

Tracking the Deployment of the Integrated Metropolitan ITS Infrastructure in Dayton, Springfield

FY99 Results

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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 Dayton, Springfield 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 Dayton, Springfield region was 74% in 1997 and 81% 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:

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

Part 2 - Summary 1999 Survey Results

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

The following two figures portray the surrogate indicators for each of the nine components in Dayton, Springfield 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.

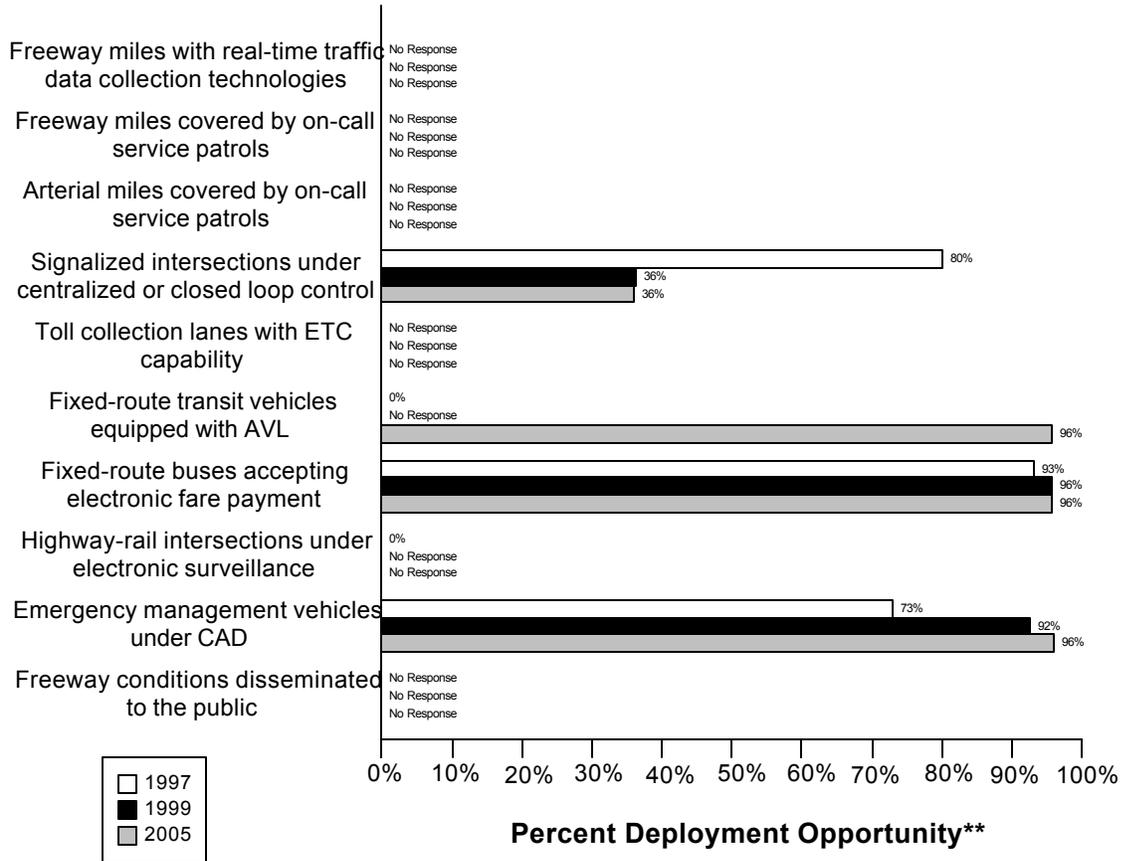
A critical aspect of ITS that provides much of its capability is the integration of individual components to form a unified regional traffic control system. Individual ITS components routinely collect information that is used for purposes internal to that component. For example, the Arterial Management 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

Dayton, Springfield Summary Indicators*

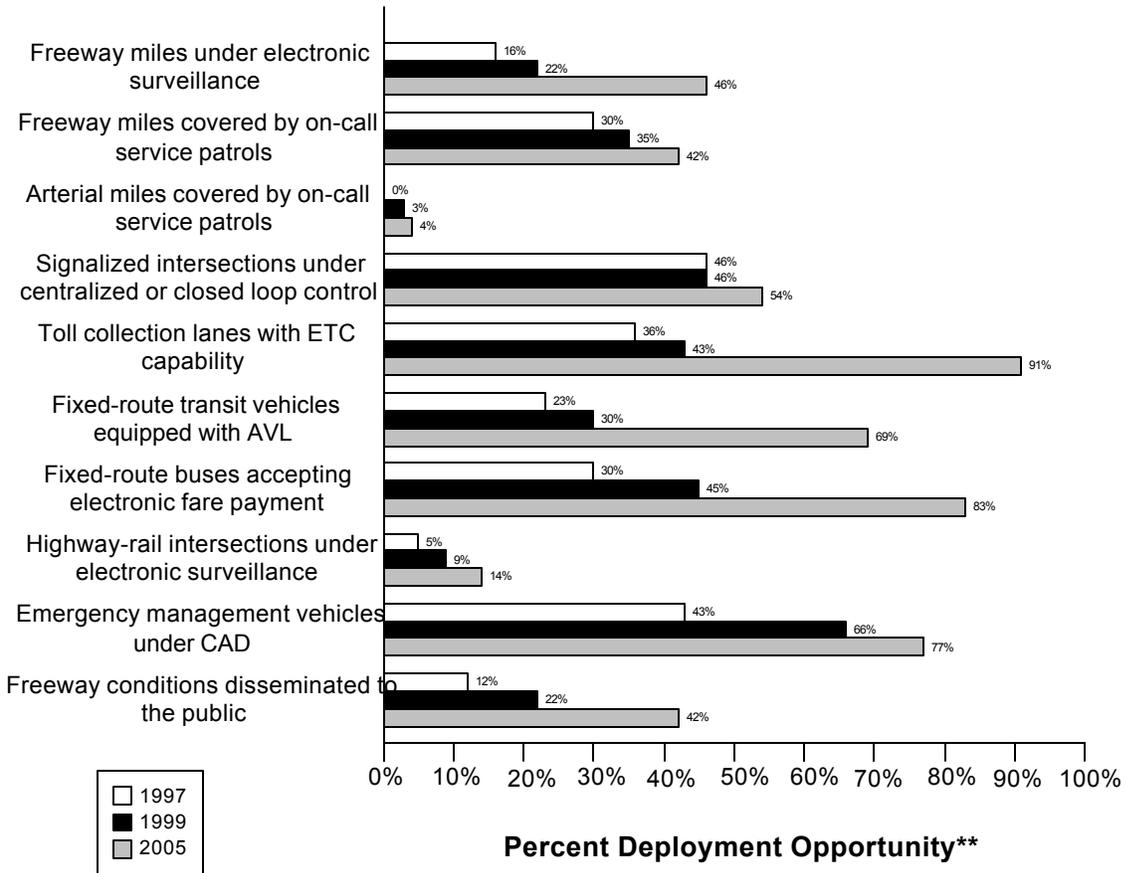


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.

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

National Summary Indicators*

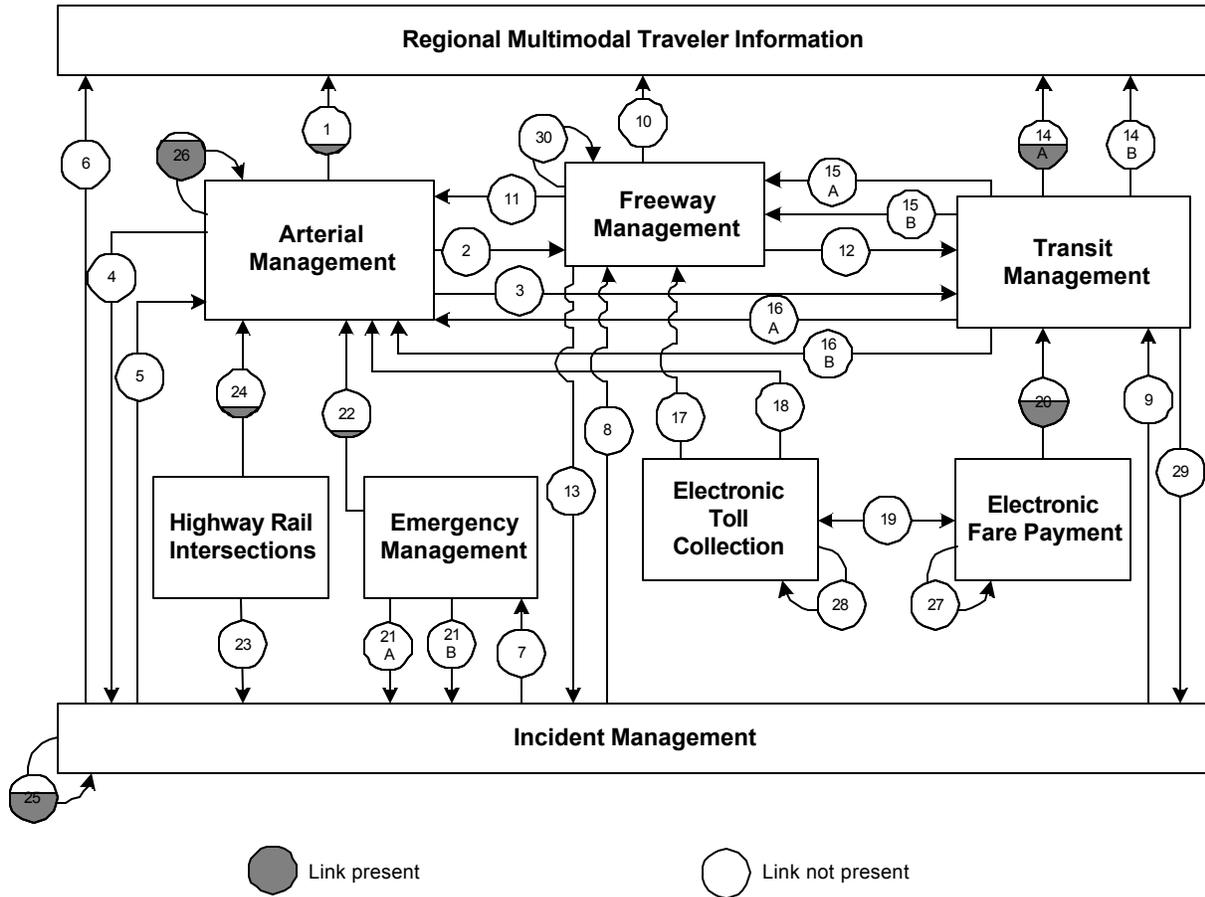
Data as of 5/1/00



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Dayton, Springfield Integration Links



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 Dayton, Springfield 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).

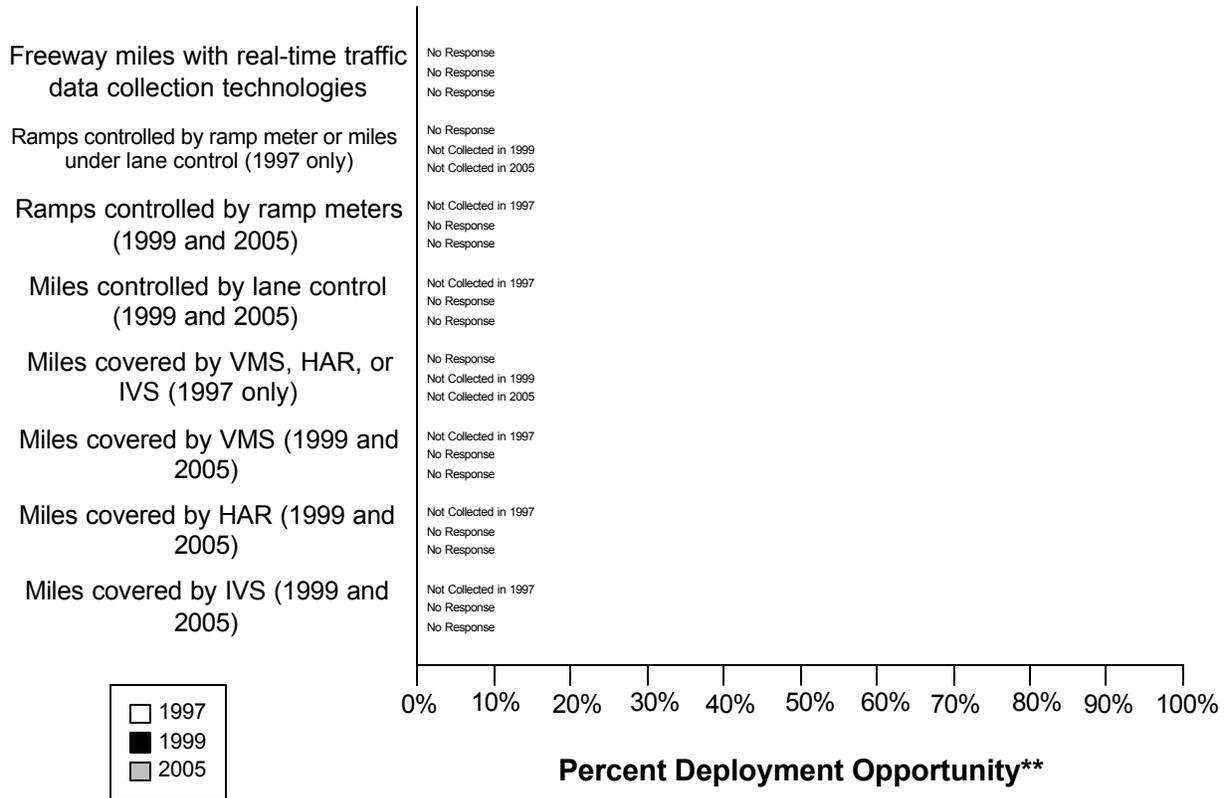
Example: Calculating Integration between Arterial Management and Regional Multimodal Traveler Information

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

Dayton, Springfield Freeway Management*



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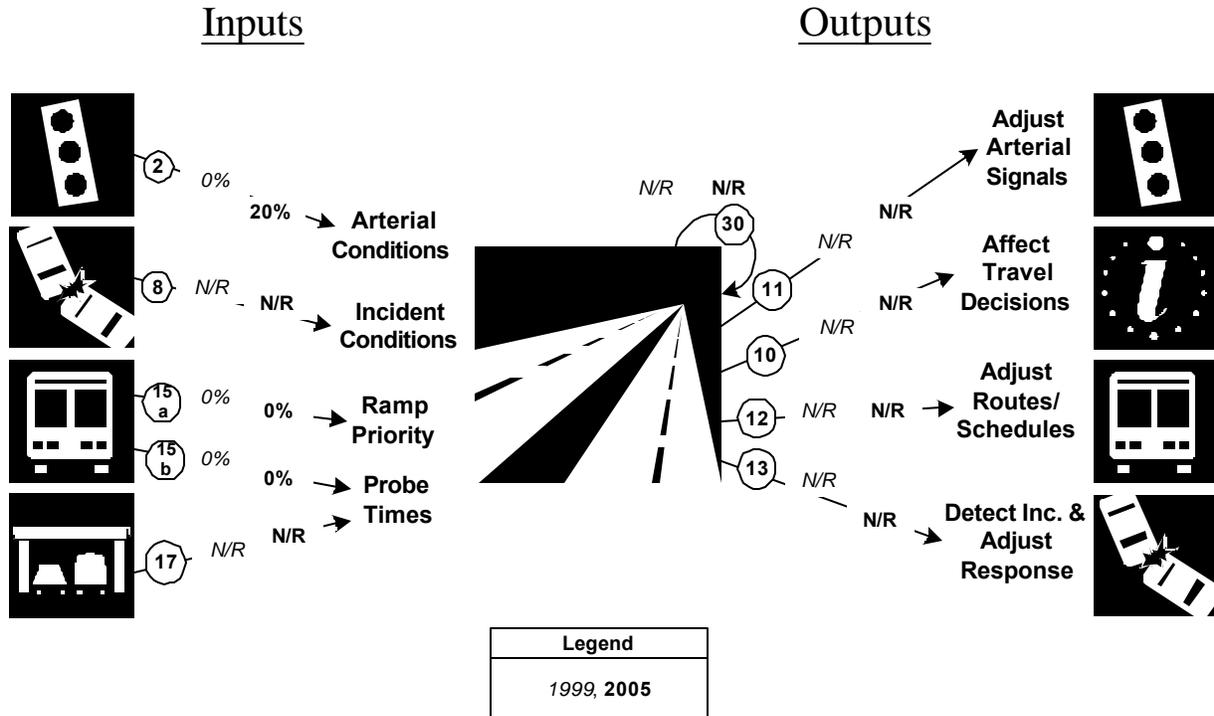
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway centerline miles are under electronic surveillance for monitoring traffic flow		154							
Freeway entrance ramps are controlled by ramp meters or miles under lane control									

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway entrance ramps are controlled by ramp meters									
Freeway centerline miles will be controlled by lane control									
Freeway miles are covered by VMS, HAR, or IVS		154							
Freeway miles are covered by VMS									
Freeway miles are covered by HAR									
Freeway miles are covered by IVS									

Freeway Management Integration Indicators

Dayton, Springfield

Freeway Management Integration*



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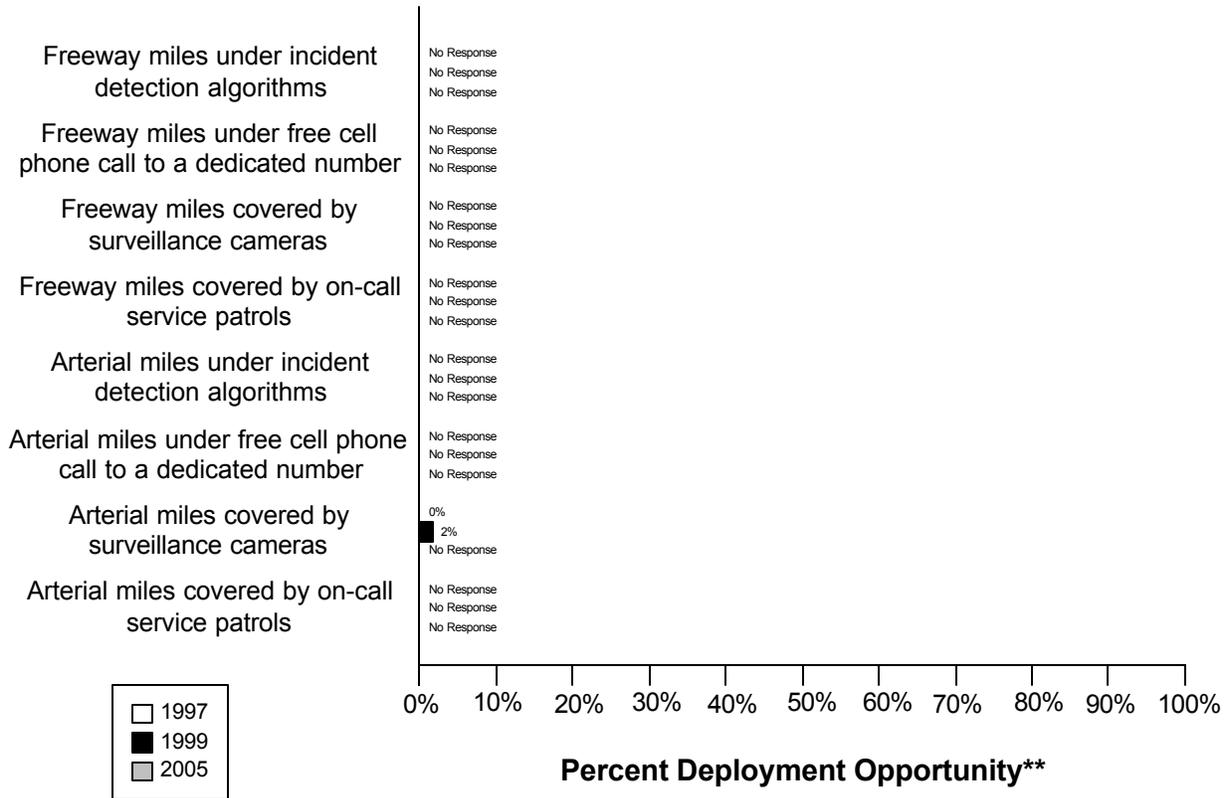
Link Description	1999	2005
2. Arterial Management agencies sending information to Freeway Management	(0 / 5) 0%	(1 / 5) 20%
8. Incident Management agencies sending information to Freeway Management	(0 /)	(0 /)
15a. Transit management agencies with vehicles equipped with ramp meter priority	(0 / 2) 0%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

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

Incident Management Component Indicators

Data as of 5/1/00

**Dayton, Springfield
Freeway and Arterial Incident Management***



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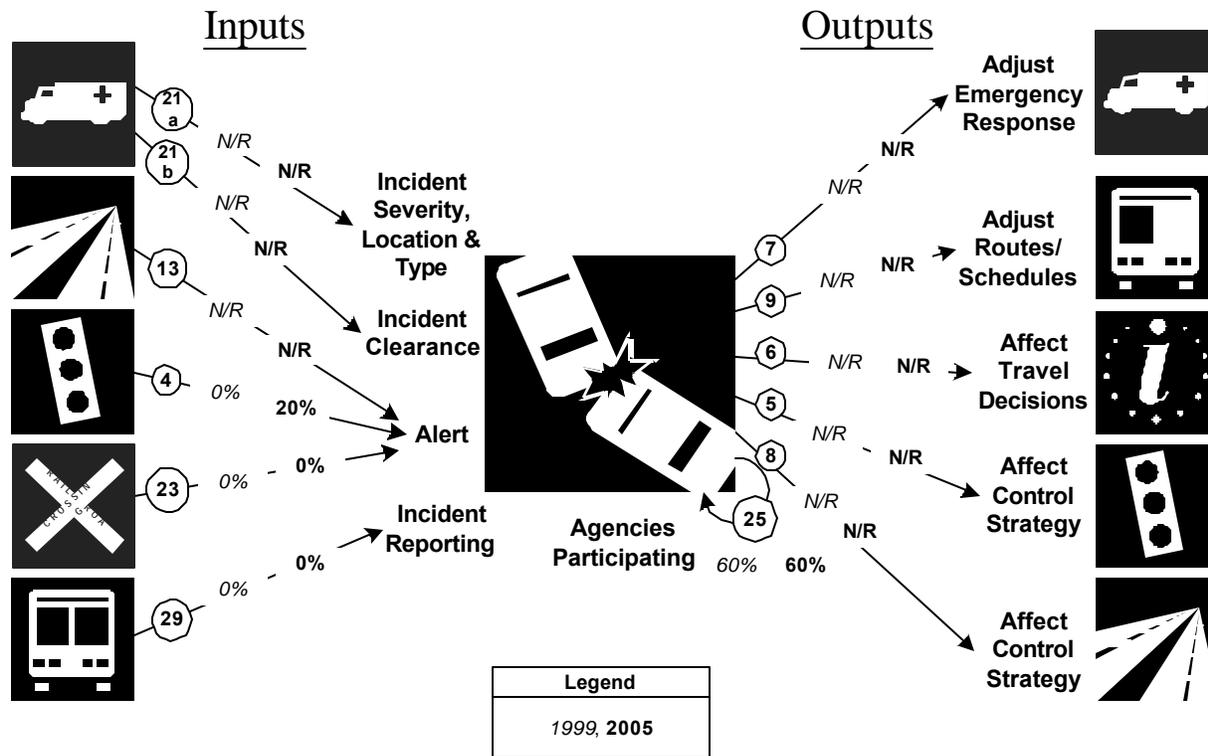
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by incident detection algorithms		154							
Freeway miles are covered by free cellular phone calls to a dedicated number		154							

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by surveillance cameras.		154							
Freeway miles are covered by on-call publicly-sponsored service patrol or towing services.		154							
Arterial miles are covered by incident detection algorithms		584			584			584	
Arterial miles are covered by free cellular phone calls to a dedicated number		584			584			584	
Arterial miles are covered by surveillance cameras	0	584	0%	10	584	2%		584	
Arterial miles are covered by on-call publicly-sponsored service patrol or towing services		584			584			584	

Incident Management Integration Indicators

Dayton, Springfield

Incident Management Integration*



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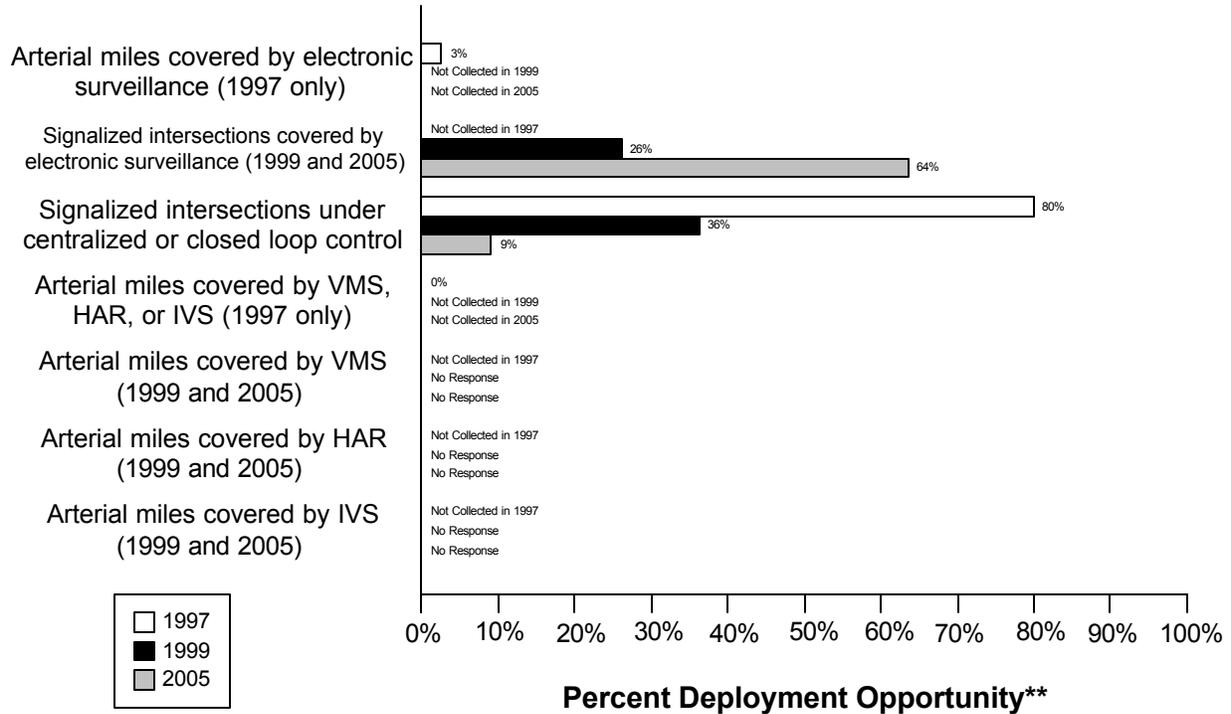
Link Description	1999	2005
21a. Incident management agencies receiving incident severity from Emergency Management	(0 /)	(0 /)
21b. Incident management agencies receiving incident clearance activities from Emergency Management	(0 /)	(0 /)
13. Freeway Management agencies sending freeway conditions to Incident Management	(0 /)	(0 /)
4. Arterial Management agencies sending arterial conditions to Incident Management	(0 / 5) 0%	(1 / 5) 20%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	(0 / 5) 0%	(0 / 5) 0%
29. Transit Management agencies report traffic incidents as part of an organized regional incident management program	(0 / 2) 0%	(0 / 2) 0%

Link Description	1999	2005
7. Incident management agencies transfer information describing incident severity, location, and type to Emergency Management agencies	(0/)	(0/)
9. Incident Management agencies transfer information describing incident severity, location, and type to Transit Management agencies	(0/)	(0/)
6. Incident Management agencies disseminate information describing incident severity, location, and type to the public	(0/)	(0/)
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management agencies	(0/)	(0/)
8. Incident Management agencies transfer information describing incident severity, location, and type to Freeway Management agencies	(0/)	(0/)
25. Police, fire, and EMS agencies participating in a formal incident management plan/team	(12/ 20) 60%	(12/ 20) 60%

Arterial Management Component Indicators

Data as of 5/1/00

Dayton, Springfield Arterial Management*



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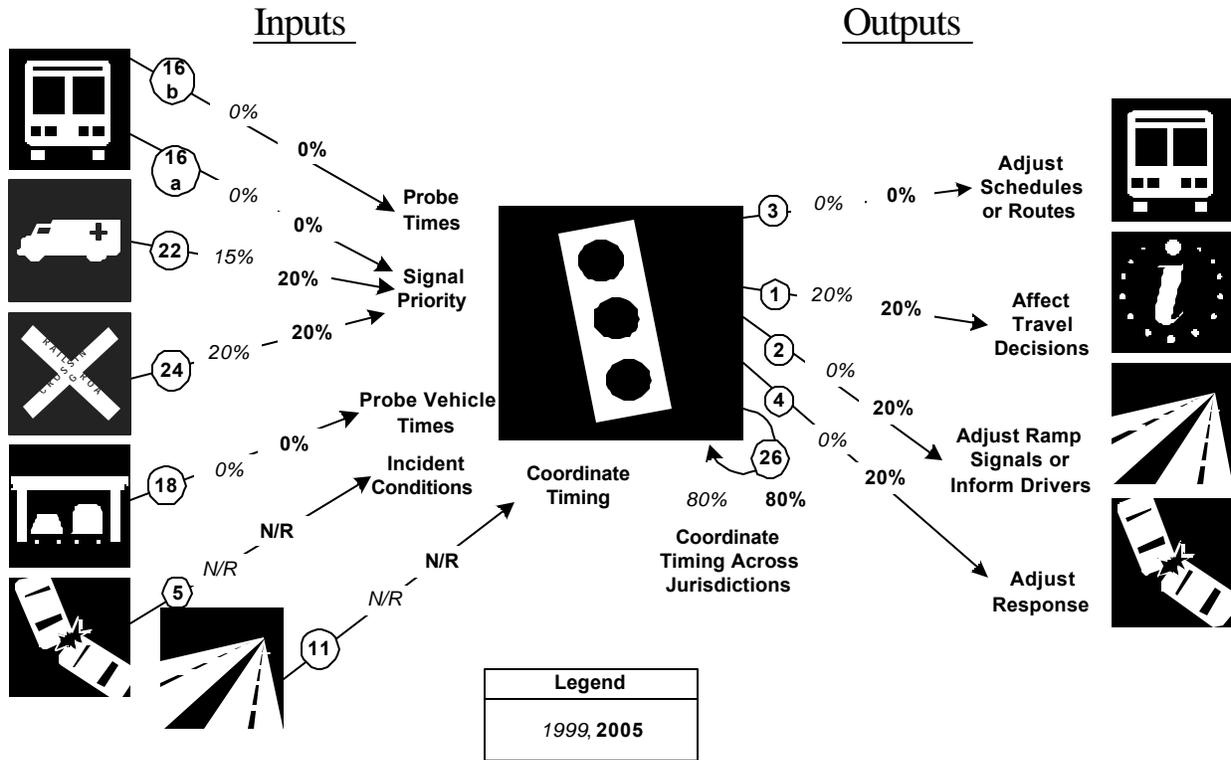
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles covered by electronic surveillance	15	584	3%						
Signalized intersections are covered by electronic surveillance for monitoring traffic flow				70	268	26%	70	110	64%
Signalized intersections are under centralized or closed loop control	380	475	80%	97	268	36%	10	110	9%

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles are covered by VMS, HAR, or IVS	0	584	0%						
Arterial miles are covered by VMS					584			584	
Arterial miles are covered by HAR					584			584	
Arterial miles are covered by IVS					584			584	

Arterial Management Integration Indicators

Dayton, Springfield

Arterial Management Integration*



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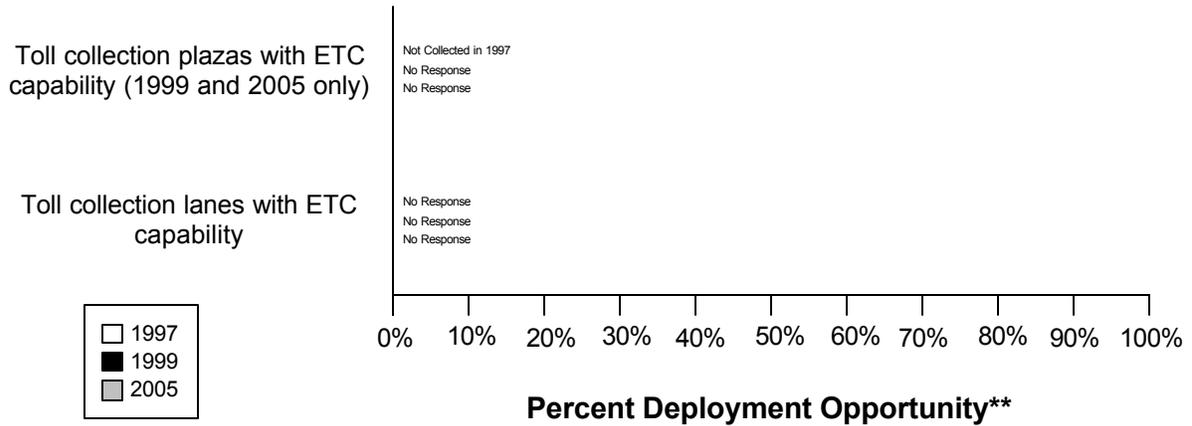
Link Description	1999	2005
16a. Transit management agencies with vehicles equipped with traffic signal priority	(0 / 2) 0%	(0 / 2) 0%
16b. Transit Management agencies have vehicles equipped as probes on arterials	(0 / 2) 0%	(0 / 2) 0%
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	(3 / 20) 15%	(4 / 20) 20%
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	(1 / 5) 20%	(1 / 5) 20%
18. Number of Arterial Management agencies receiving information from vehicle probes	(0 / 5) 0%	(0 / 5) 0%
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management	(0 /) 0%	(0 /) 0%

Link Description	1999	2005
11. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Arterial Management agencies	(0/) 0%	(0/) 0%
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	(0/ 5) 0%	(0/ 5) 0%
1. Arterial Management agencies disseminate arterial travel times, speeds, and conditions to the public	(1/ 5) 20%	(1/ 5) 20%
2. Arterial Management agencies send traffic condition information to Freeway Management	(0/ 5) 0%	(1/ 5) 20%
4. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Incident Management	(0/ 5) 0%	(1/ 5) 20%
26. Arterial Management agencies under cooperative agreement to share traffic signal timing for coordinated response	(4/ 5) 80%	(4/ 5) 80%

Electronic Toll Collection Component Indicators

Data as of 5/1/00

**Dayton, Springfield
Electronic Toll Collection***



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

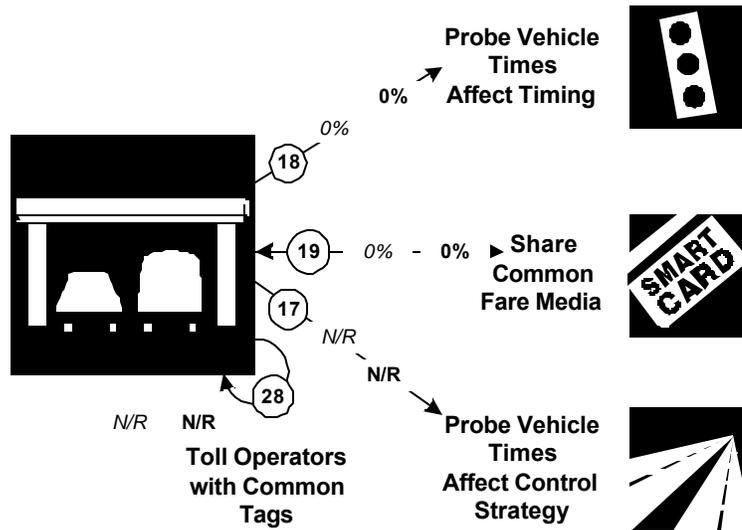
Electronic Toll Collection Integration Indicators

Dayton, Springfield

Electronic Toll Collection Integration*

Inputs

Outputs



Legend
1999, 2005

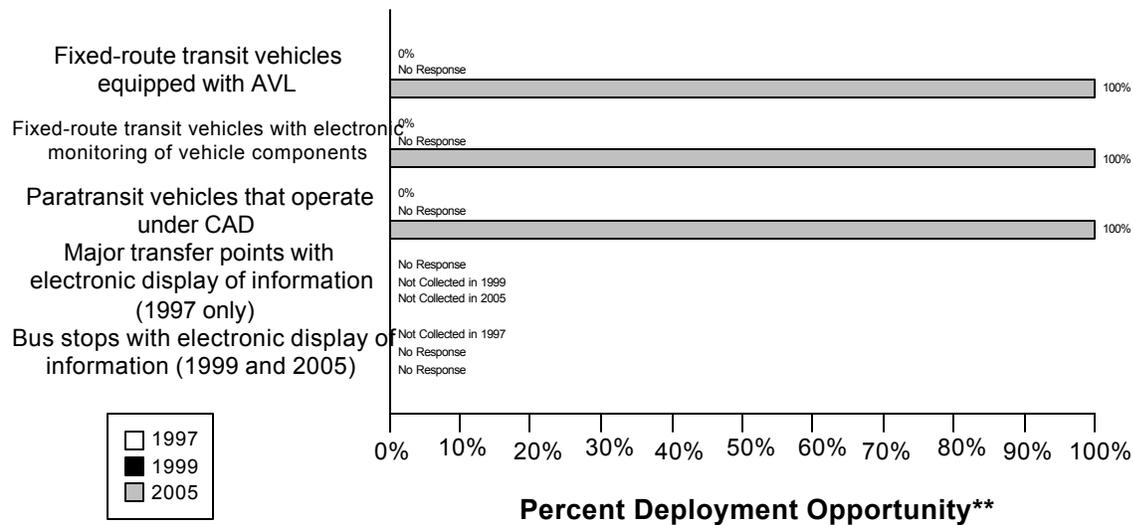
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
18. Number of Arterial Management agencies receiving information from vehicle probes	(0/ 5) 0%	(0/ 5) 0%
19. Transit agencies that accept electronic payment through the use of electronic toll collection media	(0/ 2) 0%	(0/ 2) 0%
17. Freeway Management agencies receiving information from vehicle probes	(0/)	(0/)
28. Toll operators using common toll tag technology	(0/)	(0/)

Transit Management Component Indicators

Data as of 5/1/00

Dayton, Springfield Transit Management*



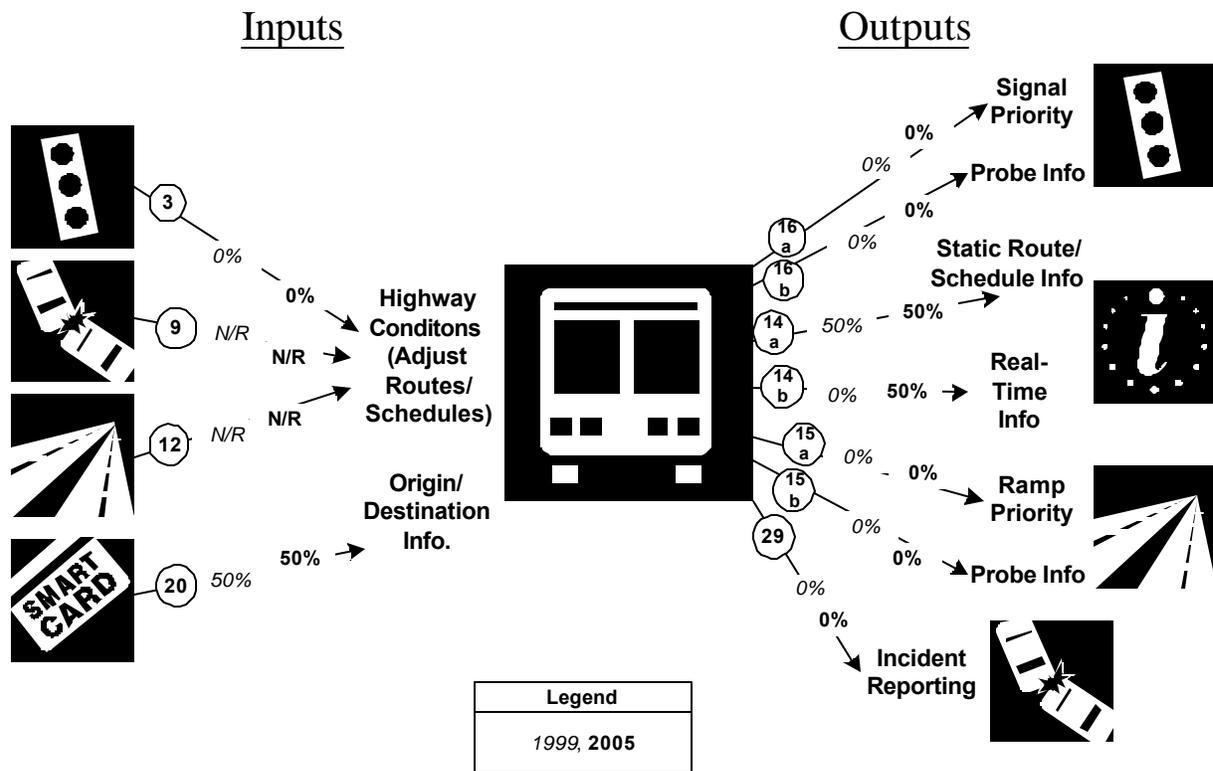
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Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Fixed-route transit vehicles are equipped with AVL	0	219	0%		249		238	238	100%
Fixed-route transit vehicles are equipped with electronic monitoring of vehicle component	0	219	0%		249		238	238	100%
Paratransit vehicles operate under computer-aided dispatch	0	61	0%		54		50	50	100%
Percent fixed-route transfer locations with electronic display of information	0	0							
Bus stops display information to the public									

Transit Management Integration Indicators

Dayton, Springfield Transit Management Integration*



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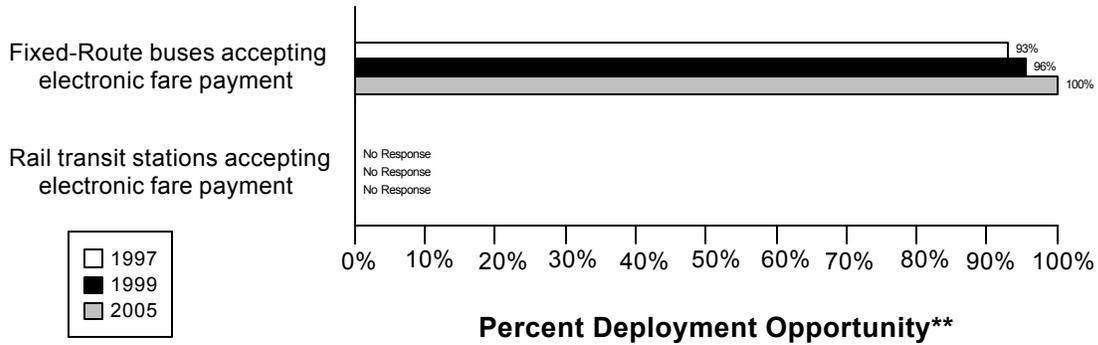
Link Description	1999	2005
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	(0 / 5) 0%	(0 / 5) 0%
9. Incident management agencies transfer information describing incident severity, location, and type to Transit Management	(0 /)	(0 /)
12. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Transit Management	(0 /)	(0 /)
20. Transit Management agencies using Electronic Fare Payment data in transit service planning	(1 / 2) 50%	(1 / 2) 50%
16a. Transit Management agencies have vehicles equipped with traffic signal priority capability	(0 / 2) 0%	(0 / 2) 0%
16b. Transit Management agencies have vehicles equipped as probes on arterials	(0 / 2) 0%	(0 / 2) 0%
14a. Transit Management agencies disseminate information describing transit routes, schedules, and fares to travelers	(1 / 2) 50%	(1 / 2) 50%

Link Description	1999	2005
14b. Transit Management agencies disseminate information describing schedule/route adherence to travelers	(0/ 2) 0%	(1/ 2) 50%
15a. Transit Management agencies have vehicles equipped with ramp meter priority capability	(0/ 2) 0%	(0/ 2) 0%
15b. Transit Management agencies have vehicles equipped as probes on freeways	(0/ 2) 0%	(0/ 2) 0%
29. Transit Management agencies that report traffic incidents as part of an organized regional Incident Management program	(0/ 2) 0%	(0/ 2) 0%

Electronic Fare Payment Component Indicators

Data as of 5/1/00

Dayton, Springfield Electronic Fare Payment*



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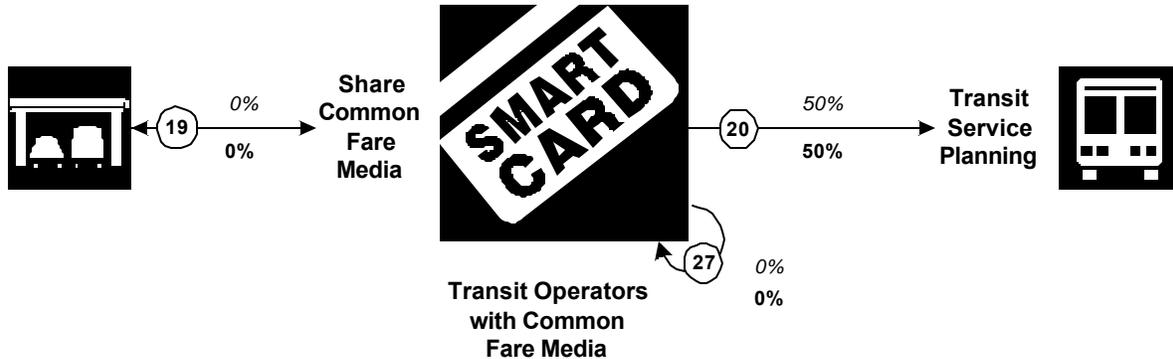
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Fixed-route transit vehicles that accept electronic payment	204	219	93%	238	249	96%	238	238	100%
Rail transit stations that accept electronic payment	0	0							

Electronic Fare Payment Integration Indicators

**Dayton, Springfield
Electronic Fare Payment Integration***

Inputs

Outputs



Legend
1999
2005

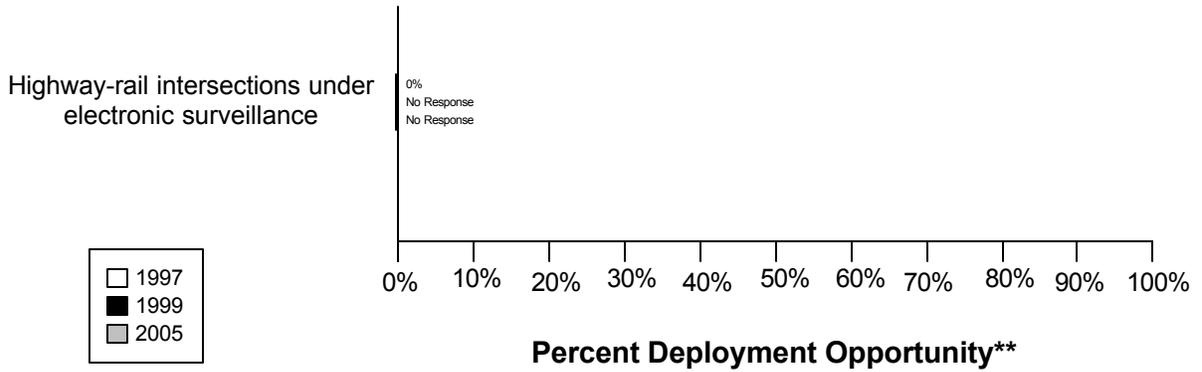
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
19. Transit agencies that accept electronic payment through the use of electronic toll collection media	(0 / 2) 0%	(0 / 2) 0%
20. Transit Management agencies use Electronic Fare Payment data in transit service planning	(1 / 2) 50%	(1 / 2) 50%
27. Transit Management agencies that use the same electronic payment system	(0 / 2) 0%	(0 / 2) 0%

Highway Rail Intersection Component Indicators

Data as of 5/1/00

Dayton, Springfield Highway-Rail Intersections*



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Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Highway-rail intersections are under electronic surveillance	0	92	0%		67			67	

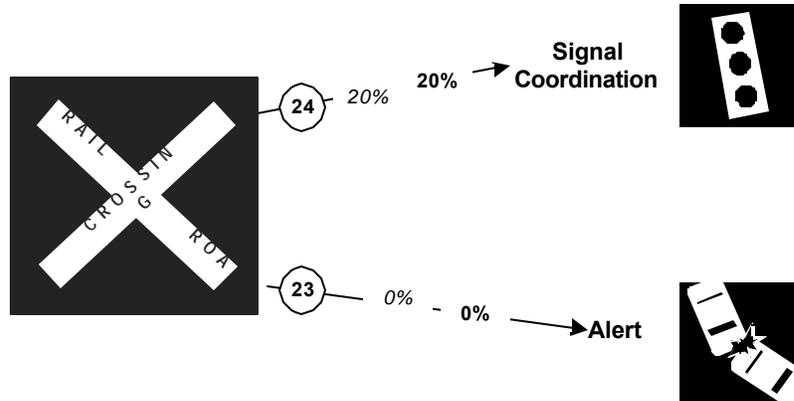
Highway Rail Intersection Integration Indicators

Dayton, Springfield

Highway Rail Intersections Integration*

Inputs

Outputs



Legend
1999, 2005

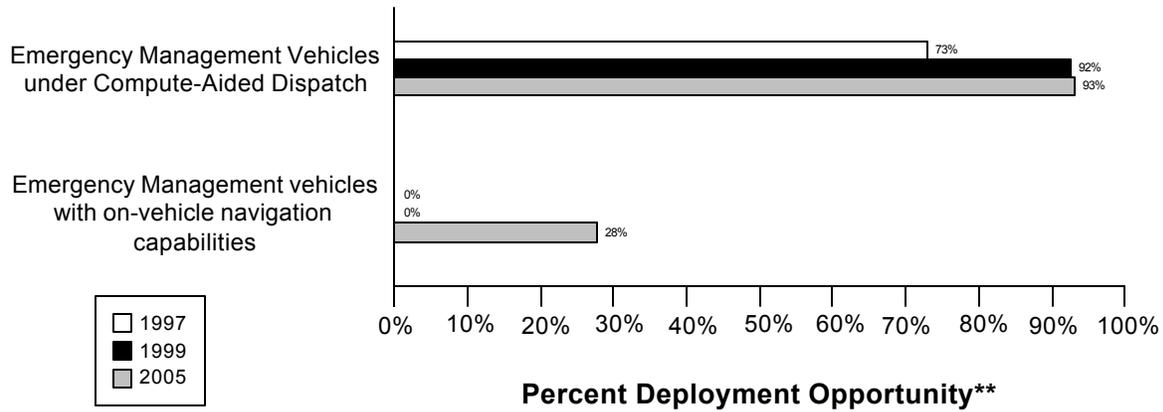
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

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	(1/ 5) 20%	(1/ 5) 20%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	(0/ 5) 0%	(0/ 5) 0%

Emergency Management Component Indicators

Data as of 5/1/00

Dayton, Springfield 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.

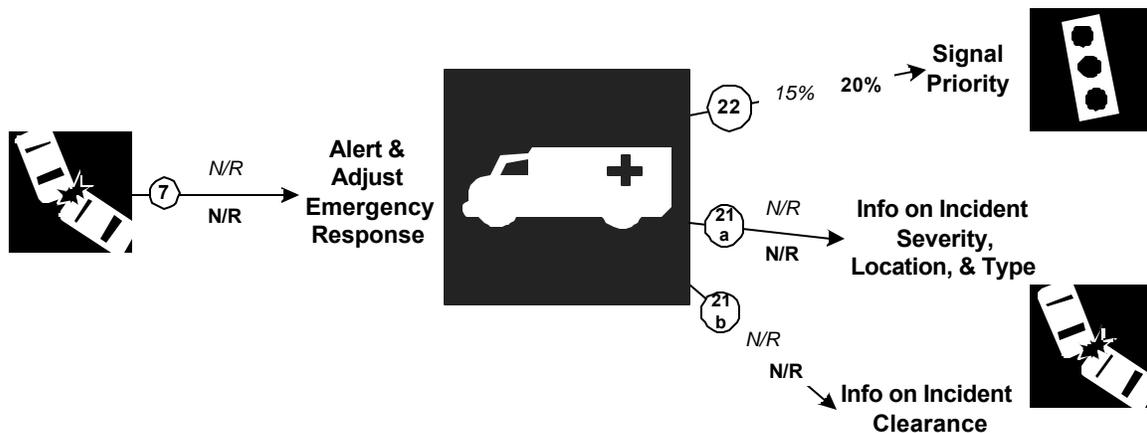
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Public sector emergency vehicles that operate under computer-aided dispatch	414	567	73%	528	571	92%	338	363	93%
Public sector emergency vehicles that have in-vehicle route guidance capability	0	567	0%	0	571	0%	100	363	28%

Emergency Management Integration Indicators

Dayton, Springfield Emergency Management Integration*

Inputs

Outputs



Legend
1999, 2005

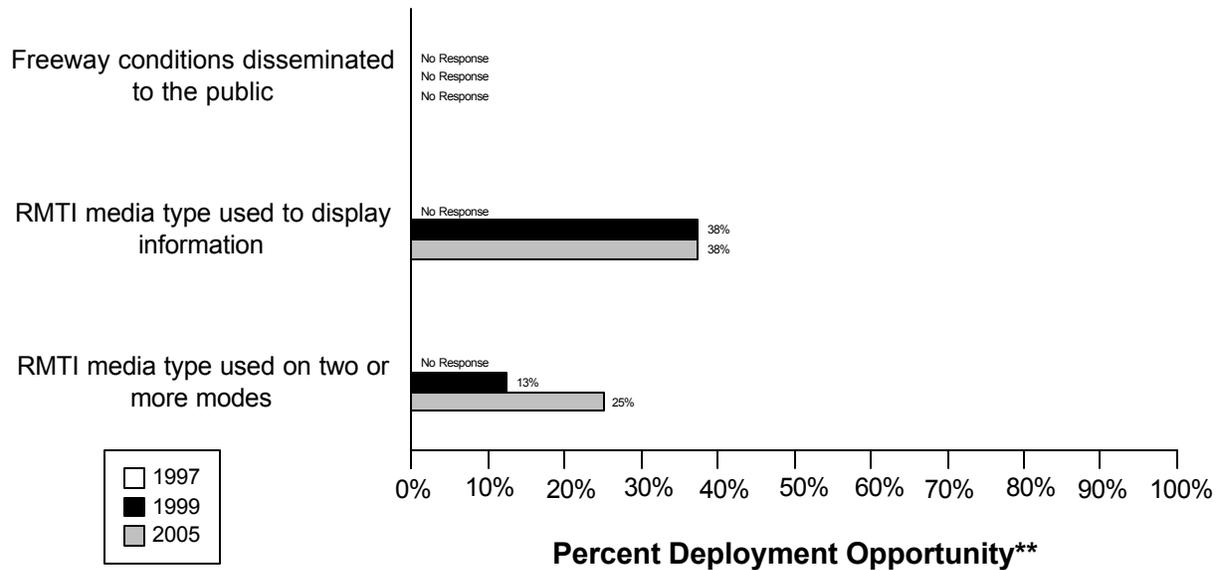
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
7. Freeway Management agencies transfer information describing incident severity, location, and type to Emergency Management agencies	(0/)	(0/)
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	(3/ 20) 15%	(4/ 20) 20%
21a. Freeway Management agencies receive incident severity, location, and type data from Emergency Management agencies	(0/)	(0/)
21b. Freeway Management agencies receive incident clearance activities information from Emergency Management agencies	(0/)	(0/)

Regional Multimodal Traveler Information Component Indicators

Data as of 5/1/00

Dayton, Springfield Regional Multimodal Traveler Information*



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

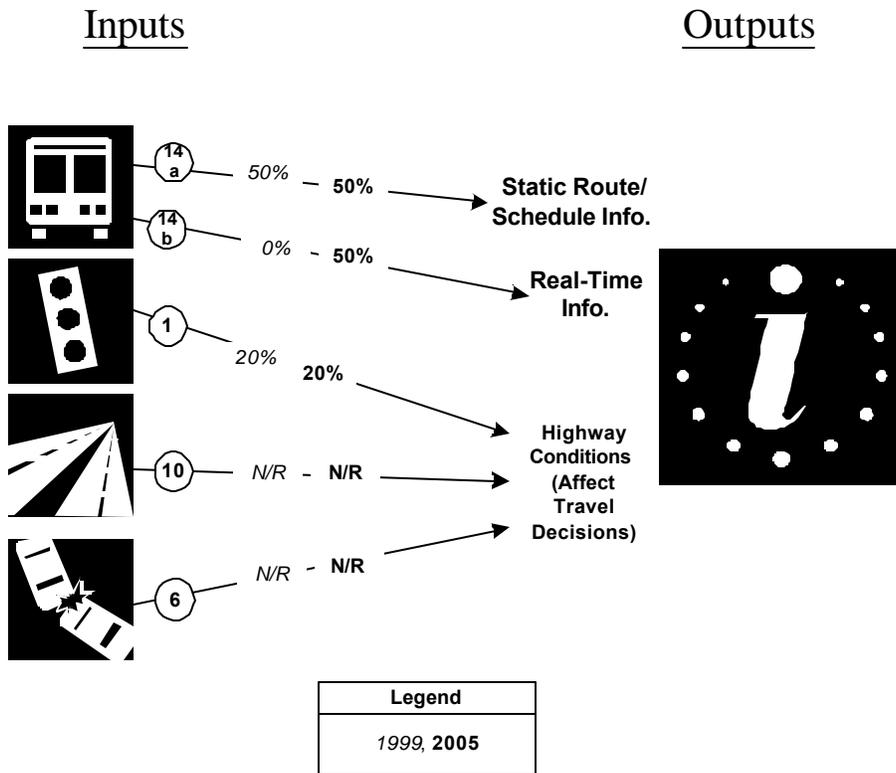
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway conditions disseminated to travelers		154		0			0		
Possible RMTI media types are used to display information to travelers				3	8	38%	3	8	38%
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

Dayton, Springfield

Regional Multimodal Traveler Information Integration*

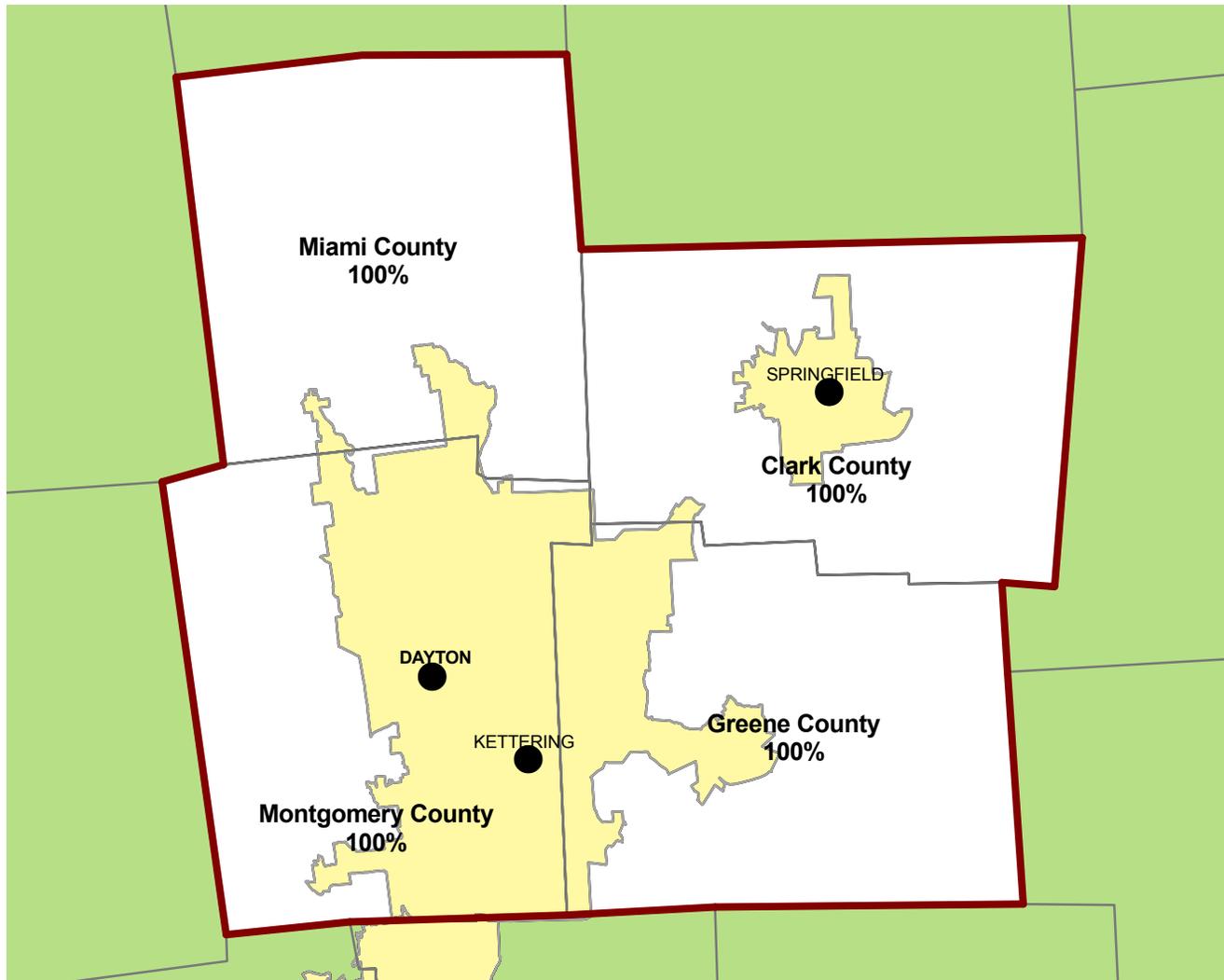


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
14a. Transit Management agencies that disseminate information describing transit routes, schedules, and fares to travelers	(1 / 2) 50%	(1 / 2) 50%
14b. Transit Management agencies that disseminate information describing schedule/route adherence to travelers	(0 / 2) 0%	(1 / 2) 50%
1. Arterial Management agencies that disseminate arterial travel times, speeds, and conditions to the public	(1 / 5) 20%	(1 / 5) 20%
10. Freeway Management agencies that disseminate freeway travel times, speeds, and conditions to travelers	(0 /)	(0 /)
6. Incident Management agencies that disseminate information describing incident severity, location, and type to the public	(0 /)	(0 /)

Appendix A
Survey Coverage Area

**CLARK COUNTY-SPRINGFIELD TRANSPORTATION STUDY,
MIAMI VALLEY REGIONAL PLANNING COMMISSION, OH**



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

Appendix B
Surveyed Agencies

Surveyed Agencies

Agency Name	Phone	Fax	1999		1997	
			Out	In	Out	In
DAYTON, SPRINGFIELD						
Arterial Management						
Kettering City	(937) 296-2405	(937) 296-3242	7/29/1999	9/20/1999	07/23/1997	08/04/1997
Montgomery County	(937) 225-4850	(937) 496-7441	7/29/1999	10/12/1999	07/23/1997	08/19/1997
Miami County	(937) 339-3525	(937) 339-3458	7/29/1999		07/23/1997	
Greene County	(937) 376-7500	(937) 376-7510	7/29/1999	10/25/1999	07/23/1997	10/14/1997
Clark County	(937) 328-2484	(937) 328-2473	7/29/1999	10/18/1999	07/23/1997	10/20/1997
Springfield City	(937) 324-7312	(937) 328-3496	7/29/1999	9/10/1999	07/23/1997	
Dayton City	(937) 443-4075	(937) 443-4077	7/29/1999		07/23/1997	07/28/1997
Ohio Department of Transportation District 7	(937) 497-6887	(937) 497-9734	7/29/1999		07/23/1997	
Emergency Management						
Clark County Sheriff Department	(937) 328-2523	(937) 328-2515	6/28/1999	8/9/1999	07/23/1997	05/15/1998
Montgomery County Sheriff Department	(937) 496-7215	(937) 496-7182	6/28/1999	9/10/1999	07/23/1997	08/04/1997
Miami County Sheriff Department	(937) 339-6400	(937) 339-5775	6/28/1999	8/27/1999	07/23/1997	08/14/1997
Kettering City Police Department	(937) 296-2555	(937) 296-3219	6/28/1999	6/29/1999	07/23/1997	07/24/1997
Greene County Sheriff Department	(937) 376-5011	(937) 376-5383	6/28/1999	7/2/1999	07/23/1997	08/01/1997
Dayton City Police Department	(937) 443-4850	(937) 443-4897	6/28/1999	7/2/1999	07/23/1997	05/15/1998
Dayton City Fire Department	(937) 443-4501	(937) 443-4561	6/28/1999	8/11/1999	07/23/1997	07/28/1997
Kettering City Fire Department (Emergency)	(937) 296-2411	(937) 296-3298	6/28/1999	6/28/1999	07/23/1997	07/23/1997
Troy Fire Department (Ambulance)	(937) 339-6400	(937) 339-5775	6/28/1999	7/6/1999		
Kettering City Fire Department	(937) 296-2411	(937) 296-3298	6/28/1999	6/28/1999	07/23/1997	07/23/1997
Troy Fire Department	(937) 339-6400	(937) 339-5775	6/28/1999	7/6/1999		
Piqua Fire Department	(937) 339-6400	(937) 339-5775	6/28/1999	7/6/1999		
Springfield City Police Department	(937) 324-7653	(937) 328-3503	6/28/1999	9/7/1999	07/23/1997	05/15/1998
Miami County Volunteer Fire Departments	(937) 339-6400	(937) 339-5775	6/28/1999	8/27/1999		
Piqua Fire Department (Emergency Medical)	(937) 339-6400	(937) 339-5775	6/28/1999	7/6/1999		
Dayton City Fire Department (Emergency)	(937) 443-4501	(937) 443-4561	6/28/1999	8/11/1999	07/23/1997	07/28/1997
Piqua Police Department	(937) 339-6400	(937) 339-5775	6/28/1999	7/6/1999		
Springfield Fire & Rescue	(937) 324-7605	(937) 324-4810	6/28/1999	7/1/1999	07/23/1997	07/23/1997
Springfield Fire & Rescue (Emergency Medical)	(937) 324-7605	(937) 324-4810	6/28/1999	7/1/1999	07/23/1997	07/23/1997
Troy Volunteer Fire Departments	(937) 339-6400	(937) 339-5775	6/28/1999	8/27/1999		
Freeway Management						
Ohio Department of Transportation District 7	(937) 497-6887	(937) 497-9734	7/29/1999		07/23/1997	

Agency Name	Phone	Fax	1999		1997	
			Out	In	Out	In
MPO						
Clark County-Springfield Metro Transportation	(937) 324-7751	(937) 328-3940	7/15/1999	8/26/1999		
Miami Valley Regional Planning Commission	(937) 223-6323	(937) 223-9750	7/15/1999	8/11/1999		
Transit Management						
Miami Valley Regional Transit	(937) 443-3033	(937) 443-3124	8/9/1999	8/30/1999	07/16/1997	07/22/1997
Springfield City Area Transit	(937) 328-7228	(937) 328-3596	8/9/1999	1/5/2000	07/17/1997	09/03/1997

Appendix C
Freeway Management Components

Appendix D
Freeway Management Integration

Appendix E
Freeway Management Information Collection and Dissemination

Appendix F
Arterial Management Components

Arterial Management
Agencies for Metropolitan Area: Dayton, Springfield

	Clark County		Greene County		Kettering City		Montgomery County	
	1999	2005	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		Yes		Yes	
ARTERIAL MANAGEMENT SECTION								
Number of arterial miles that agency owns or maintains	0		NR		50		NR	
Number of arterial miles that is used for planning	0		NR		50		NR	
Number of highway-rail intersections that agency maintains	21		NR		1		NR	
Number of highway-rail intersections that is used for planning	0		NR		0		NR	
Type of facilities used to conduct arterial management activities								
Activities housed in a free-standing dedicated building?	No		No		No		No	
Activities housed in a building shared with other activities?	No		No		No		No	
Activities conducted in a dedicated control room?	No		No		No		No	
Control room contains operator console(s)?	No		No		No		No	
Control room contains electronic wall map?	No		No		No		No	
Control room contains CCTV display(s)?	No		No		No		No	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		No		No		No	
Facilities are electronically linked to other transportation mgt facilities?	No		No		Yes		No	
Staffing and hours of operation of arterial management activities								
Number of full-time agency staff members	NR		NR		3		NR	
Number of full time contractor staff members	NR		NR		NR		NR	
Number of part-time agency staff members	NR		NR		NR		NR	
Number of part-time contractor staff members	NR		NR		NR		NR	
Staffed 24 hours day by agency staff or by others	NR		NR		NR		NR	
Staffed during peak hours only by agency staff or by others	NR		NR		NR		NR	
Staffed by others during off-peak hours	No		No		No		No	
Agency staff perform transportation management as an ancillary duty	No		No		No		No	
Agency staff dedicated to transportation management duty	No		No		No		No	
Types of operations conducted for arterial management								
Incident detection and management?	No		No		Yes		No	
This metropolitan area?	No		No		Yes		No	
Other metropolitan area?	No		No		No		No	
Monitoring and troubleshooting status of system components?	No		No		Yes		No	
Radio communications with other agencies?	No		No		No		No	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		No		No		No	
Manual override of traffic signal timing plans	No		No		Yes		No	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	No		No		No		No	
Describe agency's role in traffic signal control	County routes only		NR		All roads in incorporated area		NR	
Traffic Signals Operated by Agency								

Arterial Management
Agencies for Metropolitan Area: Dayton, Springfield

	Clark County		Greene County		Kettering City		Montgomery County	
	1999	2005	1999	2005	1999	2005	1999	2005
Number of signalized intersections operated and owned by agency	15	17	NR	NR	70	73	NR	NR
Number of signalized intersections operated by agency but owned by another	0	0	NR	NR	0	0	NR	NR
Total number of signalized intersections operated by agency	15	17	18	20	70	73	44	NR
<i>Characteristics of signalized intersections that agency operates</i>								
Under closed loop or central system control	0	0	8	10	69	NR	7	NR
Under real-time traffic adaptive control using advanced software	0	0	0	0	0	NR	0	NR
Using SCOOT	No		No		No		No	
Using SCATS	No		No		No		No	
Name of software	NR		NR		NR		NR	
Allow signal preemption for emergency vehicles	0	0	1	1	8	NR	2	NR
Allow signal priority for transit vehicles	0	0	0	0	0	NR	0	NR
Within 200 feet of a highway-rail intersection	0	0	0	0	0	NR	0	NR
Within 200 feet of a highway-rail intersection that adjust signal timing	0	0	0	0	0	NR	0	NR
Software used to control the signals agency operates								
Date of last upgrade to traffic signal control system software?	not applicable		NR		Smartways System-FA3; Eagle System, 1997		NR	
How often do you update signal timing?	NR		NR		NR		NR	
Software used and number of signalized intersections under control (1999, 2005)	NR		NR		MARC-CLOSED LOOP SYSTEM BY EAGLE TRAFFIC CONTROL SYSTEMS, 13, NR SMARTWAYS REV 3.5E BY PEEK, 57, NR		NR	
Controllers used to control signals								
NEMA	15	17	0	0	70	NR	0	0
170/179	0	0	0	0	0	0	0	0
2070 controller	0	0	0	0	NR	73	0	0
Other	0	0	0	0	0	0	0	0
Technologies Associated with Highway-Rail Intersections								
Total number of highway-rail intersections under electronic surveillance	NR	NR	NR	NR	NR	NR	NR	NR
<i>Highway-Rail intersection capabilities</i>								
Video surveillance	0	0	0	0	0	0	0	0
Electronic surveillance other than video	0	0	0	0	0	0	0	0
Ability to predict train arrival electronically	0	0	0	0	0	0	0	0
Equipped with electronic traffic violator devices	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Real-Time Electronic Traffic Data Collection Technologies								
Total number of signalized intersections covered by electronic surveillance	NR	NR	NR	NR	70	70	NR	NR
<i>Number of signalized intersections with data collection technologies</i>								
Loop detectors	0	0	0	0	70	68	0	0
Video detection cameras	0	0	0	0	NR	5	0	0
Probe readers reading toll tags	0	0	0	0	0	0	0	0
Probe readers reading license plates	0	0	0	0	0	0	0	0

Arterial Management
Agencies for Metropolitan Area: Dayton, Springfield

	Clark County		Greene County		Kettering City		Montgomery County	
	1999	2005	1999	2005	1999	2005	1999	2005
Other	0	0	0	0	0	0	0	0
Roadside Technologies used to Distribute Traveler Information								
<i>Number deployed</i>								
Highway Advisory Radio	NR	NR	NR	NR	NR	NR	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	NR	NR
VMS controlling parking access	NR	NR	NR	NR	NR	NR	NR	NR
<i>Miles covered</i>								
Highway Advisory Radio	NR	NR	NR	NR	NR	NR	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	NR	NR
Variable Message Signs (VMS) on Arterials								
Candidate locations for deployment of VMS where VMS has been deployed	NR	NR	NR	NR	NR	NR	NR	NR
Candidate locations for deployment of VMS	NR	NR	NR	NR	NR	NR	NR	NR
Communication Technologies								
<i>Signalized intersections communicated with by each type of communication</i>								
Twisted pair cable	0	0	0	0	0	0	0	0
Coaxial cable	0	0	0	0	NR	NR	0	0
Fiber-optic cable	0	0	0	0	69	72	0	0
Other (e.g., wireless, dial-up modems, leased lines, etc.)	0	0	0	0	0	0	0	0
Does agency convey information on highway-rail intersection crossing status to travelers via roadside media such as VMS or HAR?	No		No		No		No	
ITS Standards Used Related to Traffic Signal Control								
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		No		No		No	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		No		No		No	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		No		No		No	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		No		No		No	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		No		No		No	
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		No		No		No	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		No		No		No	
Would agency be willing to participate in testing of ITS Standards?	No		NR		No		NR	
Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?	No		NR		No		NR	
INCIDENT MANAGEMENT ON ARTERIAL STREETS								
Receive information on highway-rail intersection crossing blockages for the purpose of managing incident response?	No		No		No		No	
Use of Service Patrols to Assist in Detection and Response to Incidents								
Publicly operated service patrol vehicles	No		No		No		No	
Privately operated service patrol vehicles operated under public contract	No		No		No		No	
Total number of arterial miles patrolled by these services	NR	NR	NR	NR	NR	NR	NR	NR
Miles Covered by Methods to Detect and Verify Incidents								
Free cellular phone call to a dedicated phone number other than 911	0	0	0	0	0	0	0	0
Free cellular phone call to an area radio station	0	0	0	0	50	NR	0	0
Police patrols	0	0	0	0	50	NR	0	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	0	0	0	0	0

Arterial Management
Agencies for Metropolitan Area: Dayton, Springfield

	Clark County		Greene County		Kettering City		Montgomery County	
	1999	2005	1999	2005	1999	2005	1999	2005
CCTV	0	0	0	0	10	NR	0	0
Private sector sources (e.g., Shadow Traffic, Smart Routes)	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Procedures in place for Arterial Incident Response?								
Working agreement(s)/arrangement(s) with other agencies	No		No		No		No	
Inter-agency incident management admin. team that meets regularly	No		No		No		No	
Major incident response team that responds to major incidents	No		No		No		No	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		No		No		No	
Methods of Communication Used On-Site at an Incident								
<u>Police</u>								
Two-way radio	No		No		Yes		No	
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		No		Yes		No	
Hand-held (i.e., walkie-talkie)	No		No		No		No	
Automated data systems (i.e., CAD)	No		No		No		No	
Other	No		No		No		No	
<u>Fire</u>								
Two-way radio	No		No		Yes		No	
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		No		Yes		No	
Hand-held (i.e., walkie-talkie)	No		No		No		No	
Automated data systems (i.e., CAD)	No		No		No		No	
Other	No		No		No		No	
<u>DOT</u>								
Two-way radio	No		No		No		No	
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No		No	
Automated data systems (i.e., CAD)	No		No		No		No	
Other	No		No		No		No	
<u>Towing</u>								
Two-way radio	No		No		No		No	
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No		No	
Automated data systems (i.e., CAD)	No		No		No		No	
Other	No		No		No		No	
Which police agencies typically respond to incidents on arterials?								
State Police	No		No		No		No	
County Police or Sheriff	No		No		No		No	
City Police	No		No		Yes		No	

Arterial Management
Agencies for Metropolitan Area: Dayton, Springfield

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

Arterial Management
Agencies for Metropolitan Area: Dayton, Springfield

	Springfield City		Totals	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		5	
ARTERIAL MANAGEMENT SECTION				
Number of arterial miles that agency owns or maintains	72		122	
Number of arterial miles that is used for planning	72		122	
Number of highway-rail intersections that agency maintains	45		67	
Number of highway-rail intersections that is used for planning	91		91	
Type of facilities used to conduct arterial management activities				
Activities housed in a free-standing dedicated building?	No		0	
Activities housed in a building shared with other activities?	Yes		1	
Activities conducted in a dedicated control room?	No		0	
Control room contains operator console(s)?	No		0	
Control room contains electronic wall map?	No		0	
Control room contains CCTV display(s)?	No		0	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		0	
Facilities are electronically linked to other transportation mgt facilities?	No		1	
Staffing and hours of operation of arterial management activities				
Number of full-time agency staff members	NR		3	
Number of full time contractor staff members	NR		0	
Number of part-time agency staff members	NR		0	
Number of part-time contractor staff members	NR		0	
Staffed 24 hours day by agency staff or by others	NR		0	
Staffed during peak hours only by agency staff or by others	NR		0	
Staffed by others during off-peak hours	No		0	
Agency staff perform transportation management as an ancillary duty	No		0	
Agency staff dedicated to transportation management duty	No		0	
Types of operations conducted for arterial management				
Incident detection and management?	Yes		2	
This metropolitan area?	Yes		2	
Other metropolitan area?	No		0	
Monitoring and troubleshooting status of system components?	No		1	
Radio communications with other agencies?	No		0	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		0	
Manual override of traffic signal timing plans	No		1	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	Yes		1	
Describe agency's role in traffic signal control	All roads in incorporated area			
Traffic Signals Operated by Agency				

Arterial Management
Agencies for Metropolitan Area: Dayton, Springfield

	Springfield City		Totals	
	1999	2005	1999	2005
Number of signalized intersections operated and owned by agency	121	NR	206	90
Number of signalized intersections operated by agency but owned by another	0	NR	0	0
Total number of signalized intersections operated by agency	121	NR	268	110
<i>Characteristics of signalized intersections that agency operates</i>				
Under closed loop or central system control	13	NR	97	10
Under real-time traffic adaptive control using advanced software	0	NR	0	0
Using SCOOT	No		0	
Using SCATS	No		0	
Name of software	NR			
Allow signal preemption for emergency vehicles	78	NR	89	1
Allow signal priority for transit vehicles	0	NR	0	0
Within 200 feet of a highway-rail intersection	3	NR	3	0
Within 200 feet of a highway-rail intersection that adjust signal timing	2	NR	2	0
Software used to control the signals agency operates				
Date of last upgrade to traffic signal control system software?	NR			
How often do you update signal timing?	NR			
Software used and number of signalized intersections under control (1999, 2005)	NR			
Controllers used to control signals				
NEMA	96	NR	181	17
170/179	0	0	0	0
2070 controller	0	0	0	73
Other	25	0	25	0
Technologies Associated with Highway-Rail Intersections				
Total number of highway-rail intersections under electronic surveillance	NR	NR	0	0
<i>Highway-Rail intersection capabilities</i>				
Video surveillance	0	0	0	0
Electronic surveillance other than video	0	0	0	0
Ability to predict train arrival electronically	0	0	0	0
Equipped with electronic traffic violator devices	0	0	0	0
Other	0	0	0	0
Real-Time Electronic Traffic Data Collection Technologies				
Total number of signalized intersections covered by electronic surveillance	NR	NR	70	70
<i>Number of signalized intersections with data collection technologies</i>				
Loop detectors	0	0	70	68
Video detection cameras	0	0	0	5
Probe readers reading toll tags	0	0	0	0
Probe readers reading license plates	0	0	0	0

Arterial Management
Agencies for Metropolitan Area: Dayton, Springfield

	Springfield City		Totals	
	1999	2005	1999	2005
Other	0	0	0	0
Roadside Technologies used to Distribute Traveler Information				
<i>Number deployed</i>				
Highway Advisory Radio	NR	NR	0	0
In-Vehicle Signing (IVS)	NR	NR	0	0
VMS controlling parking access	NR	NR	0	0
<i>Miles covered</i>				
Highway Advisory Radio	NR	NR	0	0
In-Vehicle Signing (IVS)	NR	NR	0	0
Variable Message Signs (VMS) on Arterials				
Candidate locations for deployment of VMS where VMS has been deployed	NR	NR	0	0
Candidate locations for deployment of VMS	NR	NR	0	0
Communication Technologies				
<i>Signalized intersections communicated with by each type of communication</i>				
Twisted pair cable	30	NR	30	0
Coaxial cable	0	0	0	0
Fiber-optic cable	0	0	69	72
Other (e.g., wireless, dial-up modems, leased lines, etc.)	0	0		
Does agency convey information on highway-rail intersection crossing status to travelers via roadside media such as VMS or HAR?	No		0	
ITS Standards Used Related to Traffic Signal Control				
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		0	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		0	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		0	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		0	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		0	
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		0	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		0	
Would agency be willing to participate in testing of ITS Standards?	Yes		1	
Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?	No		0	
INCIDENT MANAGEMENT ON ARTERIAL STREETS				
Receive information on highway-rail intersection crossing blockages for the purpose of managing incident response?	No		0	
Use of Service Patrols to Assist in Detection and Response to Incidents				
Publicly operated service patrol vehicles	No		0	
Privately operated service patrol vehicles operated under public contract	No		0	
Total number of arterial miles patrolled by these services	NR	NR	0	0
Miles Covered by Methods to Detect and Verify Incidents				
Free cellular phone call to a dedicated phone number other than 911	0	0	0	0
Free cellular phone call to an area radio station	0	0	50	0
Police patrols	0	0	50	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	0

Arterial Management
Agencies for Metropolitan Area: Dayton, Springfield

	Springfield City		Totals	
	1999	2005	1999	2005
CCTV	0	0	10	0
Private sector sources (e.g., Shadow Traffic, Smart Routes)	0	0	0	0
Other	0	0	0	0
Procedures in place for Arterial Incident Response?				
Working agreement(s)/arrangement(s) with other agencies	No		0	
Inter-agency incident management admin. team that meets regularly	No		0	
Major incident response team that responds to major incidents	No		0	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		0	
Methods of Communication Used On-Site at an Incident				
<u>Police</u>				
Two-way radio	No		1	
800 MHz trunked radio	No		0	
Cellular telephone	No		1	
Hand-held (i.e., walkie-talkie)	No		0	
Automated data systems (i.e., CAD)	No		0	
Other	No		0	
<u>Fire</u>				
Two-way radio	No		1	
800 MHz trunked radio	No		0	
Cellular telephone	No		1	
Hand-held (i.e., walkie-talkie)	No		0	
Automated data systems (i.e., CAD)	No		0	
Other	No		0	
<u>DOT</u>				
Two-way radio	No		0	
800 MHz trunked radio	No		0	
Cellular telephone	No		0	
Hand-held (i.e., walkie-talkie)	No		0	
Automated data systems (i.e., CAD)	No		0	
Other	No		0	
<u>Towing</u>				
Two-way radio	No		0	
800 MHz trunked radio	No		0	
Cellular telephone	No		0	
Hand-held (i.e., walkie-talkie)	No		0	
Automated data systems (i.e., CAD)	No		0	
Other	No		0	
Which police agencies typically respond to incidents on arterials?				
State Police	No		0	
County Police or Sheriff	No		0	
City Police	No		1	

Arterial Management
Agencies for Metropolitan Area: Dayton, Springfield

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

Appendix G
Arterial Management Integration

Arterial Management Integration
 Agencies for Metropolitan Area: Dayton, Springfield

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

Arterial Management Integration
Agencies for Metropolitan Area: Dayton, Springfield

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

Arterial Management Integration
 Agencies for Metropolitan Area: Dayton, Springfield

Agency Name	Clark County		Greene County	
	1999	2005	1999	2005
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>				
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>	None listed	None listed	None listed	None listed
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>	None listed	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	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: Dayton, Springfield

Agency Name	Kettering City		Montgomery County	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Arterial Management Section				
<u>Arterial Mgt. agencies in metropolitan area with which you share info.</u>				
Share Timing Plans Information	Dayton City, Beavercreek City, Moraine City	None listed	short survey	None listed
Coordinate Changes to Timing Plans	Dayton City, Beavercreek City, Moraine City	None listed	short survey	None listed
Turn over Control of Signals	None listed	None listed	None listed	None listed
Agencies your agency provides arterial travel times, speeds, and conditions information, share infrastructure or coordinates operation				
<i>Freeway Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<i>Incident Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<i>Public Transit Operators Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<i>Arterial Management Agencies</i>				
Provide Information	Dayton City, Moraine City, Beavercreek City	None listed	None listed	None listed
Share Infrastructure	Dayton City, Moraine City, Beavercreek City	None listed	None listed	None listed

Arterial Management Integration
 Agencies for Metropolitan Area: Dayton, Springfield

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

Arterial Management Integration
 Agencies for Metropolitan Area: Dayton, Springfield

Agency Name	Kettering City		Montgomery County	
	1999	2005	1999	2005
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>				
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>	None listed	None listed	None listed	None listed
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>	None listed	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	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: Dayton, Springfield

Agency Name	Springfield City	
	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	Ohio Department of Transportation District 7	Ohio Department of Transportation District 7
Coordinate Changes to Timing Plans	Ohio Department of Transportation District 7	Ohio Department of Transportation District 7
Turn over Control of Signals	None listed	None listed
Agencies your agency provides arterial travel times, speeds, and conditions information, share infrastructure or coordinates operation		
<i>Freeway Management Agencies</i>		
Provide Information	None listed	Ohio Department of Transportation District 7
Share Infrastructure	None listed	Ohio Department of Transportation District 7
Coordinate Operation	None listed	Ohio Department of Transportation District 7
<i>Incident Management Agencies</i>		
Provide Information	None listed	Ohio Department of Transportation District 7
Share Infrastructure	None listed	Ohio Department of Transportation District 7
Coordinate Operation	None listed	Ohio Department of Transportation District 7
<i>Public Transit Operators Agencies</i>		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
<i>Arterial Management Agencies</i>		
Provide Information	Ohio Department of Transportation District 7	Ohio Department of Transportation District 7
Share Infrastructure	None listed	None listed

Arterial Management Integration
 Agencies for Metropolitan Area: Dayton, Springfield

Agency Name	Springfield City	
	1999	2005
Coordinate Operation	Ohio Department of Transportation District 7	Ohio Department of Transportation District 7
<u>Receiving real-time information via electronic means from others</u>		
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>		
	None listed	None listed
<i>Public Transit operators from which your agency receives arterial travel times derived from vehicle probes</i>		
	None listed	None listed
<i>Incident Management agencies from which your agency receives incident clearance and/or incident severity, location, and type information</i>		
Receive information on Incident Clearance	None listed	None listed
Receive information on Incident Severity, Location, and Type	None listed	None listed
<i>Toll Collection agencies from which your agency receives arterial travel 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		
<i>Emergency Management Agencies</i>		
Provide Information		
	None listed	None listed
Share Infrastructure		
	None listed	None listed
Coordinate Operation		
	None listed	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

Arterial Management Integration
 Agencies for Metropolitan Area: Dayton, Springfield

Agency Name	Springfield City	
	1999	2005
<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 H
Arterial Management Information Collection and Dissemination

Data Collection and Dissemination: Arterial Management
 Agencies for Metropolitan Area: Dayton, Springfield

Agency Name	Clark County		Greene 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, Traffic speeds, Vehicle classification, Turning movements, Phasing/cycle lengths	NR	NR	NR
Archived by your agency	Traffic volumes, Traffic speeds, Vehicle classification, Turning movements, Phasing/cycle lengths	NR	NR	NR
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		NR	

Data Collection and Dissemination: Arterial Management
 Agencies for Metropolitan Area: Dayton, Springfield

Agency Name	Clark County		Greene County	
	1999	2005	1999	2005
Ranked Low	Traffic volumes, Traffic speeds, Vehicle classification, Turning movements, Phasing/cycle lengths		NR	
Groups that make requests for the data	State DOT personnel, Consultants, General Public		NR	
What is the data used for?	Do not know, Traffic analysis, Planning		NR	
Methods used to disseminate arterial information to the public				
Technologies your agency uses to disseminate:	NR	NR	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	NR
Internet web site reporting arterial conditions	NR		NR	
Telephone system for reporting arterial information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	
Arterial Incident Management Section				
Methods used to distribute incident location and severity information to the public				
Technologies your agency uses to disseminate:	NR	NR	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	NR
Internet web site reporting incident information	NR		NR	
Telephone system for reporting incident information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	

Data Collection and Dissemination: Arterial Management
 Agencies for Metropolitan Area: Dayton, Springfield

Agency Name	Kettering City		Montgomery 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, Incidents	NR	NR	NR
Archived by your agency	Traffic volumes, Turning movements, Phasing/cycle lengths, Emergency vehicle signal preemption, Incidents	NR	NR	NR
Transferred to another agency by your agency	Traffic volumes	NR	NR	NR
Importance of making information available to the public				
Ranked High				
		NR		NR
Ranked Medium	Traffic volumes, Turning movements, Phasing/cycle lengths, Emergency vehicle signal preemption, Incidents			NR

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Dayton, Springfield

Agency Name	Kettering City		Montgomery County	
	1999	2005	1999	2005
Ranked Low				
	NR		NR	
Groups that make requests for the data	State DOT personnel, Federal DOT personnel, Media (i.e., TV stations, radio stations), MPOs, Consultants		NR	
What is the data used for?	Traffic analysis, Planning, Roadway impact analysis		NR	
Methods used to disseminate arterial information to the public				
Technologies your agency uses to disseminate:	Dedicated cable TV	Internet Web sites	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:	Dedicated cable TV	Internet Web sites	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	NR
Internet web site reporting incident information	NR		NR	
Telephone system for reporting incident information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Dayton, Springfield

Agency Name	Springfield City	
	1999	2005
Agency Returned Survey?	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, Route designations (snow emergency, etc.), Current work zones, Scheduled work zones	NR
Archived by your agency	Traffic volumes, Turning movements, Phasing/cycle lengths, Emergency vehicle signal preemption, Route designations (snow emergency, etc.), Current work zones, Scheduled work zones	NR
Transferred to another agency by your agency	Traffic volumes, Current work zones, Scheduled work zones	NR
Importance of making information available to the public		
Ranked High	Phasing/cycle lengths, Route designations (snow emergency, etc.), Current work zones, Scheduled work zones	
Ranked Medium	Traffic volumes, Turning movements	

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Dayton, Springfield

Agency Name	Springfield City	
	1999	2005
Ranked Low	Emergency vehicle signal preemption	
Groups that make requests for the data	State DOT personnel, Media (I.e., TV stations, radio stations), MPOs, Consultants, Attorneys, Investigations (Insurance)	
What is the data used for?	Traffic analysis, Planning, Dissemination to the public, Evidence	
Methods used to disseminate arterial information to the public		
Technologies your agency uses to disseminate:	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting arterial conditions	NR	
Telephone system for reporting arterial information to the public	NR	
Organizations your agency sends information for dissemination to the public	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
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting incident information	NR	
Telephone system for reporting incident information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	

Appendix I
Transit Management Components

Transit Management
Agencies for Metropolitan Area: Dayton, Springfield

	Miami Valley Regional Transit		Springfield City Area Transit		Totals	
	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		2	
Number of vehicles used in revenue service						
Fixed Route Bus	238	238	11	NR	249	238
Heavy or Rapid Rail	0	0	NR	NR	0	0
Light Rail	0	0	NR	NR	0	0
Demand Responsive	50	50	4	NR	54	50
Commuter Rail	NR	NR	NR	NR	0	0
Ferry Boat	NR	NR	NR	NR	0	0
Have of plan to have an Automated Vehicle Location System?	Yes		No		1	
Primary and Secondary Location Technologies Used						
<u>Primary Technologies</u>						
GPS	No	No	No	No	0	0
Sign/Odometer	No	No	No	No	0	0
Dead-Reckoning	No	No	No	No	0	0
LORAN C	No	No	No	No	0	0
Other	No	Yes	No	No	0	1
<u>Backup Technologies</u>						
GPS	No	No	No	No	0	0
Sign/Odometer	No	No	No	No	0	0
Dead-Reckoning	No	No	No	No	0	0
LORAN C	No	No	No	No	0	0
Other	No	No	No	No	0	0
Number of Vehicles Equipped with AVL						
Fixed Route Bus	NR	238	NR	NR	0	238
Heavy or Rapid Rail	NR	NR	NR	NR	0	0
Light Rail	NR	NR	NR	NR	0	0
Demand Responsive	NR	50	NR	NR	0	50
Commuter Rail	NR	NR	NR	NR	0	0
Ferry Boat	NR	NR	NR	NR	0	0
Motor Buses Operated as Vehicle Probes						
Number of Motor Buses equipped as probes on freeways?	NR		NR		0	
Number of Motor Buses equipped as probes on arterials?	NR		NR		0	
Have Organized Regional Incident Management Program?	No		No		0	
Have Automated Traveler Information System?	Yes		No		1	

Transit Management
Agencies for Metropolitan Area: Dayton, Springfield

	Miami Valley Regional Transit		Springfield City Area Transit		Totals	
	1999	2005	1999	2005	1999	2005
<i>Services Automated Traveler Info. System Applies:</i>						
Fixed Route	Yes		No		1	
Heavy Rail	No		No		0	
Light Rail	No		No		0	
Demand Responsive	No		No		0	
Commuter Rail	No		No		0	
Ferry	No		No		0	
Locations where traveler information is displayed to public						
Number of bus stops on fixed transit routes	NR	NR	NR	NR	0	0
Bus stops on fixed transit routes that display traveler info to the public	NR	NR	NR	NR	0	0
Number of rail stations	NR	NR	NR	NR	0	0
Number of rail stations that display traveler information	NR	NR	NR	NR	0	0
Number of other locations that display traveler information to public	NR	NR	NR	NR	0	0
Number of vehicles the traveler information system has available						
Fixed Route Bus	NR	238	NR	NR	0	238
Heavy or Rapid Rail	NR	NR	NR	NR	0	0
Light Rail	NR	NR	NR	NR	0	0
Demand Responsive	NR	NR	NR	NR	0	0
Commuter Rail	NR	NR	NR	NR	0	0
Ferry Boat	NR	NR	NR	NR	0	0
Deployment of Communications Technology						
<i>Attributes of Radio System:</i>						
Digital?	No		No		0	
Analog?	Yes		No		1	
Trunked?	No		No		0	
Regular?	Yes		No		1	
Services that use a Digital or Trunked Radio System						
<i>Digital Only</i>						
Fixed Route Bus	No	No	No	No	0	0
Heavy or Rapid Rail	No	No	No	No	0	0
Light Rail	No	No	No	No	0	0
Demand Responsive	No	No	No	No	0	0
Commuter Rail	No	No	No	No	0	0
Ferry Boat	No	No	No	No	0	0
<i>Trunked Only</i>						
Fixed Route Bus	No	No	No	No	0	0
Heavy or Rapid Rail	No	No	No	No	0	0

Transit Management
Agencies for Metropolitan Area: Dayton, Springfield

	Miami Valley Regional Transit		Springfield City Area Transit		Totals	
	1999	2005	1999	2005	1999	2005
Light Rail	No	No	No	No	0	0
Demand Responsive	No	No	No	No	0	0
Commuter Rail	No	No	No	No	0	0
Ferry Boat	No	No	No	No	0	0
Have of plan to have Automatic Passenger Counters (APCs)?	Yes		No		1	
Methods used to count passengers						
Treadle Mats	No		No		0	
Infrared Beams	Yes		No		1	
Primary and Secondary Location Technologies Used						
<u>Primary Technologies</u>						
GPS	No	No	No	No	0	0
Differential GPS	No	Yes	No	No	0	1
Signpost/Odometer	No	No	No	No	0	0
Dead_Reckoning	No	No	No	No	0	0
LORAN C	No	No	No	No	0	0
Other	No	No	No	No	0	0
<u>Backup Technologies</u>						
GPS	No	No	No	No	0	0
Differential GPS	No	No	No	No	0	0
Signpost/Odometer	No	No	No	No	0	0
Dead_Reckoning	No	No	No	No	0	0
LORAN C	No	No	No	No	0	0
Other	No	No	No	No	0	0
Number of Vehicles with APCs						
Fixed Route Bus	NR	40	NR	NR	0	40
Heavy or Rapid Rail	NR	NR	NR	NR	0	0
Light Rail	NR	NR	NR	NR	0	0
Demand Responsive	NR	NR	NR	NR	0	0
Commuter Rail	NR	NR	NR	NR	0	0
Ferry Boat	NR	NR	NR	NR	0	0
Remote Real-Time Monitoring and Computer Assisted Dispatching						
<u>Remote Real-Time Monitoring</u>						
Fixed Route Bus	NR	238	NR	NR	0	238
Heavy or Rapid Rail	NR	NR	NR	NR	0	0
Light Rail	NR	NR	NR	NR	0	0
Demand Responsive	NR	50	NR	NR	0	50
Commuter Rail	NR	NR	NR	NR	0	0

Transit Management
Agencies for Metropolitan Area: Dayton, Springfield

	Miami Valley Regional Transit		Springfield City Area Transit		Totals	
	1999	2005	1999	2005	1999	2005
Ferry Boat	NR	NR	NR	NR	0	0
<i>Automated Dispatching or Control Software</i>						
Fixed Route Bus	NR	238	NR	NR	0	238
Heavy or Rapid Rail	NR	NR	NR	NR	0	0
Light Rail	NR	NR	NR	NR	0	0
Demand Responsive	NR	50	NR	NR	0	50
Commuter Rail	NR	NR	NR	NR	0	0
Ferry Boat	NR	NR	NR	NR	0	0
Coordinate or plan to coordinate travel request and vehicle dispatching for multiple agencies?	No		No		0	
Is there or will there be a Transportation Management Center (TMC) in the region that controls transit and highway modes?	NR		NR		0	
Modes that TMC currently controls:						
Highways	No	No	No	No	0	0
Fixed Route Bus	No	No	No	No	0	0
Heavy or Rapid Rail	No	No	No	No	0	0
Light Rail	No	No	No	No	0	0
Demand Responsive	No	No	No	No	0	0
Commuter Rail	No	No	No	No	0	0
Ferry Boat	No	No	No	No	0	0
Other	No	No	No	No	0	0
Priority at Traffic Signals and Ramp Meter Priority						
<i>Priority at Traffic Signals</i>						
Fixed Route Bus	NR	NR	NR	NR	0	0
Light Rail	NR	NR	NR	NR	0	0
Demand Responsive	NR	NR	NR	NR	0	0
<i>Ramp Meter Priority</i>					0	0
Fixed Route Bus	NR	NR	NR	NR	0	0
Demand Responsive	NR	NR	NR	NR	0	0
Number of Vehicles Equipped with Navigation Aids						
Fixed Route Bus	NR	NR	NR	NR	0	0
Heavy or Rapid Rail	NR	NR	NR	NR	0	0
Light Rail	NR	NR	NR	NR	0	0
Demand Responsive	NR	NR	NR	NR	0	0
Commuter Rail	NR	NR	NR	NR	0	0
Ferry Boat	NR	NR	NR	NR	0	0

Transit Management
Agencies for Metropolitan Area: Dayton, Springfield

	Miami Valley Regional Transit		Springfield City Area Transit		Totals	
	1999	2005	1999	2005	1999	2005
ITS Standards Used Related to Transit Management						
TCIP On Board Objects (TCIP-OB)	No		No		0	
TCIP Traffic Management Objects (TCIP-TM)	No		No		0	
TCIP Common Public Transportation Objects (TCIP-CPT)	No		No		0	
TCIP Passenger Information Objects (TCIP-PI)	No		No		0	
TCIP Incident Management Objects (TCIP-IM)	No		No		0	
TCIP Fare Collection Objects (TCIP-FC)	No		No		0	
TCIP Spatial Representation Objects (TCIP-SP)	No		No		0	
TCIP Control Center Objects (TCIP-CC)	No		No		0	
TCIP Scheduling/Runcutting Objects (TCIP-SCH)	No		No		0	
Send data communication between micro computer and heavy duty vehicle applications (SAE J1708)	No		No		0	
Would agency be willing to participate in testing of ITS Standards?	Yes		Yes		2	
Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?	No		No		0	
Electronic Fare Payment						
Have full operational Electronic Fare Payment System?	Yes		No		1	
Methods of Fare Payment						
<i>Stored value card with fare deducted for each trip</i>						
Magnetic Stripe	No		No		0	
Smart Card	No		No		0	
Debit Card	No		No		0	
<i>Billed by the month for trips taken</i>						
Magnetic Stripe	No		No		0	
Smart Card	No		No		0	
Credit Card	No		No		0	
Monthly Pass						
Magnetic Stripe	Yes		No		1	
Smart Card	No		No		0	
Vehicles/Stations Equipped with Automated Payment Mechanism						
<i>Magnetic Stripe Readers</i>						
Fixed Route Bus Vehicles	238	238	NR	NR	238	238
Heavy or Rapid Rail Stations	NR	NR	NR	NR	0	0
Light Rail Stations	NR	NR	NR	NR	0	0
Demand Responsive Vehicles	NR	NR	NR	NR	0	0
Commuter Rail Stations	NR	NR	NR	NR	0	0

Transit Management
Agencies for Metropolitan Area: Dayton, Springfield

	Miami Valley Regional Transit		Springfield City Area Transit		Totals	
	1999	2005	1999	2005	1999	2005
Ferry Boat Landings	NR	NR	NR	NR	0	0
<u>Smart Card Readers</u>						
Fixed Route Bus Vehicles	NR	NR	NR	NR	0	0
Heavy or Rapid Rail Stations	NR	NR	NR	NR	0	0
Light Rail Stations	NR	NR	NR	NR	0	0
Demand Responsive Vehicles	NR	NR	NR	NR	0	0
Commuter Rail Stations	NR	NR	NR	NR	0	0
Ferry Boat Landings	NR	NR	NR	NR	0	0
<u>Credit Card</u>						
Fixed Route Bus Vehicles	NR	NR	NR	NR	0	0
Heavy or Rapid Rail Stations	NR	NR	NR	NR	0	0
Light Rail Stations	NR	NR	NR	NR	0	0
Demand Responsive Vehicles	NR	NR	NR	NR	0	0
Commuter Rail Stations	NR	NR	NR	NR	0	0
Ferry Boat Landings	NR	NR	NR	NR	0	0
<u>Debit Card</u>						
Fixed Route Bus Vehicles	NR	NR	NR	NR	0	0
Heavy or Rapid Rail Stations	NR	NR	NR	NR	0	0
Light Rail Stations	NR	NR	NR	NR	0	0
Demand Responsive Vehicles	NR	NR	NR	NR	0	0
Commuter Rail Stations	NR	NR	NR	NR	0	0
Ferry Boat Landings	NR	NR	NR	NR	0	0
NR: No Response						

Appendix J
Transit Management Integration

Transit Management Integration
 Agencies for Metropolitan Area: Dayton, Springfield

Agency Name	Miami Valley Regional Transit		Springfield City Area Transit	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
<u>Transit operators in the region that use the same electronic payment system</u>	None listed		None listed	
<u>Toll operators from whom you accept electronic payment of transit fare through the use of ETC media</u>	None listed		None listed	
<u>Receiving real-time information via electronic means from others</u>				
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>				
<i>Receive Information</i>	None listed	None listed	Ohio Department of Transportation District 7	None listed
<i>Share Infrastructure</i>	None listed	None listed	None listed	None listed
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>				
<i>Receive Information</i>	None listed	None listed	Clark County, Springfield City, Ohio Department of Transportation District 7	None listed
<i>Share Infrastructure</i>	None listed	None listed	Clark County, Springfield City	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	None listed	None listed
<i>Share Infrastructure</i>	None listed	None listed	None listed	None listed

Appendix K
Transit Management Information Collection and Dissemination

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Dayton, Springfield

Agency Name	Miami Valley Regional Transit		Springfield City Area Transit	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Methods used to disseminate transit information to the public				
Technologies your agency uses to disseminate:				
Transit routes, schedules and fares	Internet Web Sites, Telephone System	Kiosks	NR	NR
Real-time transit schedule adherence or arrival and departure times	NR	Kiosks, Telephone System	NR	NR
Technologies employed by other organization receiving your data				
Transit routes, schedules and fares	NR	NR	NR	NR
Real-time transit schedule adherence or arrival and departure times	NR	NR	NR	NR
Internet web site reporting transit routes, schedules and fare, etc.	www.mvrta.org		NR	
Telephone system for reporting transit information to the public	937.443.4090		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	
Data collected, archived, and/or transferred to another agency				
Collected by your agency	NR	Incidents, Vehicle monitoring status, Passenger count, Vehicle time and location	Transit operations coordination information, Emergency/evacuation routes and procedures, Incidents, Passenger information (e.g., surveys, O/D), Passenger count, Vehicle time and location	Transit operations coordination information, Emergency/evacuation routes and procedures, Incidents, Passenger information (e.g., surveys, O/D), Passenger count, Vehicle time and location
Archived by your agency	NR	Incidents, Vehicle monitoring status, Passenger count, Vehicle time and location	Transit operations coordination information, Emergency/evacuation routes and procedures, Incidents, Passenger information (e.g., surveys, O/D), Passenger count, Vehicle time and location	NR

Data Collection and Dissemination: Transit Management
 Agencies for Metropolitan Area: Dayton, Springfield

Agency Name	Miami Valley Regional Transit		Springfield City Area Transit	
	1999	2005	1999	2005
Transferred to another agency by your agency	NR	NR	Transit operations coordination information, Emergency/evacuation routes and procedures, Passenger information (e.g., surveys, O/D), Passenger count	Transit operations coordination information, Emergency/evacuation routes and procedures, Passenger information (e.g., surveys, O/D), Passenger count
Importance of making information available to the public				
Ranked High	Vehicle time and location		Passenger information (e.g., surveys, O/D), Vehicle time and location	
Ranked Medium	NR		Emergency/evacuation routes and procedures	
Ranked Low	Incidents, Vehicle monitoring status, Passenger count		Transit operations coordination information, Incidents, Passenger count	
Groups that make requests for the data	Federal DOT personnel		Local City Officials, Federal DOT personnel, State DOT personnel	
What is the data used for?	Planning		Budget Determination, Planning	

Appendix L
Emergency Management

Emergency Management Agencies for Metropolitan Area: Dayton, Springfield

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			
Clark County Sheriff Department	50	50	0	0	0	0	50	50	0	50	0	0	Yes	No	None listed
Dayton City Fire Department	34	55	0	55	0	55	34	55	34	55	0	0	Yes	Yes	Kettering City Fire Department, Huber Heights Fire Department
Dayton City Fire Department (Emergency Medical)	13	15	0	15	0	15	13	15	13	15	0	0	Yes	Yes	Kettering City Fire Department, Huber Heights Fire Department
Dayton City Police Department	126	NR	0	NR	0	NR	126	NR	126	NR	0	NR	No	No	None listed
Greene County Sheriff Department	25	25	0	0	0	0	0	0	0	0	0	0	Yes	No	None listed
Kettering City Fire Department	14	16	0	0	0	0	0	16	0	16	0	0	Yes	Yes	Dayton City Fire Department
Kettering City Fire Department (Emergency Medical)	4	4	0	0	0	0	0	4	0	4	0	0	Yes	Yes	Dayton City Fire Department
Kettering City Police Department	30	NR	0	NR	0	NR	30	NR	30	NR	0	NR	Yes	No	None listed
Miami County Sheriff Department	16	NR	0	NR	0	NR	16	NR	0	NR	0	NR	No	No	None listed
Miami County Volunteer Fire Departments (10each)	50	NR	0	NR	0	NR	50	NR	0	NR	0	NR	No	No	None listed
Montgomery County Sheriff Department	76	82	0	0	0	5	76	82	32	48	0	4	No	No	None listed
Piqua Fire Department	9	NR	0	NR	0	NR	9	NR	NR	NR	0	NR	No	No	None listed
Piqua Fire Department (Emergency Medical)	3	NR	0	NR	NR	NR	3	NR	NR	NR	0	NR	No	No	None listed
Piqua Police Department	15	15	0	0	0	0	15	15	14	14	0	0	No	No	None listed
Springfield City Police Department	50	60	0	0	0	0	50	60	0	60	30	30	Yes	Yes	None listed
Springfield Fire & Rescue	16	19	0	16	0	16	16	19	0	16	16	19	Yes	Yes	None listed
Springfield Fire & Rescue (Emergency Medical)	9	12	0	14	0	14	9	12	0	12	9	12	Yes	Yes	Area Hospitals, Red Cross, Clark County EMA
Troy Fire Department	6	6	0	0	0	0	6	6	0	0	0	0	Yes	Yes	Ohio Fire Marshal
Troy Fire Department (Ambulance)	4	4	0	0	0	0	4	4	0	0	0	0	Yes	No	None listed
Troy Volunteer Fire Departments	21	NR	0	NR	0	NR	21	NR	0	NR	0	NR	No	No	None listed