

# **Tracking the Deployment of the Integrated Metropolitan ITS Infrastructure in Philadelphia, Wilmington, Trenton**

## **FY99 Results**

**For additional information, please contact:**

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

## Table of Contents

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

## Part 1 - Background and Purpose

In January 1996, Secretary Peña set a goal of deploying the integrated metropolitan Intelligent Transportation System (ITS) infrastructure in 75<sup>1</sup> 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."*<sup>2</sup>

-- 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

---

<sup>1</sup> 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.

<sup>2</sup> 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.<sup>3</sup>

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 Philadelphia, Wilmington, Trenton 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 Philadelphia, Wilmington, Trenton region was 63% in 1997 and 74% in 1999.

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

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

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

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

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

---

<sup>3</sup> 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 Philadelphia, Wilmington, Trenton 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.

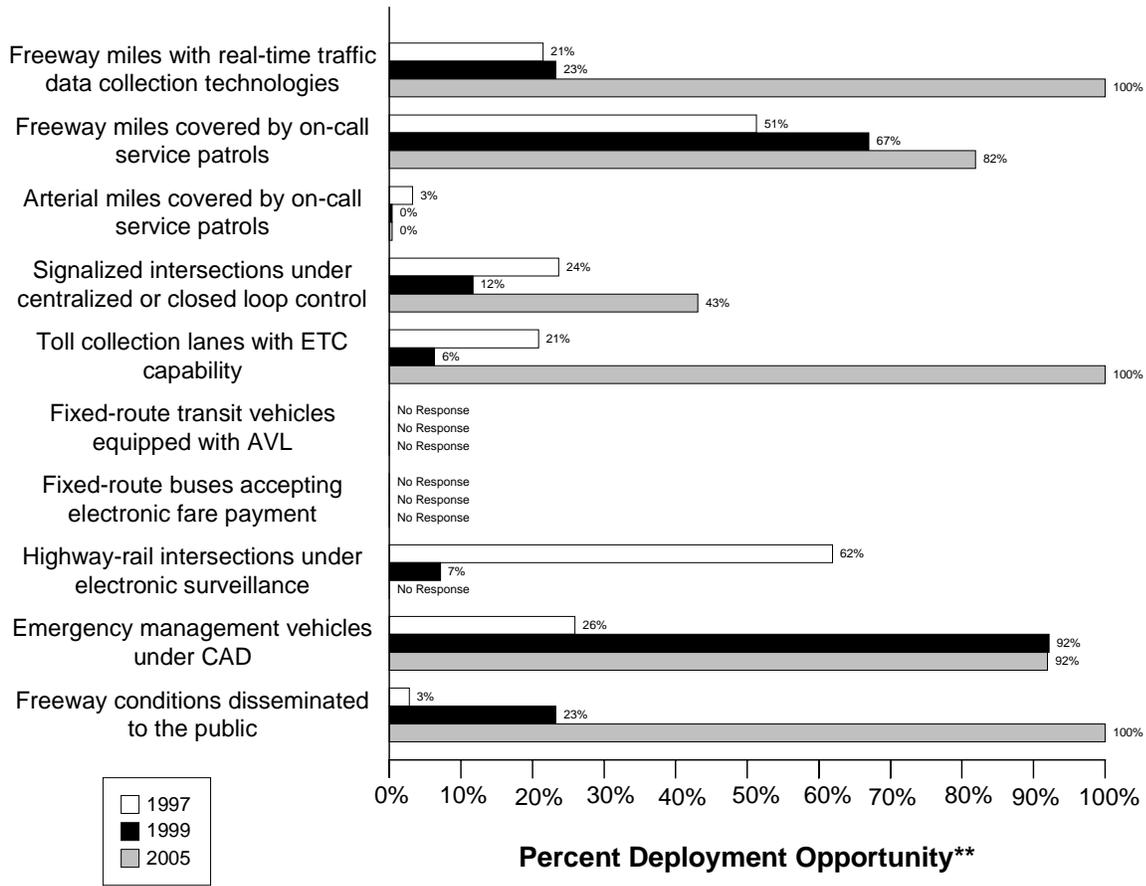
A critical aspect of ITS that provides much of its capability is the integration of individual components to form a unified regional traffic control system. Individual ITS components routinely collect information that is used for purposes internal to that component. For example, the Arterial Management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

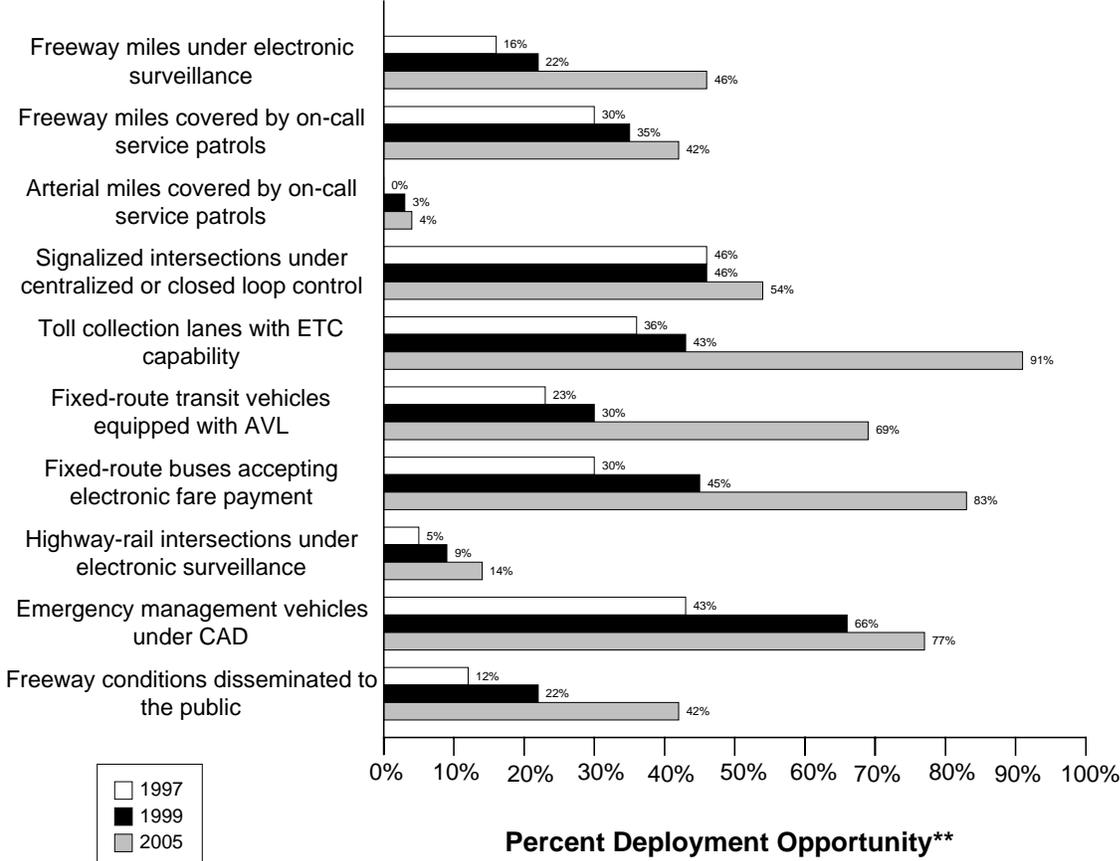
## Philadelphia, Wilmington, Trenton Summary Indicators\*



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

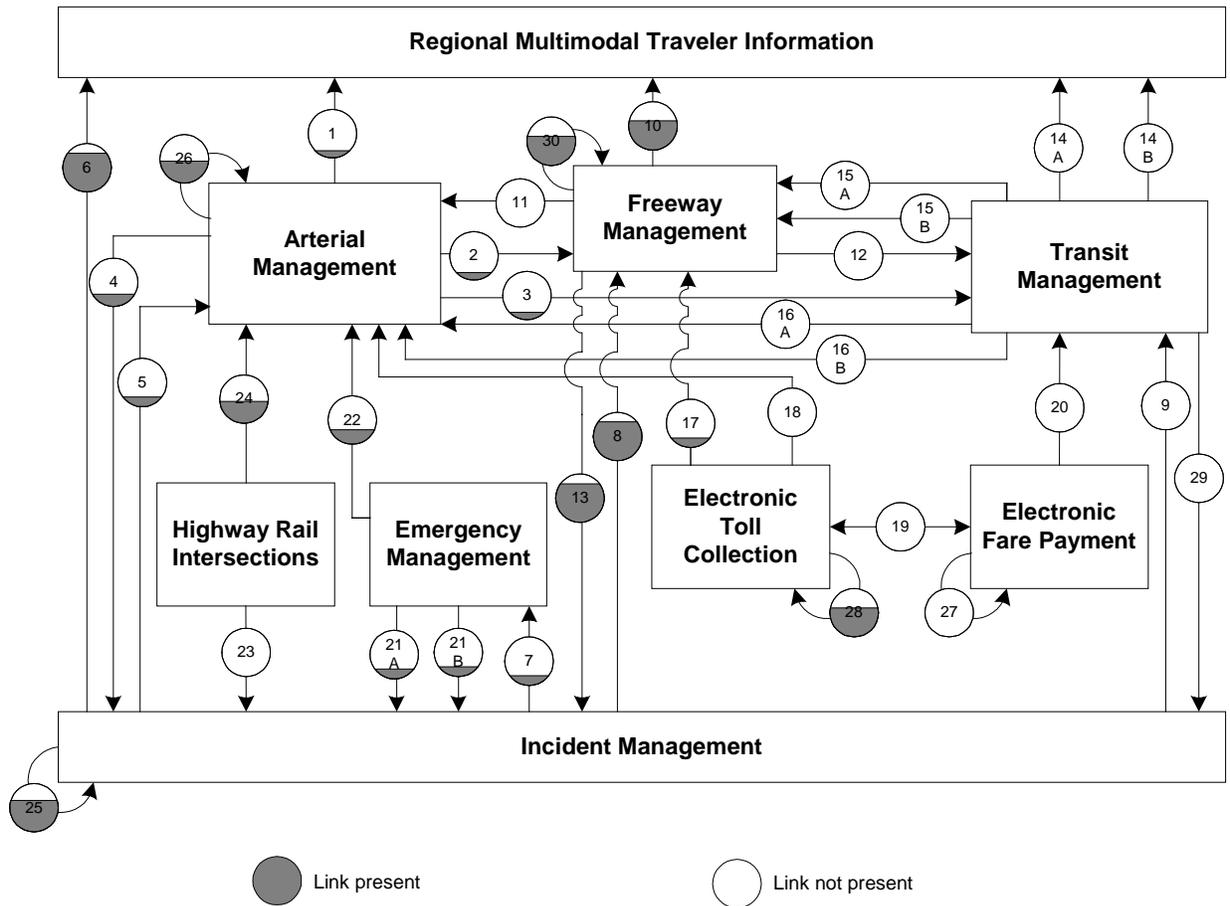
\*\* Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

# National Summary Indicators\*



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

## Philadelphia, Wilmington, Trenton Integration Links



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

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

<b>Link</b>	<b>Description</b>	<b>Link</b>	<b>Description</b>
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 Philadelphia, Wilmington, Trenton 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).

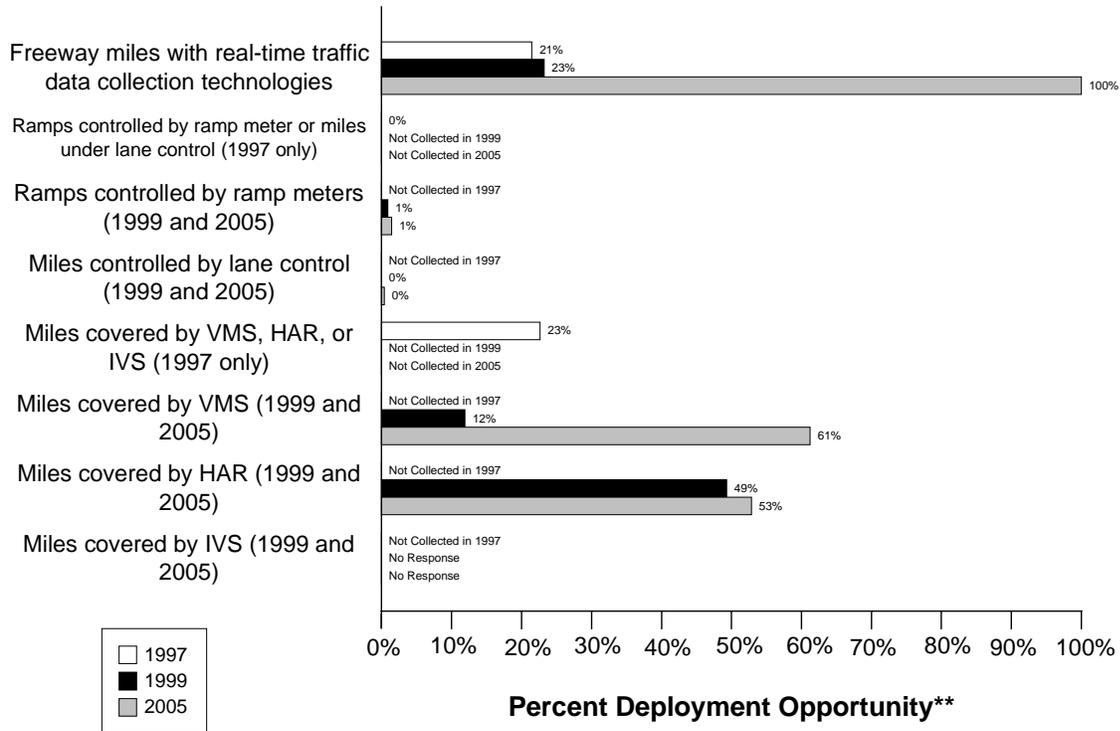
Example: Calculating Integration between Arterial Management and Regional Multimodal Traveler Information

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

## Philadelphia, Wilmington, Trenton Freeway Management\*



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

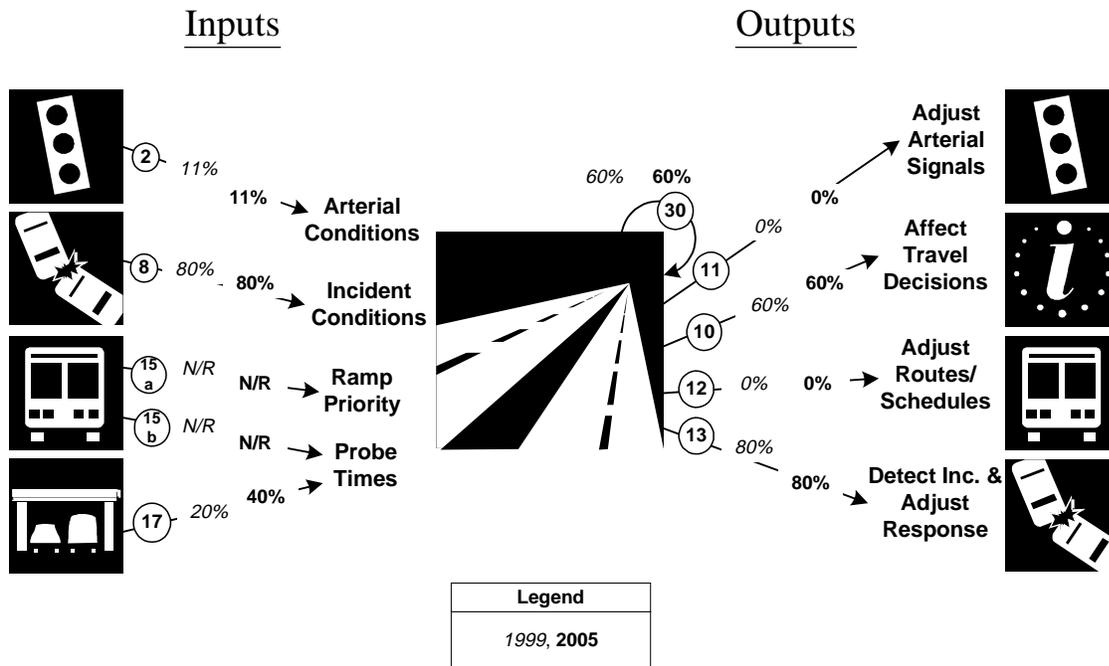
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway centerline miles are under electronic surveillance for monitoring traffic flow	108	503	21%	117	503	23%	503	503	100%
Freeway entrance ramps are controlled by ramp meters or miles under lane control	0	503	0%						
Freeway entrance ramps are controlled by ramp meters				6	688	1%	10	688	1%

<b>Description</b>	<b>1997</b>			<b>1999</b>			<b>2005</b>		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway centerline miles will be controlled by lane control				0	503	0%	2	503	0%
Freeway miles are covered by VMS, HAR, or IVS	114	503	23%						
Freeway miles are covered by VMS				60	503	12%	308	503	61%
Freeway miles are covered by HAR				248	503	49%	266	503	53%
Freeway miles are covered by IVS					503			503	

# Freeway Management Integration Indicators

## Philadelphia, Wilmington, Trenton

### Freeway Management Integration\*



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

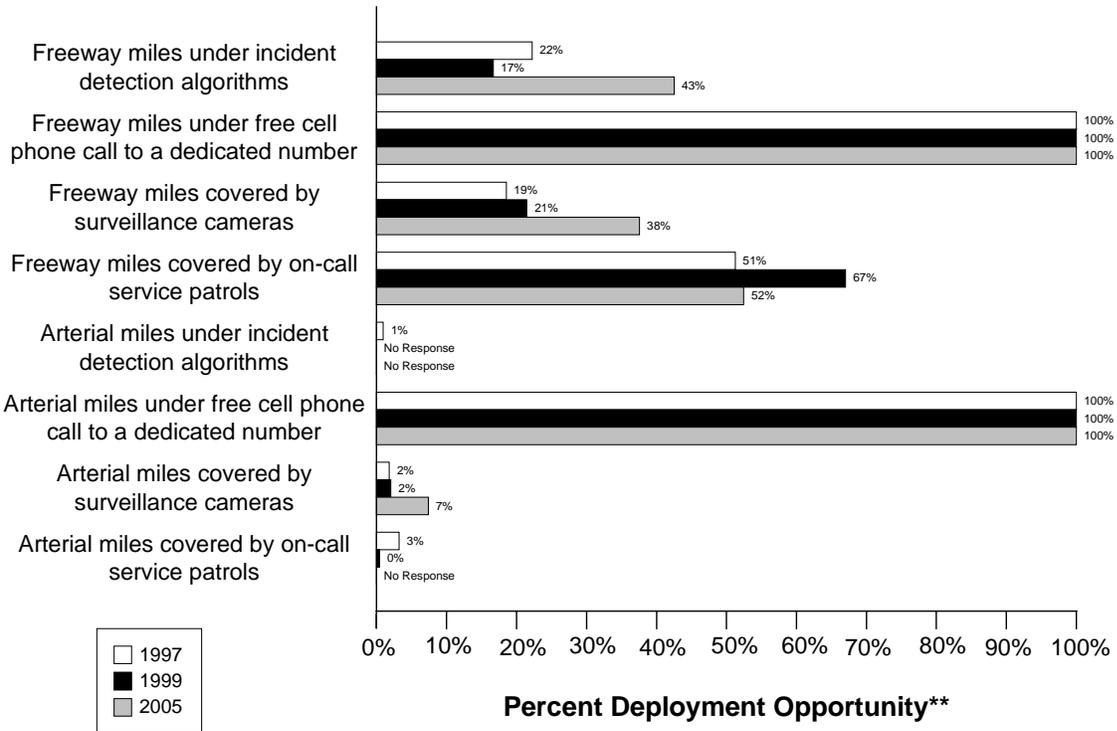
Link Description	1999	2005
2. Arterial Management agencies sending information to Freeway Management	( 1 / 9) 11%	( 1 / 9) 11%
8. Incident Management agencies sending information to Freeway Management	( 4 / 5) 80%	( 4 / 5) 80%
15a. Transit management agencies with vehicles equipped with ramp meter priority	( 0 / )	( 0 / )
15b. Transit Management agencies with vehicles equipped as probes	( 0 / )	( 0 / )
17. Freeway Management agencies receiving freeway conditions from vehicle probes	( 1 / 5) 20%	( 2 / 5) 40%
30. Freeway Management agencies sending information to another Freeway Management agency	( 3 / 5) 60%	( 3 / 5) 60%
11. Freeway Management agencies sending information to Arterial Management	( 0 / 5) 0%	( 0 / 5) 0%
10. Freeway Management agencies disseminating freeway conditions to the public	( 3 / 5) 60%	( 3 / 5) 60%

<b>Link Description</b>	<b>1999</b>	<b>2005</b>
12. Freeway Management agencies sending freeway conditions to Transit Management	( 0/ 5) 0%	( 0/ 5) 0%
13. Freeway Management agencies sending freeway conditions to Incident Management	( 4/ 5) 80%	( 4/ 5) 80%

# Incident Management Component Indicators

Data as of 5/1/00

## Philadelphia, Wilmington, Trenton Freeway and Arterial Incident Management\*



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

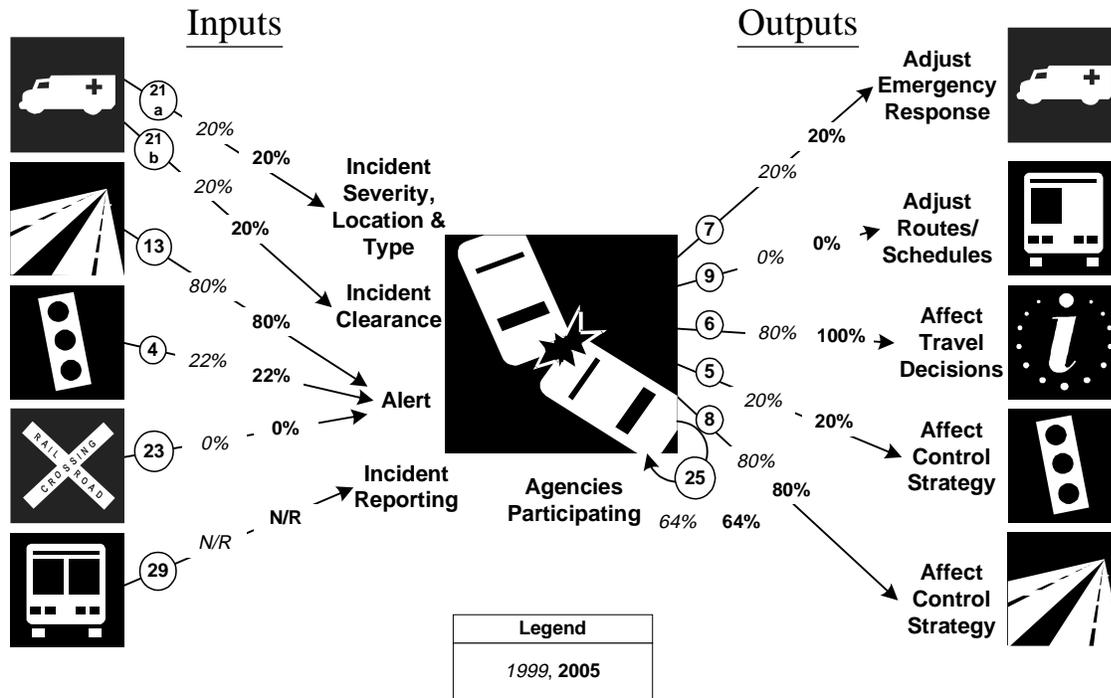
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by incident detection algorithms	112	503	22%	84	503	17%	214	503	43%
Freeway miles are covered by free cellular phone calls to a dedicated number	503	503	100%	503	503	100%	503	503	100%
Freeway miles are covered by surveillance cameras.	93.2	503	19%	108	503	21%	189	503	38%

<b>Description</b>	<b>1997</b>			<b>1999</b>			<b>2005</b>		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by on-call publicly-sponsored service patrol or towing services.	258	503	51%	337	503	67%	264	503	52%
Arterial miles are covered by incident detection algorithms	35	3726	1%		3726			3726	
Arterial miles are covered by free cellular phone calls to a dedicated number	3726	3726	100%	3726	3726	100%	3726	3726	100%
Arterial miles are covered by surveillance cameras	68	3726	2%	75	3726	2%	275	3726	7%
Arterial miles are covered by on-call publicly-sponsored service patrol or towing services	120	3726	3%	15	3726	0%		3726	

# Incident Management Integration Indicators

## Philadelphia, Wilmington, Trenton

### Incident Management Integration\*



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

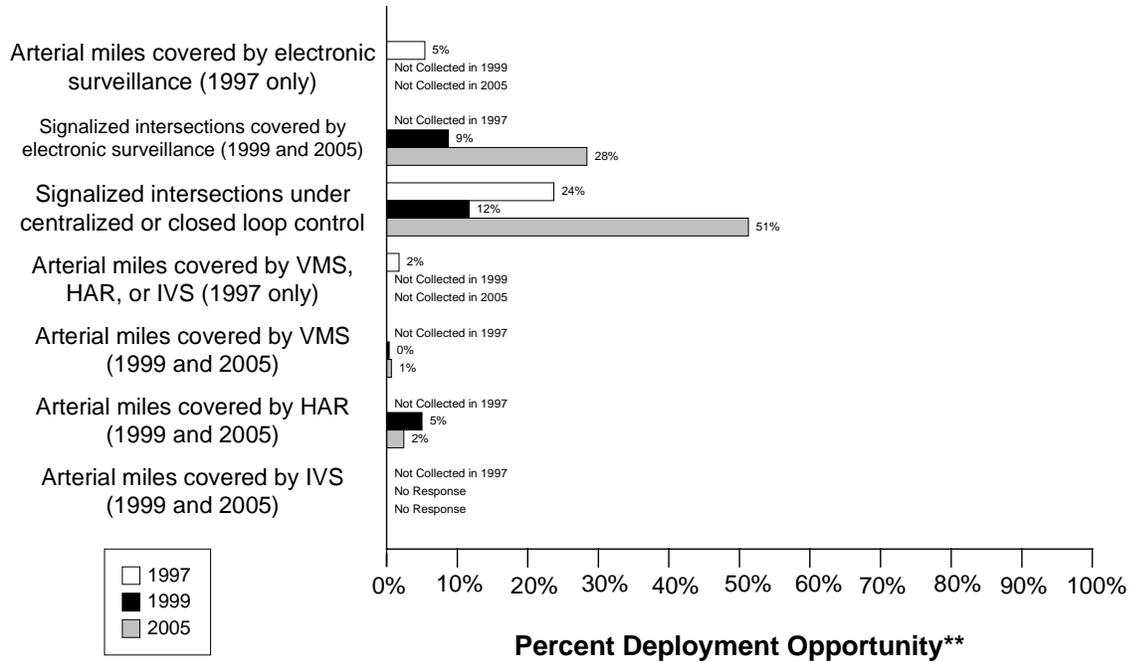
Link Description	1999	2005
21a. Incident management agencies receiving incident severity from Emergency Management	( 1 / 5) 20%	( 1 / 5) 20%
21b. Incident management agencies receiving incident clearance activities from Emergency Management	( 1 / 5) 20%	( 1 / 5) 20%
13. Freeway Management agencies sending freeway conditions to Incident Management	( 4 / 5) 80%	( 4 / 5) 80%
4. Arterial Management agencies sending arterial conditions to Incident Management	( 2 / 9) 22%	( 2 / 9) 22%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	( 0 / 9) 0%	( 0 / 9) 0%
29. Transit Management agencies report traffic incidents as part of an organized regional incident management program	( 0 / ) N/R	( 0 / ) N/R
7. Incident management agencies transfer information describing incident severity, location, and type to Emergency Management agencies	( 1 / 5) 20%	( 1 / 5) 20%

<b>Link Description</b>	<b>1999</b>	<b>2005</b>
9. Incident Management agencies transfer information describing incident severity, location, and type to Transit Management agencies	( 0/ 5) 0%	( 0/ 5) 0%
6. Incident Management agencies disseminate information describing incident severity, location, and type to the public	( 4/ 5) 80%	( 5/ 5) 100%
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management agencies	( 1/ 5) 20%	( 1/ 5) 20%
8. Incident Management agencies transfer information describing incident severity, location, and type to Freeway Management agencies	( 4/ 5) 80%	( 4/ 5) 80%
25. Police, fire, and EMS agencies participating in a formal incident management plan/team	( 7/ 11) 64%	( 7/ 11) 64%

# Arterial Management Component Indicators

Data as of 5/1/00

## Philadelphia, Wilmington, Trenton Arterial Management\*



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

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

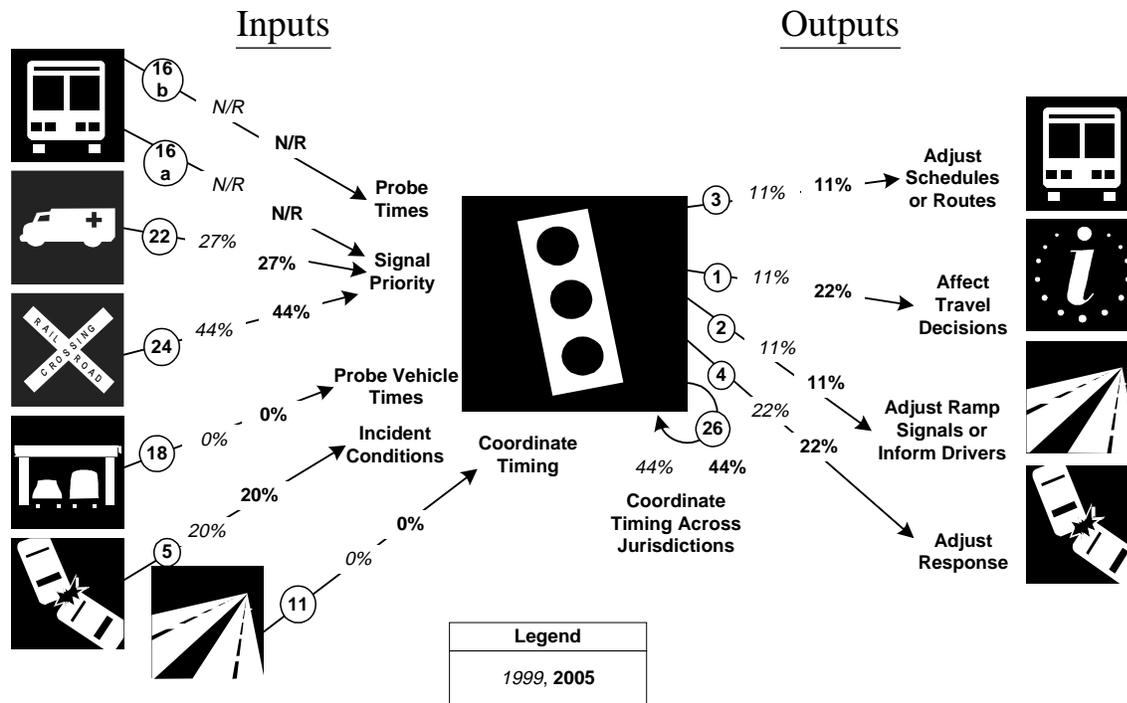
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles covered by electronic surveillance	201	3726	5%						
Signalized intersections are covered by electronic surveillance for monitoring traffic flow				426	4873	9%	1100	3876	28%
Signalized intersections are under centralized or closed loop control	193	815	24%	568	4873	12%	1986	3876	51%
Arterial miles are covered by VMS, HAR, or IVS	64	3726	2%						

<b>Description</b>	<b>1997</b>			<b>1999</b>			<b>2005</b>		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles are covered by VMS				12	3726	0%	25	3726	1%
Arterial miles are covered by HAR				186	3726	5%	90	3726	2%
Arterial miles are covered by IVS					3726			3726	

# Arterial Management Integration Indicators

## Philadelphia, Wilmington, Trenton

### Arterial Management Integration\*



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

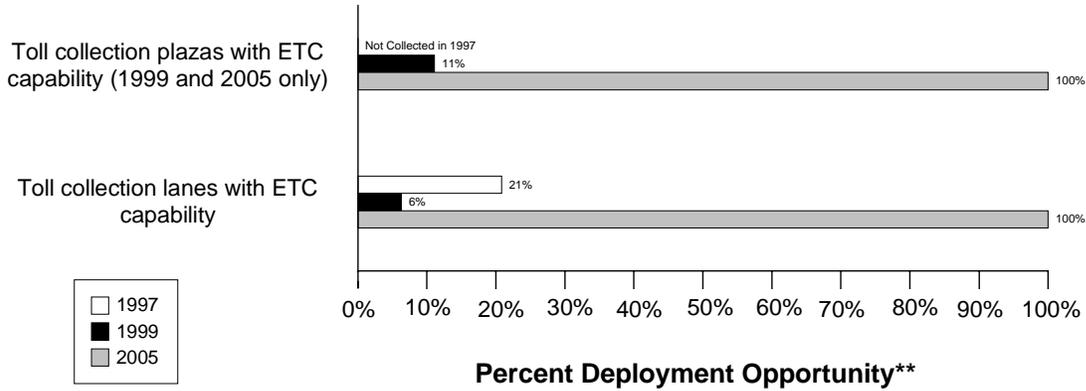
Link Description	1999	2005
16a. Transit management agencies with vehicles equipped with traffic signal priority	( 0/ )	( 0/ )
16b. Transit Management agencies have vehicles equipped as probes on arterials	( 0/ )	( 0/ )
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	( 3/ 11) 27%	( 3/ 11) 27%
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	( 4/ 9) 44%	( 4/ 9) 44%
18. Number of Arterial Management agencies receiving information from vehicle probes	( 0/ 9) 0%	( 0/ 9) 0%
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management	( 1/ 5) 20%	( 1/ 5) 20%
11. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Arterial Management agencies	( 0/ 5) 0%	( 0/ 5) 0%

<b>Link Description</b>	<b>1999</b>	<b>2005</b>
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	( 1/ 9) 11%	( 1/ 9) 11%
1. Arterial Management agencies disseminate arterial travel times, speeds, and conditions to the public	( 1/ 9) 11%	( 2/ 9) 22%
2. Arterial Management agencies send traffic condition information to Freeway Management	( 1/ 9) 11%	( 1/ 9) 11%
4. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Incident Management	( 2/ 9) 22%	( 2/ 9) 22%
26. Arterial Management agencies under cooperative agreement to share traffic signal timing for coordinated response	( 4/ 9) 44%	( 4/ 9) 44%

# Electronic Toll Collection Component Indicators

Data as of 5/1/00

## Philadelphia, Wilmington, Trenton Electronic Toll Collection\*



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

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

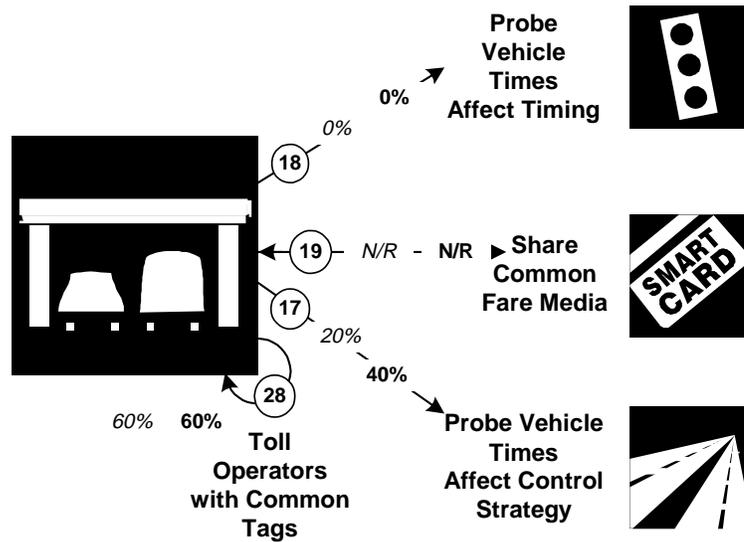
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Toll collection plazas with ETC capability				4	36	11%	39	39	100%
Toll collection lanes with ETC capability	10	48	21%	26	413	6%	429	429	100%

**Electronic Toll Collection Integration Indicators**

**Philadelphia, Wilmington, Trenton  
Electronic Toll Collection Integration\***

Inputs

Outputs



Legend
1999, 2005

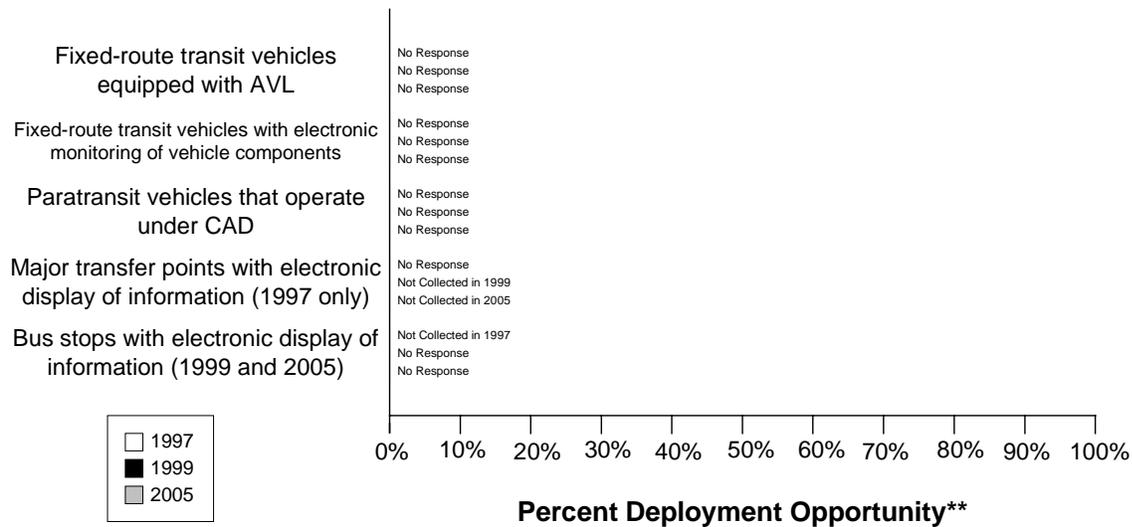
\* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
18. Number of Arterial Management agencies receiving information from vehicle probes	( 0/ 9) 0%	( 0/ 9) 0%
19. Transit agencies that accept electronic payment through the use of electronic toll collection media	( 0/ )	( 0/ )
17. Freeway Management agencies receiving information from vehicle probes	( 1/ 5) 20%	( 2/ 5) 40%
28. Toll operators using common toll tag technology	( 3/ 5) 60%	( 3/ 5) 60%

# Transit Management Component Indicators

Data as of 5/1/00

## Philadelphia, Wilmington, Trenton Transit Management\*



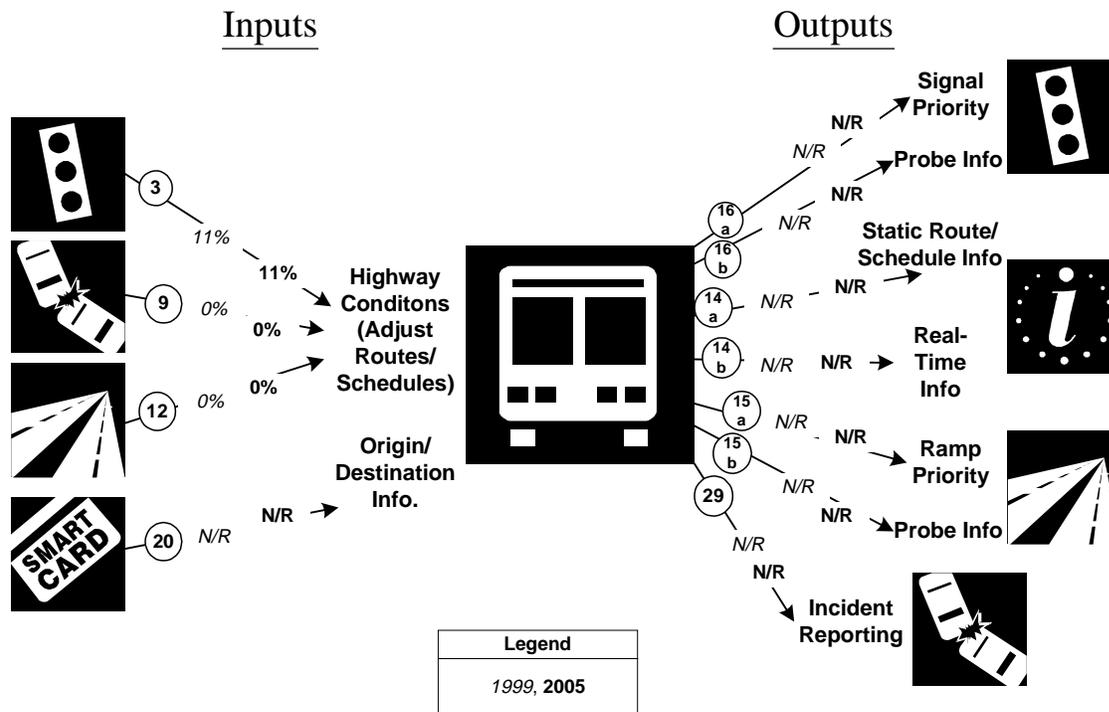
\* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.

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

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

# Transit Management Integration Indicators

## Philadelphia, Wilmington, Trenton Transit Management Integration\*



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

Link Description	1999	2005
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	( 1/ 9) 11%	( 1/ 9) 11%
9. Incident management agencies transfer information describing incident severity, location, and type to Transit Management	( 0/ 5) 0%	( 0/ 5) 0%
12. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Transit Management	( 0/ 5) 0%	( 0/ 5) 0%
20. Transit Management agencies using Electronic Fare Payment data in transit service planning	( 0/ )	( 0/ )
16a. Transit Management agencies have vehicles equipped with traffic signal priority capability	( 0/ )	( 0/ )
16b. Transit Management agencies have vehicles equipped as probes on arterials	( 0/ )	( 0/ )
14a. Transit Management agencies disseminate information describing transit routes, schedules, and fares to travelers	( 0/ )	( 0/ )

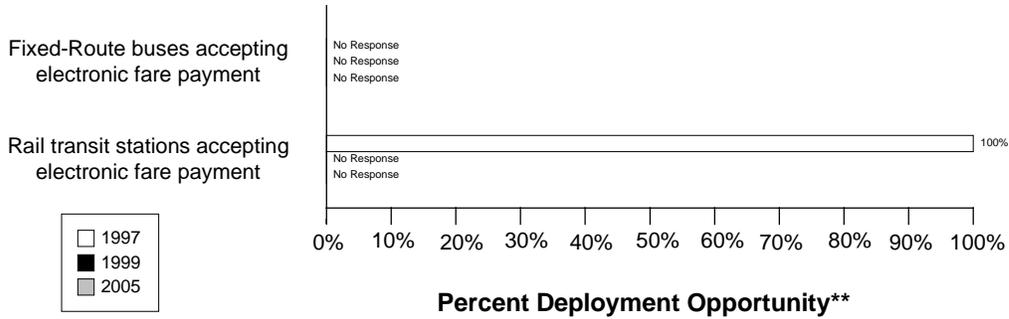
<b>Link Description</b>	<b>1999</b>	<b>2005</b>
14b. Transit Management agencies disseminate information describing schedule/route adherence to travelers	( 0/)	( 0/)
15a. Transit Management agencies have vehicles equipped with ramp meter priority capability	( 0/)	( 0/)
15b. Transit Management agencies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

# Electronic Fare Payment Component Indicators

Data as of 5/1/00

## Philadelphia, Wilmington, Trenton

### Electronic Fare Payment\*



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

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

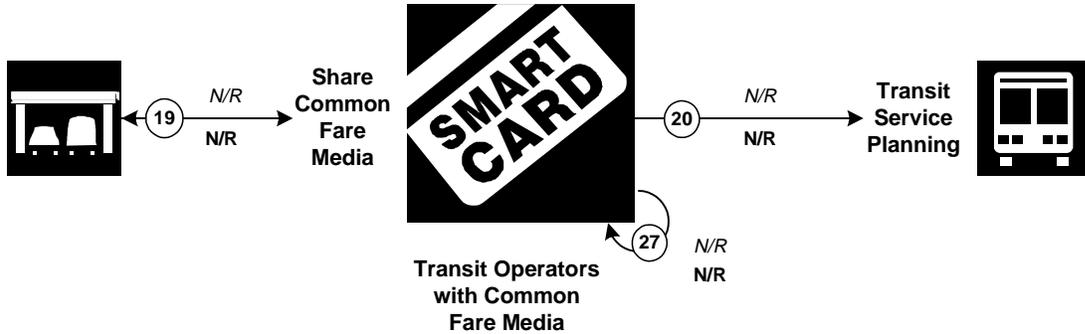
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Fixed-route transit vehicles that accept electronic payment	0	0							
Rail transit stations that accept electronic payment	13	13	100%						

**Electronic Fare Payment Integration Indicators**

**Philadelphia, Wilmington, Trenton  
Electronic Fare Payment Integration\***

Inputs

Outputs



Legend
1999
2005

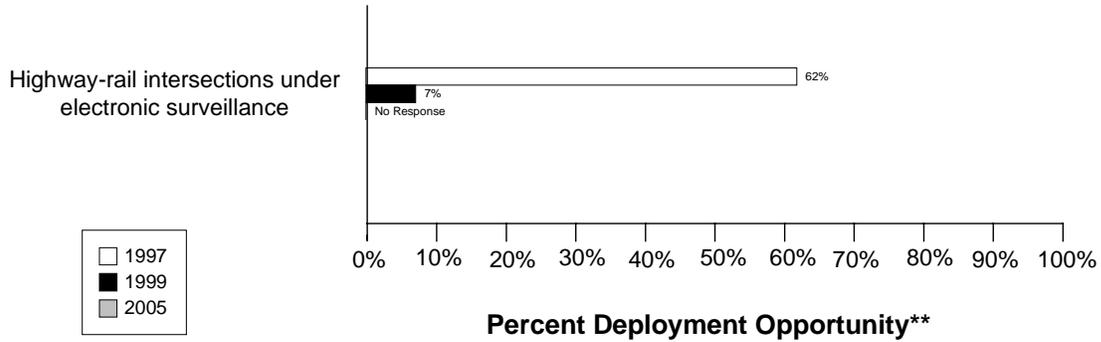
\* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

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

# Highway Rail Intersection Component Indicators

Data as of 5/1/00

## Philadelphia, Wilmington, Trenton Highway-Rail Intersections\*



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

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

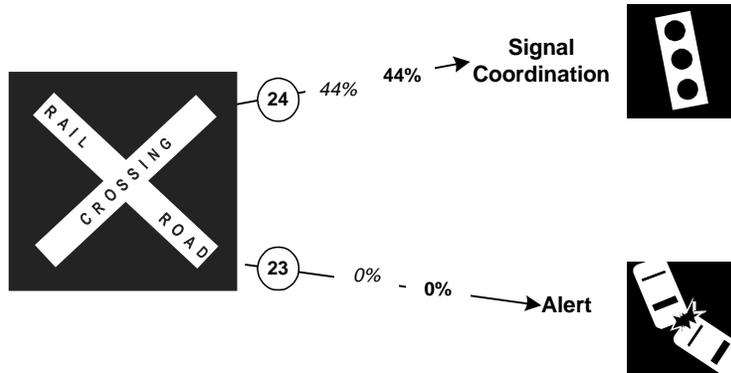
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Highway-rail intersections are under electronic surveillance	13	21	62%	1	14	7%		14	

## Highway Rail Intersection Integration Indicators

# Philadelphia, Wilmington, Trenton 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

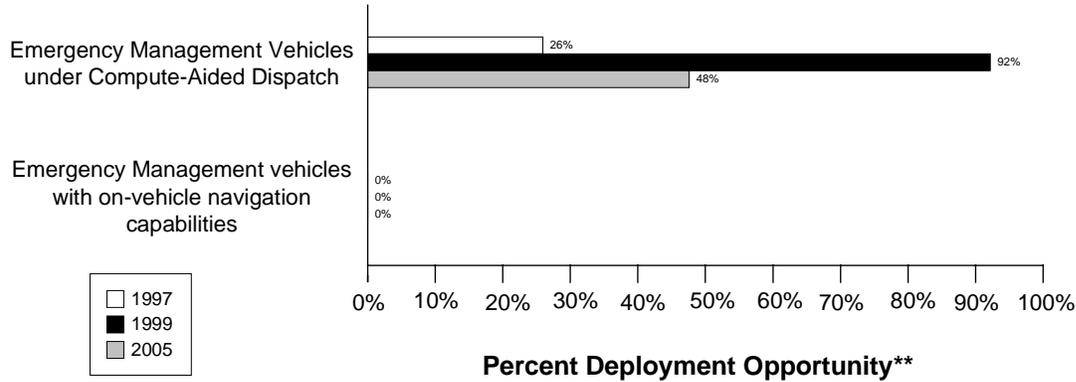
Link Description	1999	2005
24. Arterial Management agencies with traffic signals within 200 feet of a highway rail intersection with the capability of having their signal timing adjusted in response to a train crossing	( 4/ 9) 44%	( 4/ 9) 44%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	( 0/ 9) 0%	( 0/ 9) 0%

## Emergency Management Component Indicators

Data as of 5/1/00

### Philadelphia, Wilmington, Trenton

#### 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.

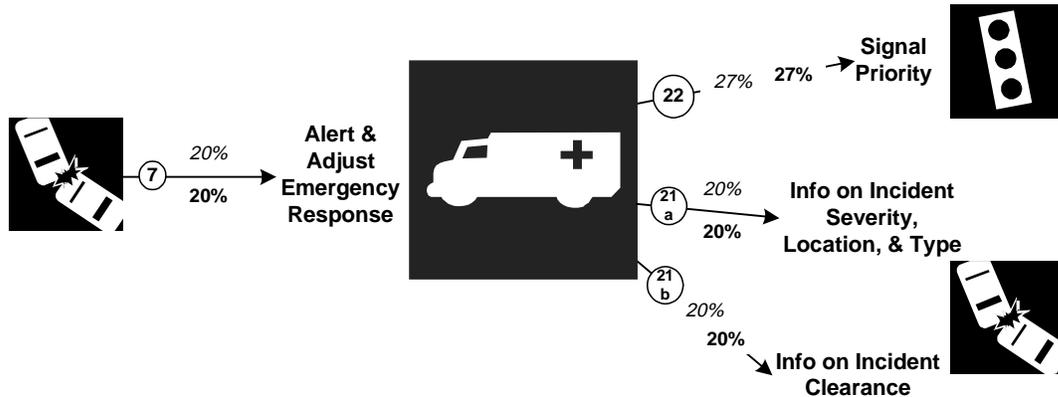
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Public sector emergency vehicles that operate under computer-aided dispatch	476	1836	26%	2012	2183	92%	127	267	48%
Public sector emergency vehicles that have in-vehicle route guidance capability	0	1836	0%	0	2183	0%	0	267	0%

# Emergency Management Integration Indicators

## Philadelphia, Wilmington, Trenton Emergency Management Integration\*

Inputs

Outputs



Legend
1999, 2005

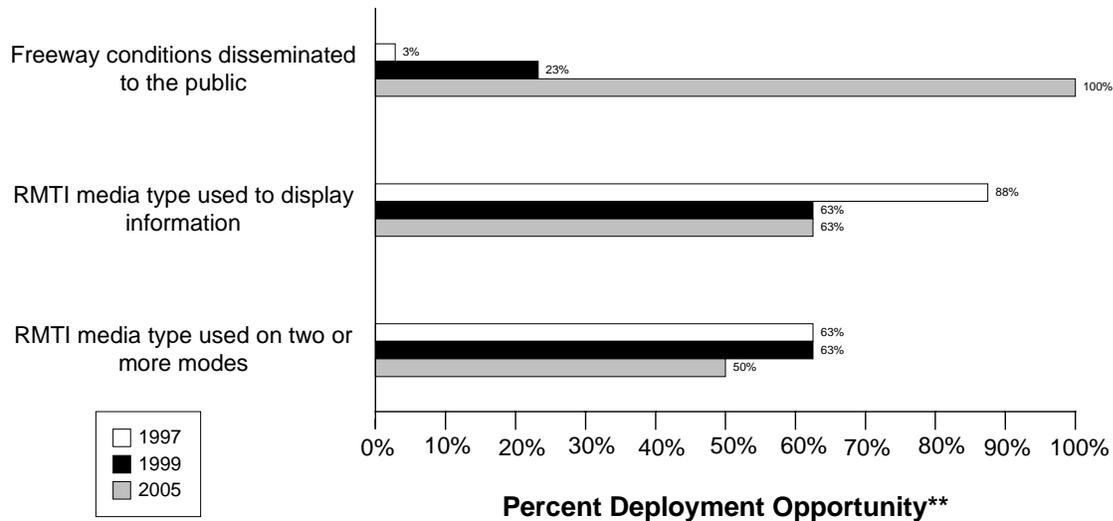
\* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
7. Freeway Management agencies transfer information describing incident severity, location, and type to Emergency Management agencies	( 1 / 5 ) 20%	( 1 / 5 ) 20%
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	( 3 / 11 ) 27%	( 3 / 11 ) 27%
21a. Freeway Management agencies receive incident severity, location, and type data from Emergency Management agencies	( 1 / 5 ) 20%	( 1 / 5 ) 20%
21b. Freeway Management agencies receive incident clearance activities information from Emergency Management agencies	( 1 / 5 ) 20%	( 1 / 5 ) 20%

## Regional Multimodal Traveler Information Component Indicators

Data as of 5/1/00

### Philadelphia, Wilmington, Trenton Regional Multimodal Traveler Information\*



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

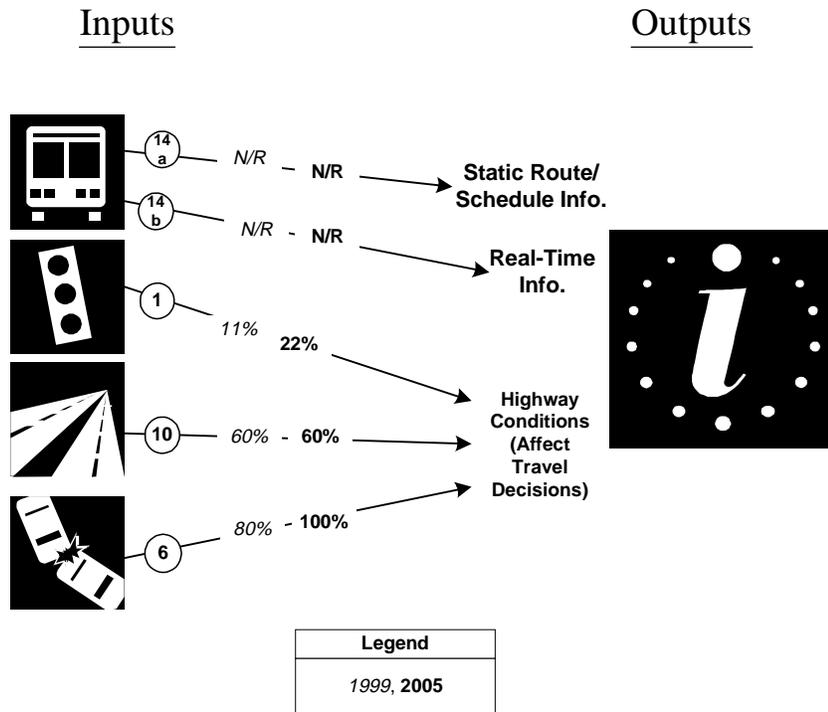
\*\* Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway conditions disseminated to travelers	14	503	3%	117	503	23%	503	503	100%
Possible RMTI media types are used to display information to travelers	7	8	88%	5	8	63%	5	8	63%
Possible RMTI media are used to display information on <i>two or more modes</i> to travelers	5	8	63%	5	8	63%	4	8	50%

# Regional Multimodal Traveler Information Integration Indicators

## Philadelphia, Wilmington, Trenton

### Regional Multimodal Traveler Information Integration\*

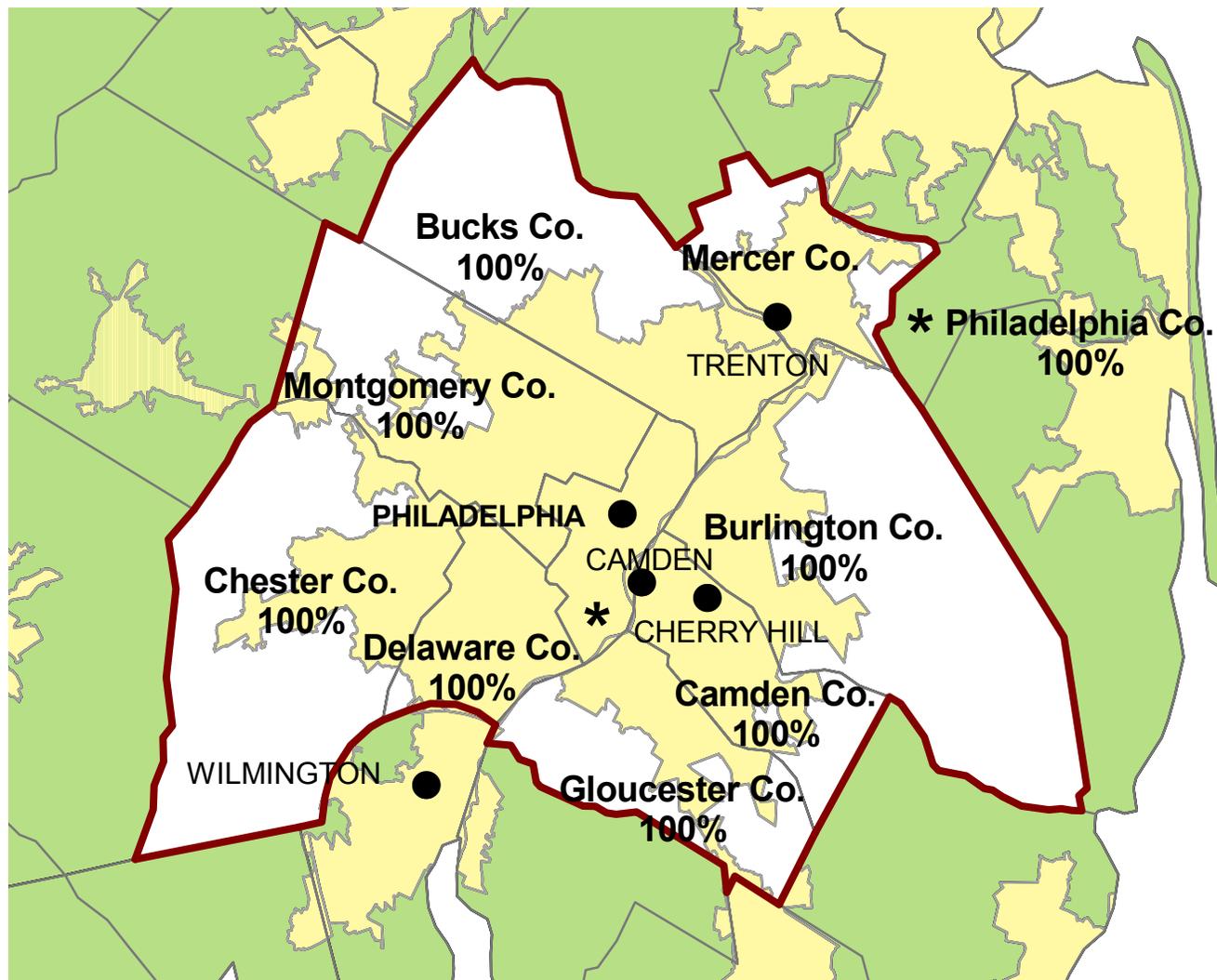


\* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
14a. Transit Management agencies that disseminate information describing transit routes, schedules, and fares to travelers	( 0/ )	( 0/ )
14b. Transit Management agencies that disseminate information describing schedule/route adherence to travelers	( 0/ )	( 0/ )
1. Arterial Management agencies that disseminate arterial travel times, speeds, and conditions to the public	( 1/ 9 ) 11%	( 2/ 9 ) 22%
10. Freeway Management agencies that disseminate freeway travel times, speeds, and conditions to travelers	( 3/ 5 ) 60%	( 3/ 5 ) 60%
6. Incident Management agencies that disseminate information describing incident severity, location, and type to the public	( 4/ 5 ) 80%	( 5/ 5 ) 100%

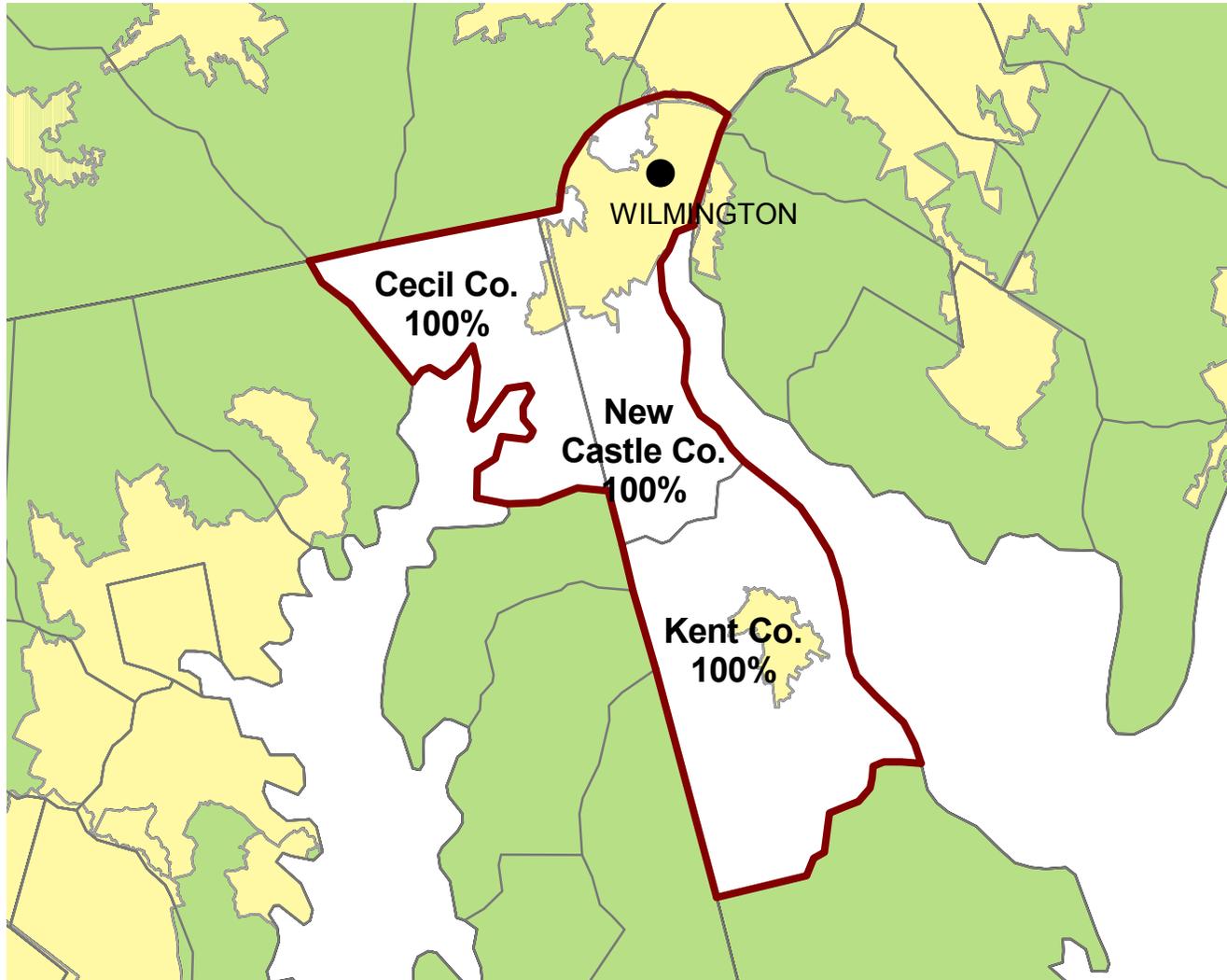
**Appendix A**  
**Survey Coverage Area**

**DELAWARE VALLEY  
REGIONAL PLANNING COMMISSION, NJ-PA**



- 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

**WILMINGTON AREA PLANNING COUNCIL,  
DOVER/KENT COUNTY MPO, DE-MD**



- 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
<b>PHILADELPHIA, WILMINGTON, TRENTON</b>						
<b>Arterial Management</b>						
Camden City	609-757-7200	609-963-4287			8/05/1997	
Gloucester County	609-863-0610	609-863-1069			8/05/1997	
Gloucester City	609-456-0781	609-456-6992			8/05/1997	8/24/1998
Bensalem Township	(215) 633-3733	(215) 639-8131	8/5/1999		8/05/1997	
Abington Township	215-884-5000	215-884-8271	8/5/1999	10/18/1999	8/05/1997	8/24/1998
Gloucester Township	(609) 228-4000	(609) 374-3527	8/5/1999		8/05/1997	
Bristol Township	(215) 785-2758		8/18/1999	9/20/1999	8/05/1997	8/21/1998
Upper Darby Township	(610) 734-7664	(610) 734-7773	8/5/1999		8/05/1997	11/13/1997
Philadelphia Streets Department	(215) 686-5538	(215) 977-7363	8/5/1999	8/24/1999	8/05/1997	
New Jersey Department of Transportation Traffic	(609) 866-4980	(609) 866-0517	8/5/1999	9/20/1999	8/05/1997	
Trenton City	(609) 989-3612	(609) 989-4287	8/5/1999	10/12/1999	8/05/1997	11/10/1997
Wilmington City	(302) 571-4233	(302) 571-4388	8/5/1999	10/22/1999	8/05/1997	10/10/1997
Burlington County	(609) 642-3800	(609) 642-3810	8/5/1999		8/05/1997	
Camden County	(609) 783-0043		8/5/1999	9/23/1999	8/05/1997	
Mercer County	(609) 989-6600	(609) 396-3968	8/5/1999		8/05/1997	
Lower Merion Township	(610) 664-5377	(610) 649-8835	8/5/1999		8/05/1997	08/19/1998
Delaware Department of Transportation	302-760-2080	302-739-3306	8/17/1999	10/12/1999	8/05/1997	
<b>Electronic Toll Collection</b>						
New Jersey Turnpike Authority/Pennsylvania	(732) 247-0900	(732) 247-3612	6/30/1999	8/27/1999	8/05/1997	10/30/1997
Delaware Department of Transportation	(302) 571-6374	(302) 571-6487	6/30/1999	7/1/1999	8/05/1997	9/11/1997
New Jersey Turnpike Authority/New Jersey	(732) 247-0900	(732) 247-3612	6/30/1999	8/27/1999	8/05/1997	10/30/1997
South Jersey Transportation Authority	(609) 561-6643	(609) 561-6849	6/30/1999	7/2/1999	8/05/1997	8/11/1997
<b>Emergency Management</b>						
Camden City	609-757-7200	609-963-1841			8/05/1997	
Bristol Township	215-785-0500				8/05/1997	
Philadelphia County	215-686-5538	215-977-7363			8/05/1997	
Upper Darby Township	610-734-7635	610-734-7775			8/05/1997	
Bensalem Township	215-633-3733	215-639-8131			8/05/1997	
Cherry Hill Township	609-665-1200	609-665-1200			8/05/1997	
Mercer County Police Department	(609) 989-6600	(609) 396-3968	6/23/1999		8/05/1997	6/22/1998
Wilmington City Police Department	302-571-4409	302-571-0000	8/20/1999	8/30/1999	8/05/1997	9/18/1997
Trenton City Fire & EMS Department	609-989-4038	609-989-4082	8/11/1999	8/26/1999	8/05/1997	11/10/1997

Agency Name	Phone	Fax	1999		1997	
			Out	In	Out	In
Trenton City Police Department	609-989-4055	609-989-4270	6/24/1999	8/16/1999	8/05/1997	11/10/1997
Philadelphia Fire Department	(215) 686-1387	(215) 922-5967	6/23/1999	6/29/1999	8/05/1997	11/05/1997
Philadelphia Police Department	(215) 686-3277	(215) 686-1183	6/23/1999	6/29/1999	8/05/1997	6/22/1998
Philadelphia Emergency Medical Services	(215) 686-1387	(215) 922-5967	6/23/1999	6/29/1999	8/05/1997	11/05/1997
Abington City Police Department	(215) 884-5000	(215) 884-8271	6/23/1999	9/2/1999	6/22/1998	6/22/1998
Gloucester Police Department	(609) 456-7797	(609) 456-3682	6/23/1999	8/23/1999	6/17/1998	6/17/1998
Abington City Fire Department	(215) 884-5000	(215) 884-8271	6/23/1999	9/2/1999	6/22/1998	6/22/1998
Wilmington City Fire Department	302-571-4409	302-571-0000	8/20/1999	8/30/1999	8/05/1997	9/18/1997
Gloucester County Sheriff	(609) 384-4600	(609) 384-4679	6/23/1999	8/20/1999	6/17/1998	6/17/1998
<b>Freeway Management</b>						
Delaware Department of Transportation	(302) 760-2201	(302) 739-4329	7/29/1999		8/05/1997	9/11/1997
South Jersey Transportation Authority	(609) 561-6643	(609) 561-6849	7/29/1999	8/16/1999	8/05/1997	12/01/1997
Pennsylvania Turnpike Commission	(717) 939-9551	(717) 986-9645	7/29/1999	8/16/1999	8/05/1997	
Pennsylvania Department of Transportation	(610) 768-3100	(610) 768-3017	7/29/1999	10/25/1999	8/05/1997	12/23/1997
New Jersey Turnpike Authority	732-247-0900	732-247-3612	7/29/1999	10/15/1999	8/05/1997	8/17/1997
New Jersey Department of Transportation Traffic	(609) 866-4980	(609) 866-0517	8/5/1999	9/20/1999	8/05/1997	8/21/1997
<b>MPO</b>						
Delaware Valley Regional Planning Commission	(215) 592-1800	(215) 592-9125	7/15/1999	7/28/1999		
Wilmington Area Planning Council	(302) 737-6205	(302) 737-9584	7/15/1999	9/7/1999		
<b>Transit Management</b>						
Port Authority Transit Corporation	(609) 772-6926	(609) 772-6957	8/9/1999		7/03/1997	10/10/1997

**Appendix C**  
**Freeway Management Components**

Freeway Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	New Jersey Department of Transportation Traffic Operations Center South		New Jersey Turnpike Authority		Pennsylvania Department of Transportation District 6-0		Pennsylvania Turnpike Commission	
	1999	2005	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		Yes		Yes	
<b>FREEWAY MANAGEMENT SECTION</b>								
Number of freeway centerline miles that agency owns or maintains	NR		NR		110		70	
Number of freeway centerline miles that is used for planning	NR		NR		110		70	
Number of freeway entrance ramps that agency owns, operates or maintains	NR		NR		205		12	
Number of freeway entrance ramps that is used for planning	NR		NR		205		12	
<b>Type of facilities used to conduct freeway/incident management activities</b>								
Activities housed in a free-standing dedicated building?	No		No		No		Yes	
Activities housed in a building shared with other activities?	Yes		No		No		No	
Activities conducted in a dedicated control room?	Yes		No		Yes		No	
Control room contains operator console(s)?	Yes		No		Yes		No	
Control room contains electronic wall map?	No		No		No		No	
Control room contains CCTV display(s)?	Yes		No		Yes		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	
<b>Staffing and hours of operation of freeway/incident management activities</b>								
Number of full-time agency staff members	7		NR		3		13	
Number of full time contractor staff members	0		NR		2		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		agency	
Staffed during peak hours only by agency staff or by others	Yes		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	Yes		No		Yes		No	
<b>Types of operations conducted for freeway/incident management</b>								
Incident detection and management?	Yes		No		Yes		Yes	
This metropolitan area?	Yes		No		Yes		No	
Other metropolitan area?	Yes		No		No		No	
Statewide?	No		No		No		Yes	
Monitoring and troubleshooting status of system components?	Yes		No		Yes		Yes	
Manual override of ramp metering rates at freeway on-ramps?	No		No		No		No	
Operating transportation management roadside devices?	Yes		No		Yes		Yes	
Radio communications with other agencies?	Yes		No		Yes		Yes	
Exchange of electronic data with other agencies such as computer aided dispatch?	Yes		No		Yes		Yes	

Freeway Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	New Jersey Department of Transportation Traffic Operations Center South		New Jersey Turnpike Authority		Pennsylvania Department of Transportation District 6-0		Pennsylvania Turnpike Commission	
	1999	2005	1999	2005	1999	2005	1999	2005
<b>Real-Time Traffic Data Collection Technologies</b>								
Total number of miles under surveillance with real-time data collection tech.	26	100	58	148	7	300	0	5
<u>Number of Stations with data collection technologies</u>								
Loop detectors	NR	NR	0	0	175	300	0	0
Video imaging detectors	0	0	0	0	2	NR	0	0
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0	0	0	0	0	0	1
Microwave radar	0	0	0	0	35	105	0	0
Other (e.g., acoustic detectors)	0	0	0	0	0	0	0	0
<u>Number of Miles covered with data collection technologies</u>								
Loop detectors	26	100	0	0	7	300	0	0
Video imaging detectors	0	0	0	0	1	NR	0	0
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0	0	0	0	0	NR	25
Microwave radar	0	0	0	0	1	35	0	0
Other (e.g., acoustic detectors)	0	0	0	0	0	0	0	0
<b>Variable Message Signs (VMS) on Freeways</b>								
Candidate locations for deployment of VMS where VMS has been deployed	8	14	12	18	4	81	0	2
Candidate locations for deployment of VMS	NR	NR	NR	NR	NR	100	0	2
<b>Roadside Technologies used to Distribute Traveler Information</b>								
Total number of miles where information is distributed	75	100	148	148	8	8	10	10
<u>Number deployed</u>								
Highway advisory radio	5	7	NR	NR	1	1	1	1
In-vehicle signing	0	0	0	0	0	0	0	0
Portable variable message signs	30	30	0	0	0	13	0	0
Other	0	0	0	0	0	0	0	0
<u>Miles covered</u>								
Highway advisory radio	75	100	148	148	8	8	10	10
In-vehicle signing	0	0	0	0	0	0	0	0
Portable variable message signs	NR	NR	0	0	NR	NR	0	0
Other	0	0	0	0	0	0	0	0
<b>Ramp Meters on Freeways</b>								
Number of entrance ramp meters operated under isolated control	NR	NR	NR	NR	6	10	NR	NR
Number of entrance ramp meters operated under central control	NR	NR	NR	NR	0	10	NR	NR
Number of entrance ramp meters that provide preemption for emergency vehicles	NR	NR	NR	NR	0	0	NR	NR
Number of entrance ramp meters that provide priority for transit vehicles	NR	NR	NR	NR	0	0	NR	NR
Total number of metered ramps	NR	NR	0	0	6	10	NR	NR
<b>Freeway centerline miles under lane control</b>	0	2	NR	NR	NR	NR	NR	NR
<b>Communication Links</b>								
<u>Freeway centerline miles covered by the following type of communication</u>								
Twisted pair cable	0	0	0	0	32	40	0	0
Coaxial cable	0	0	0	0	0	0	0	0

Freeway Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	New Jersey Department of Transportation Traffic Operations Center South		New Jersey Turnpike Authority		Pennsylvania Department of Transportation District 6-0		Pennsylvania Turnpike Commission	
	1999	2005	1999	2005	1999	2005	1999	2005
Fiber-optic cable	100	175	0	0	1	60	0	26
Microwave radio	0	0	0	0	0	5	26	26
Other	0	0	0	0	0	0	0	0
<b>ITS Standards Used Related to Freeway Management</b>								
ATMS Data Dictionary Sections 1 and 2 (ITE TM 1.01)	Yes		No		No		No	
ATMS Data Dictionary Sections 3 and 4 (ITE TM 1.02)	Yes		No		No		No	
Message Set for External TMC Communication (ITE-9604-1)	Yes		No		No		No	
NTCIP Class B Profile (AASHTO TS 3.3)	Yes		No		No		No	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	Yes		No		No		No	
NTCIP Object Definitions for Environmental Sensor Stations (AASHTO TS 3.7)	Yes		No		No		No	
NTICP Object Definitions for Dynamic Message Signs (AASHTO TS 3.6)	Yes		No		Yes		Yes	
NTICP Object Definitions for Highway Advisory Radio (AASHTO TS 3.HAR)	Yes		No		No		Yes	
NTICP Object Definitions for Ramp Meter Control (AASHTO TS 3.RMC)	Yes		No		No		No	
NTICP Object Definitions for Transportation Sensor Systems (AASHTO TS 3.TSS)	Yes		No		No		No	
NTICP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	Yes		No		Yes		Yes	
Would agency be willing to participate in testing of ITS Standards?	Yes		NR		Yes		Yes	
<b>Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?</b>	Yes		NR		No		Yes	
<b>INCIDENT MANAGEMENT SECTION</b>								
<b>Use of Service Patrols to Assist in Detection and Response to Incidents</b>								
Publicly operated service patrol vehicles	Yes		Yes		No		Yes	
Privately operated service patrol vehicles operated under public contract	No		No		Yes		No	
Total number of freeway miles patrolled by these services	45	90	148	NR	30	60	70	70
<b>Miles Covered by Methods to Detect and Verify Incidents</b>								
Free cellular phone call to a dedicated phone number other than 911	NR	NR	148	148	NR	NR	70	70
Police patrols	NR	NR	NR	NR	NR	NR	70	70
Computer algorithms linked to traffic surveillance equipment	NR	NR	58	148	NR	40	NR	NR
CCTV	25	75	10	20	38	NR	10	50
Private sector sources (e.g., Shadow Traffic, SmartRoutes)	NR	NR	NR	NR	NR	NR	100	300
Other (e.g., free cell phone call to an area radio system, etc.)	NR	NR	NR	NR	NR	NR	NR	NR
<b>Procedures in place for Freeway Incident Response?</b>								
Working agreement(s)/arrangement(s) with other agencies	Yes		No		No		Yes	
Inter-agency incident management admin. team that meets regularly	Yes		No		No		Yes	
Major incident response team that responds to major incidents	Yes		No		No		No	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		No		No		Yes	
<b>Central focal point for facilitating the two-way flow of information among agencies responding to an incident?</b>								
The central focal point is a Freeway or Traffic Management Center	Yes		No		No		Yes	
The central focal point is a Police, Fire or joint dispatch center	Yes		No		No		No	
The central focal point is another center	No		No		No		No	

Freeway Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	New Jersey Department of Transportation Traffic Operations Center South		New Jersey Turnpike Authority		Pennsylvania Department of Transportation District 6-0		Pennsylvania Turnpike Commission	
	1999	2005	1999	2005	1999	2005	1999	2005
<b>Methods of Communication Used On-Site at an Incident</b>								
<u>Police</u>								
Two-way radio	Yes		No		No		Yes	
800 MHz trunked radio	Yes		No		Yes		No	
Cellular telephone	No		No		No		Yes	
Hand-held (i.e., walkie-talkie)	Yes		No		No		Yes	
Automated data systems (i.e., CAD)	Yes		No		No		Yes	
<u>Fire</u>								
Two-way radio	Yes		No		No		Yes	
800 MHz trunked radio	Yes		No		Yes		No	
Cellular telephone	No		No		No		Yes	
Hand-held (i.e., walkie-talkie)	Yes		No		No		Yes	
Automated data systems (i.e., CAD)	Yes		No		No		Yes	
<u>DOT</u>								
Two-way radio	Yes		No		Yes		Yes	
800 MHz trunked radio	Yes		No		No		No	
Cellular telephone	Yes		No		Yes		Yes	
Hand-held (i.e., walkie-talkie)	Yes		No		Yes		Yes	
Automated data systems (i.e., CAD)	No		No		No		Yes	
<u>Towing</u>								
Two-way radio	Yes		No		No		Yes	
800 MHz trunked radio	Yes		No		No		No	
Cellular telephone	Yes		No		No		Yes	
Hand-held (i.e., walkie-talkie)	No		No		No		Yes	
Automated data systems (i.e., CAD)	No		No		No		Yes	
<b>Which police agencies typically respond to incidents on freeways?</b>								
State Police	Yes		No		Yes		Yes	
County Police or Sheriff	No		No		No		No	
City Police	No		No		Yes		No	
<b>Who provides on-site emergency medical response?</b>								
Fire	Yes		No		Yes		Yes	
Emergency Management Service Agency	Yes		No		No		Yes	
Private hospital	No		No		No		Yes	
<b>Has a multi-agency contact list been developed in area containing the names, phone numbers, etc. for the appropriate response personnel?</b>								
	Yes		NR		No		Yes	
<b>Is the Incident Command System used to manage incident scenes?</b>								
	Yes		NR		DK		Yes	
<b>Is there a legal specification by state law or formal agreement as to who is "in charge" at the incident scene?</b>								
Specified by state law?	Yes		No		No		No	

Freeway Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	New Jersey Department of Transportation Traffic Operations Center South		New Jersey Turnpike Authority		Pennsylvania Department of Transportation District 6-0		Pennsylvania Turnpike Commission	
	1999	2005	1999	2005	1999	2005	1999	2005
Formal agreement?	No		No		No		No	
Not specified or don't know?	No		No		Yes		Yes	
<b>On-scene command post used to manage activities of responding agencies?</b>	Yes		NR		No		Yes	
Are there communication linkages to a communications traffic/freeway mgt center?	Yes		NR		NR		Yes	
<b>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?</b>	No		NR		No		Yes	
<b>Respondents protected through law or court opinion for liability claims for damages to vehicles or cargoes during clearance activities?</b>	Yes		NR		No		Yes	
<b>Are overturned tank trucks, which are intact and not leaking, uprighted without first off-loading?</b>	NR		NR		No		NR	
<b>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?</b>	Yes		NR		No		NR	
<b>Have laws or policies regarding the removal of stalled/abandoned vehicles from freeway shoulders?</b>	Yes		NR		Yes		Yes	
<b>Hours abandoned vehicles are allowed to remain on a freeway shoulder?</b>	4		NR		>36		>36	
<b>Have policies or procedures for quick removal of vehicles?</b>	Yes		NR		No		Yes	
<b>Is Total Station equipment used to investigate major incidents?</b>	No		NR		Yes		Yes	
<b>Handling of Towing Responses to Incidents</b>								
Formal contract based on qualifications?	No		No		No		Yes	
Rotation with companies under contract?	No		No		No		No	
Separate lists kept for light and heavy response and for specialty recovery?	Yes		NR		Yes		NR	
Rotation list with minimal qualifications?	Yes		No		Yes		No	
<b>In towing qualifications, do you require towers to be certified under the Towing and Recovery Ass. of America's National Drivers Cert. Program?</b>	Considered		NR		DK		DK	
DK: Don't know								
NR: No Response								
Leg: Legislation or action being planned								

Freeway Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	South Jersey Transportation Authority		Totals	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		5	
<b>FREEWAY MANAGEMENT SECTION</b>				
Number of freeway centerline miles that agency owns or maintains	14		194	
Number of freeway centerline miles that is used for planning	14		194	
Number of freeway entrance ramps that agency owns, operates or maintains	3		220	
Number of freeway entrance ramps that is used for planning	3		220	
<b>Type of facilities used to conduct freeway/incident management activities</b>				
Activities housed in a free-standing dedicated building?	Yes		2	
Activities housed in a building shared with other activities?	No		1	
Activities conducted in a dedicated control room?	No		2	
Control room contains operator console(s)?	No		2	
Control room contains electronic wall map?	No		0	
Control room contains CCTV display(s)?	No		2	
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	
<b>Staffing and hours of operation of freeway/incident management activities</b>				
Number of full-time agency staff members	8		31	
Number of full time contractor staff members	NR		2	
Number of part-time agency staff members	12		12	
Number of part-time contractor staff members	NR		0	
Staffed 24 hours day by agency staff or by others	agency		0	
Staffed during peak hours only by agency staff or by others	NR		#VALUE!	
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		2	
<b>Types of operations conducted for freeway/incident management</b>				
Incident detection and management?	Yes		4	
This metropolitan area?	Yes		3	
Other metropolitan area?	Yes		2	
Statewide?	No		1	
Monitoring and troubleshooting status of system components?	No		3	
Manual override of ramp metering rates at freeway on-ramps?	No		0	
Operating transportation management roadside devices?	Yes		4	
Radio communications with other agencies?	Yes		4	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		3	

Freeway Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	South Jersey Transportation Authority		Totals	
	1999	2005	1999	2005
<b>Real-Time Traffic Data Collection Technologies</b>				
Total number of miles under surveillance with real-time data collection tech.	26	44	117	597
<u>Number of Stations with data collection technologies</u>				
Loop detectors	8	NR	183	300
Video imaging detectors	0	0	2	0
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0	0	1
Microwave radar	0	0	35	105
Other (e.g., acoustic detectors)	0	0	0	0
<u>Number of Miles covered with data collection technologies</u>				
Loop detectors	26	NR	59	400
Video imaging detectors	0	0	1	0
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0	0	25
Microwave radar	0	0	1	35
Other (e.g., acoustic detectors)	0	0	0	0
<b>Variable Message Signs (VMS) on Freeways</b>				
Candidate locations for deployment of VMS where VMS has been deployed	NR	8	24	123
Candidate locations for deployment of VMS	NR	8	0	110
<b>Roadside Technologies used to Distribute Traveler Information</b>				
Total number of miles where information is distributed	7	NR	248	266
<u>Number deployed</u>				
Highway advisory radio	1	NR	8	9
In-vehicle signing	0	0	0	0
Portable variable message signs	6	6	36	49
Other	0	0	0	0
<u>Miles covered</u>				
Highway advisory radio	7	NR	248	266
In-vehicle signing	0	0	0	0
Portable variable message signs	NR	NR	0	0
Other	0	0	0	0
<b>Ramp Meters on Freeways</b>				
Number of entrance ramp meters operated under isolated control	NR	NR	6	10
Number of entrance ramp meters operated under central control	NR	NR	0	10
Number of entrance ramp meters that provide preemption for emergency vehicles	NR	NR	0	0
Number of entrance ramp meters that provide priority for transit vehicles	NR	NR	0	0
Total number of metered ramps	NR	NR	6	10
<b>Freeway centerline miles under lane control</b>	NR	NR	0	2
<b>Communication Links</b>				
<u>Freeway centerline miles covered by the following type of communication</u>				
Twisted pair cable	0	0	32	40
Coaxial cable	0	0	0	0

Freeway Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	South Jersey Transportation Authority		Totals	
	1999	2005	1999	2005
Fiber-optic cable	0	44	101	305
Microwave radio	0	0	26	31
Other	0	0	0	0
<b>ITS Standards Used Related to Freeway Management</b>				
ATMS Data Dictionary Sections 1 and 2 (ITE TM 1.01)	No		1	
ATMS Data Dictionary Sections 3 and 4 (ITE TM 1.02)	No		1	
Message Set for External TMC Communication (ITE-9604-1)	No		1	
NTCIP Class B Profile (AASHTO TS 3.3)	No		1	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		1	
NTCIP Object Definitions for Environmental Sensor Stations (AASHTO TS 3.7)	No		1	
NTICP Object Definitions for Dynamic Message Signs (AASHTO TS 3.6)	No		3	
NTICP Object Definitions for Highway Advisory Radio (AASHTO TS 3.HAR)	No		2	
NTICP Object Definitions for Ramp Meter Control (AASHTO TS 3.RMC)	No		1	
NTICP Object Definitions for Transportation Sensor Systems (AASHTO TS 3.TSS)	No		1	
NTICP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		3	
Would agency be willing to participate in testing of ITS Standards?	Yes		4	
<b>Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?</b>	Yes		3	
<b>INCIDENT MANAGEMENT SECTION</b>				
<b>Use of Service Patrols to Assist in Detection and Response to Incidents</b>				
Publicly operated service patrol vehicles	Yes		4	
Privately operated service patrol vehicles operated under public contract	No		1	
Total number of freeway miles patrolled by these services	44	44	337	264
<b>Miles Covered by Methods to Detect and Verify Incidents</b>				
Free cellular phone call to a dedicated phone number other than 911	0	44	218	262
Police patrols	44	44	114	114
Computer algorithms linked to traffic surveillance equipment	26	26	84	214
CCTV	25	44	108	189
Private sector sources (e.g., Shadow Traffic, SmartRoutes)	NR	NR	100	300
Other (e.g., free cell phone call to an area radio system, etc.)	NR	NR	0	0
<b>Procedures in place for Freeway Incident Response?</b>				
Working agreement(s)/arrangement(s) with other agencies	Yes		3	
Inter-agency incident management admin. team that meets regularly	No		2	
Major incident response team that responds to major incidents	Yes		2	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		1	
<b>Central focal point for facilitating the two-way flow of information among agencies responding to an incident?</b>				
The central focal point is a Freeway or Traffic Management Center	No		2	
The central focal point is a Police, Fire or joint dispatch center	Yes		2	
The central focal point is another center	No		0	

Freeway Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	South Jersey Transportation Authority		Totals	
	1999	2005	1999	2005
<b>Methods of Communication Used On-Site at an Incident</b>				
<u>Police</u>				
Two-way radio	Yes		3	
800 MHz trunked radio	No		2	
Cellular telephone	Yes		2	
Hand-held (i.e., walkie-talkie)	No		2	
Automated data systems (i.e., CAD)	No		2	
<u>Fire</u>				
Two-way radio	Yes		3	
800 MHz trunked radio	No		2	
Cellular telephone	Yes		2	
Hand-held (i.e., walkie-talkie)	No		2	
Automated data systems (i.e., CAD)	No		2	
<u>DOT</u>				
Two-way radio	Yes		4	
800 MHz trunked radio	No		1	
Cellular telephone	Yes		4	
Hand-held (i.e., walkie-talkie)	No		3	
Automated data systems (i.e., CAD)	No		1	
<u>Towing</u>				
Two-way radio	Yes		3	
800 MHz trunked radio	No		1	
Cellular telephone	Yes		3	
Hand-held (i.e., walkie-talkie)	No		1	
Automated data systems (i.e., CAD)	No		1	
<b>Which police agencies typically respond to incidents on freeways?</b>				
State Police	Yes		4	
County Police or Sheriff	No		0	
City Police	No		1	
<b>Who provides on-site emergency medical response?</b>				
Fire	Yes		4	
Emergency Management Service Agency	Yes		3	
Private hospital	Yes		2	
<b>Has a multi-agency contact list been developed in area containing the names, phone numbers, etc. for the appropriate response personnel?</b>	Yes		3	
<b>Is the Incident Command System used to manage incident scenes?</b>	Yes		3	
<b>Is there a legal specification by state law or formal agreement as to who is "in charge" at the incident scene?</b>				
Specified by state law?	No		1	

Freeway Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	South Jersey Transportation Authority		Totals	
	1999	2005	1999	2005
Formal agreement?	Yes		1	
Not specified or don't know?	No		2	
<b>On-scene command post used to manage activities of responding agencies?</b>	DK		2	
Are there communication linkages to a communications traffic/freeway mgt center?	NR		2	
<b>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?</b>	DK		1	
<b>Respondents protected through law or court opinion for liability claims for damages to vehicles or cargoes during clearance activities?</b>	DK		2	
<b>Are overturned tank trucks, which are intact and not leaking, uprighted without first off-loading?</b>	NR		0	
<b>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?</b>	NR		1	
<b>Have laws or policies regarding the removal of stalled/abandoned vehicles from freeway shoulders?</b>	Yes		4	
<b>Hours abandoned vehicles are allowed to remain on a freeway shoulder?</b>	0-24		0	
<b>Have policies or procedures for quick removal of vehicles?</b>	Yes		3	
<b>Is Total Station equipment used to investigate major incidents?</b>	DK		2	
<b>Handling of Towing Responses to Incidents</b>				
Formal contract based on qualifications?	Yes		2	
Rotation with companies under contract?	No		0	
Separate lists kept for light and heavy response and for specialty recovery?	No			
Rotation list with minimal qualifications?	No		2	
<b>In towing qualifications, do you require towers to be certified under the Towing and Recovery Ass. of America's National Drivers Cert. Program?</b>	No		0	
DK: Don't know				
NR: No Response				
Leg: Legislation or action being planned				

**Appendix D**  
**Freeway Management Integration**

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	New Jersey Department of Transportation Traffic Operations Center South		New Jersey Turnpike Authority	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
<b>Freeway Management Section</b>				
<b>Agencies your agency provides freeway travel times, speeds, and conditions information, share infrastructure or coordinates operation</b>				
<b>Freeway Management Agencies</b>				
Provide Information	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op, New Jersey Turnpike Authority, Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission, South Jersey Transportation Authority, DRPA	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	New Jersey Turnpike Authority, South Jersey Transportation Authority, DRPA	None listed	None listed	None listed
<b>Incident Management Agencies</b>				

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	New Jersey Department of Transportation Traffic Operations Center South		New Jersey Turnpike Authority	
	1999	2005	1999	2005
Provide Information	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op, New Jersey Turnpike Authority, Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission, South Jersey Transportation Authority, DRPA	None listed	short survey-Transcom	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op, New Jersey Turnpike Authority, Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission, South Jersey Transportation Authority, DRPA	None listed	None listed	None listed
<b>Arterial Management Agencies</b>				
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
<b>Public Transit Operators</b>				
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
<b>Receiving real-time information via electronic means from others</b>				
<b>Incident Management agencies from which your agency receives</b>				

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	New Jersey Department of Transportation Traffic Operations Center South		New Jersey Turnpike Authority	
	1999	2005	1999	2005
<i>incident severity, location, and type information</i>	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op, New Jersey Turnpike Authority, Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission, South Jersey Transportation Authority, DRPA	None listed	short survey	None listed
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>	None listed	None listed	None listed	None listed
<i>Public Transit operators from which your agency receives freeway travel times derived from vehicle probes</i>	None listed	None listed	None listed	None listed
<i>Toll Collection agencies from which your agency receives freeway travel times derived from vehicles probes</i>	None listed	None listed	None listed	None listed
<b>Freeway Incident Management Section</b>				
<b>Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation</b>				
<b>Arterial Management Agencies</b>				
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
<b>Emergency Management Agencies</b>				

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	New Jersey Department of Transportation Traffic Operations Center South		New Jersey Turnpike Authority	
	1999	2005	1999	2005
Provide Information	County Emergency Management Centers, State Emergency Management Center	None listed	short survey-South Metro Shadow Traffic Services	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<b>Freeway Management Agencies</b>				
Provide Information	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op, New Jersey Turnpike Authority, Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission, South Jersey Transportation Authority, DRPA	None listed	short survey-Transcom	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op, New Jersey Turnpike Authority, Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission, South Jersey Transportation Authority, DRPA	None listed	None listed	None listed
<b>Public Transit Operators</b>				
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
<b>Receiving real-time information via electronic means from others</b>				

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	New Jersey Department of Transportation Traffic Operations Center South		New Jersey Turnpike Authority	
	1999	2005	1999	2005
<b><i>Emergency Management agencies from which your agency receives incident clearance and/or incident severity and type</i></b>				
Receive Arterial Incident Clearance Information	County Emergency Management Centers, State Emergency Management Center	None listed	short survey	None listed
Receive Arterial Incident Severity Information	None listed	None listed	short survey	None listed
<b><i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i></b>				
	None listed	None listed	None listed	None listed
<b><i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i></b>				
	New Jersey Department of Transportation Traffic Op, Delaware Department of Transportation, New Jersey Turnpike Authority, Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission, South Jersey Transportation Authority, DRPA	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.

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Pennsylvania Department of Transportation District 6-0		Pennsylvania Turnpike Commission	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
<b>Freeway Management Section</b>				
<b>Agencies your agency provides freeway travel times, speeds, and conditions information, share infrastructure or coordinates operation</b>				
<b><i>Freeway Management Agencies</i></b>				
Provide Information	None listed	None listed	Pennsylvania Turnpike Commission	Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission
Share Infrastructure	None listed	None listed	Pennsylvania Turnpike Commission	Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission
Coordinate Operation	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op, New Jersey Turnpike Authority, Pennsylvania Turnpike Commission, South Jersey Transportation Authority	None listed	Pennsylvania Turnpike Commission	Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission
<b><i>Incident Management Agencies</i></b>				

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Pennsylvania Department of Transportation District 6-0		Pennsylvania Turnpike Commission	
	1999	2005	1999	2005
Provide Information	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op, New Jersey Turnpike Authority, Pennsylvania Turnpike Commission, South Jersey Transportation Authority, Transcom/I-95 Corridor Coalition	None listed	Pennsylvania Turnpike Commission	Pennsylvania Department of Transportation, Pennsylvania Turnpike Commission
Share Infrastructure	None listed	None listed	Pennsylvania Turnpike Commission	Pennsylvania Department of Transportation, Pennsylvania Turnpike Commission
Coordinate Operation	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op, New Jersey Turnpike Authority, Pennsylvania Turnpike Commission, South Jersey Transportation Authority, Transcom/I-95 Corridor Coalition	None listed	Pennsylvania Turnpike Commission	Pennsylvania Department of Transportation, Pennsylvania Turnpike Commission
<b>Arterial Management Agencies</b>				
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
<b>Public Transit Operators</b>				
Provide Information	SEPTA	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
<b>Receiving real-time information via electronic means from others</b>				
<b>Incident Management agencies from which your agency receives</b>				

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Pennsylvania Department of Transportation District 6-0		Pennsylvania Turnpike Commission	
	1999	2005	1999	2005
<i>incident severity, location, and type information</i>	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op, New Jersey Turnpike Authority, Pennsylvania Turnpike Commission, South Jersey Transportation Authority, Transcom/I-95 Corridor Coalition	None listed	Pennsylvania Turnpike Commission	Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op	Philadelphia Streets Department, Upper Merion Township	None listed	None listed
<i>Public Transit operators from which your agency receives freeway travel times derived from vehicle probes</i>	None listed	None listed	None listed	None listed
<i>Toll Collection agencies from which your agency receives freeway travel times derived from vehicles probes</i>	None listed	None listed	Pennsylvania Turnpike Commission	Pennsylvania Turnpike Commission
<b>Freeway Incident Management Section</b>				
<b>Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation</b>				
<b>Arterial Management Agencies</b>				
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
<b>Emergency Management Agencies</b>				

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Pennsylvania Department of Transportation District 6-0		Pennsylvania Turnpike Commission	
	1999	2005	1999	2005
Provide Information	Philadelphia Fire Department, Philadelphia Police Department	Philadelphia Fire Department, Philadelphia Police Department	None listed	None listed
Share Infrastructure	Philadelphia Fire Department, Philadelphia Police Department	Philadelphia Fire Department, Philadelphia Police Department	None listed	None listed
Coordinate Operation	Philadelphia Fire Department, Philadelphia Police Department	Philadelphia Fire Department, Philadelphia Police Department	None listed	None listed
<b>Freeway Management Agencies</b>				
Provide Information	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op, New Jersey Turnpike Authority, Pennsylvania Turnpike Commission, South Jersey Transportation Authority, Transcom/I-95 Corridor Coalition	None listed	Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission	Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission
Share Infrastructure	None listed	None listed	Pennsylvania Turnpike Commission	Pennsylvania Turnpike Commission
Coordinate Operation	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op, New Jersey Turnpike Authority, Pennsylvania Turnpike Commission, South Jersey Transportation Authority, Transcom/I-95 Corridor Coalition	None listed	Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission	Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission
<b>Public Transit Operators</b>				
Provide Information	SEPTA	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
<b>Receiving real-time information via electronic means from others</b>				

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Pennsylvania Department of Transportation District 6-0		Pennsylvania Turnpike Commission	
	1999	2005	1999	2005
<b><i>Emergency Management agencies from which your agency receives incident clearance and/or incident severity and type</i></b>				
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
<b><i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i></b>				
	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op	Philadelphia Streets Department	None listed	None listed
<b><i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i></b>				
	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op, New Jersey Turnpike Authority, Pennsylvania Turnpike Commission, South Jersey Transportation Authority, Transcom/I-95 Corridor Coalition	None listed	Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission	Pennsylvania Department of Transportation District, Pennsylvania Turnpike Commission

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

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	South Jersey Transportation Authority/Atlantic City Expressway	
	1999	2005
Agency Returned Survey?	Yes	
<b>Freeway Management Section</b>		
<b>Agencies your agency provides freeway travel times, speeds, and conditions information, share infrastructure or coordinates operation</b>		
<b><i>Freeway Management Agencies</i></b>		
Provide Information	New Jersey Department of Transportation Traffic Op	New Jersey Department of Transportation Traffic Op
Share Infrastructure	None listed	None listed
Coordinate Operation	New Jersey Department of Transportation Traffic Op	New Jersey Department of Transportation Traffic Op
<b><i>Incident Management Agencies</i></b>		

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	South Jersey Transportation Authority/Atlantic City Expressway	
	1999	2005
Provide Information	New Jersey Department of Transportation Traffic Op	New Jersey Department of Transportation Traffic Op
Share Infrastructure	None listed	None listed
Coordinate Operation	New Jersey Department of Transportation Traffic Op	New Jersey Department of Transportation Traffic Op
<b>Arterial Management Agencies</b>		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
<b>Public Transit Operators</b>		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
<b>Receiving real-time information via electronic means from others</b>		
<b>Incident Management agencies from which your agency receives</b>		

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	South Jersey Transportation Authority/Atlantic City Expressway	
	1999	2005
<i>incident severity, location, and type information</i>	None listed	None listed
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>	None listed	None listed
<i>Public Transit operators from which your agency receives freeway travel times derived from vehicle probes</i>	None listed	None listed
<i>Toll Collection agencies from which your agency receives freeway travel times derived from vehicles probes</i>	None listed	Delaware Department of Transportation, South Jersey Transportation Authority, New Jersey Turnpike Authority, Pennsylvania Turnpike Commission
<b>Freeway Incident Management Section</b>		
<b>Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation</b>		
<b>Arterial Management Agencies</b>		
Provide Information	New Jersey Department of Transportation Traffic Op	New Jersey Department of Transportation Traffic Op
Share Infrastructure	None listed	None listed
Coordinate Operation	New Jersey Department of Transportation Traffic Op	New Jersey Department of Transportation Traffic Op
<b>Emergency Management Agencies</b>		

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	South Jersey Transportation Authority/Atlantic City Expressway	
	1999	2005
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
<b>Freeway Management Agencies</b>		
Provide Information	New Jersey Department of Transportation Traffic Op	New Jersey Department of Transportation Traffic Op
Share Infrastructure	None listed	None listed
Coordinate Operation	New Jersey Department of Transportation Traffic Op	New Jersey Department of Transportation Traffic Op
<b>Public Transit Operators</b>		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
<b>Receiving real-time information via electronic means from others</b>		

Freeway Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	South Jersey Transportation Authority/Atlantic City Expressway	
	1999	2005
<b><i>Emergency Management agencies from which your agency receives incident clearance and/or incident severity and type</i></b>		
Receive Arterial Incident Clearance Information	None listed	None listed
Receive Arterial Incident Severity Information	None listed	None listed
<b><i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i></b>		
	None listed	None listed
<b><i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i></b>		
	None listed	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Op, New Jersey Turnpike Authority, Pennsylvania Turnpike Commission

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

**Appendix E**  
**Freeway Management Information Collection and Dissemination**

Data Collection and Dissemination: Freeway Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	New Jersey Department of Transportation Traffic Op		New Jersey Turnpike Authority	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
<b>Freeway Management Section</b>				
<b>Data collected, archived, and/or transferred to another agency</b>				
Collected by your agency	NR	NR	NR	NR
Archived by your agency	NR	NR	NR	NR
Transferred to another agency by your agency	NR	NR	NR	NR
<b>Importance of making information available to the public</b>				

Data Collection and Dissemination: Freeway Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	New Jersey Department of Transportation Traffic Op		New Jersey Turnpike Authority	
	1999	2005	1999	2005
Ranked High	NR		NR	
Ranked Medium	NR		NR	
Ranked Low	NR		NR	
<b>Groups that make requests for the data</b>	NR		NR	
<b>What is the data used for?</b>	NR		NR	
<b>Methods used to disseminate freeway information to the public</b>				
Technologies your agency uses to disseminate:	NR	NR	Dedicated cable TV, Telephone system, Internet Web sites, Pagers or personal data assistants	Kiosks
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	NR
<b>Internet web site reporting freeway conditions</b>	NR		NR	
<b>Telephone system for reporting freeway information to the public</b>	NR		NR	
<b>Organizations your agency sends information for dissemination to the public</b>	NR		NR	
<b>Freeway Incident Management Section</b>				
<b>Methods used to distribute incident location and severity information to the public</b>				
Technologies your agency uses to disseminate:	NR	NR	Dedicated cable TV, Telephone system, Pagers or personal data assistants	Kiosks

Data Collection and Dissemination: Freeway Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	New Jersey Department of Transportation Traffic Op		New Jersey Turnpike Authority	
	1999	2005	1999	2005
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	NR
<b>Internet web site reporting incident information</b>	www.state.nj.us/transportation/		NR	
<b>Telephone system for reporting incident information to the public</b>	NR		NR	
<b>Organizations your agency sends information for dissemination to the public</b>	Cross County Transportation Management Association Greater Mercer Transportation Management Association SmartRoutes		NR	

Data Collection and Dissemination: Freeway Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Pennsylvania Department of Transportation District		Pennsylvania Turnpike Commission	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
<b>Freeway Management Section</b>				
<b>Data collected, archived, and/or transferred to another agency</b>				
Collected by your agency	NR	NR	Traffic volumes, Vehicle classification, Incidents, Current work zones, Scheduled work zones	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Probe vehicles, Road conditions, Weather conditions, Incidents, Current work zones, Scheduled work zones
Archived by your agency	NR	NR	Traffic volumes, Vehicle classification, Incidents, Current work zones, Scheduled work zones	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Probe vehicles, Road conditions, Weather conditions, Incidents, Current work zones, Scheduled work zones
Transferred to another agency by your agency	NR	NR	Traffic volumes	Traffic volumes
<b>Importance of making information available to the public</b>				

Data Collection and Dissemination: Freeway Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Pennsylvania Department of Transportation District		Pennsylvania Turnpike Commission	
	1999	2005	1999	2005
Ranked High	NR		Traffic volumes, Traffic speeds, Road conditions, Incidents, Current work zones, Scheduled work zones	
Ranked Medium	NR		Lane occupancy, Route designations (snow emergency, etc.), Weather conditions, Emergency/evacuation routes and procedures	
Ranked Low	NR		Vehicle classification, Probe vehicles, Ramp queues, Ramp meter preemption's, Metering rate, Intermodal (air, rail, water) connections, Highway operations coordination information	
<b>Groups that make requests for the data</b>	NR		State DOT personnel, Media (i.e., TV stations, radio stations), Advanced Traveler Information Systems (ATIS) provi	
<b>What is the data used for?</b>	NR		Dissemination to the public	
<b>Methods used to disseminate freeway information to the public</b>				
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
<b>Internet web site reporting freeway conditions</b>	NR		NR	
<b>Telephone system for reporting freeway information to the public</b>	SmarTraveler		NR	
<b>Organizations your agency sends information for dissemination to the public</b>	NR		NR	
<b>Freeway Incident Management Section</b>				
<b>Methods used to distribute incident location and severity information to the public</b>				
Technologies your agency uses to disseminate:	NR	NR	Internet Web sites, E-mail or other direct PC communication, Facsimile	Internet Web sites, E-mail or other direct PC communication, Facsimile

Data Collection and Dissemination: Freeway Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Pennsylvania Department of Transportation District		Pennsylvania Turnpike Commission	
	1999	2005	1999	2005
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	E-mail or other direct PC communication, Facsimile	E-mail or other direct PC communication, Facsimile
<b>Internet web site reporting incident information</b>	www.smartraveler.com		NR	
<b>Telephone system for reporting incident information to the public</b>	215.567.5678 #211		NR	
<b>Organizations your agency sends information for dissemination to the public</b>	Smartraveler ShadowTraffic/Express Traffic Metro Traffic		I-95, PEMA, PennDOT	

Data Collection and Dissemination: Freeway Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	South Jersey Transportation Authority	
	1999	2005
Agency Returned Survey?	Yes	
<b>Freeway Management Section</b>		
<b>Data collected, archived, and/or transferred to another agency</b>		
Collected by your agency	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Road conditions, Route designations (snow emergency, etc.), Weather conditions, Incidents, Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Probe vehicles, Road conditions, Route designations (snow emergency, etc.), Weather conditions, Incidents, Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures
Archived by your agency	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Emergency/evacuation routes and procedures	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Probe vehicles, Emergency/evacuation routes and procedures
Transferred to another agency by your agency	Road conditions, Route designations (snow emergency, etc.), Weather conditions, Incidents, Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Probe vehicles, Road conditions, Route designations (snow emergency, etc.), Weather conditions, Incidents, Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures
<b>Importance of making information available to the public</b>		

Data Collection and Dissemination: Freeway Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	South Jersey Transportation Authority	
	1999	2005
Ranked High	Traffic volumes, Vehicle classification, Probe vehicles, Road conditions, Route designations (snow emergency, etc.), Weather conditions, Incidents, Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures	
Ranked Medium	Traffic speeds	
Ranked Low	Lane occupancy, Ramp queues, Ramp meter preemption's, Metering rate, Intermodal (air, rail, water) connections, Highway operations coordination information	
<b>Groups that make requests for the data</b>	State DOT personnel, Federal DOT personnel, Media (i.e., TV stations, radio stations), MPOs, Consultants	
<b>What is the data used for?</b>	Traffic analysis, Construction impact determination, Planning, Dissemination to the public	
<b>Methods used to disseminate freeway information to the public</b>		
Technologies your agency uses to disseminate:	Telephone system, Cell phone/voice, Facsimile	Telephone system, Internet Web sites, E-mail or other direct PC communication, Cell phone/voice, Facsimile
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
<b>Internet web site reporting freeway conditions</b>	NR	
<b>Telephone system for reporting freeway information to the public</b>	1-800-658-0606 OR 1-800-965-7200	
<b>Organizations your agency sends information for dissemination to the public</b>	Atlantic City Press	
<b>Freeway Incident Management Section</b>		
<b>Methods used to distribute incident location and severity information to the public</b>		
Technologies your agency uses to disseminate:	Telephone system, Cell phone/voice, HAR	Telephone system, Cell phone/voice, HAR

Data Collection and Dissemination: Freeway Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	South Jersey Transportation Authority	
	1999	2005
Technologies your agency (through another agency or org.) uses to disseminate:	HAR	HAR
<b>Internet web site reporting incident information</b>	NR	
<b>Telephone system for reporting incident information to the public</b>	1-800-658-0606 OR 1-609-965-7200	
<b>Organizations your agency sends information for dissemination to the public</b>	NJDOT Atlantic City Press	

**Appendix F**  
**Arterial Management Components**

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	Abington Township		Bristol Township		Camden County		Delaware Department of Transportation	
	1999	2005	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		Yes		Yes	
<b>ARTERIAL MANAGEMENT SECTION</b>								
Number of arterial miles that agency owns or maintains	NR		177		500		NR	
Number of arterial miles that is used for planning	NR		0		500		NR	
Number of highway-rail intersections that agency maintains	2		2		0		10	
Number of highway-rail intersections that is used for planning	NR		0		NR		NR	
<b>Type of facilities used to conduct arterial management activities</b>								
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		No		No	
<b>Staffing and hours of operation of arterial management activities</b>								
Number of full-time agency staff members	NR		NR		NR		NR	
Number of full time contractor staff members	NR		NR		NR		NR	
Number of part-time agency staff members	NR		NR		NR		NR	
Number of part-time contractor staff members	NR		NR		NR		NR	
Staffed 24 hours day by agency staff or by others	NR		NR		NR		NR	
Staffed during peak hours only by agency staff or by others	NR		NR		NR		NR	
Staffed by others during off-peak hours	No		No		No		No	
Agency staff perform transportation management as an ancillary duty	No		No		No		No	
Agency staff dedicated to transportation management duty	No		No		No		No	
<b>Types of operations conducted for arterial management</b>								
Incident detection and management?	No		No		No		No	
This metropolitan area?	No		No		No		No	
Other metropolitan area?	No		No		No		No	
Monitoring and troubleshooting status of system components?	No		No		No		No	
Radio communications with other agencies?	No		No		No		No	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		No		No		No	
Manual override of traffic signal timing plans	No		No		No		No	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	No		No		No		No	
<b>Describe agency's role in traffic signal control</b>	NR		All roads in county		Do not operate		NR	
<b>Traffic Signals Operated by Agency</b>								

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	Abington Township		Bristol Township		Camden County		Delaware Department of Transportation	
	1999	2005	1999	2005	1999	2005	1999	2005
Number of signalized intersections operated and owned by agency	NR	NR	32	33	NR	NR	NR	NR
Number of signalized intersections operated by agency but owned by another	NR	NR	0	0	NR	NR	NR	NR
Total number of signalized intersections operated by agency	78	78	32	33	NR	NR	850	900
<i>Characteristics of signalized intersections that agency operates</i>								
Under closed loop or central system control	9	13	0	8	NR	NR	125	600
Under real-time traffic adaptive control using advanced software	0	0	0	0	NR	NR	0	0
Using SCOOT	No		No		No		No	
Using SCATS	No		No		No		No	
Name of software	NR		NR		NR		NR	
Allow signal preemption for emergency vehicles	4	4	0	12	NR	NR	10	50
Allow signal priority for transit vehicles	0	0	0	0	NR	NR	0	NR
Within 200 feet of a highway-rail intersection	4	4	1	1	NR	NR	0	0
Within 200 feet of a highway-rail intersection that adjust signal timing	4	4	1	1	NR	NR	0	0
<b>Software used to control the signals agency operates</b>								
Date of last upgrade to traffic signal control system software?	NR		NR		NR		NR	
How often do you update signal timing?	NR		annual review		NR		NR	
Software used and number of signalized intersections under control (1999, 2005)	NR		NR		NR		NR	
<b>Controllers used to control signals</b>								
NEMA	0	0	40	42	0	0	0	0
170/179	0	0	0	0	0	0	0	0
2070 controller	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
<b>Technologies Associated with Highway-Rail Intersections</b>								
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
<b>Real-Time Electronic Traffic Data Collection Technologies</b>								
Total number of signalized intersections covered by electronic surveillance	NR	NR	NR	NR	NR	NR	NR	NR
<i>Number of signalized intersections with data collection technologies</i>								
Loop detectors	0	0	0	0	0	0	0	0
Video detection cameras	0	0	0	0	0	0	0	0
Probe readers reading toll tags	0	0	0	0	0	0	0	0
Probe readers reading license plates	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
<b>Roadside Technologies used to Distribute Traveler Information</b>								
<i>Number deployed</i>								
Highway Advisory Radio	NR	NR	NR	NR	NR	NR	NR	NR

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	Abington Township		Bristol Township		Camden County		Delaware Department of Transportation	
	1999	2005	1999	2005	1999	2005	1999	2005
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	150	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	NR	NR
<b>Variable Message Signs (VMS) on Arterials</b>								
Candidate locations for deployment of VMS where VMS has been deployed	NR	NR	NR	NR	NR	NR	5	10
Candidate locations for deployment of VMS	NR	NR	NR	NR	NR	NR	NR	NR
<b>Communication Technologies</b>								
<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	0	0	0	0
Fiber-optic cable	0	0	0	0	0	0	0	0
Other (e.g., wireless, dial-up modems, leased lines, etc.)	0	0	0	0	0	0	0	0
<b>Does agency convey information on highway-rail intersection crossing status to travelers via roadside media such as VMS or HAR?</b>	No		No		No		No	
<b>ITS Standards Used Related to Traffic Signal Control</b>								
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?	NR		Yes		No		NR	
<b>Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?</b>	NR		No		NR		NR	
<b>INCIDENT MANAGEMENT ON ARTERIAL STREETS</b>								
<b>Receive information on highway-rail intersection crossing blockages for the purpose of managing incident response?</b>	No		No		No		No	
<b>Use of Service Patrols to Assist in Detection and Response to Incidents</b>								
Publicly operated service patrol vehicles	No		No		No		Yes	
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	15	NR
<b>Miles Covered by Methods to Detect and Verify Incidents</b>								
Free cellular phone call to a dedicated phone number other than 911	0	0	0	0	0	0	50	1,200
Free cellular phone call to an area radio station	0	0	0	0	0	0	0	0
Police patrols	0	0	0	0	0	0	0	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	0	0	0	0	0
CCTV	0	0	0	0	0	0	50	200
Private sector sources (e.g., Shadow Traffic, Smart Routes)	0	0	0	0	0	0	0	0

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	Abington Township		Bristol Township		Camden County		Delaware Department of Transportation	
	1999	2005	1999	2005	1999	2005	1999	2005
Other	0	0	0	0	0	0	0	0
<b>Procedures in place for Arterial Incident Response?</b>								
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	
<b>Methods of Communication Used On-Site at an Incident</b>								
<u>Police</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>Fire</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>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	
<b>Which police agencies typically respond to incidents on arterials?</b>								
State Police	No		No		No		No	
County Police or Sheriff	No		No		No		No	
City Police	No		No		No		No	

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	Abington Township		Bristol Township		Camden County		Delaware Department of Transportation	
	1999	2005	1999	2005	1999	2005	1999	2005
<b>Who provides on-site emergency medical response?</b>								
Fire	No		No		No		No	
Emergency Management Service Agency	No		No		No		No	
Private hospital	No		No		No		No	
<b>Has a multi-agency contact list been developed in area containing the names, phone numbers, etc. for the appropriate response personnel?</b>	NR		NR		NR		NR	
<b>Is the Incident Command System used to manage incident scenes?</b>	NR		NR		NR		NR	
<b>Is there a legal specification by state law or formal agreement as to who is "in charge" at the incident scene?</b>								
Specified by state law?	No		No		No		No	
Formal agreement?	No		No		No		No	
Not specified or don't know?	No		No		No		No	
<b>On-scene command post used to manage activities of responding agencies?</b>	NR		NR		NR		NR	
Are there communication linkages to a communications traffic/freeway mgt center?	NR		NR		NR		NR	
<b>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?</b>	NR		NR		NR		NR	
<b>Respondents protected through law or court opinion for liability claims for damages to vehicles or cargoes during clearance activities?</b>	NR		NR		NR		NR	
<b>Are overturned tank trucks, which are intact and not leaking, uprighted without first off-loading?</b>	NR		NR		NR		NR	
<b>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?</b>	NR		NR		NR		NR	
<b>Have laws or policies regarding the removal of stalled/abandoned vehicles from freeway shoulders?</b>	NR		NR		NR		NR	
<b>Hours abandoned vehicles are allowed to remain on a freeway shoulder?</b>	NR		NR		NR		NR	
<b>Have policies or procedures for quick removal of vehicles?</b>	NR		NR		NR		NR	
<b>Is Total Station equipment used to investigate major incidents?</b>	NR		NR		NR		NR	
<b>Handling of Towing Responses to Incidents</b>								
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		No		No	
<b>In towing qualifications, do you require towers to be certified under the Towing and Recovery Ass. of America's National Drivers Cert. Program?</b>	NR		NR		NR		NR	
DK: Don't know								
NR: No Response								
Leg: Legislation or action being planned								

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	Gloucester County		New Jersey Department of Transportation Traffic Operations Center South		Philadelphia Streets Department	
	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		Yes	
<b>ARTERIAL MANAGEMENT SECTION</b>						
Number of arterial miles that agency owns or maintains	NR		NR		350	
Number of arterial miles that is used for planning	NR		NR		350	
Number of highway-rail intersections that agency maintains	NR		NR		0	
Number of highway-rail intersections that is used for planning	NR		NR		0	
<b>Type of facilities used to conduct arterial management activities</b>						
Activities housed in a free-standing dedicated building?	No		No		No	
Activities housed in a building shared with other activities?	No		Yes		No	
Activities conducted in a dedicated control room?	No		Yes		No	
Control room contains operator console(s)?	No		Yes		No	
Control room contains electronic wall map?	No		No		No	
Control room contains CCTV display(s)?	No		Yes		No	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		No		Yes	
Facilities are electronically linked to other transportation mgt facilities?	No		Yes		No	
<b>Staffing and hours of operation of arterial management activities</b>						
Number of full-time agency staff members	NR		7		NR	
Number of full time contractor staff members	NR		0		NR	
Number of part-time agency staff members	NR		NR		1	
Number of part-time contractor staff members	NR		NR		NR	
Staffed 24 hours day by agency staff or by others	NR		NR		NR	
Staffed during peak hours only by agency staff or by others	NR		NR		NR	
Staffed by others during off-peak hours	No		No		No	
Agency staff perform transportation management as an ancillary duty	No		No		No	
Agency staff dedicated to transportation management duty	No		Yes		No	
<b>Types of operations conducted for arterial management</b>						
Incident detection and management?	No		Yes		No	
This metropolitan area?	No		Yes		No	
Other metropolitan area?	No		Yes		No	
Monitoring and troubleshooting status of system components?	No		Yes		Yes	
Radio communications with other agencies?	No		Yes		Yes	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		Yes		No	
Manual override of traffic signal timing plans	No		Yes		Yes	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	No		Yes		No	
<b>Describe agency's role in traffic signal control</b>	NR		State routes only		All roads in county	
<b>Traffic Signals Operated by Agency</b>						

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	Gloucester County		New Jersey Department of Transportation Traffic Operations Center South		Philadelphia Streets Department	
	1999	2005	1999	2005	1999	2005
Number of signalized intersections operated and owned by agency	NR	NR	NR	NR	2,900	2,600
Number of signalized intersections operated by agency but owned by another	NR	NR	NR	NR	0	0
Total number of signalized intersections operated by agency	NR	NR	663	NR	2,900	2,600
<i>Characteristics of signalized intersections that agency operates</i>						
Under closed loop or central system control	NR	NR	26	100	400	1,000
Under real-time traffic adaptive control using advanced software	NR	NR	0	0	0	0
Using SCOOT	No		No		No	
Using SCATS	No		No		No	
Name of software	NR		NR		NR	
Allow signal preemption for emergency vehicles	NR	NR	0	NR	10	1,000
Allow signal priority for transit vehicles	NR	NR	0	NR	0	0
Within 200 feet of a highway-rail intersection	NR	NR	0	NR	50	50
Within 200 feet of a highway-rail intersection that adjust signal timing	NR	NR	0	NR	20	20
<b>Software used to control the signals agency operates</b>						
Date of last upgrade to traffic signal control system software?	NR		June 1999		1999	
How often do you update signal timing?	NR		Yearly and As Needed		as needed	
Software used and number of signalized intersections under control (1999, 2005)	NR		Peek/Mats, 26, 100		Bi-Trans, 400, 1,000	
<b>Controllers used to control signals</b>						
NEMA	0	0	663	NR	10	0
170/179	0	0	0	0	390	1,000
2070 controller	0	0	0	0	0	0
Other	0	0	0	0	2500	1600
<b>Technologies Associated with Highway-Rail Intersections</b>						
Total number of highway-rail intersections under electronic surveillance	NR	NR	NR	NR	NR	NR
<i>Highway-Rail intersection capabilities</i>						
Video surveillance	0	0	0	0	0	0
Electronic surveillance other than video	0	0	0	0	0	0
Ability to predict train arrival electronically	0	0	0	0	0	0
Equipped with electronic traffic violator devices	0	0	0	0	0	0
Other	0	0	0	0	0	0
<b>Real-Time Electronic Traffic Data Collection Technologies</b>						
Total number of signalized intersections covered by electronic surveillance	NR	NR	26	100	400	1,000
<i>Number of signalized intersections with data collection technologies</i>						
Loop detectors	0	0	26	100	400	1,000
Video detection cameras	0	0	0	0	0	0
Probe readers reading toll tags	0	0	0	0	0	0
Probe readers reading license plates	0	0	0	0	0	0
Other	0	0	0	0	0	0
<b>Roadside Technologies used to Distribute Traveler Information</b>						
<i>Number deployed</i>						
Highway Advisory Radio	NR	NR	1	6	NR	NR

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	Gloucester County		New Jersey Department of Transportation Traffic Operations Center South		Philadelphia Streets Department	
	1999	2005	1999	2005	1999	2005
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR
VMS controlling parking access	NR	NR	NR	NR	NR	NR
<i>Miles covered</i>						
Highway Advisory Radio	NR	NR	36	90	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR
<b>Variable Message Signs (VMS) on Arterials</b>						
Candidate locations for deployment of VMS where VMS has been deployed	NR	NR	NR	NR	NR	NR
Candidate locations for deployment of VMS	NR	NR	6	14	NR	NR
<b>Communication Technologies</b>						
<i>Signalized intersections communicated with by each type of communication</i>						
Twisted pair cable	0	0	0	0	0	0
Coaxial cable	0	0	0	0	0	0
Fiber-optic cable	0	0	26	100	400	1,000
Other (e.g., wireless, dial-up modems, leased lines, etc.)	0	0	0	0	100	1000
<b>Does agency convey information on highway-rail intersection crossing status to travelers via roadside media such as VMS or HAR?</b>	No		No		No	
<b>ITS Standards Used Related to Traffic Signal Control</b>						
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		No		No	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		No		No	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		No		No	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		No		No	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		No		No	
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		No		No	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		No		No	
Would agency be willing to participate in testing of ITS Standards?	NR		Yes		Yes	
<b>Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?</b>	NR		No		Yes	
<b>INCIDENT MANAGEMENT ON ARTERIAL STREETS</b>						
<b>Receive information on highway-rail intersection crossing blockages for the purpose of managing incident response?</b>	No		No		No	
<b>Use of Service Patrols to Assist in Detection and Response to Incidents</b>						
Publicly operated service patrol vehicles	No		No		No	
Privately operated service patrol vehicles operated under public contract	No		No		No	
Total number of arterial miles patrolled by these services	NR	NR	NR	NR	NR	NR
<b>Miles Covered by Methods to Detect and Verify Incidents</b>						
Free cellular phone call to a dedicated phone number other than 911	0	0	0	0	0	0
Free cellular phone call to an area radio station	0	0	0	0	0	0
Police patrols	0	0	NR	NR	0	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	0	0	0
CCTV	0	0	25	75	0	0
Private sector sources (e.g., Shadow Traffic, Smart Routes)	0	0	NR	NR	0	0

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

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

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	Gloucester County		New Jersey Department of Transportation Traffic Operations Center South		Philadelphia Streets Department	
	1999	2005	1999	2005	1999	2005
<b>Who provides on-site emergency medical response?</b>						
Fire	No		Yes		No	
Emergency Management Service Agency	No		Yes		No	
Private hospital	No		No		No	
<b>Has a multi-agency contact list been developed in area containing the names, phone numbers, etc. for the appropriate response personnel?</b>	NR		Yes		NR	
<b>Is the Incident Command System used to manage incident scenes?</b>	NR		Yes		NR	
<b>Is there a legal specification by state law or formal agreement as to who is "in charge" at the incident scene?</b>						
Specified by state law?	No		Yes		No	
Formal agreement?	No		No		No	
Not specified or don't know?	No		No		No	
<b>On-scene command post used to manage activities of responding agencies?</b>	NR		Yes		NR	
Are there communication linkages to a communications traffic/freeway mgt center?	NR		Yes		NR	
<b>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?</b>	NR		No		NR	
<b>Respondents protected through law or court opinion for liability claims for damages to vehicles or cargoes during clearance activities?</b>	NR		Yes		NR	
<b>Are overturned tank trucks, which are intact and not leaking, uprighted without first off-loading?</b>	NR		NR		NR	
<b>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?</b>	NR		Yes		NR	
<b>Have laws or policies regarding the removal of stalled/abandoned vehicles from freeway shoulders?</b>	NR		No		NR	
<b>Hours abandoned vehicles are allowed to remain on a freeway shoulder?</b>	NR		>36		NR	
<b>Have policies or procedures for quick removal of vehicles?</b>	NR		Yes		NR	
<b>Is Total Station equipment used to investigate major incidents?</b>	NR		No		NR	
<b>Handling of Towing Responses to Incidents</b>						
Formal contract based on qualifications?	No		No		No	
Rotation with companies under contract?	No		No		No	
Separate lists kept for light and heavy response and for specialty recovery?	NR		NR		NR	
Rotation list with minimal qualifications?	No		No		No	
<b>In towing qualifications, do you require towers to be certified under the Towing and Recovery Ass. of America's National Drivers Cert. Program?</b>	NR		No		NR	
DK: Don't know						
NR: No Response						
Leg: Legislation or action being planned						

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	Trenton City		Wilmington City		Totals	
	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		9	
<b>ARTERIAL MANAGEMENT SECTION</b>						
Number of arterial miles that agency owns or maintains	NR		NR		1,027	
Number of arterial miles that is used for planning	NR		NR		850	
Number of highway-rail intersections that agency maintains	NR		NR		14	
Number of highway-rail intersections that is used for planning	NR		NR		0	
<b>Type of facilities used to conduct arterial management activities</b>						
Activities housed in a free-standing dedicated building?	No		No		0	
Activities housed in a building shared with other activities?	No		No		1	
Activities conducted in a dedicated control room?	No		No		1	
Control room contains operator console(s)?	No		No		1	
Control room contains electronic wall map?	No		No		0	
Control room contains CCTV display(s)?	No		No		1	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		No		1	
Facilities are electronically linked to other transportation mgt facilities?	No		No		1	
<b>Staffing and hours of operation of arterial management activities</b>						
Number of full-time agency staff members	NR		NR		7	
Number of full time contractor staff members	NR		NR		0	
Number of part-time agency staff members	NR		NR		1	
Number of part-time contractor staff members	NR		NR		0	
Staffed 24 hours day by agency staff or by others	NR		NR		0	
Staffed during peak hours only by agency staff or by others	NR		NR		0	
Staffed by others during off-peak hours	No		No		0	
Agency staff perform transportation management as an ancillary duty	No		No		0	
Agency staff dedicated to transportation management duty	No		No		1	
<b>Types of operations conducted for arterial management</b>						
Incident detection and management?	No		No		1	
This metropolitan area?	No		No		1	
Other metropolitan area?	No		No		1	
Monitoring and troubleshooting status of system components?	No		No		2	
Radio communications with other agencies?	No		No		2	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		No		1	
Manual override of traffic signal timing plans	No		No		2	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	No		No		1	
<b>Describe agency's role in traffic signal control</b>	NR		NR			
<b>Traffic Signals Operated by Agency</b>						

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	Trenton City		Wilmington City		Totals	
	1999	2005	1999	2005	1999	2005
Number of signalized intersections operated and owned by agency	NR	NR	NR	NR	2,932	2,633
Number of signalized intersections operated by agency but owned by another	NR	NR	NR	NR	0	0
Total number of signalized intersections operated by agency	88	NR	262	265	4,873	3,876
<i>Characteristics of signalized intersections that agency operates</i>						
Under closed loop or central system control	8	NR	0	265	568	1,986
Under real-time traffic adaptive control using advanced software	0	NR	0	5	0	5
Using SCOOT	No		No		0	
Using SCATS	No		No		0	
Name of software	NR		NR			
Allow signal preemption for emergency vehicles	4	NR	0	100	28	1,166
Allow signal priority for transit vehicles	0	NR	0	NR	0	0
Within 200 feet of a highway-rail intersection	1	NR	0	0	56	55
Within 200 feet of a highway-rail intersection that adjust signal timing	1	NR	0	0	26	25
<b>Software used to control the signals agency operates</b>						
Date of last upgrade to traffic signal control system software?		NR		NR		
How often do you update signal timing?		NR		NR		
Software used and number of signalized intersections under control (1999, 2005)		NR		NR		
<b>Controllers used to control signals</b>						
NEMA	0	0	0	0	713	42
170/179	0	0	0	0	390	1,000
2070 controller	0	0	0	0	0	0
Other	0	0	0	0	2,500	1,600
<b>Technologies Associated with Highway-Rail Intersections</b>						
Total number of highway-rail intersections under electronic surveillance	1	NR	NR	NR	1	0
<i>Highway-Rail intersection capabilities</i>						
Video surveillance	0	0	0	0	0	0
Electronic surveillance other than video	0	0	0	0	0	0
Ability to predict train arrival electronically	1	NR	0	0	1	0
Equipped with electronic traffic violator devices	0	0	0	0	0	0
Other	0	0	0	0	0	0
<b>Real-Time Electronic Traffic Data Collection Technologies</b>						
Total number of signalized intersections covered by electronic surveillance	NR	NR	NR	NR	426	1,100
<i>Number of signalized intersections with data collection technologies</i>						
Loop detectors	0	0	0	0	426	1,100
Video detection cameras	0	0	0	0	0	0
Probe readers reading toll tags	0	0	0	0	0	0
Probe readers reading license plates	0	0	0	0	0	0
Other	0	0	0	0	0	0
<b>Roadside Technologies used to Distribute Traveler Information</b>						
<i>Number deployed</i>						
Highway Advisory Radio	NR	NR	NR	NR	1	6

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	Trenton City		Wilmington City		Totals	
	1999	2005	1999	2005	1999	2005
In-Vehicle Signing (IVS)	NR	NR	NR	NR	0	0
VMS controlling parking access	NR	NR	NR	NR	0	0
<i>Miles covered</i>						
Highway Advisory Radio	NR	NR	NR	NR	186	90
In-Vehicle Signing (IVS)	NR	NR	NR	NR	0	0
<b>Variable Message Signs (VMS) on Arterials</b>						
Candidate locations for deployment of VMS where VMS has been deployed	NR	NR	NR	NR	5	10
Candidate locations for deployment of VMS	NR	NR	NR	NR	6	14
<b>Communication Technologies</b>						
<i>Signalized intersections communicated with by each type of communication</i>						
Twisted pair cable	0	0	0	0	0	0
Coaxial cable	0	0	0	0	0	0
Fiber-optic cable	0	0	0	0	426	1,100
Other (e.g., wireless, dial-up modems, leased lines, etc.)	0	0	0	0	100	1,000
<b>Does agency convey information on highway-rail intersection crossing status to travelers via roadside media such as VMS or HAR?</b>	No		No		0	
<b>ITS Standards Used Related to Traffic Signal Control</b>						
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		No		0	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		No		0	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		No		0	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		No		0	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		No		0	
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		No		0	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		No		0	
Would agency be willing to participate in testing of ITS Standards?	NR		NR		3	
<b>Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?</b>	NR		NR		1	
<b>INCIDENT MANAGEMENT ON ARTERIAL STREETS</b>						
<b>Receive information on highway-rail intersection crossing blockages for the purpose of managing incident response?</b>	No		No		0	
<b>Use of Service Patrols to Assist in Detection and Response to Incidents</b>						
Publicly operated service patrol vehicles	No		No		1	
Privately operated service patrol vehicles operated under public contract	No		No		0	
Total number of arterial miles patrolled by these services	NR	NR	NR	NR	15	0
<b>Miles Covered by Methods to Detect and Verify Incidents</b>						
Free cellular phone call to a dedicated phone number other than 911	0	0	0	0	50	1,200
Free cellular phone call to an area radio station	0	0	0	0	0	0
Police patrols	0	0	0	0	0	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	0	0	0
CCTV	0	0	0	0	75	275
Private sector sources (e.g., Shadow Traffic, Smart Routes)	0	0	0	0	0	0

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

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

Arterial Management  
Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

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

**Appendix G**  
**Arterial Management Integration**

Arterial Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

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

Arterial Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Abington Township		Bristol Township	
	1999	2005	1999	2005
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<b><u>Receiving real-time information via electronic means from others</u></b>				
<i>Freeway Management agencies from which your agency receives</i>				
<i>freeway travel times, speeds, and conditions</i>	None listed	None listed	None listed	None listed
<b><i>Public Transit operators from which your agency receives</i></b>				
<i>arterial travel times derived from vehicle probes</i>	None listed	None listed	None listed	None listed
<b><i>Incident Management agencies from which your agency receives</i></b>				
<i>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
<b><i>Toll Collection agencies from which your agency receives arterial travel</i></b>				
<i>times derived from vehicles probes</i>	None listed	None listed	None listed	None listed
<b>Arterial Incident Management Section</b>				
<b>Agencies your agency provides incident severity, location, and type info.</b>				
<b><u>and/or shares infrastructure and/or coordinates operation</u></b>				
<b><i>Emergency Management Agencies</i></b>				
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: Philadelphia, Wilmington, Trenton

Agency Name	Abington Township		Bristol Township	
	1999	2005	1999	2005
Coordinate Operation	None listed	None listed	None listed	None listed
<b>Freeway Management Agencies</b>				
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
<b>Public Transit Operators</b>				
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
<b>Receiving real-time information via electronic means from others</b>				
<b>Emergency Management agencies from which your agency receives arterial incident clearance and/or arterial incident severity</b>				
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
<b>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</b>				
Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions	None listed	None listed	None listed	None listed
<b>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</b>				
Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions	None listed	None listed	None listed	None listed

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

Arterial Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

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

Arterial Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

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

Arterial Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

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

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

Arterial Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

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

Arterial Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Delaware Department of Transportation		Gloucester County	
	1999	2005	1999	2005
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<b><u>Receiving real-time information via electronic means from others</u></b>				
<i>Freeway Management agencies from which your agency receives</i>				
<i>freeway travel times, speeds, and conditions</i>	None listed	None listed	None listed	None listed
<b><i>Public Transit operators from which your agency receives</i></b>				
<i>arterial travel times derived from vehicle probes</i>	None listed	None listed	None listed	None listed
<b><i>Incident Management agencies from which your agency receives</i></b>				
<i>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
<b><i>Toll Collection agencies from which your agency receives arterial travel</i></b>				
<i>times derived from vehicles probes</i>	None listed	None listed	None listed	None listed
<b>Arterial Incident Management Section</b>				
<b>Agencies your agency provides incident severity, location, and type info.</b>				
<b><u>and/or shares infrastructure and/or coordinates operation</u></b>				
<b><i>Emergency Management Agencies</i></b>				
Provide Information	short survey	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed

Arterial Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Delaware Department of Transportation		Gloucester County	
	1999	2005	1999	2005
Coordinate Operation	None listed	None listed	None listed	None listed
<b>Freeway Management Agencies</b>				
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
<b>Public Transit Operators</b>				
Provide Information	short survey	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
<b>Receiving real-time information via electronic means from others</b>				
<b>Emergency Management agencies from which your agency receives arterial incident clearance and/or arterial incident severity</b>				
Receive Arterial Incident Clearance Information	short survey	None listed	None listed	None listed
Receive Arterial Incident Severity Information	short survey	None listed	None listed	None listed
<b>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</b>				
	None listed	None listed	None listed	None listed
<b>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</b>				
	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: Philadelphia, Wilmington, Trenton

Agency Name	New Jersey Department of Transportation Traffic Operations Center South		Philadelphia Streets Department	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
<b>Arterial Management Section</b>				
<b><u>Arterial Mgt. agencies in metropolitan area with which you share info.</u></b>				
Share Timing Plans Information	None listed	None listed	Lower Merion, Upper Darby Township	None listed
Coordinate Changes to Timing Plans	None listed	None listed	Lower Merion	None listed
Turn over Control of Signals	None listed	None listed	Lower Merion	None listed
<b>Agencies your agency provides arterial travel times, speeds, and conditions information, share infrastructure or coordinates operation</b>				
<b><i>Freeway Management Agencies</i></b>				
Provide Information	None listed	None listed	Pennsylvania Department of Transportation District 60, Delaware River Port Authority	None listed
Share Infrastructure	None listed	None listed	Pennsylvania Department of Transportation District 60, Delaware River Port Authority	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<b><i>Incident Management Agencies</i></b>				
Provide Information	None listed	None listed	Pennsylvania Department of Transportation District 60	None listed
Share Infrastructure	None listed	None listed	Pennsylvania Department of Transportation District 60	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<b><i>Public Transit Operators Agencies</i></b>				
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
<b><i>Arterial Management Agencies</i></b>				
Provide Information	Delaware Department of Transportation	None listed	None listed	None listed

Arterial Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	New Jersey Department of Transportation Traffic Operations Center South		Philadelphia Streets Department	
	1999	2005	1999	2005
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<b><u>Receiving real-time information via electronic means from others</u></b>				
<b><i>Freeway Management agencies from which your agency receives</i></b>				
<b><i>freeway travel times, speeds, and conditions</i></b>	Delaware Department of Transportation, New Jersey Turnpike Authority, Pennsylvania Department of Transportation District 6-0, Pennsylvania Turnpike Commission, South Jersey Transportation Authority	None listed	None listed	None listed
<b><i>Public Transit operators from which your agency receives</i></b>				
<b><i>arterial travel times derived from vehicle probes</i></b>	None listed	None listed	None listed	None listed
<b><i>Incident Management agencies from which your agency receives</i></b>				
<b><i>incident clearance and/or incident severity, location, and type information</i></b>				
Receive information on Incident Clearance	Delaware Department of Transportation, New Jersey Turnpike Authority, Pennsylvania Department of Transportation District 6-0, Pennsylvania Turnpike Commission, South Jersey Transportation Authority	None listed	None listed	None listed
Receive information on Incident Severity, Location, and Type	None listed	None listed	None listed	None listed
<b><i>Toll Collection agencies from which your agency receives arterial travel times derived from vehicles probes</i></b>				
<b>Arterial Incident Management Section</b>				
<b>Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation</b>				
<b><i>Emergency Management Agencies</i></b>				
Provide Information	County Emergency Management, State Emergency Management Centers	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed

Arterial Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	New Jersey Department of Transportation Traffic Operations Center South		Philadelphia Streets Department	
	1999	2005	1999	2005
Coordinate Operation	None listed	None listed	None listed	None listed
<b>Freeway Management Agencies</b>				
Provide Information	Delaware Department of Transportation, New Jersey Department of Transportation Traffic Operations Center South, New Jersey Turnpike Authority, Pennsylvania Department of Transportation District 6-0, Pennsylvania Turnpike Commission, South Jersey Transportation Authority, DRPA	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
<b>Public Transit Operators</b>				
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
<b>Receiving real-time information via electronic means from others</b>				
<b>Emergency Management agencies from which your agency receives arterial incident clearance and/or arterial incident severity</b>				
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
<b>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</b>				
Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions	None listed	None listed	None listed	None listed
<b>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</b>				
Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions	None listed	None listed	None listed	None listed

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

Arterial Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Trenton City		Wilmington City	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
<b>Arterial Management Section</b>				
<b><u>Arterial Mgt. agencies in metropolitan area with which you share info.</u></b>				
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	None listed	None listed
<b>Agencies your agency provides arterial travel times, speeds, and conditions information, share infrastructure or coordinates operation</b>				
<b><i>Freeway Management Agencies</i></b>				
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
<b><i>Incident Management Agencies</i></b>				
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
<b><i>Public Transit Operators Agencies</i></b>				
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
<b><i>Arterial Management Agencies</i></b>				
Provide Information	None listed	None listed	None listed	None listed

Arterial Management Integration  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Trenton City		Wilmington City	
	1999	2005	1999	2005
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<b><u>Receiving real-time information via electronic means from others</u></b>				
<i>Freeway Management agencies from which your agency receives</i>				
<i>freeway travel times, speeds, and conditions</i>	None listed	None listed	None listed	None listed
<b><i>Public Transit operators from which your agency receives</i></b>				
<i>arterial travel times derived from vehicle probes</i>	None listed	None listed	None listed	None listed
<b><i>Incident Management agencies from which your agency receives</i></b>				
<i>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
<b><i>Toll Collection agencies from which your agency receives arterial travel</i></b>				
<i>times derived from vehicles probes</i>	None listed	None listed	None listed	None listed
<b>Arterial Incident Management Section</b>				
<b>Agencies your agency provides incident severity, location, and type info.</b>				
<b><u>and/or shares infrastructure and/or coordinates operation</u></b>				
<b><i>Emergency Management Agencies</i></b>				
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: Philadelphia, Wilmington, Trenton

Agency Name	Trenton City		Wilmington City	
	1999	2005	1999	2005
Coordinate Operation	None listed	None listed	None listed	None listed
<b>Freeway Management Agencies</b>				
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
<b>Public Transit Operators</b>				
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
<b>Receiving real-time information via electronic means from others</b>				
<b>Emergency Management agencies from which your agency receives arterial incident clearance and/or arterial incident severity</b>				
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
<b>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</b>				
Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions	None listed	None listed	None listed	None listed
<b>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</b>				
Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions	None listed	None listed	None listed	None listed

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

**Appendix H**  
**Arterial Management Information Collection and Dissemination**

Data Collection and Dissemination: Arterial Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Abington Township		Bristol Township	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
<b>Arterial Management Section</b>				
<b>Data collected, archived, and/or transferred to another agency</b>				
Collected by your agency	NR	NR	NR	NR
Archived by your agency	NR	NR	NR	NR
Transferred to another agency by your agency	NR	NR	NR	NR
<b>Importance of making information available to the public</b>				
Ranked High	NR		Scheduled work zones	

Data Collection and Dissemination: Arterial Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Abington Township		Bristol Township	
	1999	2005	1999	2005
Ranked Medium	NR		Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Probe vehicles, Turning movements, Queues, Phasing/cycle lengths, Road conditions, Emergency vehicle signal preemption, Transit vehicle signal priority, Weather conditions, Incidents, Current work zones, Intermodal (air, rail, water) connections, Emergency/evacuation routes and procedures, Highway operations coordination	
Ranked Low	NR		NR	
Groups that make requests for the data	NR		State DOT personnel	
What is the data used for?	NR		Traffic analysis, Construction impact determination, Planning	
<b>Methods used to disseminate arterial information to the public</b>				
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	
<b>Arterial Incident Management Section</b>				
<b>Methods used to distribute incident location and severity information to the public</b>				

Data Collection and Dissemination: Arterial Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Abington Township		Bristol Township	
	1999	2005	1999	2005
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
<b>Internet web site reporting incident information</b>	NR		NR	
<b>Telephone system for reporting incident information to the public</b>	NR		NR	
<b>Organizations your agency sends information for dissemination to the public</b>	NR		NR	

Data Collection and Dissemination: Arterial Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Camden County		Delaware Department of Transportation	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
<b>Arterial Management Section</b>				
<b>Data collected, archived, and/or transferred to another agency</b>				
Collected by your agency	NR	NR	NR	NR
Archived by your agency	NR	NR	NR	NR
Transferred to another agency by your agency	NR	NR	NR	NR
<b>Importance of making information available to the public</b>				
Ranked High	NR		NR	

Data Collection and Dissemination: Arterial Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Camden County		Delaware Department of Transportation	
	1999	2005	1999	2005
Ranked Medium				
	NR		NR	
Ranked Low				
	NR		NR	
<b>Groups that make requests for the data</b>				
	NR		NR	
<b>What is the data used for?</b>				
	NR		NR	
<b>Methods used to disseminate arterial information to the public</b>				
Technologies your agency uses to disseminate:	NR	NR	NR	Internet Web sites
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	NR
<b>Internet web site reporting arterial conditions</b>				
	NR		NR	
<b>Telephone system for reporting arterial information to the public</b>				
	NR		NR	
<b>Organizations your agency sends information for dissemination to the public</b>				
	NR		NR	
<b>Arterial Incident Management Section</b>				
<b>Methods used to distribute incident location and severity information to the public</b>				

Data Collection and Dissemination: Arterial Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Camden County		Delaware Department of Transportation	
	1999	2005	1999	2005
Technologies your agency uses to disseminate:	NR	NR	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	Internet Web sites, Pagers or personal data assistants, Kiosks	Internet Web sites, Pagers or personal data assistants, Kiosks
<b>Internet web site reporting incident information</b>	NR		NR	
<b>Telephone system for reporting incident information to the public</b>	NR		NR	
<b>Organizations your agency sends information for dissemination to the public</b>	NR		NR	

Data Collection and Dissemination: Arterial Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Gloucester County	
	1999	2005
Agency Returned Survey?	Yes	
<b>Arterial Management Section</b>		
<b>Data collected, archived, and/or transferred to another agency</b>		
Collected by your agency	NR	NR
Archived by your agency	NR	NR
Transferred to another agency by your agency	NR	NR
<b>Importance of making information available to the public</b>		
Ranked High	NR	

Data Collection and Dissemination: Arterial Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Gloucester County	
	1999	2005
Ranked Medium	NR	
Ranked Low	NR	
Groups that make requests for the data	NR	
What is the data used for?	NR	
<b>Methods used to disseminate arterial information to the public</b>		
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	
<b>Arterial Incident Management Section</b>		
<b>Methods used to distribute incident location and severity information to the public</b>		

Data Collection and Dissemination: Arterial Management  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

Agency Name	Gloucester County	
	1999	2005
Technologies your agency uses to disseminate:	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
<b>Internet web site reporting incident information</b>	NR	
<b>Telephone system for reporting incident information to the public</b>	NR	
<b>Organizations your agency sends information for dissemination to the public</b>	NR	

**Appendix I**  
**Transit Management Components**

**Appendix J**  
**Transit Management Integration**

**Appendix K**  
**Transit Management Information Collection and Dissemination**

**Appendix L**  
**Emergency Management**

Emergency Management Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

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			
Abington City Fire Department	24	26	0	0	0	0	24	26	0	0	4	4	Yes	Yes	Montgomery County Communications Center
Abington City Police Department	45	45	0	0	0	0	45	45	25	25	0	0	Yes	Yes	Montgomery County Communications System, Eaglevill
Gloucester County Sheriff	36	NR	0	NR	0	NR	0	NR	0	NR	0	NR	Yes	No	None listed
Gloucester Police Department	8	10	0	0	0	0	0	0	0	10	0	0	Yes	Yes	Camden County Prosecutors Office
Philadelphia Emergency Medical Services	37	40	0	0	NR	NR	0	0	NR	NR	1	40	No	No	None listed
Philadelphia Fire Department	90	90	0	0	0	NR	0	0	NR	NR	3	90	No	Yes	Philadelphia Police Department
Philadelphia Police Department	1,579	NR	0	NR	0	NR	1,579	NR	705	NR	0	NR	Yes	No	None listed
Trenton City Fire & EMS Department	26	26	0	0	0	0	26	26	0	0	0	0	Yes	Yes	New Jersey Department of Community Affairs
Trenton City Police Department	167	NR	0	NR	0	NR	167	NR	10	NR	0	NR	No	No	None listed
Wilmington City Fire Department	30	30	0	0	0	0	30	30	0	0	0	0	Yes	Yes	State Fire Marshal, Wilmington City Emergency Management Office
Wilmington City Police Department	141	NR	0	NR	0	NR	141	NR	10	NR	0	NR	No	Yes	None listed

**Appendix M**  
**Electronic Toll Collection**

Electronic Toll Collection  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	Delaware Department of Transportation		New Jersey Turnpike Authority/New Jersey Turnpike-Main Line	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
<b>Number of toll Collection Plazas operated</b>	1	1	27	27
<b>Number of toll collection plazas with dedicated ETC</b>	0	0	0	27
<b>Number of toll collection plazas with both manual and ETC</b>	0	0	0	27
<b>Number of toll collection lanes operated</b>	13	13	334	336
<b>Number of toll collection lanes with dedicated ETC</b>	0	0	0	160
<b>Number of toll collection lanes with both manual and ETC</b>	0	0	0	336
<b>Number of toll collection tags issued</b>	0	0	500,000	2,000,000
<b>Antennae Location Technologies</b>				
In-Pavement?	No		No	
Focused Beam?	No		No	
Distributed Overhead?	No		Yes	
<b>In-Vehicle Equipment Technologies</b>				
Tag-based?	No		Yes	
Integrated circuit card-based?	No		No	
<b>Are toll tags used by other toll operations in metro area?</b>	NR		Yes	
List of toll operators that use tags	None		Delaware Department of Transportation, Delaware River Port Authority, Pennsylvania Turnpike Commission, Port Authority of NY & NJ, MTA Bridges and Tunnels, NY State Bridge Authority, New Jersey Highway Authority, Pennsylvania Turnpike, Maryland Transportation Authority, Massachusetts Turnpike, Peace Bridge, West Virginia Turnpike	
<b>Are toll tags used by operators of public transit to pay transit fares in metro area?</b>	NR		No	
List of transit operators that use tags	None		None	
NR: No Response				

Electronic Toll Collection  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	New Jersey Turnpike Authority/Pennsylvania Turnpike Extension		Pennsylvania Turnpike Commission	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
<b>Number of toll Collection Plazas operated</b>	1	1	0	0
<b>Number of toll collection plazas with dedicated ETC</b>	0	1	0	0
<b>Number of toll collection plazas with both manual and ETC</b>	0	1	0	0
<b>Number of toll collection lanes operated</b>	14	16	0	0
<b>Number of toll collection lanes with dedicated ETC</b>	0	8	0	0
<b>Number of toll collection lanes with both manual and ETC</b>	0	16	0	0
<b>Number of toll collection tags issued</b>	500,000	2,000,000	0	0
<b>Antennae Location Technologies</b>				
In-Pavement?	No		No	
Focused Beam?	No		No	
Distributed Overhead?	Yes		No	
<b>In-Vehicle Equipment Technologies</b>				
Tag-based?	Yes		No	
Integrated circuit card-based?	No		No	
<b>Are toll tags used by other toll operations in metro area?</b>	Yes		NR	
List of toll operators that use tags	Delaware Department of Transportation, Delaware River Port Authority, Pennsylvania Turnpike Commission, Port Authority of NY & NJ, MTA Bridges Tunnels, NY State Bridge Authority, Pennsylvania Turnpike, Maryland Transportation Authority, Massachusetts Turnpike, Peace Bridge, West Virginia Turnpike, New York Thruway Authority, Atlantic City Expressway, New Jersey Highway Authority (Garden State Parkway)		None	
<b>Are toll tags used by operators of public transit to pay transit fares in metro area?</b>	No		NR	
List of transit operators that use tags	None		None	
NR: No Response				

Electronic Toll Collection  
 Agencies for Metropolitan Area: Philadelphia, Wilmington, Trenton

	South Jersey Transportation Authority		Totals	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		5	
<b>Number of toll Collection Plazas operated</b>	7	10	36	39
<b>Number of toll collection plazas with dedicated ETC</b>	2	2	2	30
<b>Number of toll collection plazas with both manual and ETC</b>	2	2	2	30
<b>Number of toll collection lanes operated</b>	52	64	413	429
<b>Number of toll collection lanes with dedicated ETC</b>	4	12	4	180
<b>Number of toll collection lanes with both manual and ETC</b>	22	22	22	374
<b>Number of toll collection tags issued</b>	95,000	0	1,095,000	4,000,000
<b>Antennae Location Technologies</b>				
In-Pavement?	No		0	
Focused Beam?	No		0	
Distributed Overhead?	Yes		3	
<b>In-Vehicle Equipment Technologies</b>				
Tag-based?	Yes		3	
Integrated circuit card-based?	No		0	
<b>Are toll tags used by other toll operations in metro area?</b>	Yes		3	
List of toll operators that use tags	NYSTA, MTA, PANYNJ, All agencies in the Northeast			
<b>Are toll tags used by operators of public transit to pay transit fares in metro area?</b>	No		0	
List of transit operators that use tags	None			
NR: No Response				