

Tracking the Deployment of the Integrated Metropolitan ITS Infrastructure in Phoenix

FY99 Results

For additional information, please contact:

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

Table of Contents

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

Part 1 - Background and Purpose

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

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

-- Secretary Peña, 1996

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

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

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

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

the methodology are explained elsewhere.³

During the summer and fall of 1999, the U.S. DOT undertook a new data collection effort for the purpose of examining ITS deployment progress in the nation's largest metropolitan areas. The Phoenix 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 Phoenix region was 100% in 1997 and 89% in 1999.

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

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

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

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

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

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

Part 2 - Summary 1999 Survey Results

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

The following two figures portray the surrogate indicators for each of the nine components in Phoenix 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.

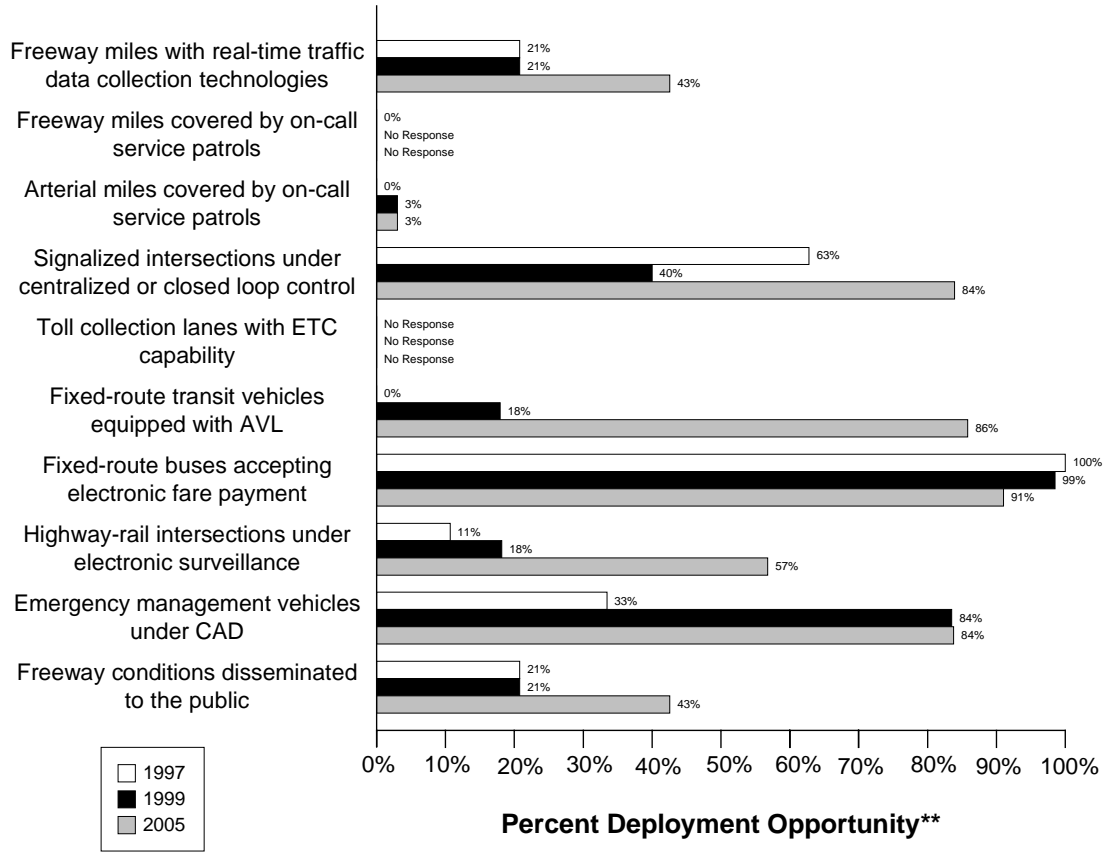
A critical aspect of ITS that provides much of its capability is the integration of individual components to form a unified regional traffic control system. Individual ITS components routinely collect information that is used for purposes internal to that component. For example, the Arterial Management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

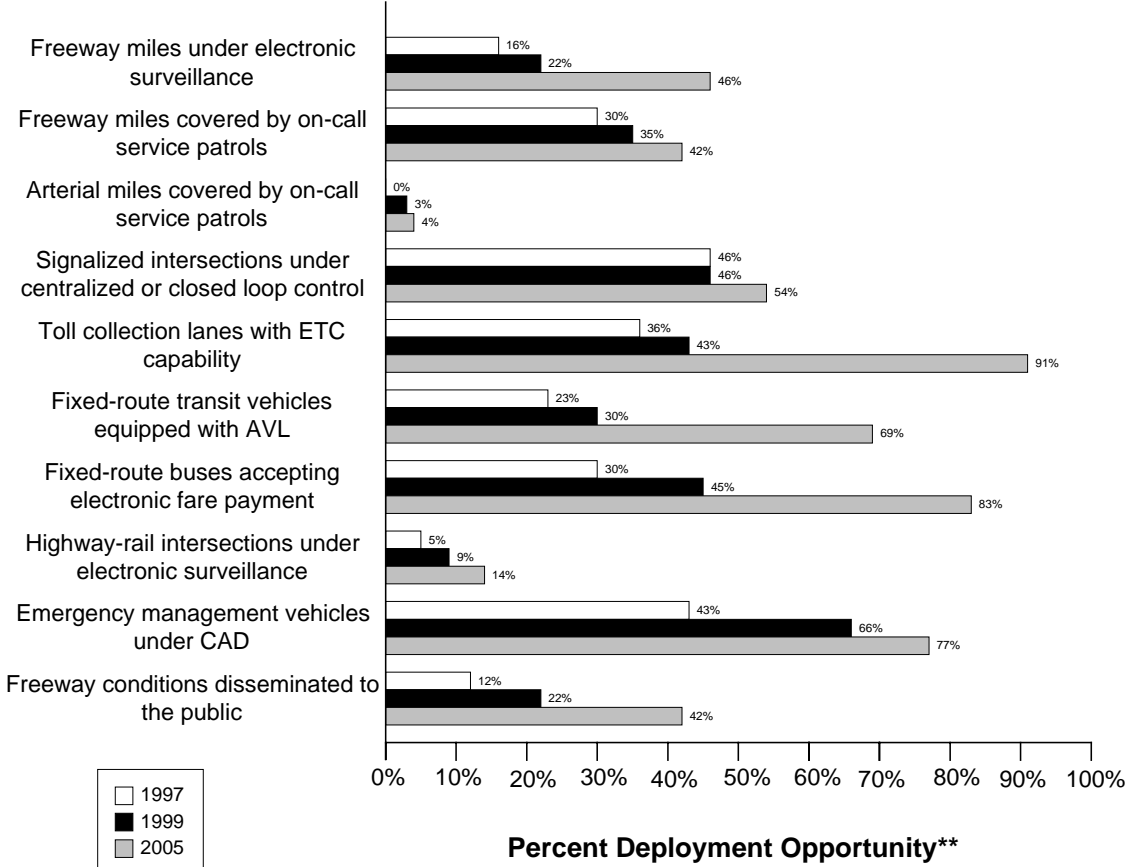
Phoenix Summary Indicators*



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

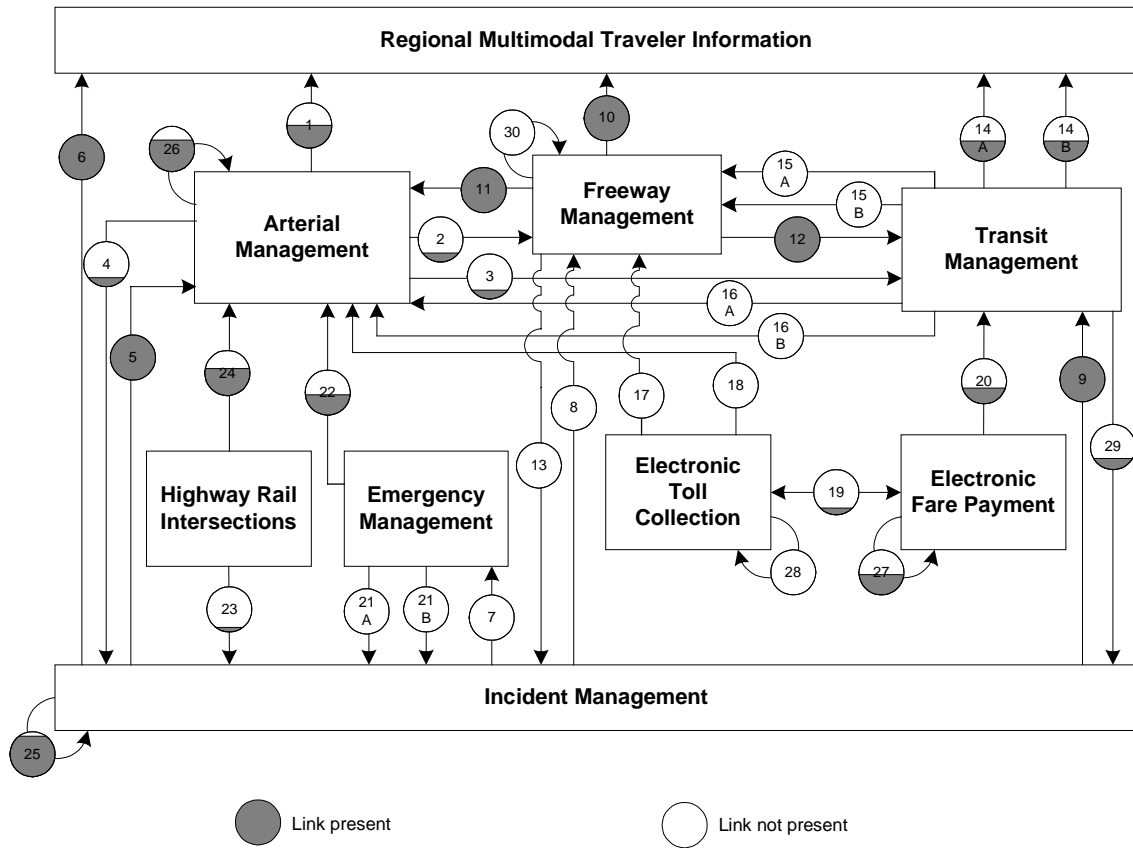
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

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

Phoenix Integration Links



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

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

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

Part 3 - Detailed 1999 Survey Results

The following figures and tables summarize the complete set of component and integration indicators developed for the Phoenix 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).

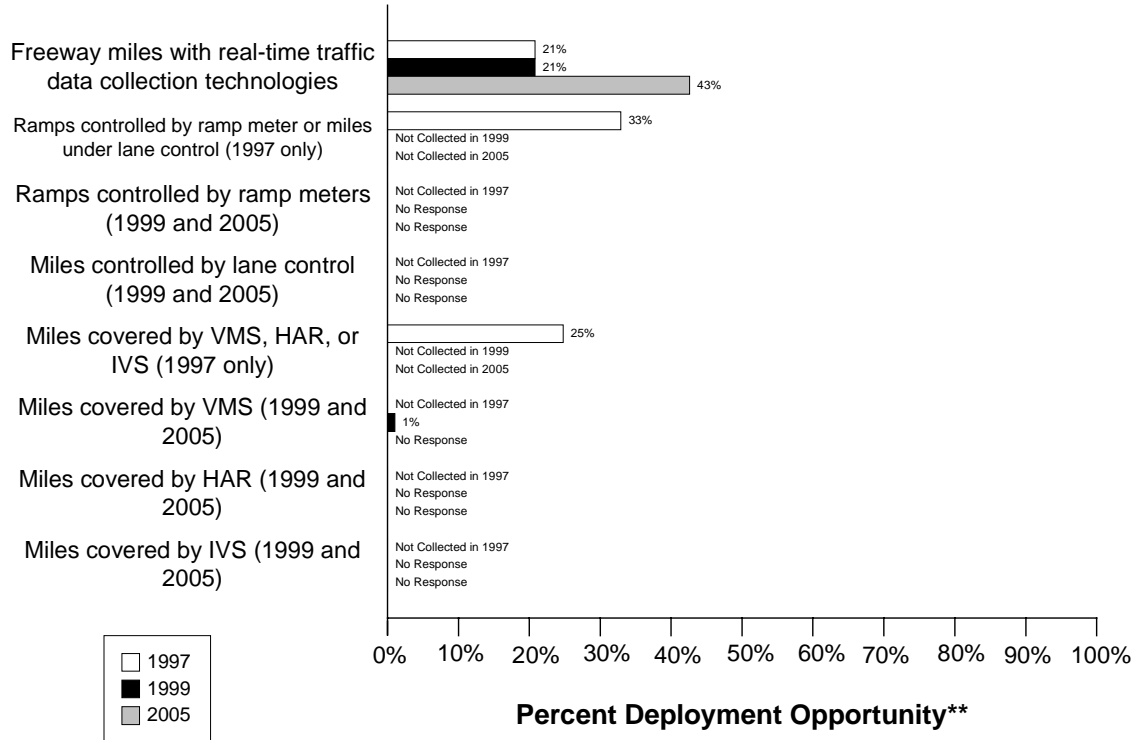
Example: Calculating Integration between Arterial Management and Regional Multimodal Traveler Information

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

Phoenix 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.

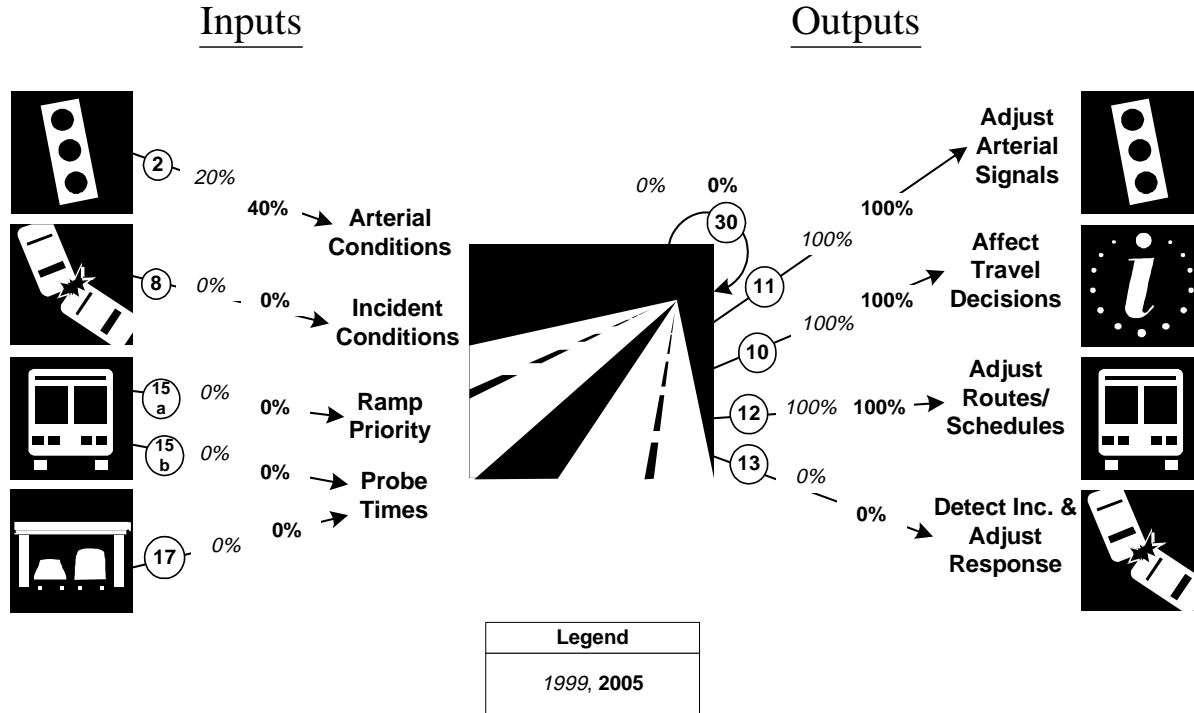
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway centerline miles are under electronic surveillance for monitoring traffic flow	42	202	21%	42	202	21%	86	202	43%
Freeway entrance ramps are controlled by ramp meters or miles under lane control	100	304	33%						
Freeway entrance ramps are controlled by ramp meters					304			304	

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway centerline miles will be controlled by lane control					202			202	
Freeway miles are covered by VMS, HAR, or IVS	50	202	25%						
Freeway miles are covered by VMS				2	202	1%		202	
Freeway miles are covered by HAR					202			202	
Freeway miles are covered by IVS					202			202	

Freeway Management Integration Indicators

Phoenix

Freeway Management Integration*



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

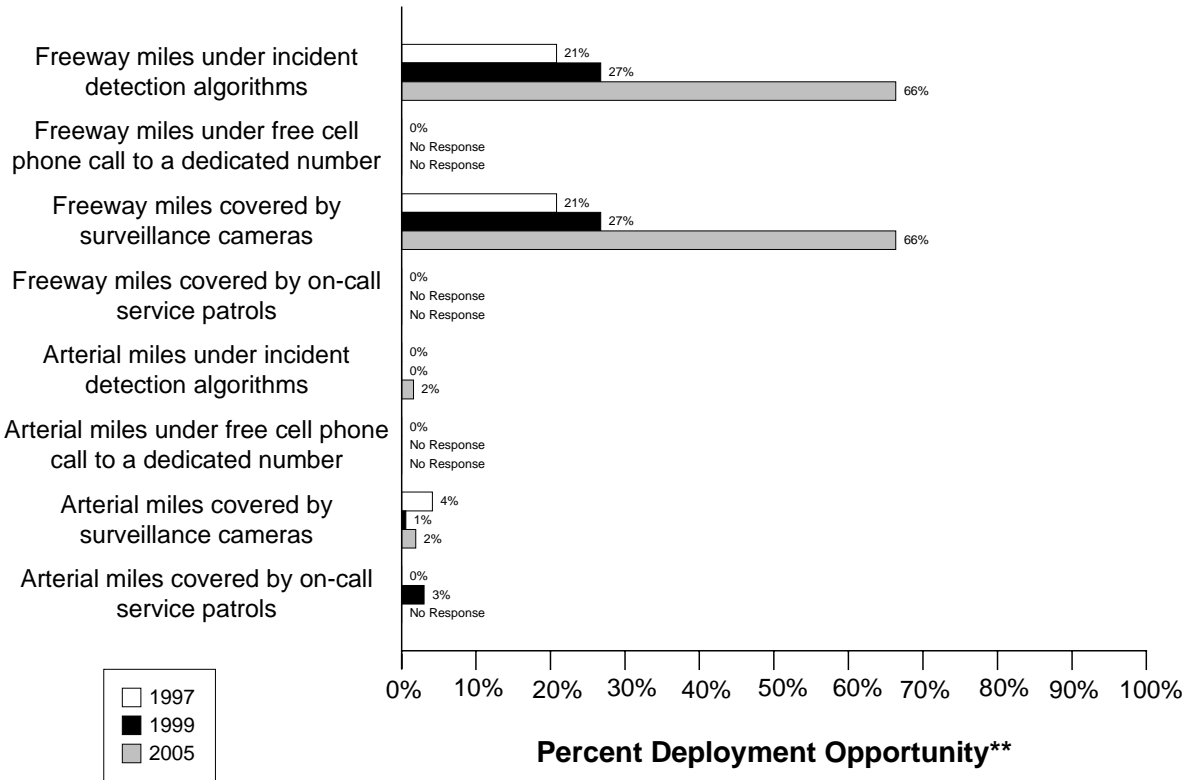
Link Description	1999	2005
2. Arterial Management agencies sending information to Freeway Management	(2/ 10) 20%	(4/ 10) 40%
8. Incident Management agencies sending information to Freeway Management	(0/ 1) 0%	(0/ 1) 0%
15a. Transit management agencies with vehicles equipped with ramp meter priority	(0/ 9) 0%	(0/ 9) 0%
15b. Transit Management agencies with vehicles equipped as probes	(0/ 9) 0%	(0/ 9) 0%
17. Freeway Management agencies receiving freeway conditions from vehicle probes	(0/ 1) 0%	(0/ 1) 0%
30. Freeway Management agencies sending information to another Freeway Management agency	(0/ 1) 0%	(0/ 1) 0%
11. Freeway Management agencies sending information to Arterial Management	(1/ 1) 100%	(1/ 1) 100%

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

Incident Management Component Indicators

Data as of 5/1/00

Phoenix 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.

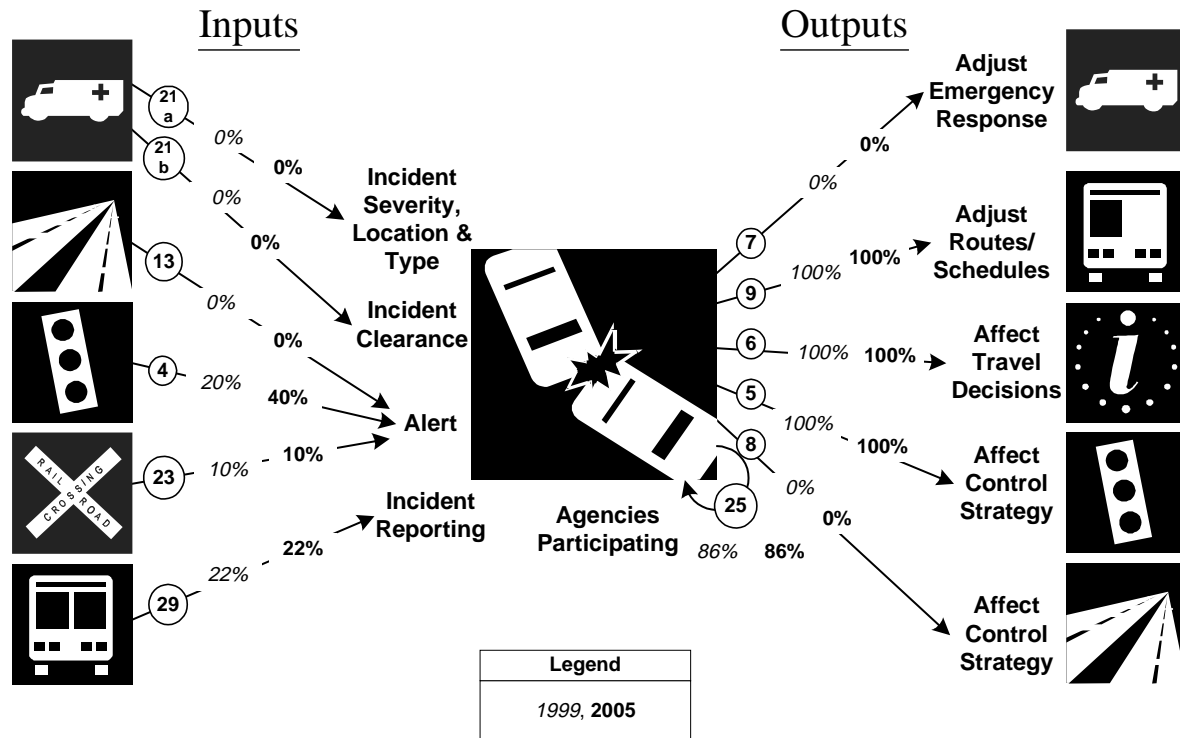
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by incident detection algorithms	42	202	21%	54	202	27%	134	202	66%
Freeway miles are covered by free cellular phone calls to a dedicated number	0	202	0%		202			202	
Freeway miles are covered by surveillance cameras.	42	202	21%	54	202	27%	134	202	66%

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by on-call publicly-sponsored service patrol or towing services.	0	202	0%		202			202	
Arterial miles are covered by incident detection algorithms	0	1577	0%	0	1577	0%	25	1577	2%
Arterial miles are covered by free cellular phone calls to a dedicated number	0	1577	0%		1577			1577	
Arterial miles are covered by surveillance cameras	65	1577	4%	9	1577	1%	30	1577	2%
Arterial miles are covered by on-call publicly-sponsored service patrol or towing services	0	1577	0%	48	1577	3%		1577	

Incident Management Integration Indicators

Phoenix

Incident Management Integration*



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

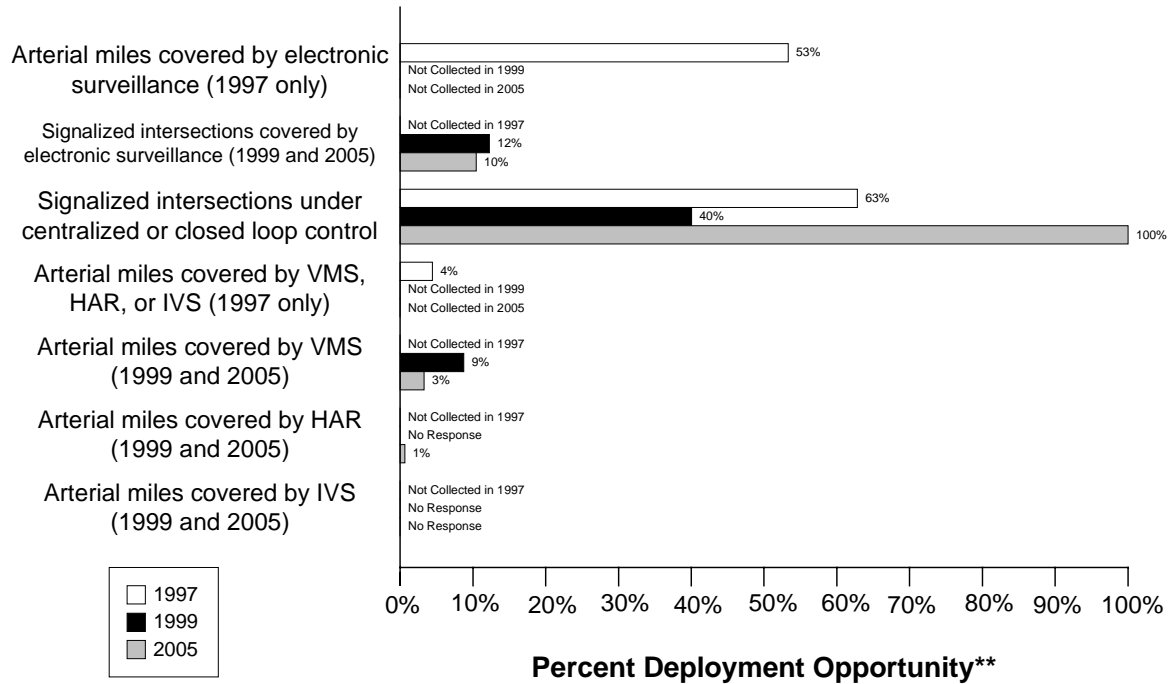
Link Description	1999	2005
21a. Incident management agencies receiving incident severity from Emergency Management	(0/ 1) 0%	(0/ 1) 0%
21b. Incident management agencies receiving incident clearance activities from Emergency Management	(0/ 1) 0%	(0/ 1) 0%
13. Freeway Management agencies sending freeway conditions to Incident Management	(0/ 1) 0%	(0/ 1) 0%
4. Arterial Management agencies sending arterial conditions to Incident Management	(2/ 10) 20%	(4/ 10) 40%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	(1/ 10) 10%	(1/ 10) 10%
29. Transit Management agencies report traffic incidents as part of an organized regional incident management program	(2/ 9) 22%	(2/ 9) 22%

Link Description	1999	2005
7. Incident management agencies transfer information describing incident severity, location, and type to Emergency Management agencies	(0/ 1) 0%	(0/ 1) 0%
9. Incident Management agencies transfer information describing incident severity, location, and type to Transit Management agencies	(1/ 1) 100%	(1/ 1) 100%
6. Incident Management agencies disseminate information describing incident severity, location, and type to the public	(1/ 1) 100%	(1/ 1) 100%
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management agencies	(1/ 1) 100%	(1/ 1) 100%
8. Incident Management agencies transfer information describing incident severity, location, and type to Freeway Management agencies	(0/ 1) 0%	(0/ 1) 0%
25. Police, fire, and EMS agencies participating in a formal incident management plan/team	(12/ 14) 86%	(12/ 14) 86%

Arterial Management Component Indicators

Data as of 5/1/00

Phoenix Arterial Management*



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

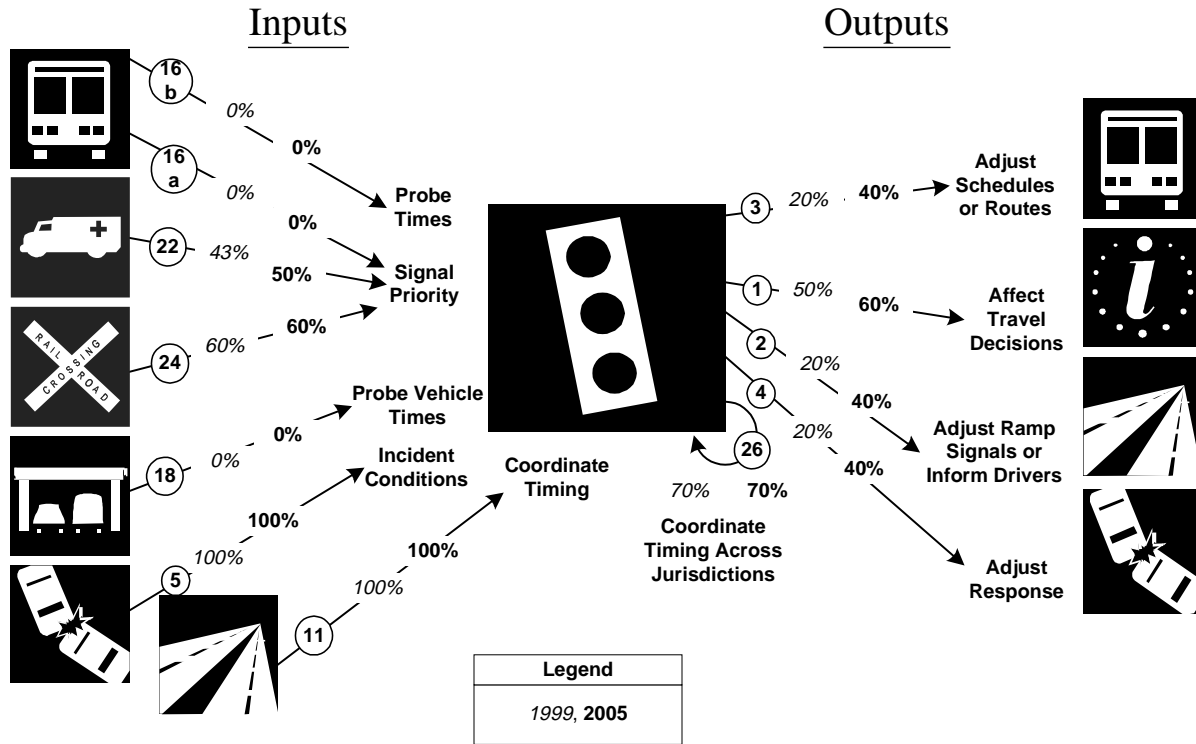
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles covered by electronic surveillance	840.5	1577	53%						
Signalized intersections are covered by electronic surveillance for monitoring traffic flow				268	2184	12%	143	1365	10%
Signalized intersections are under centralized or closed loop control	1287	2049	63%	874	2184	40%	1365	1365	100%

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles are covered by VMS, HAR, or IVS	70	1577	4%						
Arterial miles are covered by VMS				138	1577	9%	52	1577	3%
Arterial miles are covered by HAR					1577		10	1577	1%
Arterial miles are covered by IVS					1577			1577	

Arterial Management Integration Indicators Phoenix

Arterial Management Integration*



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

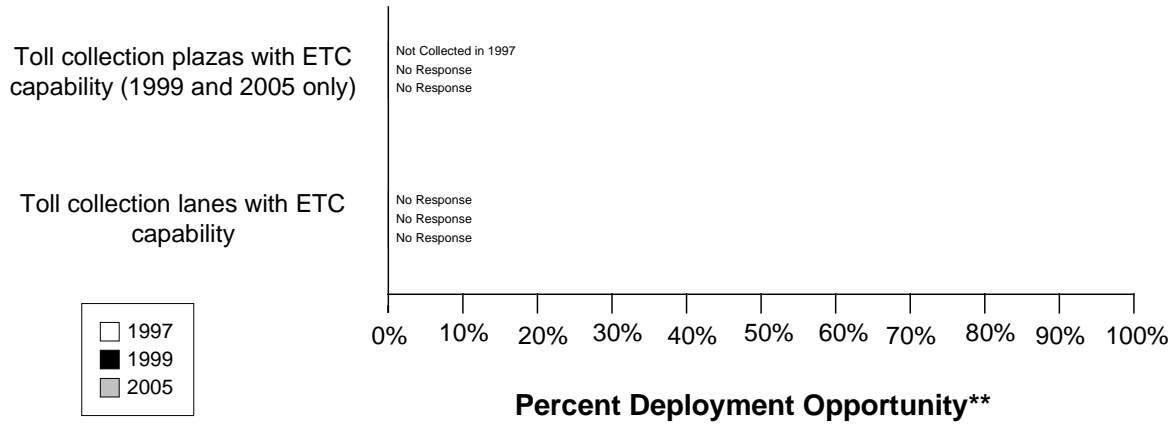
Link Description	1999	2005
16a. Transit management agencies with vehicles equipped with traffic signal priority	(0/ 9) 0%	(0/ 9) 0%
16b. Transit Management agencies have vehicles equipped as probes on arterials	(0/ 9) 0%	(0/ 9) 0%
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	(6/ 14) 43%	(7/ 14) 50%
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	(6/ 10) 60%	(6/ 10) 60%
18. Number of Arterial Management agencies receiving information from vehicle probes	(0/ 10) 0%	(0/ 10) 0%
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management	(1/ 1) 100%	(1/ 1) 100%

Link Description	1999	2005
11. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Arterial Management agencies	(1/ 1) 100%	(1/ 1) 100%
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	(2/ 10) 20%	(4/ 10) 40%
1. Arterial Management agencies disseminate arterial travel times, speeds, and conditions to the public	(5/ 10) 50%	(6/ 10) 60%
2. Arterial Management agencies send traffic condition information to Freeway Management	(2/ 10) 20%	(4/ 10) 40%
4. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Incident Management	(2/ 10) 20%	(4/ 10) 40%
26. Arterial Management agencies under cooperative agreement to share traffic signal timing for coordinated response	(7/ 10) 70%	(7/ 10) 70%

Electronic Toll Collection Component Indicators

Data as of 5/1/00

Phoenix 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									
Toll collection lanes with ETC capability									

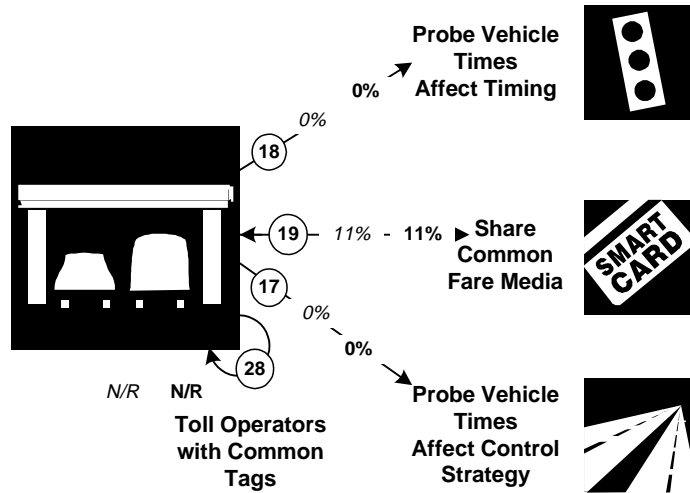
Electronic Toll Collection Integration Indicators

Phoenix

Electronic Toll Collection Integration*

Inputs

Outputs



Legend
1999, 2005

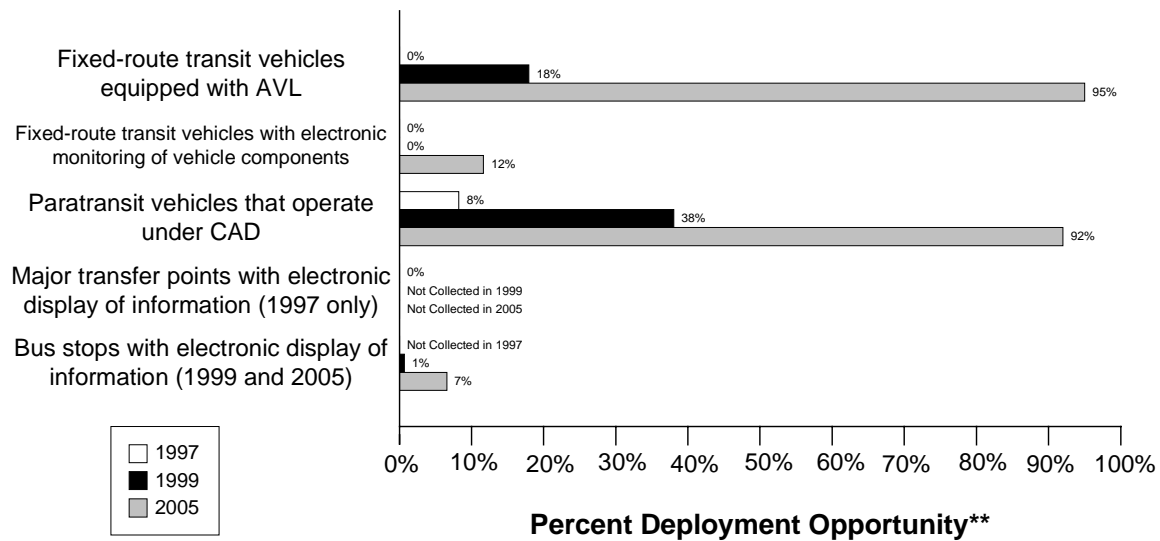
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
18. Number of Arterial Management agencies receiving information from vehicle probes	(0/ 10) 0%	(0/ 10) 0%
19. Transit agencies that accept electronic payment through the use of electronic toll collection media	(1/ 9) 11%	(1/ 9) 11%
17. Freeway Management agencies receiving information from vehicle probes	(0/ 1) 0%	(0/ 1) 0%
28. Toll operators using common toll tag technology	(0/)	(0/)

Transit Management Component Indicators

Data as of 5/1/00

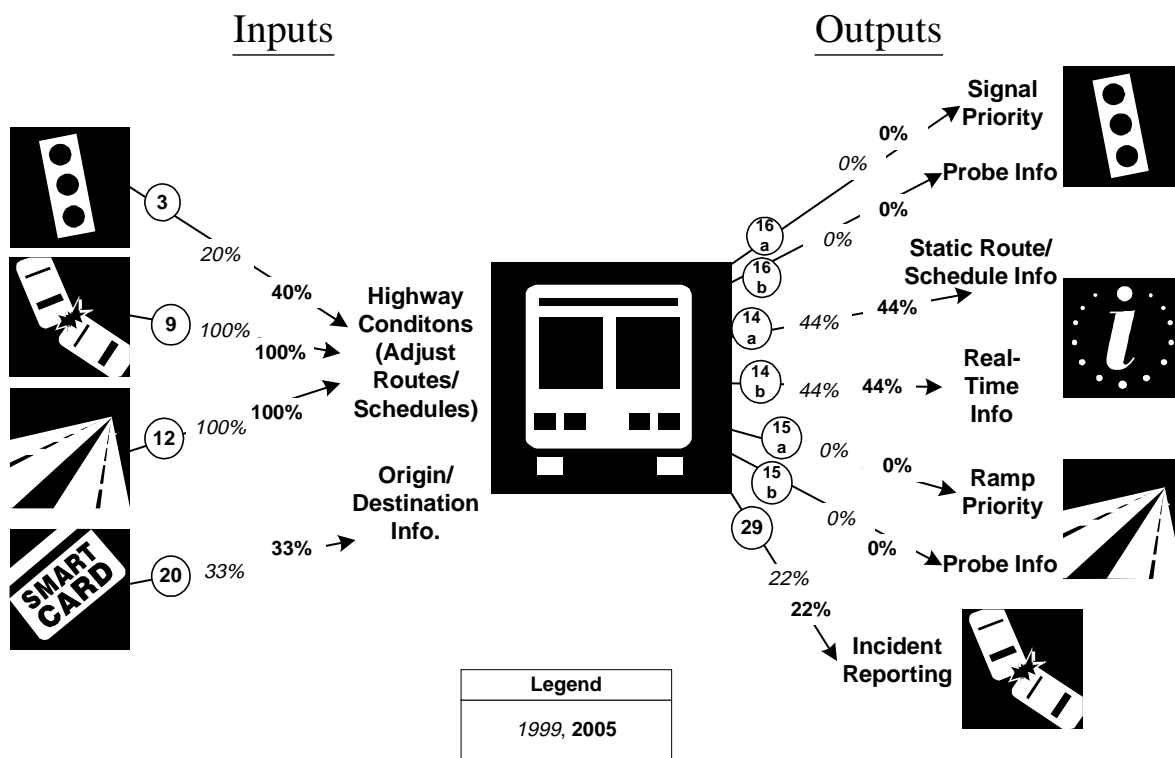
Phoenix Transit Management*



* 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	480	0%	96	535	18%	456	480	95%
Fixed-route transit vehicles are equipped with electronic monitoring of vehicle component	0	480	0%	0	535	0%	56	480	12%
Paratransit vehicles operate under computer-aided dispatch	23	280	8%	89	234	38%	184	200	92%
Percent fixed-route transfer locations with electronic display of information	0	6	0%						
Bus stops display information to the public				2	300	1%	23	350	7%

Phoenix Transit Management Integration*



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

Transit Management Integration Indicators

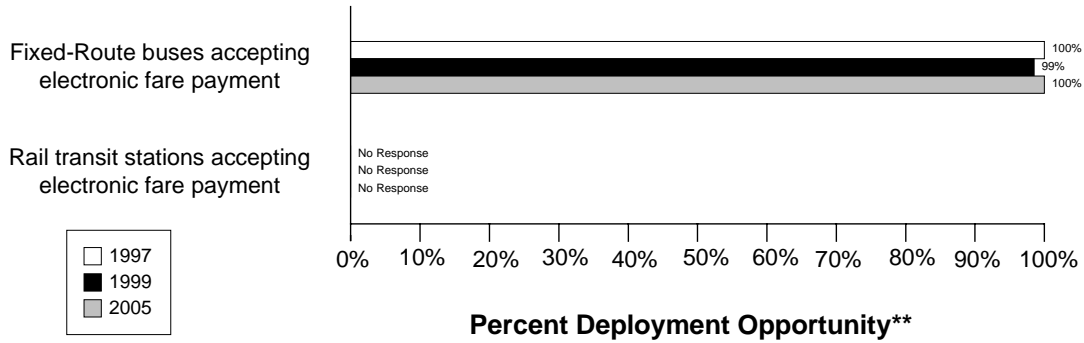
Link Description	1999	2005
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	(2/ 10) 20%	(4/ 10) 40%
9. Incident management agencies transfer information describing incident severity, location, and type to Transit Management	(1/ 1) 100%	(1/ 1) 100%
12. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Transit Management	(1/ 1) 100%	(1/ 1) 100%
20. Transit Management agencies using Electronic Fare Payment data in transit service planning	(3/ 9) 33%	(3/ 9) 33%
16a. Transit Management agencies have vehicles equipped with traffic signal priority capability	(0/ 9) 0%	(0/ 9) 0%
16b. Transit Management agencies have vehicles equipped as probes on arterials	(0/ 9) 0%	(0/ 9) 0%
14a. Transit Management agencies disseminate information describing transit routes, schedules, and fares to travelers	(4/ 9) 44%	(4/ 9) 44%
14b. Transit Management agencies disseminate information describing schedule/route adherence to travelers	(4/ 9) 44%	(4/ 9) 44%
15a. Transit Management agencies have vehicles equipped with ramp meter priority capability	(0/ 9) 0%	(0/ 9) 0%

Link Description	1999	2005
15b. Transit Management agencies have vehicles equipped as probes on freeways	(0/ 9) 0%	(0/ 9) 0%
29. Transit Management agencies that report traffic incidents as part of an organized regional Incident Management program	(2/ 9) 22%	(2/ 9) 22%

Electronic Fare Payment Component Indicators

Data as of 5/1/00

Phoenix 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	480	480	100%	527	535	99%	527	527	100%
Rail transit stations that accept electronic payment	0	0							

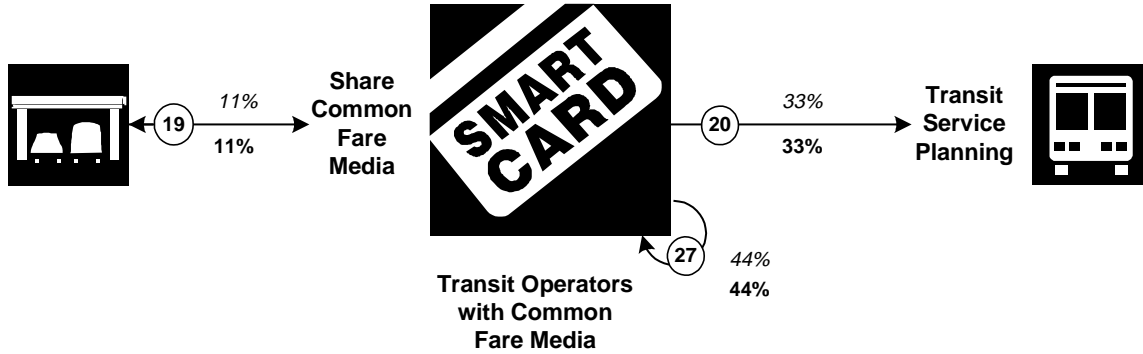
Electronic Fare Payment Integration Indicators

Phoenix

Electronic Fare Payment Integration*

Inputs

Outputs



Legend
1999
2005

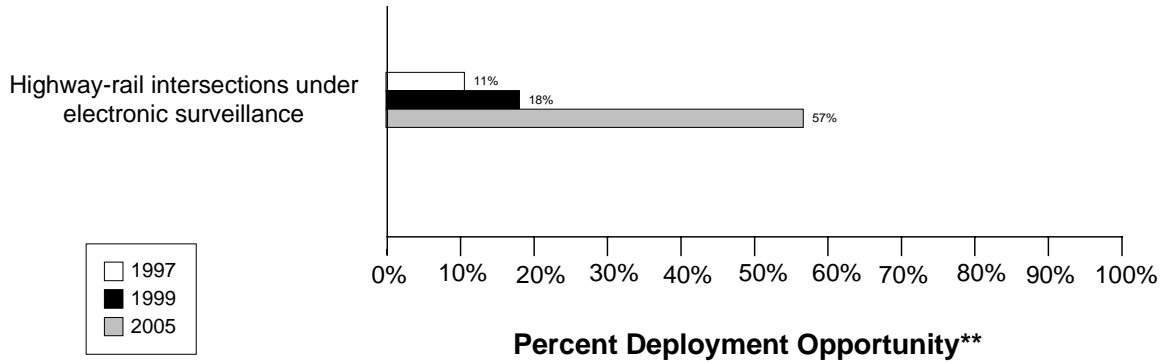
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
19. Transit agencies that accept electronic payment through the use of electronic toll collection media	(1 / 9) 11%	(1 / 9) 11%
20. Transit Management agencies use Electronic Fare Payment data in transit service planning	(3 / 9) 33%	(3 / 9) 33%
27. Transit Management agencies that use the same electronic payment system	(4 / 9) 44%	(4 / 9) 44%

Highway Rail Intersection Component Indicators

Data as of 5/1/00

Phoenix 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	8	75	11%	8	44	18%	25	44	57%

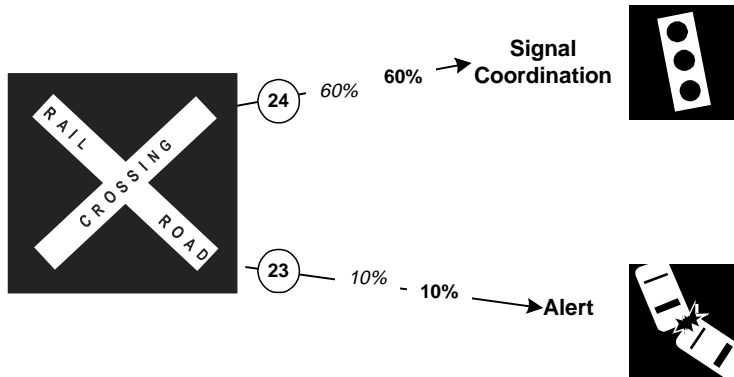
Highway Rail Intersection Integration Indicators

Phoenix

Highway Rail Intersections Integration*

Inputs

Outputs



Legend
1999, 2005

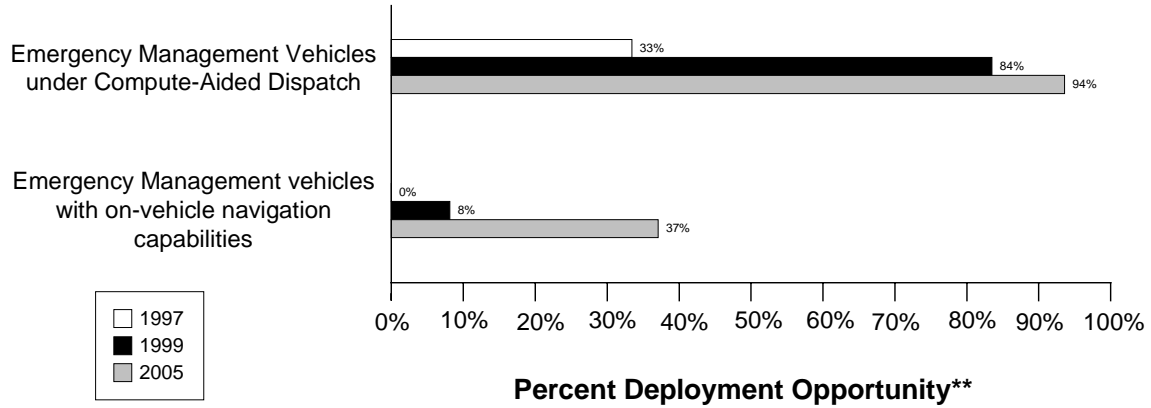
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

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	(6/ 10) 60%	(6/ 10) 60%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	(1/ 10) 10%	(1/ 10) 10%

Emergency Management Component Indicators

Data as of 5/1/00

Phoenix 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	1056	3157	33%	2725	3263	84%	1095	1170	94%
Public sector emergency vehicles that have in-vehicle route guidance capability	0	3157	0%	265	3263	8%	434	1170	37%

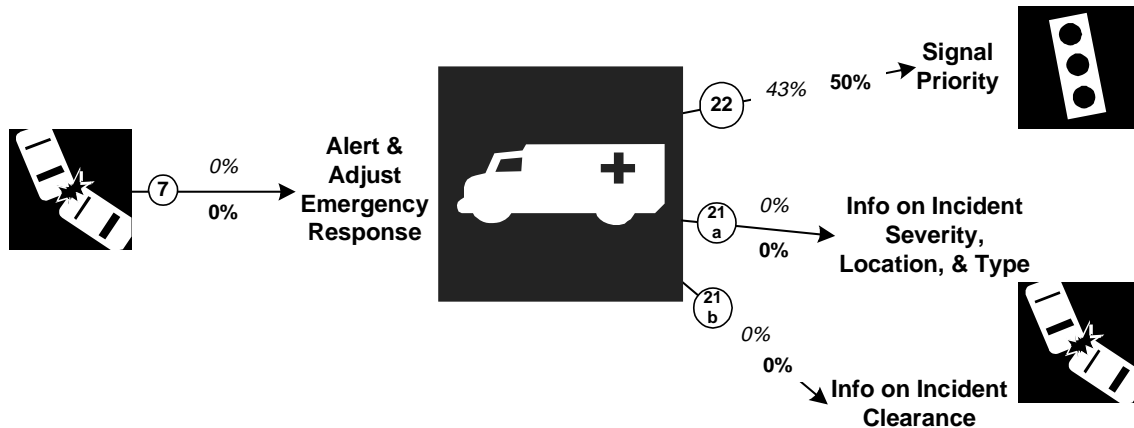
Emergency Management Integration Indicators

Phoenix

Emergency Management Integration*

Inputs

Outputs



Legend
1999, 2005

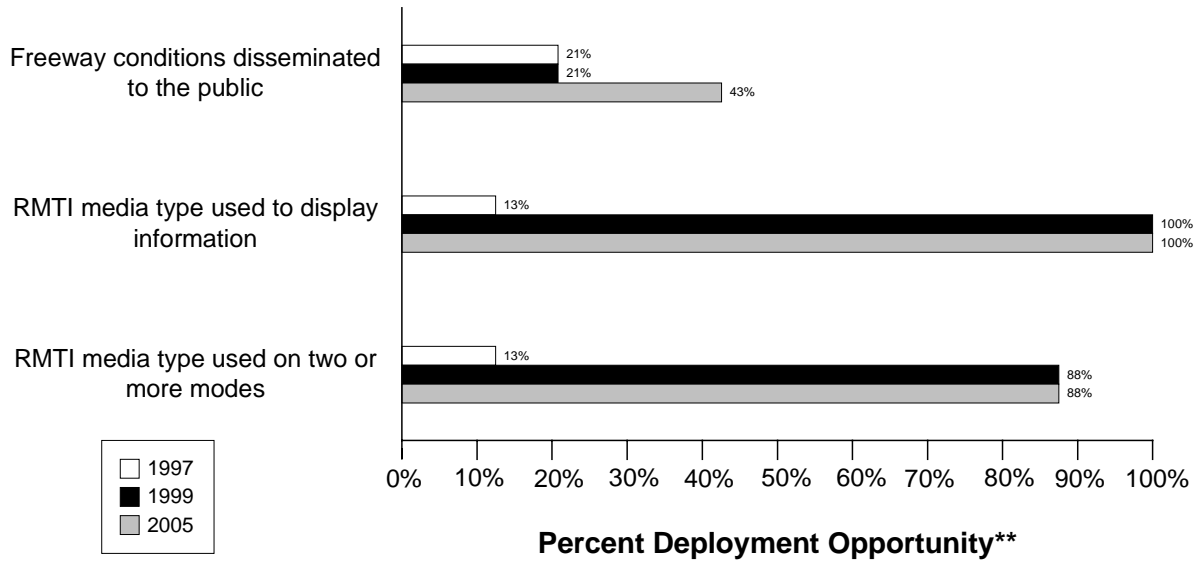
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
7. Freeway Management agencies transfer information describing incident severity, location, and type to Emergency Management agencies	(0/ 1) 0%	(0/ 1) 0%
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	(6/ 14) 43%	(7/ 14) 50%
21a. Freeway Management agencies receive incident severity, location, and type data from Emergency Management agencies	(0/ 1) 0%	(0/ 1) 0%
21b. Freeway Management agencies receive incident clearance activities information from Emergency Management agencies	(0/ 1) 0%	(0/ 1) 0%

Regional Multimodal Traveler Information Component Indicators

Data as of 5/1/00

Phoenix Regional Multimodal Traveler Information*



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

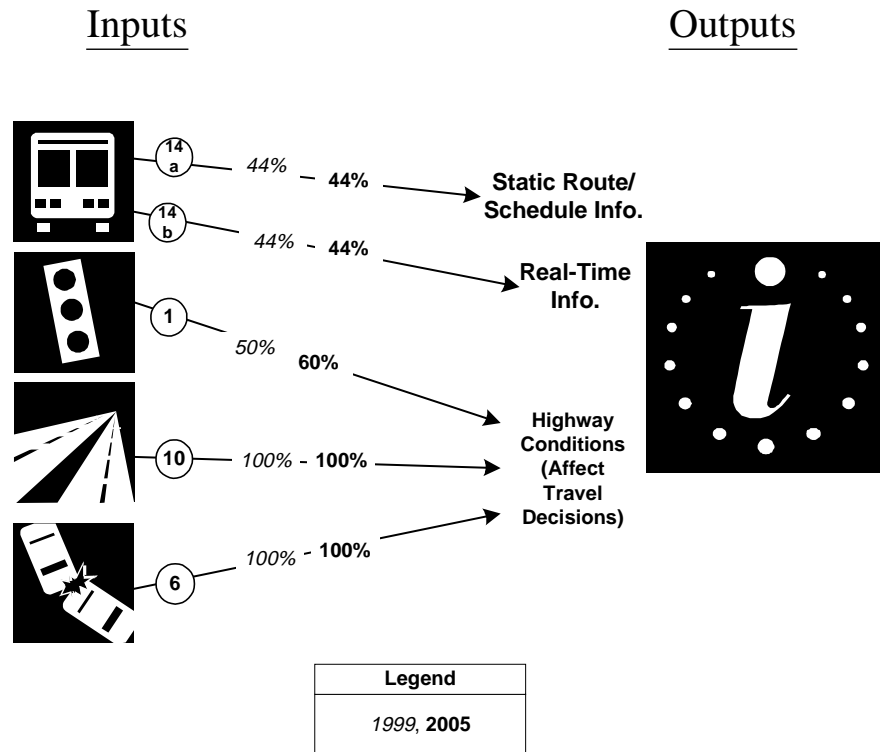
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway conditions disseminated to travelers	42	202	21%	42	202	21%	86	202	43%
Possible RMTI media types are used to display information to travelers	1	8	13%	8	8	100%	8	8	100%
Possible RMTI media are used to display information on <i>two or more modes</i> to travelers	1	8	13%	7	8	88%	7	8	88%

Regional Multimodal Traveler Information Integration Indicators

Phoenix

Regional Multimodal Traveler Information Integration*

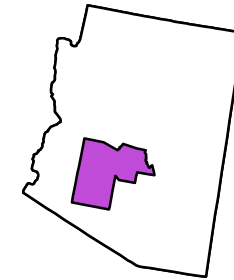
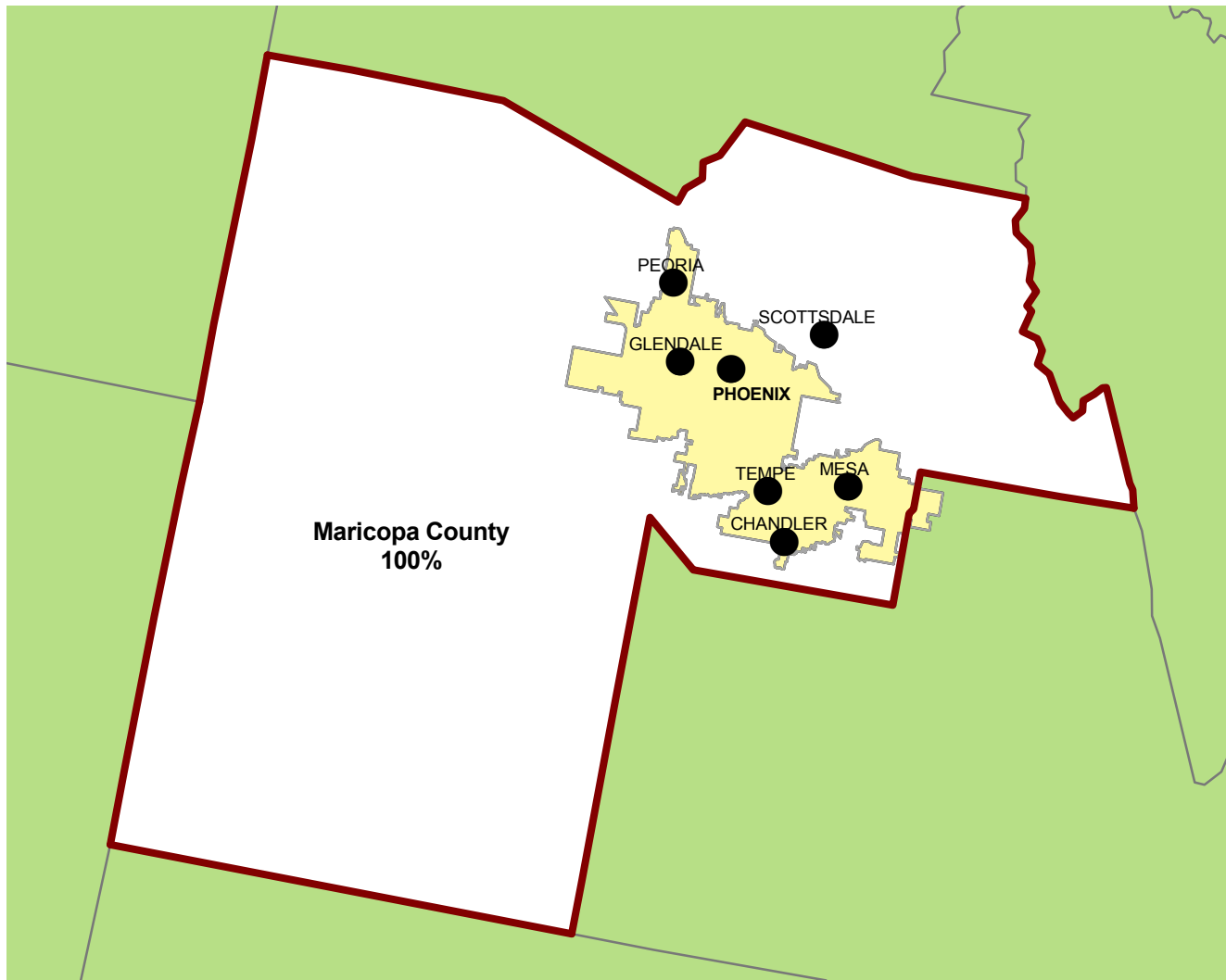


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
14a. Transit Management agencies that disseminate information describing transit routes, schedules, and fares to travelers	(4/ 9) 44%	(4/ 9) 44%
14b. Transit Management agencies that disseminate information describing schedule/route adherence to travelers	(4/ 9) 44%	(4/ 9) 44%
1. Arterial Management agencies that disseminate arterial travel times, speeds, and conditions to the public	(5/ 10) 50%	(6/ 10) 60%
10. Freeway Management agencies that disseminate freeway travel times, speeds, and conditions to travelers	(1/ 1) 100%	(1/ 1) 100%
6. Incident Management agencies that disseminate information describing incident severity, location, and type to the public	(1/ 1) 100%	(1/ 1) 100%

Appendix A
Survey Coverage Area

MARICOPA ASSOCIATION OF GOVERNMENTS, AZ



- 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
PHOENIX						
Arterial Management						
Chandler City	(602) 786-2504	(602) 786-2582	4/29/1999	9/7/1999	7/10/1997	9/16/1997
Town of Gilbert	(602) 503-6932	(602) 503-6932	4/29/1999	9/7/1999	7/10/1997	9/16/1997
Maricopa County	(602) 506-4629	(602) 506-8756	4/29/1999	9/7/1999	7/10/1997	9/16/1997
Tempe City	(602) 340-8250	(602) 495-9013	4/29/1999	9/7/1999	7/10/1997	9/16/1997
Phoenix City	(602) 262-4690	(602) 495-0345	4/29/1999	9/7/1999	7/10/1997	9/16/1997
Peoria City	(602) 412-7210	(602) 412-7211	4/29/1999		7/10/1997	11/11/1997
Mesa City	(602) 644-3123	(602) 644-3130	4/29/1999	9/7/1999	7/10/1997	9/16/1997
Glendale City	(602) 930-2940	(602) 915-2689	4/29/1999	9/7/1999	7/10/1997	9/16/1997
Arizona Department of Transportation	(602) 255-6614	(602) 255-6983	4/29/1999	9/7/1999	7/10/1997	11/11/1997
Scottsdale City	(480) 312-7935	(480) 312-4000	4/29/1999	2/9/2000	7/10/1997	9/16/1997
Emergency Management						
Tempe City Fire Department	480- 858-7200	480-858-7214	6/28/1999	7/2/1999	7/10/1997	4/23/1998
Tempe City Police Department	602-350-8991	602- 350-8379	6/28/1999	9/2/1999	7/10/1997	4/23/1998
Phoenix Department of Public Safety	(602) 223-2000	(602) 223-2358	6/28/1999	7/8/1999	7/10/1997	9/16/1997
Phoenix City Fire & EMS Department (EMS)	602-262-6297	602-262-4429	6/28/1999	9/30/1999	7/10/1997	9/16/1997
Scottsdale Fire Department/ Rural Metro	602-994-3886	602-627-6644	6/28/1999	7/1/1999	7/10/1997	9/16/1997
Chandler City Fire Department	480-786-2712	480-782-2130	6/28/1999	6/29/1999	7/10/1997	10/9/1997
Phoenix City Fire & EMS Department	602-262-6297	602-262-4429	6/28/1999	9/30/1999	7/10/1997	9/16/1997
Peoria City Police Department	(602) 412-7061	(602) 412-7030	6/28/1999	6/28/1999	7/10/1997	10/3/1997
Peoria City Fire Department	(602) 412-7440		6/28/1999		7/10/1997	10/3/1997
Phoenix City Police Department	(602) 262-7810	(602) 534-1760	7/8/1999	8/6/1999	7/10/1997	9/16/1997
Chandler City Police Department	(602) 786-4261	602-782-4222	6/28/1999	8/10/1999	7/10/1997	10/9/1997
Glendale Fire Department	(602) 930-3400	(602) 931-2103	6/28/1999		7/10/1997	9/16/1997
Mesa City Police Department	(602) 644-2229		6/28/1999	7/7/1999	7/10/1997	9/16/1997
Glendale Police Department	(602) 930-3050	602-931-2103	6/28/1999	9/23/1999	7/10/1997	9/16/1997
Scottsdale Police Department	480-391-5000	480-391-5097	6/28/1999	7/26/1999	7/10/1997	10/9/1997
Mesa City Fire Department	(602) 644-2126	(602) 644-2854	6/28/1999	7/22/1999	7/10/1997	9/16/1997
Freeway Management						
Arizona Department of Transportation	(602) 255-6587	(602) 495-9013	4/29/1999	10/4/1999	7/10/1997	9/16/1997
MPO						
Maricopa Association of Governments	602-254-6300	602-254-6490	5/2/1999	9/7/1999		

Agency Name	Phone	Fax	1999		1997	
			Out	In	Out	In
Transit Management						
Glendale Dial-A-Ride	(602) 930-2940	(602) 915-2689	4/29/1999	8/2/1999	7/21/1997	7/28/1997
Mesa City	(602) 644-3010	(602) 644-3130	4/29/1999	9/7/1999	7/18/1997	7/23/1997
Regional Public Transportation Authority	(602) 262-7242	(602) 495-0411	4/29/1999	9/7/1999	7/21/1997	7/25/1997
Peoria Transit	(602) 412-7435	(602) 412-7486	4/29/1999	9/7/1999	7/21/1997	7/25/1997
Scottsdale City	(602) 312-7656	(602) 312-7971	4/29/1999	9/7/1999	7/21/1997	7/25/1997
Phoenix Transit System	(602) 262-4490	(602) 495-2002	4/29/1999	9/7/1999	7/21/1997	8/7/1997
Sun Cities Area Transit System	(602) 977-8363	(602) 874-8852	4/29/1999	9/29/1999	7/21/1997	7/24/1997
Surprise Dial-A-Ride	(602) 583-1080	(602) 583-1084	4/29/1999	8/26/1999	7/21/1997	7/25/1997

Appendix C
Freeway Management Components

Freeway Management
Agencies for Metropolitan Area: Phoenix

	Arizona Department of Transportation	
	1999	2005
Agency Returned Survey?	Yes	
FREEWAY MANAGEMENT SECTION		
Number of freeway centerline miles that agency owns or maintains	300	
Number of freeway centerline miles that is used for planning	210	
Number of freeway entrance ramps that agency owns, operates or maintains	250	
Number of freeway entrance ramps that is used for planning	200	
Type of facilities used to conduct freeway/incident management activities		
Activities housed in a free-standing dedicated building?	Yes	
Activities housed in a building shared with other activities?	No	
Activities conducted in a dedicated control room?	Yes	
Control room contains operator console(s)?	Yes	
Control room contains electronic wall map?	Yes	
Control room contains CCTV display(s)?	Yes	
Activities conducted in a room containing workstations or PCs that manage traffic?	Yes	
Facilities are electronically linked to other transportation mgt facilities?	Yes	
Staffing and hours of operation of freeway/incident management activities		
Number of full-time agency staff members	NR	
Number of full time contractor staff members	NR	
Number of part-time agency staff members	NR	
Number of part-time contractor staff members	NR	
Staffed 24 hours day by agency staff or by others	agency	
Staffed during peak hours only by agency staff or by others	NR	
Staffed by others during off-peak hours	No	
Agency staff perform transportation management as an ancillary duty	No	
Agency staff dedicated to transportation management duty	Yes	
Types of operations conducted for freeway/incident management		
Incident detection and management?	Yes	
This metropolitan area?	Yes	
Other metropolitan area?	No	
Statewide?	No	
Monitoring and troubleshooting status of system components?	Yes	
Manual override of ramp metering rates at freeway on-ramps?	No	
Operating transportation management roadside devices?	No	
Radio communications with other agencies?	No	
Exchange of electronic data with other agencies such as computer aided dispatch?	No	
Real-Time Traffic Data Collection Technologies		
Total number of miles under surveillance with real-time data collection tech.	42	86

Freeway Management
Agencies for Metropolitan Area: Phoenix

	Arizona Department of Transportation	
	1999	2005
<i>Number of Stations with data collection technologies</i>		
Loop detectors	237	530
Video imaging detectors	0	0
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0
Microwave radar	0	0
Other (e.g., acoustic detectors)	0	0
<i>Number of Miles covered with data collection technologies</i>		
Loop detectors	42	86
Video imaging detectors	0	0
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0
Microwave radar	0	0
Other (e.g., acoustic detectors)	0	0
Variable Message Signs (VMS) on Freeways		
Candidate locations for deployment of VMS where VMS has been deployed	1	NR
Candidate locations for deployment of VMS	4	NR
Roadside Technologies used to Distribute Traveler Information		
Total number of miles where information is distributed	NR	NR
<i>Number deployed</i>		
Highway advisory radio	0	0
In-vehicle signing	0	0
Portable variable message signs	0	0
Other	0	0
<i>Miles covered</i>		
Highway advisory radio	0	0
In-vehicle signing	0	0
Portable variable message signs	0	0
Other	0	0
Ramp Meters on Freeways		
Number of entrance ramp meters operated under isolated control	NR	NR
Number of entrance ramp meters operated under central control	NR	NR
Number of entrance ramp meters that provide preemption for emergency vehicles	NR	NR
Number of entrance ramp meters that provide priority for transit vehicles	NR	NR
Total number of metered ramps	NR	NR
Freeway centerline miles under lane control	NR	NR
Communication Links		
<i>Freeway centerline miles covered by the following type of communication</i>		
Twisted pair cable	42	NR
Coaxial cable	0	0
Fiber-optic cable	42	NR
Microwave radio	0	0
Other	0	0
ITS Standards Used Related to Freeway Management		

Freeway Management
Agencies for Metropolitan Area: Phoenix

	Arizona Department of Transportation	
	1999	2005
ATMS Data Dictionary Sections 1 and 2 (ITE TM 1.01)	No	
ATMS Data Dictionary Sections 3 and 4 (ITE TM 1.02)	No	
Message Set for External TMC Communication (ITE-9604-1)	No	
NTCIP Class B Profile (AASHTO TS 3.3)	No	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No	
NTCIP Object Definitions for Environmental Sensor Stations (AASHTO TS 3.7)	No	
NTICP Object Definitions for Dynamic Message Signs (AASHTO TS 3.6)	No	
NTICP Object Definitions for Highway Advisory Radio (AASHTO TS 3.HAR)	No	
NTICP Object Definitions for Ramp Meter Control (AASHTO TS 3.RMC)	No	
NTICP Object Definitions for Transportation Sensor Systems (AASHTO TS 3.TSS)	No	
NTICP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No	
Would agency be willing to participate in testing of ITS Standards?	No	
Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?	NR	
INCIDENT MANAGEMENT SECTION		
Use of Service Patrols to Assist in Detection and Response to Incidents		
Publicly operated service patrol vehicles	No	
Privately operated service patrol vehicles operated under public contract	No	
Total number of freeway miles patrolled by these services	NR	NR
Miles Covered by Methods to Detect and Verify Incidents		
Free cellular phone call to a dedicated phone number other than 911	NR	NR
Police patrols	NR	NR
Computer algorithms linked to traffic surveillance equipment	54	134
CCTV	54	134
Private sector sources (e.g., Shadow Traffic, SmartRoutes)	NR	NR
Other (e.g., free cell phone call to an area radio system, etc.)	NR	NR
Procedures in place for Freeway Incident Response?		
Working agreement(s)/arrangement(s) with other agencies	No	
Inter-agency incident management admin. team that meets regularly	No	
Major incident response team that responds to major incidents	No	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No	
Central focal point for facilitating the two-way flow of information among agencies responding to an incident?		
The central focal point is a Freeway or Traffic Management Center	No	
The central focal point is a Police, Fire or joint dispatch center	No	
The central focal point is another center	Yes	
Methods of Communication Used On-Site at an Incident		
<u>Police</u>		
Two-way radio	No	
800 MHz trunked radio	No	
Cellular telephone	No	

Freeway Management
Agencies for Metropolitan Area: Phoenix

	Arizona Department of Transportation	
	1999	2005
Hand-held (i.e., walkie-talkie)	No	
Automated data systems (i.e., CAD)	No	
<u>Fire</u>		
Two-way radio	No	
800 MHz trunked radio	No	
Cellular telephone	No	
Hand-held (i.e., walkie-talkie)	No	
Automated data systems (i.e., CAD)	No	
<u>DOT</u>		
Two-way radio	No	
800 MHz trunked radio	No	
Cellular telephone	No	
Hand-held (i.e., walkie-talkie)	No	
Automated data systems (i.e., CAD)	No	
<u>Towing</u>		
Two-way radio	No	
800 MHz trunked radio	No	
Cellular telephone	No	
Hand-held (i.e., walkie-talkie)	No	
Automated data systems (i.e., CAD)	No	
Which police agencies typically respond to incidents on freeways?		
State Police	No	
County Police or Sheriff	No	
City Police	No	
Who provides on-site emergency medical response?		
Fire	No	
Emergency Management Service Agency	No	
Private hospital	No	
Has a multi-agency contact list been developed in area containing the names, phone numbers, etc. for the appropriate response personnel?	NR	
Is the Incident Command System used to manage incident scenes?	NR	
Is there a legal specification by state law or formal agreement as to who is "in charge" at the incident scene?		
Specified by state law?	No	
Formal agreement?	No	
Not specified or don't know?	No	
On-scene command post used to manage activities of responding agencies?	NR	
Are there communication linkages to a communications traffic/freeway mgt center?	NR	
Plan developed and adopted by responding agencies for staging and parking response vehicles and equip. at incident site that minimizes lane blockage and facilitates the re-opening of lanes?	NR	
Respondents protected through law or court opinion for liability claims		

Freeway Management
Agencies for Metropolitan Area: Phoenix

	Arizona Department of Transportation	
	1999	2005
for damages to vehicles or cargoes during clearance activities?	NR	
Are overturned tank trucks, which are intact and not leaking, uprighted without first off-loading?	NR	
Does your state or local jurisdiction have a law that requires drivers involved in property-damage-only accidents to move the vehicles from travel lanes to a safe location to exchange info and wait for police?	NR	
Have laws or policies regarding the removal of stalled/abandoned vehicles from freeway shoulders?	NR	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	NR	
Have policies or procedures for quick removal of vehicles?	NR	
Is Total Station equipment used to investigate major incidents?	NR	
Handling of Towing Responses to Incidents		
Formal contract based on qualifications?	No	
Rotation with companies under contract?	No	
Separate lists kept for light and heavy response and for specialty recovery?	NR	
Rotation list with minimal qualifications?	No	
In towing qualifications, do you require towers to be certified under the Towing and Recovery Ass. of America's National Drivers Cert. Program?	NR	
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: Phoenix

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

Freeway Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Arizona Department of Transportation	
	1999	2005
Arterial Management Agencies		
Provide Information	Peoria City, Town of Gilbert, Chandler City, Glendale City, Mesa City, Phoenix City, Tempe City, Maricopa County	None listed
Share Infrastructure	Peoria City, Town of Gilbert, Chandler City, Glendale City, Mesa City, Phoenix City, Tempe City, Maricopa County	None listed
Coordinate Operation	None listed	None listed
Emergency Management Agencies		
Provide Information	Arizona Department of Public Safety	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Freeway Management Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Public Transit Operators		
Provide Information	Phoenix Transit System	None listed
Share Infrastructure	Phoenix Transit System	None listed
Coordinate Operation	None listed	None listed
Receiving real-time information via electronic means from others		
Emergency Management agencies from which your agency receives incident clearance and/or incident severity and type		
Receive Arterial Incident Clearance Information	None listed	None listed
Receive Arterial Incident Severity Information	None listed	None listed
Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions		
	Peoria City, Town of Gilbert, Chandler City, Glendale City, Mesa City, Phoenix City, Tempe City	None listed
Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions		
	None listed	None listed

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

Appendix E
Freeway Management Information Collection and Dissemination

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

Agency Name	Arizona Department of Transportation	
	1999	2005
Agency Returned Survey?	Yes	
Freeway Management Section		
Data collected, archived, and/or transferred to another agency		
Collected by your agency	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification	NR
Archived by your agency	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification	NR
Transferred to another agency by your agency	NR	NR
Importance of making information available to the public		
Ranked High	NR	
Ranked Medium	NR	
Ranked Low	NR	
Groups that make requests for the data	Universities, State DOT personnel, Media (I.e., TV stations, radio stations), MPOs, Consultants	
What is the data used for?	Traffic analysis, Planning, Incident detection algorithm development	
Methods used to disseminate freeway information to the public		
Technologies your agency uses to disseminate:	Dedicated cable TV, Telephone system, Internet Web sites, Pagers or personal data assistants, Kiosks, E-mail or other direct PC communication	In-vehicle navigation systems
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting freeway conditions	www.azfms.com	
Telephone system for reporting freeway information to the public	NR	
Organizations your agency sends information for dissemination to the public	The Phoenix area FMS is a participant of Aztec. FMS traffic and incident data is available through the Aztec network. Any Aztec participant can access this information and then redistribute. Currently Etak is an Aztec participant and is disseminating FM	
Freeway Incident Management Section		
Methods used to distribute incident location and severity information to the public		
Technologies your agency uses to disseminate:	Telephone system, Internet Web sites, Pagers or personal data assistants, Kiosks	E-mail or other direct PC communication, In-vehicle navigation systems
Technologies your agency (through another agency or org.) uses to disseminate:	Dedicated cable TV	NR
Internet web site reporting incident information	www.azfms.com	
Telephone system for reporting incident information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	

Appendix F
Arterial Management Components

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Arizona Department of Transportation		Chandler City		Glendale City		Maricopa County	
	1999	2005	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		Yes		Yes	
ARTERIAL MANAGEMENT SECTION								
Number of arterial miles that agency owns or maintains	NR		74		55		NR	
Number of arterial miles that is used for planning	NR		74		25		NR	
Number of highway-rail intersections that agency maintains	NR		6		10		NR	
Number of highway-rail intersections that is used for planning	NR		8		6		NR	
Type of facilities used to conduct arterial management activities								
Activities housed in a free-standing dedicated building?	No		No		No		No	
Activities housed in a building shared with other activities?	No		Yes		Yes		No	
Activities conducted in a dedicated control room?	No		No		No		No	
Control room contains operator console(s)?	No		No		No		No	
Control room contains electronic wall map?	No		No		No		No	
Control room contains CCTV display(s)?	No		No		No		No	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		No		Yes		No	
Facilities are electronically linked to other transportation mgt facilities?	No		Yes		No		No	
Staffing and hours of operation of arterial management activities								
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		Yes		Yes		No	
Agency staff dedicated to transportation management duty	No		No		No		No	
Types of operations conducted for arterial management								
Incident detection and management?	No		No		No		No	
This metropolitan area?	No		No		No		No	
Other metropolitan area?	No		No		No		No	
Monitoring and troubleshooting status of system components?	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	

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Arizona Department of Transportation		Chandler City		Glendale City		Maricopa County	
	1999	2005	1999	2005	1999	2005	1999	2005
Describe agency's role in traffic signal control	NR		Operate signals on state owned and local owned roadways		Operate traffic signals on local owned roadways		NR	
Traffic Signals Operated by Agency								
Number of signalized intersections operated and owned by agency	NR	NR	80	120	146	NR	109	NR
Number of signalized intersections operated by agency but owned by another	NR	NR	NR	NR	0	NR	16	NR
Total number of signalized intersections operated by agency	156	NR	80	120	146	NR	125	NR
<u>Characteristics of signalized intersections that agency operates</u>								
Under closed loop or central system control	18	NR	69	120	43	NR	35	NR
Under real-time traffic adaptive control using advanced software	NR	NR	NR	NR	NR	NR	NR	NR
Using SCOOT	No		No		No		No	
Using SCATS	No		No		No		No	
Name of software	NR		NR		NR		NR	
Allow signal preemption for emergency vehicles	10	NR	80	120	83	NR	NR	NR
Allow signal priority for transit vehicles	0	NR	NR	NR	NR	NR	NR	NR
Within 200 feet of a highway-rail intersection	20	NR	1	1	NR	NR	5	NR
Within 200 feet of a highway-rail intersection that adjust signal timing	20	NR	1	1	NR	NR	5	NR
Software used to control the signals agency operates								
Date of last upgrade to traffic signal control system software?	May 1999		1998		April 1999		NR	
How often do you update signal timing?	Once per year		1 to 2 times per year		Annual		NR	
Software used and number of signalized intersections under control (1999, 2005)	Eagle Epack Master, NR, NR ECONOLITE system master, NR, NR		Monarc Central System (Eagle), 69, 120		Peek Controller Software, 146, NR		NR	
Controllers used to control signals								
NEMA	108	NR	80	120	146	NR	125	NR
170/179	48	NR	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
Technologies Associated with Highway-Rail Intersections								
Total number of highway-rail intersections under electronic surveillance	NR	NR	NR	NR	NR	NR	4	NR
<u>Highway-Rail intersection capabilities</u>								
Video surveillance	0	0	0	0	0	0	4	NR
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

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Arizona Department of Transportation		Chandler City		Glendale City		Maricopa County	
	1999	2005	1999	2005	1999	2005	1999	2005
Real-Time Electronic Traffic Data Collection Technologies								
Total number of signalized intersections covered by electronic surveillance	156	NR	17	43	6	NR	12	NR
<i>Number of signalized intersections with data collection technologies</i>								
Loop detectors	156	NR	17	35	6	NR	12	NR
Video detection cameras	0	0	0	8	0	0	0	0
Probe readers reading toll tags	0	0	0	0	0	0	0	0
Probe readers reading license plates	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Roadside Technologies used to Distribute Traveler Information								
<i>Number deployed</i>								
Highway Advisory Radio	NR	NR	NR	NR	NR	NR	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	NR	NR
VMS controlling parking access	NR	NR	NR	NR	NR	NR	NR	NR
<i>Miles covered</i>								
Highway Advisory Radio	NR	NR	NR	NR	NR	NR	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	NR	NR
Variable Message Signs (VMS) on Arterials								
Candidate locations for deployment of VMS where VMS has been deployed	42	NR	NR	4	NR	2	1	NR
Candidate locations for deployment of VMS	NR	NR	NR	NR	NR	NR	NR	NR
Communication Technologies								
<i>Signalized intersections communicated with by each type of communication</i>								
Twisted pair cable	48	NR	69	90	34	NR	0	0
Coaxial cable	48	NR	0	0	0	0	0	0
Fiber-optic cable	0	0	NR	30	0	0	0	0
Other (e.g., wireless, dial-up modems, leased lines, etc.)	0	0	0	5	18	0	0	0
Does agency convey information on highway-rail intersection crossing status to travelers via roadside media such as VMS or HAR?								
	No		No		No		No	
ITS Standards Used Related to Traffic Signal Control								
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		No		No		No	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		No		No		No	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		No		No		No	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		No		No		No	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		No		No		No	
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		No		No		No	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		No		No		No	
Would agency be willing to participate in testing of ITS Standards?	Yes		Yes		Yes		No	
Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?								
	No		No		No		No	
INCIDENT MANAGEMENT ON ARTERIAL STREETS								
Receive information on highway-rail intersection crossing blockages for the purpose of managing incident response?								
	No		No		No		No	
Use of Service Patrols to Assist in Detection and Response to Incidents								

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Arizona Department of Transportation		Chandler City		Glendale City		Maricopa County	
	1999	2005	1999	2005	1999	2005	1999	2005
Publicly operated service patrol vehicles	No		No		No		No	
Privately operated service patrol vehicles operated under public contract	No		No		No		No	
Total number of arterial miles patrolled by these services	NR	NR	NR	NR	NR	NR	NR	NR
Miles Covered by Methods to Detect and Verify Incidents								
Free cellular phone call to a dedicated phone number other than 911	0	0	0	0	0	0	0	0
Free cellular phone call to an area radio station	0	0	0	0	0	0	0	0
Police patrols	0	0	74	74	0	0	0	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	25	0	0	0	0
CCTV	0	0	0	10	0	0	0	0
Private sector sources (e.g., Shadow Traffic, Smart Routes)	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Procedures in place for Arterial Incident Response?								
Working agreement(s)/arrangement(s) with other agencies	No		No		Yes		No	
Inter-agency incident management admin. team that meets regularly	No		No		Yes		No	
Major incident response team that responds to major incidents	No		No		No		No	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		No		No		No	
Methods of Communication Used On-Site at an Incident								
<u>Police</u>								
Two-way radio	No		No		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	

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Arizona Department of Transportation		Chandler City		Glendale City		Maricopa County	
	1999	2005	1999	2005	1999	2005	1999	2005
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No		No	
Automated data systems (i.e., CAD)	No		No		No		No	
Other	No		No		No		No	
Which police agencies typically respond to incidents on arterials?								
State Police	No		No		No		No	
County Police or Sheriff	No		No		No		No	
City Police	No		No		No		No	
Who provides on-site emergency medical response?								
Fire	No		No		No		No	
Emergency Management Service Agency	No		No		No		No	
Private hospital	No		No		No		No	
Has a multi-agency contact list been developed in area containing the names, phone numbers, etc. for the appropriate response personnel?	NR		NR		NR		NR	
Is the Incident Command System used to manage incident scenes?	NR		NR		NR		NR	
Is there a legal specification by state law or formal agreement as to who is "in charge" at the incident scene?								
Specified by state law?	No		No		No		No	
Formal agreement?	No		No		No		No	
Not specified or don't know?	No		No		No		No	
On-scene command post used to manage activities of responding agencies?	NR		NR		NR		NR	
Are there communication linkages to a communications traffic/freeway mgt center?	NR		NR		NR		NR	
Plan developed and adopted by responding agencies for staging and parking response vehicles and equip. at incident site that minimizes lane blockage and facilitates the re-opening of lanes?	NR		NR		NR		NR	
Respondents protected through law or court opinion for liability claims for damages to vehicles or cargoes during clearance activities?	NR		NR		NR		NR	
Are overturned tank trucks, which are intact and not leaking, uprighted without first off-loading?	NR		NR		NR		NR	
Does your state or local jurisdiction have a law that requires drivers involved in property-damage-only accidents to move the vehicles from travel lanes to a safe location to exchange info and wait for police?	NR		NR		NR		NR	
Have laws or policies regarding the removal of stalled/abandoned vehicles from freeway shoulders?	NR		NR		NR		NR	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	NR		NR		NR		NR	
Have policies or procedures for quick removal of vehicles?	NR		NR		NR		NR	
Is Total Station equipment used to investigate major incidents?	NR		NR		NR		NR	
Handling of Towing Responses to Incidents								
Formal contract based on qualifications?	No		No		No		No	
Rotation with companies under contract?	No		No		No		No	
Separate lists kept for light and heavy response and for specialty recovery?	NR		NR		NR		NR	

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Arizona Department of Transportation		Chandler City		Glendale City		Maricopa County	
	1999	2005	1999	2005	1999	2005	1999	2005
Rotation list with minimal qualifications?	No		No		No		No	
In towing qualifications, do you require towers to be certified under the								
Towing and Recovery Ass. of America's National Drivers Cert. Program?	NR		NR		NR		NR	
DK: Don't know								
NR: No Response								
Leg: Legislation or action being planned								

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Mesa City		Peoria City		Phoenix City		Scottsdale City	
	1999	2005	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		Yes		Yes	
ARTERIAL MANAGEMENT SECTION								
Number of arterial miles that agency owns or maintains	170		56		NR		NR	
Number of arterial miles that is used for planning	NR		NR		NR		NR	
Number of highway-rail intersections that agency maintains	12		6		NR		NR	
Number of highway-rail intersections that is used for planning	0		6		NR		NR	
Type of facilities used to conduct arterial management activities								
Activities housed in a free-standing dedicated building?	No		No		No		No	
Activities housed in a building shared with other activities?	No		Yes		Yes		No	
Activities conducted in a dedicated control room?	No		No		Yes		No	
Control room contains operator console(s)?	No		No		Yes		No	
Control room contains electronic wall map?	No		No		Yes		No	
Control room contains CCTV display(s)?	No		No		Yes		No	
Activities conducted in a room containing workstations or PCs that manage traffic?	Yes		No		Yes		No	
Facilities are electronically linked to other transportation mgt facilities?	No		No		No		No	
Staffing and hours of operation of arterial management activities								
Number of full-time agency staff members	NR		NR		3		NR	
Number of full time contractor staff members	NR		NR		NR		NR	
Number of part-time agency staff members	NR		NR		NR		NR	
Number of part-time contractor staff members	NR		NR		NR		NR	
Staffed 24 hours day by agency staff or by others	NR		NR		NR		NR	
Staffed during peak hours only by agency staff or by others	NR		NR		NR		NR	
Staffed by others during off-peak hours	No		No		No		No	
Agency staff perform transportation management as an ancillary duty	No		No		No		No	
Agency staff dedicated to transportation management duty	No		No		Yes		No	
Types of operations conducted for arterial management								
Incident detection and management?	No		No		No		No	
This metropolitan area?	No		No		No		No	
Other metropolitan area?	No		No		No		No	
Monitoring and troubleshooting status of system components?	No		No		Yes		No	
Radio communications with other agencies?	No		No		No		No	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		No		No		No	
Manual override of traffic signal timing plans	No		No		No		No	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	No		No		No		No	

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Mesa City		Peoria City		Phoenix City		Scottsdale City	
	1999	2005	1999	2005	1999	2005	1999	2005
Describe agency's role in traffic signal control	State routes only		All roads in incorporated area except state and county routes		Operate traffic signals on state and local owned roadways		NR	
Traffic Signals Operated by Agency								
Number of signalized intersections operated and owned by agency	281	NR	43	NR	NR	NR	NR	NR
Number of signalized intersections operated by agency but owned by another	12	NR	0	NR	NR	NR	NR	NR
Total number of signalized intersections operated by agency	293	NR	43	NR	867	950	250	NR
<u>Characteristics of signalized intersections that agency operates</u>								
Under closed loop or central system control	290	NR	0	NR	NR	950	245	NR
Under real-time traffic adaptive control using advanced software	0	NR	0	NR	NR	NR	2	NR
Using SCOOT	No		No		No		No	
Using SCATS	No		No		No		No	
Name of software	NR		NR		NR		NR	
Allow signal preemption for emergency vehicles	163	NR	0	NR	6	30	250	NR
Allow signal priority for transit vehicles	0	NR	0	NR	7	7	0	NR
Within 200 feet of a highway-rail intersection	2	NR	0	NR	13	13	0	NR
Within 200 feet of a highway-rail intersection that adjust signal timing	2	NR	0	NR	13	13	0	NR
Software used to control the signals agency operates								
Date of last upgrade to traffic signal control system software?	Present		not applicable		June 1999		NR	
How often do you update signal timing?	Average every 6 months		every 2 years		Constant evaluation - varies by area		NR	
Software used and number of signalized intersections under control (1999, 2005)	SONEX /icons, 281, NR SONEX, NR, NR		NR		Computer ModComp, 300, 0 Transcore services 2000 modified, 160, 950		NR	
Controllers used to control signals								
NEMA	293	NR	0	0	367	950	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	10	0	0	0	0	0
Technologies Associated with Highway-Rail Intersections								
Total number of highway-rail intersections under electronic surveillance	NR	NR	NR	NR	NR	NR	NR	NR
<u>Highway-Rail intersection capabilities</u>								
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

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Mesa City		Peoria City		Phoenix City		Scottsdale City	
	1999	2005	1999	2005	1999	2005	1999	2005
Real-Time Electronic Traffic Data Collection Technologies								
Total number of signalized intersections covered by electronic surveillance	23	NR	NR	NR	30	50	NR	NR
<i>Number of signalized intersections with data collection technologies</i>								
Loop detectors	22	NR	0	0	30	50	0	0
Video detection cameras	1	NR	0	0	0	0	0	0
Probe readers reading toll tags	0	0	0	0	0	0	0	0
Probe readers reading license plates	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Roadside Technologies used to Distribute Traveler Information								
<i>Number deployed</i>								
Highway Advisory Radio	NR	NR	NR	NR	0	4	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	NR	NR
VMS controlling parking access	NR	NR	NR	NR	NR	NR	NR	NR
<i>Miles covered</i>								
Highway Advisory Radio	NR	NR	NR	NR	NR	10	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	NR	NR
Variable Message Signs (VMS) on Arterials								
Candidate locations for deployment of VMS where VMS has been deployed	4	NR	NR	NR	NR	15	8	NR
Candidate locations for deployment of VMS	NR	NR	NR	NR	NR	NR	8	NR
Communication Technologies								
<i>Signalized intersections communicated with by each type of communication</i>								
Twisted pair cable	43	120	0	0	30	0	0	0
Coaxial cable	0	0	0	0	0	0	0	0
Fiber-optic cable	0	100	0	0	10	50	0	0
Other (e.g., wireless, dial-up modems, leased lines, etc.)	242	152	0	0	480	900	0	0
Does agency convey information on highway-rail intersection crossing status to travelers via roadside media such as VMS or HAR?								
	No		No		No		No	
ITS Standards Used Related to Traffic Signal Control								
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		No		No		No	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		No		No		No	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		No		No		No	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		No		No		No	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		No		No		No	
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		No		No		No	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		No		No		No	
Would agency be willing to participate in testing of ITS Standards?	Yes		Yes		Yes		NR	
Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?								
	Yes		No		Yes		NR	
INCIDENT MANAGEMENT ON ARTERIAL STREETS								
Receive information on highway-rail intersection crossing blockages for the purpose of managing incident response?								
	No		Yes		No		No	
Use of Service Patrols to Assist in Detection and Response to Incidents								

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Mesa City		Peoria City		Phoenix City		Scottsdale City	
	1999	2005	1999	2005	1999	2005	1999	2005
Publicly operated service patrol vehicles	No		No		No		No	
Privately operated service patrol vehicles operated under public contract	No		No		No		No	
Total number of arterial miles patrolled by these services	NR	NR	NR	NR	NR	NR	NR	NR
Miles Covered by Methods to Detect and Verify Incidents								
Free cellular phone call to a dedicated phone number other than 911	0	0	0	0	0	0	0	0
Free cellular phone call to an area radio station	0	0	0	0	0	0	0	0
Police patrols	0	0	0	0	0	0	0	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	0	0	0	0	0
CCTV	0	0	0	0	0	0	7	NR
Private sector sources (e.g., Shadow Traffic, Smart Routes)	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Procedures in place for Arterial Incident Response?								
Working agreement(s)/arrangement(s) with other agencies	No		Yes		No		No	
Inter-agency incident management admin. team that meets regularly	No		Yes		No		No	
Major incident response team that responds to major incidents	No		Yes		No		No	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		No		No		No	
Methods of Communication Used On-Site at an Incident								
<u>Police</u>								
Two-way radio	No		No		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	

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Mesa City		Peoria City		Phoenix City		Scottsdale City	
	1999	2005	1999	2005	1999	2005	1999	2005
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No		No	
Automated data systems (i.e., CAD)	No		No		No		No	
Other	No		No		No		No	
Which police agencies typically respond to incidents on arterials?								
State Police	No		No		No		No	
County Police or Sheriff	No		No		No		No	
City Police	No		Yes		No		No	
Who provides on-site emergency medical response?								
Fire	No		Yes		No		No	
Emergency Management Service Agency	No		No		No		No	
Private hospital	No		No		No		No	
Has a multi-agency contact list been developed in area containing the names, phone numbers, etc. for the appropriate response personnel?	NR		Yes		NR		NR	
Is the Incident Command System used to manage incident scenes?	NR		Yes		NR		NR	
Is there a legal specification by state law or formal agreement as to who is "in charge" at the incident scene?								
Specified by state law?	No		No		No		No	
Formal agreement?	No		Yes		No		No	
Not specified or don't know?	No		No		No		No	
On-scene command post used to manage activities of responding agencies?	NR		DK		NR		NR	
Are there communication linkages to a communications traffic/freeway mgt center?	NR		NR		NR		NR	
Plan developed and adopted by responding agencies for staging and parking response vehicles and equip. at incident site that minimizes lane blockage and facilitates the re-opening of lanes?	NR		DK		NR		NR	
Respondents protected through law or court opinion for liability claims for damages to vehicles or cargoes during clearance activities?	NR		DK		NR		NR	
Are overturned tank trucks, which are intact and not leaking, uprighted without first off-loading?	NR		Yes		NR		NR	
Does your state or local jurisdiction have a law that requires drivers involved in property-damage-only accidents to move the vehicles from travel lanes to a safe location to exchange info and wait for police?	NR		No		NR		NR	
Have laws or policies regarding the removal of stalled/abandoned vehicles from freeway shoulders?	NR		No		NR		NR	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	NR		NR		NR		NR	
Have policies or procedures for quick removal of vehicles?	NR		NR		NR		NR	
Is Total Station equipment used to investigate major incidents?	NR		Yes		NR		NR	
Handling of Towing Responses to Incidents								
Formal contract based on qualifications?	No		No		No		No	
Rotation with companies under contract?	No		Yes		No		No	
Separate lists kept for light and heavy response and for specialty recovery?	NR		NR		NR		NR	

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Mesa City		Peoria City		Phoenix City		Scottsdale City	
	1999	2005	1999	2005	1999	2005	1999	2005
Rotation list with minimal qualifications?	No		No		No		No	
In towing qualifications, do you require towers to be certified under the								
Towing and Recovery Ass. of America's National Drivers Cert. Program?	NR		Yes		NR		NR	
DK: Don't know								
NR: No Response								
Leg: Legislation or action being planned								

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Tempe City		Town of Gilbert		Totals	
	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		10	
ARTERIAL MANAGEMENT SECTION						
Number of arterial miles that agency owns or maintains	48		NR		403	
Number of arterial miles that is used for planning	48		NR		147	
Number of highway-rail intersections that agency maintains	10		NR		44	
Number of highway-rail intersections that is used for planning	10		NR		30	
Type of facilities used to conduct arterial management activities						
Activities housed in a free-standing dedicated building?	No		No		0	
Activities housed in a building shared with other activities?	Yes		No		5	
Activities conducted in a dedicated control room?	Yes		No		2	
Control room contains operator console(s)?	Yes		No		2	
Control room contains electronic wall map?	Yes		No		2	
Control room contains CCTV display(s)?	Yes		No		2	
Activities conducted in a room containing workstations or PCs that manage traffic?	Yes		No		4	
Facilities are electronically linked to other transportation mgt facilities?	Yes		No		2	
Staffing and hours of operation of arterial management activities						
Number of full-time agency staff members	1		NR		4	
Number of full time contractor staff members	NR		NR		0	
Number of part-time agency staff members	NR		NR		0	
Number of part-time contractor staff members	NR		NR		0	
Staffed 24 hours day by agency staff or by others	NR		NR		0	
Staffed during peak hours only by agency staff or by others	agency		NR		0	
Staffed by others during off-peak hours	No		No		0	
Agency staff perform transportation management as an ancillary duty	No		No		2	
Agency staff dedicated to transportation management duty	Yes		No		2	
Types of operations conducted for arterial management						
Incident detection and management?	Yes		No		1	
This metropolitan area?	Yes		No		1	
Other metropolitan area?	No		No		0	
Monitoring and troubleshooting status of system components?	Yes		No		2	
Radio communications with other agencies?	No		No		0	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		No		0	
Manual override of traffic signal timing plans	Yes		No		1	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	No		No		0	

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Tempe City		Town of Gilbert		Totals	
	1999	2005	1999	2005	1999	2005
Describe agency's role in traffic signal control	Operate traffic signals on state, county, and local owned roadways		Operate signals on state and local owned roadways			
Traffic Signals Operated by Agency						
Number of signalized intersections operated and owned by agency	174	195	50	100	883	415
Number of signalized intersections operated by agency but owned by another	NR	NR	2	2	30	2
Total number of signalized intersections operated by agency	174	195	50	100	2184	1365
<u>Characteristics of signalized intersections that agency operates</u>						
Under closed loop or central system control	174	195	0	100	874	1365
Under real-time traffic adaptive control using advanced software	0	0	NR	NR	2	0
Using SCOOT	No		No		0	
Using SCATS	No		No		0	
Name of software	NR		NR			
Allow signal preemption for emergency vehicles	105	180	50	100	747	430
Allow signal priority for transit vehicles	0	25	NR	NR	7	32
Within 200 feet of a highway-rail intersection	10	20	0	0	51	34
Within 200 feet of a highway-rail intersection that adjust signal timing	3	NR	NR	NR	44	14
Software used to control the signals agency operates						
Date of last upgrade to traffic signal control system software?	July 1992 - July 1999 Y2K mods.		no central software yet			
How often do you update signal timing?	Dynamic process as needed		annually			
Software used and number of signalized intersections under control (1999, 2005)	COMPUTRAN MTCS PC, 174, 195		NR			
Controllers used to control signals						
NEMA	174	184	50	100	1343	1354
170/179	0	0	0	0	48	0
2070 controller	1	15	0	0	1	15
Other	0	0	0	0	10	0
Technologies Associated with Highway-Rail Intersections						
Total number of highway-rail intersections under electronic surveillance	4	25	NR	NR	8	25
<u>Highway-Rail intersection capabilities</u>						
Video surveillance	0	0	0	0	4	0
Electronic surveillance other than video	4	25	0	0	4	25
Ability to predict train arrival electronically	4	25	0	0	4	25
Equipped with electronic traffic violator devices	0	0	0	0	0	0
Other	0	0	0	0	0	0

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Tempe City		Town of Gilbert		Totals	
	1999	2005	1999	2005	1999	2005
Real-Time Electronic Traffic Data Collection Technologies						
Total number of signalized intersections covered by electronic surveillance	24	50	NR	NR	268	143
<i>Number of signalized intersections with data collection technologies</i>						
Loop detectors	16	26	0	0	259	111
Video detection cameras	8	20	0	0	9	28
Probe readers reading toll tags	0	0	0	0	0	0
Probe readers reading license plates	0	0	0	0	0	0
Other	0	0	0	0	0	0
Roadside Technologies used to Distribute Traveler Information						
<i>Number deployed</i>						
Highway Advisory Radio	NR	NR	NR	NR	0	4
In-Vehicle Signing (IVS)	NR	NR	NR	NR	0	0
VMS controlling parking access	NR	NR	NR	NR	0	0
<i>Miles covered</i>						
Highway Advisory Radio	NR	NR	NR	NR	0	10
In-Vehicle Signing (IVS)	NR	NR	NR	NR	0	0
Variable Message Signs (VMS) on Arterials						
Candidate locations for deployment of VMS where VMS has been deployed	NR	NR	NR	NR	55	21
Candidate locations for deployment of VMS	NR	NR	NR	NR	8	0
Communication Technologies						
<i>Signalized intersections communicated with by each type of communication</i>						
Twisted pair cable	174	195	0	0	398	405
Coaxial cable	0	0	0	0	48	0
Fiber-optic cable	NR	NR	NR	75	10	255
Other (e.g., wireless, dial-up modems, leased lines, etc.)	174	195	0	25	914	1277
Does agency convey information on highway-rail intersection crossing status to travelers via roadside media such as VMS or HAR?						
	Yes		No		1	
ITS Standards Used Related to Traffic Signal Control						
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		No		0	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		No		0	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		No		0	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		No		0	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		No		0	
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		No		0	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		No		0	
Would agency be willing to participate in testing of ITS Standards?	Yes		No		7	
Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?						
	Yes		No		3	
INCIDENT MANAGEMENT ON ARTERIAL STREETS						
Receive information on highway-rail intersection crossing blockages for the purpose of managing incident response?						
	No		No		1	
Use of Service Patrols to Assist in Detection and Response to Incidents						

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Tempe City		Town of Gilbert		Totals	
	1999	2005	1999	2005	1999	2005
Publicly operated service patrol vehicles	Yes		No		1	
Privately operated service patrol vehicles operated under public contract	No		No		0	
Total number of arterial miles patrolled by these services	48	NR	NR	NR	48	0
Miles Covered by Methods to Detect and Verify Incidents						
Free cellular phone call to a dedicated phone number other than 911	0	0	0	0	0	0
Free cellular phone call to an area radio station	0	0	0	0	0	0
Police patrols	0	0	0	0	74	74
Computer algorithms linked to traffic surveillance equipment	0	0	0	0	0	25
CCTV	2	20	0	0	9	30
Private sector sources (e.g., Shadow Traffic, Smart Routes)	0	0	0	0	0	0
Other	0	0	0	0	0	0
Procedures in place for Arterial Incident Response?						
Working agreement(s)/arrangement(s) with other agencies	No		No		2	
Inter-agency incident management admin. team that meets regularly	No		No		2	
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		0	
Methods of Communication Used On-Site at an Incident						
<u>Police</u>						
Two-way radio	No		No		0	
800 MHz trunked radio	No		No		0	
Cellular telephone	No		No		0	
Hand-held (i.e., walkie-talkie)	No		No		0	
Automated data systems (i.e., CAD)	No		No		0	
Other	No		No		0	
<u>Fire</u>						
Two-way radio	No		No		0	
800 MHz trunked radio	No		No		0	
Cellular telephone	No		No		0	
Hand-held (i.e., walkie-talkie)	No		No		0	
Automated data systems (i.e., CAD)	No		No		0	
Other	No		No		0	
<u>DOT</u>						
Two-way radio	No		No		0	
800 MHz trunked radio	No		No		0	
Cellular telephone	No		No		0	
Hand-held (i.e., walkie-talkie)	No		No		0	
Automated data systems (i.e., CAD)	No		No		0	
Other	No		No		0	
<u>Towing</u>						
Two-way radio	No		No		0	

Arterial Management
Agencies for Metropolitan Area: Phoenix

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

Arterial Management
Agencies for Metropolitan Area: Phoenix

	Tempe City		Town of Gilbert		Totals	
	1999	2005	1999	2005	1999	2005
Rotation list with minimal qualifications?	No		No		0	
In towing qualifications, do you require towers to be certified under the						
Towing and Recovery Ass. of America's National Drivers Cert. Program?	NR		NR		1	
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: Phoenix

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

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Arizona Department of Transportation		Chandler City	
	1999	2005	1999	2005
Share Infrastructure	None listed	None listed	None listed	Arizona Department of Transportation
Coordinate Operation	None listed	None listed	None listed	Arizona Department of Transportation, Mesa, Tempe, Gilbert
Public Transit Operators Agencies				
Provide Information	None listed	None listed	None listed	Regional Public Transportation Authority
Share Infrastructure	None listed	None listed	None listed	Regional Public Transportation Authority

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Arizona Department of Transportation		Chandler City	
	1999	2005	1999	2005
Coordinate Operation	None listed	None listed	None listed	Regional Public Transportation Authority
Arterial Management Agencies				
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
Receiving real-time information via electronic means from others				
Freeway Management agencies from which your agency receives				
<i>freeway travel times, speeds, and conditions</i>	None listed	None listed	Arizona Department of Transportation	Arizona Department of Transportation
Public Transit operators from which your agency receives				
<i>arterial travel times derived from vehicle probes</i>	None listed	None listed	Regional Public Transportation Authority	None listed
Incident Management agencies from which your agency receives				

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Arizona Department of Transportation		Chandler City	
	1999	2005	1999	2005
<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
<i>Toll Collection agencies from which your agency receives arterial travel times derived from vehicles probes</i>				
<i>times derived from vehicles probes</i>	None listed	None listed	None listed	None listed
Arterial Incident Management Section				
Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation				
Emergency Management Agencies				
Provide Information	None listed	None listed	Tempe City Fire Department, Mesa City Fire Department, Arizona Department of Public Safety, Phoenix City Fire & EMS Department (EMS), Tempe City Police Department, Phoenix City Police Department, Chandler City Fire Department	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Arizona Department of Transportation		Chandler City	
	1999	2005	1999	2005
Share Infrastructure	None listed	None listed	Tempe City Fire Department, Mesa City Fire Department, Arizona Department of Public Safety, Phoenix City Fire & EMS Department (EMS), Tempe City Police Department, Phoenix City Police Department, Chandler City Fire Department	None listed
Coordinate Operation	None listed	None listed	Tempe City Fire Department, Mesa City Fire Department, Arizona Department of Public Safety, Phoenix City Fire & EMS Department (EMS), Tempe City Police Department, Phoenix City Police Department, Chandler City Fire Department	None listed
Freeway Management Agencies				
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
Public Transit Operators				
Provide Information	None listed	None listed	Regional Public Transportation Authority	None listed
Share Infrastructure	None listed	None listed	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Arizona Department of Transportation		Chandler City	
	1999	2005	1999	2005
Coordinate Operation	None listed	None listed	None listed	None listed
Receiving real-time information via electronic means from others				
<i>Emergency Management agencies from which your agency receives arterial incident clearance and/or arterial incident severity</i>				
Receive Arterial Incident Clearance Information	None listed	None listed	None listed	None listed
Receive Arterial Incident Severity Information	None listed	None listed	None listed	None listed
<i>Arterial Management agencies from which your agency receives</i>				
<i>arterial travel times, speeds, and conditions</i>	None listed	None listed	Mesa City, Maricopa County, Arizona Department of Transportation	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Arizona Department of Transportation		Chandler City	
	1999	2005	1999	2005
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>				
	None listed	None listed	Arizona Department of Transportation	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: Phoenix

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

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Glendale City		Maricopa County	
	1999	2005	1999	2005
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	Arizona Department of Transportation	None listed	None listed
Public Transit Operators Agencies				
Provide Information	Peoria Transit, Surprise Dial-A-Ride, Scottsdale City, Sun Cities Area Transit System, Phoenix Transit System, Mesa City, Maricopa County Special Transportation Services, Regional Public Transportation Authority	Peoria Transit, Surprise Dial-A-Ride, Scottsdale City, Sun Cities Area Transit System, Phoenix Transit System, Mesa City, Maricopa County Special Transportation Services, Regional Public Transportation Authority	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Glendale City		Maricopa County	
	1999	2005	1999	2005
Coordinate Operation	Peoria Transit, Phoenix Transit System, Maricopa County Special Transportation Services, Regional Public Transportation Authority	Peoria Transit, Phoenix Transit System, Maricopa County Special Transportation Services, Regional Public Transportation Authority	None listed	None listed
Arterial Management Agencies				
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
Receiving real-time information via electronic means from others				
Freeway Management agencies from which your agency receives				
<i>freeway travel times, speeds, and conditions</i>	Arizona Department of Tra	None listed	None listed	None listed
Public Transit operators from which your agency receives				
<i>arterial travel times derived from vehicle probes</i>	None listed	None listed	None listed	None listed
Incident Management agencies from which your agency receives				

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Glendale City		Maricopa County	
	1999	2005	1999	2005
<i>incident clearance and/or incident severity, location, and type information</i>				
Receive information on Incident Clearance	None listed	Arizona Department of Transportation	None listed	None listed
Receive information on Incident Severity, Location, and Type	None listed	Arizona Department of Transportation	None listed	None listed
<i>Toll Collection agencies from which your agency receives arterial travel times derived from vehicles probes</i>	None listed	None listed	None listed	None listed
Arterial Incident Management Section				
Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation				
Emergency Management Agencies				
Provide Information	Tempe City Fire Department, Mesa City Fire Department, Phoenix City Fire & EMS Department, Chandler City Fire Department, Glendale Police Department	Tempe City Fire Department, Mesa City Fire Department, Phoenix City Fire & EMS Department, Chandler City Fire Department, Glendale Police Department	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Glendale City		Maricopa County	
	1999	2005	1999	2005
Share Infrastructure	Tempe City Fire Department, Mesa City Fire Department, Phoenix City Fire & EMS Department, Chandler City Fire Department, Glendale Police Department	Tempe City Fire Department, Mesa City Fire Department, Phoenix City Fire & EMS Department, Chandler City Fire Department, Glendale Police Department	None listed	None listed
Coordinate Operation	Peoria City Police Department, Arizona Department of Public Safety, Chandler City Police Department, Mesa City Police Department, Tempe City Police Department, Phoenix City Police Department, Scottsdale Fire Department/ Rural Metro Corporation, Scottsdale Police Department	Peoria City Police Department, Arizona Department of Public Safety, Chandler City Police Department, Mesa City Police Department, Tempe City Police Department, Phoenix City Police Department, Scottsdale Fire Department/ Rural Metro Corporation, Scottsdale Police Department	None listed	None listed
Freeway Management Agencies				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	Arizona Department of Transportation	Arizona Department of Transportation	None listed	None listed
Public Transit Operators				
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: Phoenix

Agency Name	Glendale City		Maricopa County	
	1999	2005	1999	2005
Coordinate Operation	Peoria Transit, Surprise Dial-A-Ride, Scottsdale City, Sun Cities Area Transit System, Phoenix Transit System, Mesa City, Maricopa County Special Transportation Services, Glendale Dial-A-Ride, Regional Public Transportation Authority	Peoria Transit, Surprise Dial-A-Ride, Scottsdale City, Sun Cities Area Transit System, Phoenix Transit System, Mesa City, Maricopa County Special Transportation Services, Glendale Dial-A-Ride, Regional Public Transportation Authority	None listed	None listed
Receiving real-time information via electronic means from others				
Emergency Management agencies from which your agency receives arterial incident clearance and/or arterial incident severity				
Receive Arterial Incident Clearance Information	Tempe City Fire Department, Mesa City Fire Department, Arizona Department of Public Safety, Phoenix City Fire & EMS Department, Chandler City Fire Department, Glendale Police Department	Tempe City Fire Department, Mesa City Fire Department, Arizona Department of Public Safety, Phoenix City Fire & EMS Department, Chandler City Fire Department, Glendale Police Department	None listed	None listed
Receive Arterial Incident Severity Information	Tempe City Fire Department, Mesa City Fire Department, Arizona Department of Public Safety, Phoenix City Fire & EMS Department, Chandler City Fire Department, Glendale Police Department	Tempe City Fire Department, Mesa City Fire Department, Arizona Department of Public Safety, Phoenix City Fire & EMS Department, Chandler City Fire Department, Glendale Police Department	None listed	None listed
Arterial Management agencies from which your agency receives				
arterial travel times, speeds, and conditions	None listed	None listed	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Glendale City		Maricopa County	
	1999	2005	1999	2005
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>				
	None listed	None listed	None listed	None listed

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

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Mesa City		Peoria City	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Arterial Management Section				
<u>Arterial Mgt. agencies in metropolitan area with which you share info.</u>				
Share Timing Plans Information	Town of Gilbert, Chandler City, Tempe City, Arizona Department of Transportation, Maricopa County	None listed	Glendale City, Phoenix City, Maricopa County	None listed
Coordinate Changes to Timing Plans	Town of Gilbert, Chandler City, Tempe City	None listed	None listed	None listed
Turn over Control of Signals	None listed	None listed	None listed	None listed
Agencies your agency provides arterial travel times, speeds, and conditions information, share infrastructure or coordinates operation				
<i>Freeway Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	Arizona Department of Transportation	None listed	None listed	None listed
<i>Incident Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed

Arterial Management Integration
 Agencies for Metropolitan Area: Phoenix

Agency Name	Mesa City		Peoria 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
Public Transit Operators Agencies				
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: Phoenix

Agency Name	Mesa City		Peoria City	
	1999	2005	1999	2005
Coordinate Operation	None listed	None listed	None listed	None listed
Arterial Management Agencies				
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
Receiving real-time information via electronic means from others				
Freeway Management agencies from which your agency receives				
<i>freeway travel times, speeds, and conditions</i>	Arizona Department of Tra	None listed	None listed	None listed
Public Transit operators from which your agency receives				
<i>arterial travel times derived from vehicle probes</i>	None listed	None listed	None listed	None listed
Incident Management agencies from which your agency receives				

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Mesa City		Peoria City	
	1999	2005	1999	2005
<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
<i>Toll Collection agencies from which your agency receives arterial travel times derived from vehicles probes</i>				
<i>times derived from vehicles probes</i>	None listed	None listed	None listed	None listed
Arterial Incident Management Section				
Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation				
Emergency Management Agencies				
Provide Information	None listed	None listed	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Mesa City		Peoria 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
<i>Freeway Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<i>Public Transit Operators</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Mesa City		Peoria City	
	1999	2005	1999	2005
Coordinate Operation	None listed	None listed	None listed	None listed
<u>Receiving real-time information via electronic means from others</u>				
<i>Emergency Management agencies from which your agency receives arterial incident clearance and/or arterial incident severity</i>				
Receive Arterial Incident Clearance Information	None listed	None listed	None listed	None listed
Receive Arterial Incident Severity Information	None listed	None listed	None listed	None listed
<i>Arterial Management agencies from which your agency receives</i>				
<i>arterial travel times, speeds, and conditions</i>	None listed	None listed	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Mesa City		Peoria City	
	1999	2005	1999	2005
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>				
	None listed	None listed	None listed	None listed

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

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Phoenix City		Scottsdale City	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Arterial Management Section				
<u>Arterial Mgt. agencies in metropolitan area with which you share info.</u>				
Share Timing Plans Information	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
<u>Agencies your agency provides arterial travel times, speeds, and conditions information, share infrastructure or coordinates operation</u>				
<i>Freeway Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
<i>Incident Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed

Arterial Management Integration
 Agencies for Metropolitan Area: Phoenix

Agency Name	Phoenix City		Scottsdale 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
Public Transit Operators Agencies				
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: Phoenix

Agency Name	Phoenix City		Scottsdale City	
	1999	2005	1999	2005
Coordinate Operation				
	None listed	None listed	None listed	None listed
Arterial Management Agencies				
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
Receiving real-time information via electronic means from others				
Freeway Management agencies from which your agency receives				
<i>freeway travel times, speeds, and conditions</i>	Arizona Department of Transportation	Arizona Department of Transportation	short survey	None listed
Public Transit operators from which your agency receives				
<i>arterial travel times derived from vehicle probes</i>	None listed	None listed	None listed	None listed
Incident Management agencies from which your agency receives				

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Phoenix City		Scottsdale City	
	1999	2005	1999	2005
<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
<i>Toll Collection agencies from which your agency receives arterial travel times derived from vehicles probes</i>				
Arterial Incident Management Section				
<i>Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation</i>				
<i>Emergency Management Agencies</i>				
Provide Information	None listed	None listed	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Phoenix City		Scottsdale 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
Freeway Management Agencies				
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
Public Transit Operators				
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: Phoenix

Agency Name	Phoenix City		Scottsdale City	
	1999	2005	1999	2005
Coordinate Operation	None listed	None listed	None listed	None listed
Receiving real-time information via electronic means from others				
<i>Emergency Management agencies from which your agency receives arterial incident clearance and/or arterial incident severity</i>				
Receive Arterial Incident Clearance Information	None listed	None listed	short survey	None listed
Receive Arterial Incident Severity Information	None listed	None listed	None listed	None listed
<i>Arterial Management agencies from which your agency receives</i>				
<i>arterial travel times, speeds, and conditions</i>	None listed	None listed	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Phoenix City		Scottsdale City	
	1999	2005	1999	2005
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>				
	None listed	None listed	None listed	None listed

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

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Tempe City		Town of Gilbert	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Arterial Management Section				
<u>Arterial Mgt. agencies in metropolitan area with which you share info.</u>				
Share Timing Plans Information	Town of Gilbert, Scottsdale City, Mesa City, Phoenix City, Tempe City, Arizona Department of Transportation	None listed	Chandler City, Mesa City	Mesa City
Coordinate Changes to Timing Plans	Town of Gilbert, Scottsdale City, Mesa City, Phoenix City, Tempe City, Arizona Department of Transportation	None listed	Chandler City, Mesa City	Chandler City, Mesa City
Turn over Control of Signals	None listed	None listed	None listed	None listed
Agencies your agency provides arterial travel times, speeds, and conditions information, share infrastructure or coordinates operation				
<i>Freeway Management Agencies</i>				
Provide Information	McDOT, Arizona Department of Transportation	None listed	None listed	Arizona Department of Transportation
Share Infrastructure	McDOT, Arizona Department of Transportation	None listed	None listed	None listed
Coordinate Operation	McDOT, Arizona Department of Transportation	None listed	None listed	None listed
<i>Incident Management Agencies</i>				
Provide Information	Arizona Department of Transportation, McDOT	None listed	None listed	Arizona Department of Transportation

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Tempe City		Town of Gilbert	
	1999	2005	1999	2005
Share Infrastructure	Arizona Department of Transportation, McDOT	None listed	None listed	None listed
Coordinate Operation	Arizona Department of Transportation, McDOT	None listed	None listed	None listed
Public Transit Operators Agencies				
Provide Information	Scottsdale City, Phoenix Transit System, Mesa City, Regional Public Transportation Authority, ASU Flash	None listed	None listed	Regional Public Transportation Authority
Share Infrastructure	Scottsdale City, Phoenix Transit System, Mesa City, Regional Public Transportation Authority, ASU Flash	None listed	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Tempe City		Town of Gilbert	
	1999	2005	1999	2005
Coordinate Operation	Scottsdale City, Phoenix Transit System, Mesa City, Regional Public Transportation Authority, ASU Flash	None listed	None listed	None listed
Arterial Management Agencies				
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
Receiving real-time information via electronic means from others				
Freeway Management agencies from which your agency receives				
<i>freeway travel times, speeds, and conditions</i>	Arizona Department of Transportation, McDOT	None listed	Arizona Department of Transportation	Arizona Department of Transportation
Public Transit operators from which your agency receives				
<i>arterial travel times derived from vehicle probes</i>	Scottsdale City, Mesa City, Phoenix Transit System, Regional Public Transportation Authority	None listed	Regional Public Transportation Authority	Regional Public Transportation Authority
Incident Management agencies from which your agency receives				

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Tempe City		Town of Gilbert	
	1999	2005	1999	2005
<i>incident clearance and/or incident severity, location, and type information</i>				
Receive information on Incident Clearance	Arizona Department of Transportation, McDOT	None listed	None listed	Arizona Department of Transportation
Receive information on Incident Severity, Location, and Type	Arizona Department of Transportation, McDOT	None listed	None listed	None listed
<i>Toll Collection agencies from which your agency receives arterial travel times derived from vehicles probes</i>	None listed	None listed	None listed	None listed
Arterial Incident Management Section				
<u>Agencies your agency provides incident severity, location, and type info. and/or shares infrastructure and/or coordinates operation</u>				
<i>Emergency Management Agencies</i>				
Provide Information	Tempe City Fire Department, Mesa City Fire Department, Arizona Department of Public Safety, Phoenix City Police Department	Chandler City Police Department, Mesa City Police Department, Tempe City Police Department, Scottsdale Fire Department/ Rural Metro Corporation	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Tempe City		Town of Gilbert	
	1999	2005	1999	2005
Share Infrastructure	Tempe City Fire Department, Mesa City Fire Department, Arizona Department of Public Safety, Phoenix City Police Department	Chandler City Police Department, Mesa City Police Department, Tempe City Police Department, Scottsdale Fire Department/ Rural Metro Corporation	None listed	None listed
Coordinate Operation	Tempe City Fire Department, Mesa City Fire Department, Arizona Department of Public Safety, Phoenix City Police Department	Chandler City Police Department, Mesa City Police Department, Tempe City Police Department, Scottsdale Fire Department/ Rural Metro Corporation	None listed	None listed
Freeway Management Agencies				
Provide Information	Arizona Department of Transportation, McDOT	None listed	None listed	Arizona Department of Transportation
Share Infrastructure	Arizona Department of Transportation, McDOT	None listed	None listed	None listed
Coordinate Operation	Arizona Department of Transportation, McDOT	None listed	None listed	None listed
Public Transit Operators				
Provide Information	Scottsdale City, Phoenix Transit System, Regional Public Transportation Authority	None listed	None listed	Regional Public Transportation Authority
Share Infrastructure	Scottsdale City, Phoenix Transit System, Regional Public Transportation Authority	None listed	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Tempe City		Town of Gilbert	
	1999	2005	1999	2005
Coordinate Operation	Scottsdale City, Phoenix Transit System, Regional Public Transportation Authority	None listed	None listed	None listed
Receiving real-time information via electronic means from others				
Emergency Management agencies from which your agency receives arterial incident clearance and/or arterial incident severity				
Receive Arterial Incident Clearance Information	Tempe City Fire Department, Mesa City Fire Department, Arizona Department of Public Safety, Chandler City Police Department, Phoenix City Fire & EMS Department	Tempe City Police Department	None listed	None listed
Receive Arterial Incident Severity Information	None listed	Tempe City Fire Department, Mesa City Fire Department, Arizona Department of Public Safety, Chandler City Police Department, Phoenix City Fire & EMS Department, Tempe City Police Department	None listed	None listed
Arterial Management agencies from which your agency receives				
arterial travel times, speeds, and conditions	None listed	Peoria City, Town of Gilbert, Scottsdale City, Chandler City, Glendale City, Mesa City, Phoenix City, Maricopa County, Arizona Department of Transportation	None listed	Glendale City, Mesa City, Arizona Department of Transportation

Arterial Management Integration
Agencies for Metropolitan Area: Phoenix

Agency Name	Tempe City		Town of Gilbert	
	1999	2005	1999	2005
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>				
	Arizona Department of Transportation	None listed	None listed	Arizona Department of Transportation

*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: Phoenix

Agency Name	Arizona Department of Transportation		Chandler City	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Arterial Management Section				
Data collected, archived, and/or transferred to another agency				
Collected by your agency	NR	NR	NR	NR
Archived by your agency	NR	NR	NR	NR
Transferred to another agency by your agency	NR	NR	NR	NR
Importance of making information available to the public				
Ranked High	NR		NR	
Ranked Medium	NR		NR	
Ranked Low	NR		NR	
Groups that make requests for the data	NR		NR	
What is the data used for?	NR		NR	
Methods used to disseminate arterial information to the public				
Technologies your agency uses to disseminate:	Dedicated cable TV, Telephone system, Internet Web sites	NR	NR	Dedicated cable TV, Internet Web sites
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	Internet Web sites, Kiosks
Internet web site reporting arterial conditions	NR		NR	
Telephone system for reporting arterial information to the public	NR		NR	

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

Agency Name	Arizona Department of Transportation		Chandler City	
	1999	2005	1999	2005
Organizations your agency sends information for dissemination to the public	NR		Part of the AzTech data server: Phoenix; ADOT; MCDOT; Tempe; Mesa; Glendale; Gilbert; Scottsdale	
Arterial Incident Management Section				
Methods used to distribute incident location and severity information to the public				
Technologies your agency uses to disseminate:	NR	NR	NR	Dedicated cable TV, Internet Web sites
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	Internet Web sites, Kiosks
Internet web site reporting incident information	NR		NR	
Telephone system for reporting incident information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	

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

Agency Name	Glendale City		Maricopa County	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Arterial Management Section				
Data collected, archived, and/or transferred to another agency				
Collected by your agency	NR	NR	NR	NR
Archived by your agency	NR	NR	NR	NR
Transferred to another agency by your agency	NR	NR	NR	NR
Importance of making information available to the public				
Ranked High	NR		NR	
Ranked Medium	NR		NR	
Ranked Low	NR		NR	
Groups that make requests for the data	NR		NR	
What is the data used for?	NR		NR	
Methods used to disseminate arterial information to the public				
Technologies your agency uses to disseminate:	Kiosks	Dedicated cable TV, Telephone system, Internet Web sites, Pagers or personal data assistants, E-mail or other direct PC communication, In-vehicle navigation systems	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	

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

Agency Name	Glendale City		Maricopa County	
	1999	2005	1999	2005
Organizations your agency sends information for dissemination to the public	NR		NR	
Arterial Incident Management Section				
Methods used to distribute incident location and severity information to the public				
Technologies your agency uses to disseminate:	Dedicated cable TV, Telephone system, Pagers or personal data assistants, E-mail or other direct PC communication, In-vehicle navigation systems	Dedicated cable TV, Telephone system, Pagers or personal data assistants, E-mail or other direct PC communication, In-vehicle navigation systems	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	Dedicated cable TV, Telephone system, Pagers or personal data assistants, E-mail or other direct PC communication, In-vehicle navigation systems	Dedicated cable TV, Telephone system, Pagers or personal data assistants, E-mail or other direct PC communication, In-vehicle navigation systems	NR	NR
Internet web site reporting incident information	NR		NR	
Telephone system for reporting incident information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	Media Alert managed through the Arizona Department of Public Safety. Sends instant messages to all valley news media.		NR	

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

Agency Name	Mesa City	
	1999	2005
Agency Returned Survey?	Yes	
Arterial Management Section		
Data collected, archived, and/or transferred to another agency		
Collected by your agency	NR	NR
Archived by your agency	Traffic volumes, Traffic speeds, Lane occupancy, Phasing/cycle lengths, Emergency vehicle signal preemption	NR
Transferred to another agency by your agency	NR	NR
Importance of making information available to the public		
Ranked High	NR	
Ranked Medium	NR	
Ranked Low	NR	
Groups that make requests for the data	Consultants, Adjacent jurisdictions	
What is the data used for?	Traffic analysis, To ensure cross-jurisdictional progression	
Methods used to disseminate arterial information to the public		
Technologies your agency uses to disseminate:	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	Internet Web sites, Kiosks, E-mail or other direct PC communication	NR
Internet web site reporting arterial conditions	NR	
Telephone system for reporting arterial information to the public	NR	

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

Agency Name	Mesa City	
	1999	2005
Organizations your agency sends information for dissemination to the public	Arizona Dept. of Transportation - AzTech	
Arterial Incident Management Section		
Methods used to distribute incident location and severity information to the public		
Technologies your agency uses to disseminate:	NR	Telephone system, Pagers or personal data assistants, Kiosks, Facsimile, E-mail or other direct PC communication, Interactive TV, Cell phone/voice, Dedicated cable TV, Internet Web sites
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting incident information	NR	
Telephone system for reporting incident information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	

Appendix I
Transit Management Components

Transit Management
Agencies for Metropolitan Area: Phoenix

	Glendale Dial-A-Ride		Maricopa County Special Transportation Services		Mesa City		Peoria Transit	
	1999	2005	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		Yes		Yes	
Number of vehicles used in revenue service								
Fixed Route Bus	NR	4	NR	NR	25	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	15	18	70	70	NR	NR	9	9
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Have of plan to have an Automated Vehicle Location System?	No		No		Yes		Yes	
Primary and Secondary Location Technologies Used								
<i>Primary Technologies</i>								
GPS	No	No	No	No	No	No	No	No
Sign/Odometer	No	No	No	No	No	No	No	No
Dead-Reckoning	No	No	No	No	No	No	No	No
LORAN C	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No
<i>Backup Technologies</i>								
GPS	No	No	No	No	No	No	No	No
Sign/Odometer	No	No	No	No	No	No	No	No
Dead-Reckoning	No	No	No	No	No	No	No	No
LORAN C	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No
Number of Vehicles Equipped with AVL								
Fixed Route Bus	NR	NR	NR	NR	25	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	18	NR	NR	NR	NR	NR	9
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Motor Buses Operated as Vehicle Probes								
Number of Motor Buses equipped as probes on freeways?	NR		NR		NR		NR	
Number of Motor Buses equipped as probes on arterials?	NR		NR		NR		NR	
Have Organized Regional Incident Management Program?	No		No		No		No	
Have Automated Traveler Information System?	Yes		No		Yes		No	

Transit Management
Agencies for Metropolitan Area: Phoenix

	Glendale Dial-A-Ride		Maricopa County Special Transportation Services		Mesa City		Peoria Transit	
	1999	2005	1999	2005	1999	2005	1999	2005
<u>Services Automated Traveler Info. System Applies:</u>								
Fixed Route	Yes		No		Yes		No	
Heavy Rail	No		No		No		No	
Light Rail	No		No		No		No	
Demand Responsive	No		No		No		No	
Commuter Rail	No		No		No		No	
Ferry	No		No		No		No	
Locations where traveler information is displayed to public								
Number of bus stops on fixed transit routes	300	350	NR	NR	NR	NR	NR	NR
Bus stops on fixed transit routes that display traveler info to the public	0	10	NR	NR	NR	NR	NR	NR
Number of rail stations	NR	NR	NR	NR	NR	NR	NR	NR
Number of rail stations that display traveler information	NR	NR	NR	NR	NR	NR	NR	NR
Number of other locations that display traveler information to public	2	NR	NR	NR	NR	NR	NR	NR
Number of vehicles the traveler information system has available								
Fixed Route Bus	0	0	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail	0	0	NR	NR	NR	NR	NR	NR
Light Rail	0	0	NR	NR	NR	NR	NR	NR
Demand Responsive	0	0	NR	NR	NR	NR	NR	NR
Commuter Rail	0	0	NR	NR	NR	NR	NR	NR
Ferry Boat	0	0	NR	NR	NR	NR	NR	NR
Deployment of Communications Technology								
<u>Attributes of Radio System:</u>								
Digital?	No		Yes		No		No	
Analog?	Yes		No		No		No	
Trunked?	Yes		Yes		Yes		No	
Regular?	No		No		No		No	
Services that use a Digital or Trunked Radio System								
<u>Digital Only</u>								
Fixed Route Bus	No	No	No	No	No	No	No	No
Heavy or Rapid Rail	No	No	No	No	No	No	No	No
Light Rail	No	No	No	No	No	No	No	No
Demand Responsive	No	Yes	Yes	Yes	No	No	No	No
Commuter Rail	No	No	No	No	No	No	No	No
Ferry Boat	No	No	No	No	No	No	No	No
<u>Trunked Only</u>								
Fixed Route Bus	No	Yes	No	No	No	No	No	No
Heavy or Rapid Rail	No	No	No	No	No	No	No	No
Light Rail	No	No	No	No	No	No	No	No

Transit Management
Agencies for Metropolitan Area: Phoenix

	Glendale Dial-A-Ride		Maricopa County Special Transportation Services		Mesa City		Peoria Transit	
	1999	2005	1999	2005	1999	2005	1999	2005
Demand Responsive	No	No	No	No	No	No	No	No
Commuter Rail	No	No	No	No	No	No	No	No
Ferry Boat	No	No	No	No	No	No	No	No
Have of plan to have Automatic Passenger Counters (APCs)?	No		No		No		No	
Methods used to count passengers								
Treadle Mats	No		No		No		No	
Infrared Beams	No		No		No		No	
Primary and Secondary Location Technologies Used								
<u>Primary Technologies</u>								
GPS	No	Yes	No	No	No	No	No	No
Differential GPS	No	No	No	No	No	No	No	No
Signpost/Odometer	Yes	No	No	No	No	No	No	No
Dead_Reckoning	No	No	No	No	No	No	No	No
LORAN C	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No
<u>Backup Technologies</u>								
GPS	No	No	No	No	No	No	No	No
Differential GPS	No	No	No	No	No	No	No	No
Signpost/Odometer	Yes	Yes	No	No	No	No	No	No
Dead_Reckoning	No	No	No	No	No	No	No	No
LORAN C	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No
Number of Vehicles with APCs								
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	0	0	NR	NR	NR	NR	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Remote Real-Time Monitoring and Computer Assisted Dispatching								
<u>Remote Real-Time Monitoring</u>								
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	18	25	NR	NR	NR	NR	NR	9
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
<u>Automated Dispatching or Control Software</u>								

Transit Management
Agencies for Metropolitan Area: Phoenix

	Glendale Dial-A-Ride		Maricopa County Special Transportation Services		Mesa City		Peoria Transit	
	1999	2005	1999	2005	1999	2005	1999	2005
Fixed Route Bus	NR	5	NR	NR	25	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	15	20	0	70	NR	NR	NR	9
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Coordinate or plan to coordinate travel request and vehicle dispatching for multiple agencies?	Yes		No		No		NR	
Is there or will there be a Transportation Management Center (TMC) in the region that controls transit and highway modes?	Yes		NR		NR		NR	
Modes that TMC currently controls:								
Highways	No	No	No	No	No	No	No	No
Fixed Route Bus	No	No	No	No	No	No	No	No
Heavy or Rapid Rail	No	No	No	No	No	No	No	No
Light Rail	No	No	No	No	No	No	No	No
Demand Responsive	No	No	No	No	No	No	No	No
Commuter Rail	No	No	No	No	No	No	No	No
Ferry Boat	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No
Priority at Traffic Signals and Ramp Meter Priority								
<u>Priority at Traffic Signals</u>								
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR
<u>Ramp Meter Priority</u>								
Fixed Route Bus	0	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	0	NR	NR	NR	NR	NR	NR	NR
Number of Vehicles Equipped with Navigation Aids								
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	0	70	NR	NR	NR	9
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
ITS Standards Used Related to Transit Management								
TCIP On Board Objects (TCIP-OB)	No		No		No		No	

Transit Management
Agencies for Metropolitan Area: Phoenix

	Glendale Dial-A-Ride		Maricopa County Special Transportation Services		Mesa City		Peoria Transit	
	1999	2005	1999	2005	1999	2005	1999	2005
TCIP Traffic Management Objects (TCIP-TM)	No		No		No		No	
TCIP Common Public Transportation Objects (TCIP-CPT)	No		No		No		No	
TCIP Passenger Information Objects (TCIP-PI)	No		No		No		No	
TCIP Incident Management Objects (TCIP-IM)	No		No		No		No	
TCIP Fare Collection Objects (TCIP-FC)	No		No		No		No	
TCIP Spatial Representation Objects (TCIP-SP)	No		No		No		No	
TCIP Control Center Objects (TCIP-CC)	No		No		No		No	
TCIP Scheduling/Runcutting Objects (TCIP-SCH)	No		No		No		No	
Send data communication between micro computer and heavy duty vehicle applications (SAE J1708)	Yes		No		No		No	
Would agency be willing to participate in testing of ITS Standards?	Yes		Yes		NR		NR	
Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?	No		No		NR		NR	
Electronic Fare Payment								
Have full operational Electronic Fare Payment System?	No		Yes		Yes		No	
Methods of Fare Payment								
<u>Stored value card with fare deducted for each trip</u>								
Magnetic Stripe	No		No		No		No	
Smart Card	No		Yes		No		No	
Debit Card	No		No		No		No	
<u>Billed by the month for trips taken</u>								
Magnetic Stripe	No		No		No		No	
Smart Card	No		No		No		No	
Credit Card	No		No		No		No	
<u>Monthly Pass</u>								
Magnetic Stripe	No		No		No		No	
Smart Card	No		No		No		No	
Vehicles/Stations Equipped with Automated Payment Mechanism								
<u>Magnetic Stripe Readers</u>								
Fixed Route Bus Vehicles	2	5	NR	NR	25	NR	NR	NR
Heavy or Rapid Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	0	15	0	70	NR	NR	NR	NR
Commuter Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR
<u>Smart Card Readers</u>								
Fixed Route Bus Vehicles	0	5	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR

Transit Management
Agencies for Metropolitan Area: Phoenix

	Glendale Dial-A-Ride		Maricopa County Special Transportation Services		Mesa City		Peoria Transit	
	1999	2005	1999	2005	1999	2005	1999	2005
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	0	15	0	70	NR	NR	NR	NR
Commuter Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR
<u>Credit Card</u>								
Fixed Route Bus Vehicles	2	5	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	0	0	0	0	NR	NR	NR	NR
Commuter Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR
<u>Debit Card</u>								
Fixed Route Bus Vehicles	2	5	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	0	0	0	0	NR	NR	NR	NR
Commuter Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR
NR: No Response								

Transit Management
Agencies for Metropolitan Area: Phoenix

	Phoenix Transit System		Regional Public Transportation Authority		Scottsdale City		Sun Cities Area Transit System	
	1999	2005	1999	2005	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes		Yes		Yes	
Number of vehicles used in revenue service								
Fixed Route Bus	400	400	74	NR	36	76	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	65	70	49	NR	9	15	14	15
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Have of plan to have an Automated Vehicle Location System?	Yes		Yes		Yes		No	
Primary and Secondary Location Technologies Used								
<i>Primary Technologies</i>								
GPS	No	No	No	No	No	No	No	No
Sign/Odometer	No	No	No	No	No	No	No	No
Dead-Reckoning	No	No	No	No	No	No	No	No
LORAN C	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No
<i>Backup Technologies</i>								
GPS	No	No	No	No	No	No	No	No
Sign/Odometer	No	No	No	No	No	No	No	No
Dead-Reckoning	No	No	No	No	No	No	No	No
LORAN C	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No
Number of Vehicles Equipped with AVL								
Fixed Route Bus	55	400	16	NR	0	56	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	65	70	NR	NR	0	15	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Motor Buses Operated as Vehicle Probes								
Number of Motor Buses equipped as probes on freeways?	NR		NR		NR		NR	
Number of Motor Buses equipped as probes on arterials?	NR		NR		NR		NR	
Have Organized Regional Incident Management Program?	Yes		No		No		No	
Have Automated Traveler Information System?	No		Yes		No		No	

Transit Management
Agencies for Metropolitan Area: Phoenix

	Phoenix Transit System		Regional Public Transportation Authority		Scottsdale City		Sun Cities Area Transit System	
	1999	2005	1999	2005	1999	2005	1999	2005
<u>Services Automated Traveler Info. System Applies:</u>								
Fixed Route	No		Yes		No		No	
Heavy Rail	No		No		No		No	
Light Rail	No		No		No		No	
Demand Responsive	No		No		No		No	
Commuter Rail	No		No		No		No	
Ferry	No		No		No		No	
Locations where traveler information is displayed to public								
Number of bus stops on fixed transit routes	NR	NR	NR	NR	NR	NR	NR	NR
Bus stops on fixed transit routes that display traveler info to the public	1	3	NR	NR	1	10	NR	NR
Number of rail stations	NR	NR	NR	NR	NR	NR	NR	NR
Number of rail stations that display traveler information	NR	NR	NR	NR	NR	NR	NR	NR
Number of other locations that display traveler information to public	NR	NR	NR	NR	NR	NR	NR	NR
Number of vehicles the traveler information system has available								
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Deployment of Communications Technology								
<u>Attributes of Radio System:</u>								
Digital?	No		No		No		Yes	
Analog?	Yes		No		No		No	
Trunked?	No		No		No		Yes	
Regular?	No		No		No		No	
Services that use a Digital or Trunked Radio System								
<u>Digital Only</u>								
Fixed Route Bus	No	No	No	No	No	No	No	No
Heavy or Rapid Rail	No	No	No	No	No	No	No	No
Light Rail	No	No	No	No	No	No	No	No
Demand Responsive	No	No	No	No	No	No	No	No
Commuter Rail	No	No	No	No	No	No	No	No
Ferry Boat	No	No	No	No	No	No	No	No
<u>Trunked Only</u>								
Fixed Route Bus	No	No	No	No	No	No	No	No
Heavy or Rapid Rail	No	No	No	No	No	No	No	No
Light Rail	No	No	No	No	No	No	No	No

Transit Management
Agencies for Metropolitan Area: Phoenix

	Phoenix Transit System		Regional Public Transportation Authority		Scottsdale City		Sun Cities Area Transit System	
	1999	2005	1999	2005	1999	2005	1999	2005
Demand Responsive	No	No	No	No	No	No	No	No
Commuter Rail	No	No	No	No	No	No	No	No
Ferry Boat	No	No	No	No	No	No	No	No
Have of plan to have Automatic Passenger Counters (APCs)?	No		No		No		No	
Methods used to count passengers								
Treadle Mats	No		No		No		No	
Infrared Beams	No		No		No		No	
Primary and Secondary Location Technologies Used								
<u>Primary Technologies</u>								
GPS	No	No	No	No	No	No	No	No
Differential GPS	No	No	No	No	No	No	No	No
Signpost/Odometer	No	No	No	No	No	No	No	No
Dead_Reckoning	No	No	No	No	No	No	No	No
LORAN C	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No
<u>Backup Technologies</u>								
GPS	No	No	No	No	No	No	No	No
Differential GPS	No	No	No	No	No	No	No	No
Signpost/Odometer	No	No	No	No	No	No	No	No
Dead_Reckoning	No	No	No	No	No	No	No	No
LORAN C	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No
Number of Vehicles with APCs								
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Remote Real-Time Monitoring and Computer Assisted Dispatching								
<u>Remote Real-Time Monitoring</u>								
Fixed Route Bus	NR	NR	NR	NR	0	56	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	0	15	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
<u>Automated Dispatching or Control Software</u>								

Transit Management
Agencies for Metropolitan Area: Phoenix

	Phoenix Transit System		Regional Public Transportation Authority		Scottsdale City		Sun Cities Area Transit System	
	1999	2005	1999	2005	1999	2005	1999	2005
Fixed Route Bus	0	400	NR	NR	0	56	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	65	70	NR	NR	9	15	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
Coordinate or plan to coordinate travel request and vehicle dispatching for multiple agencies?	No		No		No		No	
Is there or will there be a Transportation Management Center (TMC) in the region that controls transit and highway modes?	NR		NR		NR		NR	
Modes that TMC currently controls:								
Highways	No	No	No	No	No	No	No	No
Fixed Route Bus	No	No	No	No	No	No	No	No
Heavy or Rapid Rail	No	No	No	No	No	No	No	No
Light Rail	No	No	No	No	No	No	No	No
Demand Responsive	No	No	No	No	No	No	No	No
Commuter Rail	No	No	No	No	No	No	No	No
Ferry Boat	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No
Priority at Traffic Signals and Ramp Meter Priority								
<u>Priority at Traffic Signals</u>								
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR
<u>Ramp Meter Priority</u>								
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR
Number of Vehicles Equipped with Navigation Aids								
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	0	15	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR
ITS Standards Used Related to Transit Management								
TCIP On Board Objects (TCIP-OB)	No		No		No		No	

Transit Management
Agencies for Metropolitan Area: Phoenix

	Phoenix Transit System		Regional Public Transportation Authority		Scottsdale City		Sun Cities Area Transit System	
	1999	2005	1999	2005	1999	2005	1999	2005
TCIP Traffic Management Objects (TCIP-TM)	No		No		No		No	
TCIP Common Public Transportation Objects (TCIP-CPT)	No		No		No		No	
TCIP Passenger Information Objects (TCIP-PI)	No		No		No		No	
TCIP Incident Management Objects (TCIP-IM)	No		No		No		No	
TCIP Fare Collection Objects (TCIP-FC)	No		No		No		No	
TCIP Spatial Representation Objects (TCIP-SP)	No		No		No		No	
TCIP Control Center Objects (TCIP-CC)	No		No		No		No	
TCIP Scheduling/Runcutting Objects (TCIP-SCH)	No		No		No		No	
Send data communication between micro computer and heavy duty vehicle applications (SAE J1708)	No		No		No		No	
Would agency be willing to participate in testing of ITS Standards?	NR		NR		NR		Yes	
Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?	NR		NR		NR		No	
Electronic Fare Payment								
Have full operational Electronic Fare Payment System?	Yes		Yes		Yes		No	
Methods of Fare Payment								
<u>Stored value card with fare deducted for each trip</u>								
Magnetic Stripe	No		No		No		No	
Smart Card	No		No		No		No	
Debit Card	No		No		No		No	
<u>Billed by the month for trips taken</u>								
Magnetic Stripe	No		No		No		No	
Smart Card	No		No		No		No	
Credit Card	No		No		No		No	
<u>Monthly Pass</u>								
Magnetic Stripe	No		No		No		No	
Smart Card	No		No		No		No	
Vehicles/Stations Equipped with Automated Payment Mechanism								
<u>Magnetic Stripe Readers</u>								
Fixed Route Bus Vehicles	400	400	74	NR	26	56	NR	NR
Heavy or Rapid Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	NR	NR	NR	NR	0	15	NR	NR
Commuter Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR
<u>Smart Card Readers</u>								
Fixed Route Bus Vehicles	NR	NR	NR	NR	0	56	NR	NR
Heavy or Rapid Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR

Transit Management
Agencies for Metropolitan Area: Phoenix

	Phoenix Transit System		Regional Public Transportation Authority		Scottsdale City		Sun Cities Area Transit System	
	1999	2005	1999	2005	1999	2005	1999	2005
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	NR	NR	NR	NR	0	15	NR	NR
Commuter Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR
<u>Credit Card</u>								
Fixed Route Bus Vehicles	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR
<u>Debit Card</u>								
Fixed Route Bus Vehicles	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR
NR: No Response								

Transit Management
Agencies for Metropolitan Area: Phoenix

	Surprise Dial-A-Ride		Totals	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		9	
Number of vehicles used in revenue service				
Fixed Route Bus	NR	NR	535	480
Heavy or Rapid Rail	NR	NR	0	0
Light Rail	NR	NR	0	0
Demand Responsive	3	3	234	200
Commuter Rail	NR	NR	0	0
Ferry Boat	NR	NR	0	0
Have of plan to have an Automated Vehicle Location System?	No		5	
Primary and Secondary Location Technologies Used				
<i>Primary Technologies</i>				
GPS	No	No	0	0
Sign/Odometer	No	No	0	0
Dead-Reckoning	No	No	0	0
LORAN C	No	No	0	0
Other	No	No	0	0
<i>Backup Technologies</i>				
GPS	No	No	0	0
Sign/Odometer	No	No	0	0
Dead-Reckoning	No	No	0	0
LORAN C	No	No	0	0
Other	No	No	0	0
Number of Vehicles Equipped with AVL				
Fixed Route Bus	NR	NR	96	456
Heavy or Rapid Rail	NR	NR	0	0
Light Rail	NR	NR	0	0
Demand Responsive	NR	NR	65	112
Commuter Rail	NR	NR	0	0
Ferry Boat	NR	NR	0	0
Motor Buses Operated as Vehicle Probes				
Number of Motor Buses equipped as probes on freeways?	NR		0	
Number of Motor Buses equipped as probes on arterials?	NR		0	
Have Organized Regional Incident Management Program?	Yes		2	
Have Automated Traveler Information System?	No		3	

Transit Management
Agencies for Metropolitan Area: Phoenix

	Surprise Dial-A-Ride		Totals	
	1999	2005	1999	2005
<u>Services Automated Traveler Info. System Applies:</u>				
Fixed Route	No		3	
Heavy Rail	No		0	
Light Rail	No		0	
Demand Responsive	No		0	
Commuter Rail	No		0	
Ferry	No		0	
Locations where traveler information is displayed to public				
Number of bus stops on fixed transit routes	NR	NR	300	350
Bus stops on fixed transit routes that display traveler info to the public	NR	NR	2	23
Number of rail stations	NR	NR	0	0
Number of rail stations that display traveler information	NR	NR	0	0
Number of other locations that display traveler information to public	NR	NR	2	0
Number of vehicles the traveler information system has available				
Fixed Route Bus	NR	NR	0	0
Heavy or Rapid Rail	NR	NR	0	0
Light Rail	NR	NR	0	0
Demand Responsive	NR	NR	0	0
Commuter Rail	NR	NR	0	0
Ferry Boat	NR	NR	0	0
Deployment of Communications Technology				
<u>Attributes of Radio System:</u>				
Digital?	Yes		3	
Analog?	No		2	
Trunked?	Yes		5	
Regular?	No		0	
Services that use a Digital or Trunked Radio System				
<u>Digital Only</u>				
Fixed Route Bus	No	No	0	0
Heavy or Rapid Rail	No	No	0	0
Light Rail	No	No	0	0
Demand Responsive	No	No	1	2
Commuter Rail	No	No	0	0
Ferry Boat	No	No	0	0
<u>Trunked Only</u>				
Fixed Route Bus	No	No	0	1
Heavy or Rapid Rail	No	No	0	0
Light Rail	No	No	0	0

Transit Management
Agencies for Metropolitan Area: Phoenix

	Surprise Dial-A-Ride		Totals	
	1999	2005	1999	2005
Demand Responsive	No	No	0	0
Commuter Rail	No	No	0	0
Ferry Boat	No	No	0	0
Have of plan to have Automatic Passenger Counters (APCs)?	No			
Methods used to count passengers				
Treadle Mats	No		0	
Infrared Beams	No		0	
Primary and Secondary Location Technologies Used				
<i>Primary Technologies</i>				
GPS	No	No	0	1
Differential GPS	No	No	0	0
Signpost/Odometer	No	No	1	0
Dead_Reckoning	No	No	0	0
LORAN C	No	No	0	0
Other	No	No	0	0
<i>Backup Technologies</i>				
GPS	No	No	0	0
Differential GPS	No	No	0	0
Signpost/Odometer	No	No	1	1
Dead_Reckoning	No	No	0	0
LORAN C	No	No	0	0
Other	No	No	0	0
Number of Vehicles with APCs				
Fixed Route Bus	NR	NR	0	0
Heavy or Rapid Rail	NR	NR	0	0
Light Rail	NR	NR	0	0
Demand Responsive	NR	NR	0	0
Commuter Rail	NR	NR	0	0
Ferry Boat	NR	NR	0	0
Remote Real-Time Monitoring and Computer Assisted Dispatching				
<i>Remote Real-Time Monitoring</i>				
Fixed Route Bus	NR	NR	0	56
Heavy or Rapid Rail	NR	NR	0	0
Light Rail	NR	NR	0	0
Demand Responsive	NR	NR	18	49
Commuter Rail	NR	NR	0	0
Ferry Boat	NR	NR	0	0
<i>Automated Dispatching or Control Software</i>				

Transit Management
Agencies for Metropolitan Area: Phoenix

	Surprise Dial-A-Ride		Totals	
	1999	2005	1999	2005
Fixed Route Bus	NR	NR	25	461
Heavy or Rapid Rail	NR	NR	0	0
Light Rail	NR	NR	0	0
Demand Responsive	NR	NR	89	184
Commuter Rail	NR	NR	0	0
Ferry Boat	NR	NR	0	0
Coordinate or plan to coordinate travel request and vehicle				
dispatching for multiple agencies?	No		1	
Is there or will there be a Transportation Management Center				
(TMC) in the region that controls transit and highway modes?	NR		1	
Modes that TMC currently controls:				
Highways	No	No	0	0
Fixed Route Bus	No	No	0	0
Heavy or Rapid Rail	No	No	0	0
Light Rail	No	No	0	0
Demand Responsive	No	No	0	0
Commuter Rail	No	No	0	0
Ferry Boat	No	No	0	0
Other	No	No	0	0
Priority at Traffic Signals and Ramp Meter Priority				
<u>Priority at Traffic Signals</u>				
Fixed Route Bus	NR	NR	0	0
Light Rail	NR	NR	0	0
Demand Responsive	NR	NR	0	0
<u>Ramp Meter Priority</u>				
Fixed Route Bus	NR	NR	0	0
Demand Responsive	NR	NR	0	0
Number of Vehicles Equipped with Navigation Aids				
Fixed Route Bus	NR	NR	0	0
Heavy or Rapid Rail	NR	NR	0	0
Light Rail	NR	NR	0	0
Demand Responsive	NR	NR	0	94
Commuter Rail	NR	NR	0	0
Ferry Boat	NR	NR	0	0
ITS Standards Used Related to Transit Management				
TCIP On Board Objects (TCIP-OB)	No		0	

Transit Management
Agencies for Metropolitan Area: Phoenix

	Surprise Dial-A-Ride		Totals	
	1999	2005	1999	2005
TCIP Traffic Management Objects (TCIP-TM)	No		0	
TCIP Common Public Transportation Objects (TCIP-CPT)	No		0	
TCIP Passenger Information Objects (TCIP-PI)	No		0	
TCIP Incident Management Objects (TCIP-IM)	No		0	
TCIP Fare Collection Objects (TCIP-FC)	No		0	
TCIP Spatial Representation Objects (TCIP-SP)	No		0	
TCIP Control Center Objects (TCIP-CC)	No		0	
TCIP Scheduling/Runcutting Objects (TCIP-SCH)	No		0	
Send data communication between micro computer and heavy duty vehicle applications (SAE J1708)	No		1	
Would agency be willing to participate in testing of ITS Standards?	Yes		4	
Have agreements in place with other agencies to use similar hardware and software to aid maintenance and interoperability?	Yes		1	
Electronic Fare Payment				
Have full operational Electronic Fare Payment System?	No		5	
Methods of Fare Payment				
<u>Stored value card with fare deducted for each trip</u>				
Magnetic Stripe	No		0	
Smart Card	No		1	
Debit Card	No		0	
<u>Billed by the month for trips taken</u>				
Magnetic Stripe	No		0	
Smart Card	No		0	
Credit Card	No		0	
<u>Monthly Pass</u>				
Magnetic Stripe	No		0	
Smart Card	No		0	
Vehicles/Stations Equipped with Automated Payment Mechanism				
<u>Magnetic Stripe Readers</u>				
Fixed Route Bus Vehicles	NR	NR	527	461
Heavy or Rapid Rail Stations	NR	NR	0	0
Light Rail Stations	NR	NR	0	0
Demand Responsive Vehicles	NR	NR	0	100
Commuter Rail Stations	NR	NR	0	0
Ferry Boat Landings	NR	NR	0	0
<u>Smart Card Readers</u>				
Fixed Route Bus Vehicles	NR	NR	0	61
Heavy or Rapid Rail Stations	NR	NR	0	0

Transit Management
Agencies for Metropolitan Area: Phoenix

	Surprise Dial-A-Ride		Totals	
	1999	2005	1999	2005
Light Rail Stations	NR	NR	0	0
Demand Responsive Vehicles	NR	NR	0	100
Commuter Rail Stations	NR	NR	0	0
Ferry Boat Landings	NR	NR	0	0
<u>Credit Card</u>				
Fixed Route Bus Vehicles	NR	NR	2	5
Heavy or Rapid Rail Stations	NR	NR	0	0
Light Rail Stations	NR	NR	0	0
Demand Responsive Vehicles	NR	NR	0	0
Commuter Rail Stations	NR	NR	0	0
Ferry Boat Landings	NR	NR	0	0
<u>Debit Card</u>				
Fixed Route Bus Vehicles	NR	NR	2	5
Heavy or Rapid Rail Stations	NR	NR	0	0
Light Rail Stations	NR	NR	0	0
Demand Responsive Vehicles	NR	NR	0	0
Commuter Rail Stations	NR	NR	0	0
Ferry Boat Landings	NR	NR	0	0
NR: No Response				

Appendix J
Transit Management Integration

Transit Management Integration
 Agencies for Metropolitan Area: Phoenix

Agency Name	Glendale Dial-A-Ride		Maricopa County Special Transportation Services	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
<u>Transit operators in the region that use the same electronic payment system</u>	Phoenix Transit System, Valley Metro		None listed	
<u>Toll operators from whom you accept electronic payment of transit fare through the use of ETC media</u>	On Route 70 Luke Link		None listed	
<u>Receiving real-time information via electronic means from others</u>				
<i>Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions</i>				
<i>Receive Information</i>	Arizona Department of Transportation	Arizona Department of Transportation	None listed	None listed
<i>Share Infrastructure</i>	Arizona Department of Transportation	Arizona Department of Transportation	None listed	None listed
<i>Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions</i>				
<i>Receive Information</i>	None listed	None listed	None listed	None listed
<i>Share Infrastructure</i>	None listed	None listed	None listed	None listed
<i>Incident Management agencies from which your agency receives incident severity, location, and type</i>				
<i>Receive Information</i>	None listed	None listed	None listed	None listed
<i>Share Infrastructure</i>	None listed	None listed	None listed	None listed

Transit Management Integration
 Agencies for Metropolitan Area: Phoenix

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

Transit Management Integration
Agencies for Metropolitan Area: Phoenix

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

Transit Management Integration
 Agencies for Metropolitan Area: Phoenix

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

Transit Management Integration
 Agencies for Metropolitan Area: Phoenix

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

Appendix K
Transit Management Information Collection and Dissemination

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Phoenix

Agency Name	Glendale Dial-A-Ride		Maricopa County Special Transportation Services	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Methods used to disseminate transit information to the public				
Technologies your agency uses to disseminate:				
Transit routes, schedules and fares	Facsimile, Cell phone/data, Cell phone/voice, E-mail or other direct PC communication, Pagers or personal data assistants, Telephone System	Facsimile, Audible Enunciators, Monitors/VMS (not in vehicle), Internet Web Sites, Cell phone/voice, Kiosks, Pagers or personal data assistants, Telephone System	NR	NR
Real-time transit schedule adherence or arrival and departure times	Facsimile, Cell phone/data, E-mail or other direct PC communication, Pagers or personal data assistants	Facsimile, Audible Enunciators, Monitors/VMS (not in vehicle), Variable Message Signs (in vehicle), Cell phone/data, Kiosks, Pagers or personal data assistants, Telephone System	NR	NR
Technologies employed by other organization receiving your data				
Transit routes, schedules and fares	Facsimile, Cell phone/data, E-mail or other direct PC communication	Facsimile, Audible Enunciators, Monitors/VMS (not in vehicle), Variable Message Signs (in vehicle), Internet Web Sites, Cell phone/data, In-vehicle navigation systems, Kiosks, Pagers or personal data assistants, Telephone System	NR	NR

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Phoenix

Agency Name	Glendale Dial-A-Ride		Maricopa County Special Transportation Services	
	1999	2005	1999	2005
Real-time transit schedule adherence or arrival and departure times	Facsimile, Cell phone/data, E-mail or other direct PC communication	Facsimile, Audible Enunciators, Monitors/VMS (not in vehicle), Variable Message Signs (in vehicle), Internet Web Sites, Cell phone/data, In-vehicle navigation systems, Kiosks, Pagers or personal data assistants, Telephone System	NR	NR
Internet web site reporting transit routes, schedules and fare, etc.	www.rpta.maricopa.gov, www.glendale.gov.us-transportation		NR	
Telephone system for reporting transit information to the public	623-930-3500, 602-253-5000		NR	
Organizations your agency sends information for dissemination to the public	City of Phoenix, RPTA, City of Peoria		NR	
Data collected, archived, and/or transferred to another agency				
Collected by your agency	Weather conditions, Passenger count, Trip itinerary planning records, Passenger information (e.g., surveys, O/D), Road conditions, Emergency vehicle signal preemption, Route designations (snow emergency, etc), Transit operations coordination information, Current roadway work zones for transit, Scheduled roadway work zones for transit, Emergency/evacuation routes and procedures, Highway operations coordination information	Weather conditions, Passenger count, Trip itinerary planning records, Passenger information (e.g., surveys, O/D), Vehicle monitoring status, Road conditions, Emergency vehicle signal preemption, Route designations (snow emergency, etc), Transit operations coordination information, Current roadway work zones for transit, Scheduled roadway work zones for transit, Emergency/evacuation routes and procedures, Highway operations coordination information	Passenger count, Trip itinerary planning records, Passenger information (e.g., surveys, O/D)	Passenger count, Trip itinerary planning records, Passenger information (e.g., surveys, O/D), Vehicle monitoring status, Transit operations coordination information

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Phoenix

Agency Name	Glendale Dial-A-Ride		Maricopa County Special Transportation Services	
	1999	2005	1999	2005
Archived by your agency	Weather conditions, Passenger count, Trip itinerary planning records, Passenger information (e.g., surveys, O/D), Transit operations coordination information, Current roadway work zones for transit, Highway operations coordination information	Weather conditions, Passenger count, Trip itinerary planning records, Vehicle monitoring status, Route designations (snow emergency, etc), Transit operations coordination information, Current roadway work zones for transit, Intermodal (air, rail, water) conditions, Emergency/evacuation routes and procedures, Highway operations coordination information	Passenger count, Trip itinerary planning records, Passenger information (e.g., surveys, O/D)	Passenger count, Trip itinerary planning records, Passenger information (e.g., surveys, O/D), Transit operations coordination information
Transferred to another agency by your agency	Weather conditions, Passenger count, Passenger information (e.g., surveys, O/D), Road conditions, Emergency vehicle signal preemption, Vehicle time and location, Transit operations coordination information, Current roadway work zones for transit, Highway operations coordination information	Weather conditions, Passenger count, Passenger information (e.g., surveys, O/D), Vehicle monitoring status, Road conditions, Emergency vehicle signal preemption, Vehicle time and location, Route designations (snow emergency, etc), Transit operations coordination information, Current roadway work zones for transit, Intermodal (air, rail, water) conditions, Emergency/evacuation routes and procedures, Highway operations coordination information	NR	Passenger count, Trip itinerary planning records, Passenger information (e.g., surveys, O/D), Transit operations coordination information
Importance of making information available to the public				

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Phoenix

Agency Name	Glendale Dial-A-Ride		Maricopa County Special Transportation Services	
	1999	2005	1999	2005
Ranked High	Weather conditions, Passenger count, Road conditions, Vehicle time and location, Route designations (snow emergency, etc), Transit operations coordination information, Current roadway work zones for transit, Scheduled roadway work zones for transit, Emergency/evacuation routes and procedures, Highway operations coordination information		Passenger count, Passenger information (e.g., surveys, O/D), Transit operations coordination information	
Ranked Medium	Passenger information (e.g., surveys, O/D), Intermodal (air, rail, water) conditions		Trip itinerary planning records, Vehicle monitoring status	
Ranked Low	Trip itinerary planning records, Vehicle monitoring status, Emergency vehicle signal preemption, Incidents, Transit vehicle signal priority		Weather conditions, Road conditions, Emergency vehicle signal preemption, Vehicle time and location, Route designations (snow emergency, etc), Incidents, Current roadway work zones for transit, Scheduled roadway work zones for transit, Intermodal (air, rail, water) conditions, Emergency/evacuation routes and procedures, Highway operations coordination information, Transit vehicle signal priority	
Groups that make requests for the data	Advanced Traveler Information Systems (ATIS) providers, Consultants, MPOs, Media (I.e., TV stations, radio stations), Federal DOT personnel, State DOT personnel, Universities		Local Transit Agencies	
What is the data used for?	Dissemination to the public, Planning, Construction impact determination, Traffic analysis		Dissemination to the public, Planning	

NR: No Response

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Phoenix

Agency Name	Mesa City		Peoria Transit	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Methods used to disseminate transit information to the public				
Technologies your agency uses to disseminate:				
Transit routes, schedules and fares	Kiosks, Telephone System	NR	NR	NR
Real-time transit schedule adherence or arrival and departure times	Internet Web Sites	Kiosks	NR	NR
Technologies employed by other organization receiving your data				
Transit routes, schedules and fares	Kiosks, Internet Web Sites	NR	NR	NR

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Phoenix

Agency Name	Mesa City		Peoria Transit	
	1999	2005	1999	2005
Real-time transit schedule adherence or arrival and departure times	Kiosks	Internet Web Sites	NR	NR
Internet web site reporting transit routes, schedules and fare, etc.	NR		NR	
Telephone system for reporting transit information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	
Data collected, archived, and/or transferred to another agency				
Collected by your agency	NR	NR	Vehicle monitoring status, Passenger information (e.g., surveys, O/D), Trip itinerary planning records, Passenger count, Vehicle time and location	NR

Data Collection and Dissemination: Transit Management
 Agencies for Metropolitan Area: Phoenix

Agency Name	Mesa City		Peoria Transit	
	1999	2005	1999	2005
Archived by your agency	NR	NR	Vehicle monitoring status, Passenger information (e.g., surveys, O/D), Trip itinerary planning records, Passenger count, Vehicle time and location	NR
Transferred to another agency by your agency	NR	NR	NR	NR
Importance of making information available to the public				

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Phoenix

Agency Name	Mesa City		Peoria Transit	
	1999	2005	1999	2005
Ranked High	NR		NR	
Ranked Medium	NR		NR	
Ranked Low	NR		NR	
Groups that make requests for the data	NR		FTA	
What is the data used for?	NR		Do not know	

NR: No Response

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Phoenix

Agency Name	Phoenix Transit System		Regional Public Transportation Authority	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Methods used to disseminate transit information to the public				
Technologies your agency uses to disseminate:				
Transit routes, schedules and fares	Internet Web Sites, Telephone System	Kiosks, Internet Web Sites	Kiosks, Internet Web Sites, Telephone System	NR
Real-time transit schedule adherence or arrival and departure times	Internet Web Sites	Kiosks, Internet Web Sites, Telephone System	Kiosks	NR
Technologies employed by other organization receiving your data				
Transit routes, schedules and fares	NR	In-vehicle navigation systems, E-mail or other direct PC communication, Interactive TV, Pagers or personal data assistants	NR	NR

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Phoenix

Agency Name	Phoenix Transit System		Regional Public Transportation Authority	
	1999	2005	1999	2005
Real-time transit schedule adherence or arrival and departure times	NR	In-vehicle navigation systems, E-mail or other direct PC communication, Interactive TV, Pagers or personal data assistants	NR	NR
Internet web site reporting transit routes, schedules and fare, etc.	WWW.VALLEYMETRO.MARICOPA.GOV		NR	
Telephone system for reporting transit information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	Arizona Department of Transportation		NR	
Data collected, archived, and/or transferred to another agency				
Collected by your agency	Passenger count, Vehicle time and location	NR	NR	NR

Data Collection and Dissemination: Transit Management
 Agencies for Metropolitan Area: Phoenix

Agency Name	Phoenix Transit System		Regional Public Transportation Authority	
	1999	2005	1999	2005
Archived by your agency				
	Passenger count, Vehicle time and location	NR	NR	NR
Transferred to another agency by your agency				
	NR	NR	NR	NR
Importance of making information available to the public				

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Phoenix

Agency Name	Phoenix Transit System		Regional Public Transportation Authority	
	1999	2005	1999	2005
Ranked High	NR		NR	
Ranked Medium	NR		NR	
Ranked Low	NR		NR	
Groups that make requests for the data	Consultants, State DOT personnel		NR	
What is the data used for?	Research Projects, Planning		NR	

NR: No Response

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Phoenix

Agency Name	Scottsdale City		Sun Cities Area Transit System	
	1999	2005	1999	2005
Agency Returned Survey?	Yes		Yes	
Methods used to disseminate transit information to the public				
Technologies your agency uses to disseminate:				
Transit routes, schedules and fares	NR	NR	NR	NR
Real-time transit schedule adherence or arrival and departure times	NR	NR	NR	NR
Technologies employed by other organization receiving your data				
Transit routes, schedules and fares	Kiosks, Internet Web Sites, Telephone System, Dedicated cable TV	Kiosks, Internet Web Sites, Telephone System, Dedicated cable TV	NR	NR

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Phoenix

Agency Name	Scottsdale City		Sun Cities Area Transit System	
	1999	2005	1999	2005
Real-time transit schedule adherence or arrival and departure times	NR	In-vehicle navigation systems, E-mail or other direct PC communication, Kiosks, Pagers or personal data assistants, Internet Web Sites, Telephone System, Dedicated cable TV	NR	NR
Internet web site reporting transit routes, schedules and fare, etc.	WWW.AZFMS.COM		NR	
Telephone system for reporting transit information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	Regional Public Transportation Authority		NR	
Data collected, archived, and/or transferred to another agency				
Collected by your agency	NR	NR	NR	NR

Data Collection and Dissemination: Transit Management
 Agencies for Metropolitan Area: Phoenix

Agency Name	Scottsdale City		Sun Cities Area Transit System	
	1999	2005	1999	2005
Archived by your agency	NR	NR	NR	NR
Transferred to another agency by your agency	NR	NR	NR	NR
Importance of making information available to the public				

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Phoenix

Agency Name	Scottsdale City		Sun Cities Area Transit System	
	1999	2005	1999	2005
Ranked High	NR		NR	
Ranked Medium	NR		NR	
Ranked Low	NR		NR	
Groups that make requests for the data	NR		Federal DOT personnel, Universities	
What is the data used for?	NR		Traffic analysis	

NR: No Response

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Phoenix

Agency Name	Surprise Dial-A-Ride	
	1999	2005
Agency Returned Survey?	Yes	
Methods used to disseminate transit information to the public		
Technologies your agency uses to disseminate:		
Transit routes, schedules and fares	NR	NR
Real-time transit schedule adherence or arrival and departure times	NR	NR
Technologies employed by other organization receiving your data		
Transit routes, schedules and fares	NR	NR

Data Collection and Dissemination: Transit Management
 Agencies for Metropolitan Area: Phoenix

Agency Name	Surprise Dial-A-Ride	
	1999	2005
Real-time transit schedule adherence or arrival and departure times	NR	NR
Internet web site reporting transit routes, schedules and fare, etc.	NR	
Telephone system for reporting transit information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	
Data collected, archived, and/or transferred to another agency		
Collected by your agency	NR	NR

Data Collection and Dissemination: Transit Management
 Agencies for Metropolitan Area: Phoenix

Agency Name	Surprise Dial-A-Ride	
	1999	2005
Archived by your agency	NR	NR
Transferred to another agency by your agency	NR	NR
Importance of making information available to the public		

Data Collection and Dissemination: Transit Management
 Agencies for Metropolitan Area: Phoenix

Agency Name	Surprise Dial-A-Ride	
	1999	2005
Ranked High	NR	
Ranked Medium	NR	
Ranked Low	NR	
Groups that make requests for the data	MPOs, Federal DOT personnel, State DOT personnel	
What is the data used for?	models, Roadway impact analysis, Incident detection algorithm development, Planning, Construction impact determination, Traffic analysis	

NR: No Response

Appendix L
Emergency Management

Emergency Management Agencies for Metropolitan Area: Phoenix

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			
Chandler City Fire Department	9	13	9	13	9	13	9	13	9	13	9	13	Yes	No	None listed
Chandler City Police Department	60	120	0	0	0	120	60	120	60	120	0	0	Yes	No	None listed
Glendale Police Department	93	120	0	120	0	120	85	120	80	100	0	120	No	No	None listed
Mesa City Fire Department	34	50	NR	NR	NR	NR	34	50	NR	NR	34	50	Yes	NR	None listed
Mesa City Police Department	254	316	254	286	253	285	254	286	254	286	0	NR	Yes	Yes	None listed
Peoria City Police Department	78	95	0	0	0	0	41	50	41	50	0	0	No	No	None listed
Phoenix City Fire & EMS Department	208	220	2	NR	208	220	208	220	208	220	33	150	Yes	No	None listed
Phoenix City Fire & EMS Department (EMS)	35	40	0	NR	35	40	35	40	35	40	20	40	Yes	No	None listed
Phoenix City Police Department	1,752	NR	0	NR	0	NR	1,752	NR	790	NR	0	NR	Yes	No	None listed
Phoenix Department of Public Safety	513	NR	0	NR	0	NR	0	NR	0	NR	0	NR	Yes	Yes	Arizona Department of Emergency Services
Scottsdale Fire Department/ Rural Metro Corporation	23	28	0	0	0	28	23	28	0	0	20	28	Yes	No	None listed
Scottsdale Police Department	70	NR	0	NR	0	NR	90	NR	90	NR	0	NR	Yes	No	None listed
Tempe City Fire Department	27	28	0	15	15	16	27	28	15	16	15	16	Yes	Yes	Phoenix Fire Department, Mesa Fire Department, Chandler Fire Department, Gilbert Fire Department
Tempe City Police Department	107	140	NR	NR	NR	NR	107	140	107	140	0	0	Yes	No	None listed