

APPENDIX-B

FUNCTIONAL REQUIREMENTS

Functional Requirements

ND Statewide (Region)

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Architecture	Status
ND Statewide (Region)	(Region)
<i>Element:NDDOT ATR</i>	
<i>Entity:Roadway Subsystem</i>	
<i>Functional Area: Roadway Basic Surveillance</i>	
Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	
<i>Requirement:</i>	Existing
1 The field element shall collect, process, digitize, and send traffic sensor data (speed, volume, and occupancy) to the center for further analysis and storage, under center control.	
<i>Functional Area: Roadway Data Collection</i>	
Field elements to collect traffic, road, and environmental conditions information for use in transportation planning, research, and other off-line applications. Includes the sensors, supporting roadside infrastructure, and communications equipment.	
<i>Requirement:</i>	Existing
4 [User Defined] The field element shall collect traffic information.	
<i>Element:NDDOT Automated Treatment Systems</i>	
<i>Entity:Roadway Subsystem</i>	
<i>Functional Area: Roadway Equipment Coordination</i>	
Field elements that control and send data to other field elements (such as environmental sensors that send data to a DMS or coordination between traffic controllers on adjacent intersections), without center control.	
<i>Requirement:</i>	Existing
4 The field element shall include devices (such as arterial or freeway controllers, roadway automated treatment systems, barrier and safeguard systems, emissions or pollution systems, and work zone intrusion alert systems) that receive control information from other field element devices, without center control.	
<i>Functional Area: Roadway Automated Treatment</i>	
Field elements that activate automated roadway treatment systems (to disperse anti-icing chemicals, etc.) based on environmental or atmospheric conditions, or under center control.	
<i>Requirement:</i>	Existing
1 The field element shall activate automated roadway treatment systems based on environmental or atmospheric conditions. Treatments can be in the form of fog dispersion, anti-icing chemicals, etc.	
<i>Requirement:</i>	Existing
2 The field element shall activate automated roadway treatment systems under center control. Treatments can be in the form of fog dispersion, anti-icing chemicals, etc.	
<i>Requirement:</i>	Existing
3 The field element shall return automated roadway treatment system and associated environmental sensor operational status to the maintenance center.	
<i>Requirement:</i>	Existing
4 The field element shall return automated roadway treatment system and associated environmental sensor fault data to the maintenance center for repair.	
<i>Element:NDDOT Cameras</i>	
<i>Entity:Roadway Subsystem</i>	

Architecture	Status
ND Statewide (Region)	(Region)
<i>Element:</i> NDDOT Cameras	
<i>Entity:</i> Roadway Subsystem	
<i>Functional Area:</i> Roadway Basic Surveillance Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	
<i>Requirement:</i>	Planned
2	The field element shall collect, process, and send traffic images to the center for further analysis and distribution.
<i>Element:</i> NDDOT District Offices	
<i>Entity:</i> Maintenance and Construction Management	
<i>Functional Area:</i> MCM Winter Maintenance Management Manages winter road maintenance, tracking and controlling snow plow operations, roadway treatment (e.g., salt spraying and other material applications) based on weather information.	
<i>Requirement:</i>	Existing
1	The center shall respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other winter roadway maintenance.
<i>Requirement:</i>	Existing
7	The center shall dispatch and route winter maintenance vehicle drivers and support them with route- specific environmental, incident, advisory, threat, alert, and traffic congestion information.
<i>Requirement:</i>	Existing
8	The center shall determine the need for roadway treatment based on current and forecasted weather information, current usage of treatments and materials, available resources, requests for action from other agencies, and recommendations from the Maintenance Decision Support system, specifically under winter conditions. This supports winter maintenance such as plowing, treating, anti-icing, etc.
<i>Requirement:</i>	Existing
9	The center shall provide dispatch instructions for vehicle operators based on input parameters from center personnel, specifically for winter conditions. This could include a treatment route, treatment application rates, start and end times, and other treatment instructions.
<i>Functional Area:</i> MCM Work Zone Management Remotely monitors and supports work zone activities, controlling traffic through portable dynamic message signs (DMS) and informing other groups of activity (e.g., traveler information systems, traffic management centers, other maintenance and construction centers).	
<i>Requirement:</i>	Existing
2	The center shall control the collection of work zone status information including video images from cameras located in or near the work zone.
<i>Requirement:</i>	Existing
3	The center shall disseminate work zone information to other agencies and centers including traffic, transit, emergency management centers, other maintenance centers, traveler information providers, and the media.
<i>Requirement:</i>	Existing
4	The center shall control traffic in work zones by providing remote control of dynamic message signs and highway advisory radio systems located in or near the work zone.
<i>Functional Area:</i> MCM Work Activity Coordination	

Architecture	Status
ND Statewide (Region)	(Region)
<i>Element:</i> NDDOT District Offices	
<i>Entity:</i> Maintenance and Construction Management	
<i>Functional Area:</i> MCM Work Activity Coordination Disseminates work activity schedules to other agencies. Work schedules are coordinated, factoring in the needs and activities of other agencies and adjacent jurisdictions.	
<i>Requirement:</i>	Existing
1 The center shall provide work zone activities affecting the road network including the nature of the maintenance or construction activity, location, impact to the roadway, expected time(s) and duration of impact, anticipated delays, alternate routes, and suggested speed limits. This information may be augmented with images that provide a visual indication of current work zone status and traffic impacts.	
<i>Requirement:</i>	Existing
4 The center shall collect and disseminate asset restriction information levied on transportation asset usage based on infrastructure design, surveys, tests, or analyses. This includes standard facility design height, width, and weight restrictions, special restrictions such as spring weight restrictions, and temporary facility restrictions that are imposed during maintenance and construction.	
<i>Requirement:</i>	Existing
5 The center shall exchange information with administrative systems to support the planning and scheduling of maintenance and construction activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.	
<i>Element:</i> NDDOT DMS	
<i>Entity:</i> Roadway Subsystem	
<i>Functional Area:</i> Roadway Traffic Information Dissemination Driver information systems, such as dynamic message signs and Highway Advisory Radio (HAR).	
<i>Requirement:</i>	Planned
1 The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display(s) (e.g. vehicle restrictions, or lane open/close).	
<i>Requirement:</i>	Planned
2 The field element shall include driver information systems that communicate directly from a center to the vehicle radio (such as Highway Advisory Radios) for dissemination of traffic and other information to drivers, under center control.	
<i>Functional Area:</i> Roadway Work Zone Traffic Control Field elements in a work zone that manage traffic conditions using CCTV cameras and driver information systems (such as DMS) to provide information directly to drivers affected by the work zone activity.	
<i>Requirement:</i>	Existing
2 Under traffic and maintenance center control, the field element shall include driver information systems (such as dynamic messages signs and highway advisory radios) that advise drivers of activity around the work zone through which they are currently passing.	

Architecture	Status
ND Statewide (Region)	(Region)
<i>Element:</i> NDDOT IRIS	
<i>Entity:</i> Information Service Provider	
<i>Functional Area:</i> Basic Information Broadcast Collection, processing, storage, and broadcast dissemination of traffic, transit, maintenance and construction, event, and weather information to traveler interface systems and vehicles.	
<i>Requirement:</i>	Planned
11 [User Defined] The center shall collect, process, store, and disseminate traffic and highway condition information to travelers, including incident information, detours and road closures, and emergency alerts	
<i>Functional Area:</i> Traveler Telephone Information Collection and distribution of traveler information and wide-area alerts to traveler telephone information systems such as 511, based on voice-based traveler requests.	
<i>Requirement:</i>	Existing
1 The center shall provide the capability to process voice-formatted requests for traveler information from a traveler telephone information system, and return the information in the requested format.	
<i>Requirement:</i>	Existing
5 The center shall collect and provide work zone and roadway maintenance information in the requested voice format and for the requested location.	
<i>Requirement:</i>	Existing
6 The center shall collect and provide roadway environment conditions information in the requested voice format and for the requested location.	
<i>Requirement:</i>	Existing
7 The center shall collect and provide weather and event information in the requested voice format and for the requested location.	
<i>Requirement:</i>	Existing
12 The center shall receive and forward region-specific wide-area alert and advisory information to the traveler telephone information system, including major emergencies such as a natural or man-made disaster, civil emergency, child abductions, severe weather watches and warnings, military activities, and law enforcement warnings.	
<i>Element:</i> NDDOT Maintenance Office	
<i>Entity:</i> Maintenance and Construction Management	
<i>Functional Area:</i> MCM Vehicle Tracking Remotely tracks the location of maintenance and construction vehicles and other equipment; presented to the center personnel.	
<i>Requirement:</i>	Planned
1 The center shall monitor the locations of all maintenance and construction vehicles and other equipment under its jurisdiction.	
<i>Requirement:</i>	Planned
2 The center shall present location data to center personnel for the fleet of maintenance and construction vehicles and other equipment.	
<i>Functional Area:</i> MCM Environmental Information Collection Remotely controls environmental sensors and assimilates collected data with other current and forecast road conditions and surface weather information from weather service providers and transportation operations.	
<i>Requirement:</i>	Planned
1 The center shall remotely control environmental sensors that measure road surface temperature, moisture, icing, salinity, and other measures.	

Architecture	Status
ND Statewide (Region)	(Region)
<i>Element:</i> NDDOT Maintenance Office	
<i>Entity:</i> Maintenance and Construction Management	
<i>Functional Area:</i> MCM Environmental Information Collection Remotely controls environmental sensors and assimilates collected data with other current and forecast road conditions and surface weather information from weather service providers and transportation operations.	
<i>Requirement:</i>	Planned
2 The center shall remotely control environmental sensors that measure weather conditions including temperature, wind, humidity, precipitation, and visibility.	
<i>Requirement:</i>	Existing
4 The center shall assimilate current and forecast road conditions and surface weather information using a combination of weather service provider information (such as the National Weather Service and value-added sector specific meteorological services), data from traffic, emergency, and transit management, traveler information providers, and environmental data collected from sensors deployed on and about the roadway as well as the fleet of maintenance and construction vehicles.	
<i>Requirement:</i>	Planned
7 The center shall collect operational status for the roadside and vehicle-based environmental sensor equipment.	
<i>Functional Area:</i> MCM Automated Treatment System Control Remotely controls automated roadway treatment systems (to disperse anti-icing chemicals, etc.) directly, or via control of the environmental sensors that activate the treatment systems automatically in the field.	
<i>Requirement:</i>	Existing
1 The center shall remotely control automated roadway treatment systems. Treatments can be in the form of fog dispersion, anti-icing chemicals, etc.	
<i>Requirement:</i>	Existing
2 The center shall remotely control the environmental sensors that upon detecting changes in environmental or atmospheric conditions, automatically activate roadway treatment systems.	
<i>Requirement:</i>	Existing
3 The center shall collect automated roadway treatment system and associated environmental sensor operational status.	
<i>Requirement:</i>	Existing
4 The center shall collect automated roadway treatment system and associated environmental sensor fault data and request repair.	
<i>Requirement:</i>	Existing
5 The center shall accept requests for automated roadway treatment system activation from center personnel.	
<i>Functional Area:</i> MCM Incident Management Supports coordinated response to incidents - share incident notifications, manage incident response resources, and coordinate overall incident situation and response among allied response organizations.	
<i>Requirement:</i>	Existing
1 The center shall receive inputs from the Alerting and Advisory System concerning the possibility or occurrence of severe weather, terrorist activity, or other major emergency, including information provided by the Emergency Alert System.	
<i>Requirement:</i>	Existing
4 The center shall coordinate planning for incidents with emergency management centers - including pre-planning activities for disaster response, evacuation, and recovery operations.	

Architecture	Status
ND Statewide (Region)	(Region)
<i>Element:</i> NDDOT Maintenance Office	
<i>Entity:</i> Maintenance and Construction Management	
<i>Functional Area:</i> MCM Incident Management	
Supports coordinated response to incidents - share incident notifications, manage incident response resources, and coordinate overall incident situation and response among allied response organizations.	
<i>Requirement:</i>	Existing
5 The center shall respond to requests from emergency management to provide maintenance and construction resources to implement response plans, assist in clean up, verify an incident, etc. This may also involve coordination with traffic management centers and other maintenance centers.	
<i>Requirement:</i>	Existing
6 The center shall exchange road network status assessment information with emergency management and traffic management centers including an assessment of damage sustained by the road network including location and extent of the damage, estimate of remaining capacity, required closures, alternate routes, necessary restrictions, and time frame for repair and recovery.	
<i>Requirement:</i>	Existing
7 The center shall provide work zone activities affecting the road network including the nature of the maintenance or construction activity, location, impact to the roadway, expected time(s) and duration of impact, anticipated delays, alternate routes, and suggested speed limits. This information may be augmented with images that provide a visual indication of current work zone status and traffic impacts.	
<i>Requirement:</i>	Existing
8 The center shall receive information indicating the damage sustained by transportation assets, derived from aerial surveillance, field reports, inspections, tests, and analyses to support incident management.	
<i>Functional Area:</i> MCM Winter Maintenance Management	
Manages winter road maintenance, tracking and controlling snow plow operations, roadway treatment (e.g., salt spraying and other material applications) based on weather information.	
<i>Requirement:</i>	Existing
1 The center shall respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other winter roadway maintenance.	
<i>Requirement:</i>	Existing
6 The center shall collect current and forecast traffic and weather information from traffic management centers and weather service providers (such as the National Weather Service and value-added sector specific meteorological services).	
<i>Requirement:</i>	Existing
11 The center shall assess the current status of all winter maintenance activities, including actual work activities performed, current locations and operational conditions of vehicles, materials and equipment inventories, field equipment status, environmental information, etc.	
<i>Functional Area:</i> MCM Work Zone Management	
Remotely monitors and supports work zone activities, controlling traffic through portable dynamic message signs (DMS) and informing other groups of activity (e.g., traveler information systems, traffic management centers, other maintenance and construction centers).	

Architecture	Status
ND Statewide (Region)	(Region)
<i>Element:</i> NDDOT Maintenance Office	
<i>Entity:</i> Maintenance and Construction Management	
<i>Functional Area:</i> MCM Work Zone Management Remotely monitors and supports work zone activities, controlling traffic through portable dynamic message signs (DMS) and informing other groups of activity (e.g., traveler information systems, traffic management centers, other maintenance and construction centers).	
<i>Requirement:</i>	Existing
1 The center shall generate new work zone activity schedules for use by maintenance and construction vehicles, maintenance and construction operators, and for information coordination purposes.	
<i>Requirement:</i>	Existing
5 The center shall exchange information with administrative systems to support the planning and scheduling of work zone activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.	
<i>Element:</i> NDDOT Maintenance Vehicles	
<i>Entity:</i> Maintenance and Construction Vehicle	
<i>Functional Area:</i> MCV Vehicle Location Tracking On-board systems to track vehicle location and reports the position and timestamp information to the dispatch center.	
<i>Requirement:</i>	Planned
1 The maintenance and construction vehicle shall compute the location of the vehicle based on inputs from a vehicle location determination function.	
<i>Requirement:</i>	Planned
2 The maintenance and construction vehicle shall send the timestamped vehicle location to the controlling center.	
<i>Functional Area:</i> MCV Environmental Monitoring On-board systems that collect environmental and road condition data (including road surface or air temperature, wind speed, and road traction information - spatially located and time stamped) from sensors on-board the maintenance vehicle or located at the roadway.	
<i>Requirement:</i>	Planned
1 The maintenance and construction vehicle shall collect environmental data from on-board sensors, including air temperature, wind speed, surface temperature, traction conditions, etc.	
<i>Requirement:</i>	Planned
2 The maintenance and construction vehicle shall transmit environmental sensor data to the center. The sensor data includes location and timestamp information.	
<i>Functional Area:</i> MCV Winter Maintenance On-board systems that support snow plow operations and other roadway treatments (e.g., salt spraying and other material applications). Supports platooning of snow plows.	
<i>Requirement:</i>	Planned
1 The maintenance and construction vehicle shall track the location and status of safety systems on-board the vehicle.	

Architecture	Status
ND Statewide (Region)	(Region)
<i>Element:</i> NDDOT Maintenance Vehicles	
<i>Entity:</i> Maintenance and Construction Vehicle	
<i>Functional Area:</i> MCV Winter Maintenance On-board systems that support snow plow operations and other roadway treatments (e.g., salt spraying and other material applications). Supports platooning of snow plows.	
<i>Requirement:</i>	Planned
5 The maintenance and construction vehicle shall send operational data to the center including the operational state of the maintenance equipment (e.g., blade up/down, spreader pattern), types and quantities of materials used for construction and maintenance activities, and a record of the actual work performed.	
<i>Element:</i> NDDOT Speed Monitoring System	
<i>Entity:</i> Roadway Subsystem	
<i>Functional Area:</i> Roadway Speed Monitoring Vehicle speed sensors that detect excessive vehicle speeds, informing drivers, centers and/or enforcement agencies of speed violations.	
<i>Requirement:</i>	Planned
1 The field element shall include sensors to detect vehicle speeds, under traffic or maintenance center control.	
<i>Requirement:</i>	Planned
3 If the speed detected by vehicle speed sensors is determined to be excessive, the field element shall provide a safe speed advisory to passing drivers via a driver information system (such as portable messages signs, etc.).	
<i>Element:</i> NDDOT Traffic Collection	
<i>Entity:</i> Archived Data Management Subsystem	
<i>Functional Area:</i> ITS Data Repository Collect and maintain data and data catalogs from one or more data sources. May include quality checks, error notification, and archive coordination.	
<i>Requirement:</i>	Existing
13 [User Defined] The center shall collect traffic data to be archived from WIM and ATR systems	
<i>Element:</i> NDDOT WIM	
<i>Entity:</i> Roadway Subsystem	
<i>Functional Area:</i> Roadway Basic Surveillance Field elements that monitor traffic conditions using loop detectors and CCTV cameras.	
<i>Requirement:</i>	Existing
1 The field element shall collect, process, digitize, and send traffic sensor data (speed, volume, and occupancy) to the center for further analysis and storage, under center control.	
<i>Functional Area:</i> Roadway Data Collection Field elements to collect traffic, road, and environmental conditions information for use in transportation planning, research, and other off-line applications. Includes the sensors, supporting roadside infrastructure, and communications equipment.	
<i>Requirement:</i>	Existing
5 [User Defined] The field element shall collect traffic and vehicle weight information	
<i>Element:</i> SOC	
<i>Entity:</i> Emergency Management	
<i>Functional Area:</i> Emergency Response Management	

Architecture	Status
ND Statewide (Region)	(Region)
<i>Element: SOC</i>	
<i>Entity: Emergency Management</i>	
<i>Functional Area: Emergency Response Management</i>	
Strategic emergency planning and response capabilities and broad inter-agency interfaces to support large-scale incidents and disasters, commonly associated with Emergency Operations Centers.	
<i>Requirement:</i>	Existing
1 The center shall provide strategic emergency response capabilities such as that of an Emergency Operations Center for large-scale incidents and disasters.	
<i>Requirement:</i>	Existing
2 The center shall manage coordinated inter-agency responses to and recovery from large-scale emergencies. Such agencies include traffic management, transit, maintenance and construction management, rail operations, and other emergency management agencies.	
<i>Requirement:</i>	Existing
3 The center shall provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.	
<i>Requirement:</i>	Existing
4 The center shall develop, coordinate with other agencies, and store emergency response plans.	
<i>Requirement:</i>	Existing
6 The center shall allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.	
<i>Requirement:</i>	Existing
10 The center shall provide the capability to request transit resource availability from transit centers for use during disaster and evacuation operations.	
<i>Requirement:</i>	Existing
12 The center shall provide information to the media concerning the status of an emergency response.	
<i>Requirement:</i>	Existing
15 [User Defined] The center shall track the availability of resources (including vehicles, roadway cleanup, etc.), request additional resources from traffic, maintenance, or other emergency centers if needed.	
<i>Functional Area: Incident Command</i>	
Tactical decision support, resource coordination, and communications integration among emergency management agencies for Incident Commands that are established by first responders to support local management of an incident.	
<i>Requirement:</i>	Existing
1 The center shall provide tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders to support local management of an incident.	
<i>Requirement:</i>	Planned
3 The center shall track and maintain resource information and action plans pertaining to the incident command.	
<i>Requirement:</i>	Planned
5 The center shall assess the status of responding emergency vehicles as part of an incident command.	
<i>Functional Area: Emergency Evacuation Support</i>	
Evacuation planning and coordination to manage evacuation and reentry of a population in the vicinity of a disaster or other emergency that poses a risk to public safety.	

Architecture	Status
ND Statewide (Region)	(Region)
<i>Element: SOC</i>	
<i>Entity: Emergency Management</i>	
<i>Functional Area: Emergency Evacuation Support</i>	
Evacuation planning and coordination to manage evacuation and reentry of a population in the vicinity of a disaster or other emergency that poses a risk to public safety.	
<i>Requirement:</i>	Existing
1 The center shall manage inter-agency coordination of evacuation operations, from initial planning through the evacuation process and reentry.	
<i>Requirement:</i>	Existing
2 The center shall develop and exchange evacuation plans with allied agencies prior to the occurrence of a disaster.	
<i>Requirement:</i>	Existing
4 The center shall coordinate evacuation destinations and shelter needs with shelter providers (e.g., the American Red Cross) in the region.	
<i>Requirement:</i>	Existing
5 The center shall provide evacuation information to traffic, transit, maintenance and construction, rail operations, and other emergency management centers as needed.	
<i>Requirement:</i>	Existing
6 The center shall request resources from transit agencies as needed to support the evacuation.	
<i>Requirement:</i>	Existing
8 The center shall provide traveler information systems with evacuation guidance including basic information to assist potential evacuees in determining whether evacuation is necessary and when it is safe to return.	
<i>Element: State Radio</i>	
<i>Entity: Emergency Management</i>	
<i>Functional Area: Emergency Call-Taking</i>	
Provides interface to the emergency call-taking systems such as the Emergency Telecommunications System (e.g., 911) that correlate call information with emergencies reported by transit agencies, commercial vehicle operators, or other public safety agencies. Allows the operator to verify the incident and forward the information to the responding agencies.	
<i>Requirement:</i>	Existing
1 The center shall support the interface to the Emergency Telecommunications System (e.g. 911 or 7-digit call routing) to receive emergency notification information and provide it to the emergency system operator.	
<i>Requirement:</i>	Existing
2 The center shall receive emergency call information from 911 services and present the possible incident information to the emergency system operator.	
<i>Requirement:</i>	Existing
5 The center shall receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.	
<i>Requirement:</i>	Existing
11 The center shall update the incident information log once the emergency system operator has verified the incident.	
<i>Requirement:</i>	Existing
13 The center shall forward the verified emergency information to the responding agency based on the location and nature of the emergency.	
<i>Functional Area: Emergency Dispatch</i>	

Architecture	Status
ND Statewide (Region)	(Region)
<i>Element:State Radio</i>	
<i>Entity:Emergency Management</i>	
<i>Functional Area: Emergency Dispatch</i>	
Dispatch emergency vehicles to incidents, tracking their location and status. Pertinent incident information is gathered and relayed to the responding units; includes requests for signal preemption.	
<i>Requirement:</i>	3 The center shall relay location and incident details to the responding vehicles. Existing
<i>Requirement:</i>	7 The center shall store and maintain the emergency service responses in an action log. Existing
<i>Requirement:</i>	9 The center shall receive traffic information, including closures, traffic conditions, etc. from traffic management centers. Existing
<i>Requirement:</i>	12 The center shall coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized. Existing
<i>Requirement:</i>	13 [User Defined] The center shall dispatch NDHP vehicles to respond to verified emergencies and provide suggested routing Planned
<i>Functional Area: Emergency Early Warning System</i>	
Monitors alerting and advisory systems, information collected by ITS surveillance and sensors, and reports from other agencies in order to identify potential, imminent, or in-progress major incidents or disasters. Notification is provided to other ITS centers to notify the traveling public. Includes support for Child Abduction notices.	
<i>Requirement:</i>	3 The center shall broadcast wide-area alerts and advisories to traffic management centers for emergency situations such as severe weather events, civil emergencies, child abduction (AMBER alert system), military activities, and other situations that pose a threat to life and property. Existing
<i>Requirement:</i>	7 The center shall broadcast wide-area alerts and advisories to maintenance centers for emergency situations such as severe weather events, civil emergencies, child abduction (AMBER alert system), military activities, and other situations that pose a threat to life and property. Existing
<i>Requirement:</i>	8 The center shall broadcast wide-area alerts and advisories to other emergency management centers for emergency situations such as severe weather events, civil emergencies, child abduction (AMBER alert system), military activities, and other situations that pose a threat to life and property. Existing
<i>Requirement:</i>	10 The center shall coordinate the broadcast of wide-area alerts and advisories with other emergency management centers. Existing
<i>Functional Area: Incident Command</i>	
Tactical decision support, resource coordination, and communications integration among emergency management agencies for Incident Commands that are established by first responders to support local management of an incident.	
<i>Requirement:</i>	2 The center shall provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers. Existing

Element:User Personal Computing Devices

Architecture	Status
ND Statewide (Region)	(Region)
<i>Element:User Personal Computing Devices</i>	
<i>Entity:Personal Information Access</i>	
<i>Functional Area: Personal Basic Information Reception</i>	
Personal traveler interface that provides formatted traffic advisories, transit, event, and other traveler information, as well as broadcast alerts. Devices include desktop computers at home, work, or at major trip generation sites, plus personal portable devices such as PDAs and pagers.	
<i>Requirement:</i>	Existing
1 The personal traveler interface shall receive traffic information from a center and present it to the traveler.	
<i>Requirement:</i>	Existing
5 The personal traveler interface shall receive wide-area alerts and present it to the traveler.	
<i>Requirement:</i>	Planned
6 The personal traveler interface shall provide the capability for digitized map data to act as the background to the information presented to the traveler.	
<i>Requirement:</i>	Existing
7 The personal traveler interface shall support traveler input in audio or manual form.	
<i>Requirement:</i>	Existing
8 The personal traveler interface shall present information to the traveler in audible or visual forms, consistent with a personal device.	
<i>Functional Area: Personal Interactive Information Reception</i>	
Personal traveler interface that provides traffic, transit, yellow pages, event, and trip planning information, as well as payment services for tolls, parking, and other personalized traveler information services upon request. Devices include desktop computers at home, work, or at major trip generation sites, plus personal portable devices such as PDAs and pagers.	
<i>Requirement:</i>	Existing
1 The personal traveler interface shall receive traffic information from a center and present it to the traveler upon request.	
<i>Requirement:</i>	Existing
5 The personal traveler interface shall receive evacuation information from a center and present it to the traveler.	
<i>Requirement:</i>	Existing
6 The personal traveler interface shall receive wide-area alerts and present it to the traveler.	
<i>Requirement:</i>	Existing
11 The personal traveler interface shall provide digitized map data to act as the background to the information presented to the traveler.	
<i>Requirement:</i>	Existing
12 The personal traveler interface shall support traveler input in audio or manual form.	
<i>Requirement:</i>	Existing
13 The personal traveler interface shall present information to the traveler in audible or visual forms consistent with a personal device, and suitable for travelers with hearing and vision physical disabilities.	
<i>Element:Visitor Centers Kiosks</i>	
<i>Entity:Remote Traveler Support</i>	
<i>Functional Area: Remote Basic Information Reception</i>	
Public traveler interface, such as a kiosk, that provides formatted traffic advisories, transit, event, and other traveler information, as well as broadcast alerts.	
<i>Requirement:</i>	Existing
1 The public interface for travelers shall receive traffic information from a center and present it to the traveler.	

Architecture	Status
ND Statewide (Region)	(Region)
<i>Element: Visitor Centers Kiosks</i>	
<i>Entity: Remote Traveler Support</i>	
<i>Functional Area: Remote Basic Information Reception</i>	
Public traveler interface, such as a kiosk, that provides formatted traffic advisories, transit, event, and other traveler information, as well as broadcast alerts.	
<i>Requirement:</i>	Existing
4 This public interface for travelers shall receive evacuation information from a center and present it to the traveler.	
<i>Requirement:</i>	Existing
5 The public interface for travelers shall receive wide-area alerts and present it to the traveler.	
<i>Requirement:</i>	Existing
6 The public interface for travelers shall provide the capability for digitized map data to act as the background to the information presented to the traveler.	
<i>Functional Area: Remote Interactive Information Reception</i>	
Public traveler interface, such as a kiosk, that provides traffic, transit, yellow pages, event, and trip planning information, as well as payment services for tolls, parking, and other personalized traveler information services upon request.	
<i>Requirement:</i>	Existing
1 The public interface for travelers shall receive traffic information from a center and present it to the traveler upon request.	
<i>Requirement:</i>	Existing
5 The public interface for travelers shall receive evacuation information from a center and present it to the traveler.	
<i>Requirement:</i>	Existing
6 The public interface for travelers shall receive wide-area alerts and present it to the traveler.	
<i>Requirement:</i>	Planned
11 The public interface for travelers shall provide digitized map data to act as the background to the information presented to the traveler.	