffic speeds, Route designations (snow emergency, etc.), Intermodal (air, rail, water) connections	
Ranked Low	Lane occupancy, Vehicle classification, Probe vehicles, Ramp meter preemption's, Metering rate	
Groups that make requests for the data	Media (I.e., TV stations, radio stations), Consultants	
What is the data used for?	Traffic analysis, Dissemination to the public	
Methods used to disseminate freeway information to the public		
Technologies your agency uses to disseminate:	NR	Internet Web sites
Technologies your agency (through another agency or org.) uses to disseminate:	NR	Dedicated cable TV, Telephone system, Internet Web sites, Pagers or personal data assistants, Interactive TV, Kiosks, E-mail or other direct PC communication, In-vehicle navigation systems
Internet web site reporting freeway conditions	under development	
Telephone system for reporting freeway information to the public	only general traffic information and incidents for limited length of freeways 305-470-5831	
Organizations your agency sends information for dissemination to the public	Any agency when it requests in general, metro traffic, shadow traffic, only when there is something to report.	
Freeway Incident Management Section		
Methods used to distribute incident location and severity information		

Data Collection and Dissemination: Freeway Management
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Florida Department of Transportation-District 6	
	1999	2005
to the public		
Technologies your agency uses to disseminate:	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	Dedicated cable TV, Telephone system, Internet Web sites, Pagers or personal data assistants, Interactive TV, Kiosks, E-mail or other direct PC communication, In-vehicle navigation systems
Internet web site reporting incident information	NR	
Telephone system for reporting incident information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	

Appendix F
Arterial Management Components

Arterial Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Broward County		Dade County		Totals	
	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		2	
ARTERIAL MANAGEMENT SECTION						
Number of arterial miles that agency owns or maintains	563		1,400		1,963	
Number of arterial miles that is used for planning	563		1,400		1,963	
Number of highway-rail intersections that agency maintains	63		150		213	
Number of highway-rail intersections that is used for planning	63		NR		63	
Type of facilities used to conduct arterial management activities						
Activities housed in a free-standing dedicated building?	Yes		Yes		2	
Activities housed in a building shared with other activities?	No		No		0	
Activities conducted in a dedicated control room?	Yes		Yes		2	
Control room contains operator console(s)?	Yes		Yes		2	
Control room contains electronic wall map?	Yes		Yes		2	
Control room contains CCTV display(s)?	No		No		0	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		Yes		1	
Facilities are electronically linked to other transportation mgt facilities?	No		Yes		1	
Staffing and hours of operation of arterial management activities						
Number of full-time agency staff members	14		12		0	
Number of full time contractor staff members	NR		0		0	
Number of part-time agency staff members	NR		0		0	
Number of part-time contractor staff members	NR		0		0	
Staffed 24 hours day by agency staff or by others	NR		NR		0	
Staffed during peak hours only by agency staff or by others	agency		NR		0	
Staffed by others during off-peak hours	No		No		0	
Agency staff perform transportation management as an ancillary duty	No		No		0	
Agency staff dedicated to transportation management duty	No		Yes		1	
Types of operations conducted for arterial management						
Incident detection and management?	No		No		0	
This metropolitan area?	No		No		0	
Other metropolitan area?	No		No		0	
Monitoring and troubleshooting status of system components?	Yes		Yes		2	
Radio communications with other agencies?	No		Yes		1	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		Yes		1	
Manual override of traffic signal timing plans	Yes		Yes		2	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	No		No		0	
Describe agency's role in traffic signal control	All roads in county		All roads in county			
Traffic Signals Operated by Agency						
Number of signalized intersections operated and owned by agency	500	700	NR	NR	500	700

Arterial Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Broward County		Dade County		Totals	
	1999	2005	1999	2005	1999	2005
Number of signalized intersections operated by agency but owned by another	750	800	0	0	750	800
Total number of signalized intersections operated by agency	1,250	1,500	2,450	2,600	3,700	4,100
<i>Characteristics of signalized intersections that agency operates</i>						
Under closed loop or central system control	950	1,500	2,025	2,500	2,975	4,000
Under real-time traffic adaptive control using advanced software	0	0	0	NR	0	0
Using SCOOT	No		No		0	
Using SCATS	No		No		0	
Name of software	NR		NR			
Allow signal preemption for emergency vehicles	0	0	500	1,000	500	1,000
Allow signal priority for transit vehicles	0	0	22	50	22	50
Within 200 feet of a highway-rail intersection	32	40	45	50	77	90
Within 200 feet of a highway-rail intersection that adjust signal timing	32	40	38	45	70	85
Software used to control the signals agency operates						
Date of last upgrade to traffic signal control system software?	1988		ongoing			
How often do you update signal timing?	Once a year		ranges from daily to ~ 5 years, as needed			
Software used and number of signalized intersections under control (1999, 2005)	Distributed, 0, 1,500 UTCS, 950, 0		New software being developed, 0, 1,800 UTCS, 2,025, 1,000			
Controllers used to control signals						
NEMA	1,000	0	1,350	500	2,350	500
170/179	0	0	1,100	2,100	1,100	2,100
2070 controller	0	1,500	0	0	0	1,500
Other	0	0	0	0	0	0
Technologies Associated with Highway-Rail Intersections						
Total number of highway-rail intersections under electronic surveillance	0	100	38	45	38	145
<i>Highway-Rail intersection capabilities</i>						
Video surveillance	0	100	0	0	0	100
Electronic surveillance other than video	0	0	38	NR	38	0
Ability to predict train arrival electronically	0	0	38	45	38	45
Equipped with electronic traffic violator devices	0	0	0	0	0	0
Other	0	0	0	0	0	0
Real-Time Electronic Traffic Data Collection Technologies						
Total number of signalized intersections covered by electronic surveillance	1	200	0	20	1	220
<i>Number of signalized intersections with data collection technologies</i>						
Loop detectors	0	0	0	0	0	0
Video detection cameras	1	200	0	20	1	220
Probe readers reading toll tags	0	0	0	0	0	0
Probe readers reading license plates	0	0	0	0	0	0
Other	0	0	0	0	0	0
Roadside Technologies used to Distribute Traveler Information						

Arterial Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Broward County		Dade County		Totals	
	1999	2005	1999	2005	1999	2005
<i>Number deployed</i>						
Highway Advisory Radio	NR	NR	NR	NR	0	0
In-Vehicle Signing (IVS)	NR	NR	NR	NR	0	0
VMS controlling parking access	NR	NR	NR	NR	0	0
<i>Miles covered</i>						
Highway Advisory Radio	NR	NR	NR	NR	0	0
In-Vehicle Signing (IVS)	NR	NR	NR	NR	0	0
Variable Message Signs (VMS) on Arterials						
Candidate locations for deployment of VMS where VMS has been deployed	0	50	NR	NR	0	50
Candidate locations for deployment of VMS	0	50	NR	NR	0	50
Communication Technologies						
<i>Signalized intersections communicated with by each type of communication</i>						
Twisted pair cable	400	0	200	NR	600	0
Coaxial cable	0	0	0	0	0	0
Fiber-optic cable	0	600	0	1,000	0	1,600
Other (e.g., wireless, dial-up modems, leased lines, etc.)	150	0	1825	1000	1,975	1,000
Does agency convey information on highway-rail intersection crossing status to travelers via roadside media such as VMS or HAR?						
	No		No		0	
ITS Standards Used Related to Traffic Signal Control						
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		No		0	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		No		0	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		No		0	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		No		0	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		No		0	
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		No		0	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		No		0	
Would agency be willing to participate in testing of ITS Standards?	No		No		0	
Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?						
	Yes		No		1	
INCIDENT MANAGEMENT ON ARTERIAL STREETS						
Receive information on highway-rail intersection crossing blockages for the purpose of managing incident response?						
	No		No		0	
Use of Service Patrols to Assist in Detection and Response to Incidents						
Publicly operated service patrol vehicles	No		No		0	
Privately operated service patrol vehicles operated under public contract	No		No		0	
Total number of arterial miles patrolled by these services	NR	NR	NR	NR	0	0
Miles Covered by Methods to Detect and Verify Incidents						
Free cellular phone call to a dedicated phone number other than 911	0	0	0	0	0	0
Free cellular phone call to an area radio station	0	0	0	0	0	0
Police patrols	0	0	0	0	0	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	0	0	0

Arterial Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Broward County		Dade County		Totals	
	1999	2005	1999	2005	1999	2005
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		0	
Inter-agency incident management admin. team that meets regularly	Yes		No		1	
Major incident response team that responds to major incidents	No		No		0	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		No		0	
Methods of Communication Used On-Site at an Incident						
<u>Police</u>						
Two-way radio	Yes		No		1	
800 MHz trunked radio	Yes		No		1	
Cellular telephone	No		No		0	
Hand-held (i.e., walkie-talkie)	No		No		0	
Automated data systems (i.e., CAD)	No		No		0	
Other	No		No		0	
<u>Fire</u>						
Two-way radio	Yes		No		1	
800 MHz trunked radio	Yes		No		1	
Cellular telephone	No		No		0	
Hand-held (i.e., walkie-talkie)	No		No		0	
Automated data systems (i.e., CAD)	No		No		0	
Other	No		No		0	
<u>DOT</u>						
Two-way radio	Yes		No		1	
800 MHz trunked radio	No		No		0	
Cellular telephone	Yes		No		1	
Hand-held (i.e., walkie-talkie)	No		No		0	
Automated data systems (i.e., CAD)	No		No		0	
Other	No		No		0	
<u>Towing</u>						
Two-way radio	Yes		No		1	
800 MHz trunked radio	No		No		0	
Cellular telephone	Yes		No		1	
Hand-held (i.e., walkie-talkie)	No		No		0	
Automated data systems (i.e., CAD)	No		No		0	
Other	No		No		0	
Which police agencies typically respond to incidents on arterials?						

Arterial Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Broward County		Dade County		Totals	
	1999	2005	1999	2005	1999	2005
State Police	Yes		No		1	
County Police or Sheriff	Yes		No		1	
City Police	Yes		No		1	
Who provides on-site emergency medical response?						
Fire	No		No		0	
Emergency Management Service Agency	Yes		No		1	
Private hospital	No		No		0	
Has a multi-agency contact list been developed in area containing the names, phone numbers, etc. for the appropriate response personnel?	Yes		NR		1	
Is the Incident Command System used to manage incident scenes?	DK		NR		0	
Is there a legal specification by state law or formal agreement as to who is "in charge" at the incident scene?						
Specified by state law?	No		No		0	
Formal agreement?	No		No		0	
Not specified or don't know?	Yes		No		1	
On-scene command post used to manage activities of responding agencies?	DK		NR		0	
Are there communication linkages to a communications traffic/freeway mgt center?	NR		NR		0	
Plan developed and adopted by responding agencies for staging and parking response vehicles and equip. at incident site that minimizes lane blockage and facilitates the re-opening of lanes?	DK		NR		0	
Respondents protected through law or court opinion for liability claims for damages to vehicles or cargoes during clearance activities?	DK		NR		0	
Are overturned tank trucks, which are intact and not leaking, uprighted without first off-loading?	NR		NR		0	
Does your state or local jurisdiction have a law that requires drivers involved in property-damage-only accidents to move the vehicles from travel lanes to a safe location to exchange info and wait for police?	Yes		NR		1	
Have laws or policies regarding the removal of stalled/abandoned vehicles from freeway shoulders?	NR		NR		0	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	0-24		NR		0	
Have policies or procedures for quick removal of vehicles?	No		NR		0	
Is Total Station equipment used to investigate major incidents?	DK		NR		0	
Handling of Towing Responses to Incidents						
Formal contract based on qualifications?	No		No		0	
Rotation with companies under contract?	No		No		0	
Separate lists kept for light and heavy response and for specialty recovery?	NR		NR		0	
Rotation list with minimal qualifications?	No		No		0	
In towing qualifications, do you require towers to be certified under the Towing and Recovery Ass. of America's National Drivers Cert. Program?	DK		NR		0	

Appendix G
Arterial Management Integration

Arterial Management Integration
Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Broward County	
	1999	2005
Agency Returned Survey?	Yes	
Arterial Management Section		
<u>Arterial Mgt. agencies in metropolitan area with which you share info.</u>		
Share Timing Plans Information	Broward County Traffic Engineering Division, Florida Department of Transportation-District 4	Florida Department of Transportation-District 4
Coordinate Changes to Timing Plans	Broward County Traffic Engineering Division, Florida Department of Transportation-District 4	Broward County Traffic Engineering Division, Florida Department of Transportation-District 4
Turn over Control of Signals	None listed	None listed
<u>Agencies your agency provides arterial travel times, speeds, and conditions information, share infrastructure or coordinates operation</u>		
<i>Freeway Management Agencies</i>		
Provide Information	Florida Department of Transportation	Florida Department of Transportation
Share Infrastructure	Florida Department of Transportation	Florida Department of Transportation
Coordinate Operation	Florida Department of Transportation	Florida Department of Transportation
<i>Incident Management Agencies</i>		
Provide Information	Florida Department of Transportation	Florida Department of Transportation
Share Infrastructure	Florida Department of Transportation	Florida Department of Transportation
Coordinate Operation	Florida Department of Transportation	Florida Department of Transportation
<i>Public Transit Operators Agencies</i>		
Provide Information	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Broward County	
	1999	2005
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Arterial Management Agencies		
Provide Information	Broward County Traffic Engineering Division, Florida Department of Transportation-District 4	Broward County Traffic Engineering Division, Florida Department of Transportation-District 4
Share Infrastructure	Broward County Traffic Engineering Division, Florida Department of Transportation-District 4	Broward County Traffic Engineering Division, Florida Department of Transportation-District 4
Coordinate Operation	Broward County Traffic Engineering Division, Florida Department of Transportation-District 4	Broward County Traffic Engineering Division, Florida Department of Transportation-District 4
Receiving real-time information via electronic means from others		
Freeway Management agencies from which your agency receives		
<i>freeway travel times, speeds, and conditions</i>	Florida Department of Transportation	Florida Department of Transportation
Public Transit operators from which your agency receives		
<i>arterial travel times derived from vehicle probes</i>	None listed	None listed
Incident Management agencies from which your agency receives		
<i>incident clearance and/or incident severity, location, and type information</i>		
Receive information on Incident Clearance	Florida Department of Transportation	Florida Department of Transportation
Receive information on Incident Severity, Location, and Type	Florida Department of Transportation	Florida Department of Transportation
Toll Collection agencies from which your agency receives arterial travel		
<i>times derived from vehicles probes</i>	None listed	None listed
Arterial Incident Management Section		
Agencies your agency provides incident severity, location, and type info.		
<u>and/or shares infrastructure and/or coordinates operation</u>		
Emergency Management Agencies		

Arterial Management Integration
Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Broward County	
	1999	2005
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	Broward County Sheriff, Coral Springs City Police Department, Coral Springs City Police Department, Coral Springs Fire & EMS Department, Fort Lauderdale City Fire Department, Fort Lauderdale City Police Department, Hollywood City Police Department, Hollywood Fire & EMS Department, Pembroke Pines City Fire/Rescue, Pembroke Pines City Police Department, Plantation City Fire & EMS Department, Plantation City Police Department, Pompano Beach City Fire Rescue, Pompano Beach City Police Department, Florida Department of Transportation	None listed
<i>Freeway Management Agencies</i>		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
<i>Public Transit Operators</i>		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
<u>Receiving real-time information via electronic means from others</u>		
<i>Emergency Management agencies from which your agency receives arterial incident clearance and/or arterial incident severity</i>		
Receive Arterial Incident Clearance Information	None listed	None listed
Receive Arterial Incident Severity Information	None listed	None listed
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>		
None listed	None listed	None listed
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>		
None listed	None listed	None listed

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

Arterial Management Integration
Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Dade County	
	1999	2005
Agency Returned Survey?	Yes	
Arterial Management Section		
<u>Arterial Mgt. agencies in metropolitan area with which you share info.</u>		
Share Timing Plans Information	None listed	None listed
Coordinate Changes to Timing Plans	None listed	None listed
Turn over Control of Signals	None listed	None listed
<u>Agencies your agency provides arterial travel times, speeds, and conditions information, share infrastructure or coordinates operation</u>		
<i>Freeway Management Agencies</i>		
Provide Information	None listed	Florida Department of Transportation-District 4, Florida Department of Transportation Turnpike District
Share Infrastructure	None listed	Florida Department of Transportation-District 4, Florida Department of Transportation Turnpike District
Coordinate Operation	None listed	Florida Department of Transportation-District 4, Florida Department of Transportation Turnpike District
<i>Incident Management Agencies</i>		
Provide Information	None listed	Florida Department of Transportation Turnpike District, Florida Department of Transportation-District 4
Share Infrastructure	None listed	Florida Department of Transportation Turnpike District, Florida Department of Transportation-District 4
Coordinate Operation	None listed	Florida Department of Transportation Turnpike District, Florida Department of Transportation-District 4
<i>Public Transit Operators Agencies</i>		
Provide Information	None listed	Miami-Dade Transit Authority

Arterial Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Dade County	
	1999	2005
Share Infrastructure	None listed	Miami-Dade Transit Authority
Coordinate Operation	None listed	Miami-Dade Transit Authority
Arterial Management Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Receiving real-time information via electronic means from others		
Freeway Management agencies from which your agency receives		
<i>freeway travel times, speeds, and conditions</i>	None listed	Florida Department of Transportation Turnpike District, Florida Department of Transportation-District 4
Public Transit operators from which your agency receives		
<i>arterial travel times derived from vehicle probes</i>	None listed	Miami-Dade Transit Authority
Incident Management agencies from which your agency receives		
<i>incident clearance and/or incident severity, location, and type information</i>		
Receive information on Incident Clearance	None listed	Florida Department of Transportation Turnpike District, Florida Department of Transportation-District 4
Receive information on Incident Severity, Location, and Type	None listed	Florida Department of Transportation Turnpike District, Florida Department of Transportation-District 4
Toll Collection agencies from which your agency receives arterial travel		
<i>times derived from vehicles probes</i>	None listed	None listed
Arterial Incident Management Section		
Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation		
Emergency Management Agencies		

Arterial Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Dade County	
	1999	2005
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation		
	None listed	None listed
Freeway Management Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Public Transit Operators		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Receiving real-time information via electronic means from others		
Emergency Management agencies from which your agency receives		
arterial incident clearance and/or arterial incident severity		
Receive Arterial Incident Clearance Information	None listed	None listed
Receive Arterial Incident Severity Information	None listed	None listed
Arterial Management agencies from which your agency receives		
arterial travel times, speeds, and conditions		
Freeway Management agencies from which your agency receives		
freeway travel times, speeds, and conditions	None listed	None listed

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

Appendix H
Arterial Management Information Collection and Dissemination

Data Collection and Dissemination: Arterial Management
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Broward County		Dade County	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Arterial Management Section				
Data collected, archived, and/or transferred to another agency				
Collected by your agency	Traffic volumes, Turning movements, Phasing/cycle lengths, Emergency vehicle signal preemption	Traffic volumes, Turning movements, Phasing/cycle lengths, Emergency vehicle signal preemption, Transit vehicle signal priority	Phasing/cycle lengths, Emergency vehicle signal preemption, Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures, Highway operations coordination information	Phasing/cycle lengths, Emergency vehicle signal preemption, Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures, Highway operations coordination information
Archived by your agency	Traffic volumes, Turning movements, Phasing/cycle lengths, Emergency vehicle signal preemption	Traffic volumes, Turning movements, Phasing/cycle lengths, Emergency vehicle signal preemption, Transit vehicle signal priority	Phasing/cycle lengths, Emergency vehicle signal preemption	Phasing/cycle lengths, Emergency vehicle signal preemption
Transferred to another agency by your agency	NR	NR	NR	NR
Importance of making information available to the public				
Ranked High	NR		NR	
Ranked Medium	NR		Traffic volumes, Traffic speeds, Queues, Phasing/cycle lengths, Road conditions, Emergency vehicle signal preemption, Transit vehicle signal priority, Route designations (snow emergency, etc.), Weather conditions, Incidents, Current work zones, Scheduled work zones, Intermodal (air, rail, water) connections, Emergency/evacuation routes and procedures	
Ranked Low	NR		Lane occupancy, Vehicle classification, Probe vehicles, Turning movements, Highway operations coordination information	

Data Collection and Dissemination: Arterial Management
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Broward County		Dade County	
	1999	2005	1999	2005
Groups that make requests for the data	State DOT personnel, MPOs, Consultants		Universities, State DOT personnel, Consultants, Development Impact Staff at County Public Works De	
What is the data used for?	Traffic analysis, Planning, Dissemination to the public		Traffic analysis, Construction impact determination, Planning	
Methods used to disseminate arterial information to the public				
Technologies your agency uses to disseminate:	Internet Web sites, Kiosks, Facsimile	Internet Web sites, Kiosks, Facsimile	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	NR
Internet web site reporting arterial conditions	NR		NR	
Telephone system for reporting arterial information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	
Arterial Incident Management Section				
Methods used to distribute incident location and severity information to the public				
Technologies your agency uses to disseminate:	NR	NR	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	Telephone system, Internet Web sites, Kiosks	Telephone system, Internet Web sites, Kiosks	NR	NR
Internet web site reporting incident information	NR		NR	
Telephone system for reporting incident information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	

Appendix I
Transit Management Components

Transit Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Broward County Mass Transit	
	1999	2005
Agency Returned Survey?	Yes	
Number of vehicles used in revenue service		
Fixed Route Bus	202	244
Heavy or Rapid Rail	NR	NR
Light Rail	NR	NR
Demand Responsive	480	525
Commuter Rail	NR	NR
Ferry Boat	NR	NR
Have of plan to have an Automated Vehicle Location System?	Yes	
Primary and Secondary Location Technologies Used		
<u>Primary Technologies</u>		
GPS	No	No
Sign/Odometer	No	No
Dead-Reckoning	Yes	No
LORAN C	No	No
Other	Yes	No
<u>Backup Technologies</u>		
GPS	No	No
Sign/Odometer	No	No
Dead-Reckoning	No	No
LORAN C	No	No
Other	No	No
Number of Vehicles Equipped with AVL		
Fixed Route Bus	202	244
Heavy or Rapid Rail	NR	NR
Light Rail	NR	NR
Demand Responsive	NR	NR
Commuter Rail	NR	NR
Ferry Boat	NR	NR
Motor Buses Operated as Vehicle Probes		
Number of Motor Buses equipped as probes on freeways?	NR	
Number of Motor Buses equipped as probes on arterials?	NR	
Have Organized Regional Incident Management Program?	No	
Have Automated Traveler Information System?	Yes	
<u>Services Automated Traveler Info. System Applies:</u>		

Transit Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Broward County Mass Transit	
	1999	2005
Fixed Route	Yes	
Heavy Rail	No	
Light Rail	No	
Demand Responsive	No	
Commuter Rail	No	
Ferry	No	
Locations where traveler information is displayed to public		
Number of bus stops on fixed transit routes	NR	NR
Bus stops on fixed transit routes that display traveler info to the public	NR	NR
Number of rail stations	NR	NR
Number of rail stations that display traveler information	NR	NR
Number of other locations that display traveler information to public	NR	NR
Number of vehicles the traveler information system has available		
Fixed Route Bus	NR	NR
Heavy or Rapid Rail	NR	NR
Light Rail	NR	NR
Demand Responsive	NR	NR
Commuter Rail	NR	NR
Ferry Boat	NR	NR
Deployment of Communications Technology		
<i>Attributes of Radio System:</i>		
Digital?	No	
Analog?	Yes	
Trunked?	No	
Regular?	Yes	
Services that use a Digital or Trunked Radio System		
<i>Digital Only</i>		
Fixed Route Bus	No	No
Heavy or Rapid Rail	No	No
Light Rail	No	No
Demand Responsive	No	No
Commuter Rail	No	No
Ferry Boat	No	No
<i>Trunked Only</i>		
Fixed Route Bus	No	No
Heavy or Rapid Rail	No	No
Light Rail	No	No
Demand Responsive	No	No
Commuter Rail	No	No

Transit Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Broward County Mass Transit	
	1999	2005
Ferry Boat	No	No
Have of plan to have Automatic Passenger Counters (APCs)?	Yes	
Methods used to count passengers		
Treadle Mats	No	
Infrared Beams	No	
Primary and Secondary Location Technologies Used		
<i>Primary Technologies</i>		
GPS	No	No
Differential GPS	Yes	No
Signpost/Odometer	No	No
Dead_Reckoning	No	No
LORAN C	No	No
Other	No	No
<i>Backup Technologies</i>		
GPS	No	No
Differential GPS	No	No
Signpost/Odometer	No	No
Dead_Reckoning	Yes	No
LORAN C	No	No
Other	No	No
Number of Vehicles with APCs		
Fixed Route Bus	0	250
Heavy or Rapid Rail	NR	NR
Light Rail	NR	NR
Demand Responsive	NR	NR
Commuter Rail	NR	NR
Ferry Boat	NR	NR
Remote Real-Time Monitoring and Computer Assisted Dispatching		
<i>Remote Real-Time Monitoring</i>		
Fixed Route Bus	202	244
Heavy or Rapid Rail	NR	NR
Light Rail	NR	NR
Demand Responsive	NR	NR
Commuter Rail	NR	NR
Ferry Boat	NR	NR
<i>Automated Dispatching or Control Software</i>		
Fixed Route Bus	202	244
Heavy or Rapid Rail	NR	NR
Light Rail	NR	NR

Transit Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Broward County Mass Transit	
	1999	2005
Demand Responsive	NR	NR
Commuter Rail	NR	NR
Ferry Boat	NR	NR
Coordinate or plan to coordinate travel request and vehicle dispatching for multiple agencies?	No	
Is there or will there be a Transportation Management Center (TMC) in the region that controls transit and highway modes?	NR	
Modes that TMC currently controls:		
Highways	No	No
Fixed Route Bus	No	No
Heavy or Rapid Rail	No	No
Light Rail	No	No
Demand Responsive	No	No
Commuter Rail	No	No
Ferry Boat	No	No
Other	No	No
Priority at Traffic Signals and Ramp Meter Priority		
<i>Priority at Traffic Signals</i>		
Fixed Route Bus	NR	NR
Light Rail	NR	NR
Demand Responsive	NR	NR
<i>Ramp Meter Priority</i>		
Fixed Route Bus	NR	NR
Demand Responsive	NR	NR
Number of Vehicles Equipped with Navigation Aids		
Fixed Route Bus	NR	NR
Heavy or Rapid Rail	NR	NR
Light Rail	NR	NR
Demand Responsive	NR	NR
Commuter Rail	NR	NR
Ferry Boat	NR	NR
ITS Standards Used Related to Transit Management		
TCIP On Board Objects (TCIP-OB)	No	
TCIP Traffic Management Objects (TCIP-TM)	No	
TCIP Common Public Transportation Objects (TCIP-CPT)	No	
TCIP Passenger Information Objects (TCIP-PI)	No	
TCIP Incident Management Objects (TCIP-IM)	No	
TCIP Fare Collection Objects (TCIP-FC)	No	

Transit Management
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Broward County Mass Transit	
	1999	2005
TCIP Spatial Representation Objects (TCIP-SP)	No	
TCIP Control Center Objects (TCIP-CC)	No	
TCIP Scheduling/Runcutting Objects (TCIP-SCH)	No	
Send data communication between micro computer and heavy duty vehicle applications (SAE J1708)	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?	No	
Electronic Fare Payment		
Have full operational Electronic Fare Payment System?	No	
Methods of Fare Payment		
<u>Stored value card with fare deducted for each trip</u>		
Magnetic Stripe	No	
Smart Card	No	
Debit Card	No	
<u>Billed by the month for trips taken</u>		
Magnetic Stripe	No	
Smart Card	No	
Credit Card	No	
<u>Monthly Pass</u>		
Magnetic Stripe	No	
Smart Card	No	
Vehicles/Stations Equipped with Automated Payment Mechanism		
<u>Magnetic Stripe Readers</u>		
Fixed Route Bus Vehicles	NR	NR
Heavy or Rapid Rail Stations	NR	NR
Light Rail Stations	NR	NR
Demand Responsive Vehicles	NR	NR
Commuter Rail Stations	NR	NR
Ferry Boat Landings	NR	NR
<u>Smart Card Readers</u>		
Fixed Route Bus Vehicles	NR	NR
Heavy or Rapid Rail Stations	NR	NR
Light Rail Stations	NR	NR
Demand Responsive Vehicles	NR	NR
Commuter Rail Stations	NR	NR
Ferry Boat Landings	NR	NR
<u>Credit Card</u>		
Fixed Route Bus Vehicles	NR	NR
Heavy or Rapid Rail Stations	NR	NR

Transit Management
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Broward County Mass Transit	
	1999	2005
Light Rail Stations	NR	NR
Demand Responsive Vehicles	NR	NR
Commuter Rail Stations	NR	NR
Ferry Boat Landings	NR	NR
<i>Debit Card</i>		
Fixed Route Bus Vehicles	NR	NR
Heavy or Rapid Rail Stations	NR	NR
Light Rail Stations	NR	NR
Demand Responsive Vehicles	NR	NR
Commuter Rail Stations	NR	NR
Ferry Boat Landings	NR	NR
NR: No Response		

Appendix J
Transit Management Integration

Transit Management Integration
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

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

Appendix K
Transit Management Information Collection and Dissemination

Data Collection and Dissemination: Transit Management
 Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Broward County Mass 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	Internet Web Sites, Telephone System	NR
Real-time transit schedule adherence or arrival and departure times	NR	NR
Technologies employed by other organization receiving your data		
Transit routes, schedules and fares	NR	NR
Real-time transit schedule adherence or arrival and departure times	NR	NR
Internet web site reporting transit routes, schedules and fare, etc.	not available at this time	
Telephone system for reporting transit information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	
Data collected, archived, and/or transferred to another agency		
Collected by your agency	Vehicle monitoring status	Passenger count, Trip itinerary planning records, Vehicle time and location
Archived by your agency	NR	NR
Transferred to another agency by your agency	NR	NR
Importance of making information available to the public		
Ranked High	Weather conditions, Trip itinerary planning records, Passenger information (e.g., surveys, O/D), Road conditions, Vehicle time and location, Route designations (snow emergency, etc), Intermodal (air, rail, water) conditions, Emergency/evacuation routes and procedures	
Ranked Medium	Vehicle monitoring status, Emergency vehicle signal preemption, Transit operations coordination information, Current roadway work zones for transit, Scheduled roadway work zones for transit, Transit vehicle signal priority	
Ranked Low	Passenger count, Incidents, Highway operations coordination information	
Groups that make requests for the data	Advanced Traveler Information Systems (ATIS) providers, Consultants, MPOs, Media (I.e., TV stations, radio stations), Federal DOT personnel, State DOT personnel, Universities	
What is the data used for?	Dissemination to the public, Accident prediction models, Roadway impact analysis, Incident detection algorithm development, Planning, Construction impact determination, Traffic analysis	

NR: No Response

Appendix L
Emergency Management

Emergency Management Agencies for Metropolitan Area: Miami, Fort Lauderdale

Agency Name	Total Vehicles		Navigation Capabilities		AVL		CAD		CAD Equipped with Mobile Data Terminal		Vehicles Equipped with Preemption		Participate in Formal Incident Mgt Program	Send Incident Info to other agencies	List of agencies receiving data
	1999	2005	1999	2005	1999	2005	1999	2005	1999	2005	1999	2005			
Broward County Sheriff	1,000	1,400	0	NR	0	NR	1,000	NR	0	NR	0	NR	No	No	None listed
Coral Springs City Police Department	130	NR	0	NR	0	NR	130	NR	90	NR	0	NR	Yes	Yes	Broward County Emergency Management Division
Coral Springs Fire & EMS Department	16	20	0	20	0	20	16	20	0	20	0	20	Yes	Yes	None listed
Fort Lauderdale City Fire Department	26	30	0	NR	0	30	0	30	NR	NR	0	NR	Yes	No	None listed
Fort Lauderdale City Police Department	82	93	0	0	6	10	0	0	7	7	0	0	No	No	None listed
Hialeah City Fire Department	67	68	0	0	0	18	67	68	NR	NR	0	0	Yes	Yes	Miami Dade County Fire & Rescue
Hialeah City Police Department	350	420	0	NR	0	NR	200	420	200	420	0	0	Yes	Yes	None listed
Miami City Fire Department	17	NR	0	NR	0	NR	17	NR	NR	NR	0	NR	Yes	Yes	None listed
Miami City Fire Rescue (Emergency Medical)	21	NR	0	NR	0	NR	21	NR	NR	NR	0	NR	Yes	Yes	None listed
Miami City Police Department	600	900	0	0	0	900	600	900	320	900	0	0	No	Yes	Miami-Dade Police Department
Miami-Dade Police Department	1,929	2,250	0	0	0	0	25	750	NR	NR	0	0	Yes	No	None listed
North Miami Beach City Police Department	72	78	0	75	0	75	72	78	72	78	0	0	Yes	Yes	Metro Dade Police Department
Pembroke Pines City Fire/Rescue	7	8	0	8	0	8	0	8	NR	NR	0	0	Yes	No	None listed
Pembroke Pines City Fire/Rescue (Emergency Medical)	5	7	0	7	0	7	0	7	NR	NR	0	0	Yes	No	None listed
Pembroke Pines City Police Department	224	274	0	0	0	0	224	274	NR	NR	0	0	Yes	No	None listed
Plantation City Fire & EMS Department	22	NR	5	NR	0	NR	0	NR	0	NR	0	NR	Yes	No	None listed
Plantation City Police Department	101	NR	0	NR	0	NR	0	NR	0	NR	0	NR	Yes	No	None listed
Pompano Beach City Fire Rescue	8	10	0	0	0	0	8	10	NR	NR	0	0	Yes	Yes	Broward County HazMat
Pompano Beach City Fire Rescue (Emergency Medical)	13	18	0	0	0	0	13	18	NR	NR	0	0	Yes	Yes	Florida State Health Department, NFIRC System, Broward County Hazmat
Pompano Beach City Police Department	82	85	0	0	0	0	82	85	NR	NR	0	0	No	Yes	Broward County Sheriff
Sunrise City Fire & EMS Department	13	15	13	15	13	15	13	15	NR	NR	0	15	Yes	No	None listed
Sunrise City Police Department	140	160	110	130	110	130	140	160	NR	NR	0	0	Yes	Yes	Broward County Hurricane Management

Appendix M
Electronic Toll Collection

Electronic Toll Collection
Agencies for Metropolitan Area: Miami, Fort Lauderdale

	Bay Harbor Island City		Dade County/Rickenbacker Causeway		Dade County/Venetial Causeway		Totals	
	1999	2005	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		Yes		3	
Number of toll Collection Plazas operated	0	0	1	1	1	1	2	2
Number of toll collection plazas with dedicated ETC	0	0	1	1	0	0	1	1
Number of toll collection plazas with both manual and ETC	0	0	1	1	1	1	2	2
Number of toll collection lanes operated	6	0	8	8	6	6	20	14
Number of toll collection lanes with dedicated ETC	4	0	1	1	2	2	7	3
Number of toll collection lanes with both manual and ETC	2	0	5	5	2	2	9	7
Number of toll collection tags issued	8,854	0	14,000	20,000	9,000	12,000	31,854	32,000
Antennae Location Technologies								
In-Pavement?	No		No		No		0	
Focused Beam?	No		No		No		0	
Distributed Overhead?	No		Yes		Yes		2	
In-Vehicle Equipment Technologies								
Tag-based?	No		Yes		Yes		2	
Integrated circuit card-based?	No		No		No		0	
Are toll tags used by other toll operations in metro area?	NR		No		No		0	
List of toll operators that use tags	None		None		None			
Are toll tags used by operators of public transit to pay transit fares in metro area?	NR		No		No		0	
List of transit operators that use tags	None		None		None			
NR: No Response								