Animal Warning System

1. Number of deployed systems:

______________________________________________________________________________

2. Please indicate the number of systems with each of the following road classifications:
   - Freeway or other limited access highway
   - Other multi-lane highway (non-limited access)
   - 2-lane highway

3. What road technologies are used for roadside detection of animal presence? (Check all that apply)
   - Radar detection of on-road objects
   - Video
   - Electric detection fence using microwave or infrared sensors
   - Radio transmitter collars for animals
   - Other (please specify): _________________________________

4. What technologies are used to communicate with vehicles? (Check all that apply)
   - Dynamic message sign
   - Highway advisory radio
   - In-vehicle
   - Flashing lights
   - Other (please specify): _________________________________

5. Do these systems communicate information (e.g., status, activation), in real time, to any agencies/systems?
   Yes.
   - Check all that apply:
     - Data archiving
     - Public safety
     - State police
     - Local agencies
     - Traffic management
     - Incident management
     - Traveler information /Information service providers
     - Other states
     - Other (please specify): _________________________________
   No
6. Please provide any additional comments you may have regarding your Animal Warning System(s) in the space provided below:
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

Bicycle Warning Systems

7. Number of deployed systems:
________________________________________________________________

8. Please indicate the number of systems with each of the following road classifications:
   Freeway or other limited access highway
   Other multi-lane highway (non-limited access)
   2-lane highway

9. Please indicate the number of systems deployed at the following locations:
   Tunnel
   Road section with restricted visibility
   Other (please specify):

10. What technologies are used for roadside detection of bicyclists?
    Manual (activated by bicyclist)
    Automatic (sensor detects bicyclist)
    Other (please specify):

11. What technologies are used to communicate with vehicles? (Check all that apply)
    Dynamic message sign
    Highway advisory radio
    In-vehicle
    Flashing lights
    Other (please specify):
12. Do these systems communicate information (e.g., status, activation), in real time, to any agencies/systems?

Yes.
Check all that apply:
- Data archiving
- Public safety
  - State police
  - Local agencies
- Traffic management
- Incident management
- Traveler information /Information service providers
- Other states
- Other (please specify): __________________________

No

13. Please provide any additional comments you may have regarding your Bicycle Warning System(s) in the space provided below:

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

Environmental Road Hazard Warning Systems

14. Number of deployed systems:
________________________________________________________________

15. Please indicate the number of systems with each of the following road classifications:
- Freeway or other limited access highway
- Other multi-lane highway (non-limited access)
- 2-lane highway

16. What hazards are detected by these systems? (Check all that apply)

Visibility
- Fog
- Snow
- Smoke
- Dust/Sand
- Wind
- Other (please specify): __________________________

Road Conditions
- Ice on bridge
- Icy road
- Wet road
- Obstructions on road
- Flooding
- Other (please specify): __________________________
17. What technologies/methods are used to detect hazardous conditions? (Check all that apply)

**Forecasted/Actual Conditions**
- National Weather Service
- Weather modeling
- Road Weather Information Systems (RWIS)

**On-Site Sensors**
- Closed circuit television (CCTV)
- Infrared
- Particulate
- Wind speed detector
- In-pavement sensor

Other (please specify): ____________________________

18. What information do these systems collect about vehicles for use in assessing the need for a warning? (Check all that apply)

- Vehicle speed
- Vehicle classification
- Weight (weigh-in-motion)

Other (please specify): ____________________________

19. What technologies are used to communicate with vehicles? (Check all that apply)

- Dynamic message signs
- Flashing lights
- In-vehicle warning
- Highway advisory radio
- In-pavement roadside edge lights

Other (please specify): ____________________________

20. Do the systems warning include a variable speed limit?

- Yes
- No

21. What type of message is provided by these systems?

- Tailored information provided to specific vehicle
- Generic warning message provided to all vehicles
22. Do these systems communicate information (e.g., status, activation), in real time, to any agencies/systems?  
   Yes.  
   Check all that apply:  
   Data archiving  
   Public safety  
   State police  
   Local agencies  
   Traffic management  
   Incident management  
   Traveler information /Information service providers  
   Other states  
   Other (please specify): ________________________________  
   No  

23. Please provide any additional comments you may have regarding your Environmental Road Hazard Warning System(s) in the space provided below:  
   _____________________________________________________  
   _____________________________________________________  
   _____________________________________________________  

**Intersection Crossing Detection Systems**  

24. Number of deployed systems:  
   _____________________________________________________  

25. Please indicate the number of systems with each of the following road classifications:  
   Freeway or other limited access highway  
   Other multi-lane highway (non-limited access)  
   2-lane highway  

26. Please indicate the number of systems that have vehicle detection sensors at the following locations:  
   On all legs of an intersection  
   On the major road only  
   Other (please specify): ________________________________  

27. What technologies are used to communicate with vehicles? (Check all that apply)  
   Dynamic message sign  
   Flashing lights  
   In-vehicle  
   Other (please specify): ________________________________
28. Do these systems communicate information (e.g., status, activation), in real time, to any agencies/systems?

Yes.

Check all that apply:
- Data archiving
- Public safety
  - State police
  - Local agencies
- Traffic management
- Incident management
- Traveler information /Information service providers
- Other states
- Other (please specify): ________________________________

No

29. Please provide any additional comments you may have regarding your Intersection Crossing Detection System(s) in the space provided below:

________________________________________________________________
________________________________________________________________
________________________________________________________________

Pedestrian Safety Systems

30. Number of deployed systems:

________________________________________________________________

31. Please indicate the number of systems with each of the following road classifications:

- Freeway or other limited access highway
- Other multi-lane highway (non-limited access)
- 2-lane highway

32. What technologies are used to detect the presence of pedestrians and/or vehicles? (Check all that apply)

- Vehicle detection sensors (e.g., loops, video, acoustic)
- Microwave pedestrian detector
- Infrared pedestrian detector
- Manually operated pedestrian detector
- Other (please specify): ________________________________

33. What technologies are used to communicate with pedestrians and/or vehicles? (Check all that apply)

- In-pavement lights illuminate crosswalk
- Illuminated crosswalk signs
- Dynamic message signs
- Flashing lights
- In-vehicle warning
- Other (please specify): ________________________________
34. What type of message is provided by these systems?
   Alert to approaching vehicles to pedestrian presence
   Alert to pedestrian of approaching vehicle
   Other (please specify): ____________________________

35. Do these systems communicate information (e.g., status, activation), in real time, to any agencies/systems?
   Yes.
   Check all that apply:
   Data archiving
   Public safety
   State police
   Local agencies
   Traffic management
   Incident management
   Traveler information /Information service providers
   Other states
   Other (please specify): ____________________________

   No

36. Please provide any additional comments you may have regarding your Pedestrian Safety System(s) in the space provided below:
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________

Rail-Highway Crossing Safety Systems

37. Number of deployed systems:
   ____________________________________________________________

38. Please indicate the number of systems with each of the following road classifications:
   Freeway or other limited access highway
   Other multi-lane highway (non-limited access)
   2-lane highway

39. What information is collected by these systems? (Check all that apply)
   Train presence
   Train speed
   Detection of vehicle intrusion
   Detection of pedestrian intrusion
   Second train approaching
   Other (please specify): ____________________________
40. What technologies are used to communicate with vehicles? (Check all that apply)
   Dynamic message sign
   Highway advisory radio
   In-vehicle warning Flashing lights
   Other (please specify): ________________________________

41. Do these systems communicate information (e.g., status, activation), in real time, to any agencies/systems?
   Yes.
   Check all that apply:
   - Data archiving
   - Public safety
   - State police
   - Local agencies
   - Traffic management
   - Incident management
   - Traveler information /Information service providers
   - Other states
   - Other (please specify): ________________________________
   No

42. Please provide any additional comments you may have regarding your Rail-Highway Safety System(s) in the space provided below:

________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________

Road Geometry Warning Systems

43. Number of deployed systems:

________________________________________________________________________________________________________

44. Please indicate the number of systems with each of the following road classifications:
   - Freeway or other limited access highway
   - Other multi-lane highway (non-limited access)
   - 2-lane highway

45. What hazards are handled by these systems? (Check all that apply)
   - Truck roll over
   - Curve
   - Downhill
   - All vehicles
   - Curve
   - Downhill
   - Other (please specify): ________________________________
46. What information do these systems collect about vehicles? (Check all that apply)
   - Vehicle speed
   - Vehicle classification
   - Vehicle weight (weigh-in-motion)
   - Vehicle height
   - Other (please specify): ________________________________

47. What information does this system collect about environmental conditions to determine whether a warning is needed?
   - Road surface condition
   - Other (please specify): ________________________________

48. What technologies are used to communicate with vehicles? (Check all that apply)
   - Dynamic message sign
   - Flashing lights
   - In-vehicle warning
   - Highway advisory radio
   - In-pavement roadside edge lights
   - Other (please specify): ________________________________

49. What types of messages are provided by these systems?
   - Generic warning message provided to all vehicles
   - Tailored information provided to specific vehicle

50. Do these systems communicate information (e.g., status, activation), in real time, to any agencies/systems?
   Yes.
   Check all that apply:
   - Data archiving
   - Public safety
     - State police
     - Local agencies
   - Traffic management
   - Incident management
   - Traveler information /Information service providers
   - Other states
   - Other (please specify): ________________________________

   No

51. Please provide any additional comments you may have regarding your Road Geometry Warning System(s) in the space provided below:

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

2004 STATEWIDE ITS SURVEY
Road Geometry Warning Systems: Cost and Benefits

52. Is your agency willing to share COST information on ITS-related equipment (i.e., capital and O&M cost, and brief equipment description)? This information will be used to update the ITS JPO sponsored ITS unit cost database. [http://www.benefitcost.its.dot.gov/]
   
   Yes.
   
   Please provide name and phone number of the cost information contact if different from respondent. This person will be contacted for the cost information at a later date.

   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

   No

53. Is your agency willing to share documented BENEFITS or LESSONS LEARNED information from ITS deployments? The information will be used to update the ITS JPO sponsored ITS benefits database.
   
   Yes.
   
   Please provide name and phone number of the benefits information contact if different from respondent. This person will be contacted for the benefit information at a later date.

   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

   No

Fixed Anti-icing/Deicing Systems

54. Number of deployed systems:

   ________________________________

55. Please indicate the number of systems with each of the following road classification:
   
   Freeway or other limited access highway
   Other multi-lane highway (non-limited access)
   2-lane highway

56. Please indicate the number of systems deployed at the following locations:
   
   Bridge
   Overpass
   Underpass
   Exit lane
   Ramp
   Sharp curve
   Deep canyon
   Road segment with high winter crash rate
   Other (please specify): ________________________________
57. Are these systems automatically activated based upon sensor data?

No.

The fixed anti-icing/deicing system is manually activated
By maintenance personnel
By traffic operations personnel
By other personnel (please specify)

What criteria are used to activate the system? (check all that apply)
- Light precipitation
- Slick pavement (due to water, snow or ice)
- Pavement temperature (current or freeze point)
- Traffic volume
- Time of day
- Other (please specify): ________________________________

Yes

Is activation of the fixed anti-icing/deicing system controlled by a central computer?

No. A remote processing unit controls system activation.

Yes. Treatment strategies recommended by the central computer must be approved by maintenance or operations personnel prior to activation.

Yes. The fixed anti-icing/deicing system is fully automated with no human intervention. Maintenance or operations personnel simply monitor

58. What components are included in these systems? (check all that apply)

Chemical storage tanks
- Please specify the typical number and size
- __________________________________________________________________

- Please specify the type(s) of chemical(s)
- __________________________________________________________________
- __________________________________________________________________

Spray nozzles
- Embedded in road surface
- Embedded in bridge deck
- Embedded in median barrier
- Other location (please specify): ________________________________

Environmental Sensor Station(s) measuring the following:
- Air temperature
- Relative humidity
- Barometric pressure
- Precipitation type
- Precipitation rate
- Wind speed
- Wind direction
- Visibility distance
- Cloud cover/solar radiation
- Pavement surface temperature
- Pavement freeze point temperature
- Pavement condition (dry, wet, icy, snow-covered, flooded)
- Pavement snow depth/accumulation Pavement friction coefficient
- Pavement chemical concentration
- Other (please specify): ________________________________
Vehicle detectors (for volume, speed, classification, etc.)
Closed Circuit Television (CCTV) cameras
Other (please specify): ________________________________

59. What types of services are used to warn motorists of system activation? (check all that apply)
   None
   Static signs with flashing beacons
   Dynamic Message Signs (DMS)
   Other (please specify): ________________________________

60. What benefits of the fixed anti-icing/deicing system have been observed and/or quantified? (check all that apply)
   Improved safety in winter weather
      By predicting or detecting slick pavement
      By reducing winter crash rate
      Other (please specify): ________________________________
   Improved mobility in winter weather
      By reducing delay and congestion due to winter crashes
      By maintaining higher roadway level of service
      Other (please specify): ________________________________
   Improved productivity in winter weather
      By reducing road treatment costs
      By reducing the amount of chemical applications
      By extending the life of road infrastructure
      Other (please specify): ________________________________
   Other (please specify): ________________________________

61. Do these systems communicate information (e.g., status, activation), in real time, to any agencies/systems?
   Yes.
      Check all that apply:
      Data archiving
      Public safety
         State police
         Local agencies
      Traffic management
      Incident management
      State DOT
      Maintenance agencies
      Traveler information /Information service providers
      Other (please specify): ________________________________
   No
62. Please provide any additional comments you may have regarding your Fixed Anti-Icing/Deicing Systems System(s) in the space provided below:

________________________________________________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________

Avalanche/Slide Management Systems

63. Number of deployed systems:

________________________________________________________________

64. Please indicate the number of systems with each of the following road classification.
   Freeway or other limited access highway
   Other multi-lane highway (non-limited access)
   2-lane highway

65. What are the key reasons for deploying these systems? (check all that apply)
   Evaluation
   Road curvature
   Road grade
   High accident history
   Other (please specify):_______________________________

66. What information is collected by these systems?
   Avalanche/slide detection sensors
   Vehicle detection sensors on corridors prone to avalanches
   Other (please specify):_______________________________

67. What technologies are used to communicate with vehicles?
   Traveler alerts
     Dynamic message sign
     Highway advisory radio
     In-vehicle warning
     Flashing lights
   Radio contact with maintenance vehicles
   Other (please specify):_______________________________

68. What methods are used to limit access to avalanche/slide area?
   Coupled gate to close road
   Other (please specify):_______________________________
69. Do these systems communicate information (e.g., status, activation), in real time, to any agencies/systems?
   Yes.
   Check all that apply:
   - Data archiving
   - Public safety
     - State police
     - Local agencies
   - Traffic management
   - Incident management
   - State DOT
   - Maintenance agencies
   - Traveler information /Information service providers
   Other (please specify):

   No

70. Please provide any additional comments you may have regarding your Automatic Avalanche/Slide Warning System(s) in the space provided below:
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________

Maintenance Fleet Management Systems

71. The system is used to monitor:
   - Snowplows
   - Street sweepers
   Other maintenance vehicles (please specify):

72. The system allows central managers to:
   - Monitor vehicle location data using Automated Vehicle Location (AVL) technology
   - Monitor vehicle status data
     - Plow position (e.g., up/down)
     - Chemical application rate
     - Inventory level of chemicals
     - Engine diagnostic sensors
   - Monitor mobile environmental sensor data
     - Air temperature
     - Pavement temperature
     - Pavement condition (dry, wet, icy, snow-covered)
   - Send messages to vehicle drivers using in-vehicle display devices
     - Send pre-programmed messages
     - Send customized messages
     - Send messages to a single plow, group of plows or all plows
   - Make scheduling and routing decisions using optimization software
   - Share road treatment data with neighboring jurisdictions/agencies
   Other (please specify):

73. What communication technologies are used?
    - Cell phones
    - Pagers
    - Mobile data terminals
    - Two-way radios - voice only
    - Two-way radios - voice and data
    - Interoperable with regional service vehicles (transit, maintenance, public safety)
    - Other (please specify): ________________________________

74. What benefits of the system have been observed and/or quantified?
    - Improved safety
      Please specify how: ________________________________
    - Improved mobility
      Please specify how: ________________________________
    - Improved productivity in winter weather
      - By reducing road treatment costs
      - By identifying the most efficient treatment routes
      - By facilitating real-time communication between maintenance managers and vehicle drivers
      - By fostering interagency communication
      - Other (please specify): ________________________________
    - Other (please specify): ________________________________

75. Please provide any additional comments you may have regarding your Maintenance Fleet Management System(s) in the space provided below:
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Work Zone Management Systems

76. What is the road classification where these systems are located? (Check all that apply)
    - Freeway or other limited access highway
    - Other multi-lane highway (non-limited access)
    - 2-lane highway

77. What type of traffic management center manages traffic for work zones? (Check all that apply)
    - Portable traffic management center
    - Permanent traffic management center
    - None
    - Other (please specify): ________________________________
78. What types of deployments are these? (Check all that apply)
    Temporary
    Permanent
    Temporary deployments to take over functions of permanent systems that degraded or were made inoperable by construction activities
    Other (please specify): ____________________________

79. What technologies are employed? (Check all that apply)
    Intrusion alarm
    Dynamic lane merge system
    Queue detection and alert system
    Travel time system
    Advanced speed information system (ASIS)
    Other (please specify): ____________________________

80. What are the reasons for deployment? (Check all that apply)
    Reduce crashes
    Improve workers safety
    Reduce congestion
    Provide traveler information to reduce frustration
    Other (please specify): ____________________________

81. What technologies are used to communicate with vehicles? (Check all that apply)
    Portable message sign
    Permanent dynamic message sign
    Highway advisory radio
    In-vehicle warning Flashing lights
    Series of warning signs activated progressively farther from the work site as sensors detect increases in traffic volume
    Temporary speed limits
    Temporary vehicle width, height, or width restrictions
    Other (please specify): ____________________________

82. Which other systems or agencies receive data on work zone status? (Check all that apply)
    Data archiving
    Public safety  
        State police  
        Local agencies
    Traffic management
    Incident management
    Traveler information / Information service providers
    Other states
    Other (please specify): ____________________________
83. Please provide any additional comments you may have regarding your Work Zone Management System(s) in the space provided below:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Work Zone Management Systems: Cost and Benefits

84. Is your agency willing to share COST information on ITS-related equipment (i.e., capital and O&M cost, and brief equipment description)? This information will be used to update the ITS JPO sponsored ITS unit cost database. ([http://www.benefitcost.its.dot.gov/](http://www.benefitcost.its.dot.gov/))

Yes.

   Please provide name and phone number of the cost information contact if different from respondent. This person will be contacted for the cost information at a later date:

   ________________________________________________________________

No

85. Is your agency willing to share documented BENEFITS or LESSONS LEARNED information from ITS deployments? The information will be used to update the ITS JPO sponsored ITS benefits database.

Yes.

   Please provide name and phone number of the benefits information contact if different from respondent. This person will be contacted for the cost information at a later date:

   ________________________________________________________________

No

Statewide Web Site

86. Has your agency deployed a Web Site that distributes traveler information?

Yes.

   Please provide the web address (URL):

   ________________________________

No

87. What information is disseminated by this web site? (Check all that apply)

   Roadway Information
   - Road closure
   - Detours
   - Alternate routes
   - Work zones/construction events
   - Weather
   - Road surface conditions
   - Road restrictions
   - Incidents
   - Congestion
   - Speeds
   - Travel times
   - CCTV images
   - Other
Traveler and Tourist Information
- Maps
- Directions
- Special events
- Points of interest
- Hotel accommodations
- Restaurants
- Recreational areas
- National Parks information
- Local event calendars
- Trail information
- Parking information
- Parking space availability
- Other

Public Transportation Information
- Transit schedules
- Transit adherence to schedules
- Rail schedules
- Ferry schedules
- Other

Other information
- Air quality alerts
- AMBER (child abduction) alerts
- Safety campaign messages
- Other

88. What is the geographic coverage of the information provided?
   Regional.
   Describe coverage: ____________________________________________________________
   Statewide
   Multi-state.
   States included: ________________________________________________________________

89. What is the highway coverage of the information provided?
   Freeways
   Multi-lane (not limited access)
   State routes
   Other

90. What is the usage of the web site?
   Monthly use sessions:
   Other (e.g., hits, page views): _________________________________________________
   Do not track usage

91. Who is the information service provider for your web site?
   ________________________________________________________________

92. Please provide any comments regarding your web site in the space provided below:
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
Statewide 511 System

93. Has your state deployed a 511 traveler information system?
   Yes
   No

94. What is the geographic coverage of the information?
   Regional.
   Describe coverage: ____________________________________________
   Statewide
   Multi-state.
   States included: _______________________________________________

95. What is the highway coverage of the information provided?
   Freeways
   Multi-lane (not limited access)
   State routes
   Other

96. What is the content of the 511 system? (Check all that apply)
   Basic service provided free of charge
   Traveler and tourist information
   Roadway information
   Public transportation
   Optional content (premium service) for specific users provided for a fee
   Describe optional content: ________________________________________

97. What are the sources of data for your statewide 511 systems? (Check all that apply)
   Public safety (incident information)
   State Police
   Local agencies
   Traffic management
   Operations and maintenance
   Work zones
   Construction areas
   Incident management service patrols
   Private traveler information
   Cellular phone calls
   Information service providers
   News Media
   National Weather Service
   Weather sensor data
   Road surface condition detectors
   Public transportation Inductive loop detectors CCTV
   Microwave radar detectors
   Other (Please specify): _________________________________________
98. Does the system incorporate a voice recognition service?
   Yes
   No

99. Is the system multi-lingual?
   Yes
   No

100. What are the operating hours?
   24 hours
   Other

101. Number of calls per month:

______________________________________________________________________________________

102. Please provide any comments regarding your 511 system in the space provided below:

______________________________________________________________________________________

______________________________________________________________________________________

______________________________________________________________________________________

______________________________________________________________________________________

______________________________________________________________________________________

Other Means of Disseminating Traveler Information

103. Please check any other means by which your state disseminates statewide traveler information:
   Highway advisory radio (HAR)
   Automated telephone (non-511)
   Staffed telephone (non-511)
   Permanent dynamic message signs (DMS)
   Portable dynamic message signs (DMS)
   In-vehicle devices
   E-mail
   Personal data assistants (PDA)
   Interactive kiosks
   Television broadcast - dedicated TV channel
   Television broadcast - media
   Fax
   Other (Please specify): ________________________________________________________________
   Do not disseminate traveler information (go to question 108)
104. Who is the information service provider for each media type?

- **Highway advisory radio:**
- **Automated telephone (non-511):**
- **Staffed telephone (non-511):**
- **Permanent dynamic message signs:**
- **Portable dynamic message signs:**
- **In-vehicle devices:**
- **E-mail:**
- **Personal data assistants:**
- **Interactive kiosks:**
- **Television broadcast - dedicated TV channel:**
- **Television broadcast - media:**
- **Fax:**
- **Other (Please specify):**

105. How are message sets developed?

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Data Dictionary</th>
<th>Local Policy</th>
<th>Ad-hoc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway advisory radio</td>
<td></td>
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<tr>
<td>Automated telephone (non-511)</td>
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<tr>
<td>Staffed telephone (non-511)</td>
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<tr>
<td>Permanent dynamic message signs</td>
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<td>Portable dynamic message signs</td>
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<td>In-vehicle devices E-mail</td>
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<tr>
<td>Personal data assistants</td>
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<td>Interactive kiosks</td>
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<td>Television broadcast - dedicated TV channel</td>
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<td>Television broadcast - media</td>
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<td>Fax</td>
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<td>Other (Please specify:)</td>
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</tbody>
</table>

106. What is the process for selecting message sets for dissemination?

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Manual</th>
<th>Semi-Automatic</th>
<th>Fully Automatic</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway advisory radio</td>
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<tr>
<td>Automated telephone (non-511)</td>
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<tr>
<td>Permanent dynamic message signs</td>
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<tr>
<td>Portable dynamic message signs</td>
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<td>In-vehicle devices E-mail</td>
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<td>Personal data assistants</td>
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<tr>
<td>Interactive kiosks</td>
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<tr>
<td>Television broadcast - dedicated TV channel</td>
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<td>Television broadcast - media</td>
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<td>Fax</td>
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<td>Other (Please specify:)</td>
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</tbody>
</table>
107. How are message sets approved for dissemination?

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Supervisor Approved All Messages</th>
<th>Operator Approved Manually Generated Messages</th>
<th>Operator Approved Pre-Programmed Messages</th>
<th>Automated Selection No Approval Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway advisory radio</td>
<td></td>
<td></td>
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<tr>
<td>Automated telephone (non-511)</td>
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<tr>
<td>Staffed telephone (non-511)</td>
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<tr>
<td>Permanent dynamic message signs</td>
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<tr>
<td>Portable dynamic message signs</td>
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<tr>
<td>In-vehicle devices E-mail</td>
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<td>Personal data assistants</td>
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<td>Interactive kiosks</td>
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<td>Fax</td>
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<tr>
<td>Other (Please specify:)</td>
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</table>

108. Please provide any comments you may have regarding your statewide traveler information system(s) in the space provided below:

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Traveler Information: Cost and Benefits

109. Is your agency willing to share COST information on ITS-related equipment (i.e., capital and O&M cost, and brief equipment description)? This information will be used to update the ITS JPO sponsored ITS unit cost database. [http://www.benefitcost.its.dot.gov/]

Yes.
Please provide name and phone number of the cost information contact if different from respondent.
This person will be contacted for the cost information at a later date:
______________________________________________________________________________

No

110. Is your agency willing to share documented BENEFITS or LESSONS LEARNED information from ITS deployments? The information will be used to update the ITS JPO sponsored ITS benefits database.

Yes.
Please provide name and phone number of the benefits information contact if different from respondent. This person will be contacted for the cost information at a later date:
______________________________________________________________________________

No
Surface Transportation Weather Systems

111. Under what area of responsibility does your job apply? (Check all that apply)
   Traffic Management
   Traveler Information Dissemination
   Maintenance
   Construction
   Other (please specify):______________________________________________________

112. What weather events and impacts significantly affect the operation and maintenance of roads in your jurisdiction? (Check all that apply)
   Liquid precipitation (i.e., rain)
   Frozen precipitation (e.g., snow, sleet, freezing rain)
   Low visibility due to fog
   Low visibility due to wind-blown snow
   Low visibility due to wind-blown dust
   Low visibility due to smoke
   High winds
   Flooding
   Tropical storms and hurricanes
   Tornadoes
   Slick pavement (due to water, snow or ice, black ice)
   Sand or dust
   Landslides (mudslides, rockslides)
   Snow slides (avalanches)
   Other (please specify):______________________________________________________
   None

113. What types of road weather information does your agency use to make operational decisions? (Check all that apply)
   Atmospheric data (e.g., precipitation, air temperature, visibility distance)
   Pavement condition data (e.g., wet, freeze point temperature, chemical concentration)
   Water level data (e.g., stream levels, river forecasts, tide levels)
   Other (please specify):______________________________________________________
114. What environmental data are collected by your agency to support operational decisions? (Check all that apply)

- Air temperature
- Air quality
- Dew point and relative humidity
- Barometric pressure
- Precipitation type
- Precipitation rate
- Wind speed and gusts
- Wind direction
- Visibility distance
- Cloud cover/solar radiation
- Pavement surface temperature
- Pavement freezing point
- Pavement condition (wet, dry, icy, snow-covered, flooded)
- Pavement snow depth
- Pavement friction coefficient
- Pavement chemical concentration
- Subsurface conditions (e.g., soil temperature, depth of frost level)
- Water level (in streams, rivers, and lakes near roads)
- Other (please specify): ________________________________

Do not collect environmental data

115. Does your agency use Environmental Sensor Stations (ESS) that are field components of a State DOT Road Weather Information System (RWIS) to gather road weather information?

- No. Go to question 127
- Yes

116. How many ESS are in the RWIS?

________________________________________________________

117. Is a map with ESS deployment data available?

- No
- Yes.

Where can the map be obtained?: ________________________________

118. What other sections within your agency are involved with the operation of or have responsibility for ESS? (Check all that apply)

- Traffic Management
- Traveler Information Dissemination
- Maintenance
- Construction
- None
- Other (please specify): ________________________________
119. Select the entity or entities with which your agency shares ESS observational data. (Check all that apply)
- NOAA’s Forecast System Laboratory to the Meteorological Assimilation Data Ingest System (MADIS)
- National Weather Service through local forecast offices
- Private meteorological services
- Other (please specify): ________________________________

Do not share ESS observational data

120. If your agency DOES NOT share ESS observational data, what is/are the barrier(s)? (Check all that apply)
- Cost
- Proprietary restraints from private meteorological service providers
- Never considered
- Other (please specify): ________________________________

121. Who OWNS the ESS that you have access to?
- My agency only
- My agency and other public or private agencies (please specify):
  Other public or private agencies (please specify): ________________________________

122. Who OPERATES the ESS that you have access to?
- My agency only
- My agency and other public or private agencies (please specify):
  Other public or private agencies (please specify): ________________________________

123. Who MAINTAINS the ESS that you have access to?
- My agency only
- My agency and other public or private agencies (please specify):
  Other public or private agencies (please specify): ________________________________

124. Please identify the private vendor for ESS data collection, RWIS network operation, or RWIS network maintenance.
- ESS data collection:
- RWIS network operation:
- RWIS network maintenance:
- Do not use private vendors
- Other (please specify): ________________________________

125. During what periods are your ESS operational? (Check all that apply)
- Year-round
- Winter
- Spring
- Summer
- Fall
- Other (please specify): ________________________________
126. Please indicate which parameter(s) your ESS measures, and the source of any siting or performance standards that have been specified for each type of sensors (e.g., agency vendor, other- please specify). For siting and performance standards, please cite a URL or publicly available document (if available) to which we may refer.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Siting Standards</th>
<th>Performance Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air quality</td>
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<tr>
<td>Atmospheric pressure</td>
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<td>Cloud height</td>
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<tr>
<td>Lightning</td>
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<tr>
<td>Pavement condition (wet, dry, icy, snow-covered, flooded)</td>
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<tr>
<td>Pavement friction coefficient</td>
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<td>Pavement chemical concentration</td>
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<tr>
<td>Precipitation occurrence</td>
<td></td>
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<tr>
<td>Precipitation type discrimination (rain)</td>
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<tr>
<td>Precipitation type discrimination (freezing vs. non-freezing)</td>
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<tr>
<td>Precipitation type discrimination (sleet-specific)</td>
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<tr>
<td>Precipitation type discrimination (snow specific)</td>
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<tr>
<td>Precipitation rate</td>
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<tr>
<td>Precipitation, amount of accumulation</td>
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<tr>
<td>Relative humidity</td>
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<td>Snowfall</td>
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<td>Snow depth</td>
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<td>Sky condition</td>
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<tr>
<td>Temperature (ambient air)</td>
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<td>Temperature (dew point)</td>
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<td>Temperature (pavement freeze point)</td>
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<td>Temperature (pavement surface)</td>
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<td>Temperature (subsurface)</td>
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<tr>
<td>Visibility</td>
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<tr>
<td>Wind direction</td>
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<tr>
<td>Wind speed</td>
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</tbody>
</table>

127. What are the barrier(s) to obtaining or implementing Environmental Sensor Stations? (Check all that apply)

- No perceived need
- Cost
- Use other source(s)
- Other (please specify): ________________________________________________
- No barriers
128. What SYSTEM(S), besides ESS, are used by your agency to gather road weather information? (Check all that apply)

- Agricultural monitoring networks
- Air quality sensing stations
- Airport monitoring stations (e.g., ASOS stations, AWOS stations)
- Closed Circuit Television (CCTV) cameras
- Mobile environmental sensor
  - On maintenance vehicles with Automated Vehicle Location (AVL) technology
  - On other vehicles (please specify type): ________________________________

What data are collected by the mobile environmental sensors? (Check all that apply)

- Air temperature
- Pavement surface temperature
- Pavement freeze point temperature
- Pavement condition (wet, dry, icy, snow-covered, flooded)
- Pavement friction coefficient
- Other (please specify): ____________________________________________

- State-owned mesoscale environmental monitoring network (mesonet)
- Other system state owned
- Other mesonet (e.g., university): ______________________________________
- Other monitoring system: ____________________________________________

Do not gather road weather information

129. What source(s) of weather information does your agency use to gather road weather information? (Check all that apply)

- National Weather Service (NWS) (e.g., general weather forecasts)
- Federal Aviation Administration (FAA) (e.g., ASOS/AWOS data)
- U.S. Geological Survey (USGS) (e.g., stream gauge data)
- National Hurricane Center (NHC) (e.g., storm track and landfall forecasts)
- Department of Defense Reports from field personnel
- Private weather information service: ______________________________________

Are weather products tailored to your operational requirements? (e.g., route-specific)

- Yes
- No

Other (please specify): _________________________________________________

Do not gather road weather information

130. Do you coordinate data gathering with other states?

- No
- Yes.

  Please list them: ________________________________________________
131. Which personnel in your agency use road weather information to make operational decisions? (Check all that apply)

- Traffic management personnel
- Traveler information dissemination personnel
- Winter maintenance personnel (for snow and ice control activities)
- Summer maintenance personnel (for weed control, patching, etc.)
- Construction personnel (for paving operations, concrete pouring, etc.)
- Do not use road weather information to make operational decisions
- Other (please specify): ________________________________

132. Does your agency SHARE road weather information with other agencies/entities?

- No
- Yes

Please specify the other agencies/entities (Check all that apply)

- Emergency management
- Public safety (e.g., law enforcement, highway patrol)
- Transit operators
- Information service providers
- Commercial vehicle operators
- School districts
- Traffic management centers
- Maintenance crews
- Other (please specify): ________________________________

133. Does your agency RECEIVE road weather information from non-weather agencies/entities?

- No
- Yes

Please specify the other agencies/entities (Check all that apply)

- Emergency management
- Public safety (e.g., law enforcement, highway patrol)
- Transit operators
- Information service providers
- Commercial vehicle operators
- School districts
- Traffic management centers
- Maintenance crews
- Other (please specify): ________________________________
134. Does your agency provide road weather information to the traveling public?

No
Yes

Please specify the type of dissemination system(s) (Check all that apply)

- Roadside warning devices (e.g., DMS, HAR)
- In-vehicle devices
- Interactive kiosks
- Personal communication devices (e.g., PDAs, pagers)
- Dedicated television channel
- Fax
- E-mail
- Internet/web site. What is the URL?
- 511 Telephone system
- Telephone number other than 511.
  - What is/are the number(s)? ____________________________
  - Does the telephone system use interactive voice response technology?
    - Yes
    - No

Other dissemination system (please specify): ________________________________

Please specify the type of road weather information disseminated to the traveling public. (Check all that apply)

- Atmospheric observations (e.g., precipitation and air temperature from ESS)
- Route-specific pavement condition data (e.g., dry, wet, plowed, flooded)
- Video images of selected routes
- Weather-related travel restrictions (e.g., tire chain requirements, closed routes)
- General weather forecast data (e.g., National Weather Service warnings)
- Route-specific weather forecast data
- Other (please specify) : ________________________________

135. Is weather information provided in a format that can be integrated with existing GIS and overlaid on a road network?

Yes
No

136. Are any or all-weather data archived in a way that would permit their re-use in forensics or validation studies?

Yes

- How have archived weather data been used by your agency?
  ____________________________________________________________________________

No

______________________________________________________________________________
137. The U.S. DOT is interested in networking with evaluators of Intelligent Transportation Systems (ITS) nationwide. Is there a point of contact in your state for ITS evaluations?

Yes

Please provide the name, e-mail, and phone number


No

Don’t know

138. The U.S. DOT ITS JPO actively collects data on the benefits and costs of ITS implementations and makes this information available at the following URL: http://www.benefitcost.its.dot.gov/. Are you aware of any locally produced and funded evaluations that could be added to this national database?

Yes

Please provide a point of contact (name, phone number and e-mail) or reference (e.g., URL) for the evaluation report.


No

Don’t know

139. Is your agency willing to share COST information on ITS-related equipment and projects (i.e., capital and O&M cost, project component breakdown, and brief description)? This information will be used to update the ITS JPO sponsored ITS costs database.

Yes

Please provide name, phone number, and e-mail of the cost information contact if different from respondent. This person will be contacted for the cost information at a later date.


No

140. Is your agency willing to share BENEFITS information from ITS deployments? This information will be used to update the ITS JPO sponsored ITS benefits database.

Yes

Please provide name and phone number of the benefits information contact if different from respondent. This person will be contacted for the benefits information at a later date.


No