Tracking the Deployment of the Integrated Metropolitan ITS Infrastructure in Seattle, Tacoma

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 Seattle, Tacoma 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 Seattle, Tacoma region was 91% in 1997 and 74% in 1999.

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

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

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

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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.

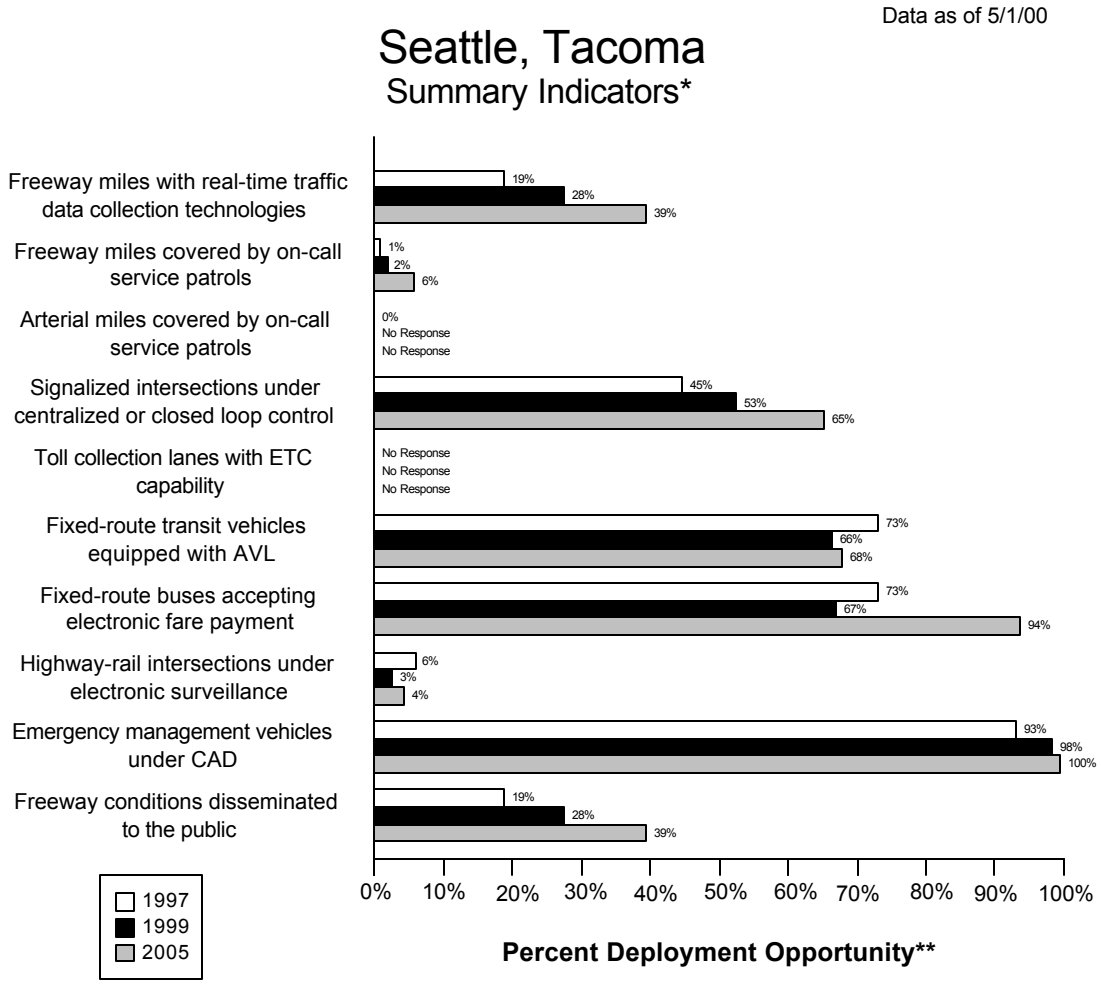
The following two figures portray the surrogate indicators for each of the nine components in Seattle, Tacoma and the same indicators at the national level. These are judged to be the single best representative of a component and are being used as summary indicator for component. The summary indicators 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."

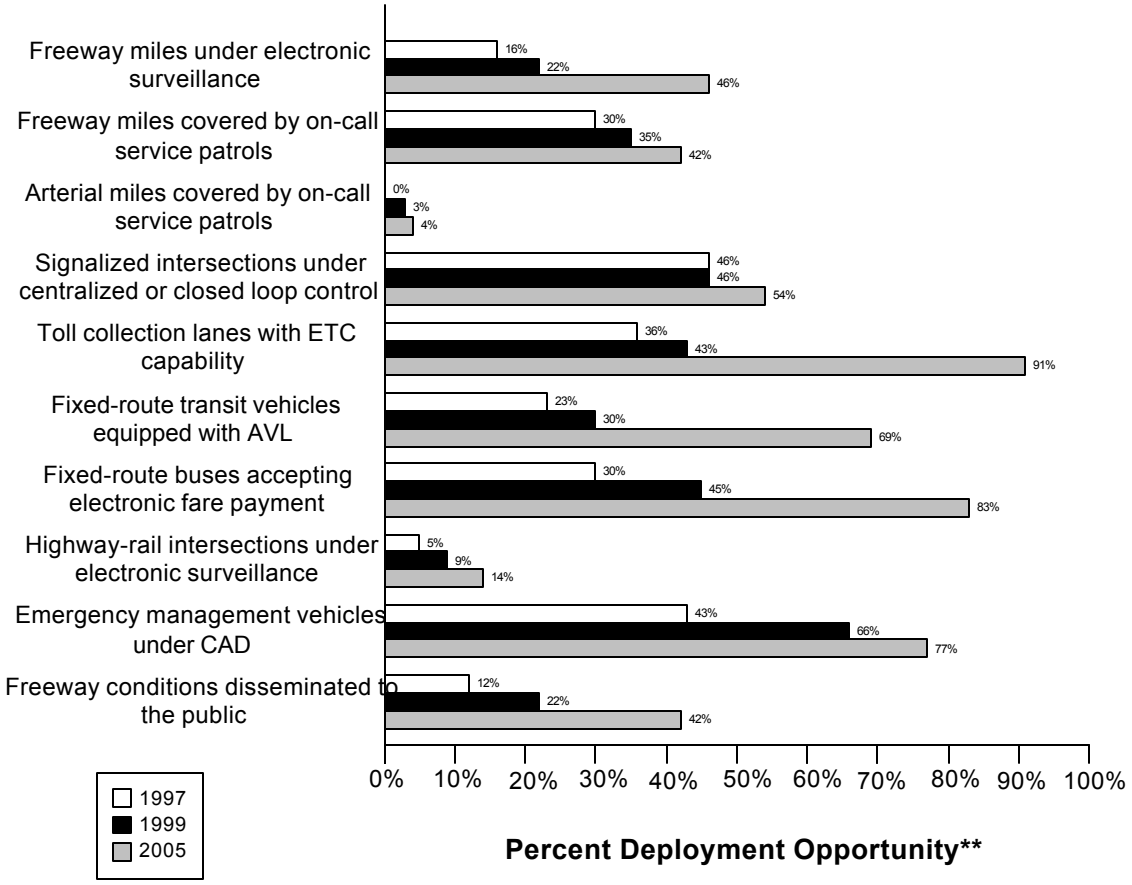


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Data as of 5/1/00

National

Summary Indicators*



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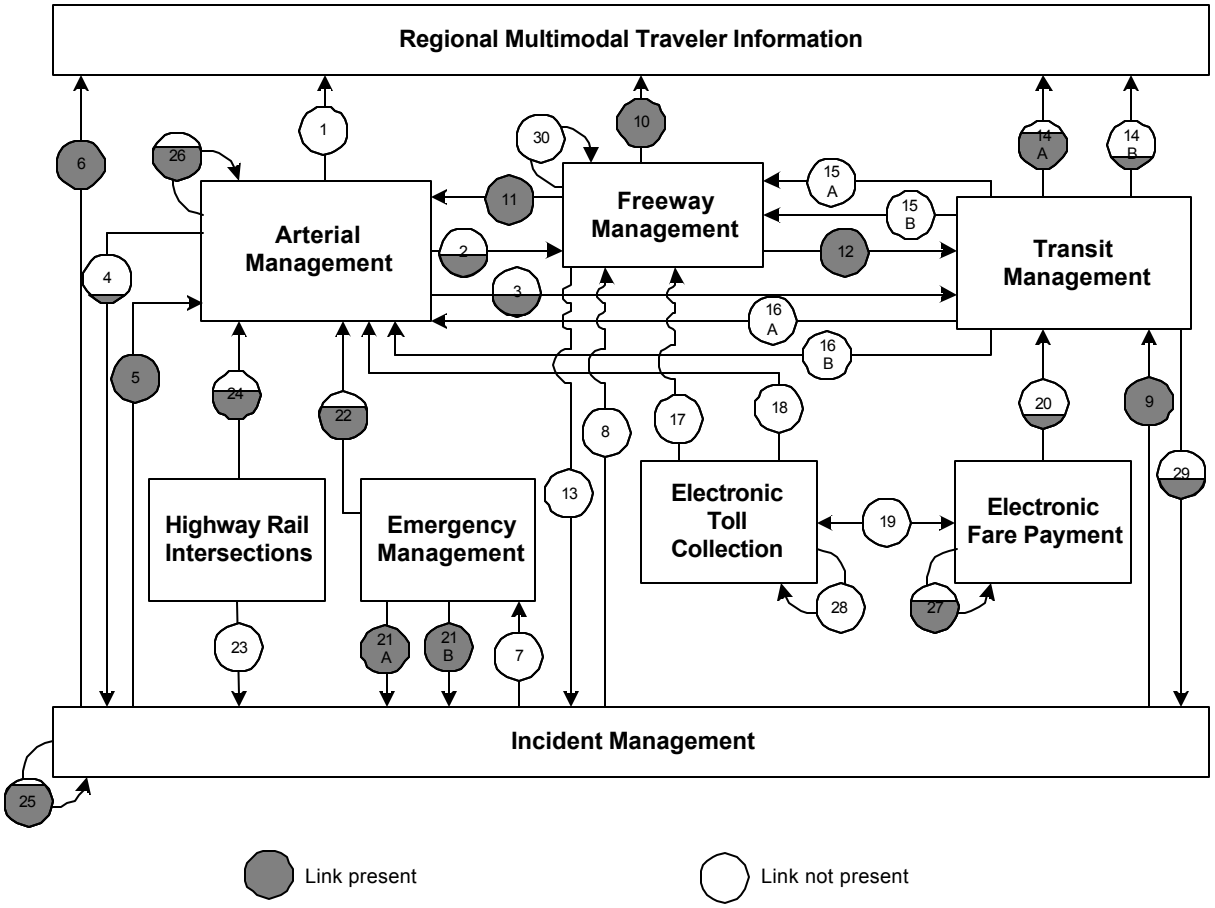
Seattle, Tacoma Integration Links



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 Seattle, Tacoma 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%.

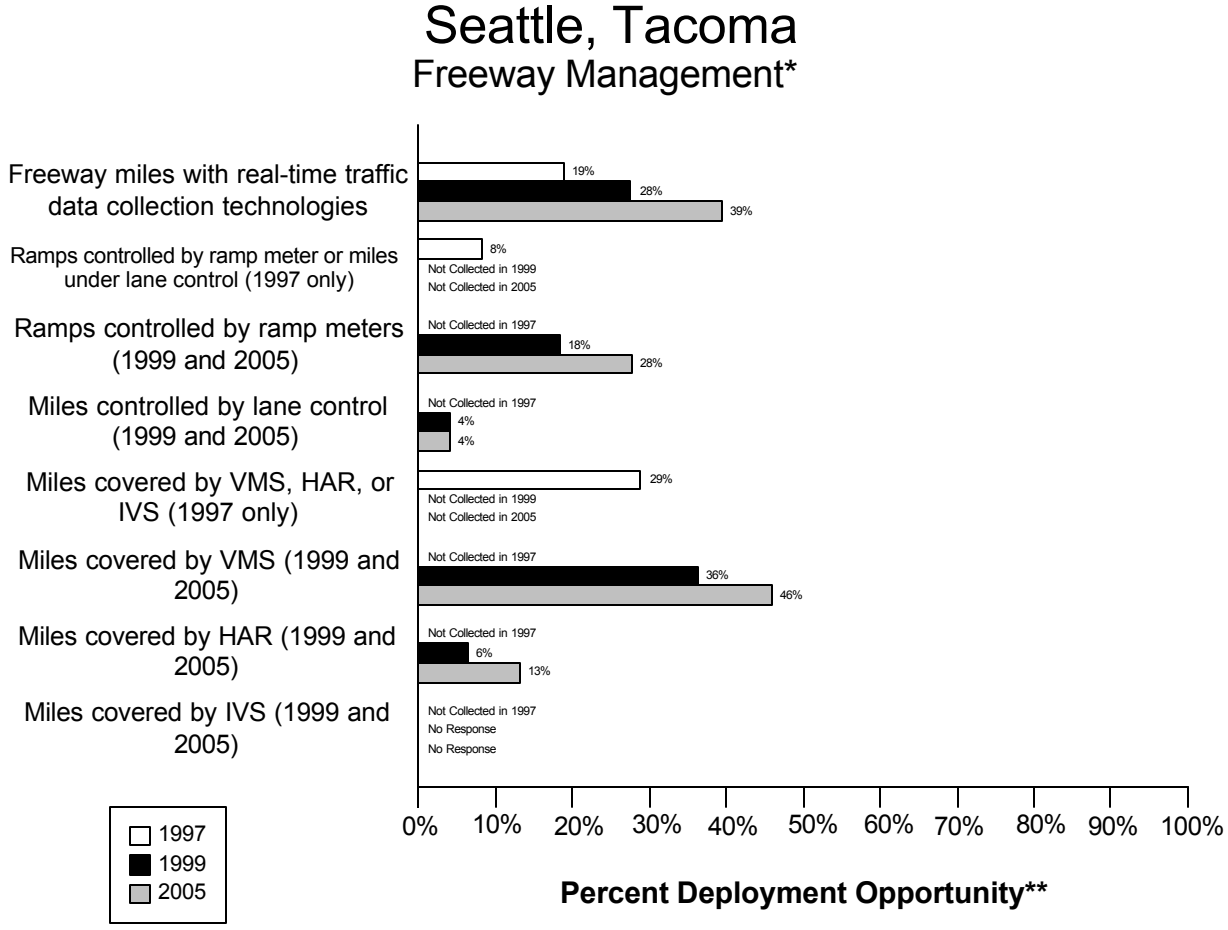
The figures summarizing the integration indicators consist of a diagram for each of the nine metropolitan ITS components portraying the integration level for 1999 (*italic*) and 2005 (**bold**), accompanied by tables providing an explanation of the data and calculations performed to develop each integration 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



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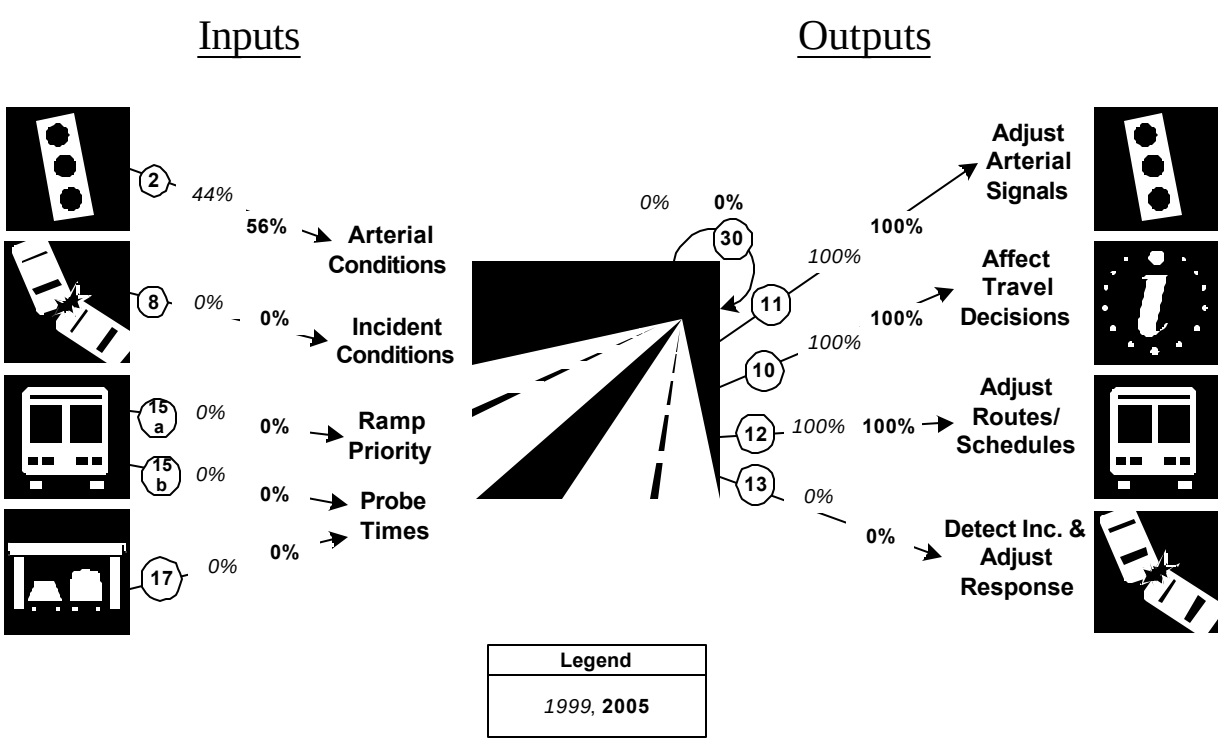
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Freeway centerline miles are under electronic surveillance for monitoring traffic flow	72	381	19%	105	381	28%	150	381	39%
Freeway entrance ramps are controlled by ramp meters or miles under lane control	37	452	8%						

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway entrance ramps are controlled by ramp meters				83	452	18%	125	452	28%
Freeway centerline miles will be controlled by lane control				15	381	4%	15	381	4%
Freeway miles are covered by VMS, HAR, or IVS	110	381	29%						
Freeway miles are covered by VMS				138	381	36%	175	381	46%
Freeway miles are covered by HAR				24	381	6%	50	381	13%
Freeway miles are covered by IVS					381			381	

Freeway Management Integration Indicators

Seattle, Tacoma
Freeway Management Integration*



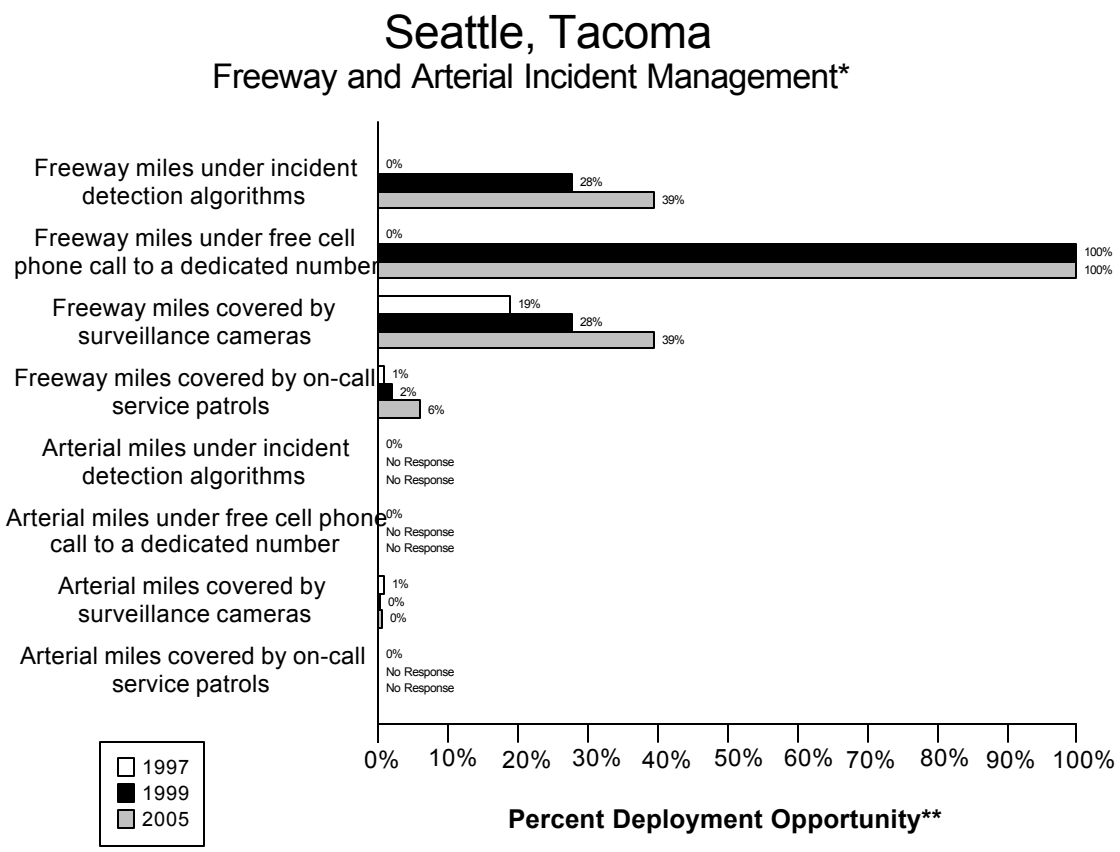
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
2. Arterial Management agencies sending information to Freeway Management	(4/ 9) 44%	(5/ 9) 56%
8. Incident Management agencies sending information to Freeway Management	(0/ 1) 0%	(0/ 1) 0%
15a. Transit management agencies with vehicles equipped with ramp meter priority	(0/ 8) 0%	(0/ 8) 0%
15b. Transit Management agencies with vehicles equipped as probes	(0/ 8) 0%	(0/ 8) 0%
17. Freeway Management agencies receiving freeway conditions from vehicle probes	(0/ 1) 0%	(0/ 1) 0%
30. Freeway Management agencies sending information to another Freeway Management agency	(0/ 1) 0%	(0/ 1) 0%
11. Freeway Management agencies sending information to Arterial Management	(1/ 1) 100%	(1/ 1) 100%

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

Incident Management Component Indicators

Data as of 5/1/00



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

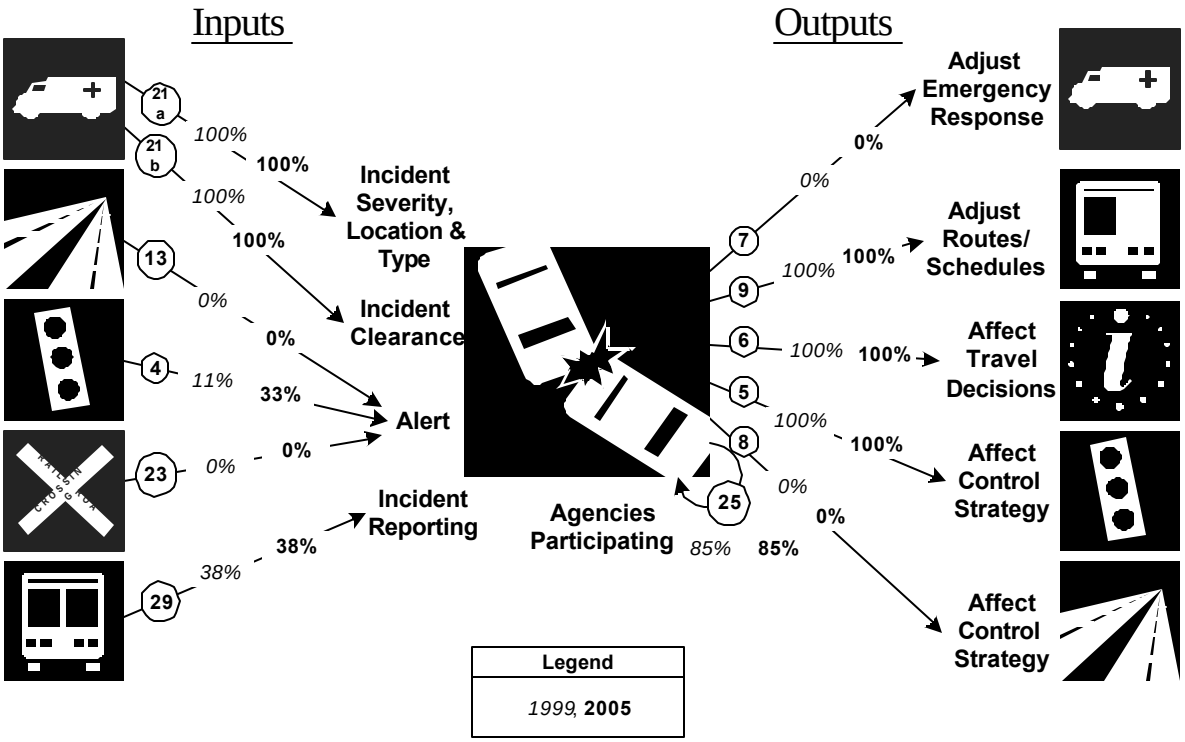
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by incident detection algorithms	0	381	0%	105	381	28%	150	381	39%
Freeway miles are covered by free cellular phone calls to a dedicated number	0	381	0%	381	381	100%	381	381	100%
Freeway miles are covered by surveillance cameras.	72	381	19%	105	381	28%	150	381	39%

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Freeway miles are covered by on-call publicly-sponsored service patrol or towing services.	3	381	1%	7	381	2%	22	381	6%
Arterial miles are covered by incident detection algorithms	0	2100	0%		2100			2100	
Arterial miles are covered by free cellular phone calls to a dedicated number	0	2100	0%		2100			2100	
Arterial miles are covered by surveillance cameras	18	2100	1%	4	2100	0%	8	2100	0%
Arterial miles are covered by on-call publicly-sponsored service patrol or towing services	0	2100	0%		2100			2100	

Incident Management Integration Indicators

Seattle, Tacoma

Incident Management Integration*



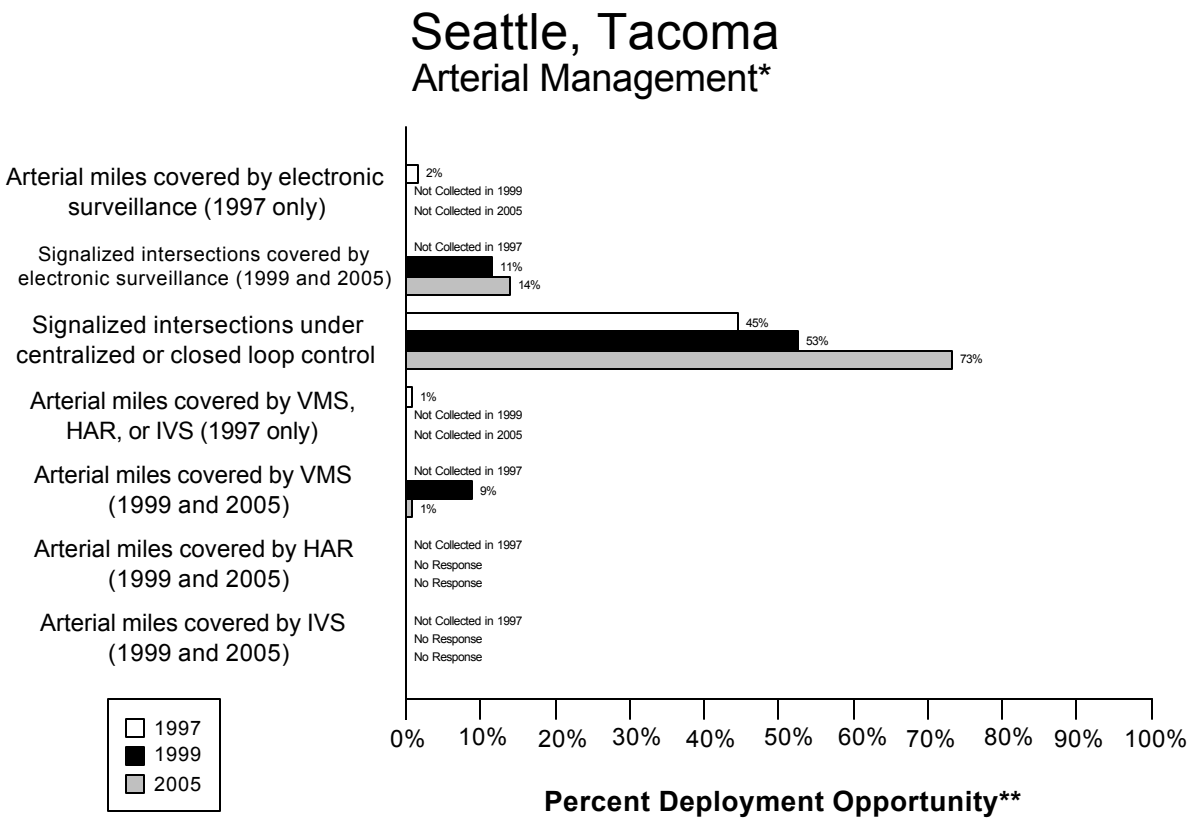
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
21a. Incident management agencies receiving incident severity from Emergency Management	(1/ 1) 100%	(1/ 1) 100%
21b. Incident management agencies receiving incident clearance activities from Emergency Management	(1/ 1) 100%	(1/ 1) 100%
13. Freeway Management agencies sending freeway conditions to Incident Management	(0/ 1) 0%	(0/ 1) 0%
4. Arterial Management agencies sending arterial conditions to Incident Management	(1/ 9) 11%	(3/ 9) 33%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	(0/ 9) 0%	(0/ 9) 0%
29. Transit Management agencies report traffic incidents as part of an organized regional incident management program	(3/ 8) 38%	(3/ 8) 38%

Link Description	1999	2005
7. Incident management agencies transfer information describing incident severity, location, and type to Emergency Management agencies	(0/ 1) 0%	(0/ 1) 0%
9. Incident Management agencies transfer information describing incident severity, location, and type to Transit Management agencies	(1/ 1) 100%	(1/ 1) 100%
6. Incident Management agencies disseminate information describing incident severity, location, and type to the public	(1/ 1) 100%	(1/ 1) 100%
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management agencies	(1/ 1) 100%	(1/ 1) 100%
8. Incident Management agencies transfer information describing incident severity, location, and type to Freeway Management agencies	(0/ 1) 0%	(0/ 1) 0%
25. Police, fire, and EMS agencies participating in a formal incident management plan/team	(11/ 13) 85%	(11/ 13) 85%

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.

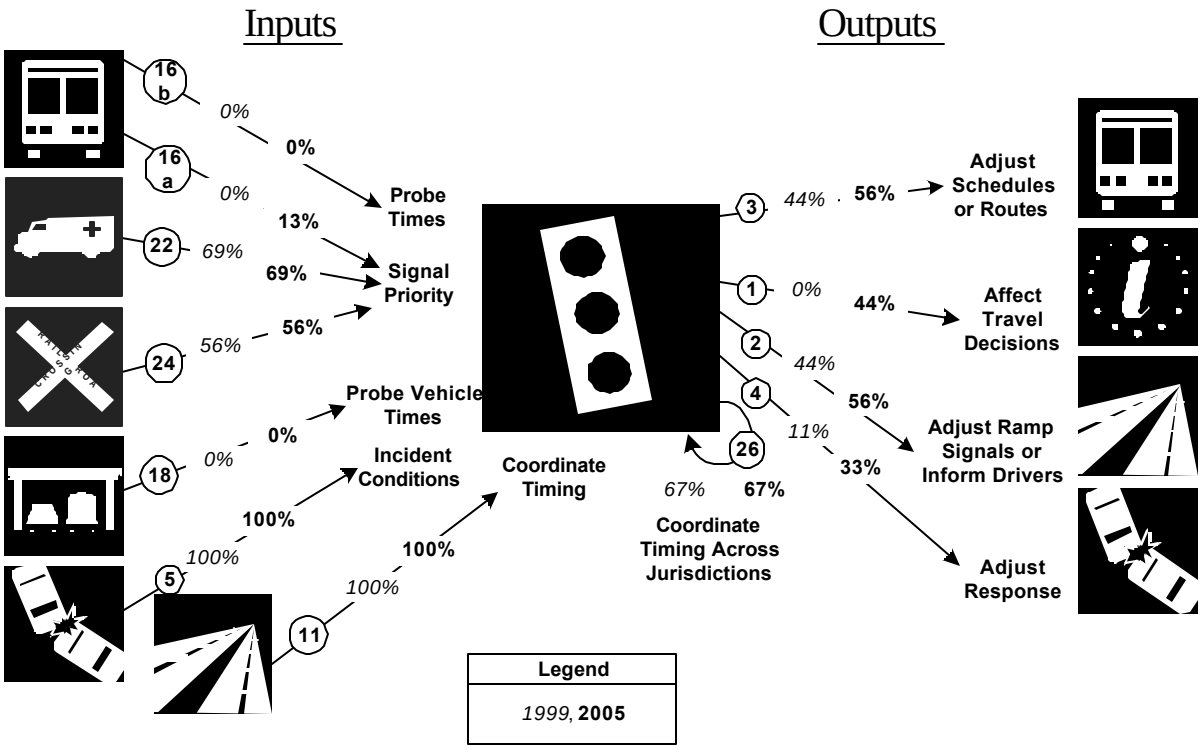
Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles covered by electronic surveillance	33	2100	2%						
Signalized intersections are covered by electronic surveillance for monitoring traffic flow				277	2412	11%	314	2256	14%
Signalized intersections are under centralized or closed loop control	1032	2312	45%	1267	2412	53%	1653	2256	73%

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Arterial miles are covered by VMS, HAR, or IVS	18	2100	1%						
Arterial miles are covered by VMS				185	2100	9%	18	2100	1%
Arterial miles are covered by HAR					2100			2100	
Arterial miles are covered by IVS					2100			2100	

Arterial Management Integration Indicators

Seattle, Tacoma

Arterial Management Integration*



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

Link Description	1999	2005
16a. Transit management agencies with vehicles equipped with traffic signal priority	(0/ 8) 0%	(1/ 8) 13%
16b. Transit Management agencies have vehicles equipped as probes on arterials	(0/ 8) 0%	(0/ 8) 0%
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	(9/ 13) 69%	(9/ 13) 69%
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/ 9) 56%	(5/ 9) 56%
18. Number of Arterial Management agencies receiving information from vehicle probes	(0/ 9) 0%	(0/ 9) 0%
5. Incident Management agencies transfer information describing incident severity, location, and type to Arterial Management	(1/ 1) 100%	(1/ 1) 100%

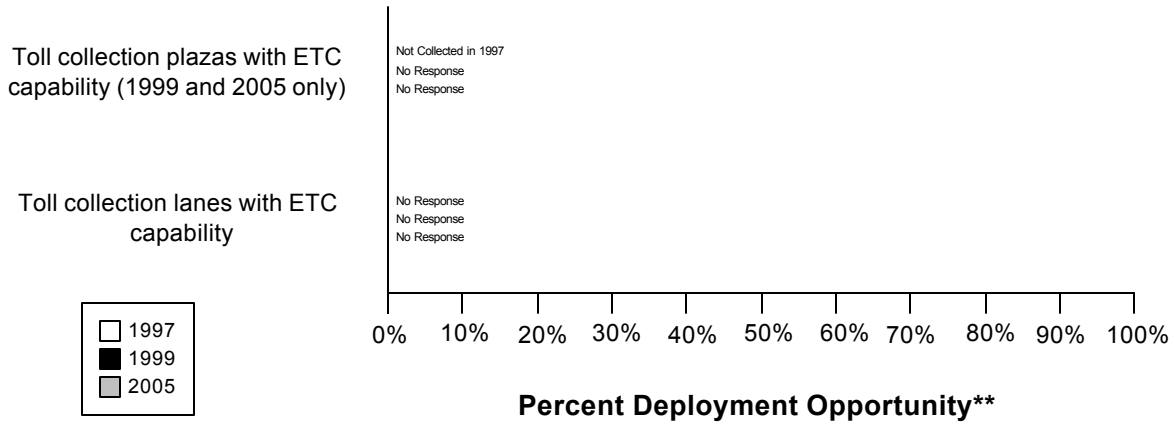
Link Description	1999	2005
11. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Arterial Management agencies	(1/ 1) 100%	(1/ 1) 100%
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	(4/ 9) 44%	(5/ 9) 56%
1. Arterial Management agencies disseminate arterial travel times, speeds, and conditions to the public	(0/ 9) 0%	(4/ 9) 44%
2. Arterial Management agencies send traffic condition information to Freeway Management	(4/ 9) 44%	(5/ 9) 56%
4. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Incident Management	(1/ 9) 11%	(3/ 9) 33%
26. Arterial Management agencies under cooperative agreement to share traffic signal timing for coordinated response	(6/ 9) 67%	(6/ 9) 67%

Electronic Toll Collection Component Indicators

Data as of 5/1/00

Seattle, Tacoma

Electronic Toll Collection*



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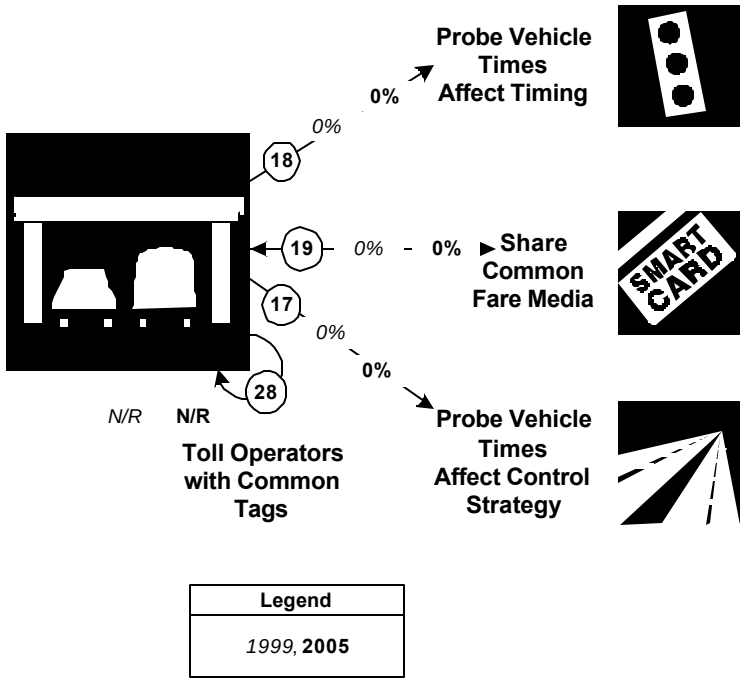
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

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

Electronic Toll Collection Integration Indicators

Seattle, Tacoma
Electronic Toll Collection Integration*

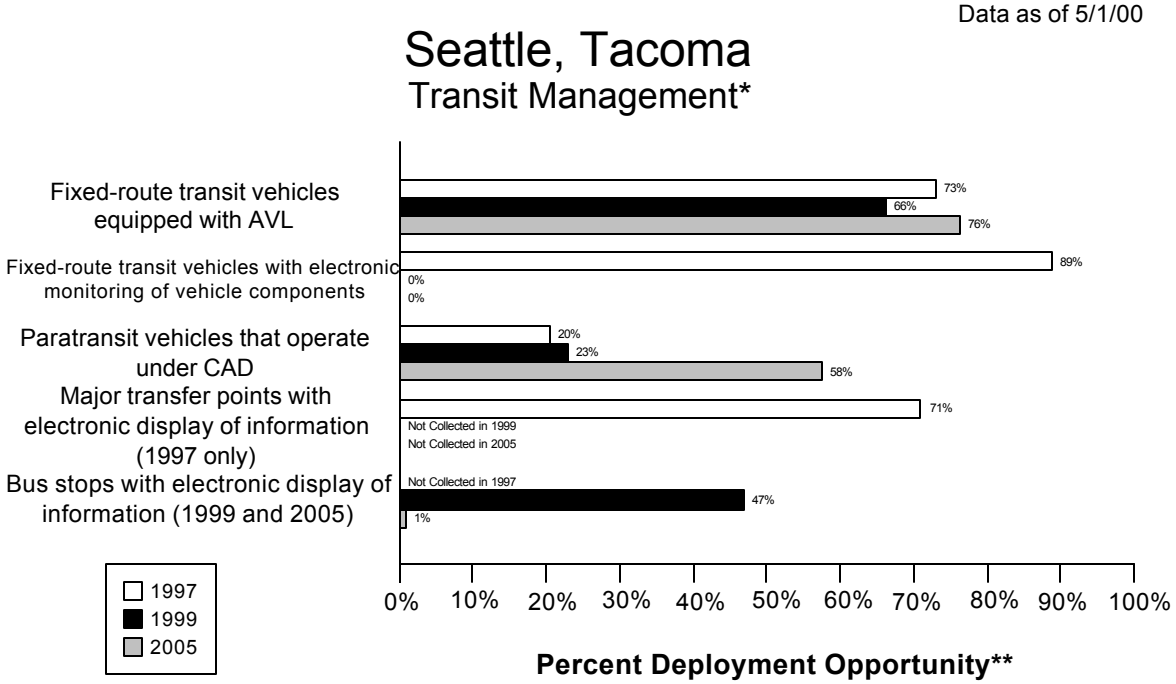


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
18. Number of Arterial Management agencies receiving information from vehicle probes	(0/ 9) 0%	(0/ 9) 0%
19. Transit agencies that accept electronic payment through the use of electronic toll collection media	(0/ 8) 0%	(0/ 8) 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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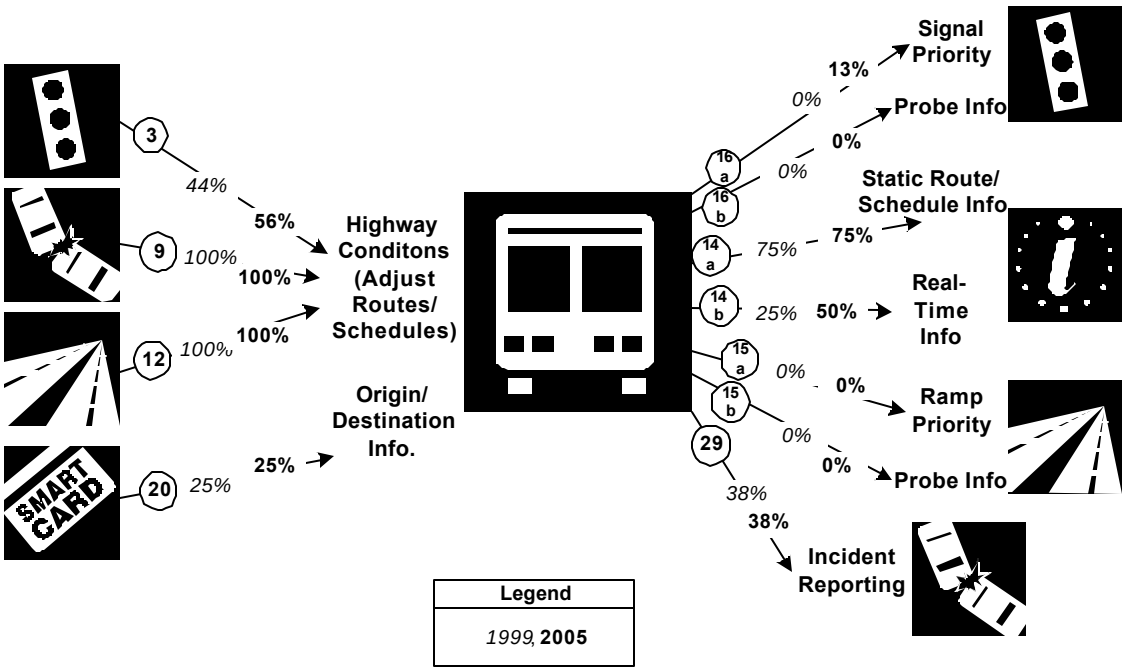
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Fixed-route transit vehicles are equipped with AVL	1243	1700	73%	1294	1951	66%	1405	1843	76%
Fixed-route transit vehicles are equipped with electronic monitoring of vehicle component	1508	1700	89%	0	1951	0%	0	1843	0%
Paratransit vehicles operate under computer-aided dispatch	88	431	20%	50	218	23%	72	125	58%
Percent fixed-route transfer locations with electronic display of information	44	62	71%						
Bus stops display information to the public				5010	10686	47%	100	10750	1%

Transit Management Integration Indicators

Seattle, Tacoma
Transit Management Integration*



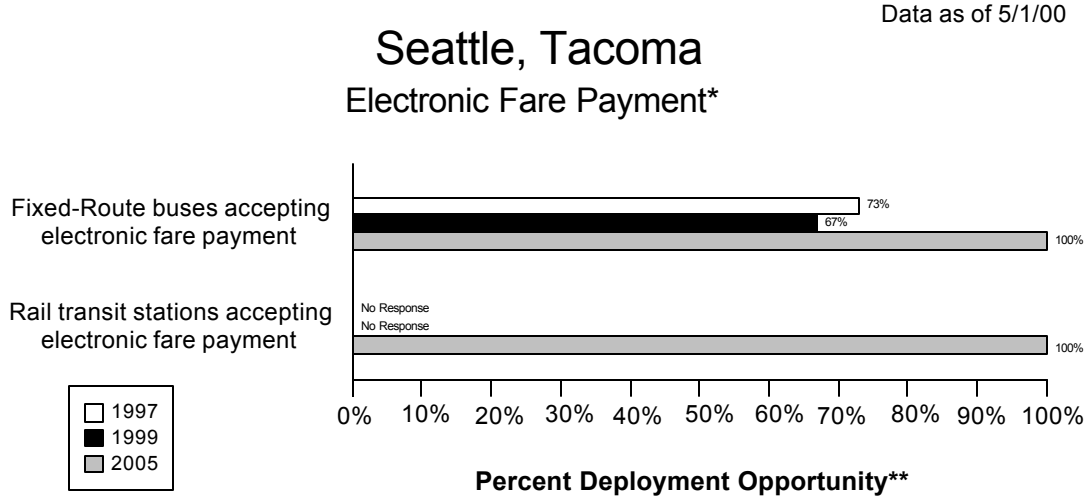
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
3. Arterial Management agencies transfer arterial travel times, speeds, and conditions to Transit Management	(4/ 9) 44%	(5/ 9) 56%
9. Incident management agencies transfer information describing incident severity, location, and type to Transit Management	(1/ 1) 100%	(1/ 1) 100%
12. Freeway Management agencies transfer freeway travel times, speeds, and conditions to Transit Management	(1/ 1) 100%	(1/ 1) 100%
20. Transit Management agencies using Electronic Fare Payment data in transit service planning	(2/ 8) 25%	(2/ 8) 25%
16a. Transit Management agencies have vehicles equipped with traffic signal priority capability	(0/ 8) 0%	(1/ 8) 13%
16b. Transit Management agencies have vehicles equipped as probes on arterials	(0/ 8) 0%	(0/ 8) 0%
14a. Transit Management agencies disseminate information describing transit routes, schedules, and fares to travelers	(6/ 8) 75%	(6/ 8) 75%

Link Description	1999	2005
14b. Transit Management agencies disseminate information describing schedule/route adherence to travelers	(2/ 8) 25%	(4/ 8) 50%
15a. Transit Management agencies have vehicles equipped with ramp meter priority capability	(0/ 8) 0%	(0/ 8) 0%
15b. Transit Management agencies have vehicles equipped as probes on freeways	(0/ 8) 0%	(0/ 8) 0%
29. Transit Management agencies that report traffic incidents as part of an organized regional Incident Management program	(3/ 8) 38%	(3/ 8) 38%

Electronic Fare Payment Component Indicators

Data as of 5/1/00



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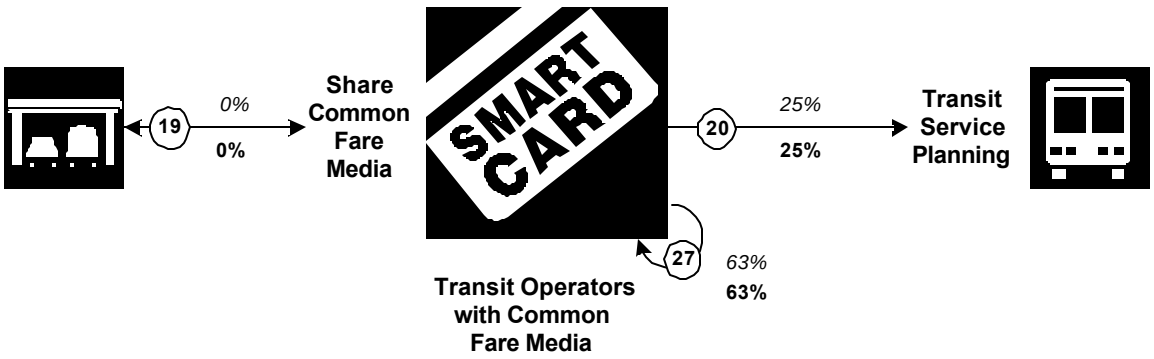
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Fixed-route transit vehicles that accept electronic payment	1243	1700	73%	1308	1951	67%	1843	1843	100%
Rail transit stations that accept electronic payment	0	0			0		1	1	100%

Electronic Fare Payment Integration Indicators

Seattle, Tacoma
Electronic Fare Payment Integration*

Inputs Outputs



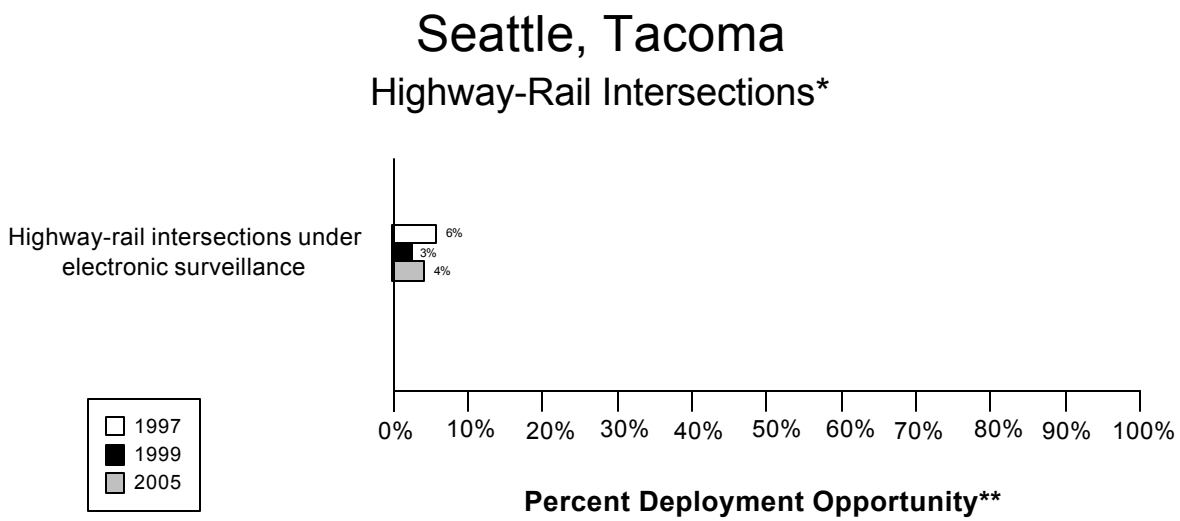
Legend
1999
2005

* 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/ 8) 0%	(0/ 8) 0%
20. Transit Management agencies use Electronic Fare Payment data in transit service planning	(2/ 8) 25%	(2/ 8) 25%
27. Transit Management agencies that use the same electronic payment system	(5/ 8) 63%	(5/ 8) 63%

Highway Rail Intersection Component Indicators

Data as of 5/1/00



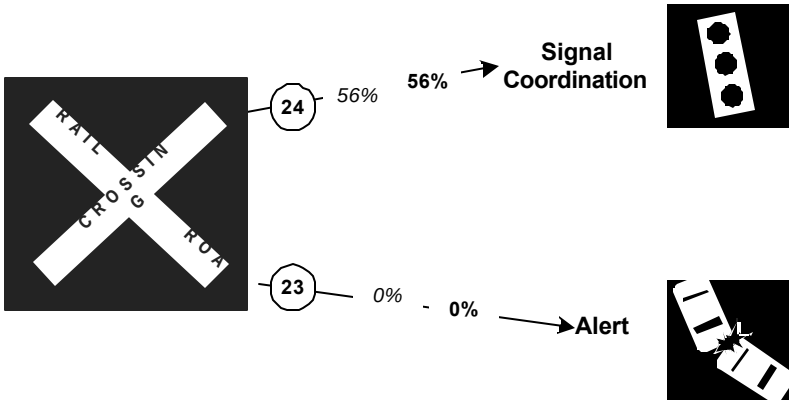
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Highway-rail intersections are under electronic surveillance	22	374	6%	4	158	3%	7	158	4%

Highway Rail Intersection Integration Indicators

Seattle, Tacoma
Highway Rail Intersections Integration*

Inputs Outputs



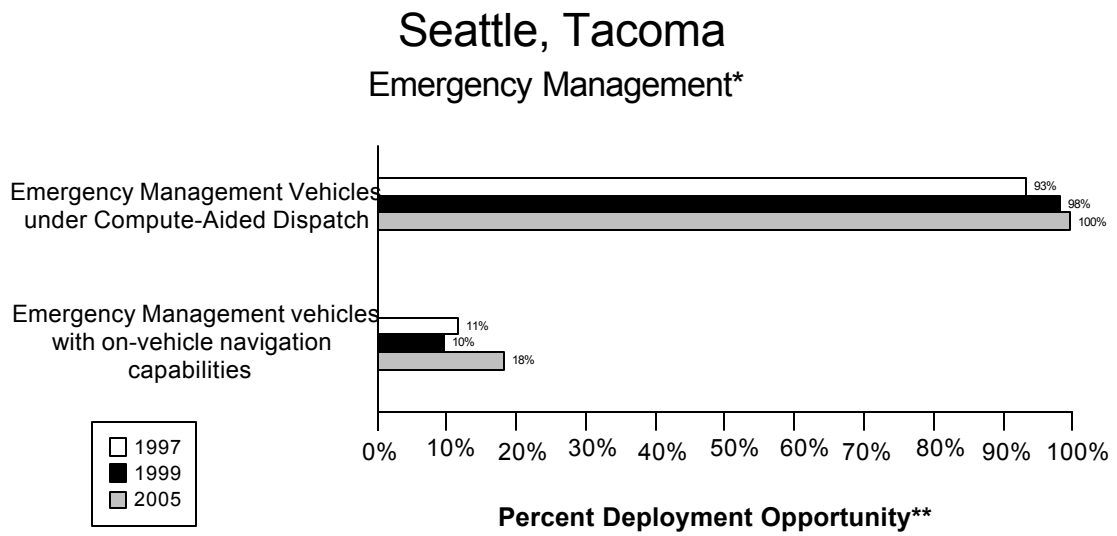
Legend
1999, **2005**

* 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/ 9) 56%	(5/ 9) 56%
23. Arterial Management agencies receive information on highway-rail intersection crossing blockages for the purpose of managing incident response	(0/ 9) 0%	(0/ 9) 0%

Emergency Management Component Indicators

Data as of 5/1/00



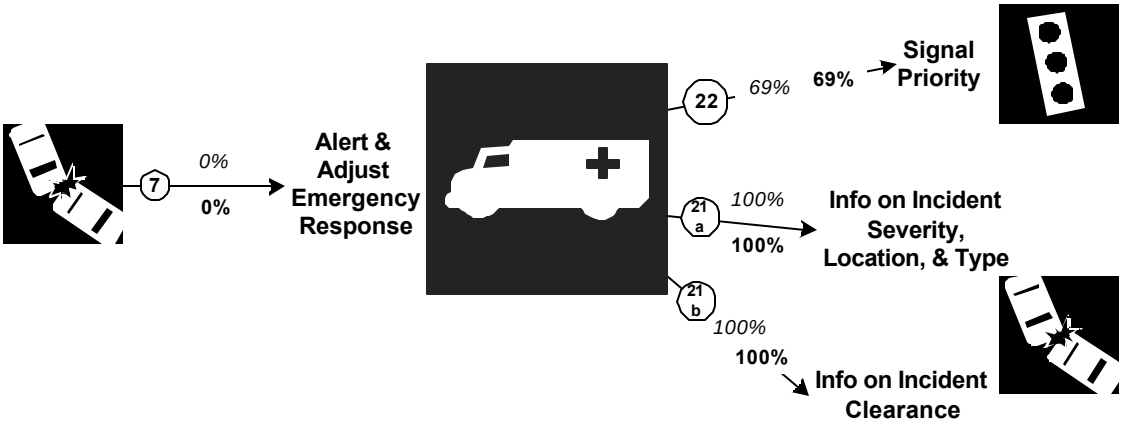
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

Description	1997			1999			2005		
	Num	Den	%	Num	Den	%	Num	Den	%
Public sector emergency vehicles that operate under computer-aided dispatch	587	630	93%	793	807	98%	862	866	100%
Public sector emergency vehicles that have in-vehicle route guidance capability	72	630	11%	78	807	10%	158	866	18%

Emergency Management Integration Indicators

Seattle, Tacoma
Emergency Management Integration*

Inputs Outputs



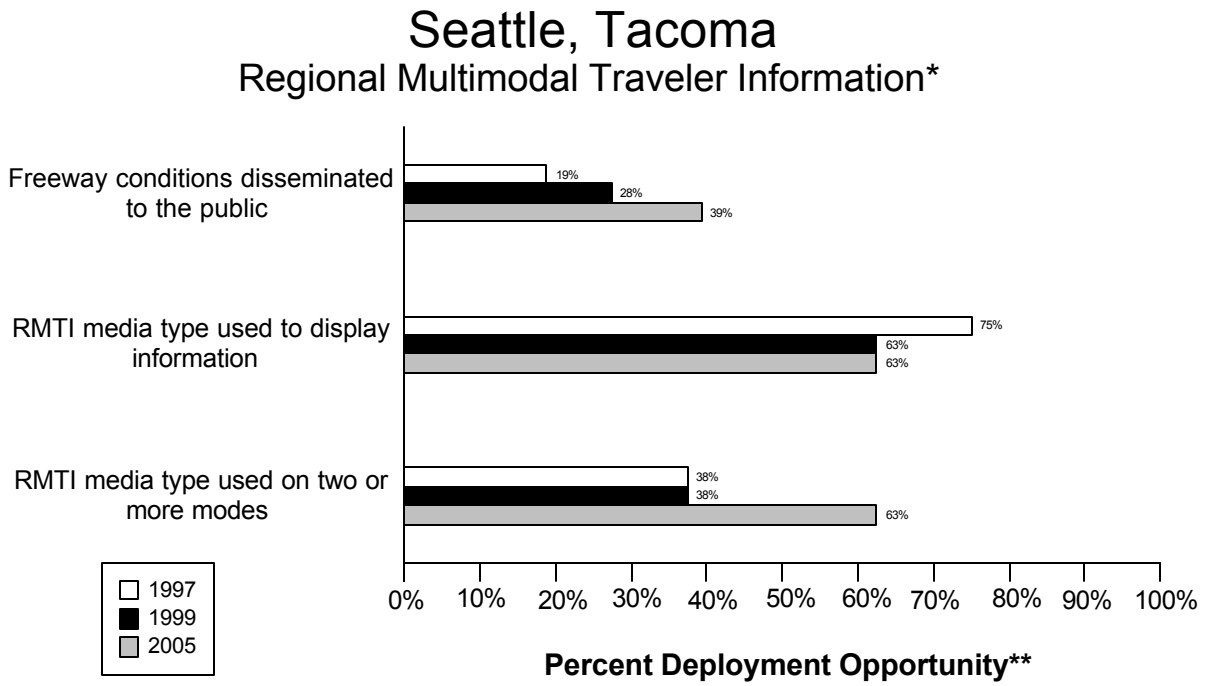
Legend
1999, **2005**

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

Link Description	**1999**	**2005**
7. Freeway Management agencies transfer information describing incident severity, location, and type to Emergency Management agencies	(0/ 1) 0%	(0/ 1) 0%
22. Emergency Management agencies have vehicles equipped with traffic signal preemption capability	(9/ 13) 69%	(9/ 13) 69%
21a. Freeway Management agencies receive incident severity, location, and type data from Emergency Management agencies	(1/ 1) 100%	(1/ 1) 100%
21b. Freeway Management agencies receive incident clearance activities information from Emergency Management agencies	(1/ 1) 100%	(1/ 1) 100%

Regional Multimodal Traveler Information Component Indicators

Data as of 5/1/00

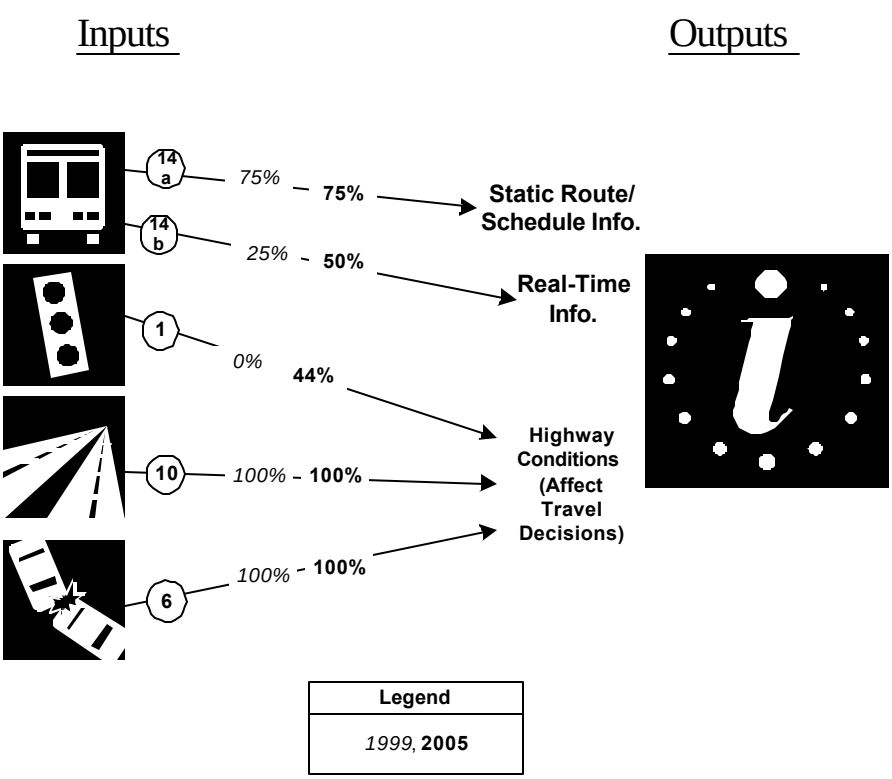


* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity.
** Deployment opportunity reflects potential totals that do not necessarily reflect actual need.

	1997			1999			2005		
Description	Num	Den	%	Num	Den	%	Num	Den	%
Freeway conditions disseminated to travelers	72	381	19%	105	381	28%	150	381	39%
Possible RMTI media types are used to display information to travelers	6	8	75%	5	8	63%	5	8	63%
Possible RMTI media are used to display information on *two or more modes* to travelers	3	8	38%	3	8	38%	5	8	63%

Regional Multimodal Traveler Information Integration Indicators

Seattle, Tacoma
Regional Multimodal Traveler Information Integration*

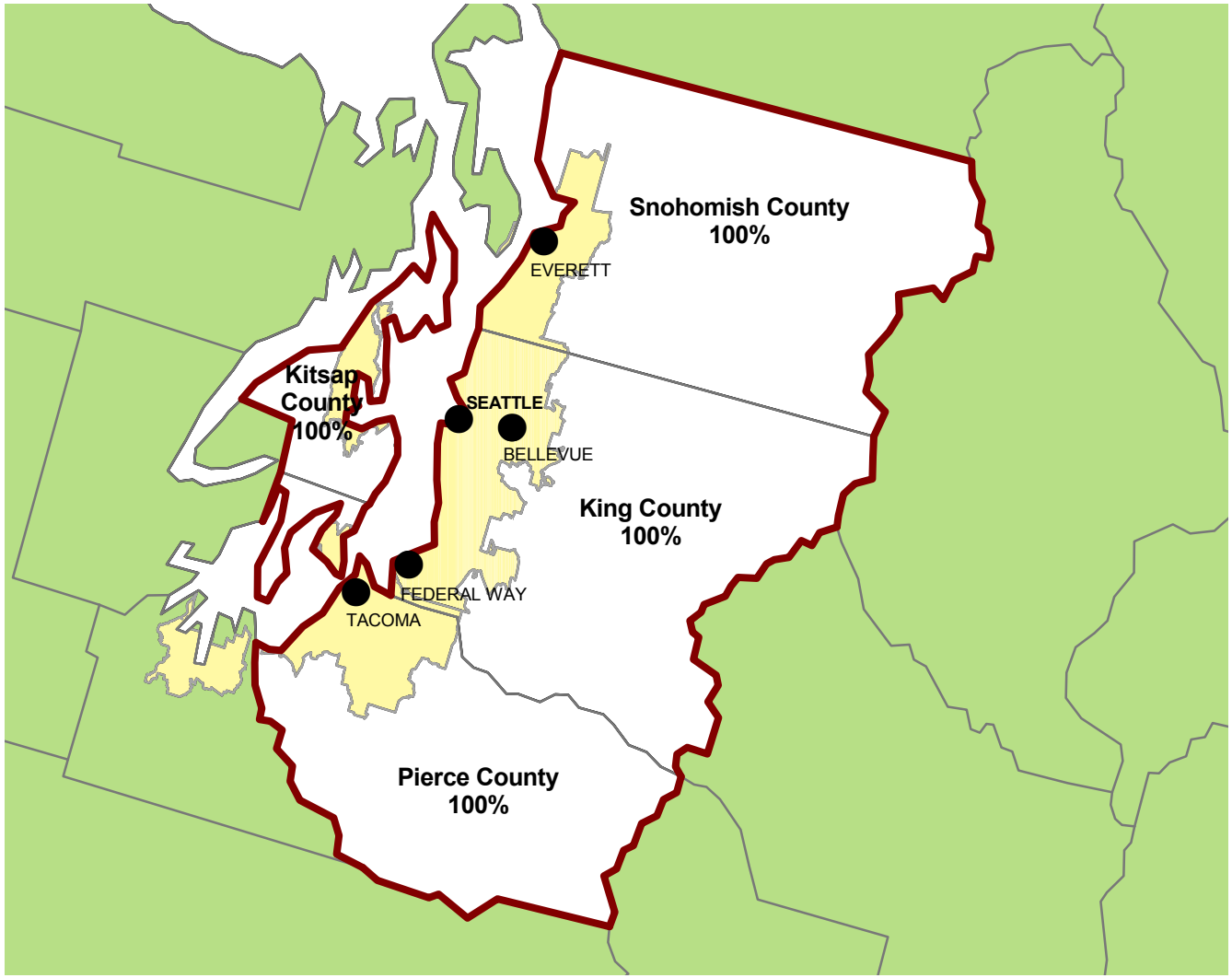


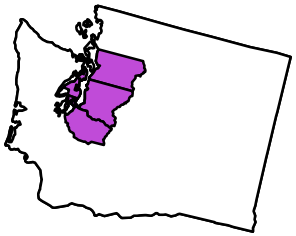
* Indicators are single surrogates that do not necessarily reflect the full breadth of ITS deployment activity

Link Description	1999	2005
14a. Transit Management agencies that disseminate information describing transit routes, schedules, and fares to travelers	(6/ 8) 75%	(6/ 8) 75%
14b. Transit Management agencies that disseminate information describing schedule/route adherence to travelers	(2/ 8) 25%	(4/ 8) 50%
1. Arterial Management agencies that disseminate arterial travel times, speeds, and conditions to the public	(0/ 9) 0%	(4/ 9) 44%
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

PUGET SOUND
REGIONAL 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
SEATTLE, TACOMA						
Arterial Management						
Everett City	(425) 257-8923	425- 257-8856	8/5/1999	10/25/1999	7/15/1997	7/16/1997
Seattle City	(206) 684-5096	(206) 684-5063	8/5/1999	9/27/1999	7/15/1997	10/9/1997
Pierce County	(253) 798-7250	(253) 798-3661	8/5/1999	9/7/1999	7/15/1997	8/5/1997
Snohomish County	(425) 388-6421	(425) 259-4945	8/5/1999	12/15/1999	7/15/1997	10/3/1997
Bellevue City	(425) 452-6856	(425) 452-5272	8/5/1999	8/30/1999	7/15/1997	7/31/1997
Washington State Department of Transportation	(360) 357-2707	(360) 704-3240	8/5/1999	8/30/1999	7/15/1997	8/18/1997
Washington State Department of Transportation	(206) 440-4403	(206) 440-4804	8/5/1999	10/12/1999	7/15/1997	9/3/1997
Federal Way City	(206) 296-6590	(206) 296-0176	8/5/1999		7/15/1997	
King County	(206) 296-6590	(206) 296-0176	8/5/1999		7/15/1997	
Tacoma City	(253) 591-5538	(253) 591-5262	8/5/1999	8/19/1999	7/15/1997	7/16/1997
Kitsap County	(360) 337-7121	(360) 337-4867	8/5/1999	9/27/1999	7/15/1997	8/8/1997
Emergency Management						
Federal Way City Fire Department	253- 839-6234	253-529-7206	6/26/1999	6/30/1999	7/15/1997	7/22/1997
Bellevue City Fire Department	425-452-6892	425-452-5287	6/26/1999	7/26/1999	7/15/1997	7/28/1997
Bellevue City Fire Department (Emergency	425-452-6892	425-452-5287	6/26/1999	7/26/1999	7/15/1997	7/28/1997
Tacoma City Fire Department (Emergency	253- 591-5737	(253) 591-5746	6/26/1999	7/26/1999	7/15/1997	7/16/1997
Everett City Fire Department (Emergency	425-257-8100	425-257-8139	6/26/1999	6/30/1999	7/15/1997	7/18/1997
Seattle City Police Department	(206) 684-8790	(206) 233-7207	6/26/1999	7/7/1999	7/15/1997	7/22/1997
Tacoma City Fire Department	253- 591-5737	(253) 591-5746	6/26/1999	7/26/1999	7/15/1997	7/16/1997
Tacoma City Police Department	(253) 591-5901	(253) 591-5991	6/26/1999	7/12/1999	7/15/1997	10/2/1997
Washington State Department of Transportation	(206) 440-4471	(206) 440-4804	6/26/1999	7/1/1999	7/15/1997	7/22/1997
Everett City Police Department	425- 257-8400	425- 257-6501	6/26/1999	8/2/1999	7/15/1997	7/22/1997
Everett City Fire Department	425-257-8100	425-257-8139	6/26/1999	6/30/1999	7/15/1997	7/18/1997
Seattle City Fire Department	(206) 386-1400	(206) 386-1412	6/26/1999	8/19/1999	7/15/1997	10/31/1997
Bellevue City Police Department	425-452-6917	425-452-6110	6/26/1999	7/30/1999	7/15/1997	7/22/1997
Freeway Management						
Washington State Department of Transportation	(206) 440-4403	(206) 440-4804	8/5/1999	10/12/1999	7/15/1997	8/18/1997
Washington State Department of Transportation	(360) 357-2670	(360) 357-2793	8/5/1999		7/15/1997	8/13/1997
MPO						
Puget Sound Regional Council	(206) 464-6174	(206) 587-4825	7/15/1999	10/11/1999		
Transit Management						
Kitsap Transit	(360) 478-6223	(360) 377-7086	8/9/1999	1/18/2000	7/11/1997	

Agency Name	Phone	Fax	1999		1997	
			Out	In	Out	In
Snohomish County Senior Services	(425) 355-1112	(425) 000-0000	8/9/1999		7/14/1997	7/28/1997
Snohomish County Public Transportation	(425) 348-7129	(425) 438-6141	8/9/1999	8/30/1999	7/11/1997	7/23/1997
Seattle Monorail Transit	(206) 684-0769	(206) 684-4183	8/9/1999	9/2/1999	7/11/1997	7/14/1997
Pierce Transit	253-581-8122	253-581-8075	8/9/1999	1/6/2000	7/11/1997	10/10/1997
Pierce County Ferry Operations	(253) 798-3147	(253) 798-2740	8/9/1999	10/18/1999	7/11/1997	7/14/1997
Washington State Ferries	(206) 515-3695	(206) 515-3445	8/9/1999	10/22/1999	7/11/1997	7/28/1997
King County Metro	(206) 684-1513	(206) 684-2059	8/9/1999	12/10/1999	7/11/1997	7/25/1997
Everett Transit	425 257-8932	(425) 257-8945	8/9/1999	12/10/1999	7/11/1997	7/22/1997

Appendix C
Freeway Management Components

Freeway Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Washington State Department of Transportation Northwest Region	
	1999	**2005**
Agency Returned Survey?	Yes	
FREEWAY MANAGEMENT SECTION		
Number of freeway centerline miles that agency owns or maintains	NR	
Number of freeway centerline miles that is used for planning	NR	
Number of freeway entrance ramps that agency owns, operates or maintains	NR	
Number of freeway entrance ramps that is used for planning	NR	
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?	No	
Activities conducted in a dedicated control room?	No	
Control room contains operator console(s)?	No	
Control room contains electronic wall map?	No	
Control room contains CCTV display(s)?	No	
Activities conducted in a room containing workstations or PCs that manage traffic?	No	
Facilities are electronically linked to other transportation mgt facilities?	No	
Staffing and hours of operation of freeway/incident management activities		
Number of full-time agency staff members	NR	
Number of full time contractor staff members	NR	
Number of part-time agency staff members	NR	
Number of part-time contractor staff members	NR	
Staffed 24 hours day by agency staff or by others	NR	
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	No	
Types of operations conducted for freeway/incident management		
Incident detection and management?	No	
This metropolitan area?	No	
Other metropolitan area?	No	
Statewide?	No	
Monitoring and troubleshooting status of system components?	No	
Manual override of ramp metering rates at freeway on-ramps?	No	
Operating transportation management roadside devices?	No	
Radio communications with other agencies?	No	
Exchange of electronic data with other agencies such as computer aided dispatch?	No	
Real-Time Traffic Data Collection Technologies		

	Washington State Department of Transportation Northwest Region	
	1999	**2005**
Total number of miles under surveillance with real-time data collection tech.	105	150
Number of Stations with data collection technologies		
Loop detectors	0	0
Video imaging detectors	0	0
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0
Microwave radar	0	0
Other (e.g., acoustic detectors)	0	0
Number of Miles covered with data collection technologies		
Loop detectors	0	0
Video imaging detectors	0	0
Probe readers (elec. toll tags, transit vehicles, other technology)	0	0
Microwave radar	0	0
Other (e.g., acoustic detectors)	0	0
Variable Message Signs (VMS) on Freeways		
Candidate locations for deployment of VMS where VMS has been deployed	55	70
Candidate locations for deployment of VMS	NR	NR
Roadside Technologies used to Distribute Traveler Information		
Total number of miles where information is distributed	24	50
Number deployed		
Highway advisory radio	NR	NR
In-vehicle signing	0	0
Portable variable message signs	0	0
Other	0	0
Miles covered		
Highway advisory radio	24	50
In-vehicle signing	0	0
Portable variable message signs	0	0
Other	0	0
Ramp Meters on Freeways		
Number of entrance ramp meters operated under isolated control	NR	NR
Number of entrance ramp meters operated under central control	NR	NR
Number of entrance ramp meters that provide preemption for emergency vehicles	NR	NR
Number of entrance ramp meters that provide priority for transit vehicles	NR	NR
Total number of metered ramps	83	125
Freeway centerline miles under lane control	15	15
Communication Links		
Freeway centerline miles covered by the following type of communication		
Twisted pair cable	0	0
Coaxial cable	0	0
Fiber-optic cable	0	0
Microwave radio	0	0
Other	0	0

	Washington State Department of Transportation Northwest Region	
	1999	**2005**
ITS Standards Used Related to Freeway Management		
ATMS Data Dictionary Sections 1 and 2 (ITE TM 1.01)	No	
ATMS Data Dictionary Sections 3 and 4 (ITE TM 1.02)	No	
Message Set for External TMC Communication (ITE-9604-1)	No	
NTCIP Class B Profile (AASHTO TS 3.3)	No	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No	
NTCIP Object Definitions for Environmental Sensor Stations (AASHTO TS 3.7)	No	
NTICP Object Definitions for Dynamic Message Signs (AASHTO TS 3.6)	No	
NTICP Object Definitions for Highway Advisory Radio (AASHTO TS 3.HAR)	No	
NTICP Object Definitions for Ramp Meter Control (AASHTO TS 3.RMC)	No	
NTICP Object Definitions for Transportation Sensor Systems (AASHTO TS 3.TSS)	No	
NTICP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No	
Would agency be willing to participate in testing of ITS Standards?	NR	
Have agreements in place with other agencies to use similar hardware		
and software to aid maintenance and interoperability?	NR	
INCIDENT MANAGEMENT SECTION		
Use of Service Patrols to Assist in Detection and Response to Incidents		
Publicly operated service patrol vehicles	Yes	N/A
Privately operated service patrol vehicles operated under public contract	No	N/A
Total number of freeway miles patrolled by these services	7	22
Miles Covered by Methods to Detect and Verify Incidents		
Free cellular phone call to a dedicated phone number other than 911	4	8
Police patrols	NR	NR
Computer algorithms linked to traffic surveillance equipment	105	150
CCTV	105	150
Private sector sources (e.g., Shadow Traffic, SmartRoutes)	NR	NR
Other (e.g., free cell phone call to an area radio system, etc.)	NR	NR
Procedures in place for Freeway Incident Response?		
Working agreement(s)/arrangement(s) with other agencies	No	
Inter-agency incident management admin. team that meets regularly	No	
Major incident response team that responds to major incidents	No	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No	
Central focal point for facilitating the two-way flow of information		
among agencies responding to an incident?		
The central focal point is a Freeway or Traffic Management Center	No	
The central focal point is a Police, Fire or joint dispatch center	No	
The central focal point is another center	No	
Methods of Communication Used On-Site at an Incident		
Police		
Two-way radio	No	
800 MHz trunked radio	No	

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

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

Appendix D
Freeway Management Integration

Agency Name	Washington State Department of Transportation Northwest Region	
	1999	2005
Agency Returned Survey?	Yes	
Freeway Management Section		
Agencies your agency provides freeway travel times, speeds, and		
conditions information, share infrastructure or coordinates operation		
Freeway Management Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
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
Arterial Management Agencies		
Provide Information	short survey	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Public Transit Operators		
Provide Information	short survey	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Receiving real-time information via electronic means from others		
Incident Management agencies from which your agency receives		
incident severity, location, and type information	None listed	None listed
Arterial Management agencies from which your agency receives		
arterial travel times, speeds, and conditions	None listed	None listed
Public Transit operators from which your agency receives		
freeway travel times derived from vehicle probes	None listed	None listed
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		
Provide Information	short survey	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed

Freeway Management Integration
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Washington State Department of Transportation Northwest Region	
	1999	**2005**
Emergency Management Agencies		
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	short survey	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		
incident clearance and/or incident severity and type		
Receive Arterial Incident Clearance Information	short survey	None listed
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 E
Freeway Management Information Collection and Dissemination

Data Collection and Dissemination: Freeway Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Washington State Department of Transportation Northwest Region	
	1999	**2005**
Agency Returned Survey?	Yes	
Freeway 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		
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 freeway information to the public		
Technologies your agency uses to disseminate:	Dedicated cable TV, Telephone system, Internet Web sites	Dedicated cable TV, Telephone system, Internet Web sites
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting freeway conditions	NR	
Telephone system for reporting freeway information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	
Freeway Incident Management Section		
Methods used to distribute incident location and severity information		
to the public		
Technologies your agency uses to disseminate:	Telephone system, Internet Web sites	Telephone system, Internet Web sites
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR
Internet web site reporting incident information	NR	
Telephone system for reporting incident information to the public	NR	
Organizations your agency sends information for dissemination to the public	NR	

Appendix F
Arterial Management Components

Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Bellevue City		Everett City		Kitsap County		Pierce County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes		Yes		Yes	
ARTERIAL MANAGEMENT SECTION								
Number of arterial miles that agency owns or maintains	NR		100		27		693	
Number of arterial miles that is used for planning	NR		50		27		0	
Number of highway-rail intersections that agency maintains	5		7		8		47	
Number of highway-rail intersections that is used for planning	5		7		7		0	
Type of facilities used to conduct arterial management activities								
Activities housed in a free-standing dedicated building?	No		No		No		No	
Activities housed in a building shared with other activities?	No		Yes		No		No	
Activities conducted in a dedicated control room?	No		Yes		No		No	
Control room contains operator console(s)?	No		Yes		No		No	
Control room contains electronic wall map?	No		No		No		No	
Control room contains CCTV display(s)?	Yes		Yes		No		No	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		Yes		Yes		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	2		0		NR		NR	
Number of full time contractor staff members	NR		0		NR		NR	
Number of part-time agency staff members	NR		0		NR		NR	
Number of part-time contractor staff members	NR		0		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	agency		NR		NR		NR	
Staffed by others during off-peak hours	No		No		No		No	
Agency staff perform transportation management as an ancillary duty	Yes		Yes		No		No	
Agency staff dedicated to transportation management duty	Yes		No		No		No	
Types of operations conducted for arterial management								
Incident detection and management?	No		No		No		No	
This metropolitan area?	No		No		No		No	
Other metropolitan area?	No		No		No		No	
Monitoring and troubleshooting status of system components?	Yes		Yes		No		No	
Radio communications with other agencies?	Yes		No		No		No	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		No		No		No	
Manual override of traffic signal timing plans	Yes		Yes		No		No	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	Yes		No		No		No	

	Bellevue City		Everett City		Kitsap County		Pierce County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Describe agency's role in traffic signal control	All roads in incorporated area		All roads in incorporated area		County routes only		County routes only	
Traffic Signals Operated by Agency								
Number of signalized intersections operated and owned by agency	145	155	138	143	29	NR	58	NR
Number of signalized intersections operated by agency but owned by another	1	1	2	2	NR	NR	NR	NR
Total number of signalized intersections operated by agency	146	156	140	150	29	NR	58	NR
Characteristics of signalized intersections that agency operates								
Under closed loop or central system control	146	156	119	122	29	NR	13	NR
Under real-time traffic adaptive control using advanced software	0	0	0	0	0	NR	0	NR
Using SCOOT	No		No		No		No	
Using SCATS	No		No		No		No	
Name of software	NR		NR		NR		NR	
Allow signal preemption for emergency vehicles	140	156	139	144	29	NR	58	NR
Allow signal priority for transit vehicles	140	156	0	30	29	NR	0	NR
Within 200 feet of a highway-rail intersection	0	0	1	0	0	NR	1	NR
Within 200 feet of a highway-rail intersection that adjust signal timing	0	0	0	0	0	NR	1	NR
Software used to control the signals agency operates								
Date of last upgrade to traffic signal control system software?	under way now complete by 11/99		1999		TNETJ2/latest version		NR	
How often do you update signal timing?	some every other year, some 2-3 times a year		annually		rarely		NR	
Software used and number of signalized intersections under control (1999, 2005)	Tranconex TMP 500, 2, 2 MTCS PC Computran, 144, 154		Bi-Tran and/or Wapiti, 0, 4 IDC Traconet, 3, 0 IDC Multisonics VMS, 116, 122		NR		ECONOLITE, 13, NR	
Controllers used to control signals								
NEMA	146	156	139	145	32	36	58	NR
170/179	0	0	NR	4	0	0	0	0
2070 controller	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Technologies Associated with Highway-Rail Intersections								

Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Bellevue City		Everett City		Kitsap County		Pierce County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Total number of highway-rail intersections under electronic surveillance	NR	NR	1	0	NR	NR	1	NR
Highway-Rail intersection capapbilities								
Video surveillance	0	0	1	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	1	NR
Equipped with electronic traffic violator devices	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Real-Time Electronic Traffic Data Collection Technologies								
Total number of signalized intersections covered by electronic surveillance	122	125	119	122	NR	NR	NR	NR
Number of signalized intersections with data collection technologies								
Loop detectors	120	125	119	122	0	0	0	0
Video detection cameras	2	NR	8	10	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	30	0	0	0	0
Roadside Technologies used to Distribute Traveler Information								
Number deployed								
Highway Advisory Radio	NR	NR	NR	NR	NR	NR	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	NR	NR
VMS controlling parking access	NR	NR	NR	1	NR	NR	NR	NR
Miles covered								
Highway Advisory Radio	NR	NR	NR	NR	NR	NR	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	NR	NR
Variable Message Signs (VMS) on Arterials								
Candidate locations for deployment of VMS where VMS has been deployed	NR	NR	NR	NR	NR	NR	NR	NR
Candidate locations for deployment of VMS	NR	NR	NR	NR	NR	NR	NR	NR
Communication Technologies								
Signalized intersections communicated with by each type of communication								
Twisted pair cable	144	154	0	0	30	32	15	NR
Coaxial cable	0	0	0	0	0	0	0	0
Fiber-optic cable	0	0	0	0	0	0	0	0
Other (e.g., wireless, dial-up modems, leased lines, etc.)	2	2	3	0	2	0	0	0
Does agency convey information on highway-rail intersection crossing								
status to travelers via roadside media such as VMS or HAR?	No		No		No		No	
ITS Standards Used Related to Traffic Signal Control								
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		No		No		No	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		No		No		No	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		No		No		No	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		No		No		No	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		No		No		No	

	Bellevue City		Everett City		Kitsap County		Pierce County	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		Yes		No		No	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		No		No		No	
Would agency be willing to participate in testing of ITS Standards?	Yes		Yes		No		No	
Have agreements in place with other agencies to use similar hardware								
and software to aid maintenance and interoperability?	No		Yes		No		No	
INCIDENT MANAGEMENT ON ARTERIAL STREETS								
Receive information on highway-rail intersection crossing blockages for								
the purpose of managing incident response?	No		No		No		No	
Use of Service Patrols to Assist in Detection and Response to Incidents								
Publicly operated service patrol vehicles	No		No		No		No	
Privately operated service patrol vehicles operated under public contract	No		No		No		No	
Total number of arterial miles patrolled by these services	NR	NR	NR	NR	NR	NR	NR	NR
Miles Covered by Methods to Detect and Verify Incidents								
Free cellular phone call to a dedicated phone number other than 911	0	0	0	0	0	0	0	0
Free cellular phone call to an area radio station	0	0	0	0	0	0	0	0
Police patrols	0	0	0	0	0	0	0	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	0	0	0	0	0
CCTV	4	8	0	0	0	0	0	0
Private sector sources (e.g., Shadow Traffic, Smart Routes)	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Procedures in place for Arterial Incident Response?								
Working agreement(s)/arrangement(s) with other agencies	No		No		No		No	
Inter-agency incident management admin. team that meets regularly	No		No		No		No	
Major incident response team that responds to major incidents	No		No		No		No	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	Yes		No		No		No	
Methods of Communication Used On-Site at an Incident								
Police								
Two-way radio	No		No		No		No	
800 MHz trunked radio	Yes		No		No		No	
Cellular telephone	No		No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No		No	
Automated data systems (i.e., CAD)	Yes		No		No		No	
Other	No		No		No		No	
Fire								
Two-way radio	No		No		No		No	
800 MHz trunked radio	Yes		No		No		No	
Cellular telephone	No		No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No		No	
Automated data systems (i.e., CAD)	Yes		No		No		No	

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

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

Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Seattle City		Snohomish County		Tacoma City		Washington State Department of Transportation	
	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	477		NR		216		NR	
Number of arterial miles that is used for planning	477		NR		216		NR	
Number of highway-rail intersections that agency maintains	8		40		40		NR	
Number of highway-rail intersections that is used for planning	8		NR		40		NR	
Type of facilities used to conduct arterial management activities								
Activities housed in a free-standing dedicated building?	No		No		No		No	
Activities housed in a building shared with other activities?	No		No		Yes		No	
Activities conducted in a dedicated control room?	Yes		No		No		No	
Control room contains operator console(s)?	No		No		No		No	
Control room contains electronic wall map?	No		No		No		No	
Control room contains CCTV display(s)?	No		No		No		No	
Activities conducted in a room containing workstations or PCs that manage traffic?	No		No		No		No	
Facilities are electronically linked to other transportation mgt facilities?	No		No		No		No	
Staffing and hours of operation of arterial management activities								
Number of full-time agency staff members	NR		NR		15		NR	
Number of full time contractor staff members	NR		NR		0		NR	
Number of part-time agency staff members	NR		NR		0		NR	
Number of part-time contractor staff members	NR		NR		0		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	Yes		No		Yes		No	
Agency staff dedicated to transportation management duty	No		No		No		No	
Types of operations conducted for arterial management								
Incident detection and management?	No		No		No		No	
This metropolitan area?	No		No		No		No	
Other metropolitan area?	No		No		No		No	
Monitoring and troubleshooting status of system components?	No		No		Yes		No	
Radio communications with other agencies?	No		No		No		No	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		No		No		No	
Manual override of traffic signal timing plans	Yes		No		No		No	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	Yes		No		No		No	

	Seattle City		Snohomish County		Tacoma City		Washington State Department of Transportation	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Describe agency's role in traffic signal control	All roads in incorporated area		NR		All roads in incorporated area		NR	
Traffic Signals Operated by Agency								
Number of signalized intersections operated and owned by agency	975	1,025	NR	NR	272	280	NR	NR
Number of signalized intersections operated by agency but owned by another	15	20	NR	NR	22	25	NR	NR
Total number of signalized intersections operated by agency	990	1,045	75	100	294	305	425	500
Characteristics of signalized intersections that agency operates								
Under closed loop or central system control	700	900	40	100	120	250	15	25
Under real-time traffic adaptive control using advanced software	0	NR	0	0	0	0	0	0
Using SCOOT	No		No		No		No	
Using SCATS	No		No		No		No	
Name of software	NR		NR		NR		NR	
Allow signal preemption for emergency vehicles	225	400	75	100	5	50	425	500
Allow signal priority for transit vehicles	20	70	11	30	3	50	20	100
Within 200 feet of a highway-rail intersection	11	11	0	0	10	10	20	25
Within 200 feet of a highway-rail intersection that adjust signal timing	6	11	0	0	8	10	20	25
Software used to control the signals agency operates								
Date of last upgrade to traffic signal control system software?	1997 for central system		NR		not applicable		NR	
How often do you update signal timing?	10 year cycle		NR		timing is checked daily and revised as needed		NR	
Software used and number of signalized intersections under control (1999, 2005)	New central, NR, 550 Traconet closed loop system, 50, 0 MDM & LCM closed loop systems, 220, 250 MARC Closed Loop system, 25, 25 MIST, 55, 75 Comtrac, 300, NR		NR		Older NEMA Software, 23, 23 TCT-LMD, 50, 73 Traconex 390, 138, 188		NR	
Controllers used to control signals								
NEMA	975	1,025	0	0	211	284	0	0
170/179	0	0	0	0	0	0	0	0
2070 controller	0	0	0	0	0	0	0	0
Other	0	0	0	0	83	21	0	0
Technologies Associated with Highway-Rail Intersections								

Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Seattle City		Snohomish County		Tacoma City		Washington State Department of Transportation	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Total number of highway-rail intersections under electronic surveillance	2	7	NR	NR	NR	NR	NR	NR
Highway-Rail intersection capapbilities								
Video surveillance	1	5	0	0	0	0	0	0
Electronic surveillance other than video	1	NR	0	0	0	0	0	0
Ability to predict train arrival electronically	0	2	0	0	0	0	0	0
Equipped with electronic traffic violator devices	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Real-Time Electronic Traffic Data Collection Technologies								
Total number of signalized intersections covered by electronic surveillance	36	67	NR	NR	0	0	NR	NR
Number of signalized intersections with data collection technologies								
Loop detectors	30	50	0	0	211	284	0	0
Video detection cameras	2	7	0	0	0	0	0	0
Probe readers reading toll tags	0	0	0	0	0	0	0	0
Probe readers reading license plates	0	0	0	0	0	0	0	0
Other	4	10	0	0	0	0	0	0
Roadside Technologies used to Distribute Traveler Information								
Number deployed								
Highway Advisory Radio	NR	NR	NR	NR	NR	NR	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	NR	NR
VMS controlling parking access	NR	6	NR	NR	NR	NR	NR	NR
Miles covered								
Highway Advisory Radio	NR	NR	NR	NR	NR	NR	NR	NR
In-Vehicle Signing (IVS)	NR	NR	NR	NR	NR	NR	NR	NR
Variable Message Signs (VMS) on Arterials								
Candidate locations for deployment of VMS where VMS has been deployed	2	7	NR	NR	NR	NR	NR	NR
Candidate locations for deployment of VMS	NR	26	NR	NR	NR	NR	NR	NR
Communication Technologies								
Signalized intersections communicated with by each type of communication								
Twisted pair cable	700	700	0	0	211	284	0	0
Coaxial cable	0	0	0	0	0	0	0	0
Fiber-optic cable	NR	200	0	0	0	0	0	0
Other (e.g., wireless, dial-up modems, leased lines, etc.)	10	5	0	0	13	18	0	0
Does agency convey information on highway-rail intersection crossing								
status to travelers via roadside media such as VMS or HAR?	No		No		No		No	
ITS Standards Used Related to Traffic Signal Control								
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		No		No		No	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		No		No		No	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		No		No		No	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		No		No		No	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		No		No		No	

Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Seattle City		Snohomish County		Tacoma City		Washington State Department of Transportation	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	Yes		No		No		No	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		No		No		No	
Would agency be willing to participate in testing of ITS Standards?	No		NR		Yes		NR	
Have agreements in place with other agencies to use similar hardware								
and software to aid maintenance and interoperability?	Yes		NR		No		NR	
INCIDENT MANAGEMENT ON ARTERIAL STREETS								
Receive information on highway-rail intersection crossing blockages for								
the purpose of managing incident response?	No		No		No		No	
Use of Service Patrols to Assist in Detection and Response to Incidents								
Publicly operated service patrol vehicles	No		No		No		No	
Privately operated service patrol vehicles operated under public contract	No		No		No		No	
Total number of arterial miles patrolled by these services	NR	NR	NR	NR	NR	NR	NR	NR
Miles Covered by Methods to Detect and Verify Incidents								
Free cellular phone call to a dedicated phone number other than 911	0	0	0	0	0	0	0	0
Free cellular phone call to an area radio station	0	0	0	0	0	0	0	0
Police patrols	0	0	0	0	0	0	0	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	0	0	0	0	0
CCTV	0	0	0	0	0	0	0	0
Private sector sources (e.g., Shadow Traffic, Smart Routes)	NR	10	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Procedures in place for Arterial Incident Response?								
Working agreement(s)/arrangement(s) with other agencies	No		No		No		No	
Inter-agency incident management admin. team that meets regularly	No		No		No		No	
Major incident response team that responds to major incidents	No		No		No		No	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		No		No		No	
Methods of Communication Used On-Site at an Incident								
Police								
Two-way radio	No		No		No		No	
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No		No	
Automated data systems (i.e., CAD)	No		No		No		No	
Other	No		No		No		No	
Fire								
Two-way radio	No		No		No		No	
800 MHz trunked radio	No		No		No		No	
Cellular telephone	No		No		No		No	
Hand-held (i.e., walkie-talkie)	No		No		No		No	
Automated data systems (i.e., CAD)	No		No		No		No	

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

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

Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Washington State Department of Transportation Olympic Region		Totals	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		9	
ARTERIAL MANAGEMENT SECTION				
Number of arterial miles that agency owns or maintains	60		1,573	
Number of arterial miles that is used for planning	0		770	
Number of highway-rail intersections that agency maintains	3		158	
Number of highway-rail intersections that is used for planning	0		67	
Type of facilities used to conduct arterial management activities				
Activities housed in a free-standing dedicated building?	Yes		1	
Activities housed in a building shared with other activities?	Yes		3	
Activities conducted in a dedicated control room?	Yes		3	
Control room contains operator console(s)?	No		1	
Control room contains electronic wall map?	No		0	
Control room contains CCTV display(s)?	No		2	
Activities conducted in a room containing workstations or PCs that manage traffic?	Yes		3	
Facilities are electronically linked to other transportation mgt facilities?	Yes		2	
Staffing and hours of operation of arterial management activities				
Number of full-time agency staff members	8		25	
Number of full time contractor staff members	NR		0	
Number of part-time agency staff members	0		0	
Number of part-time contractor staff members	NR		0	
Staffed 24 hours day by agency staff or by others	agency		0	
Staffed during peak hours only by agency staff or by others	NR		0	
Staffed by others during off-peak hours	No		0	
Agency staff perform transportation management as an ancillary duty	No		4	
Agency staff dedicated to transportation management duty	No		1	
Types of operations conducted for arterial management				
Incident detection and management?	Yes		1	
This metropolitan area?	Yes		1	
Other metropolitan area?	No		0	
Monitoring and troubleshooting status of system components?	Yes		4	
Radio communications with other agencies?	No		1	
Exchange of electronic data with other agencies such as computer aided dispatch?	No		0	
Manual override of traffic signal timing plans	Yes		4	
Operating transportation mgt roadside devices (e.g., VMS, CCTV, etc.)	Yes		3	

	Washington State Department of Transportation Olympic Region		Totals	
	1999	**2005**	**1999**	**2005**
Describe agency's role in traffic signal control	State routes only			
Traffic Signals Operated by Agency				
Number of signalized intersections operated and owned by agency	240	NR	1,857	1,603
Number of signalized intersections operated by agency but owned by another	15	NR	55	48
Total number of signalized intersections operated by agency	255	NR	2,412	2,256
Characteristics of signalized intersections that agency operates				
Under closed loop or central system control	85	100	1,267	1,653
Under real-time traffic adaptive control using advanced software	0	0	0	0
Using SCOOT	No		0	
Using SCATS	No		0	
Name of software	NR			
Allow signal preemption for emergency vehicles	235	250	1,331	1,600
Allow signal priority for transit vehicles	23	23	246	459
Within 200 feet of a highway-rail intersection	7	7	50	53
Within 200 feet of a highway-rail intersection that adjust signal timing	7	7	42	53
Software used to control the signals agency operates				
Date of last upgrade to traffic signal control system software?	NR			
How often do you update signal timing?	reviewed annually, adjust as appropriate			
Software used and number of signalized intersections under control (1999, 2005)	Traconet, 225, NR			
Controllers used to control signals				
NEMA	275	NR	1,836	1,646
170/179	0	0	0	4
2070 controller	0	0	0	0
Other	0	0	83	21
Technologies Associated with Highway-Rail Intersections				

Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Washington State Department of Transportation Olympic Region		Totals	
	1999	**2005**	**1999**	**2005**
Total number of highway-rail intersections under electronic surveillance	NR	NR	4	7
Highway-Rail intersection capapbilities				
Video surveillance	0	0	2	5
Electronic surveillance other than video	0	0	1	0
Ability to predict train arrival electronically	0	0	1	2
Equipped with electronic traffic violator devices	0	0	0	0
Other	0	0	0	0
Real-Time Electronic Traffic Data Collection Technologies				
Total number of signalized intersections covered by electronic surveillance	NR	NR	277	314
Number of signalized intersections with data collection technologies				
Loop detectors	0	0	480	581
Video detection cameras	0	0	12	17
Probe readers reading toll tags	0	0	0	0
Probe readers reading license plates	0	0	0	0
Other	0	0	4	40
Roadside Technologies used to Distribute Traveler Information				
Number deployed				
Highway Advisory Radio	20	25	20	25
In-Vehicle Signing (IVS)	NR	NR	0	0
VMS controlling parking access	NR	NR	0	7
Miles covered				
Highway Advisory Radio	NR	NR	0	0
In-Vehicle Signing (IVS)	NR	NR	0	0
Variable Message Signs (VMS) on Arterials				
Candidate locations for deployment of VMS where VMS has been deployed	72	NR	74	7
Candidate locations for deployment of VMS	NR	NR	0	26
Communication Technologies				
Signalized intersections communicated with by each type of communication				
Twisted pair cable	60	NR	1,160	1,170
Coaxial cable	0	0	0	0
Fiber-optic cable	0	0	0	200
Other (e.g., wireless, dial-up modems, leased lines, etc.)	85	100	115	125
Does agency convey information on highway-rail intersection crossing				
status to travelers via roadside media such as VMS or HAR?	No		0	
ITS Standards Used Related to Traffic Signal Control				
Advanced Transportation Controller (ATC) Software Application Interface (ITE 9603-1)	No		0	
ATC Physical Cabinet Functional Design (ITE-9603-2)	No		0	
ATC Functionality and Interface Definitions (ITE-9603-3)	No		0	
Natl. Trans. Communications for ITS Protocol (NTCIP) Class B Profile (AASHTO TS 3.3)	No		0	
NTCIP Data Collection and Monitoring Devices (AASHTO TS 3.DCM)	No		0	

	Washington State Department of Transportation Olympic Region		Totals	
	1999	**2005**	**1999**	**2005**
NTCIP Object Definitions for Video Camera Control (AASHTO TS 3.VCC)	No		2	
NTCIP Object Definitions for Actuated Traffic Signal Controller Units (AASHTO TS 3.5)	No		0	
Would agency be willing to participate in testing of ITS Standards?	No		3	
Have agreements in place with other agencies to use similar hardware				
and software to aid maintenance and interoperability?	Yes		3	
INCIDENT MANAGEMENT ON ARTERIAL STREETS				
Receive information on highway-rail intersection crossing blockages for				
the purpose of managing incident response?	No		0	
Use of Service Patrols to Assist in Detection and Response to Incidents				
Publicly operated service patrol vehicles	No		0	
Privately operated service patrol vehicles operated under public contract	No		0	
Total number of arterial miles patrolled by these services	NR	NR	0	0
Miles Covered by Methods to Detect and Verify Incidents				
Free cellular phone call to a dedicated phone number other than 911	0	0	0	0
Free cellular phone call to an area radio station	0	0	0	0
Police patrols	0	0	0	0
Computer algorithms linked to traffic surveillance equipment	0	0	0	0
CCTV	0	0	4	8
Private sector sources (e.g., Shadow Traffic, Smart Routes)	0	0	0	10
Other	0	0	0	0
Procedures in place for Arterial Incident Response?				
Working agreement(s)/arrangement(s) with other agencies	No		0	
Inter-agency incident management admin. team that meets regularly	No		0	
Major incident response team that responds to major incidents	No		0	
Set of goals/objectives for incident mgt that has been adopted by agencies in region	No		1	
Methods of Communication Used On-Site at an Incident				
Police				
Two-way radio	No		0	
800 MHz trunked radio	No		1	
Cellular telephone	No		0	
Hand-held (i.e., walkie-talkie)	No		0	
Automated data systems (i.e., CAD)	No		1	
Other	No			
Fire				
Two-way radio	No		0	
800 MHz trunked radio	No		1	
Cellular telephone	No		0	
Hand-held (i.e., walkie-talkie)	No		0	
Automated data systems (i.e., CAD)	No		1	

	Washington State Department of Transportation Olympic Region		Totals	
	1999	**2005**	**1999**	**2005**
Other	No		0	
DOT				
Two-way radio	No		0	
800 MHz trunked radio	No		0	
Cellular telephone	No		0	
Hand-held (i.e., walkie-talkie)	No		0	
Automated data systems (i.e., CAD)	No		0	
Other	No		0	
Towing				
Two-way radio	No		0	
800 MHz trunked radio	No		0	
Cellular telephone	No		0	
Hand-held (i.e., walkie-talkie)	No		0	
Automated data systems (i.e., CAD)	No		0	
Other	No		0	
Which police agencies typically respond to incidents on arterials?				
State Police	No		0	
County Police or Sheriff	No		0	
City Police	No		1	
Who provides on-site emergency medical response?				
Fire	No		1	
Emergency Management Service Agency	No		0	
Private hospital	No		0	
Has a multi-agency contact list been developed in area containing the				
names, phone numbers, etc. for the appropriate response personnel?	NR		1	
Is the Incident Command System used to manage incident scenes?	NR		1	
Is there a legal specification by state law or formal agreement as to who				
is "in charge" at the incident scene?				
Specified by state law?	No		1	
Formal agreement?	No		0	
Not specified or don't know?	No		0	
On-scene command post used to manage activities of responding agencies?	NR		1	
Are there communication linkages to a communications traffic/freeway mgt center?	NR		1	
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		1	
Respondents protected through law or court opinion for liability claims				
for damages to vehicles or cargoes during clearance activities?	NR		0	
Are overturned tank trucks, which are intact and not leaking, uprighted				

	Washington State Department of Transportation Olympic Region		Totals	
	1999	**2005**	**1999**	**2005**
without first off-loading?	NR		0	
Does your state or local jurisdiction have a law that requires drivers				
involved in property-damage-only accidents to move the vehicles				
from travel lanes to a safe location to exchange info and wait for police?	NR		0	
Have laws or policies regarding the removal of stalled/abandoned vehicles				
from freeway shoulders?	NR		0	
Hours abandoned vehicles are allowed to remain on a freeway shoulder?	NR		0	
Have policies or procedures for quick removal of vehicles?	NR		0	
Is Total Station equipment used to investigate major incidents?	NR		1	
Handling of Towing Responses to Incidents				
Formal contract based on qualifications?	No		0	
Rotation with companies under contract?	No		1	
Separate lists kept for light and heavy response and for specialty recovery?	NR		0	
Rotation list with minimal qualifications?	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		1	
_____				
DK: Don't know				
NR: No Response				
Leg: Legislation or action being planned				

Appendix G
Arterial Management Integration

Arterial Management Integration
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Bellevue City		Everett 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	Washington State Department of Transportation	Redmond	Washington State Department of Transportation	Snohomish County Public Works
Coordinate Changes to Timing Plans	None listed	Kirkland, Redmond	Washington State Department of Transportation	Snohomish County Public Works
Turn over Control of Signals	Washington State Department of Transportation, Redmond	Washington State Department of Transportation, Redmond	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	Washington State Department of Transportation Northwest Region	None listed	None listed	Washington State Department of Transportation Northwest Region
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
Incident Management Agencies				
Provide Information	None listed	None listed	None listed	Washington State Department of Transportation Northwest Region

Agency Name	Bellevue City		Everett City	
	1999	**2005**	**1999**	**2005**
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
Public Transit Operators Agencies				
Provide Information	None listed	King County Metro	Everett Transit, Snoho	None listed
Share Infrastructure	None listed	King County Metro	Everett Transit	None listed
Coordinate Operation	None listed	King County Metro	None listed	Everett Transit
Arterial Management Agencies				
Provide Information	None listed	King County, Redmond, Kirkland	None listed	Washington State Department of Transportation
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	King County, Redmond, Kirkland	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	Washington State Department of Transportation Northwest Region	None listed	Washington State Department of Transportation Northwest Region
Public Transit operators from which your agency receives				
arterial travel times derived from vehicle probes	None listed	King County Metro	None listed	None listed

Agency Name	Bellevue City		Everett City	
	1999	**2005**	**1999**	**2005**
Incident Management agencies from which your agency receives				
incident clearance and/or incident severity, location, and type information				
Receive information on Incident Clearance	Washington State Department of Transportation Northwest Region	Washington State Department of Transportation Northwest Region	None listed	None listed
Receive information on Incident Severity, Location, and Type	Washington State Department of Transportation Northwest Region	Washington State Department of Transportation Northwest Region	None listed	Washington State Department of Transportation Northwest Region
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				
Provide Information	Media	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	Washington State Department of Transportation Northwest Region	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	Washington State Department of Transportation Northwest Region	None listed	None listed
Public Transit Operators				
Provide Information	None listed	King County Metro	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	King County Metro	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				

Arterial Management Integration
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Bellevue City		Everett City	
	1999	**2005**	**1999**	**2005**
Receive Arterial Incident Clearance Information	Washington State Department of Transportation, King County Roads	None listed	None listed	None listed
Receive Arterial Incident Severity Information	Washington State Department of Transportation, King County Roads	None listed	None listed	None listed
Arterial Management agencies from which your agency receives				
arterial travel times, speeds, and conditions	None listed	Everett City, Federal Way City, King County, Kitsap County, Pierce County, Seattle City, Snohomish County, Tacoma City, Washington State Department of Transportation	None listed	None listed
Freeway Management agencies from which your agency receives				
freeway travel times, speeds, and conditions	None listed	Washington State Department of Transportation Northwest Region	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	Kitsap County		Pierce 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	None listed	None listed	None listed	None listed
Coordinate Changes to Timing Plans	None listed	None listed	Washington State Department of Transportation Olympic Region	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
Coordinate Operation	None listed	None listed	None listed	None listed
Incident Management Agencies				
Provide Information	None listed	None listed	None listed	None listed

Agency Name	Kitsap County		Pierce County	
	1999	**2005**	**1999**	**2005**
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
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				
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

Agency Name	Kitsap County		Pierce County	
	1999	**2005**	**1999**	**2005**
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				
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				

Arterial Management Integration
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Kitsap County		Pierce County	
	1999	**2005**	**1999**	**2005**
Receive Arterial Incident Clearance Information	None listed	None listed	None listed	None listed
Receive Arterial Incident Severity Information	None listed	None listed	None listed	None listed
Arterial Management 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	Seattle City		Snohomish 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	Bellevue City, King County, Washington State Department of Transportation	Everett City	short survey	None listed
Coordinate Changes to Timing Plans	King County	Washington State Department of Transportation	short survey	None listed
Turn over Control of Signals	None listed	None listed	None listed	None listed
Agencies your agency provides arterial travel times, speeds, and				
conditions information, share infrastructure or coordinates operation				
Freeway Management Agencies				
Provide Information	Washington State Department of Transportation Northwest Region	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	Washington State Department of Transportation Northwest Region	None listed	None listed
Incident Management Agencies				
Provide Information	None listed	Washington State Department of Transportation Northwest Region	None listed	None listed

Agency Name	Seattle City		Snohomish County	
	1999	2005	1999	2005
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
Public Transit Operators Agencies				
Provide Information	King County Metro	Snohomish County Public Transportation, Sound Transit	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	King County Metro	Snohomish County Public Transportation, Sound Transit	None listed	None listed
Arterial Management Agencies				
Provide Information	Bellevue City, King County, Washington State Department of Transportation	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	King County	Washington State Department of Transportation	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	Washington State Department of Transportation Northwest Region	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

Agency Name	Seattle City		Snohomish County	
	1999	**2005**	**1999**	**2005**
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	Washington State Department of Transportation Northwest Region	None listed	None listed
Receive information on Incident Severity, Location, and Type	None listed	Washington State Department of Transportation Northwest Region	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				
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				

Arterial Management Integration
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Seattle City		Snohomish County	
	1999	**2005**	**1999**	**2005**
Receive Arterial Incident Clearance Information	None listed	None listed	None listed	None listed
Receive Arterial Incident Severity Information	None listed	None listed	None listed	None listed
Arterial Management 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.

Arterial Management Integration
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Tacoma City		Washington State Department of Transportation	
	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	Washington State Department of Transportation Olympic Region	Washington State Department of Transportation Olympic Region	short survey	None listed
Coordinate Changes to Timing Plans	Washington State Department of Transportation Olympic Region	Washington State Department of Transportation Olympic Region	short survey	None listed
Turn over Control of Signals	None listed	None listed	short survey	None listed
Agencies your agency provides arterial travel times, speeds, and				
conditions information, share infrastructure or coordinates operation				
Freeway Management Agencies				
Provide Information	None listed	None listed	short survey	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
Incident Management Agencies				
Provide Information	None listed	None listed	None listed	None listed

Agency Name	Tacoma City		Washington State Department of Transportation	
	1999	**2005**	**1999**	**2005**
Share Infrastructure	None listed	None listed	None listed	None listed
Coordinate Operation	None listed	None listed	None listed	None listed
Public Transit Operators Agencies				
Provide Information	Pierce Transit	Pierce Transit	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				
Provide Information	Washington State Department of Transportation Olympic Region	Washington State Department of Transportation Olympic Region	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

Arterial Management Integration
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Tacoma City		Washington State Department of Transportation	
	1999	2005	1999	2005
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				
Provide Information	None listed	None listed	short survey	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				

Arterial Management Integration
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Tacoma City		Washington State Department of Transportation	
	1999	**2005**	**1999**	**2005**
Receive Arterial Incident Clearance Information	None listed	None listed	short survey	None listed
Receive Arterial Incident Severity Information	None listed	None listed	short survey	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	short survey	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	Washington State Department of Transportation Olympic Region	
	1999	**2005**
Agency Returned Survey?	Yes	
Arterial Management Section		
Arterial Mgt. agencies in metropolitan area with which you share info.		
Share Timing Plans Information	None listed	None listed
Coordinate Changes to Timing Plans	None listed	None listed
Turn over Control of Signals	None listed	None listed
Agencies your agency provides arterial travel times, speeds, and		
conditions information, share infrastructure or coordinates operation		
Freeway Management Agencies		
Provide Information	Washington State Department of Transportation Northwest Region, Tacoma Fire Department	Washington State Department of Transportation Northwest Region, Tacoma Fire Department
Share Infrastructure	Washington State Department of Transportation Northwest Region, Tacoma Fire Department	Washington State Department of Transportation Northwest Region, Tacoma Fire Department
Coordinate Operation	Washington State Department of Transportation Northwest Region	Washington State Department of Transportation Northwest Region
Incident Management Agencies		
Provide Information	Washington State Department of Transportation Northwest Region, Washington State Patrol	Washington State Department of Transportation Northwest Region, Washington State Patrol

Agency Name	Washington State Department of Transportation Olympic Region	
	1999	**2005**
Share Infrastructure	Washington State Department of Transportation Northwest Region, Washington State Patrol	Washington State Department of Transportation Northwest Region, Washington State Patrol
Coordinate Operation	Washington State Department of Transportation Northwest Region, Washington State Patrol	Washington State Department of Transportation Northwest Region, Washington State Patrol
Public Transit Operators Agencies		
Provide Information	Pierce Transit, Washington State Ferries	Pierce Transit, Washington State Ferries
Share Infrastructure	Washington State Ferries	Washington State Ferries
Coordinate Operation	Washington State Ferries	Pierce Transit, Washington State Ferries
Arterial Management Agencies		
Provide Information	None listed	None listed
Share Infrastructure	None listed	None listed
Coordinate Operation	None listed	None listed
Receiving real-time information via electronic means from others		
Freeway Management agencies from which your agency receives		
freeway travel times, speeds, and conditions	Washington State Department of Transportation Northwest Region, Washington State Patrol	Washington State Department of Transportation Northwest Region, Washington State Patrol
Public Transit operators from which your agency receives		
arterial travel times derived from vehicle probes	None listed	None listed

Agency Name	Washington State Department of Transportation Olympic Region	
	1999	**2005**
Incident Management agencies from which your agency receives		
incident clearance and/or incident severity, location, and type information		
Receive information on Incident Clearance	Washington State Department of Transportation Northwest Region, Washington State Patrol	Washington State Department of Transportation Northwest Region, Washington State Patrol
Receive information on Incident Severity, Location, and Type	Washington State Department of Transportation Northwest Region, Washington State Patrol	Washington State Department of Transportation Northwest Region, Washington State Patrol
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		
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		

Arterial Management Integration
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Washington State Department of Transportation Olympic Region	
	1999	**2005**
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 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: Seattle, Tacoma

Agency Name	Bellevue City		Everett City	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes	
Arterial Management Section				
Data collected, archived, and/or transferred to another agency				
Collected by your agency	Traffic volumes, Traffic speeds, Lane occupancy, Turning movements, Phasing/cycle lengths, Emergency vehicle signal preemption	Traffic volumes, Traffic speeds, Lane occupancy, Turning movements, Phasing/cycle lengths, Emergency vehicle signal preemption, Transit vehicle signal priority	Traffic volumes, Traffic speeds, Vehicle classification, Phasing/cycle lengths, Emergency vehicle signal preemption	Transit vehicle signal priority
Archived by your agency	Traffic volumes, Traffic speeds, Turning movements, Emergency vehicle signal preemption	Traffic volumes, Traffic speeds, Lane occupancy, Turning movements, Phasing/cycle lengths, Emergency vehicle signal preemption, Transit vehicle signal priority	Traffic volumes, Traffic speeds, Vehicle classification, Phasing/cycle lengths, Emergency vehicle signal preemption	NR
Transferred to another agency by your agency	Traffic volumes, Lane occupancy, Phasing/cycle lengths	Traffic volumes, Traffic speeds, Lane occupancy, Phasing/cycle lengths, Transit vehicle signal priority	NR	Traffic volumes, Traffic speeds, Phasing/cycle lengths
Importance of making information available to the public				
Ranked High	Traffic volumes, Lane occupancy, Phasing/cycle lengths, Route designations (snow emergency, etc.), Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures		Traffic volumes	

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Bellevue City		Everett City	
	1999	**2005**	**1999**	**2005**
Ranked Medium	Traffic speeds, Queues, Transit vehicle signal priority, Incidents		Traffic speeds, Transit vehicle signal priority	
Ranked Low	Vehicle classification, Probe vehicles, Turning movements, Emergency vehicle signal preemption, Weather conditions, Intermodal (air, rail, water) connections, Highway operations coordination information		NR	
Groups that make requests for the data	State DOT personnel, MPOs, Consultants, Advanced Traveler Information Systems (ATIS) provi		State DOT personnel, Media (I.e., TV stations, radio stations), MPOs, Consultants	
What is the data used for?	Traffic analysis, Planning, Dissemination to the public		Traffic analysis, Planning, Roadway impact analysis, Dissemination to the public	
Methods used to disseminate arterial information to the public				
Technologies your agency uses to disseminate:	NR	Dedicated cable TV	NR	Share with WSDOT and other agencies on dedicated l
Technologies your agency (through another agency or org.) uses to disseminate:	Internet Web sites	Internet Web sites, Pagers or personal data assistants, Pagers or personal data assistants, Kiosks, E-mail or other direct PC communication, E-mail or other direct PC communication	NR	NR
Internet web site reporting arterial conditions	currently only video in late 2000 should have traffic cor		NR	
Telephone system for reporting arterial information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	WSDOT		NR	
Arterial Incident Management Section				
Methods used to distribute incident location and severity information				
to the public				
Technologies your agency uses to disseminate:	Telephone system	NR	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	NR

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Bellevue City		Everett City	
	1999	**2005**	**1999**	**2005**
Internet web site reporting incident information	NR		NR	
Telephone system for reporting incident information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Kitsap County		Pierce County	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes	
Arterial Management Section				
Data collected, archived, and/or transferred to another agency				
Collected by your agency	NR	NR	Traffic volumes, Vehicle classification, Turning movements	NR
Archived by your agency	NR	NR	Traffic volumes, Vehicle classification, Turning movements	NR
Transferred to another agency by your agency	NR	NR	NR	NR
Importance of making information available to the public				
Ranked High	NR		Traffic volumes	

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Kitsap County		Pierce County	
	1999	**2005**	**1999**	**2005**
Ranked Medium	NR		NR	
Ranked Low	NR		Vehicle classification, Turning movements	
Groups that make requests for the data	Media (I.e., TV stations, radio stations), Consultants, Lawyers		Consultants	
What is the data used for?	Traffic analysis, Construction impact determination, Planning, Roadway impact analysis, Accident prediction models		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	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	NR
Internet web site reporting arterial conditions	NR		NR	
Telephone system for reporting arterial information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	
Arterial Incident Management Section				
Methods used to distribute incident location and severity information				
to the public				
Technologies your agency uses to disseminate:	NR	NR	NR	NR
Technologies your agency (through another agency or org.) uses to disseminate:	NR	NR	NR	NR

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Kitsap County		Pierce County	
	1999	**2005**	**1999**	**2005**
Internet web site reporting incident information	NR		NR	
Telephone system for reporting incident information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Seattle City	
	1999	**2005**
Agency Returned Survey?	Yes	
Arterial Management Section		
Data collected, archived, and/or transferred to another agency		
Collected by your agency	Traffic volumes, Turning movements, Phasing/cycle lengths, Emergency vehicle signal preemption, Transit vehicle signal priority, Route designations (snow emergency, etc.), Current work zones, Scheduled work zones, Emergency/evacuation routes and procedures	Traffic speeds, Lane occupancy, Road conditions, Incidents
Archived by your agency	Traffic volumes, Turning movements, Transit vehicle signal priority, Route designations (snow emergency, etc.), Scheduled work zones, Emergency/evacuation routes and procedures	Traffic speeds, Lane occupancy
Transferred to another agency by your agency	Traffic volumes, Phasing/cycle lengths, Transit vehicle signal priority, Route designations (snow emergency, etc.), Emergency/evacuation routes and procedures	Traffic speeds, Lane occupancy, Road conditions, Incidents, Current work zones, Scheduled work zones
Importance of making information available to the public		
Ranked High	Traffic speeds, Lane occupancy, Road conditions, Route designations (snow emergency, etc.), Incidents, Current work zones, Scheduled work zones	

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Seattle City	
	1999	**2005**
Ranked Medium	Traffic volumes, Transit vehicle signal priority, Emergency/evacuation routes and procedures	
Ranked Low	Turning movements, Phasing/cycle lengths, Emergency vehicle signal preemption	
Groups that make requests for the data	Universities, State DOT personnel, Federal DOT personnel, Media (I.e., TV stations, radio stations), MPOs, Consultants, Advanced Traveler Information Systems (ATIS) provi	
What is the data used for?	Traffic analysis, Construction impact determination, Planning, Roadway impact analysis, Dissemination to the public	
Methods used to disseminate arterial information to the public		
Technologies your agency uses to disseminate:	NR	Internet Web sites, E-mail or other direct PC communication
Technologies your agency (through another agency or org.) uses to disseminate:	Dedicated cable TV, Internet Web sites	NR
Internet web site reporting arterial conditions	find site for Washington State DOT	
Telephone system for reporting arterial information to the public	NR	
Organizations your agency sends information for dissemination to the public	Washington State DOT	
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
Technologies your agency (through another agency or org.) uses to disseminate:	NR	Dedicated cable TV, Internet Web sites

Data Collection and Dissemination: Arterial Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Seattle City	
	1999	**2005**
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: Seattle, Tacoma

	Everett Transit		King County Metro		Kitsap Transit		Pierce County Ferry Operations		Pierce Transit		Seattle Monorail Transit	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes		Yes		Yes		Yes		Yes	
Number of vehicles used in revenue service												
Fixed Route Bus	41	55	1,294	1,345	95	102	NR	NR	230	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	15	17	NR	NR	46	53	NR	NR	106	NR	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	2	2
Ferry Boat	NR	NR	NR	NR	3	3	2	2	NR	NR	NR	NR
Have of plan to have an Automated Vehicle Location System?	No		Yes		Yes		No		Yes		No	
Primary and Secondary Location Technologies Used												
Primary Technologies												
GPS	No	No	No	Yes	Yes	No	No	No	No	No	No	No
Sign/Odometer	No	No	Yes	No	No	No	No	No	No	No	No	No
Dead-Reckoning	No	No	No	No	No	No	No	No	No	No	No	No
LORAN C	No	No	No	No	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No	No	No	No	No
Backup Technologies												
GPS	No	No	No	No	No	No	No	No	No	No	No	No
Sign/Odometer	No	No	No	No	No	No	No	No	No	No	No	No
Dead-Reckoning	No	No	No	No	No	No	No	No	No	No	No	No
LORAN C	No	No	No	No	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No	No	No	No	No
Number of Vehicles Equipped with AVL												
Fixed Route Bus	NR	NR	1,294	1,345	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Motor Buses Operated as Vehicle Probes												
Number of Motor Buses equipped as probes on freeways?	NR		NR		NR		NR		NR		NR	
Number of Motor Buses equipped as probes on arterials?	NR		NR		NR		NR		NR		NR	
Have Organized Regional Incident Management Program?	No		Yes		No		No		Yes		No	
Have Automated Traveler Information System?	Yes		Yes		Yes		Yes		Yes		No	
Services Automated Traveler Info. System Applies:												

Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Everett Transit		King County Metro		Kitsap Transit		Pierce County Ferry Operations		Pierce Transit		Seattle Monorail Transit	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Fixed Route	Yes		Yes		Yes		No		Yes		No	
Heavy Rail	No		No		No		No		No		No	
Light Rail	No		No		No		No		No		No	
Demand Responsive	No		No		No		No		No		No	
Commuter Rail	No		No		No		No		No		No	
Ferry	No		No		No		Yes		No		No	
Locations where traveler information is displayed to public												
Number of bus stops on fixed transit routes	686	750	10,000	10,000	NR	NR	NR	NR	0	NR	NR	NR
Bus stops on fixed transit routes that display traveler info to the public	10	100	5,000	NR	NR	NR	NR	NR	0	0	NR	NR
Number of rail stations	NR	1	NR	NR	NR	NR	NR	NR	0	0	NR	NR
Number of rail stations that display traveler information	NR	1	NR	NR	NR	NR	NR	NR	0	0	NR	NR
Number of other locations that display traveler information to public	NR	1	NR	NR	NR	3	NR	NR	0	0	NR	NR
Number of vehicles the traveler information system has available												
Fixed Route Bus	NR	25	NR	NR	NR	32	NR	NR	0	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR	0	0	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR	0	0	NR	NR
Demand Responsive	NR	10	NR	NR	NR	NR	NR	NR	0	0	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR	0	0	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR	0	0	NR	NR
Deployment of Communications Technology												
Attributes of Radio System:												
Digital?	No		No		No		No		No		No	
Analog?	Yes		Yes		Yes		No		Yes		Yes	
Trunked?	Yes		No		Yes		No		Yes		Yes	
Regular?	No		Yes		No		No		No		No	
Services that use a Digital or Trunked Radio System												
Digital Only												
Fixed Route Bus	No	No	No	No	No	No	No	No	No	Yes	No	No
Heavy or Rapid Rail	No	No	No	No	No	No	No	No	No	No	No	No
Light Rail	No	No	No	No	No	No	No	No	No	No	No	No
Demand Responsive	No	No	No	No	No	No	No	No	No	No	No	No
Commuter Rail	No	No	No	No	No	No	No	No	No	No	No	No
Ferry Boat	No	No	No	No	No	No	No	No	No	No	No	No
Trunked Only												
Fixed Route Bus	No	No	No	No	No	Yes	No	No	Yes	No	No	No
Heavy or Rapid Rail	No	No	No	No	No	No	No	No	No	No	No	No
Light Rail	No	No	No	No	No	No	No	No	No	No	No	No
Demand Responsive	No	No	No	No	No	Yes	No	No	No	No	No	No

Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Everett Transit		King County Metro		Kitsap Transit		Pierce County Ferry Operations		Pierce Transit		Seattle Monorail Transit	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Commuter Rail	No	No	No	No	No	No	No	No	No	No	No	No
Ferry Boat	No	No	No	No	No	Yes	No	No	No	No	No	No
Have of plan to have Automatic Passenger Counters (APCs)?	No		Yes		No		No		No		No	
Methods used to count passengers												
Treadle Mats	No		No		No		No		No		No	
Infrared Beams	No		No		No		No		No		No	
Primary and Secondary Location Technologies Used												
Primary Technologies												
GPS	No	No	No	Yes	No	No	No	No	No	No	No	No
Differential GPS	No	No	No	No	No	No	No	No	No	No	No	No
Signpost/Odometer	No	No	Yes	No	No	No	No	No	No	No	No	No
Dead_Reckoning	No	No	No	No	No	No	No	No	No	No	No	No
LORAN C	No	No	No	No	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No	No	No	No	No
Backup Technologies												
GPS	Yes	No	No	No	No	No	No	No	No	No	No	No
Differential GPS	No	No	No	No	No	No	No	No	No	No	No	No
Signpost/Odometer	No	No	No	No	No	No	No	No	No	No	No	No
Dead_Reckoning	No	No	No	No	No	No	No	No	No	No	No	No
LORAN C	No	No	No	No	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No	No	No	No	No
Number of Vehicles with APCs												
Fixed Route Bus	NR	NR	165	200	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Remote Real-Time Monitoring and Computer Assisted Dispatching												
Remote Real-Time Monitoring												
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Automated Dispatching or Control Software												
Fixed Route Bus	NR	NR	1,294	1,345	NR	NR	NR	NR	NR	NR	NR	NR

Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Everett Transit		King County Metro		Kitsap Transit		Pierce County Ferry Operations		Pierce Transit		Seattle Monorail Transit	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	15	17	NR	NR	35	NR	NR	NR	NR	NR	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Coordinate or plan to coordinate travel request and vehicle												
dispatching for multiple agencies?	No		Yes		No		No		No		No	
Is there or will there be a Transportation Management Center												
(TMC) in the region that controls transit and highway modes?	NR		No		No		No		No		No	
Modes that TMC currently controls:												
Highways	No	No	No	No	No	No	No	No	No	No	No	No
Fixed Route Bus	No	No	No	No	No	No	No	No	No	No	No	No
Heavy or Rapid Rail	No	No	No	No	No	No	No	No	No	No	No	No
Light Rail	No	No	No	No	No	No	No	No	No	No	No	No
Demand Responsive	No	No	No	No	No	No	No	No	No	No	No	No
Commuter Rail	No	No	No	No	No	No	No	No	No	No	No	No
Ferry Boat	No	No	No	No	No	No	No	No	No	No	No	No
Other	No	No	No	No	No	No	No	No	No	No	No	No
Priority at Traffic Signals and Ramp Meter Priority												
Priority at Traffic Signals												
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR	0	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ramp Meter Priority												
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Number of Vehicles Equipped with Navigation Aids												
Fixed Route Bus	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
ITS Standards Used Related to Transit Management												
TCIP On Boad Objects (TCIP-OB)	No		No		No		No		No		No	
TCIP Traffic Management Objects (TCIP-TM)	No		No		No		No		No		No	
TCIP Common Public Transportation Objects (TCIP-CPT)	No		No		No		No		No		No	

Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Everett Transit		King County Metro		Kitsap Transit		Pierce County Ferry Operations		Pierce Transit		Seattle Monorail Transit	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
TCIP Passenger Information Objects (TCIP-PI)	No		No		No		No		No		No	
TCIP Incident Management Objects (TCIP-IM)	No		No		No		No		No		No	
TCIP Fare Collection Objects (TCIP-FC)	No		No		No		No		No		No	
TCIP Spatial Representation Objects (TCIP-SP)	No		No		No		No		No		No	
TCIP Control Center Objects (TCIP-CC)	No		No		No		No		No		No	
TCIP Scheduling/Runcutting Objects (TCIP-SCH)	No		No		No		No		No		No	
Send data communication between micro computer and heavy duty												
vehicle applications (SAE J1708)	No		No		No		No		No		No	
Would agency be willing to participate in testing of ITS Standards?	Yes		Yes		Yes		No		Yes		No	
Have agreements in place with other agencies to use similar hardware												
and software to aid maintenance and interoperability?	No		No		Yes		No		Yes		No	
Electronic Fare Payment												
Have full operational Electronic Fare Payment System?	Yes		Yes		Yes		No		Yes		No	
Methods of Fare Payment												
Stored value card with fare deducted for each trip												
Magnetic Stripe	Yes		No		No		No		No		No	
Smart Card	Yes		Yes		Yes		No		Yes		No	
Debit Card	No		No		No		No		No		No	
Billed by the month for trips taken												
Magnetic Stripe	No		No		No		No		No		No	
Smart Card	No		Yes		No		No		No		No	
Credit Card	No		No		No		No		No		No	
Monthly Pass												
Magnetic Stripe	Yes		Yes		No		No		No		No	
Smart Card	Yes		Yes		No		No		No		No	
Vehicles/Stations Equipped with Automated Payment Mechanism												
Magnetic Stripe Readers												
Fixed Route Bus Vehicles	NR	55	1,294	1,345	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail Stations	NR	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Smart Card Readers												
Fixed Route Bus Vehicles	NR	55	NR	1,345	NR	100	NR	NR	0	100	NR	NR
Heavy or Rapid Rail Stations	NR	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Everett Transit		King County Metro		Kitsap Transit		Pierce County Ferry Operations		Pierce Transit		Seattle Monorail Transit	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**	**1999**	**2005**
Ferry Boat Landings	NR	NR	NR	NR	NR	5	NR	NR	NR	NR	NR	NR
Credit Card												
Fixed Route Bus Vehicles	NR	55	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail Stations	NR	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail Stations	NR	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Debit Card												
Fixed Route Bus Vehicles	NR	55	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heavy or Rapid Rail Stations	NR	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Light Rail Stations	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Demand Responsive Vehicles	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Commuter Rail Stations	NR	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ferry Boat Landings	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
_____												
NR: No Response												

Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Snohomish County Public Transportation		Washington State Ferries		**Totals**	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes		8	
Number of vehicles used in revenue service						
Fixed Route Bus	291	341	NR	NR	1,951	1,843
Heavy or Rapid Rail	0	0	NR	NR	0	0
Light Rail	0	0	NR	NR	0	0
Demand Responsive	51	55	NR	NR	218	125
Commuter Rail	0	0	NR	NR	2	2
Ferry Boat	0	0	29	33	34	38
Have of plan to have an Automated Vehicle Location System?	Yes		Yes		5	
Primary and Secondary Location Technologies Used						
Primary Technologies						
GPS	No	No	No	No	1	1
Sign/Odometer	Yes	No	No	No	2	0
Dead-Reckoning	No	No	No	No	0	0
LORAN C	No	No	No	No	0	0
Other	No	Yes	No	No	0	1
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	No	No	No	0	0
Number of Vehicles Equipped with AVL						
Fixed Route Bus	27	341	NR	NR	1,321	1,686
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	29	33	29	33
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		Yes		3	
Have Automated Traveler Information System?	Yes		Yes		7	
Services Automated Traveler Info. System Applies:						

Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Snohomish County Public Transportation		Washington State Ferries		**Totals**	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Fixed Route	Yes		No		5	
Heavy Rail	No		No		0	
Light Rail	No		No		0	
Demand Responsive	No		No		0	
Commuter Rail	No		No		0	
Ferry	No		Yes		2	
Locations where traveler information is displayed to public						
Number of bus stops on fixed transit routes	0	0	NR	NR	10,686	10,750
Bus stops on fixed transit routes that display traveler info to the public	0	0	NR	NR	5,010	100
Number of rail stations	0	0	NR	NR	0	1
Number of rail stations that display traveler information	0	0	NR	NR	0	1
Number of other locations that display traveler information to public	0	0	NR	NR	0	4
Number of vehicles the traveler information system has available						
Fixed Route Bus	291	341	NR	NR	291	398
Heavy or Rapid Rail	0	0	NR	NR	0	0
Light Rail	0	0	NR	NR	0	0
Demand Responsive	0	0	NR	NR	0	10
Commuter Rail	0	0	NR	NR	0	0
Ferry Boat	0	0	NR	NR	0	0
Deployment of Communications Technology						
Attributes of Radio System:						
Digital?	No		No		0	
Analog?	Yes		No		6	
Trunked?	No		No		4	
Regular?	Yes		No		2	
Services that use a Digital or Trunked Radio System						
Digital Only						
Fixed Route Bus	No	No	No	No	0	1
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	Yes	No	No	1	2
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	1

Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Snohomish County Public Transportation		Washington State Ferries		**Totals**	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Commuter Rail	No	No	No	No	0	0
Ferry Boat	No	No	No	No	0	1
Have of plan to have Automatic Passenger Counters (APCs)?	No		No		1	
Methods used to count passengers						
Treadle Mats	No		No		0	
Infrared Beams	No		No		0	
Primary and Secondary Location Technologies Used						
Primary Technologies						
GPS	No	No	No	No	0	1
Differential GPS	No	No	No	No	0	0
Signpost/Odometer	No	No	No	No	1	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	1	0
Differential GPS	No	No	No	No	0	0
Signpost/Odometer	No	No	No	No	0	0
Dead_Reckoning	No	No	No	No	0	0
LORAN C	No	No	No	No	0	0
Other	No	No	No	No	0	0
Number of Vehicles with APCs						
Fixed Route Bus	NR	NR	NR	NR	165	200
Heavy or Rapid Rail	NR	NR	NR	NR	0	0
Light Rail	NR	NR	NR	NR	0	0
Demand Responsive	NR	NR	NR	NR	0	0
Commuter Rail	NR	NR	NR	NR	0	0
Ferry Boat	NR	NR	NR	NR	0	0
Remote Real-Time Monitoring and Computer Assisted Dispatching						
Remote Real-Time Monitoring						
Fixed Route Bus	0	0	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	29	33	29	33
Automated Dispatching or Control Software						
Fixed Route Bus	0	341	NR	NR	1,294	1,686

Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Snohomish County Public Transportation		Washington State Ferries		Totals	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Heavy or Rapid Rail	NR	NR	NR	NR	0	0
Light Rail	NR	NR	NR	NR	0	0
Demand Responsive	0	55	NR	NR	50	72
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		1	
Is there or will there be a Transportation Management Center						
(TMC) in the region that controls transit and highway modes?	NR		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	27	NR	NR	NR	27	0
Light Rail	NR	NR	NR	NR	0	0
Demand Responsive	NR	NR	NR	NR	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
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	

Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Snohomish County Public Transportation		Washington State Ferries		**Totals**	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
TCIP Passenger Information Objects (TCIP-PI)	No		No		0	
TCIP Incident Management Objects (TCIP-IM)	No		No		0	
TCIP Fare Collection Objects (TCIP-FC)	Yes		No		1	
TCIP Spatial Representation Objects (TCIP-SP)	No		No		0	
TCIP Control Center Objects (TCIP-CC)	Yes		No		1	
TCIP Scheduling/Runcutting Objects (TCIP-SCH)	No		No		0	
Send data communication between micro computer and heavy duty						
vehicle applications (SAE J1708)	Yes		No		1	
Would agency be willing to participate in testing of ITS Standards?	Yes		No		5	
Have agreements in place with other agencies to use similar hardware						
and software to aid maintenance and interoperability?	Yes		No		3	
Electronic Fare Payment						
Have full operational Electronic Fare Payment System?	Yes		Yes		6	
Methods of Fare Payment						
Stored value card with fare deducted for each trip						
Magnetic Stripe	No		No		1	
Smart Card	Yes		Yes		6	
Debit Card	No		No		0	
Billed by the month for trips taken						
Magnetic Stripe	No		No		0	
Smart Card	No		No		1	
Credit Card	No		No		0	
Monthly Pass						
Magnetic Stripe	No		No		2	
Smart Card	No		No		2	
Vehicles/Stations Equipped with Automated Payment Mechanism						
Magnetic Stripe Readers						
Fixed Route Bus Vehicles	14	0	NR	NR	1,308	1,400
Heavy or Rapid Rail Stations	NR	NR	NR	NR	0	1
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
Smart Card Readers						
Fixed Route Bus Vehicles	0	341	NR	NR	0	1,941
Heavy or Rapid Rail Stations	NR	NR	NR	NR	0	1
Light Rail Stations	NR	NR	NR	NR	0	0
Demand Responsive Vehicles	0	55	NR	NR	0	55
Commuter Rail Stations	NR	NR	NR	NR	0	0

Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

	Snohomish County Public Transportation		Washington State Ferries		**Totals**	
	1999	**2005**	**1999**	**2005**	**1999**	**2005**
Ferry Boat Landings	NR	NR	NR	8	0	13
Credit Card						
Fixed Route Bus Vehicles	NR	NR	NR	NR	0	55
Heavy or Rapid Rail Stations	NR	NR	NR	NR	0	1
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	1
Ferry Boat Landings	NR	NR	NR	NR	0	0
Debit Card						
Fixed Route Bus Vehicles	NR	NR	NR	NR	0	55
Heavy or Rapid Rail Stations	NR	NR	NR	NR	0	1
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	1
Ferry Boat Landings	NR	NR	NR	NR	0	0
_____						
NR: No Response						

Appendix J
Transit Management Integration

Transit Management Integration
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Everett Transit		King County Metro	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes	
Transit operators in the region that use the same electronic payment system	Pierce Transit, Community Transit, Metro Transit		Pierce Transit, Community Transit, Sound Transit	
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	Washington State Department of Transportation Northwest Region	Washington State Department of Transportation Northwest Region	Washington State Department of Transportation Northwest Region	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions				
Receive Information	Everett City, King County, Snohomish County, Washington State Department of Transportation	Everett City, King County, Snohomish County, Washington State Department of Transportation	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Incident Management agencies from which your agency receives incident severity, location, and type				
Receive Information	Washington State Department of Transportation Northwest Region, King County Roads via Net	Washington State Department of Transportation Northwest Region, King County Roads via Net	Washington State Department of Transportation Northwest Region, Local police, state patrol	None listed
Share Infrastructure	None listed	None listed	None listed	None listed

Agency Name	Kitsap Transit		Pierce County Ferry Operations	
	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	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Arterial Management agencies from which your agency receives				
arterial travel times, speeds, and conditions				
Receive Information	None listed	Kitsap County, Washington State Department of Transportation	None listed	None listed
Share Infrastructure	None listed	Kitsap County, Washington State Department of Transportation	None listed	None listed
Incident Management agencies from which your agency receives				
incident severity, location, and type				
Receive Information	Washington State Transportation Insurance Pool	None listed	None listed	None listed
Share Infrastructure	None listed	Washington State Transportation Insurance Pool	None listed	None listed

Agency Name	Pierce Transit		Seattle Monorail Transit	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes	
Transit operators in the region that use the same electronic payment system	King County Metro, Everett Transit, Community Transit		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	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Arterial Management agencies from which your agency receives				
arterial travel times, speeds, and conditions				
Receive Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Incident Management agencies from which your agency receives				
incident severity, location, and type				
Receive Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed

Agency Name	Snohomish County Public Transportation		Washington State Ferries	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes	
Transit operators in the region that use the same electronic payment system	Sound Transit, King County Metro, Kitsap Transit, Pierce Transit, Everett Transit		Metro, Kitsap Transit, Pierce Transit	
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	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Arterial Management agencies from which your agency receives arterial travel times, speeds, and conditions				
Receive Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed
Incident Management agencies from which your agency receives incident severity, location, and type				
Receive Information	None listed	None listed	None listed	None listed
Share Infrastructure	None listed	None listed	None listed	None listed

Appendix K
Transit Management Information Collection and Dissemination

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Everett Transit		King County Metro	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes	
Methods used to disseminate transit information to the public				
Technologies your agency uses to disseminate:				
Transit routes, schedules and fares	Facsimile, Kiosks, Internet Web Sites, Telephone System	Variable Message Signs (in vehicle), E-mail or other direct PC communication	Facsimile, E-mail or other direct PC communication, Kiosks, Internet Web Sites, Telephone System	NR
Real-time transit schedule adherence or arrival and departure times	NR	E-mail or other direct PC communication, Kiosks, Internet Web Sites	Kiosks, Internet Web Sites	NR
Technologies employed by other organization receiving your data				
Transit routes, schedules and fares	Kiosks, Internet Web Sites, Telephone System	Variable Message Signs (in vehicle), E-mail or other direct PC communication	NR	NR
Real-time transit schedule adherence or arrival and departure times	NR	E-mail or other direct PC communication, Kiosks, Internet Web Sites	NR	NR
Internet web site reporting transit routes, schedules and fare, etc.	www.ci.everett.wa.us/everett/transit/index.html http://transit.metrokc.gov http://www.wsdot.wa.gov		www.transit.metrokc.gov www.its.washington.edu/mybus/	
Telephone system for reporting transit information to the public	425-527-8803 425-353-7433 1-800-562-1375 425-778-2188--TDD		206-553-2000	
Organizations your agency sends information for dissemination to the public	Snohomish County PTBA (Community Transit)		University of Washington puts real time transit data from our AVL system on our ITS back bone.	
Data collected, archived, and/or transferred to another agency				

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Everett Transit		King County Metro	
	1999	**2005**	**1999**	**2005**
Collected by your agency	Transit operations coordination information, Emergency/evacuation routes and procedures, Intermodal (air, rail, water) conditions, Current roadway work zones for transit, Incidents, Weather conditions, Route designations (snow emergency, etc), Road conditions, Trip itinerary planning records, Passenger count	Transit vehicle signal priority, Vehicle monitoring status, Vehicle time and location	Transit operations coordination information, Incidents, Passenger information (e.g., surveys, O/D), Passenger count, Vehicle time and location	NR
Archived by your agency	Transit operations coordination information, Emergency/evacuation routes and procedures, Incidents, Route designations (snow emergency, etc), Trip itinerary planning records, Passenger count	NR	Transit operations coordination information, Incidents, Passenger information (e.g., surveys, O/D), Passenger count, Vehicle time and location	NR
Transferred to another agency by your agency	Transit operations coordination information, Emergency/evacuation routes and procedures, Route designations (snow emergency, etc), Road conditions, Passenger count	Intermodal (air, rail, water) conditions, Transit vehicle signal priority	Vehicle time and location	NR
Importance of making information available to the public				
Ranked High	Transit operations coordination information, Intermodal (air, rail, water) conditions, Route designations (snow emergency, etc)		Incidents, Vehicle time and location	

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Everett Transit		King County Metro	
	1999	**2005**	**1999**	**2005**
Ranked Medium	Emergency/evacuation routes and procedures, Transit vehicle signal priority, Trip itinerary planning records, Passenger count		Passenger information (e.g., surveys, O/D)	
Ranked Low	Current roadway work zones for transit, Incidents, Weather conditions, Road conditions		Transit operations coordination information, Passenger count	
Groups that make requests for the data	Consultants, MPOs, Media (I.e., TV stations, radio stations), State DOT personnel, Universities		Advanced Traveler Information Systems (ATIS) providers, Consultants, MPOs, State DOT personnel, Universities	
What is the data used for?	Dissemination to the public, Roadway impact analysis, Planning, Construction impact determination, Traffic analysis		Roadway impact analysis, Planning, Traffic analysis	

NR: No Response

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Kitsap Transit		Pierce County Ferry Operations	
	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	E-mail or other direct PC communication, Internet Web Sites	Audible Enunciators, Variable Message Signs (in vehicle), Kiosks, Internet Web Sites, Telephone System	Facsimile, E-mail or other direct PC communication, Internet Web Sites, Telephone System	NR
Real-time transit schedule adherence or arrival and departure times	NR	NR	NR	NR
Technologies employed by other organization receiving your data				
Transit routes, schedules and fares	NR	NR	NR	NR
Real-time transit schedule adherence or arrival and departure times	NR	NR	NR	NR
Internet web site reporting transit routes, schedules and fare, etc.	www.kitsaptransit.org		NR	
Telephone system for reporting transit information to the public	NR		NR	
Organizations your agency sends information for dissemination to the public	NR		NR	
Data collected, archived, and/or transferred to another agency				

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Kitsap Transit		Pierce County Ferry Operations	
	1999	**2005**	**1999**	**2005**
Collected by your agency	Transit operations coordination information, Emergency/evacuation routes and procedures, Intermodal (air, rail, water) conditions, Scheduled roadway work zones for transit, Current roadway work zones for transit, Incidents, Route designations (snow emergency, etc), Transit vehicle signal priority, Passenger information (e.g., surveys, O/D), Passenger count, Vehicle time and location	NR	Incidents, Passenger count, Vehicle time and location	NR
Archived by your agency	Transit operations coordination information, Emergency/evacuation routes and procedures, Incidents, Route designations (snow emergency, etc), Transit vehicle signal priority, Passenger information (e.g., surveys, O/D), Passenger count, Vehicle time and location	NR	Passenger count, Vehicle time and location	NR
Transferred to another agency by your agency	Passenger information (e.g., surveys, O/D), Passenger count	NR	NR	NR
Importance of making information available to the public				
Ranked High	Intermodal (air, rail, water) conditions, Route designations (snow emergency, etc)		NR	

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Kitsap Transit		Pierce County Ferry Operations	
	1999	**2005**	**1999**	**2005**
Ranked Medium	Transit operations coordination information, Emergency/evacuation routes and procedures, Vehicle time and location		NR	
Ranked Low	Scheduled roadway work zones for transit, Current roadway work zones for transit, Incidents, Transit vehicle signal priority, Passenger information (e.g., surveys, O/D), Passenger count		Incidents, Passenger count, Vehicle time and location	
Groups that make requests for the data	Consultants, MPOs, Media (I.e., TV stations, radio stations), Federal DOT personnel, State DOT personnel, Universities		US Coast Guard, State DOT personnel	
What is the data used for?	Dissemination to the public, Planning, Construction impact determination, Traffic analysis		Do not know	

NR: No Response

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Pierce Transit		Seattle Monorail Transit	
	1999	**2005**	**1999**	**2005**
Agency Returned Survey?	Yes		Yes	
Methods used to disseminate transit information to the public				
Technologies your agency uses to disseminate:				
Transit routes, schedules and fares	Telephone System, Facsimile, E-mail or other direct PC communication, Internet Web Sites	Kiosks	NR	NR
Real-time transit schedule adherence or arrival and departure times	NR	Monitors/VMS (not in vehicle), In-vehicle navigation systems, Kiosks, Internet Web Sites	NR	NR
Technologies employed by other organization receiving your data				
Transit routes, schedules and fares	Telephone System, Facsimile, E-mail or other direct PC communication, Internet Web Sites	In-vehicle navigation systems, Kiosks	NR	NR
Real-time transit schedule adherence or arrival and departure times	NR	Monitors/VMS (not in vehicle), Kiosks, Internet Web Sites	NR	NR
Internet web site reporting transit routes, schedules and fare, etc.	www.piercetransit.org		NR	
Telephone system for reporting transit information to the public	none		NR	
Organizations your agency sends information for dissemination to the public	none at this time		NR	
Data collected, archived, and/or transferred to another agency				

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Pierce Transit		Seattle Monorail Transit	
	1999	**2005**	**1999**	**2005**
Collected by your agency	Emergency/evacuation routes and procedures, Incidents, Route designations (snow emergency, etc), Road conditions, Vehicle monitoring status, Passenger information (e.g., surveys, O/D), Passenger count, Vehicle time and location	Emergency/evacuation routes and procedures, Incidents, Route designations (snow emergency, etc), Transit vehicle signal priority, Road conditions, Vehicle monitoring status, Passenger information (e.g., surveys, O/D), Passenger count, Vehicle time and location	Passenger count	Passenger count
Archived by your agency	NR	NR	Passenger count	Passenger count
Transferred to another agency by your agency	NR	NR	NR	NR
Importance of making information available to the public				
Ranked High	Emergency/evacuation routes and procedures, Route designations (snow emergency, etc), Transit vehicle signal priority, Passenger information (e.g., surveys, O/D), Trip itinerary planning records, Vehicle time and location		NR	

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Pierce Transit		Seattle Monorail Transit	
	1999	**2005**	**1999**	**2005**
Ranked Medium	Passenger count		NR	
Ranked Low	Emergency vehicle signal preemption		Passenger count	
Groups that make requests for the data	Media (I.e., TV stations, radio stations), Federal DOT personnel, State DOT personnel		Federal DOT personnel, State DOT personnel	
What is the data used for?	Dissemination to the public, Accident prediction models, Planning, Traffic analysis		Do not know	

NR: No Response

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Snohomish County Public Transportation		Washington State Ferries	
	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	Telephone System	Internet Web Sites, Telephone System	NR	NR
Real-time transit schedule adherence or arrival and departure times	Telephone System	E-mail or other direct PC communication, Internet Web Sites, Telephone System	NR	NR
Technologies employed by other organization receiving your data				
Transit routes, schedules and fares	E-mail or other direct PC communication, Kiosks-Automated, Telephone System	E-mail or other direct PC communication, Kiosks-Automated, Internet Web Sites, Telephone System	NR	NR
Real-time transit schedule adherence or arrival and departure times	E-mail or other direct PC communication, Internet Web Sites, Telephone System	E-mail or other direct PC communication, Kiosks-Automated, Internet Web Sites, Telephone System	NR	NR
Internet web site reporting transit routes, schedules and fare, etc.	www.commtrans.org		NR	
Telephone system for reporting transit information to the public	Regional Automated Trip Planning		NR	
Organizations your agency sends information for dissemination to the public	Everett sends to CT, CT sends to KC Metro Pierce and Sound Transit		NR	
Data collected, archived, and/or transferred to another agency				

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Snohomish County Public Transportation		Washington State Ferries	
	1999	**2005**	**1999**	**2005**
Collected by your agency	Transit operations coordination information, Transit vehicle signal priority	Transit operations coordination information, Transit vehicle signal priority	Vehicle time and location	Weather conditions
Archived by your agency	Transit operations coordination information, Transit vehicle signal priority	Transit operations coordination information, Transit vehicle signal priority	NR	Route designations (snow emergency, etc), Vehicle time and location
Transferred to another agency by your agency	Transit operations coordination information, Transit vehicle signal priority	Transit operations coordination information, Transit vehicle signal priority	NR	Transit vehicle signal priority, Vehicle time and location
Importance of making information available to the public				
Ranked High	Transit operations coordination information, Transit vehicle signal priority		Vehicle time and location	

Data Collection and Dissemination: Transit Management
Agencies for Metropolitan Area: Seattle, Tacoma

Agency Name	Snohomish County Public Transportation		Washington State Ferries	
	1999	**2005**	**1999**	**2005**
Ranked Medium	NR		Transit vehicle signal priority	
Ranked Low	NR		NR	
Groups that make requests for the data	Consultants, MPOs, State DOT personnel, Universities		Media (I.e., TV stations, radio stations)	
What is the data used for?	Contract negotiations/marketing, Dissemination to the public, Planning		Dissemination to the public	

NR: No Response

Appendix L
Emergency Management

Emergency Management Agencies for Metropolitan Area: Seattle, Tacoma

	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	
Agency Name	1999	2005	1999	2005	1999	2005	1999	2005	1999	2005	1999	2005			List of agencies receiving data
Bellevue City Fire Department	20	22	0	22	0	22	20	22	0	22	19	22	Yes	Yes	Bellevue City Police Department, Washington State Police, Washington State Department of Transportation, EPA, Utility companies
Bellevue City Fire Department (Emergency Medical)	18	20	0	18	0	18	18	20	0	18	16	18	Yes	Yes	None listed
Bellevue City Police Department	50	55	0	0	0	55	50	55	0	55	0	0	Yes	Yes	Olympia State Capital
Everett City Fire Department	10	11	0	0	0	0	10	11	NR	NR	10	11	Yes	No	None listed
Everett City Fire Department (Emergency Medical)	3	5	0	0	0	0	3	5	0	0	3	5	Yes	No	None listed
Everett City Police Department	85	100	0	20	0	0	85	100	85	100	0	0	No	No	None listed
Federal Way City Fire Department	16	18	0	18	0	18	16	18	0	18	16	18	Yes	Yes	King County Emergency Medical Services
Seattle City Fire Department	78	78	78	78	0	78	78	78	0	72	72	72	Yes	Yes	Seattle City Police Department, Washington State Incidents Reporting System
Seattle City Police Department	239	239	0	0	0	0	239	239	239	239	0	0	Yes	Yes	Washington State Emergency Management Agency
Tacoma City Fire Department	28	28	0	0	0	0	28	28	28	28	20	28	Yes	No	None listed
Tacoma City Fire Department (Emergency Medical)	10	12	0	0	0	0	10	12	10	12	10	12	Yes	No	None listed
Tacoma City Police Department	236	260	0	0	0	0	236	260	10	160	0	0	No	No	None listed
Washington State Department of Transportation	14	18	0	2	0	0	0	14	0	14	4	6	Yes	No	None listed