



The Pennsylvania Department of Transportation (PennDOT District 2-0) has commissioned this program, Regional Intelligent Transportation Systems Architecture Development Program, with the aim of addressing major transportation issues in the region, creating a framework to identify transportation system components and interconnections, improving communications, and identifying integration opportunities as defined in the National ITS Architecture.

A key element for the success of this program is input from local residents, transportation agencies, and non-transportation agencies about major transportation issues affecting your local area.

Please take a few minutes to complete this questionnaire. The information received from this questionnaire will be compiled in a database and used to inventory ITS technologies and services currently deployed in the region. It will also help us identify and prioritize transportation needs in your local area.

If you have any questions, please contact the project manager on (215) 735-1932 or email him at kcaglar@orth-roddgers.com.

Thank you for your cooperation.

Freeway/Arterial Management

Local Area: _____ Date Completed: _____
Name: _____ Title: _____
Organization: _____
Street: _____
City: _____ State: _____ Zip: _____
Phone Number: _____ Fax Number: _____
Email: _____

Technical questions can be directed to:

Please return completed questionnaire to:

1. Please identify the geographical and/or jurisdictional areas to which your answers to this survey apply (e.g., all freeways within the region, or freeways only within certain counties). Area of geographical or jurisdictional coverage:



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2. Does your agency operate a Freeway Management Center?

- No; go to Question 3. Yes, planned to begin operation on what date? _____
 Yes, as of what date: _____

If yes, what is the name of this center? _____

How many management, maintenance, and operations personnel work in this center? _____

What freeways are under surveillance by this center? (Please describe below, e.g. I-90 between Exit 45 and Exit 12)

How many freeway centerline miles are under surveillance by this center? _____ miles

What type of communications is used (check all that apply and provide the number of freeway centerline miles affected)?

- Twisted pair cable _____ miles
 Coaxial cable _____ miles
 Fiber optic cable _____ miles
 Microwave radio _____ miles
 Other (specify) _____ miles
 Other (specify) _____ miles

THE FOLLOWING QUESTIONS FOCUS ON REAL-TIME TRAFFIC DATA COLLECTION CAPABILITIES OPERATED BY YOUR AGENCY ON THE FREEWAYS. THE TYPES OF DATA COLLECTED BY THESE DEVICES MAY INCLUDE VEHICLE VOLUME, SPEED, AND DENSITY. THE DEVICES USED TO COLLECT SUCH DATA TYPICALLY INCLUDE LOOP DETECTORS, VIDEO IMAGE DETECTORS, RADAR, AND ACOUSTIC DETECTORS AND VEHICLES AS PROBES.

3. Are any of the freeways operated by your agency under electronic surveillance using real-time traffic data collection technologies?

- No; go to Question 4.
 Yes

If yes, what types of real-time traffic data collection technologies are used to collect data vehicle volume, speed, and density data (check all that apply)?

- Loop Detectors
 Closed Circuit Television
 Vehicle Probe Readers
 Other (specify) _____
 Other (specify) _____



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3. Continued

How many of the following electronic data collection devices are deployed?

- Loop Detectors _____ stations (count each direction individually)
- Closed Circuit Television _____ cameras. Specify average range of view _____ miles.
- Other (specify) _____
- Other (specify) _____

How many freeway centerline miles are under surveillance by the following data collection technologies?

- Loop Detectors _____ miles
- Closed Circuit Television _____ miles
- Other (specify) _____ miles
- Other (specify) _____ miles

4. Does your agency operate probe reader stations to collect traffic data on freeways?

- No; go to Question 5.
- Yes

If yes: How many probe reader stations are installed? _____

How many freeway segments are monitored? _____

What is the average length of these segments? _____ miles

Approximately how many probe vehicles are deployed? _____ vehicles

How many freeway miles covered by probe readers are also covered by other electronic traffic data collection equipment used to estimate vehicle speed (e.g., loop detectors to estimate speed)? _____ miles

How many probe vehicles are counted on a segment during a typical five-minute period during peak travel times?
_____ vehicles

THE FOLLOWING QUESTIONS FOCUS ON THE TECHNOLOGIES USED BY YOUR AGENCY TO DISTRIBUTE INFORMATION TO TRAVELERS DIRECTLY USING ROADSIDE INFRASTRUCTURE ON THE FREEWAYS.

5. What types of roadside technologies are used to distribute traveler information on the freeways (check all that apply and provide the number deployed)?

- Permanent dynamic message signs (DMS) Number deployed: _____ signs
- Highway advisory radio (HAR) Number deployed: _____ stations
- In-vehicle signing Number deployed: _____ transmitter locations
- Other (specify) _____ Number deployed: _____
- None—traveler information is not distributed via roadside technologies



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6. How many of the freeway centerline miles are covered by the following roadside technologies deployed to distribute traveler information on the freeways (check all that apply and estimate the number of freeway centerline miles covered).

- Permanent dynamic message signs (DMS) Miles: _____
- Highway advisory radio (HAR) Miles: _____
- In-vehicle signing Miles: _____
- Other (specify) _____ Miles: _____
- Other (specify) _____ Miles: _____
- None—traveler information is not distributed

THE FOLLOWING QUESTIONS CONCERN THE USE OF RAMP METERING AND LANE CONTROL ON THE FREEWAYS.

7. Does your agency operate ramp meters on freeways?

- No; go to Question 8.
- Yes

If yes:

How many freeway entrance ramps are located on the freeway system operated by your agency? _____ number

How many entrance ramps are under ramp meter control? _____ number

How many of these ramp meters operate under isolated control? _____ number

How many of these ramp meters operate under central control? _____ number

How many of these ramp meters provide preemption or priority for transit vehicles? _____ number

How many of these ramp meters provide preemption or priority to emergency vehicles? _____ number

How many freeway-to-freeway ramps are under some form of ramp meter control? _____ number

8. Does your agency operate lane control devices (e.g., changeable overhead directional arrows) on freeways?

- No; go to Question 9.
- Yes

If yes, how many freeway miles are under lane control? _____ miles



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THE FOLLOWING QUESTIONS CONCERN THE USE OF THE WORLD WIDE WEB (WWW) TO DISTRIBUTE FREEWAY TRAVEL CONDITION INFORMATION.

9. Does your agency maintain a World Wide Web site that displays real-time freeway travel conditions?

- No; go to Question 10.
- Yes

If yes, freeway centerline miles displayed: _____ miles

If yes, to the best of your knowledge, is this web page used by any groups, organizations, or agencies to manage any of the following functions (check all that apply).

- Incident management
- Traffic signal control
- Public transit operations and planning
- Distribution of freeway travel condition information (e.g., commercial radio station)
- Other (specify) _____

THE FOLLOWING QUESTIONS ARE USED TO DETERMINE IF THERE IS TRANSFER IN TIME INTERVALS NO LARGER THAN 5-MINUTES VIA ELECTRONIC MEANS, FREEWAY TRAVEL TIMES, SPEEDS, OR CONDITIONS (E.G., DATA FROM LOOP DETECTORS) DATA TO OTHER GROUPS, AGENCIES OR ORGANIZATIONS.

10. Does your agency share, electronically and in time intervals no larger than 5-minutes, data describing freeway travel times, speeds, or conditions with any organization responsible for the following activities (check all that apply)? Note: If the only transfer occurs via a World Wide Web site, please go to Question 12.

- Incident management
Name of organization, agency or group: _____
Freeway centerline miles covered by the transfer: _____ miles
Method used to transfer data (check one):
 Transfer between separate computer systems
 A common (shared) data based
 Other (specify) _____

- Traffic signal control on arterial and Central Business District streets
Name of organization, agency or group: _____
Freeway centerline miles covered by the transfer: _____ miles
Method used to transfer data (check one):
 Transfer between separate computer systems
 A common (shared) data based
 Other (specify) _____



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10. Continued.

Public transit operations

Name of organization, agency or group: _____

Freeway centerline miles covered by the transfer: _____ miles

Method used to transfer data (check one):

Transfer between separate computer systems

A common (shared) data based

Other (specify) _____

Traveler information service provider (e.g. Regional Multimodal Traveler Information Center, private Information Service Provider [ISP])

Name of organization, agency or group: _____

Freeway centerline miles covered by the transfer: _____ miles

Method used to transfer data (check one):

Transfer between separate computer systems

A common (shared) data based

Other (specify) _____

Do not electronically share these data

11. Does your agency share, electronically and in time intervals no longer than 5-minutes, data on freeway entrance ramp queue lengths with agencies responsible for traffic signals?

No; go to Question 12.

Yes

If yes, what is the name of the organization, agency, or group receiving these data? _____

Number of freeway entrance ramps covered: _____

Method used to transfer data (check one):

Transfer between separate computer systems

A common (shared) data base

Other (specify) _____



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THE FOLLOWING QUESTIONS ARE USED TO DETERMINE WHETHER YOUR AGENCY RECEIVES, IN REAL-TIME VIA ELECTRONIC MEANS, DATA FROM OTHER GROUPS, AGENCIES OR ORGANIZATIONS

12. Does your agency receive, in real-time via electronic means, data on arterial travel times, speeds, or incidents from an operator traffic signal systems? (The data must be summarized in time intervals no larger than 5-minutes.)

- No; go to Question 13.
 Yes

If yes, what is the name of the organization, agency, or group providing these data? _____

How are these data used by your agency to manage the freeway system (check all that apply)?

- Adjust ramp meter timing or lane control devices in real-time
 Convey arterial incident information to travelers via roadside infrastructure such as DMS or HAR
 Other (specify) _____

13. Does your agency receive, in real-time via electronic means, data on freeway incident severity, location and type from the organization or group operating a freeway incident management program? (The data must be summarized in time intervals no larger than 5-minutes.)

- No; go to Question 14.
 Yes

If yes, what is the name of the organization, agency, or group providing these data? _____

How are these data used by your agency to manage the freeway system (check all that apply)?

- Adjust ramp meter timing or lane control devices in real-time
 Convey arterial incident information to travelers via roadside infrastructure such as DMS or HAR
 Other (specify) _____



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14. Does your agency receive, in real-time via electronic means, data on freeway travel time data derived from vehicle probes from an agency, organization or group operating an electronic toll collection program? (The data must be summarized in time intervals no larger than 5-minutes.)

No; go to Question 15.

Yes

If yes, what is the name of the organization, agency, or group providing these data? _____

How many freeway miles have travel times measured with these probe data? _____

How are these data used by your agency to manage the freeway system (check all that apply)?

Adjust ramp meter timing or lane control devices in real-time

Convey arterial incident information to travelers via roadside infrastructure such as DMS or HAR

Other (specify) _____

15. Does your agency receive, in real-time via electronic means, data on freeway travel time data derived from vehicle probes from an agency, organization, or group operating a public transit service? (The data must be summarized in time intervals no larger than 5-minutes.)

No

Yes

If yes, what is the name of the organization, agency, or group providing these data? _____

How many freeway miles have travel times measured with these probe data? _____

How are these data used by your agency to manage the freeway system (check all that apply)?

Adjust ramp meter timing or lane control devices in real-time

Convey arterial incident information to travelers via roadside infrastructure such as DMS or HAR

Other (specify) _____



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Additional Comments: