

2002 Statewide Intelligent Transportation System (ITS) Survey

Animal Warning System

1. **Animal Warning System Name:**

2. **Location(s) (e.g., route and mile point or description)**

3. **What is the current system status?**

Currently deployed

Planned

Planned deployment date: _____

4. **What is the road classification where this system is located?**

Freeway or other limited access highway

Other multi-lane highway (non-limited access)

2-lane highway

5. **What road technologies are used for roadside detection of animal presence?**

Radar detection of on-road objects

Video

Electric detection fence using microwave or infrared sensors

Radio transmitter collars for animals

Other

6. **What technologies are used to communicate with vehicles?**

Dynamic message sign

Highway advisory radio

In-vehicle

Flashing lights

Other

7. With what other systems or agencies does this system interface?

- Data archiving
- Public safety
 - State police
 - Local agencies
- Traffic management
- Incident management
- Traveler information / Information service providers
- Other states
- Other

Bicycle Warning Systems

8. Bicycle Warning System Name:

9. Location(s) (e.g., route and mile point or description)

10. What is the current system status?

- Currently deployed
- Planned
 - Planned deployment date: _____

11. What is the road classification where this system is located?

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

12. What is the situation where this system is located?

- Tunnel
- Road section with restricted visibility
- Other

13. What technologies are used for roadside detection of bicyclists?

- Manual (activated by bicyclist)
- Automatic (sensor detects bicyclist)
- Other

14. What technologies are used to communicate with vehicles?

- Dynamic message sign
- Highway advisory radio
- In-vehicle
- Flashing lights
- Other

15. With what other systems or functions does this system interface?

- Data archiving
- Public safety
 - State police
 - Local agencies
- Traffic management
- Incident management
- Traveler information / Information service providers
- Other states
- Other

Environmental Road Hazard Warning System

16. Environmental Road Hazard Warning System Name:

17. Location(s) (e.g., route and mile point or description)

18. What is the current system status?

- Currently deployed
- Planned
 - Planned deployment date

19. What is the road classification where this system is located?

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

20. What hazards are detected by this system?

Visibility

- Fog
- Snow
- Smoke
- Dust/Sand
- Wind
- Other

Road Conditions

- Ice on bridge
- Icy road
- Wet road
- Obstructions on road
- Flooding
- Other

21. What technologies/methods are used to detect hazardous conditions?

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

22. What information does this system collect about vehicles for use in assessing the need for a warning?

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

23. What technologies are used to communicate with vehicles?

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

24. Does the system warning include a variable speed limit?

Yes

No

25. What type of message is provided by this system?

Tailored information provided to specific vehicle

Generic warning message provided to all vehicles

26. With what other systems or agencies does this system interface?

Data archiving

Public safety

State police

Local agencies

Traffic management

Incident management

Traveler information / Information service providers

Other states

Other

Intersection Crossing Detection System

27. Intersection Crossing Detection System Name:

28. Location(s) (e.g., routes intersecting, route and mile point)

29. What is the current system status?

Currently deployed

Planned

Planned deployment date: _____

30. What is the road classification where this system is located?

Freeway or other limited access highway

Other multi-lane highway (non-limited access)

2-lane highway

31. Where are vehicle detection sensors located?

Sensors on all legs of an intersection

Sensors on the major road only

Other

32. What technologies are used to communicate with vehicles?

- Dynamic message sign
- Flashing lights
- In-vehicle
- Other

33. With what other systems or agencies does this system interface?

- Data archiving
- Public safety
 - State police
 - Local agencies
- Traffic management
- Incident management
- Traveler information / Information service providers
- Other states
- Other

Pedestrian Safety System

34. Pedestrian Safety System Name:

35. Location(s) (e.g., route and mile point or description)

36. What is the current system status?

- Currently deployed
- Planned
 - Planned deployment date

37. What is the road classification where this system is located?

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

38. What technologies are used to detect the presence of pedestrians and/or vehicles?

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

39. What technologies are used to communicate with pedestrians and/or vehicles?

- In-pavement lights illuminate crosswalk
- Illuminated crosswalk signs
- Dynamic message signs
- Flashing lights
- In-vehicle warning
- Other

40. What type of message is provided by this system?

- Alert to approaching vehicles to pedestrian presence
- Alert to pedestrian of approaching vehicle
- Other

41. With what other systems or agencies does this system interface (share data)?

- Data archiving
- Public safety
 - State police
 - Local agencies
- Traffic management
- Incident management
- Traveler information / Information service providers
- Other states
- Other

Rail-highway Crossing Safety System

42. Rail-highway Crossing Safety System Name:

43. Location(s) (e.g., route and mile point or description)

44. What is the current system status?

- Currently deployed
- Planned
 - Planned deployment date: _____

45. What is the road classification where this system is located?

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

46. What information is collected by this system?

- Train presence
- Train speed
- Detection of vehicle intrusion
- Detection of pedestrian intrusion
- Second train approaching
- Other

47. What technologies are used to communicate with vehicles?

- Dynamic message sign
- Highway advisory radio
- In-vehicle warning
 - Ambulance
 - Police vehicles
 - Transit
 - Other
- Flashing lights
- Other

48. With what other systems or agencies does this system interface?

- Data archiving
- Public safety
 - State police
 - Local agencies
- Traffic management
- Incident management
- Traveler information / Information service providers
- Other states
- Other

Road Geometry Warning System

49. Road Geometry Warning System Name:

50. Location(s) (e.g., route and mile point or description)

51. What is the current system status?

- Currently deployed
- Planned
 - Planned deployment date: _____

52. What is the road classification where this system is located?

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

53. What hazards are handled by this system?

- Truck roll over
 - Curve
 - Downhill
- All vehicles
 - Curve
 - Downhill
- Other

54. What information does this system collect about vehicles?

- Vehicle speed
- Vehicle classification
- Vehicle weight (weigh-in-motion)
- Vehicle height
- Other

55. What information does this system collect about environmental conditions to determine whether a warning is needed?

- Road surface condition
- Other

56. What technologies are used to communicate with vehicles?

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

57. What type of message is provided by this system?

- Generic warning message provided to all vehicles
- Tailored information provided to specific vehicle

58. With what other systems or agencies does this system interface?

- Data archiving
- Public safety
 - State police
 - Local agencies
- Traffic management
- Incident management
- Traveler information / Information service providers
- Other states
- Other

Automatic Anti-Icing Systems

59. Automatic Anti-Icing System Name:

60. Location(s) (e.g., route and mile point, longitude and latitude, bridge number, or description)

61. What is the current system status?

- Currently deployed
- Planned
 - Planned deployment date: _____

62. What is the road classification where this system is located?

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

63. Where is the anti-icing system located?

- Bridge
- Overpass
- Underpass
- Exit lane
- Other

64. What is the primary purpose for system installation?

- Evaluation
- Road curvature
- Road grade
- High accident history
- Other

65. What anti-icing methods are used by this system?

- Automatic sprayers
- Other

66. What information is collected by this system?

- Environmental conditions (air temperature, barometric pressure, humidity)
- Roadway surface temperature
- Roadway icing
- Roadway chemical concentration
- Other

67. What are the remote capabilities of this system?

- Automatically activated
 - When environmental conditions make icing likely
 - When ice detected on road surface
 - System automatically reports when activated
- System may be overridden or manually operated remotely
- Status can be queried remotely
- Other

Avalanche/Slide Management Systems

68. Avalanche/Slide Management System Name:

69. Location(s) (e.g., route and mile point or description)

70. What is the current system status?

- Currently deployed
- Planned
- Planned deployment date: _____

71. What is the road classification where this system is located?

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

72. What is the primary purpose for system installation?

- Evaluation
- Road curvature
- Road grade
- High accident history
- Other

73. What information is collected by this system?

- Avalanche/slide detection sensors
- Vehicle detection sensors on corridors prone to avalanches
- Other

74. 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

75. What methods are used to limit access to avalanche/slide area?

- Coupled gate to close road
- Other

76. With what other systems or agencies does this system interface (transmit notification of avalanche)?

- Data archiving
- Public safety
 - State police
 - Local agencies
- Traffic management
- Incident management
- State DOT
- Maintenance agencies
- Traveler information/Information service providers
- Other

Maintenance Fleet Management Systems

77. Maintenance Fleet Management System Name:

78. What is the current system status?

- Currently deployed
- Planned
 - Planned deployment date

79. What is the type of fleet?

- Snow removal
- Maintenance
- Other

80. What in-vehicle technologies are used to collect information?

- Automatic vehicle location (AVL)
- Road surface condition sensors
- Weather sensors
- Engine diagnostic sensors
- Lane position sensors (visual, road reference, or radio)
- Collision warning sensors
- Snowplow position (up/down) sensors
- Rate of chemical application sensors
- Inventory level of chemicals or sand on vehicle sensors
- Other

81. What 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

82. What are the vehicle dispatch and control capabilities of this system?

- Computer aided dispatch of maintenance vehicles
- Route optimization software to allow real-time modification of routes
- Automated reporting by systems of maintenance problems
- Automated environmental warnings (e.g., flood)
- Other

83. What information is shared through coordinated multi-agency reporting?

- Accidents
- Road conditions
- Weather conditions
- Other

84. Which services are coordinated through a multi-agency dispatch center?

- Emergency services
- Snow removal
- Maintenance activities
- Other

Work Zone Management Systems

85. Work Zone Management System Name:

86. What is the current system status?

Currently deployed

Planned

Planned deployment date: _____

87. What is the road classification where this system is located?

Freeway or other limited access highway

Other multi-lane highway (non-limited access)

2-lane highway

88. What type of traffic management center manages traffic for work zones?

Portable traffic management center

Permanent traffic management center

None

89. What types of sensors are deployed at work zones?

Queue length detectors

CCTV

Vehicle speed

Traffic volume

Travel time

Vehicle intrusion into work zone

Work team intrusion into roadway

Other

90. What technologies are used to communicate with vehicles?

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

Temporary speed limits

Temporary vehicle width, height, or width restrictions

Other

91. What automated maintenance systems are used?

- Remote controlled mowers
- Highway cone placement and retrieval vehicle
- Other

92. With other systems or agencies receive data on work zone status?

- Data archiving
- Public safety
 - State police
 - Local agencies
- Traffic management
- Incident management
- Traveler information/Information service providers
- Other states
- Other

Traveler Information System

93. Traveler Information System Name:

94. Description:

95. What is the current system status?

- Currently deployed
- Planned
 - Planned deployment date: _____

96. What information is disseminated by the system?

Roadway Information

- Road closure Detours
- Alternate routes
- Work zones/construction events
- Weather
- Road surface conditions
- Road restrictions
- Incidents
- Congestion
- 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

- Transit schedules
- Transit adherence to schedules
- Rail schedules
- Ferry schedules
- Other

97. What is the geographic coverage of the information provided?

- Regional. Describe
- Statewide
- Multi-state. States included: _____

98. What is the highway coverage of the information provided?

- Freeways
 - Description of freeways included: _____
- Multi-lane (not limited access)
- State routes
- Other

99. Who is the intended audience for the information provided?

- General Public
- Commuters (AM/PM rush hour)
- Law Enforcement
- Emergency Response
- Commercial Vehicles
- Other public agencies
- Other

100. What technologies are used to disseminate information and who is the Information Service Provider (e.g., Traveler Information Radio Network, Kansas DOT) for each technology?

Media Type	Used/Not Used	Information Service Provider
Highway advisory radio		
Automated telephone (non-511)		
Staffed telephone (non-511)		
Automated telephone (511)		
Staffed telephone (511)		
Cellular telephone		
Statewide conditions reporting system (i.e., HCRS, CARS, etc.)		
Dynamic message signs with information about services - static		
Dynamic message signs with information about services - mobile		
In-vehicle devices		
Email		
Personal digital assistants		
Internet - (URL: _____)		
Interactive kiosks		
Television Broadcast - Dedicated TV channel		
Television Broadcast - Media		
Fax		
Other		

101. Does the system include planned or operational 511 access?

There are no plans to implement 511 at this time

Yes

If yes, please answer the following questions about your 511 system

Status

Operational

Planned, Deployment date:

Coverage

Miles of freeway coverage:

Miles of non-freeway coverage:

Geographic coverage (all or part of state)?

Content

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:

Does the system incorporate a voice recognition?

Yes

No

Is the system multi-lingual?

Yes

Languages included: _____

No

Operating hours

24 hours

Other

102. What are the sources of data?

- Public safety (incident information)
 - State Police
 - Local agencies DOT
- DOT Traffic management
- Operations and maintenance
 - Work zones
 - Construction areas
- Incident management service patrols
- Private traveler information
 - Cellular phone calls
- Information service providers
- Information service providers, please name:
 - News Media
 - National Weather Service
 - Weather sensor data
 - Road surface condition detectors
 - Public transportation
 - Inductive loop detectors
 - CCTV
 - Microwave radar detectors
 - Other

103. Please provide the name of the hardware or software system that provides the following types of information for each of the media types listed.

Media Type	Information Types				
	Construction-Work Zones	Congestion	Special Events	Weather	Traveler - Tourist
Highway advisory radio					
Automated telephone (non-511)					
Staffed telephone (non-511)					
Automated telephone (511)					
Cellular telephone					
Dynamic message signs with information about services - static					
Dynamic message signs with information about services - mobile					
In-vehicle devices					
Email					
Personal digital assistants					
Internet					
Interactive kiosks					
Television Broadcast - Dedicated TV channel					
Television Broadcast - Media					
Fax					
Other					

104. Message Set System Name:

105. How are message sets developed?

Media Type	Data Dictionary	Local Policy	Ad-Hoc
Highway advisory radio			
Automated telephone (non-511)			
Staffed telephone (non-511)			
Automated telephone (511)			
Cellular telephone			
Dynamic message signs with information about services - static			
Dynamic message signs with information about services - mobile			
In-vehicle devices			
Email			
Personal digital assistants			
Internet			
Interactive kiosks			
Television Broadcast - Dedicated TV channel			
Television Broadcast - Media			
Fax			
Other			

106. What is the process for selecting message sets for dissemination? (1=Manual;2=Semi-Automatic;3=Fully Automated;4=None)

- Highway advisory radio
- Automated telephone (non-511)
- Staffed telephone (non-511)
- Automated telephone (511)
- Cellular telephone
- Dynamic message signs with information about services - static
- Dynamic message signs with information about services - mobile
- In-vehicle devices
- Email
- Personal digital assistants
- Internet
- Interactive kiosks
- Television Broadcast - Dedicated TV channel
- Television Broadcast - Media
- Fax
- Other

107. How are message sets approved for dissemination?

Media Type	Supervisor Approved		Operator Approved			Automated selection No Approval Required
	All Messages	Manually Generated Messages	All Messages	Manually Generated Messages	Pre-programmed Messages	
Highway advisory radio						
Automated telephone (non-511)						
Staffed telephone (non-511)						
Automated telephone (511)						
Cellular telephone						
Dynamic message signs with information about services - static						
Dynamic message signs with information about services - mobile						
In-vehicle devices						
Email						
Personal digital assistants						
Internet						
Interactive kiosks						
Television Broadcast - Dedicated TV channel						
Television Broadcast - Media						
Fax						
Other						

Surface Transportation Weather System

108. Surface Transportation Weather System Name:

109. What is the current system status?

Currently deployed

Planned

Planned deployment date: _____

110. What statewide systems provide data?

State DOT environmental sensor stations

Agricultural monitoring networks

Air pollution sensing stations

Airport monitoring stations

Environmental sensor stations

Probe vehicles

Instrumented maintenance vehicles

Dedicated vehicles (e.g., snow monitors)

Other

111. What national sources of data are used?

- National Weather Service
- Department of Defense
- Federal Aviation Administration
- Other

112. With what other states do you coordinate to gather data?

113. How many environmental sensor stations (RWIS sites) have been deployed?

114. Is a map available with statewide environmental sensor station deployment information?

- Yes
Please provide reference where it can be obtained.
- No

115. What are the data collection capabilities of the environmental sensor stations?

- Air temperature
- Wind direction and speed
- Precipitation
- Cloud coverage
- Pavement dew point
- Pavement freezing point
- Pavement snow depth
- Pavement surface temperature
- Pavement subsurface temperature
- Pavement condition (wet, dry, freezing, frozen)
- Pavement chemical concentration
- Flooding
- Other

116. What is the coverage of environmental sensor stations?

- Total freeway miles: _____
- Total non-freeway miles: _____

117. Do you have any road sections specially designated as impacted by weather hazards?

No

Yes

What type of weather hazard is involved?

Snow

Sand or Dust

High winds

Other

Total miles of defined sections

Route and mile point start and finish

Miles of these sections covered by weather sensors

Route and mile point start and finish

118. Do you have dedicated weather information dissemination systems (as opposed to providing weather information to a general traveler information system)?

Highway advisory radio

Automated telephone (non-511)

Staffed telephone (non-511)

Dynamic message signs

Email

Personal communication devices

HAR

Internet

URL: _____

Kiosks

Dedicated TV channel

Fax

Other

119. What services or agencies are provided with tailored weather products?

Traffic management centers

Traveler information systems

Public safety

Maintenance crews

Highway patrol

Transit operators

Commercial vehicle operators

School management

Other