2007 Statewide Intelligent Transportation System (ITS) Survey

Crash Prevention and Safety

Road Geometry Warning Systems

1. **Does your state deploy any Road Geometry Warning Systems using roadside detectors and electronic warning systems to warn drivers of potentially dangerous speeds?**

    Yes

    > Where are the systems located? (Check all that apply)
    > Freeway ramps
    > Curves on highways
    > Downhill grades
    > Other locations (please specify):_____

    No

2. **Does your state deploy automated Over height/Over width warning systems that use roadside detectors and electronic warning signs to warn drivers of vehicles that are too tall or wide to pass under bridges or through tunnels?**

    Yes
    No

Highway-Rail Crossing Systems

3. **Does your state deploy sensors to detect and warn vehicles of approaching trains at highway rail crossings?**

    Yes
    No

4. **Does your state deploy automated enforcement systems to detect drivers violating railroad crossing traffic controls?**

    Yes
    No

Other Safety Systems

5. **Does your state deploy Intersection Collision Warning Systems using sensors to monitor traffic approaching dangerous intersections and warn vehicles of approaching cross traffic?**

    Yes
    No

6. **Does your state deploy Pedestrian Safety Systems to protect pedestrians by alerting drivers as pedestrians enter crosswalks?**

    Yes

    No

7. **Does your state deploy Bicycle Warning Systems that use detectors and electronic warning signs to identify bicycle traffic and notify drivers when a cyclist is in an upcoming segment of roadway to improve safety on narrow bridges and tunnels?**

    Yes

    No

8. **Does your state deploy Animal Warning Systems to detect large animals approaching the roadway, and provide warnings to travelers?**

    Yes

    No

Integration

9. **Do any of your crash prevention 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

    Tourism boards

    Other states

    Other (please specify):_____

    No

Roadway Operations and Maintenance

Asset Management

10. **Does your state employ ITS technologies (e.g., fleet tracking applications such as automated vehicle location and computer aided dispatch systems, as well as handheld computers supporting data entry and reporting from the field) to manage maintenance vehicles?**

    Yes

    No

11. **Does your state employ sensors or automated data collection systems (e.g., weigh-in-motion, traffic volumes, pavement condition, bridge condition, etc.) to monitor the condition of highway infrastructure?**
    Yes
    No

Work Zone Management

12. **Which of the following technologies does your state use to inform travelers about work zones? (Check all that apply)**
    Portable dynamic message signs (DMS)
    Highway advisory radio (HAR)
    Internet web site
    None of these technologies

13. **Does your state deploy ITS technologies, either as stand-alone implementations or to supplement existing systems, to support temporary traffic management at work zones?**
    Yes
    No

14. **Does your state deploy temporary Incident Management Systems to facilitate the safe clearance of incidents that occur near work zones?**
    Yes
    No

15. **Does your state deploy ITS technologies (e.g., lane control signs, portable dynamic message signs, dynamic lane merge systems, or other applications) to notify travelers of lane configuration changes approaching work zones?**
    Yes
    No

16. **Does your state implement variable speed limits within work zones?**
    Yes
    No

17. **Does your state employ automated enforcement systems to enforce speed limits at work zones?**
    Yes
    No

18. **Does your state deploy automated intrusion detection and warning systems to alert highway workers and drivers when vehicles or construction equipment enter sensitive sections of the work area within work zones?**
    Yes
    No

19. **Does your state use ITS technologies to manage traffic along detour routes during full road?**
    Yes
    No

20. **Does your state communicate information (e.g., status, specific warnings) concerning work zones in real-time to any of the following agencies/systems?**
    Yes.
        Check all that apply:
        Data archiving
        Public safety
            State police
            Local agencies
        Traffic management
        Incident management
        Traveler information
        Information service providers
        Tourism boards
        Other states
        Other (please specify):_____
    No

Traveler Information

Information Dissemination

21. **Which of the following technologies does your state use to distribute pre-trip traveler information? (Check all that apply) Internet or wireless systems**
        511
        Other (non-511) telephone systems
        TV/Radio
        Kiosks

22. **Which of the following technologies does your state use to distribute en-route traveler information? (Check all that apply)**
        Wireless systems
        511
        Other (non-511) telephone systems
        Radio
        In-vehicle systems

Tourism and Events

23. **Does your state deploy tourism information traveler systems that focus on the needs (i.e., electronic yellow pages, incorporating lodging reservations systems and directions to points of interest) of travelers in areas unfamiliar to them?**
        Yes
        No

24. **Does your state deploy parking management systems that provide availability status and directional guidance posted on dynamic message signs at major tourism destinations?**
    Yes
    No

25. **Does your state deploy electronic payment systems, using technologies such as magnetic stripe cards or smart cards, to facilitate traveler's payment for travel and other services at tourist destinations?**
    Yes
    No

Statewide Web Site

26. **Has your state deployed a Web Site that distributes traveler information?**
    Yes.
        Please provide the web address (URL):_____
    No

27. **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 (please specify):_____

    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 (please specify):_____

Public Transportation Information:
    Transit schedules
    Transit adherence to schedules
    Rail schedules
    Ferry schedules
    Other (please specify):_____

Other Information:
    Air quality alerts
    AMBER (child abduction)
    Safety campaign messages
    Other (please specify):_____

28. **What is the geographic coverage of the information provided?**
    Regional
        Describe coverage:_____
    Statewide
    Multi-state
        States included:_____

29. **What is the highway coverage of the information provided?**
    Freeways
    Multi-lane (not limited access)
    State routes
    Other (please specify): _____

Weather

General Information

30. **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
    Other (please specify):_____

31. **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
Other (please specify):_____

32. **What environmental data are collected by your agency to support operational decisions? (Check all that apply) Air temperature**

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)
Pavement water levels
Other
Other (please specify):_____

Environmental Sensor Stations

33. **Does your state deploy in-pavement or road surface sensors to track pavement conditions?**

Yes
No

34. **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

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

        No perceived need

        Cost

        Use other source(s)

        No barriers

        Other

        Other (please specify):_____

    Yes

35. **How many ESS are in the RWIS?**

_____

36. **Is a map with ESS deployment data available?**

    No

    Yes

        Where can the map be obtained?

        _____

37. **What 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

    Other

    Other (please specify):_____

38. **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

    Other (please specify):_____

    Do not share ESS observational data

39. **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

    Other (please specify):_____

40. During what periods are your ESS operational? (Check all that apply)

Year-round
Winter
Spring
Summer
Fall
Other
Other (please specify):_____

Other Sources of Weather Information

41. If not including ESS, which of the following SYSTEMS, if any, does your agency use to gather road weather information?

Agricultural monitoring networks
Air quality sensing stations
Airport monitoring stations (e.g., ASOS stations, AWOS stations)
Closed Circuit Television (CCTV) cameras
State-owned mesoscale environmental monitoring network (mesonet)
Other mesonet (e.g., university):
Other mesonet (please specify):_____
Other monitoring system:
Other monitoring system (please specify):_____
Mobile environmental sensors

If using mobile weather sensors, on which of the following types of vehicles are the sensors located? (Check all that apply)
    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
    Other (please specify): :_____

Do not gather road weather information

42. **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 (please specify):_____

        Are weather products tailored to your operational requirements? (e.g., route-specific)
        - Yes
        - No

    - Other
    - Other (please specify):_____
    - Do not gather road weather information

43. **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
        - Other (please specify):_____

Integration, Dissemination, and Archiving

44. **Do you coordinate data gathering with other states?**
    - Yes

        Please list them:_____

        _____

    - No

45. **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.)
Other
Other (please specify):_____

46. **Please indicate with which of the following agencies/systems your state communicates weather warnings or forecasts in real-time. (Check all that apply)**

Agencies/Systems	Warnings	Forecasts
Data archiving		
Public safety		
State police		
Local agencies		
Traffic management		
Incident management		
Traveler information		
Information service providers		
Tourism boards		
Other states		
Do not communicate in real-time		
Other (please specify):		

47. **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)
Dynamic Message Signs (DMS)
Highway Advisory Radio (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?
No
Yes
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
Other (please specify):_____

48. **Is weather information provided in a format that can be integrated with existing GIS and overlaid on a road network?**
    Yes
    No

49. **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

Traffic Control

50. **Does your state employ variable speed limits in response to weather conditions?**
    Yes
    No

51. **Does your state change traffic signal timing in response to weather?**
    Yes
    No

52. **Does your state deploy ITS technologies to manage traffic diversions in response to road closures due to weather events?**
    Yes
    No

53. **Does your state employ ITS sensors and information dissemination technologies to determine the need to implement temporary restrictions on vehicles during inclement weather conditions (e.g., road closures to high-profile vehicles during periods of high winds, snow tire/chain requirements during winter weather)?**

    Yes

    No

Response and Treatment

54. **Does your state deploy automatic bridge anti-icing systems?**

    Yes

    No

55. **Does your state deploy snowplows with AVL, communications and sensors to monitor treatment?**

    Yes

    No