Tracking the Deployment of the Integrated Metropolitan ITS Infrastructure in Portland, Vancouver

FY99 Results

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Part 1 - Background and Purpose

In January 1996, Secretary Peña set a goal of deploying the integrated metropolitan Intelligent Transportation System (ITS) infrastructure in 75[1] of the nation's largest metropolitan areas by 2006:

> *"I'm setting a national goal: to build an intelligent transportation infrastructure across the United States to save time and lives, and improve the quality of life for Americans. I believe that what we do, we must measure . . . Let us set a very tangible target that will focus our attention . . . I want 75 of our largest metropolitan areas outfitted with a complete intelligent transportation infrastructure in 10 years."*[2]
>
> *-- Secretary Peña, 1996*

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

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

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

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

the methodology are explained elsewhere.[3]

During the summer and fall of 1999, the U.S. DOT undertook a new data collection effort for the purpose of examining ITS deployment progress in the nation's largest metropolitan areas. The Portland, Vancouver 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 Portland, Vancouver region was 83% in 1997 and 68% in 1999.

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

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

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

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

Part 2 - Summary 1999 Survey Results

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

The following two figures portray the surrogate indicators for each of the nine components in Portland, Vancouver 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).

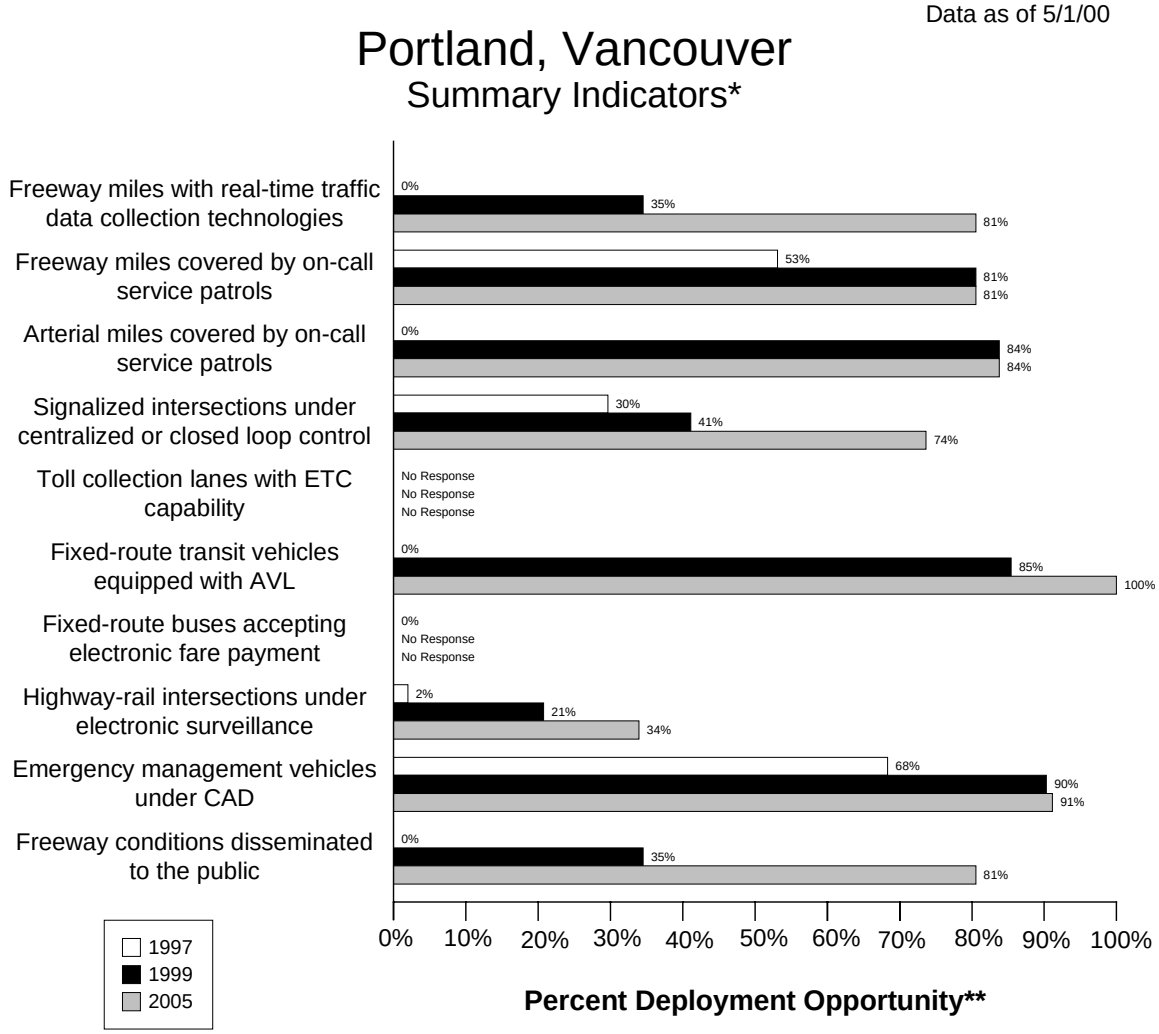
Each component indicator was selected to reflect a critical function of the individual components. For example, in the case of Freeway Management, three basic functions were defined: surveillance, traffic control, and information display. The three indicators developed to reflect these functions are: 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."

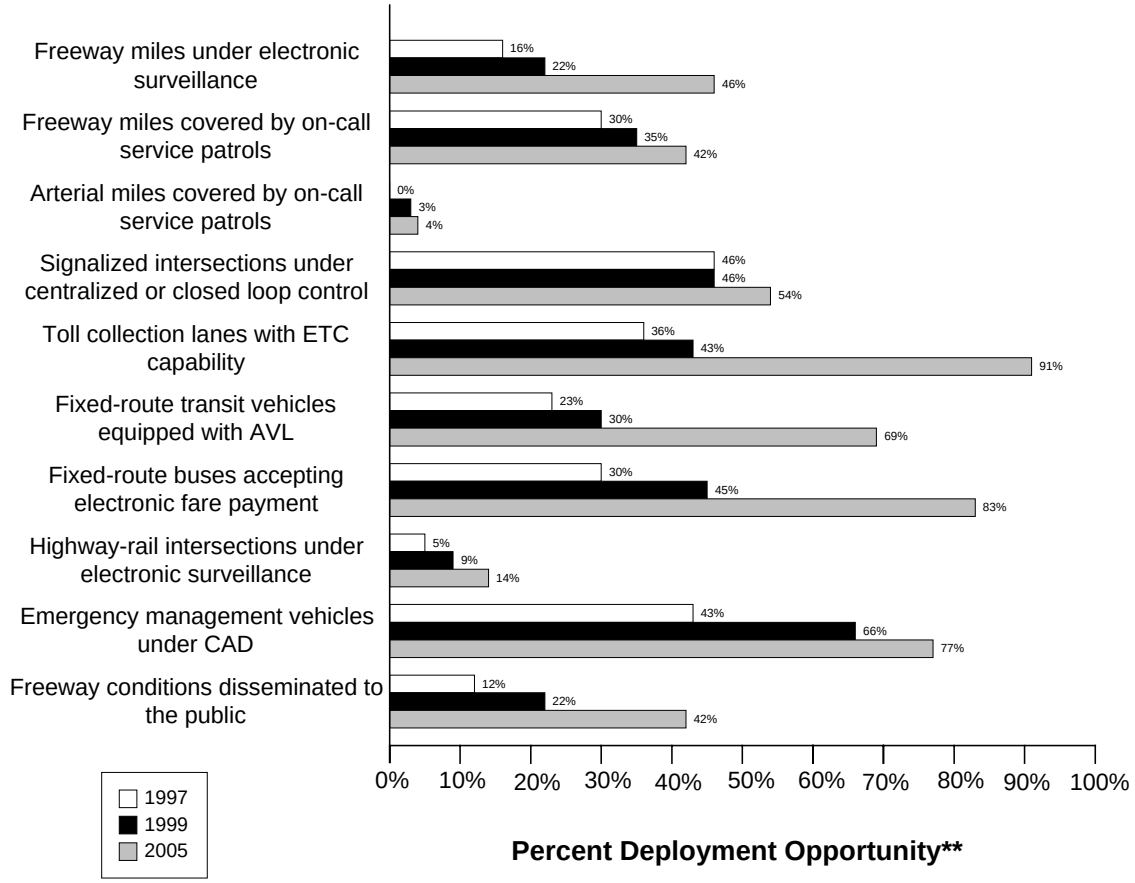
Data as of 5/1/00



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

Data as of 5/1/00

National
Summary Indicators*



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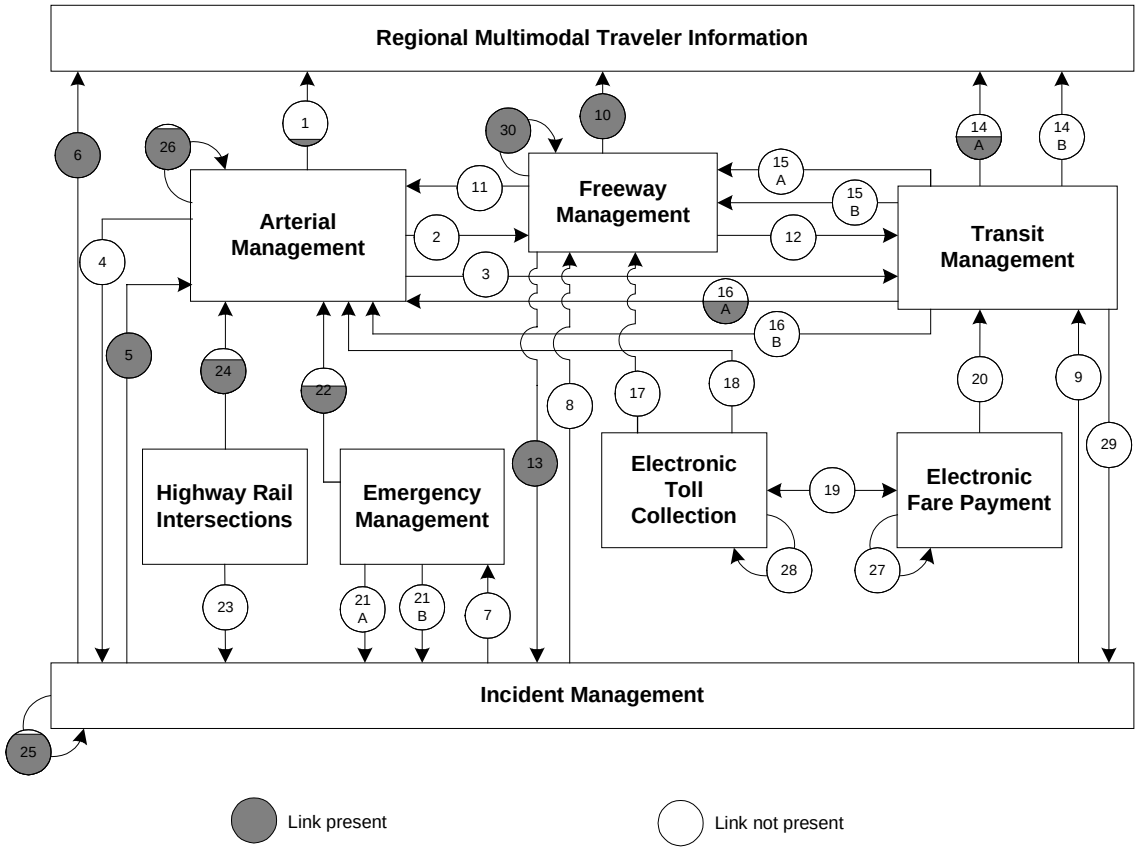
Portland, Vancouver Integration Links



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

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

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

Part 3 - Detailed 1999 Survey Results

The following figures and tables summarize the complete set of component and integration indicators developed for the Portland, Vancouver metropolitan area. The figures summarizing the component indicators consist of a bar chart portraying the deployment levels for 1997, 1999, and 2005 accompanied by detailed tables of the data used to calculate each component indicator value (*Num* stands for numerator and *Den* stands for denominator; blank space indicates that no response was received.)

Example: Calculating Component Indicators for Freeway Management

Consider a metropolitan area with 100 miles of freeway and 25 freeway entrance ramps. The area has no ramp meters, 10 freeway miles for which traffic data are collected electronically, and 5 freeway miles, which are covered by highway advisory radio.

The component indicator for electronic surveillance is calculated as (10/100) or 10%.

The component indicator for ramp meter control is calculated as (0/25) or 0%.

The component indicator for HAR coverage is calculated as (5/100) or 5%.

The summary indicator for the metropolitan area is calculated as (10%+0%+5%)/3 = 5%.

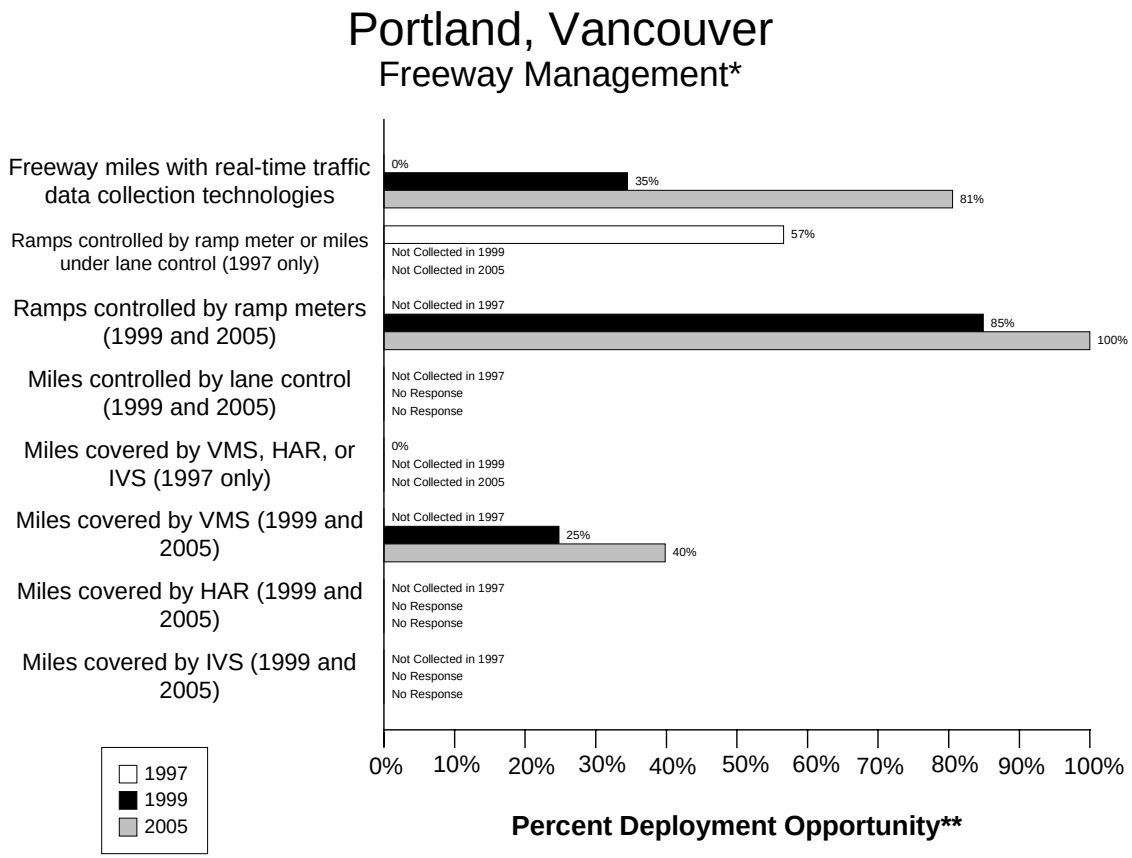
The figures summarizing the integration indicators consist of a diagram for each of the nine metropolitan ITS components portraying the integration level for 1999 (*italic*) and 2005 (**bold**), accompanied by tables providing an explanation of the data and calculations performed to develop each integration indicator value for 1999 and 2005. Each diagram portrays the proportion of agencies providing information to a component (e.g., the flow of incident information from Incident Management to Freeway Management) and the proportion of agencies providing information from one component to other components (e.g., the flow of freeway travel condition information from Freeway Management to Arterial Management).

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

Consider a metropolitan area with three arterial management agencies. One out of three provides information to the public using a Regional Multimodal Traveler Information Media (e.g., internet, kiosk, pager, etc...). The integration indicator is 1/3 or 33%.

Freeway Management Component Indicators

Data as of 5/1/00



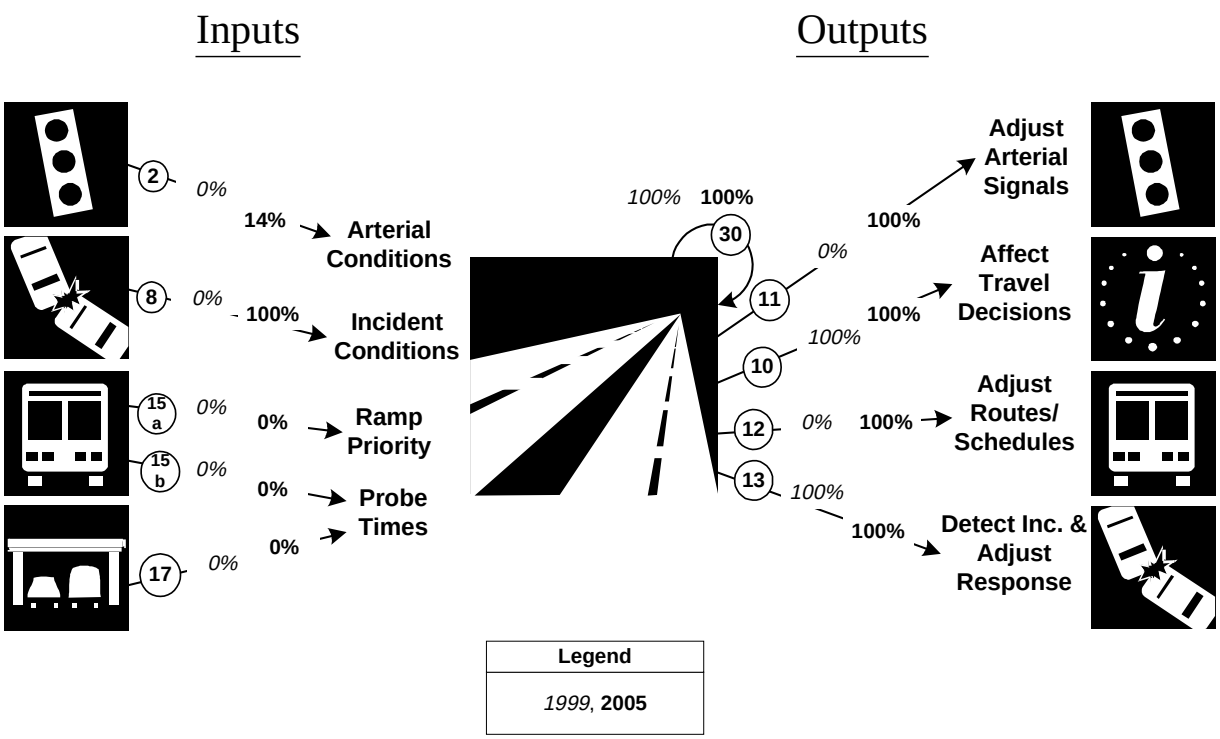
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway centerline miles are under electronic surveillance for monitoring traffic flow	0	113	0%	39	113	35%	91	113	81%
Freeway entrance ramps are controlled by ramp meters or miles under lane control	60	106	57%						
Freeway entrance ramps are controlled by ramp meters				90	106	85%	150	150	100%

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway centerline miles will be controlled by lane control					113			113	
Freeway miles are covered by VMS, HAR, or IVS	0	113	0%						
Freeway miles are covered by VMS				28	113	25%	45	113	40%
Freeway miles are covered by HAR					113			113	
Freeway miles are covered by IVS					113			113	

Freeway Management Integration Indicators

Portland, Vancouver
Freeway Management Integration*



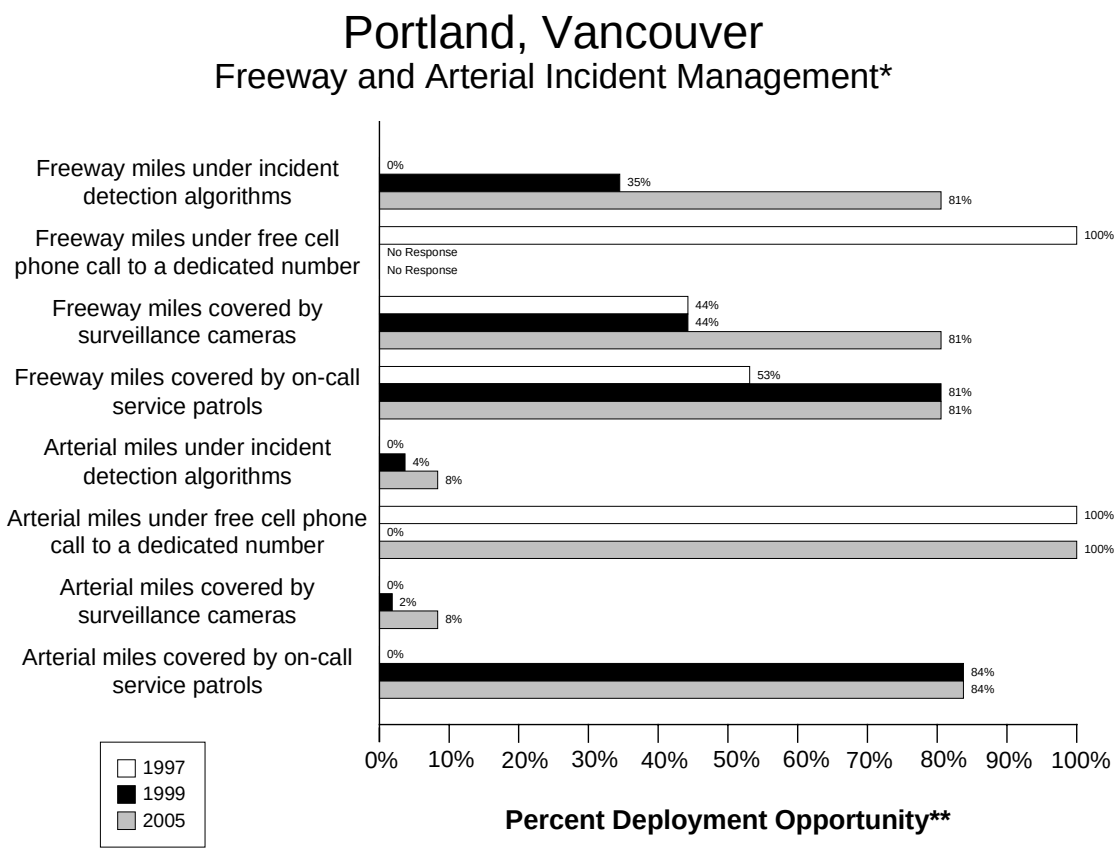
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
2. Arterial Management agencies sending information to Freeway Management	(0/ 7) 0%	(1/ 7) 14%
8. Incident Management agencies sending information to Freeway Management	(0/ 1) 0%	(1/ 1) 100%
15a. Transit management agencies with vehicles equipped with ramp meter priority	(0/ 2) 0%	(0/ 2) 0%
15b. Transit Management agencies with vehicles equipped as probes	(0/ 2) 0%	(0/ 2) 0%
17. Freeway Management agencies receiving freeway conditions from vehicle probes	(0/ 1) 0%	(0/ 1) 0%
30. Freeway Management agencies sending information to another Freeway Management agency	(1/ 1) 100%	(1/ 1) 100%
11. Freeway Management agencies sending information to Arterial Management	(0/ 1) 0%	(1/ 1) 100%

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

Incident Management Component Indicators

Data as of 5/1/00



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

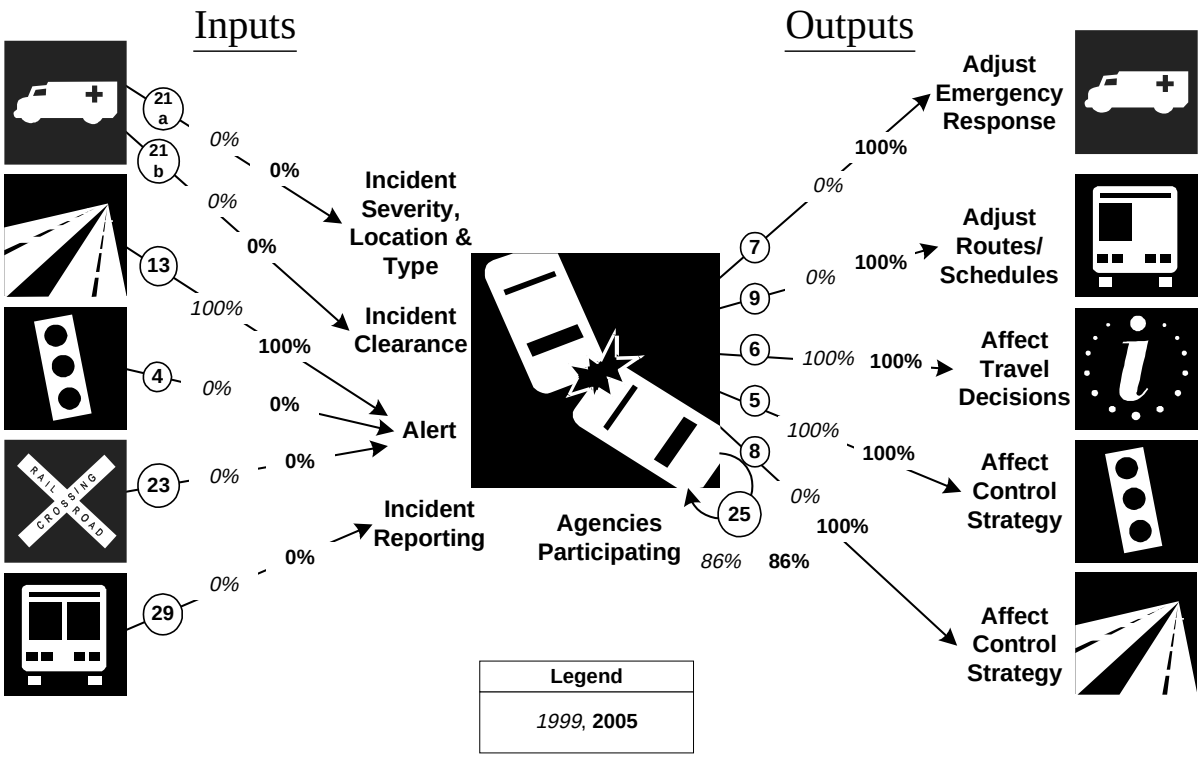
	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by incident detection algorithms	0	113	0%	39	113	35%	91	113	81%
Freeway miles are covered by free cellular phone calls to a dedicated number	113	113	100%		113			113	
Freeway miles are covered by surveillance cameras.	50	113	44%	50	113	44%	91	113	81%

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by on-call publicly-sponsored service patrol or towing services.	60	113	53%	91	113	81%	91	113	81%
Arterial miles are covered by incident detection algorithms	0	597	0%	22	597	4%	50	597	8%
Arterial miles are covered by free cellular phone calls to a dedicated number	597	597	100%	0	597	0%	0	597	100%
Arterial miles are covered by surveillance cameras	0	597	0%	11	597	2%	50	597	8%
Arterial miles are covered by on-call publicly-sponsored service patrol or towing services	0	597	0%	500	597	84%	500	597	84%

Incident Management Integration Indicators

Portland, Vancouver

Incident Management Integration*



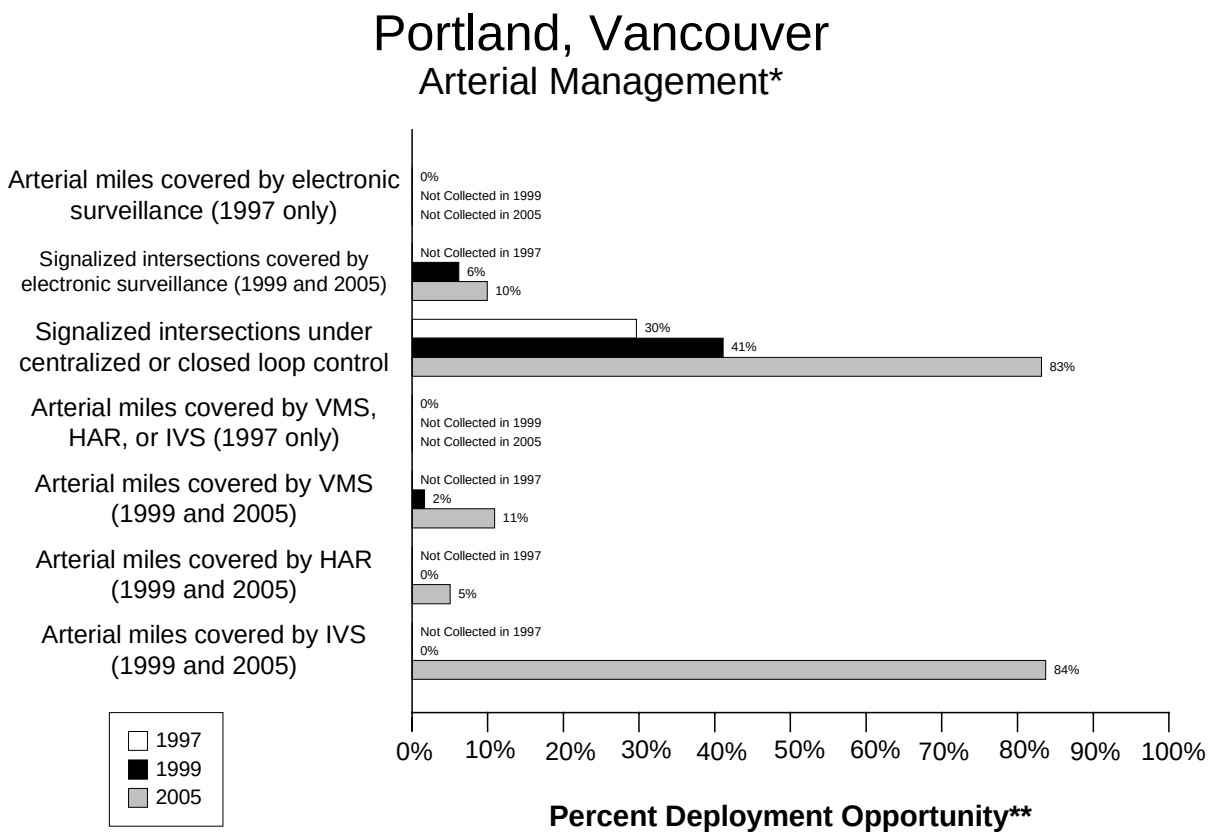
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

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	(1/ 1) 100%	(1/ 1) 100%
4. Arterial Management agencies sending arterial conditions to Incident Management	(0/ 7) 0%	(0/ 7) 0%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	(0/ 7) 0%	(0/ 7) 0%
29. Transit Management agencies report traffic incidents as part of an organized regional incident management program	(0/ 2) 0%	(0/ 2) 0%

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

Arterial Management Component Indicators

Data as of 5/1/00



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

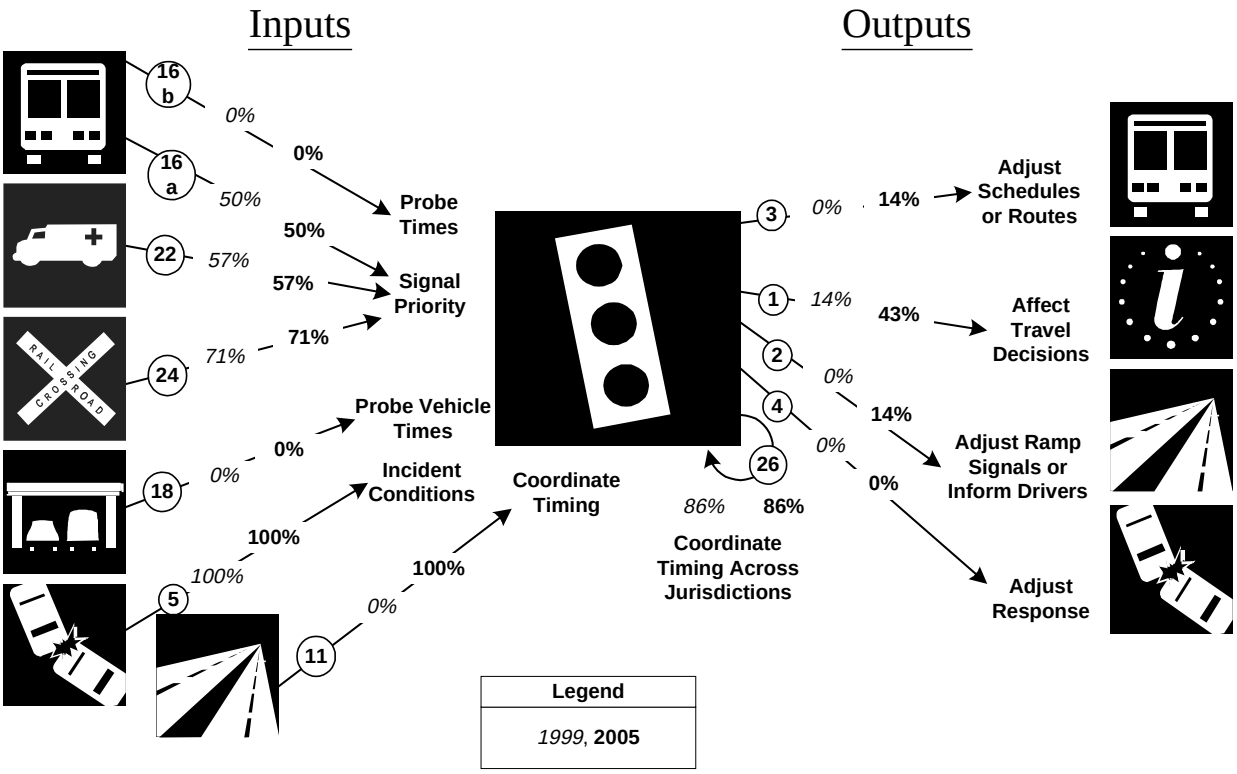
	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles covered by electronic surveillance	0	597	0%						
Signalized intersections are covered by electronic surveillance for monitoring traffic flow				104	1687	6%	154	1552	10%
Signalized intersections are under centralized or closed loop control	201	678	30%	693	1687	41%	1291	1552	83%

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles are covered by VMS, HAR, or IVS	0	597	0%						
Arterial miles are covered by VMS				10	597	2%	65	597	11%
Arterial miles are covered by HAR				0	597	0%	30	597	5%
Arterial miles are covered by IVS				0	597	0%	500	597	84%

Arterial Management Integration Indicators

Portland, Vancouver

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	(1/ 2) 50%	(1/ 2) 50%
16b. Transit Management agencies have vehicles equipped as probes on arterials	(0/ 2) 0%	(0/ 2) 0%
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	(4/ 7) 57%	(4/ 7) 57%
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	(5/ 7) 71%	(5/ 7) 71%
18. Number of Arterial Management agencies receiving information from vehicle probes	(0/ 7) 0%	(0/ 7) 0%
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management	(1/ 1) 100%	(1/ 1) 100%

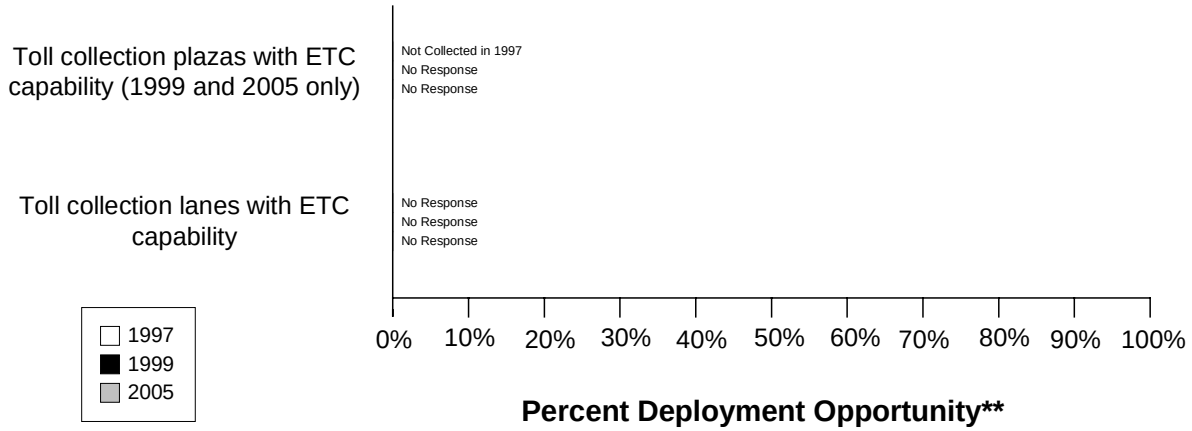
Link Description	1999	2005
11. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Arterial Management agencies	(0/ 1) 0%	(1/ 1) 100%
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	(0/ 7) 0%	(1/ 7) 14%
1. Arterial Management agencies disseminate arterial travel times, speeds, and conditions to the public	(1/ 7) 14%	(3/ 7) 43%
2. Arterial Management agencies send traffic condition information to Freeway Management	(0/ 7) 0%	(1/ 7) 14%
4. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Incident Management	(0/ 7) 0%	(0/ 7) 0%
26. Arterial Management agencies under cooperative agreement to share traffic signal timing for coordinated response	(6/ 7) 86%	(6/ 7) 86%

Electronic Toll Collection Component Indicators

Data as of 5/1/00

Portland, Vancouver

Electronic Toll Collection*



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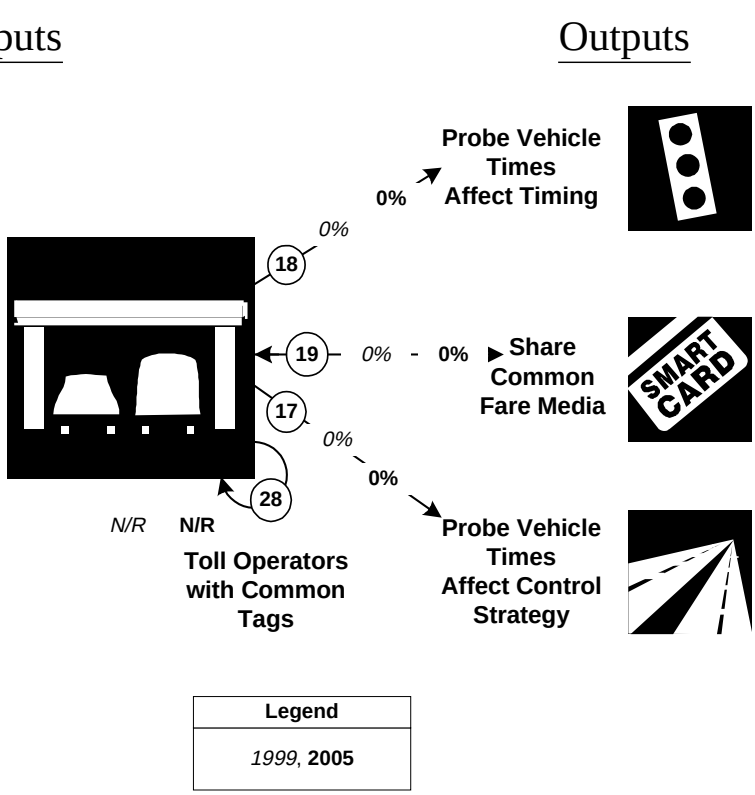
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

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

Electronic Toll Collection Integration Indicators

Portland, Vancouver
Electronic Toll Collection Integration*

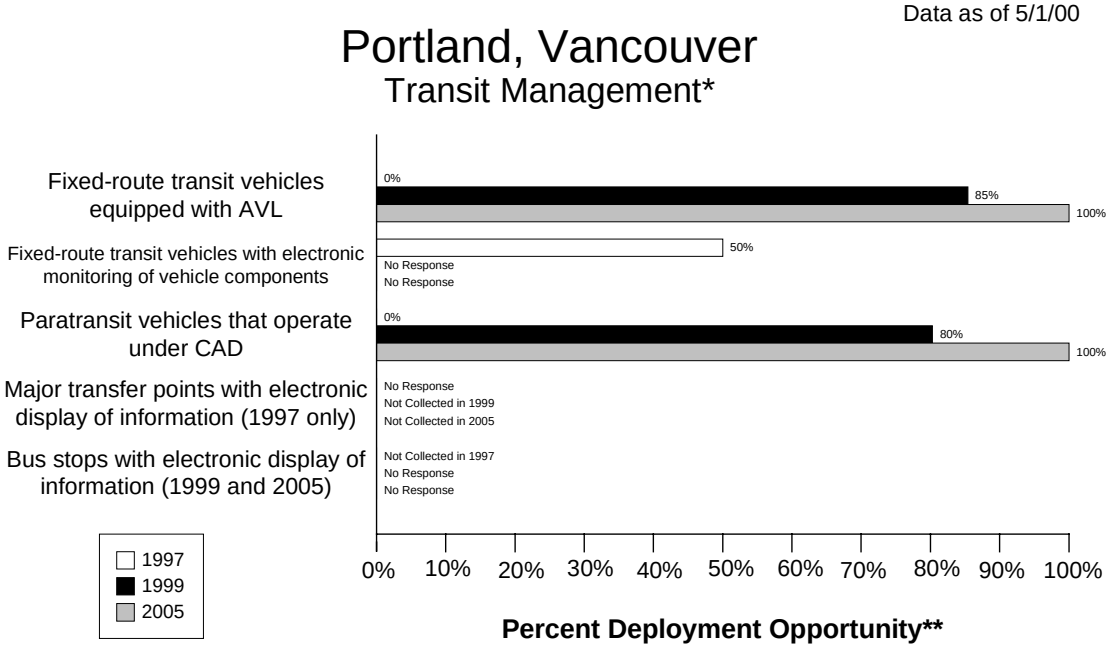


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
18. Number of Arterial Management agencies receiving information from vehicle probes	(0/ 7) 0%	(0/ 7) 0%
19. Transit agencies that accept electronic payment through the use of electronic toll collection media	(0/ 2) 0%	(0/ 2) 0%
17. Freeway Management agencies receiving information from vehicle probes	(0/ 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



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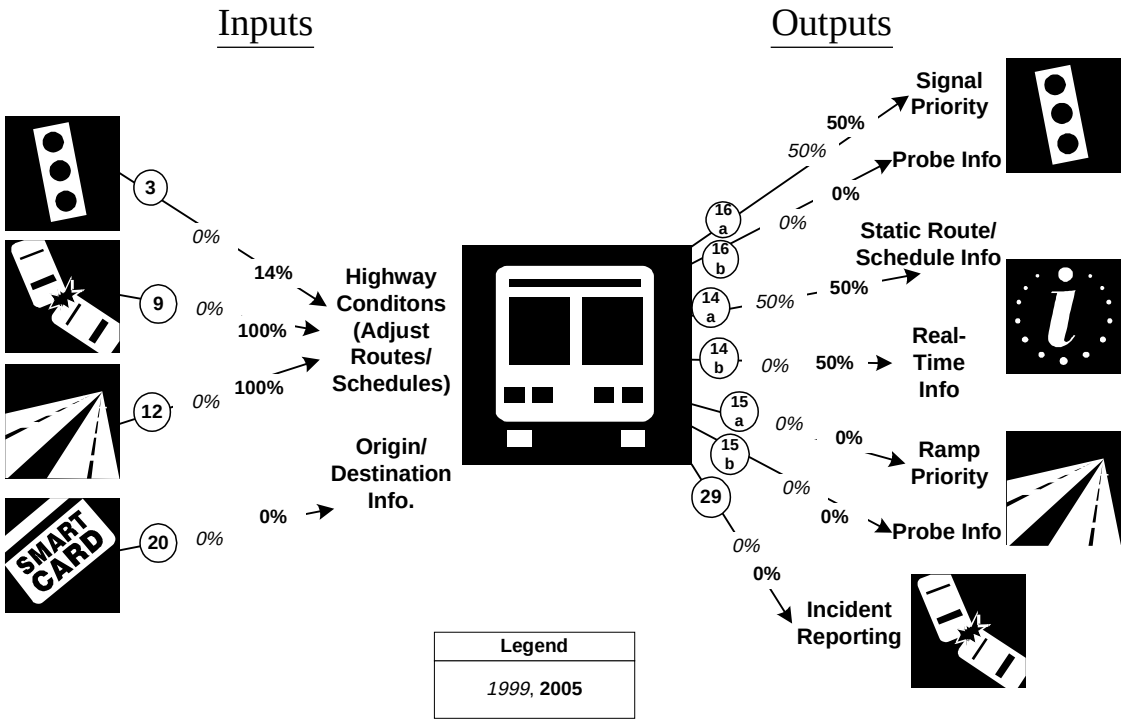
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Fixed-route transit vehicles are equipped with AVL	0	104	0%	667	781	85%	887	887	100%
Fixed-route transit vehicles are equipped with electronic monitoring of vehicle component	52	104	50%		781			887	
Paratransit vehicles operate under computer-aided dispatch	0	20	0%	167	208	80%	277	277	100%
Percent fixed-route transfer locations with electronic display of information	0	0							
Bus stops display information to the public				32			200		

Transit Management Integration Indicators

Portland, Vancouver
Transit Management Integration*



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

Link Description	1999	2005
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	(0/ 7) 0%	(1/ 7) 14%
9. Incident management agencies transfer information describing incident severity, location, and type to Transit Management	(0/ 1) 0%	(1/ 1) 100%
12. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Transit Management	(0/ 1) 0%	(1/ 1) 100%
20. Transit Management agencies using Electronic Fare Payment data in transit service planning	(0/ 2) 0%	(0/ 2) 0%
16a. Transit Management agencies have vehicles equipped with traffic signal priority capability	(1/ 2) 50%	(1/ 2) 50%
16b. Transit Management agencies have vehicles equipped as probes on arterials	(0/ 2) 0%	(0/ 2) 0%
14a. Transit Management agencies disseminate information describing transit routes, schedules, and fares to travelers	(1/ 2) 50%	(1/ 2) 50%
14b. Transit Management agencies disseminate information describing schedule/route adherence to travelers	(0/ 2) 0%	(1/ 2) 50%

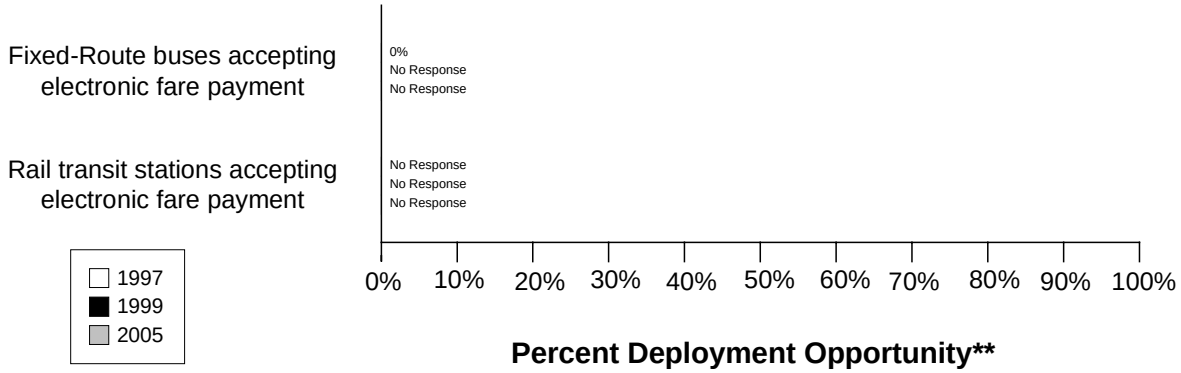
Link Description	1999	2005
15a. Transit Management agencies have vehicles equipped with ramp meter priority capability	(0/ 2) 0%	(0/ 2) 0%
15b. Transit Management agencies have vehicles equipped as probes on freeways	(0/ 2) 0%	(0/ 2) 0%
29. Transit Management agencies that report traffic incidents as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

Electronic Fare Payment Component Indicators

Data as of 5/1/00

Portland, Vancouver

Electronic Fare Payment*



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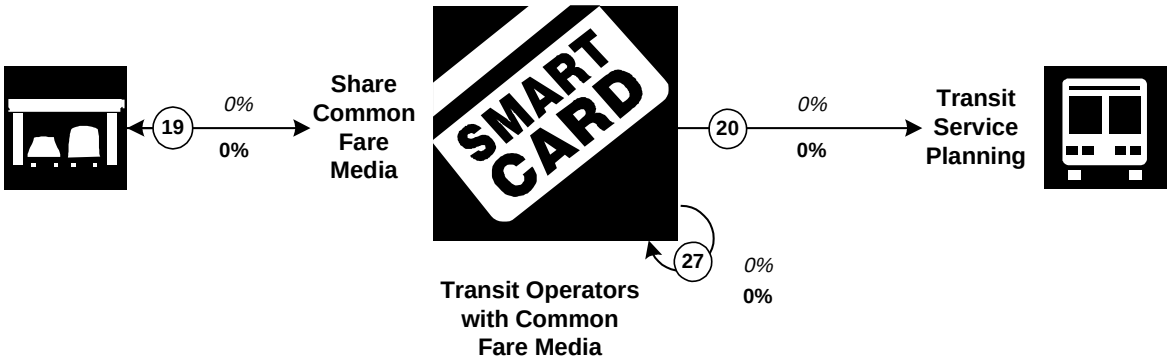
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Fixed-route transit vehicles that accept electronic payment	0	104	0%		781			887	
Rail transit stations that accept electronic payment	0	0			40			55	

Electronic Fare Payment Integration Indicators

Portland, Vancouver
Electronic Fare Payment Integration*

Inputs Outputs



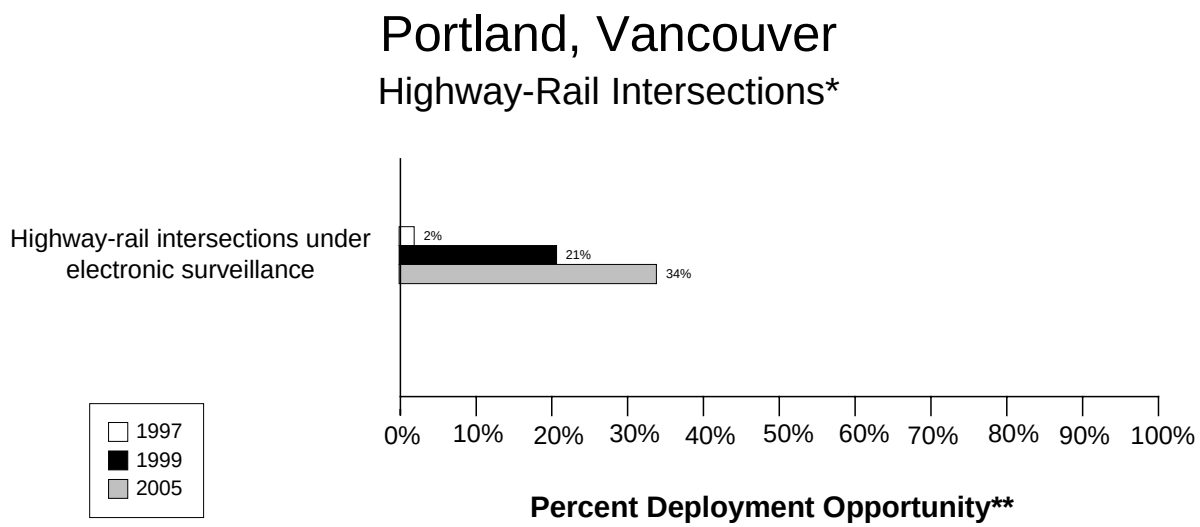
Legend
1999
2005

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

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

Highway Rail Intersection Component Indicators

Data as of 5/1/00



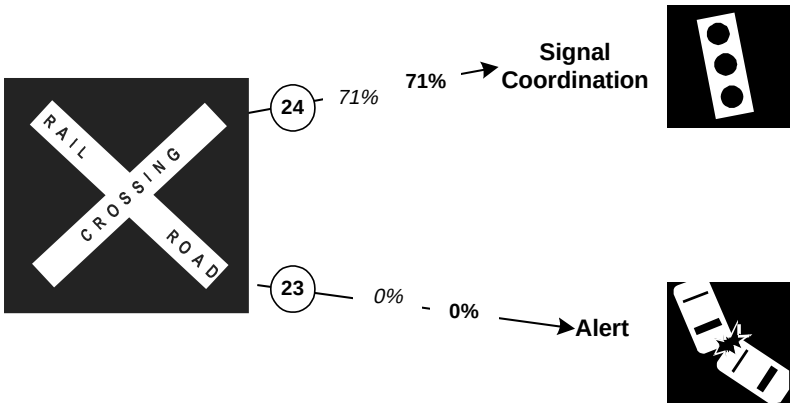
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Highway-rail intersections are under electronic surveillance	1	50	2%	11	53	21%	18	53	34%

Highway Rail Intersection Integration Indicators

Portland, Vancouver
Highway Rail Intersections Integration*

Inputs Outputs



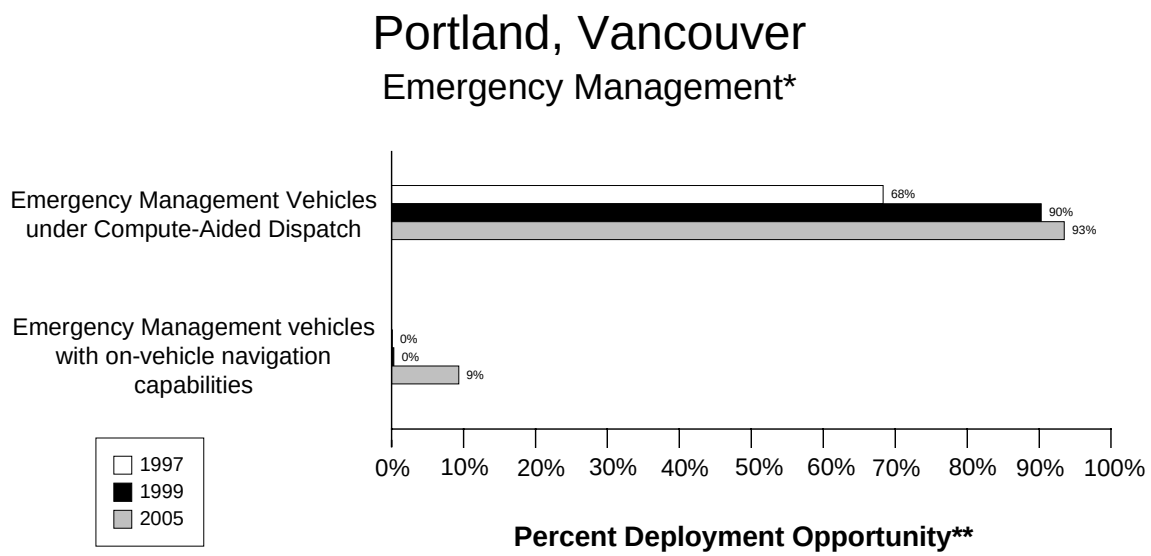
Legend
1999, **2005**

* 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	(5/ 7) 71%	(5/ 7) 71%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	(0/ 7) 0%	(0/ 7) 0%

Emergency Management Component Indicators

Data as of 5/1/00



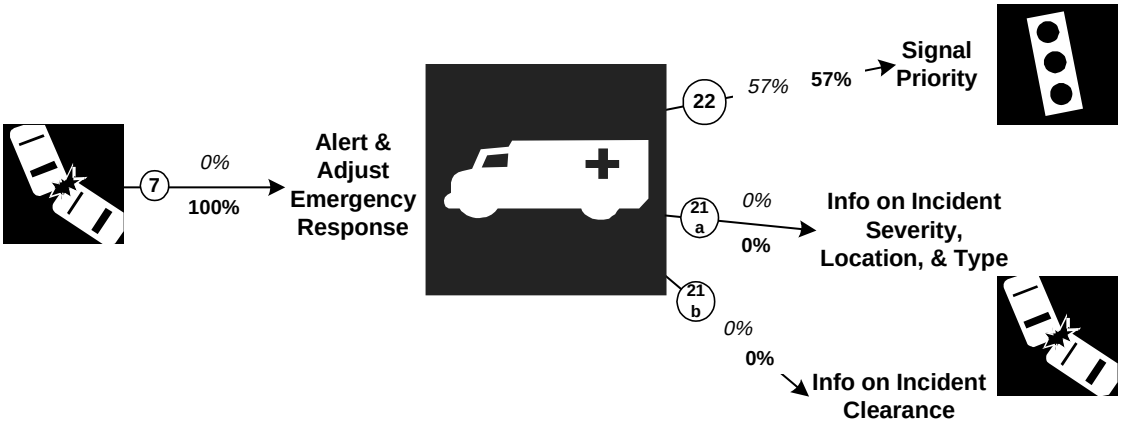
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Public sector emergency vehicles that operate under computer-aided dispatch	731	1070	68%	808	895	90%	501	536	93%
Public sector emergency vehicles that have in-vehicle route guidance capability	1	1070	0%	3	895	0%	50	536	9%

Emergency Management Integration Indicators

Portland, Vancouver
Emergency Management Integration*

Inputs Outputs



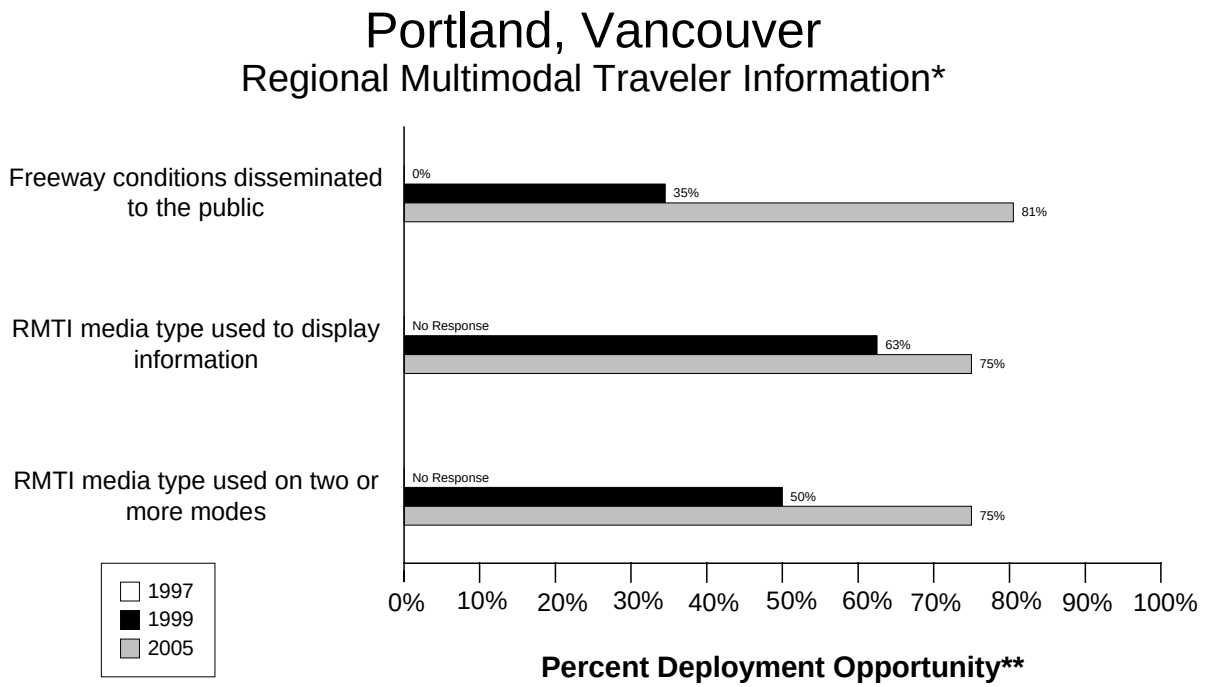
Legend
1999, **2005**

* 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%	(1/ 1) 100%
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	(4/ 7) 57%	(4/ 7) 57%
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

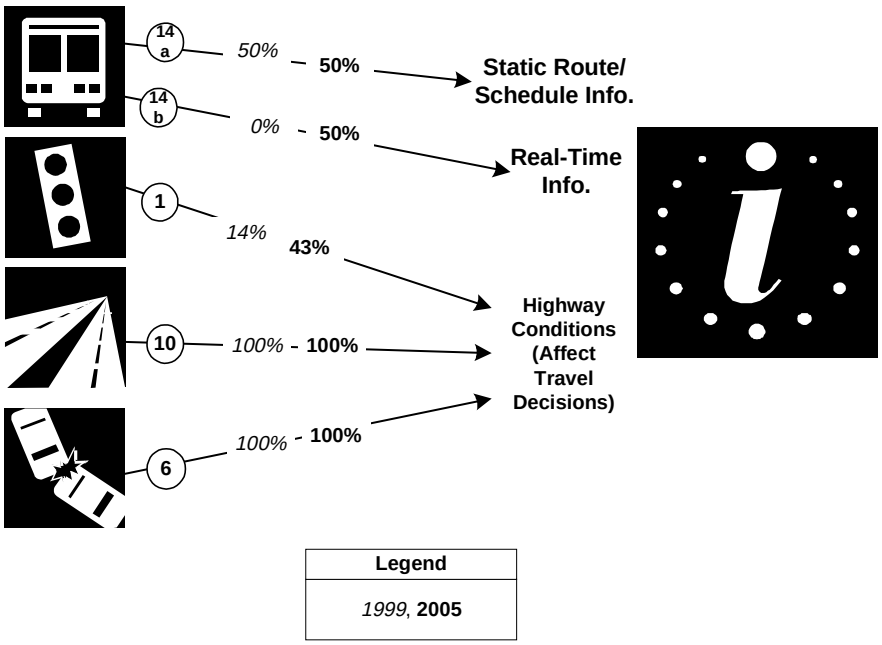


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Freeway conditions disseminated to travelers	0	113	0%	39	113	35%	91	113	81%
Possible RMTI media types are used to display information to travelers				5	8	63%	6	8	75%
Possible RMTI media are used to display information on *two or more modes* to travelers				4	8	50%	6	8	75%

Regional Multimodal Traveler Information Integration Indicators

Portland, Vancouver
Regional Multimodal Traveler Information Integration*

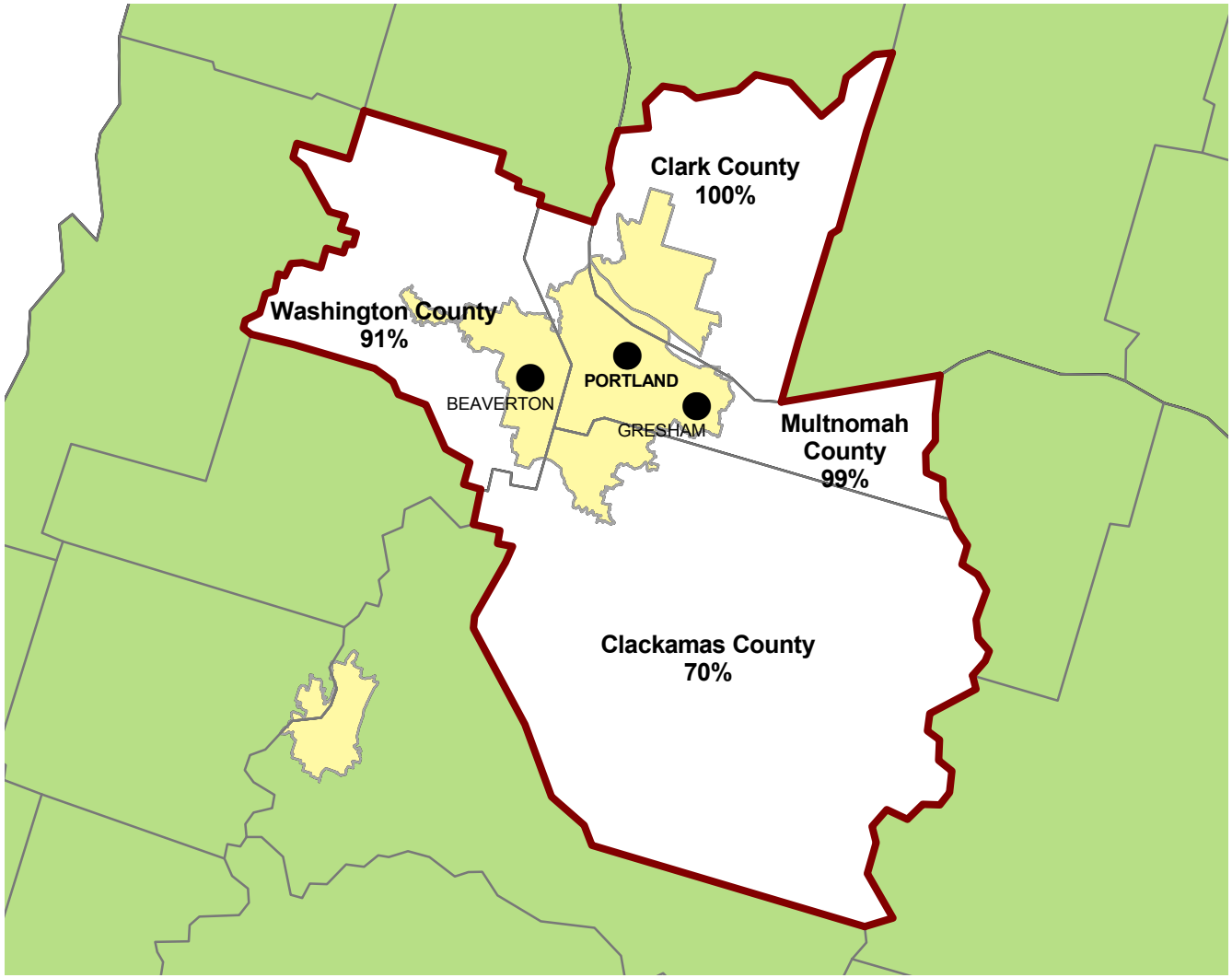


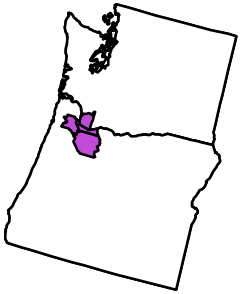
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
14a. Transit Management agencies that disseminate information describing transit routes, schedules, and fares to travelers	(1/ 2) 50%	(1/ 2) 50%
14b. Transit Management agencies that disseminate information describing schedule/route adherence to travelers	(0/ 2) 0%	(1/ 2) 50%
1. Arterial Management agencies that disseminate arterial travel times, speeds, and conditions to the public	(1/ 7) 14%	(3/ 7) 43%
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

METROPOLITAN SERVICE DISTRICT, OR,
SOUTHWEST WASHINGTON REGIONAL TRANSPORTATION COUNCIL, WA





City Included in Surveys

Metropolitan Planning Area Boundary

County Boundary

Urbanlized Area

Outside Survey Area

Percentage on the Map Represents Percentage of County Population Included within MPO Boundary

Appendix B
Surveyed Agencies

Surveyed Agencies

Agency Name	Phone	Fax	1999		1997	
			Out	In	Out	In
PORTLAND, VANCOUVER						
Arterial Management						
Oregon Department of Transportation	(503) 731-8218	(503) 731-4555	8/5/1999	8/30/1999	7/17/1997	9/25/1997
Multnomah County	(503) 248-5050	(503) 248-3321	8/5/1999	10/5/1999	7/17/1997	9/8/1997
Washington County	(503) 681-3822	(503) 681-6793	8/5/1999		7/17/1997	
Clackamas County	(503) 650-3452	(503) 650-3793	8/5/1999	9/7/1999	7/17/1997	10/20/1997
Portland City	(503) 823-5382	(503) 823-7682	8/5/1999	10/15/1999	7/17/1997	
Gresham City	(503) 618-2430	(503) 661-5927	8/5/1999	9/13/1999	7/17/1997	
Beaverton City	(503) 526-2444	(503) 526-2535	8/5/1999	9/27/1999	7/17/1997	8/18/1997
Clark County	(360) 397-6118	(360) 397-6051	8/5/1999	2/4/2000	7/17/1997	8/26/1997
Emergency Management						
Beaverton City Fire Department	503-649-8577	503-649-4814			7/17/1997	9/8/1997
Beaverton City Police Department	(503) 526-2260	(503) 526-2484	6/28/1999	7/29/1999	7/17/1997	7/22/1997
Vancouver City Fire Department	(360)-735-8787	(360) 696-8163	6/28/1999		6/30/1998	6/30/1998
Tualatin Valley Fire Department	(503) 649-8577	(503) 642-4814	6/28/1999	8/27/1999		
Portland City Police	(503) 823-4636	(503) 823-4419	6/28/1999	7/8/1999	7/17/1997	6/25/1998
Clark County Sheriff Department	(360) 397-2366	(360) 576-0525	6/28/1999	8/23/1999	6/30/1998	6/30/1998
Gresham City Fire Department	503-618-2348	503-666-8330	6/28/1999	8/23/1999	6/30/1998	6/30/1998
Vancouver City Police Department	(360) 696-8066	(360) 696-8047	6/28/1999		7/28/1997	7/28/1997
Gresham City Police Department	503-618-2348	503-666-8330	6/28/1999		6/30/1998	6/30/1998
Multnomah County Sheriff	(503) 255-3600	(503) 253-2663	6/28/1999	7/29/1999	7/28/1997	7/28/1997
Portland City Fire & Rescue Department	(503) 823-3700	(503) 823-4077	6/28/1999	9/24/1999	7/28/1997	7/28/1997
Freeway Management						
Oregon Department of Transportation	(503) 731-8218	(503) 731-4555	8/5/1999	8/31/1999	7/17/1997	9/25/1997
MPO						
Southwest Washington Regional Trans Council	(360) 737-6067	(360) 696-1847	7/15/1999	7/28/1999		
Metro	(503) 797-1755	(503) 797-1930	7/15/1999	10/11/1999		
Transit Management						
Clark County Public Transportation Benefit Area	(360) 696-4494	360-906-7490	8/9/1999	9/24/1999	7/17/1997	8/26/1997
Tri-Met	(503) 238-4918	(503) 239-3088	8/9/1999	1/12/2000	7/17/1997	

Appendix C
Freeway Management Components

Freeway Management
Agencies for Metropolitan Area: Portland, Vancouver

	Oregon Department of Transportation	
	1999	**2005**
Agency Returned Survey?	Yes	
FREEWAY MANAGEMENT SECTION		
Number of freeway centerline miles that agency owns or maintains	91	
Number of freeway centerline miles that is used for planning	91	
Number of freeway entrance ramps that agency owns, operates or maintains	150	
Number of freeway entrance ramps that is used for planning	150	
Type of facilities used to conduct freeway/incident management activities		
Activities housed in a free-standing dedicated building?	No	
Activities housed in a building shared with other activities?	Yes	
Activities conducted in a dedicated control room?	Yes	
Control room contains operator console(s)?	Yes	
Control room contains electronic wall map?	Yes	
Control room contains CCTV display(s)?	Yes	
Activities conducted in a room containing workstations or PCs that manage traffic?	No	
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	24	
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?	Yes	
Monitoring and troubleshooting status of system components?	Yes	
Manual override of ramp metering rates at freeway on-ramps?	Yes	
Operating transportation management roadside devices?	Yes	
Radio communications with other agencies?	Yes	
Exchange of electronic data with other agencies such as computer aided dispatch?	No	
Real-Time Traffic Data Collection Technologies		
Total number of miles under surveillance with real-time data collection tech.	39	91

Freeway Management
Agencies for Metropolitan Area: Portland, Vancouver

	Oregon Department of Transportation	
	1999	**2005**
Number of Stations with data collection technologies		
Loop detectors	90	150
Video imaging detectors	NR	25
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0
Microwave radar	0	0
Other (e.g., acoustic detectors)	0	0
Number of Miles covered with data collection technologies		
Loop detectors	39	91
Video imaging detectors	NR	NR
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	11	18
Candidate locations for deployment of VMS	18	18
Roadside Technologies used to Distribute Traveler Information		
Total number of miles where information is distributed	NR	NR
Number deployed		
Highway advisory radio	0	0
In-vehicle signing	0	0
Portable variable message signs	0	0
Other	0	0
Miles covered		
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	0	0
Number of entrance ramp meters operated under central control	90	150
Number of entrance ramp meters that provide preemption for emergency vehicles	0	NR
Number of entrance ramp meters that provide priority for transit vehicles	3	NR
Total number of metered ramps	90	150
Freeway centerline miles under lane control	NR	NR
Communication Links		
Freeway centerline miles covered by the following type of communication		
Twisted pair cable	17	NR
Coaxial cable	0	0
Fiber-optic cable	20	91
Microwave radio	0	0
Other	0	0
ITS Standards Used Related to Freeway Management		
ATMS Data Dictionary Sections 1 and 2 (ITE TM 1.01)	No	

Freeway Management
Agencies for Metropolitan Area: Portland, Vancouver

	Oregon Department of Transportation	
	1999	**2005**
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?	Yes	
Have agreements in place with other agencies to use similar hardware		
and software to aid maintenance and interoperability?	Yes	
INCIDENT MANAGEMENT SECTION		
Use of Service Patrols to Assist in Detection and Response to Incidents		
Publicly operated service patrol vehicles	Yes	
Privately operated service patrol vehicles operated under public contract	No	
Total number of freeway miles patrolled by these services	91	91
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	39	91
CCTV	50	91
Private sector sources (e.g., Shadow Traffic, SmartRoutes)	91	91
Other (e.g., free cell phone call to an area radio system, etc.)	91	91
Procedures in place for Freeway Incident Response?		
Working agreement(s)/arrangement(s) with other agencies	Yes	
Inter-agency incident management admin. team that meets regularly	Yes	
Major incident response team that responds to major incidents	No	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	Yes	
Central focal point for facilitating the two-way flow of information		
among agencies responding to an incident?		
The central focal point is a Freeway or Traffic Management Center	No	
The central focal point is a Police, Fire or joint dispatch center	Yes	
The central focal point is another center	No	
Methods of Communication Used On-Site at an Incident		
Police		
Two-way radio	No	
800 MHz trunked radio	Yes	
Cellular telephone	Yes	
Hand-held (i.e., walkie-talkie)	No	

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

Freeway Management
Agencies for Metropolitan Area: Portland, Vancouver

	Oregon Department of Transportation	
	1999	**2005**
Are overturned tank trucks, which are intact and not leaking, uprighted		
without first off-loading?	No	
Does your state or local jurisdiction have a law that requires drivers		
involved in property-damage-only accidents to move the vehicles		
from travel lanes to a safe location to exchange info and wait for police?	Yes	
Have laws or policies regarding the removal of stalled/abandoned vehicles		
from freeway shoulders?	Yes	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	0-24	
Have policies or procedures for quick removal of vehicles?	Yes	
Is Total Station equipment used to investigate major incidents?	Yes	
Handling of Towing Responses to Incidents		
Formal contract based on qualifications?	No	
Rotation with companies under contract?	Yes	
Separate lists kept for light and heavy response and for specialty recovery?	Yes	
Rotation list with minimal qualifications?	No	
In towing qualifications, do you require towers to be certified under the		
Towing and Recovery Ass. of America's National Drivers Cert. Program?	DK	
_____		
DK: Don't know		
NR: No Response		
Leg: Legislation or action being planned		

Appendix D
Freeway Management Integration

Agency Name	Oregon 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		
Freeway Management Agencies		
Provide Information	Oregon Department of Transportation	Oregon Department of Transportation
Share Infrastructure	Portland City, Tri-Met	Portland City, Tri-Met, Port of Portland
Coordinate Operation	Oregon Department of Transportation	Oregon Department of Transportation
Incident Management Agencies		
Provide Information	Oregon Department of Transportation, Portland City Police	Oregon Department of Transportation, Portland City Police
Share Infrastructure	City, 911	City, 911
Coordinate Operation	Oregon Department of Transportation, Portland City Police	Oregon Department of Transportation, Portland City Police
Arterial Management Agencies		
Provide Information	None listed	Beaverton City Operations Department, Clackamas County Transportation & Development, Clark County Public Works, Gresham City Environment Services, Multnomah County, Oregon Department of Transportation, Portland City, Washington County
Share Infrastructure	Gresham City Environment Services, Multnomah County, Oregon Department of Transportation, Portland City	Beaverton City Operations Department, Clackamas County Transportation & Development, Clark County Public Works, Washington County

Agency Name	Oregon Department of Transportation	
	1999	**2005**
Coordinate Operation	Gresham City Environment Services, Multnomah County, Oregon Department of Transportation, Portland City	Beaverton City Operations Department, Clackamas County Transportation & Development, Clark County Public Works, Washington County
Public Transit Operators		
Provide Information	None listed	Clark County Public Transportation Benefit Area, Tri-Met
Share Infrastructure	None listed	Tri-Met
Coordinate Operation	Clark County Public Transportation Benefit Area, Tri-Met	None listed
Receiving real-time information via electronic means from others		
Incident Management agencies from which your agency receives		
incident severity, location, and type information	None listed	None listed
Arterial Management agencies from which your agency receives		
arterial travel times, speeds, and conditions	None listed	Beaverton City Operations Department, Clackamas County Transportation & Development, Clark County Public Works, Gresham City Environment Services, Multnomah County, Oregon Department of Transportation, Portland City, Tri-Met
Public Transit operators from which your agency receives		
freeway travel times derived from vehicle probes	None listed	Tri-Met
Toll Collection agencies from which your agency receives freeway travel		
times derived from vehicles probes	None listed	None listed
Freeway Incident Management Section		
Agencies your agency provides incident severity, location, and type info.		
and/or shares infrastructure and/or coordinates operation		
Arterial Management Agencies		

Agency Name	Oregon Department of Transportation	
	1999	**2005**
Provide Information	Beaverton City Operations Department, Clackamas County Transportation & Development, Clark County Public Works, Gresham City Environment Services, Multnomah County, Multnomah County, Portland City, Washington County, Oregon State Police	Beaverton City Operations Department, Clackamas County Transportation & Development, Clark County Public Works, Gresham City Environment Services, Multnomah County, Multnomah County, Portland City, Washington County, Oregon State Police
Share Infrastructure	Multnomah County, Portland City	Multnomah County, Portland City
Coordinate Operation	None listed	None listed
Emergency Management Agencies		
Provide Information	None listed	Beaverton, Portland, Gresham, Vancouver, Multnomah County, Washington County, Clackamas County, Clark County, Tri-Met, Port of Portland
Share Infrastructure	None listed	Beaverton, Portland, Gresham, Vancouver, Multnomah County, Washington County, Clackamas County, Clark County, Tri-Met, Port of Portland
Coordinate Operation	None listed	Beaverton, Portland, Gresham, Vancouver, Multnomah County, Washington County, Clackamas County, Clark County, Tri-Met, Port of Portland
Freeway Management Agencies		
Provide Information	None listed	Beaverton, Portland, Gresham, Vancouver, Multnomah County, Washington County, Clackamas County, Clark County, Tri-Met, Port of Portland

Agency Name	Oregon Department of Transportation	
	1999	**2005**
Share Infrastructure	None listed	Beaverton, Portland, Gresham, Vancouver, Multnomah County, Washington County, Clackamas County, Clark County, Tri-Met, Port of Portland
Coordinate Operation	None listed	Beaverton, Portland, Gresham, Vancouver, Multnomah County, Washington County, Clackamas County, Clark County, Tri-Met, Port of Portland
Public Transit Operators		
Provide Information	None listed	Beaverton, Portland, Gresham, Vancouver, Multnomah County, Washington County, Clackamas County, Clark County, Tri-Met, Port of Portland
Share Infrastructure	None listed	Beaverton, Portland, Gresham, Vancouver, Multnomah County, Washington County, Clackamas County, Clark County, Tri-Met, Port of Portland
Coordinate Operation	None listed	Beaverton, Portland, Gresham, Vancouver, Multnomah County, Washington County, Clackamas County, Clark County, Tri-Met, Port of Portland
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	None listed	None listed

Freeway Management Integration
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Oregon Department of Transportation	
	1999	**2005**
Freeway Management agencies from which your agency receives freeway travel times, speeds, and conditions	Oregon 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.

Appendix E
Freeway Management Information Collection and Dissemination

Data Collection and Dissemination: Freeway Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Oregon 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, Metering rate, Road conditions, Weather conditions, Incidents, Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures, Highway operations coordination information	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Metering rate, Road conditions, Weather conditions, Incidents, Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures, Highway operations coordination information
Archived by your agency	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Road conditions, Weather conditions, Incidents, Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures, Highway operations coordination information	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Road conditions, Weather conditions, Incidents, Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures, Highway operations coordination information
Transferred to another agency by your agency	Road conditions, Weather conditions, Incidents, Current work zones, Scheduled work zones	Traffic volumes, Traffic speeds, Lane occupancy, Vehicle classification, Emergency/evacuation routes and procedures
Importance of making information available to the public		
Ranked High	Traffic speeds, Road conditions, Weather conditions, Incidents, Emergency/evacuation routes and procedures	
Ranked Medium	Traffic volumes, Ramp queues, Route designations (snow emergency, etc.), Current work zones, Scheduled work zones, Intermodal (air, rail, water) connections, Highway operations coordination information	
Ranked Low	Lane occupancy, Vehicle classification, Probe vehicles, Ramp meter preemption's, Metering rate	
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, Construction impact determination, Planning, Roadway impact analysis, Dissemination to the public, Calibrate Regional Model	
Methods used to disseminate freeway information to the public		
Technologies your agency uses to disseminate:	Internet Web sites, Pagers or personal data assistants	Internet Web sites, Pagers or personal data assistants
Technologies your agency (through another agency or org.) uses to disseminate:	Pagers or personal data assistants	Dedicated cable TV, Internet Web sites, Interactive TV, Kiosks, E-mail or other direct PC communication, In-vehicle navigation systems
Internet web site reporting freeway conditions	www.odot.state.or.us/travel	
Telephone system for reporting freeway information to the public	NR	
Organizations your agency sends information for dissemination to the public	local media traffic reporters-radio and tv	
Freeway Incident Management Section		
Methods used to distribute incident location and severity information		
to the public		

Data Collection and Dissemination: Freeway Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Oregon Department of Transportation	
	1999	**2005**
Technologies your agency uses to disseminate:	Internet Web sites	Telephone system, Internet Web sites
Technologies your agency (through another agency or org.) uses to disseminate:	Broadcast radio and TV	Internet Web sites, Pagers or personal data assistants, Interactive TV, Kiosks, E-mail or other direct PC communication
Internet web site reporting incident information	NR	
Telephone system for reporting incident information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	

Appendix F
Arterial Management Components

Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

	Beaverton City		Clackamas County		Clark County		Gresham 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	23		66		NR		1	
Number of arterial miles that is used for planning	0		120		NR		34	
Number of highway-rail intersections that agency maintains	14		1		NR		6	
Number of highway-rail intersections that is used for planning	0		2		NR		6	
Type of facilities used to conduct arterial management activities								
Activities housed in a free-standing dedicated building?	No		No		No		No	
Activities housed in a building shared with other activities?	Yes		No		No		No	
Activities conducted in a dedicated control room?	No		No		No		Yes	
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?	Yes		Yes		No		No	
Facilities are electronically linked to other transportation mgt facilities?	Yes		No		No		No	
Staffing and hours of operation of arterial management activities								
Number of full-time agency staff members	9		NR		NR		NR	
Number of full time contractor staff members	0		NR		NR		NR	
Number of part-time agency staff members	0		NR		NR		NR	
Number of part-time contractor staff members	0		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		No		No	
Agency staff dedicated to transportation management duty	No		No		No		No	
Types of operations conducted for arterial management								
Incident detection and management?	No		Yes		No		No	
This metropolitan area?	No		Yes		No		No	
Other metropolitan area?	No		No		No		No	
Monitoring and troubleshooting status of system components?	No		Yes		No		No	
Radio communications with other agencies?	No		Yes		No		No	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		Yes		No		No	
Manual override of traffic signal timing plans	Yes		Yes		No		No	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	No		No		No		No	

Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

	Beaverton City		Clackamas County		Clark County		Gresham City	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Describe agency's role in traffic signal control	All roads in incorporated area, and roads in another local jurisdiction		All roads in incorporated area except state routes		NR		Do not operate	
Traffic Signals Operated by Agency								
Number of signalized intersections operated and owned by agency	51	NR	52	92	NR	NR	NR	NR
Number of signalized intersections operated by agency but owned by another	64	NR	79	105	NR	NR	NR	NR
Total number of signalized intersections operated by agency	115	NR	131	197	55	75	NR	NR
Characteristics of signalized intersections that agency operates								
Under closed loop or central system control	0	NR	20	150	32	50	NR	NR
Under real-time traffic adaptive control using advanced software	0	NR	0	40	0	9	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	100	NR	80	150	54	75	NR	NR
Allow signal priority for transit vehicles	0	NR	80	150	0	0	NR	NR
Within 200 feet of a highway-rail intersection	10	NR	1	1	0	0	NR	NR
Within 200 feet of a highway-rail intersection that adjust signal timing	9	NR	1	1	0	0	NR	NR
Software used to control the signals agency operates								
Date of last upgrade to traffic signal control system software?	8/5/99		7/99		NR		NR	
How often do you update signal timing?	as needed		once a year or as needed		NR		NR	
Software used and number of signalized intersections under control (1999, 2005)	Wapiti-W41KS, 106, NR		Translink- Communication Interface, 88, 150 W41KS-:Local Controller, 83, 135 W70SM- For Masters, 5, 15		NR		NR	
Controllers used to control signals								
NEMA	0	0	0	0	0	0	0	0
170/179	106	NR	88	120	0	0	0	0
2070 controller	0	0	NR	30	0	0	0	0
Other	2	0	0	0	0	0	0	0
Technologies Associated with Highway-Rail Intersections								
Total number of highway-rail intersections under electronic surveillance	NR	NR	0	1	NR	NR	NR	NR
Highway-Rail intersection capapbilities								
Video surveillance	0	0	0	0	0	0	0	0
Electronic surveillance other than video	0	0	0	0	0	0	0	0
Ability to predict train arrival electronically	0	0	0	0	0	0	0	0
Equipped with electronic traffic violator devices	0	0	0	1	0	0	0	0

	Beaverton City		Clackamas County		Clark County		Gresham City	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Other	0	0	0	0	0	0	0	0
Real-Time Electronic Traffic Data Collection Technologies								
Total number of signalized intersections covered by electronic surveillance	NR	NR	88	150	NR	NR	NR	NR
Number of signalized intersections with data collection technologies								
Loop detectors	0	0	88	150	0	0	0	0
Video detection cameras	0	0	1	100	0	0	0	0
Probe readers reading toll tags	0	0	0	0	0	0	0	0
Probe readers reading license plates	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Roadside Technologies used to Distribute Traveler Information								
Number deployed								
Highway Advisory Radio	NR	NR	0	1	NR	NR	NR	NR
In-Vehicle Signing (IVS)	NR	NR	0	2	NR	NR	NR	NR
VMS controlling parking access	NR	NR	0	6	NR	NR	NR	NR
Miles covered								
Highway Advisory Radio	NR	NR	0	30	NR	NR	NR	NR
In-Vehicle Signing (IVS)	NR	NR	0	500	NR	NR	NR	NR
Variable Message Signs (VMS) on Arterials								
Candidate locations for deployment of VMS where VMS has been deployed	NR	NR	0	12	2	4	NR	NR
Candidate locations for deployment of VMS	NR	NR	0	12	0	2	NR	NR
Communication Technologies								
Signalized intersections communicated with by each type of communication								
Twisted pair cable	77	NR	20	60	0	0	0	0
Coaxial cable	0	0	0	0	0	0	0	0
Fiber-optic cable	0	0	0	90	0	0	0	0
Other (e.g., wireless, dial-up modems, leased lines, etc.)	9	0	91	150	0	0	0	0
Does agency convey information on highway-rail intersection crossing								
status to travelers via roadside media such as VMS or HAR?	No		No		No		No	
ITS Standards Used Related to Traffic Signal Control								
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		No		No		No	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		Yes		No		No	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		Yes		No		No	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		Yes		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		Yes		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		Yes		NR		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	

	Beaverton City		Clackamas County		Clark County		Gresham City	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Use of Service Patrols to Assist in Detection and Response to Incidents								
Publicly operated service patrol vehicles	No		Yes		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	500	500	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	500	0	0	0	0
Free cellular phone call to an area radio station	0	0	1,500	1,500	0	0	0	0
Police patrols	0	0	1,500	1,500	0	0	0	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	0	0	0	0	0
CCTV	0	0	1	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		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		Yes		No		No	
Methods of Communication Used On-Site at an Incident								
Police								
Two-way radio	No		Yes		No		No	
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		Yes		No		No	
Hand-held (i.e., walkie-talkie)	No		Yes		No		No	
Automated data systems (i.e., CAD)	No		Yes		No		No	
Other	No		No		No		No	
Fire								
Two-way radio	No		Yes		No		No	
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		Yes		No		No	
Hand-held (i.e., walkie-talkie)	No		Yes		No		No	
Automated data systems (i.e., CAD)	No		No		No		No	
Other	No		No		No		No	
DOT								
Two-way radio	No		Yes		No		No	
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		Yes		No		No	
Hand-held (i.e., walkie-talkie)	No		Yes		No		No	
Automated data systems (i.e., CAD)	No		No		No		No	
Other	No		No		No		No	
Towing								

	Beaverton City		Clackamas County		Clark County		Gresham City	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Two-way radio	No		Yes		No		No	
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		Yes		No		No	
Hand-held (i.e., walkie-talkie)	No		Yes		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		Yes		No		No	
City Police	No		No		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		Yes		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		Yes		NR		NR	
Are there communication linkages to a communications traffic/freeway mgt center?	NR		Yes		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		No		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		No		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		Yes		NR		NR	
Have laws or policies regarding the removal of stalled/abandoned vehicles								
from freeway shoulders?	NR		Yes		NR		NR	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	NR		>36		NR		NR	
Have policies or procedures for quick removal of vehicles?	NR		Yes		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	

Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

	Beaverton City		Clackamas County		Clark County		Gresham City	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Separate lists kept for light and heavy response and for specialty recovery?	NR		Yes		NR		NR	
Rotation list with minimal qualifications?	No		No		No		No	
In towing qualifications, do you require towers to be certified under the								
Towing and Recovery Ass. of America's National Drivers Cert. Program?	NR		DK		NR		NR	
_____								
DK: Don't know								
NR: No Response								
Leg: Legislation or action being planned								

Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

	Multnomah County		Oregon Department of Transportation		Portland City		**Totals**	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes		Yes		7	
ARTERIAL MANAGEMENT SECTION								
Number of arterial miles that agency owns or maintains	48		155		NR		293	
Number of arterial miles that is used for planning	36		155		NR		345	
Number of highway-rail intersections that agency maintains	NR		2		30		53	
Number of highway-rail intersections that is used for planning	NR		NR		NR		8	
Type of facilities used to conduct arterial management activities								
Activities housed in a free-standing dedicated building?	No		No		No		0	
Activities housed in a building shared with other activities?	Yes		No		No		2	
Activities conducted in a dedicated control room?	No		No		No		1	
Control room contains operator console(s)?	No		No		No		0	
Control room contains electronic wall map?	No		No		No		0	
Control room contains CCTV display(s)?	No		No		No		0	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		Yes		No		3	
Facilities are electronically linked to other transportation mgt facilities?	Yes		No		No		2	
Staffing and hours of operation of arterial management activities								
Number of full-time agency staff members	NR		3		NR		12	
Number of full time contractor staff members	NR		NR		NR		0	
Number of part-time agency staff members	NR		NR		NR		0	
Number of part-time contractor staff members	NR		NR		NR		0	
Staffed 24 hours day by agency staff or by others	NR		Yes		NR		1	
Staffed during peak hours only by agency staff or by others	NR		NR		NR		0	
Staffed by others during off-peak hours	No		No		No		0	
Agency staff perform transportation management as an ancillary duty	No		Yes		No		2	
Agency staff dedicated to transportation management duty	No		No		No		0	
Types of operations conducted for arterial management								
Incident detection and management?	No		No		No		1	
This metropolitan area?	No		No		No		1	
Other metropolitan area?	No		No		No		0	
Monitoring and troubleshooting status of system components?	Yes		Yes		No		3	
Radio communications with other agencies?	No		Yes		No		2	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		No		No		1	
Manual override of traffic signal timing plans	Yes		Yes		No		4	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	No		Yes		No		1	

Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

	Multnomah County		Oregon Department of Transportation		Portland City		**Totals**	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Describe agency's role in traffic signal control	Operate signals within county except for state routes inside city of Portland limits.		State routes only		NR			
Traffic Signals Operated by Agency								
Number of signalized intersections operated and owned by agency	82	NR	341	320	NR	NR	526	412
Number of signalized intersections operated by agency but owned by another	4	NR	3	0	NR	NR	150	105
Total number of signalized intersections operated by agency	86	NR	344	320	956	960	1687	1552
Characteristics of signalized intersections that agency operates								
Under closed loop or central system control	44	82	9	259	588	750	693	1291
Under real-time traffic adaptive control using advanced software	0	NR	0	0	0	100	0	149
Using SCOOT	No		No		No		0	
Using SCATS	No		No		No		0	
Name of software	NR		NR	RT-TRACS adaptive control				
Allow signal preemption for emergency vehicles	64	NR	260	280	150	350	708	855
Allow signal priority for transit vehicles	7	NR	0	45	5	300	92	495
Within 200 feet of a highway-rail intersection	7	NR	43	40	10	10	71	51
Within 200 feet of a highway-rail intersection that adjust signal timing	7	NR	43	40	10	10	70	51
Software used to control the signals agency operates								
Date of last upgrade to traffic signal control system software?	1998		NR		NR			
How often do you update signal timing?	yearly or as needed		once every 12-18 months		NR			
Software used and number of signalized intersections under control (1999, 2005)	JHK Series 2000 with W41KS, 44, 82		Series 2000, 9, 259		NR			
Controllers used to control signals								
NEMA	0	0	4	0	0	0	4	0
170/179	82	86	340	320	0	0	616	526
2070 controller	0	0	0	0	0	0	0	30
Other	4	0	0	0	0	0	6	0
Technologies Associated with Highway-Rail Intersections								
Total number of highway-rail intersections under electronic surveillance	7	7	NR	NR	4	10	11	18
Highway-Rail intersection capapbilities								
Video surveillance	0	0	0	0	0	0	0	0
Electronic surveillance other than video	0	0	0	0	0	0	0	0
Ability to predict train arrival electronically	7	7	0	0	0	0	7	7
Equipped with electronic traffic violator devices	0	0	0	0	0	0	0	1

	Multnomah County		Oregon Department of Transportation		Portland City		**Totals**	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Other	0	0	0	0	0	0	0	0
Real-Time Electronic Traffic Data Collection Technologies								
Total number of signalized intersections covered by electronic surveillance	12	NR	4	4	NR	NR	104	154
Number of signalized intersections with data collection technologies								
Loop detectors	12	NR	4	4	0	0	104	154
Video detection cameras	0	0	0	0	0	0	1	100
Probe readers reading toll tags	0	0	0	0	0	0	0	0
Probe readers reading license plates	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Roadside Technologies used to Distribute Traveler Information								
Number deployed								
Highway Advisory Radio	NR	NR	NR	NR	NR	NR	0	1
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	0	2
VMS controlling parking access	NR	NR	NR	NR	NR	NR	0	6
Miles covered								
Highway Advisory Radio	NR	NR	NR	NR	NR	NR	0	30
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	0	500
Variable Message Signs (VMS) on Arterials								
Candidate locations for deployment of VMS where VMS has been deployed	NR	NR	NR	NR	2	10	4	26
Candidate locations for deployment of VMS	NR	NR	NR	NR	80	80	80	94
Communication Technologies								
Signalized intersections communicated with by each type of communication								
Twisted pair cable	44	82	59	0	0	0	200	142
Coaxial cable	0	0	0	0	0	0	0	0
Fiber-optic cable	0	0	9	23	0	0	9	113
Other (e.g., wireless, dial-up modems, leased lines, etc.)	0	4	156	205	0	0	256	359
Does agency convey information on highway-rail intersection crossing								
status to travelers via roadside media such as VMS or HAR?	No		No		No		0	
ITS Standards Used Related to Traffic Signal Control								
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		No		No		0	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		No		No		1	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		No		No		1	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		No		No		1	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		No		No		0	
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		No		No		0	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		No		No		1	
Would agency be willing to participate in testing of ITS Standards?	NR		Yes		NR		3	
Have agreements in place with other agencies to use similar hardware								
and software to aid maintenance and interoperability?	No		Yes		NR		2	
INCIDENT MANAGEMENT ON ARTERIAL STREETS								
Receive information on highway-rail intersection crossing blockages for								
the purpose of managing incident response?	No		No		No		0	

Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

	Multnomah County		Oregon Department of Transportation		Portland City		**Totals**	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Use of Service Patrols to Assist in Detection and Response to Incidents								
Publicly operated service patrol vehicles	No		Yes		No		2	
Privately operated service patrol vehicles operated under public contract	No		No		No		0	
Total number of arterial miles patrolled by these services	NR	NR	0	NR	NR	NR	500	500
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	500
Free cellular phone call to an area radio station	0	0	0	0	0	0	1500	1500
Police patrols	0	0	0	0	0	0	1500	1500
Computer algorithms linked to traffic surveillance equipment	0	0	0	0	22	50	22	50
CCTV	0	0	0	0	10	40	11	50
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		2	
Inter-agency incident management admin. team that meets regularly	No		No		No		1	
Major incident response team that responds to major incidents	No		No		No		1	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		No		No		1	
Methods of Communication Used On-Site at an Incident								
Police								
Two-way radio	No		No		No		1	
800 MHz trunked radio	No		Yes		No		1	
Cellular telephone	No		Yes		No		2	
Hand-held (i.e., walkie-talkie)	No		No		No		1	
Automated data systems (i.e., CAD)	No		No		No		1	
Other	No		No		No		0	
Fire								
Two-way radio	No		No		No		1	
800 MHz trunked radio	No		Yes		No		1	
Cellular telephone	No		No		No		1	
Hand-held (i.e., walkie-talkie)	No		No		No		1	
Automated data systems (i.e., CAD)	No		No		No		0	
Other	No		No		No		0	
DOT								
Two-way radio	No		Yes		No		2	
800 MHz trunked radio	No		Yes		No		1	
Cellular telephone	No		Yes		No		2	
Hand-held (i.e., walkie-talkie)	No		No		No		1	
Automated data systems (i.e., CAD)	No		No		No		0	
Other	No		No		No		0	
Towing								

	Multnomah County		Oregon Department of Transportation		Portland City		Totals	
	1999	2005	1999	2005	1999	2005	1999	2005
Two-way radio	No		No		No		1	
800 MHz trunked radio	No		No		No		0	
Cellular telephone	No		No		No		1	
Hand-held (i.e., walkie-talkie)	No		No		No		1	
Automated data systems (i.e., CAD)	No		No		No		0	
Other	No		No		No		0	
Which police agencies typically respond to incidents on arterials?								
State Police	No		Yes		No		1	
County Police or Sheriff	No		Yes		No		2	
City Police	No		Yes		No		1	
Who provides on-site emergency medical response?								
Fire	No		Yes		No		2	
Emergency Management Service Agency	No		No		No		0	
Private hospital	No		Yes		No		1	
Has a multi-agency contact list been developed in area containing the								
names, phone numbers, etc. for the appropriate response personnel?	NR		NR		NR		1	
Is the Incident Command System used to manage incident scenes?	NR		Yes		NR		2	
Is there a legal specification by state law or formal agreement as to who								
is "in charge" at the incident scene?								
Specified by state law?	No		No		No		1	
Formal agreement?	No		Yes		No		1	
Not specified or don't know?	No		No		No		0	
On-scene command post used to manage activities of responding agencies?	NR		NR		NR		1	
Are there communication linkages to a communications traffic/freeway mgt center?	NR		Yes		NR		2	
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		0	
Respondents protected through law or court opinion for liability claims								
for damages to vehicles or cargoes during clearance activities?	NR		NR		NR		0	
Are overturned tank trucks, which are intact and not leaking, uprighted								
without first off-loading?	NR		NR		NR		0	
Does your state or local jurisdiction have a law that requires drivers								
involved in property-damage-only accidents to move the vehicles								
from travel lanes to a safe location to exchange info and wait for police?	NR		Yes		NR		2	
Have laws or policies regarding the removal of stalled/abandoned vehicles								
from freeway shoulders?	NR		Yes		NR		2	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	NR		0-24		NR		0	
Have policies or procedures for quick removal of vehicles?	NR		Yes		NR		2	
Is Total Station equipment used to investigate major incidents?	NR		Yes		NR		2	
Handling of Towing Responses to Incidents								
Formal contract based on qualifications?	No		No		No		0	
Rotation with companies under contract?	No		Yes		No		2	

	Multnomah County		Oregon Department of Transportation		Portland City		**Totals**	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Separate lists kept for light and heavy response and for specialty recovery?	NR		NR		NR		1	
Rotation list with minimal qualifications?	No		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		NR		0	
_____								
DK: Don't know								
NR: No Response								
Leg: Legislation or action being planned								

Appendix G
Arterial Management Integration

Arterial Management Integration
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Beaverton City		Clackamas County	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes	
Arterial Management Section				
Arterial Mgt. agencies in metropolitan area with which you share info.				
Share Timing Plans Information	Oregon Department of Transportation, Washington County	None listed	Clackamas County	Portland City
Coordinate Changes to Timing Plans	Oregon Department of Transportation, Washington County	None listed	Clackamas County	Clackamas County, Gresham City, Multnomah County, Oregon Department of Transportation, Washington County, Portland City
Turn over Control of Signals	None listed	None listed	Clackamas County	Clackamas County, Portland City
Agencies your agency provides arterial travel times, speeds, and				
conditions information, share infrastructure or coordinates operation				
Freeway Management Agencies				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	Oregon Department of Transportation	Oregon Department of Transportation

Agency Name	Beaverton City		Clackamas County	
	1999	**2005**	**1999**	**2005**
Coordinate Operation	None listed	None listed	Oregon Department of Transportation	Oregon Department of Transportation
Incident Management Agencies				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	Oregon Department of Transportation	Oregon Department of Transportation
Coordinate Operation	None listed	None listed	Oregon Department of Transportation	Oregon Department of Transportation
Public Transit Operators Agencies				
Provide Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	Tri-Met
Coordinate Operation	None listed	None listed	None listed	Tri-Met
Arterial Management Agencies				

Agency Name	Beaverton City		Clackamas County	
	1999	**2005**	**1999**	**2005**
Provide Information	None listed	None listed	Clackamas County, Oregon Department of Transportation	Clackamas County, Multnomah County, Oregon Department of Transportation, Portland City, Washington County, Gresham City
Share Infrastructure	None listed	None listed	Clackamas County, Oregon Department of Transportation	Clackamas County, Oregon Department of Transportation
Coordinate Operation	None listed	None listed	Clackamas County, Oregon Department of Transportation, Portland City	Clackamas County, Multnomah County, Oregon Department of Transportation, Portland City, Washington County, Gresham City
Receiving real-time information via electronic means from others				
Freeway Management agencies from which your agency receives				
freeway travel times, speeds, and conditions	None listed	None listed	None listed	Oregon Department of Transportation
Public Transit operators from which your agency receives				
arterial travel times derived from vehicle probes	None listed	None listed	None listed	Tri-Met
Incident Management agencies from which your agency receives				
incident clearance and/or incident severity, location, and type information				
Receive information on Incident Clearance	None listed	None listed	CCOM (911), Oregon Department of Transportation	CCOM (911), Oregon Department of Transportation
Receive information on Incident Severity, Location, and Type	None listed	None listed	CCOM (911), Oregon Department of Transportation	CCOM (911), Oregon Department of Transportation
Toll Collection agencies from which your agency receives arterial travel				
times derived from vehicles probes	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				

Agency Name	Beaverton City		Clackamas County	
	1999	2005	1999	2005
Provide Information	None listed	None listed	Gresham City Fire Department, Gresham City Police Department, Multnomah County Sheriff, Portland City Police, Portland City Fire & Rescue Department	Gresham City Fire Department, Gresham City Police Department, Multnomah County Sheriff, Portland City Police, Portland City Fire & Rescue Department
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	Gresham City Fire Department, Gresham City Police Department, Multnomah County Sheriff, Portland City Police, Portland City Fire & Rescue Department	Gresham City Fire Department, Gresham City Police Department, Multnomah County Sheriff, Portland City Police, Portland City Fire & Rescue Department
Freeway Management Agencies				
Provide Information	None listed	None listed	Oregon Department of Transportation	Oregon Department of Transportation
Share Infrastructure	None listed	None listed	Oregon Department of Transportation	Oregon Department of Transportation
Coordinate Operation	None listed	None listed	Oregon Department of Transportation	Oregon Department of Transportation
Public Transit Operators				
Provide Information	None listed	None listed	Tri-Met	Tri-Met
Share Infrastructure	None listed	None listed	None listed	Tri-Met
Coordinate Operation	None listed	None listed	None listed	Tri-Met
Receiving real-time information via electronic means from others				
Emergency Management agencies from which your agency receives				
arterial incident clearance and/or arterial incident severity				
Receive Arterial Incident Clearance Information	None listed	None listed	None listed	Gresham City Fire Department, Gresham City Police Department, Multnomah County Sheriff, Portland City Fire & Rescue Department, Portland City Police

Arterial Management Integration
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Beaverton City		Clackamas County	
	1999	**2005**	**1999**	**2005**
Receive Arterial Incident Severity Information	None listed	None listed	None listed	Gresham City Fire Department, Gresham City Police Department, Multnomah County Sheriff, Portland City Fire & Rescue Department, Portland City Police
Arterial Management agencies from which your agency receives				
arterial travel times, speeds, and conditions	None listed	None listed	Clackamas County, Oregon Department of Transportation	Clackamas County, Gresham City, Multnomah County, Oregon Department of Transportation, Portland City, Washington County
Freeway Management agencies from which your agency receives				
freeway travel times, speeds, and conditions	None listed	None listed	Oregon Department of Transportation	Oregon 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.

Arterial Management Integration
Agencies for Metropolitan Area: Portland, Vancouver

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

Agency Name	Clark County		Gresham City	
	1999	**2005**	**1999**	**2005**
Coordinate Operation	None listed	None listed	None listed	None listed
Incident 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 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
Arterial Management Agencies				

Agency Name	Clark County		Gresham City	
	1999	**2005**	**1999**	**2005**
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				
freeway travel times, speeds, and conditions	None listed	None listed	None listed	None listed
Public Transit operators from which your agency receives				
arterial travel times derived from vehicle probes	None listed	None listed	None listed	None listed
Incident Management agencies from which your agency receives				
incident clearance and/or incident severity, location, and type information				
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
Toll Collection agencies from which your agency receives arterial travel				
times derived from vehicles probes	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				

Agency Name	Clark County		Gresham City	
	1999	**2005**	**1999**	**2005**
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
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
Coordinate Operation	None listed	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	None listed	None listed	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Clark County		Gresham City	
	1999	**2005**	**1999**	**2005**
Receive Arterial Incident Severity Information	None listed	None listed	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
Freeway Management agencies from which your agency receives				
freeway travel times, speeds, and conditions	None listed	None listed	None listed	None listed

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

Agency Name	Multnomah County	
	1999	**2005**
Agency Returned Survey?	Yes	
Arterial Management Section		
Arterial Mgt. agencies in metropolitan area with which you share info.		
Share Timing Plans Information	Gresham City, Oregon Department of Transportation, Portland City	None listed
Coordinate Changes to Timing Plans	None listed	None listed
Turn over Control of Signals	None listed	None listed
Agencies your agency provides arterial travel times, speeds, and		
conditions information, share infrastructure or coordinates operation		
Freeway Management Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed

Agency Name	Multnomah County	
	1999	**2005**
Coordinate Operation	None listed	None listed
Incident Management Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Public Transit Operators Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Arterial Management Agencies		

Agency Name	Multnomah County	
	1999	**2005**
Provide Information	None listed	Gresham City, Oregon Department of Transportation, Portland City
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Receiving real-time information via electronic means from others		
Freeway Management agencies from which your agency receives		
freeway travel times, speeds, and conditions	None listed	None listed
Public Transit operators from which your agency receives		
arterial travel times derived from vehicle probes	None listed	None listed
Incident Management agencies from which your agency receives		
incident clearance and/or incident severity, location, and type information		
Receive information on Incident Clearance	None listed	None listed
Receive information on Incident Severity, Location, and Type	None listed	None listed
Toll Collection agencies from which your agency receives arterial travel		
times derived from vehicles probes	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		

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

Arterial Management Integration
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Multnomah County	
	1999	**2005**
Receive Arterial Incident Severity Information	None listed	None listed
Arterial Management agencies from which your agency receives		
arterial travel times, speeds, and conditions	None listed	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.

Agency Name	Oregon Department of Transportation	
	1999	**2005**
Agency Returned Survey?	Yes	
Arterial Management Section		
Arterial Mgt. agencies in metropolitan area with which you share info.		
Share Timing Plans Information	Clackamas County, Multnomah County, Portland City	Clackamas County, Multnomah County, Portland City
Coordinate Changes to Timing Plans	Clackamas County, Multnomah County, Washington County, Portland City	Clackamas County, Multnomah County, Portland City, Washington County
Turn over Control of Signals	Beaverton City, Clackamas County, Portland City, Washington County	Beaverton City, Clackamas County, Portland City, Washington County
Agencies your agency provides arterial travel times, speeds, and		
conditions information, share infrastructure or coordinates operation		
Freeway Management Agencies		
Provide Information	None listed	Beaverton City Operations Department, Clackamas County Transportation & Development, Clark County Public Works, Gresham City Environment Services, Multnomah County, Oregon Department of Transportation, Portland City, Washington County
Share Infrastructure	None listed	Beaverton City Operations Department, Clackamas County Transportation & Development, Clark County Public Works, Gresham City Environment Services, Multnomah County, Oregon Department of Transportation, Portland City, Washington County

Agency Name	Oregon Department of Transportation	
	1999	**2005**
Coordinate Operation	None listed	Beaverton City Operations Department, Clackamas County Transportation & Development, Clark County Public Works, Gresham City Environment Services, Multnomah County, Oregon Department of Transportation, Portland City, Washington County
Incident Management Agencies		
Provide Information	None listed	Beaverton City Operations Department, Clackamas County Transportation & Development, Clark County Public Works, Gresham City Environment Services, Multnomah County, Oregon Department of Transportation, Portland City, Washington County
Share Infrastructure	None listed	Beaverton City Operations Department, Clackamas County Transportation & Development, Clark County Public Works, Gresham City Environment Services, Multnomah County, Oregon Department of Transportation, Portland City, Washington County
Coordinate Operation	None listed	Beaverton City Operations Department, Clackamas County Transportation & Development, Clark County Public Works, Gresham City Environment Services, Multnomah County, Oregon Department of Transportation, Portland City, Washington County
Public Transit Operators Agencies		
Provide Information	None listed	Tri-Met, C-Tran
Share Infrastructure	None listed	Tri-Met, C-Tran
Coordinate Operation	None listed	Tri-Met, C-Tran
Arterial Management Agencies		

Agency Name	Oregon Department of Transportation	
	1999	**2005**
Provide Information	None listed	Beaverton City, Clackamas County, Multnomah County, Portland City, Washington County
Share Infrastructure	None listed	Beaverton City, Clackamas County, Multnomah County, Portland City, Washington County
Coordinate Operation	None listed	Beaverton City, Clackamas County, Multnomah County, Portland City, Washington County
Receiving real-time information via electronic means from others		
Freeway Management agencies from which your agency receives		
freeway travel times, speeds, and conditions	None listed	Washington DOT
Public Transit operators from which your agency receives		
arterial travel times derived from vehicle probes	None listed	None listed
Incident Management agencies from which your agency receives		
incident clearance and/or incident severity, location, and type information		
Receive information on Incident Clearance	None listed	None listed
Receive information on Incident Severity, Location, and Type	None listed	None listed
Toll Collection agencies from which your agency receives arterial travel		
times derived from vehicles probes	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		

Agency Name	Oregon Department of Transportation	
	1999	**2005**
Provide Information	None listed	911
Share Infrastructure	None listed	911
Coordinate Operation	None listed	911
Freeway Management Agencies		
Provide Information	None listed	Washington DOT
Share Infrastructure	None listed	Washington DOT
Coordinate Operation	None listed	None listed
Public Transit Operators		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Receiving real-time information via electronic means from others		
Emergency Management agencies from which your agency receives		
arterial incident clearance and/or arterial incident severity		
Receive Arterial Incident Clearance Information	None listed	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Oregon Department of Transportation	
	1999	**2005**
Receive Arterial Incident Severity Information	None listed	None listed
Arterial Management agencies from which your agency receives		
arterial travel times, speeds, and conditions	None listed	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.

Arterial Management Integration
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Portland City	
	1999	**2005**
Agency Returned Survey?	Yes	
Arterial Management Section		
Arterial Mgt. agencies in metropolitan area with which you share info.		
Share Timing Plans Information	short survey	None listed
Coordinate Changes to Timing Plans	short survey	None listed
Turn over Control of Signals	short survey	None listed
Agencies your agency provides arterial travel times, speeds, and		
conditions information, share infrastructure or coordinates operation		
Freeway Management Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed

Agency Name	Portland City	
	1999	**2005**
Coordinate Operation	None listed	None listed
Incident Management Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Public Transit Operators Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Arterial Management Agencies		

Arterial Management Integration
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Portland City	
	1999	**2005**
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Receiving real-time information via electronic means from others		
Freeway Management agencies from which your agency receives		
freeway travel times, speeds, and conditions	short survey	None listed
Public Transit operators from which your agency receives		
arterial travel times derived from vehicle probes	None listed	None listed
Incident Management agencies from which your agency receives		
incident clearance and/or incident severity, location, and type information		
Receive information on Incident Clearance	None listed	None listed
Receive information on Incident Severity, Location, and Type	None listed	None listed
Toll Collection agencies from which your agency receives arterial travel		
times derived from vehicles probes	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		

Agency Name	Portland City	
	1999	**2005**
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Freeway Management Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Public Transit Operators		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Receiving real-time information via electronic means from others		
Emergency Management agencies from which your agency receives		
arterial incident clearance and/or arterial incident severity		
Receive Arterial Incident Clearance Information	short survey	None listed

Arterial Management Integration
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Portland City	
	1999	**2005**
Receive Arterial Incident Severity Information	short survey	None listed
Arterial Management agencies from which your agency receives		
arterial travel times, speeds, and conditions	None listed	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 H
Arterial Management Information Collection and Dissemination

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Beaverton City	
	1999	**2005**
Agency Returned Survey?	Yes	
Arterial Management Section		
Data collected, archived, and/or transferred to another agency		
Collected by your agency	Traffic volumes, Phasing/cycle lengths, Emergency vehicle signal preemption	NR
Archived by your agency	Traffic volumes, Phasing/cycle lengths, Emergency vehicle signal preemption	NR
Transferred to another agency by your agency	Traffic volumes, Phasing/cycle lengths, Emergency vehicle signal preemption	NR
Importance of making information available to the public		

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Beaverton City	
	1999	**2005**
Ranked High	NR	
Ranked Medium	NR	
Ranked Low	Traffic volumes, Phasing/cycle lengths, Emergency vehicle signal preemption	
Groups that make requests for the data	Consultants	
What is the data used for?	Traffic analysis	
Methods used to disseminate arterial information to the public		
Technologies your agency uses to disseminate:	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting arterial conditions	NR	
Telephone system for reporting arterial information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	
Arterial Incident Management Section		
Methods used to distribute incident location and severity information		
to the public		
Technologies your agency uses to disseminate:	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting incident information	NR	
Telephone system for reporting incident information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

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

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Clackamas County	
	1999	**2005**
Ranked High	Traffic speeds, Vehicle classification, Turning movements, Phasing/cycle lengths, Emergency vehicle signal preemption, Incidents, Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures	
Ranked Medium	Traffic volumes, Queues, Road conditions, Transit vehicle signal priority, Route designations (snow emergency, etc.), Weather conditions, Highway operations coordination information	
Ranked Low	Lane occupancy, Probe vehicles, Intermodal (air, rail, water) connections	
Groups that make requests for the data	Universities, State DOT personnel, Federal DOT personnel, MPOs, Consultants, Media (I.e., TV stations, radio stations)	
What is the data used for?	Traffic analysis, Planning, Roadway impact analysis, Accident prediction models, Dissemination to the public	
Methods used to disseminate arterial information to the public		
Technologies your agency uses to disseminate:	Telephone system, Internet Web sites, Pagers or personal data assistants, E-mail or other direct PC communication, Cell phone/voice, Cell phone/data, Facsimile	Telephone system, Internet Web sites, Pagers or personal data assistants, Kiosks, E-mail or other direct PC communication, In-vehicle navigation systems, Cell phone/voice, Cell phone/data, Facsimile
Technologies your agency (through another agency or org.) uses to disseminate:	NR	Dedicated cable TV
Internet web site reporting arterial conditions	www.co.clackamas.or.us www.odot.state.or.us	
Telephone system for reporting arterial information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	
Arterial Incident Management Section		
Methods used to distribute incident location and severity information		
to the public		
Technologies your agency uses to disseminate:	Internet Web sites, Pagers or personal data assistants, E-mail or other direct PC communication, Cell phone/voice, Cell phone/data, Facsimile	personal data assistants, Kiosks, E-mail or other direct PC communication, In-vehicle navigation systems, Cell phone/voice, Cell phone/data, Facsimile
Technologies your agency (through another agency or org.) uses to disseminate:	Telephone system, Internet Web sites, Pagers or personal data assistants, E-mail or other direct PC communication, Cell phone/voice, Cell phone/data, Facsimile	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, Cell phone/voice, Cell phone/data, Facsimile
Internet web site reporting incident information	www.co.clackamas.or.us www.odot.state.or.us	
Telephone system for reporting incident information to the public	503-690-3262	
Organizations your agency sends information for dissemination to the public	Press releases through radio and television stations	

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Clark County	
	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	NR	NR
Transferred to another agency by your agency	NR	NR
Importance of making information available to the public		

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

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

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Gresham City	
	1999	**2005**
Agency Returned Survey?	Yes	
Arterial Management Section		
Data collected, archived, and/or transferred to another agency		
Collected by your agency	Traffic volumes, Traffic speeds, Lane occupancy, Route designations (snow emergency, etc.), Emergency/evacuation routes and procedures	Traffic volumes, Traffic speeds, Lane occupancy, Route designations (snow emergency, etc.), Emergency/evacuation routes and procedures
Archived by your agency	Traffic volumes, Traffic speeds, Lane occupancy, Route designations (snow emergency, etc.), Emergency/evacuation routes and procedures	Traffic volumes, Traffic speeds, Lane occupancy, Route designations (snow emergency, etc.), Emergency/evacuation routes and procedures
Transferred to another agency by your agency	Traffic volumes, Traffic speeds, Lane occupancy, Route designations (snow emergency, etc.), Emergency/evacuation routes and procedures	Traffic volumes, Traffic speeds, Lane occupancy, Route designations (snow emergency, etc.), Emergency/evacuation routes and procedures
Importance of making information available to the public		

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Gresham City	
	1999	**2005**
Ranked High	Traffic volumes, Traffic speeds, Route designations (snow emergency, etc.), Emergency/evacuation routes and procedures	
Ranked Medium	Lane occupancy	
Ranked Low	NR	
Groups that make requests for the data	Consultants	
What is the data used for?	Traffic analysis, Construction impact determination, Planning, Dissemination to the public	
Methods used to disseminate arterial information to the public		
Technologies your agency uses to disseminate:	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting arterial conditions	NR	
Telephone system for reporting arterial information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	
Arterial Incident Management Section		
Methods used to distribute incident location and severity information		
to the public		
Technologies your agency uses to disseminate:	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting incident information	NR	
Telephone system for reporting incident information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Multnomah County	
	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, Turning movements	NR
Transferred to another agency by your agency	NR	NR
Importance of making information available to the public		

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Multnomah County	
	1999	**2005**
Ranked High	Traffic volumes, Incidents, Current work zones, Scheduled work zones	
Ranked Medium	NR	
Ranked Low	NR	
Groups that make requests for the data	Consultants, Realtors and Business Consultants	
What is the data used for?	Traffic analysis, Planning, Marketing Decisions	
Methods used to disseminate arterial information to the public		
Technologies your agency uses to disseminate:	NR	Internet Web sites
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting arterial conditions	NR	
Telephone system for reporting arterial information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	
Arterial Incident Management Section		
Methods used to distribute incident location and severity information		
to the public		
Technologies your agency uses to disseminate:	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting incident information	NR	
Telephone system for reporting incident information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Oregon Department of Transportation	
	1999	**2005**
Agency Returned Survey?	Yes	
Arterial Management Section		
Data collected, archived, and/or transferred to another agency		
Collected by your agency	Traffic volumes, Vehicle classification, Turning movements, Phasing/cycle lengths, Current work zones, Scheduled work zones	Traffic volumes, Vehicle classification, Turning movements, Phasing/cycle lengths, Current work zones, Scheduled work zones
Archived by your agency	Traffic volumes, Vehicle classification, Turning movements, Phasing/cycle lengths, Current work zones, Scheduled work zones	Traffic volumes, Vehicle classification, Turning movements, Phasing/cycle lengths, Current work zones, Scheduled work zones
Transferred to another agency by your agency	Current work zones, Scheduled work zones	Current work zones, Scheduled work zones
Importance of making information available to the public		

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Oregon Department of Transportation	
	1999	**2005**
Ranked High	Current work zones, Scheduled work zones	
Ranked Medium	NR	
Ranked Low	Traffic volumes, Vehicle classification, Turning movements, Phasing/cycle lengths	
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, Construction impact determination, Planning, Roadway impact analysis	
Methods used to disseminate arterial information to the public		
Technologies your agency uses to disseminate:	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting arterial conditions	NR	
Telephone system for reporting arterial information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	
Arterial Incident Management Section		
Methods used to distribute incident location and severity information		
to the public		
Technologies your agency uses to disseminate:	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting incident information	NR	
Telephone system for reporting incident information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Portland 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	NR	NR
Transferred to another agency by your agency	NR	NR
Importance of making information available to the public		

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Portland City	
	1999	**2005**
Ranked High	NR	
Ranked Medium	NR	
Ranked Low	NR	
Groups that make requests for the data	NR	
What is the data used for?	NR	
Methods used to disseminate arterial information to the public		
Technologies your agency uses to disseminate:	NR	Telephone system, Internet Web sites, Interactive TV, Kiosks, E-mail or other direct PC communication
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting arterial conditions	NR	
Telephone system for reporting arterial information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	
Arterial Incident Management Section		
Methods used to distribute incident location and severity information		
to the public		
Technologies your agency uses to disseminate:	NR	Internet Web sites, Interactive TV, E-mail or other direct PC communication
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: Portland, Vancouver

	Clark County Public Transportation Benefit Area Authority		Tri-Met		**Totals**	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes		2	
Number of vehicles used in revenue service						
Fixed Route Bus	117	135	664	752	781	887
Heavy or Rapid Rail	NR	NR	NR	NR	0	0
Light Rail	NR	NR	72	89	72	89
Demand Responsive	41	62	167	215	208	277
Commuter Rail	NR	NR	NR	NR	0	0
Ferry Boat	NR	NR	NR	NR	0	0
Have of plan to have an Automated Vehicle Location System?	Yes		Yes		2	
Primary and Secondary Location Technologies Used						
Primary Technologies						
GPS	No	No	No	No	0	0
Sign/Odometer	No	No	No	No	0	0
Dead-Reckoning	No	No	No	No	0	0
LORAN C	No	No	No	No	0	0
Other	Yes	No	Yes	No	2	0
Backup Technologies						
GPS	No	No	No	No	0	0
Sign/Odometer	No	No	No	No	0	0
Dead-Reckoning	No	No	No	No	0	0
LORAN C	No	No	No	No	0	0
Other		No	Yes	No	1	0
Number of Vehicles Equipped with AVL						
Fixed Route Bus	3	135	664	752	667	887
Heavy or Rapid Rail	NR	NR	NR	NR	0	0
Light Rail	NR	NR	72	89	72	89
Demand Responsive	NR	62	167	215	167	277
Commuter Rail	NR	NR	NR	NR	0	0
Ferry Boat	NR	NR	NR	NR	0	0
Motor Buses Operated as Vehicle Probes						
Number of Motor Buses equipped as probes on freeways?	NR		NR		0	
Number of Motor Buses equipped as probes on arterials?	NR		NR		0	
Have Organized Regional Incident Management Program?	No		No		0	

Transit Management
Agencies for Metropolitan Area: Portland, Vancouver

	Clark County Public Transportation Benefit Area Authority		Tri-Met		Totals	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Have Automated Traveler Information System?	No		Yes		1	
Services Automated Traveler Info. System Applies:						
Fixed Route	No		Yes		1	
Heavy Rail	No		No		0	
Light Rail	No		Yes		1	
Demand Responsive	No		No		0	
Commuter Rail	No		No		0	
Ferry	No		No		0	
Locations where traveler information is displayed to public						
Number of bus stops on fixed transit routes	NR	NR	NR	NR	0	0
Bus stops on fixed transit routes that display traveler info to the public	NR	NR	32	200	32	200
Number of rail stations	NR	NR	40	55	40	55
Number of rail stations that display traveler information	NR	NR	5	55	5	55
Number of other locations that display traveler information to public	NR	NR	NR	NR	0	0
Number of vehicles the traveler information system has available						
Fixed Route Bus	NR	NR	NR	NR	0	0
Heavy or Rapid Rail	NR	NR	NR	NR	0	0
Light Rail	NR	NR	NR	NR	0	0
Demand Responsive	NR	NR	NR	NR	0	0
Commuter Rail	NR	NR	NR	NR	0	0
Ferry Boat	NR	NR	NR	NR	0	0
Deployment of Communications Technology						
Attributes of Radio System:						
Digital?	Yes		No		1	
Analog?	No		Yes		1	
Trunked?	Yes		Yes		2	
Regular?	No		Yes		1	
Services that use a Digital or Trunked Radio System						
Digital Only						
Fixed Route Bus	No	No	No	No	0	0
Heavy or Rapid Rail	No	No	No	No	0	0
Light Rail	No	No	No	No	0	0
Demand Responsive	No	No	No	No	0	0
Commuter Rail	No	No	No	No	0	0
Ferry Boat	No	No	No	No	0	0
Trunked Only						
Fixed Route Bus	No	No	No	No	0	0

Transit Management
Agencies for Metropolitan Area: Portland, Vancouver

	Clark County Public Transportation Benefit Area Authority		Tri-Met		**Totals**	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Heavy or Rapid Rail	No	No	No	No	0	0
Light Rail	No	No	No	No	0	0
Demand Responsive	No	No	No	No	0	0
Commuter Rail	No	No	No	No	0	0
Ferry Boat	No	No	No	No	0	0
Have of plan to have Automatic Passenger Counters (APCs)?	Yes		Yes			
Methods used to count passengers						
Treadle Mats	No		No		0	
Infrared Beams	Yes		Yes		2	
Primary and Secondary Location Technologies Used						
Primary Technologies						
GPS	No	No	No	No	0	0
Differential GPS	No	Yes	Yes	Yes	1	2
Signpost/Odometer	No	No	No	No	0	0
Dead_Reckoning	No	No	No	No	0	0
LORAN C	No	No	No	No	0	0
Other	No	No	No	No	0	0
Backup Technologies						
GPS	No	No	No	No	0	0
Differential GPS	No	No	No	No	0	0
Signpost/Odometer	No	No	No	No	0	0
Dead_Reckoning	No	No	No	No	0	0
LORAN C	No	No	No	No	0	0
Other	No	No	Yes	Yes	1	1
Number of Vehicles with APCs						
Fixed Route Bus	3	135	374	461	377	596
Heavy or Rapid Rail	0	0	NR	NR	0	0
Light Rail	0	0	NR	NR	0	0
Demand Responsive	0	62	0	0	0	62
Commuter Rail	0	0	NR	NR	0	0
Ferry Boat	0	0	NR	NR	0	0
Remote Real-Time Monitoring and Computer Assisted Dispatching						
Remote Real-Time Monitoring						
Fixed Route Bus	NR	NR	NR	NR	0	0
Heavy or Rapid Rail	NR	NR	NR	NR	0	0
Light Rail	NR	NR	NR	NR	0	0
Demand Responsive	NR	NR	NR	NR	0	0

Transit Management
Agencies for Metropolitan Area: Portland, Vancouver

	Clark County Public Transportation Benefit Area Authority		Tri-Met		Totals	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Commuter Rail	NR	NR	NR	NR	0	0
Ferry Boat	NR	NR	NR	NR	0	0
Automated Dispatching or Control Software						
Fixed Route Bus	NR	135	664	752	664	887
Heavy or Rapid Rail	NR	NR	NR	NR	0	0
Light Rail	NR	NR	72	89	72	89
Demand Responsive	NR	62	167	215	167	277
Commuter Rail	NR	NR	NR	NR	0	0
Ferry Boat	NR	NR	NR	NR	0	0
Coordinate or plan to coordinate travel request and vehicle						
dispatching for multiple agencies?	No		No		0	
Is there or will there be a Transportation Management Center						
(TMC) in the region that controls transit and highway modes?	No		No		0	
Modes that TMC currently controls:						
Highways	No	No	No	No	0	0
Fixed Route Bus	No	No	No	No	0	0
Heavy or Rapid Rail	No	No	No	No	0	0
Light Rail	No	No	No	No	0	0
Demand Responsive	No	No	No	No	0	0
Commuter Rail	No	No	No	No	0	0
Ferry Boat	No	No	No	No	0	0
Other	No	No	No	No	0	0
Priority at Traffic Signals and Ramp Meter Priority						
Priority at Traffic Signals						
Fixed Route Bus	NR	NR	0	752	0	752
Light Rail	NR	NR	72	89	72	89
Demand Responsive	NR	NR	0	0	0	0
Ramp Meter Priority						
Fixed Route Bus	NR	NR	NR	NR	0	0
Demand Responsive	NR	NR	NR	NR	0	0
Number of Vehicles Equipped with Navigation Aids						
Fixed Route Bus	NR	NR	NR	NR	0	0
Heavy or Rapid Rail	NR	NR	NR	NR	0	0
Light Rail	NR	NR	NR	NR	0	0
Demand Responsive	NR	NR	NR	NR	0	0

Transit Management
Agencies for Metropolitan Area: Portland, Vancouver

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

Transit Management
Agencies for Metropolitan Area: Portland, Vancouver

	Clark County Public Transportation Benefit Area Authority		Tri-Met		**Totals**	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Ferry Boat Landings	NR	NR	NR	NR	0	0
Smart Card Readers						
Fixed Route Bus Vehicles	NR	NR	NR	NR	0	0
Heavy or Rapid Rail Stations	NR	NR	NR	NR	0	0
Light Rail Stations	NR	NR	NR	NR	0	0
Demand Responsive Vehicles	NR	NR	NR	NR	0	0
Commuter Rail Stations	NR	NR	NR	NR	0	0
Ferry Boat Landings	NR	NR	NR	NR	0	0
Credit Card						
Fixed Route Bus Vehicles	NR	NR	NR	NR	0	0
Heavy or Rapid Rail Stations	NR	NR	NR	NR	0	0
Light Rail Stations	NR	NR	NR	NR	0	0
Demand Responsive Vehicles	NR	NR	NR	NR	0	0
Commuter Rail Stations	NR	NR	NR	NR	0	0
Ferry Boat Landings	NR	NR	NR	NR	0	0
Debit Card						
Fixed Route Bus Vehicles	NR	NR	NR	NR	0	0
Heavy or Rapid Rail Stations	NR	NR	NR	NR	0	0
Light Rail Stations	NR	NR	NR	NR	0	0
Demand Responsive Vehicles	NR	NR	NR	NR	0	0
Commuter Rail Stations	NR	NR	NR	NR	0	0
Ferry Boat Landings	NR	NR	NR	NR	0	0
NR: No Response						

Appendix J
Transit Management Integration

Transit Management Integration
Agencies for Metropolitan Area: Portland, Vancouver

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

Appendix K
Transit Management Information Collection and Dissemination

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Clark County Public Transportation Benefit Area Authority		Tri-Met	
	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	Monitors/VMS (not in vehicle), Kiosks, Pagers or personal data assistants, Internet Web Sites, Telephone System	Audible Enunciators, Monitors/VMS (not in vehicle), Kiosks, Pagers or personal data assistants, Internet Web Sites, Telephone System
Real-time transit schedule adherence or arrival and departure times	NR	NR	NR	Audible Enunciators, Monitors/VMS (not in vehicle), Kiosks, Pagers or personal data assistants, Internet Web Sites, Telephone System
Technologies employed by other organization receiving your data				
Transit routes, schedules and fares	NR	NR	NR	Pagers or personal data assistants, Internet Web Sites
Real-time transit schedule adherence or arrival and departure times	NR	NR	NR	Pagers or personal data assistants, Internet Web Sites
Internet web site reporting transit routes, schedules and fare, etc.	NR		www.tri-met.org	
Telephone system for reporting transit information to the public	NR		503-238-7433	
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	Transit operations coordination information, Vehicle monitoring status, Passenger information (e.g., surveys, O/D), Trip itinerary planning records, Passenger count, Vehicle time and location	Incidents, Route designations (snow emergency, etc), Passenger information (e.g., surveys, O/D), Passenger count, Vehicle time and location	Incidents, Route designations (snow emergency, etc), Road conditions, Passenger information (e.g., surveys, O/D), Passenger count, Vehicle time and location
Archived by your agency	NR	NR	Incidents, Passenger information (e.g., surveys, O/D), Passenger count, Vehicle time and location	Incidents, Passenger information (e.g., surveys, O/D), Passenger count, Vehicle time and location

Emergency Management Agencies for Metropolitan Area: Portland, Vancouver

	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
Agency Name	1999	2005	1999	2005	1999	2005	1999	2005	1999	2005	1999	2005			
Beaverton City Police Department	39	50	0	50	0	50	30	45	30	45	0	NR	Yes	Yes	Portland Police Records Database
Clark County Sheriff Department	140	NR	0	NR	0	NR	95	NR	90	NR	10	NR	Yes	Yes	None listed
Gresham City Fire Department	41	50	0	0	0	0	16	20	0	0	14	18	Yes	No	None listed
Multnomah County Sheriff	30	36	0	0	0	0	30	36	30	36	0	0	Yes	No	None listed
Portland City Fire & Rescue Department	205	NR	3	NR	50	NR	197	NR	80	NR	68	NR	Yes	Yes	Gresham City Fire Department
Portland City Police	330	400	0	NR	0	NR	330	400	330	400	0	NR	No	No	None listed
Tualatin Valley Fire Department	110	NR	0	NR	0	NR	110	NR	110	NR	110	NR	Yes	NR	None listed

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Portland, Vancouver

Agency Name	Clark County Public Transportation Benefit Area Authority		Tri-Met	
	1999	**2005**	**1999**	**2005**
Transferred to another agency by your agency	NR	NR	Incidents	Incidents, Road conditions, Vehicle time and location
Importance of making information available to the public				
Ranked High	Vehicle time and location		Vehicle time and location	
Ranked Medium	Passenger information (e.g., surveys, O/D)		Incidents, Road conditions, Passenger information (e.g., surveys, O/D)	
Ranked Low	Transit operations coordination information, Vehicle monitoring status, Trip itinerary planning records, Passenger count		Vehicle monitoring status, Trip itinerary planning records, Passenger count	
Groups that make requests for the data	City & County, MPOs, State DOT personnel		MPOs, State DOT personnel, Universities	
What is the data used for?	Planning		Incident detection algorithm development, Planning, Traffic analysis	

Appendix L
Emergency Management