



I-95 Corridor Coalition

Significant Weather-Related Events Bridge-Highway Closure Policies Survey Summary of Results



**I-95 CORRIDOR
COALITION**

September 2013

Bridge-Highway Closure Policies

Summary Report

Prepared for:

I-95 Corridor Coalition

September 2013

This report was produced by the I-95 Corridor Coalition.

The I-95 Corridor Coalition gratefully acknowledges its members' participation in this survey and project.

The I-95 Corridor Coalition is a partnership of state departments of transportation, regional and local transportation agencies, toll authorities, and related organizations, including law enforcement, port, transit and rail organizations, from Maine to Florida, with affiliate members in Canada. Additional information on the Coalition, including other project reports, can be found on the Coalition's web site at <http://www.i95coalition.org>.

SYNOPSIS OF FINDINGS AND RECOMMENDATIONS

FINDINGS

- ✓ Differing protocols and few formal policies exist on...
 - Closure criteria/triggers
 - Closure procedures
 - Hard versus soft closures, and emergency vehicle passage
- ✓ Responsibility for closures frequently not fully defined
 - Usually DOT, State Police, and/or Public Authority
 - Sometimes difficult to identify who has the final decision responsibility
- ✓ Communication between states/areas does exist, but not in a consistent way:
 - Generally via telephone or email
 - Typically informal protocols
- ✓ 511 used extensively

RECOMMENDATIONS

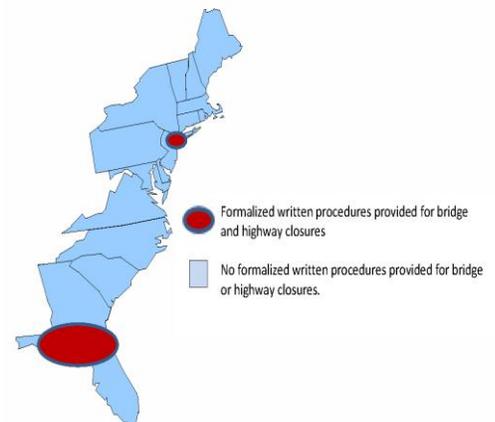
- ✓ Formalize and streamline a common set of guidelines for bridge/highway closures
 - Identify protocols and triggers (e.g., wind speed and other closure triggers, hard/soft closure criteria, communications and notifications timing and content, ...)
- ✓ Identify key agencies and responsibilities

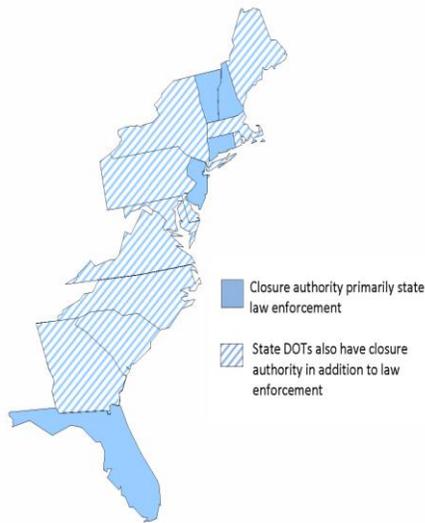
EXECUTIVE SUMMARY

Recent experiences, including those encountered by transportation agencies during SuperStorm Sandy and other major weather-related events, have had a widespread geographical impact along the I-95 Corridor. Based on this, Coalition Leadership requested that the Coalition conduct a Significant Weather-Related Events Response Project to determine issues to be addressed as well as the Coalition's prospective coordinative role as an information facilitator during emergency response. Part of the initial project effort was conducting a brief survey of the Coalition Members seeking information about agency's policies and practices pertaining to bridge-highway closures during significant weather events.

All sixteen states in the I-95 Corridor Coalition responded to the survey, and several commonalities in states' Bridge-Highway Closure Policies/Procedures emerged:

- a.) With the exception of two sub-regions within two states, no states provided official documented policies for highway and bridge closures.
- b.) All States except Maryland and Georgia noted that closure triggers are used as guidelines and are not an automatic hard closure policy.
- c.) The majority of states reported no official written policy for emergency vehicles crossing a bridge or highway during a facility closure; instead, states typically permitted crossing at the operators' own risk, with considerations by law enforcement and done on a case-by-case basis. Two states' bridge closings apply to all vehicles, including emergency vehicles.

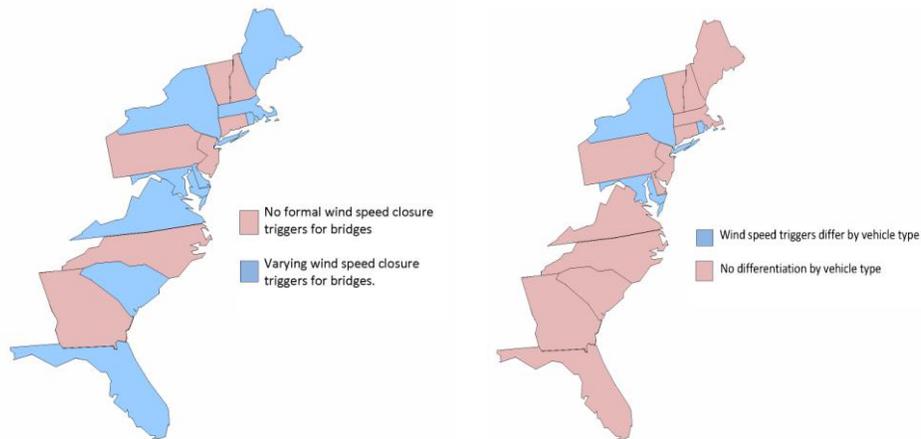




- d.) All state law enforcement agencies have the legal authority to close highways and bridges to all traffic. Additionally, many state DOT headquarters staffs have the authority to close highways and bridges to all traffic, but typically coordinate closely with law enforcement for approval. Additional personnel are authorized to close facilities, but these vary among all of the states. Onscene personnel, specifically law enforcement but in certain cases DOTs, are the primary originators of road closure considerations.
- e.) Six states (Rhode Island, New York, Maryland, South Carolina, Delaware, and Pennsylvania) require the additional approval of the Office of the Secretary/Commissioner of Transportation for facility closures. Rhode Island also requires Gubernatorial approval.

f.) Highway Closure Policies -- No states, other than Maine, have a guideline for snowfall amount as a trigger for highway closures, and only Maine, Virginia, and South Carolina have a guideline for wind speed as a trigger for highway closures. All states close highways when the roadway is flooded and passage is unsafe, including the occurrence of flashfloods, or debris/rocks on the highway. No states, except Pennsylvania, close highways due to a neighboring jurisdiction’s closing of a highway, but close coordination is maintained to monitor potential impacts which may require additional closings. No states, except Pennsylvania, have different closure restrictions with respect to highways for trucks/power units with trailers/heavy vehicles or for other vehicle types.

g.) Bridge Closure Policies – Over half of the states (except Vermont, New Hampshire, Connecticut, Pennsylvania, New Jersey/non-metro New York City, North Carolina, and Georgia), close bridges when certain sustained wind speeds are reached, but these wind speed thresholds vary from 39 to 80 mph and are used as guidelines. Further, of those states which have wind speeds as triggers, a handful differentiate wind speed thresholds for different types of vehicles. None of the 16 responding states have a guideline for snowfall amount as a trigger for bridge closures.



- h.) All states’ law enforcement agencies are responsible for enforcing restrictions and hard closures of highways and bridges.
- i.) Ten of the sixteen responding states do not differentiate between soft and hard closures for either highways or bridges.
- j.) The majority of states coordinate, as much as possible, with neighboring jurisdictions and local municipalities when closures are to occur, but methods of communicating these closures vary from emails to telephone calls to regional systems.
- k.) The vast majority of states utilize 511 and VMS to notify travelers of highway and bridge closures. States also utilize additional communications methods, but these vary from state-to-state and include social media, HAR, websites, subscription services, and news media/press releases.

Recommendations

The full survey results are presented in the ensuing detailed report, including Appendix C containing the actual state survey responses. The following recommendations emerge:

Issue	Recommendation	Stakeholders
<p>Closure Protocol Guidelines With few exceptions, no states provided official documented policies for highway and bridge closures. There is no common agreement among states pertaining to closure triggers for general traffic and/or heavy vehicles/trailers.</p>	<p>Formalize a common set of guidelines for state highway/bridge closures to encourage systematic, regional coordination, including establishing a common guideline for closure triggers such as sustained wind speed trigger point range for highway/span bridge/causeway closure to all traffic, with subset triggers pertaining to heavy vehicles/trailers and motorcycles.</p>	<p>Suggested Lead: AASHTO Subcommittee on Operations and Management (SCOM) for national; I-95 Corridor Coalition for regional/corridor Support: FHWA, IBTTA, IACP</p>
<p>Closure Authority From state-to-state, there are differing authorities to effectuate highway/ bridge closures, with state law enforcement having the primary, but not exclusive, closure authority.</p>	<p>Identify the authority in each state and the process they should follow in order to coordinate cross border closures. Streamline the process to avoid unnecessary delays in coordination.</p>	<p>Suggested Lead: IACP Support: AASHTO SCOM, FHWA, IBTTA, I-95 Corridor Coalition</p>
<p>Communications</p> <ul style="list-style-type: none"> • The majority of states communicate highway/bridge closures to the traveling public using 511 and VMS, but notice posting times differ among the states. • With a few exceptions, all states communicate highway/ bridge closures to the traveling public using social media, but notice posting times differ among the states. • With one exception, no states communicate highway/bridge closures to commercial vehicle operators. 	<ul style="list-style-type: none"> • Establish a protocol guideline for the timing of 511/VMS notice postings for bridge/highway closures. Include an HAR guideline as well. • Encourage broader use of social media and website postings, and establish a protocol guideline for the timing of notice postings for bridge/highway closures. • Identify key outlets and methods for communications. Encourage states to add state motor truck associations and other identified key outlets to closure notification lists. 	<p>Suggested Lead: I-95 Corridor Coalition Regional HOGs and TISPTC to establish consensus guidelines and protocols, and make recommendation to AASHTO SCOM to advance national standard Support: FHWA</p>
<p>Notifications</p> <ul style="list-style-type: none"> • The majority of states communicate, as much as possible, imminent highway/bridge closures to neighboring DOT jurisdictions, but the method used to communicate this information varies. • There is no common agreement as to whether states notify local jurisdictions and operating authorities encompassing the bridge/highway closure geography. 	<p>To encourage regional communication, establish a protocol guideline for content, timing of notifications, communications method (tele/email...), and recipient of notifications to neighboring DOTs and local jurisdictions and operating authorities pertaining to highway/bridge closures.</p>	<p>Suggested Lead: I-95 Corridor Coalition Regional HOGS for Corridor, with recommendation to AASHTO SCOM for national protocol</p>

1.0 INTRODUCTION

At the request of I-95 Corridor Coalition Leadership, the Coalition has embarked on a project entitled “Significant Weather-Related Events Coordination.” This cross-cutting project emerged from member experiences during recent events such as Hurricane Sandy, and addresses coordination of traffic, operations and freight movement related to significant weather events impacting multiple states.

Challenges to inter-agency communication and coordination can affect and even hamper specific response and recovery operational activities. There is always room for improvement in the coordination of such activities (e.g., dissemination of information, or transport of oversize and overweight vehicles through the impacted region to secure equipment and job sites in the path of the weather event and bring relief supplies and debris-clearing equipment after the event, etc.). Though many agencies have effective inter-agency coordination within their jurisdictions and information exchange support entities in portions of their region (e.g., New York City Area/Northern NJ/Western CT through TRANSCOM; DC Metro Area/MD/Eastern-Northern VA through RITIS, Florida-Georgia-North Carolina-South Carolina through STIX, etc.), there is no corridor-wide mechanism for situational awareness for events that impact a larger geographic region transgressing the pockets of sub-regional information exchange, or for the whole of the I-95 Coalition Corridor. Real time status of road closures and detours, assisting with information exchange among agencies to address operational response issues, improving regional information for agencies’ travel information systems, and improved coordination with the trucking industry for commercial vehicle specialized movements across the region are just a few of the issues being addressed in this project.

The I-95 Coalition Leadership has requested that the Coalition determine its prospective coordinative role as an information facilitator during emergency response. Current state of operations throughout the Corridor is being explored, and part of this effort was a brief survey seeking information about agency’s policies and practices pertaining to bridge-highway closures during significant weather events.

2.0 THE SURVEY

Contained in Appendix A, a brief survey was developed and conducted with the I-95 Coalition Member States during August-September, 2013. Survey topics included identification of states’ routine highway and bridge closure restrictions and their triggers, differentiation between hard and soft closures, the approval authority required to implement a closure, and communications with neighboring jurisdictions and travelers when closures occur.

3.0 SURVEY RESULTS

All sixteen I-95 Coalition Member States responded to the survey:

Maine
New Hampshire
Vermont
Massachusetts
Connecticut
Rhode Island
New York
New Jersey
Pennsylvania
Delaware
Maryland
Virginia
North Carolina
South Carolina
Georgia
Florida

3.1. Detailed Results

The survey, contained in Appendix A of this report, sought information through basic questions. The ensuing sections summarize specific results for each of these questions, and actual Survey Responses by state are contained in Appendix C.

3.1.1 Routine Highway Closure Restrictions

All respondents, except Maryland and Georgia which have “hard triggers,” related that their triggers are used as guidelines, with no “hard and fast rules” for mandatory closures of highways. Onscene personnel, primarily law enforcement and in some cases DOT personnel, are the typical originators of road closure decisions. Additionally, the following information pertains to such closures:

- a. No states, other than Maine, have a guideline for snowfall amount as a trigger for highway closures. Maine considers closings when snowfall rate reaches six inches per hour. Rhode Island implements travel restrictions on interstate highways and limited access highways when blizzard conditions occur. Florida closes highways in the event of icing, and Massachusetts monitors pavement temperature.
- b. No states, other than Maine, Virginia, and South Carolina, have a guideline for wind speed as a trigger for highway closures. South Carolina’s guideline is 39 mph sustained wind speed, typically associated with hurricane conditions. Virginia’s guideline is 45 mph sustained wind speed. Maine observes 80 mph as a guideline. As is probable with other states, Delaware’s Governor may implement driving restrictions based on the impact of the weather event.
- c. All states close highways when the roadway is flooded and passage is unsafe, including the occurrence of flashfloods. On a case-by-case basis, onscene DOT or law enforcement personnel pursue closures, evaluating factors such as water depth and speed, road damage, and visibility. In New Jersey and North Carolina, it is a rarity to close a highway.
- d. All states monitor other hazardous weather/environmental conditions and anticipated events, such as significant thunderstorms or visibility during heavy fog or fires/smoke, and determine closures based on safety conditions of the roadway. Such factors as debris or rocks on the highway are considered. Maine also utilizes offshore buoy information, and National Weather Service and Coast Guard reports.
- e. No states, except Pennsylvania, close highways due to a neighboring jurisdiction’s closing of a highway, but all states maintain close coordination to monitor potential impacts which may require additional closings.
- f. No states, except Pennsylvania and New Hampshire, have different highway closure restrictions for trucks/power units with trailers/heavy vehicles or for other vehicle types. However, North Carolina may institute restricted access criteria as established by Executive Order or by Emergency Management personnel.

3.1.2 Routine Bridge Closure Restrictions

All respondents, except Maryland and Georgia with “hard triggers,” related that their triggers are used as guidelines, with no “hard and fast rules” for mandatory closures of bridges. Onscene personnel, primarily law enforcement and in some cases DOT personnel, are the typical originators of bridge closure decisions. Additionally, the following information pertains to such closures:

- a) Except Vermont, New Hampshire, Connecticut (wherein bridge spans are so located as to not encounter weather-related travel hazard factors), New Jersey, Pennsylvania, North Carolina, and Georgia, all states close bridges when certain wind speeds are reached:
 - i. South Carolina, Virginia, and Florida close bridges at 39-45 mph wind speed. Massachusetts closes bridges at 39-45 mph wind speed if there are other conditions present such as snow, ice, freezing rain, driving rain, etc. that exacerbate the situation and the decision is made (amongst multiple stakeholders) to close the bridge.

- ii. Delaware and Maryland close bridges at 50-55 mph wind speed, with some New York bridges closing to all traffic at 50 mph.
 - iii. Rhode Island and New York close most bridges at 60-65 mph wind speed.
 - iv. Maine closes bridges at 80 mph wind speed.
- b) For states which consider wind speed closing factors, with respect to certain types of vehicles:
- i. South Carolina, Virginia, Delaware, Florida, Massachusetts, and Maine do not differentiate.
 - ii. Maryland closes bridges to heavy vehicles/tractor trailers at 40 mph wind speed, Rhode Island at 45 mph wind speed, and New York at 40-50 mph wind speed, varying with empty vs. full trailers.
 - iii. Maryland closes bridges to motorcycles at 50 mph wind speed, while New York bridges close to motorcycles at 40-50 mph depending on the bridge.
- c) All of the above wind speed triggers are based on a combination of sustained wind speeds (during a set amount of time, frequently 2 minutes) and wind gusts. Structure movement is also considered.
- d) No states have a guideline for snowfall amount as a trigger for bridge closures.
- e) All states monitor prospective flooding pertaining to bridge closures, but this is done on a case-by-base basis, evaluating depth of water and structure integrity. Florida closes bridges when flooding reaches the bottom chord elevation of the bridge superstructure; similarly, Georgia closes bridges when flood water reaches the beams of the bridge. Some local jurisdictions will seek bridge closure if waves continuously splash onto the roadway, creating a driving hazard.
- f) Though infrequent, all states monitor other hazardous weather conditions and anticipated events, such as significant thunderstorms with windshear, and determine closures based on safety conditions of the bridge. In North Carolina, it is a rarity to close a bridge.
- g) Most states have span bridges only, but Maine, New York, Pennsylvania, North Carolina, South Carolina, and Florida also have causeways, and do not typically differentiate between closing triggers for causeways vs. span bridges.

3.1.3 Soft vs. Hard Closures for Highways and Bridges

All states defined “hard closures” as “closed to all traffic.” With the following exceptions, states do not differentiate between hard and soft closures:

- a) Pennsylvania and Maryland define soft closures as those which restrict certain vehicles or loads.
- b) Maine, New York, Delaware, and Rhode Island define soft closures as limiting work crews when it is no longer safe to conduct normal highway or bridge (or tunnel) field operations such as maintenance, patrol, toll collection, and roadway assistance. Delaware’s and Rhode Island’s trigger for such soft closures includes sustained wind speed exceeding 40 mph, based upon observations by field operations personnel and supervisors. Maine also considers wind speed picking up, debris starting to be deposited on the facility, or water level is rising.

3.1.4 Authority to Issue Highways and Bridges Closures

All state law enforcement agencies have the legal authority to close highways and bridges to all traffic. Additionally, most state DOT Headquarters Staffs have the authority to close highways and bridges to all traffic, but typically coordinate closely with law enforcement for approval, as in the case of Florida.

Moreover, the following additional entities have closure approval authority:

- a) Massachusetts authorizes its field personnel and the District Highway Director to close a facility in the interest of onscene safety, working in concert with law enforcement.
- b) Rhode Island authorizes its Division of Highway and Bridge Maintenance to close facilities in the interest of public safety, closely coordinating with Rhode Island State Police. The Chief Engineer must also approve the action.
- c) South Carolina’s Sheriffs, County Law enforcement, and County Emergency Management Directors also have the authority to close facilities. All closures are coordinated through local and state Emergency Management in major events.

- d) Maine's Public Officials also have the authority to close facilities, but this also requires a separate Elected Official's confirmation for reporting purposes. Additionally, Maine DOT onsite crews have the authority to issue a closure, based on understanding of the significance of safety at the scene.
- e) Delaware closely coordinates all closures through its Traffic Management Center and the Office of the Secretary of Transportation.
- f) North Carolina's Governor can mandate a facility closure by Executive Order, and it is probable that this also applies to most states.
- g) New York, Pennsylvania, Maryland, South Carolina, Delaware, and Rhode Island require the additional approval of the Office of the Secretary/Commissioner of Transportation for facility closures. Rhode Island also requires Gubernatorial approval for hard closures; for soft closures, operations staff seeking safety is at the discretion of the crew/supervisor. Maryland also requires the approval of the Modal Administrator or the State Highway Administration for hard closures, and of the DOT for soft closures. Virginia requires approval for all closures from the District Administrator or Resident Administrator.
- h) New York elected officials can issue traffic bans, but these are coordinated with law enforcement and the transportation agencies.

3.1.5 Soft Closure and Hard Closure Enforcement

All states' law enforcement agencies are responsible for enforcing restrictions and hard closures of highways and bridges. As in the case of New York, this may involve positioning of physical barriers. In Florida, DOT personnel may be called upon to assist. For soft closures involving vehicular restrictions, Maryland utilizes electronic scales for enforcement. For soft closures involving limitation of work, New York relies on the discretion of the agencies, and Maine also utilizes periodic inspections by responsible crews/technicians. Pennsylvania uses a variety of enforcement actions from actual active state police enforcement to additional fines for those involved in incidents while restrictions are in effect. Most states reported no official written policy for emergency vehicles crossing a bridge or highway during a facility closure; instead states typically permitted crossing at the operators' own risk, with considerations from law enforcement and done on a case-by-case basis. The exceptions are Georgia and Pennsylvania wherein a bridge closure is pertinent to all vehicles, including emergency vehicles. States noted that every effort is made to provide emergency vehicle access unless conditions make it unsafe.

3.1.6 Closure Coordination with Neighboring Jurisdictions

When the decision to close highways or bridges is being contemplated, states notify surrounding jurisdictions as follows:

- a) Maine, Rhode Island, New York, Maryland, Virginia, South Carolina, Georgia, and Florida email neighboring jurisdictions and local municipalities/jurisdictions encompassing the particular geography. Delaware determines notifications on a case-by-case basis, as do Connecticut and Vermont.
- b) Rhode Island, New York, Maine, Pennsylvania, Virginia, North Carolina, Georgia, and Florida telephone neighboring jurisdictions. Delaware determines notifications on a case-by-case basis, as do Connecticut and Vermont.
- c) Rhode Island, New York, Virginia, North Carolina, South Carolina, Georgia, and Florida telephone local municipalities/jurisdictions encompassing the particular geography. Delaware determines notifications on a case-by-case basis, as do Connecticut and Vermont.
- d) Massachusetts activates its State Emergency Operations Center, and Mass DOT sends out information to all Districts across the state. Pennsylvania informs its State EMA (PEMA) and this agency follows up with local municipal EMAs.
- e) Maine uses a regional notification system that vertically and horizontally notifies all interested authorities of the closure. New Hampshire informally coordinates with impacted neighboring jurisdictions. The New York City Metropolitan Region, including Northern New Jersey, uses a regional notification system.

3.1.7 Traveler Notifications

The vast majority of states utilize 511 and VMS to notify travelers of highway and bridge closures. Additionally, the following notification media is utilized:

- a) New Hampshire, Rhode Island, New York, Maryland, Pennsylvania, Delaware, Virginia, North Carolina, Georgia, and Florida use social media such as Twitter and Facebook. These notifications are typically posted when the closure occurs. New York, Delaware, Pennsylvania, and Maryland also post advance notices of potential closings. New York also issues alerts through customer subscription communications.
- b) Delaware, Maryland, North Carolina, and Florida also utilize website postings for facility closure notifications.
- c) Maryland and Maine also use direct emails for facility closure notifications, and Maryland also utilizes telephone calls for notifications as well. Pennsylvania also emails the PA Motor Truck Association directly.
- d) Delaware, Rhode Island, and North Carolina utilize contact with the news media, and also Pennsylvania and Rhode Island may issue press releases for facility closure notifications.
- e) Delaware and Pennsylvania also utilize HAR, and Delaware has a DelDOT App for closure notifications.

4.0 CONCLUSIONS

Particularly during special weather-related events, communications with the traveling public and coordination among impacted transportation agencies at all jurisdictional levels are critical to effective traffic management and travel safety. This survey brought to light certain clear issues pertaining to one segment of this traffic management – bridge and highway closures – which obviously directly impact the traveling public during weather emergencies:

1. With few exceptions (e.g., New York City Metro Area and Northern Florida), no states provided official documented policies for highway and bridge closures.
2. Most states use highway and bridge closure triggers as *guidelines*, and not as mandates. Further, these triggers vary from state to state. There is no common agreement among states pertaining to closure triggers for general traffic and/or heavy vehicles/trailers or motorcycles.
3. All state law enforcement entities have the legal authority to close highways and bridges. From state-to-state, there are differing authorities to effectuate highway/bridge closures, with state law enforcement having the primary, but not exclusive, road/highway closure authority.
4. All states' law enforcement entities are responsible for the enforcement of soft/hard closures. The policy regarding emergency vehicle crossing during a highway/bridge closure is informal in most states except Georgia and Pennsylvania.
5. The majority of the state DOTs are notifying each other/neighboring DOTs in the event of a closure which may impact those neighboring jurisdictions, but the means of notification varies from state to state. There is no common agreement as to whether states notify local jurisdictions/municipalities/operating authorities encompassing the bridge/highway closure geography.
6. The vast majority of the states are notifying travelers in the event of a closure, using VMS and 511. Notification timings vary from state to state. Social media is also used by many states to notify the general traveling public. With one exception, no states communicate highway/bridge closures to commercial vehicle operators.

The I-95 Corridor Coalition suggests that clarifying bridge/highway closure guidelines by reducing procedural disparities among the I-95 Corridor States will help improve situational operations and safety. Recommendations for Next Steps are explored in the ensuing Section 5.0.

5.0 RECOMMENDATIONS FOR NEXT STEPS

The I-95 Corridor Coalition has developed the following matrix to summarize *Next Steps* with regard to identified issues, proposed solutions/recommendations, and involved stakeholders.

Issue	Recommendation	Stakeholders
<p>Closure Protocol Guidelines With few exceptions, no states provided official documented policies for highway and bridge closures. There is no common agreement among states pertaining to closure triggers for general traffic and/or heavy vehicles/trailers.</p>	<p>Formalize a common set of guidelines for state highway/bridge closures to encourage systematic, regional coordination, including establishing a common guideline for closure triggers such as sustained wind speed trigger point range for highway/span bridge/causeway closure to all traffic, with subset triggers pertaining to heavy vehicles/trailers and motorcycles.</p>	<p>Suggested Lead: AASHTO Subcommittee on Operations and Management (SCOM) for national; I-95 Corridor Coalition for regional/corridor Support: FHWA, IBTTA, IACP</p>
<p>Closure Authority From state-to-state, there are differing authorities to effectuate highway/bridge closures, with state law enforcement having the primary, but not exclusive, closure authority.</p>	<p>Identify the authority in each state and the process they should follow in order to coordinate cross border closures. Streamline the process to avoid unnecessary delays in coordination.</p>	<p>Suggested Lead: IACP Support: AASHTO SCOM, FHWA, IBTTA, I-95 Corridor Coalition</p>
<p>Communications</p> <ul style="list-style-type: none"> • The majority of states communicate highway/bridge closures to the traveling public using 511 and VMS, but notice posting times differ among the states. • With a few exceptions, all states communicate highway/ bridge closures to the traveling public using social media, but notice posting times differ among the states. • With one exception, no states communicate highway/bridge closures to commercial vehicle operators. 	<ul style="list-style-type: none"> • Establish a protocol guideline for the timing of 511/VMS notice postings for bridge/highway closures. Include an HAR guideline as well. • Encourage broader use of social media and website postings, and establish a protocol guideline for the timing of notice postings for bridge/highway closures. • Identify key outlets and methods for communications. Encourage states to add state motor truck associations and other identified key outlets to closure notification lists. 	<p>Suggested Lead: I-95 Corridor Coalition Regional HOGs and TISPTC to establish consensus guidelines and protocols, and make recommendation to AASHTO SCOM to advance national standard Support: FHWA</p>
<p>Notifications</p> <ul style="list-style-type: none"> • The majority of states communicate, as much as possible, imminent highway/bridge closures to neighboring DOT jurisdictions, but the method used to communicate this information varies. • There is no common agreement as to whether states notify local jurisdictions and operating authorities encompassing the bridge/highway closure geography. 	<p>To encourage regional communication, establish a protocol guideline for content, timing of notifications, communications method (tele/email...), and recipient of notifications to neighboring DOTs and local jurisdictions and operating authorities pertaining to highway/bridge closures.</p>	<p>Suggested Lead: I-95 Corridor Coalition Regional HOGS for Corridor, with recommendation to AASHTO SCOM for national protocol</p>

APPENDICES

Appendix A – Survey



SIGNIFICANT WEATHER EVENTS HIGHWAY AND BRIDGE CLOSURE POLICY SURVEY

August, 2013

I-95 Corridor Coalition Member Agency Leadership has identified a priority project entitled "Significant Weather Events Coordination." This cross-cutting project emerged from member experiences during recent events such as Hurricane Sandy. It will address coordination of traffic, operations and freight movement related to significant weather events impacting multiple states, and will potentially expand the role of the Coalition as an information facilitator during emergency response. Current state of operations throughout the Corridor is being explored, and this brief survey complements that effort by seeking information about your agency's policies and practices pertaining to highway and bridge closures during significant weather events. Should you have any questions about this survey, please contact Marygrace Parker, 518-852-4083 or i95mgp@ttlc.net. Please complete the survey below and return it by August 31, 2013 to dottyd@aol.com. Thank you!

1. What are your routine **highway closure** restrictions?

- Snow fall rates of _____ inches per hour.
- Wind speed reaches _____ mph.
- Tidal surge and flooding; please specify your triggers: _____

- Severe "generic" hazardous weather (e.g., severe widespread thunderstorms); please specify your triggers: _____

- Other connecting and/or neighboring facilities are closing; please specify your triggers: _____

- Anticipation of an event (e.g., if wind speeds are at 30 mph, but are anticipated to hit 45, we'll close for certain types of vehicles); please specify: _____

- Other factors; please identify: _____

- Do you have different closure restrictions for trucks/power units with trailers/heavy vehicles or for other vehicle types?
 No.
 Yes; please identify: _____

2. What are your routine **bridge closure** restrictions?

- We close the bridge to all traffic when wind speed reaches _____ mph.
- Do you have different closure restrictions for trucks/power units with trailers/heavy vehicles?
 No
 Yes, we close the bridge to trucks/trailers when wind speed reaches _____ mph for trucks with empty trailers, and when wind speed reaches _____ mph for all truck/trailers.
- Do you have different closure restrictions for motorcycles?
 No
 Yes, we close the bridge to motorcycles when wind speed reaches _____ mph.
- Are your wind speed closure restrictions based on:
 sustained winds speed
 wind gust speeds
 Both; please explain: _____
- Other factors which trigger bridge closures are:
 - Snow fall rates of _____ inches per hour.
 - Tidal surge and flooding; please specify your triggers: _____

 - Severe "generic" hazardous weather (e.g., severe widespread thunderstorms); please specify your triggers: _____



- Other connecting and/or neighboring facilities are closing; please specify your triggers:

- Anticipation of an event (e.g., if wind speeds are at 30 mph, but are anticipated to hit 45, we'll close for certain types of vehicles); please specify: _____
- Other factors; please identify: _____

3. All of the above triggers are:
 Used as guidelines
 Hard triggers.
 Both; please explain: _____

4. Do you have both span bridges and causeways in your jurisdiction?
 No, we just have span bridges. No, we just have causeways.
 Yes we have both; please identify the closure policy factors for each:
 Span bridges: _____
 Causeways: _____

5. Do you have soft closures (e.g., no longer safe to conduct operations) and hard closures (e.g. closed to all traffic)?
 If so, please define the distinctions and vehicles impacted:
 Soft Closures are: _____

 Hard Closures are: _____

6. Who has the authority to issue a hard bridge or highway closure to all traffic?
 Department of Transportation: Division Staff Headquarters Staff
 Department of Public Safety or Law Enforcement; please specify level: _____
 Other; please specify: _____

6.a. The above authority requires approval from:
 Secretary/Commissioner
 Governor's Office
 Other Elected Official; please specify: _____
 Local officials; please specify: _____
 Other; please specify: _____

6.b. If a different level of authority is needed for soft bridge or highway closures or bans on certain vehicular traffic, please specify: _____

6.c. As applicable, how do you enforce soft vs. hard bridge or highway closings? Please explain: _____

7. Do you coordinate with adjoining jurisdictions/agencies when you are considering bridge or highway closures?
 If so, how do you do this and when? Please select all that apply:
 Yes, we telephone: neighboring agencies local municipalities/jurisdictions
 Yes, we email: neighboring agencies local municipalities/jurisdictions
 Yes, closings are done in systematic, multi-modal, and regional way (e.g., closure of mass transit is coordinated with highway/bridges closures)
 Other; please explain: _____



8. How and when do you inform travelers of highway and/or bridge closures?
___ VMS ; please identify when you post the messaging: _____
___ 511; please identify when you post the messaging: _____
___ Social Media; please identify when you post the messaging: _____
___ Other; please explain: _____
9. Do you have a policy addressing crossing of emergency vehicles during a bridge closure?
___ No.
___ Yes; the policy is: _____

10. Do you have a policy addressing travel by emergency vehicles during a highway closure?
___ No.
___ Yes; the policy is: _____

11. Who is the appropriate person to contact at your agency for followup about your highway and bridge closure policies?
Name: _____ Title: _____
Organization: _____
Telephone Number: _____ Email address: _____
12. If available, please provide a copy of your highway and/or bridge closure policies, pertinent Standard Operational Procedures, and/or Legislative Procedures.

THANK YOU! Please return your completed survey to dottyd@aol.com.

Appendix B - Contacts for further questions

Maine

Clifton Curtis, Asst. Highway Maintenance Engineer, Maine DOT, 207-624-3600, clifton.curtis@maine.gov

New Hampshire

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Appendix C

Matrix of Survey Responses by State

	A	B	C	D	E	F	G	H	I	J
1		Aug-Sept 2013		I-95 Corridor Coalition			Significant Weather-Related Events Project			
2							Highway/Bridge Closure Policy Survey Responses			
3										
4			Survey Respondents →	Maine DOT	New Hampshire	VT DOT	MASS DOT	RI DOT	ConnDOT	NYS DOT and New York Downstate Bridge/Tunnel Agencies/NYC Region
5	Survey Question #s	Survey Topics								Draft NY Downstate Bridge-Tunnel Policy provided/facilities have close coordination, meetings, TRANSCOM during closures
6	1	Routine Highway Closure Restrictions	Snow - inches per hour	6+ inches per hour	Do have road closures that may be single lane, multiple lane, full closure, and for emergency vehicles only depending on conditions.	Vermont does not have routine highway or bridge closure restrictions due to severe weather events. Occasionally we may have a crash during a severe weather event that requires a detour around the incident while it is cleaned up, or we may have a washout that needs repairs, but we do not close roads or bridges due to high wind or snow fall rates.	Massachusetts does not have standardized SOPs for closures -- these are done on a case-by-case basis, and the determination is made by the District Highway Director (6 Districts in Mass DOT; "District Autonomy" to permit dynamic and relevant decisions); Decisions are made in concert with Senior Leadership at Mass DOT Headquarters	Rhode Island has no routine highway closure restrictions pre-identified. In Winter Storm Nemo (February 2013) we enacted travel restrictions along our interstates and several high volume limited access highways due to heavy snowfall and blizzard conditions.	Connecticut has no hard and fast rules re. infrastructure closings.	No preset triggers set by NYS DOT. Site specific closures depending on deteriorating conditions - See "Other Factors" below
7			Wind Speed mph	80 mph	N/A	No	See above	See above	See above	No preset triggers set by NYS DOT. Site specific closures depending on deteriorating conditions - See "Other Factors" below
8			Tidal Surge/Flooding	USGS Gauges and observation; flashfloods	No pre-event closures, reactive closures to flooding conditions.	see above	See above	See above	See above	No preset triggers set by NYS DOT. Site specific closures depending on deteriorating conditions - See "Other Factors" below
9			Hazardous Weather	Debris on road	No Pre-event closures, reactive closures to actual conditions.	see above	See above	See above	See above	No preset triggers set by NYS DOT. Site specific closures depending on deteriorating conditions - See "Other Factors" below

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1		Aug-Sept 2013		I-95 Corridor Coalition			Significant Weather-Related Events Project			
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4			Survey Respondents →	Maine DOT	New Hampshire	VT DOT	MASS DOT	RI DOT	ConnDOT	NYSDOT and New York Downstate Bridge/Tunnel Agencies/NYC Region
5	Survey Question #s	Survey Topics								Draft NY Downstate Bridge-Tunnel Policy provided/facilities have close coordination, meetings, TRANSCOM during closures
10			Connecting/ Neighboring Jurisdiction Closing	Ferry Service, Offshore Buoys, NWS Wind Reports from field devices	N/A	see above	See above	See above	See above	No preset triggers set by NYSDOT. Site specific closures depending on deteriorating conditions - See "Other Factors" below
11			Anticipated Events	Ferry Service	Manufactured housing and building components oversize loads are to stop if wind exceeds 25 mph.	see above	See above	See above	See above	No preset triggers set by NYSDOT. Site specific closures depending on deteriorating conditions - See "Other Factors" below
12			Other	Buoy information; coast guard reports	See above	see above	See above	Rhode Island has no routine highway closure restrictions pre-identified. In Winter Storm Nemo (February 2013) we enacted travel restrictions along our interstates and several high volume limited access highways due to heavy snowfall and blizzard conditions.	See above	Policy provided in response addressed bridges/tunnels. NYSDOT does not have any predetermined criteria to close HIGHWAYS in NYS. There are instances when highways will be closed due to excessive snowfalls, localized flooding, etc. Those closures are a result of unsafe conditions determined at the time, not pre-set thresholds.
13			Heavy Vehicle-specific restrictions	None	Manufactured housing and building components oversize loads are to stop if wind exceeds 25 mph.	N/A	See above	None	See above	No for NYS; policy provided for downstate authorities -- see below.

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5	Survey Question #s	Survey Topics								Draft NY Downstate Bridge-Tunnel Policy provided/facilities have close coordination, meetings, TRANSCOM during closures
14	2	Bridge Closure Restrictions	Wind Speed mph - All Traffic	80	Don't have vehicular traffic related bridge closure procedures for significant weather events. The only procedures we have are for closure to marine traffic at the lift bridges.	No	Based on anemometers, for major bridges, will close when wind speed reaches 70 knots (39-45 mph) IF there are other conditions present such as snow, ice, freezing rain, driving rain, etc. that exacerbate the situation and the decision is made (amongst multiple stakeholders) to close the bridge.	65	No	50-60; Note: closed to pedestrians and bicyclists at 40 mph
15			Wind Speed mph for Heavy Vehicles with Empty Trailers	80	Manufactured housing and building components oversize loads are to stop if wind exceeds 25 mph.	No	38	45	No	NYS DOT: 40-50 mph for trucks with empty trailers; downstate authorities: 50 mph
16			Wind Speed mph for Motorcycles	80	None	No	38	65	No	NYS DOT: 40 mph for motorcycles; downstate authorities: 50 mph for motorcycles
17			Wind Speed based on Gusts or Sustained Winds or Both	Both. Corridors where gusts can be excessive, and locations where sustained wind speeds may cause structure movement.	See above	N/A	See above	Both plus wind direction; RIDOT does not currently own any of the high clearance bridges over Narragansett Bay, however the RI Turnpike & Bridge Authority has closure procedures based on wind direction (perpendicular to the deck) and speed - truck restriction at 45mph; all vehicles at 65mph.	See above	Generally based on sustained winds, but gusting winds are considered on a case-by-case basis.
18			Snow - inches per hour	N/A	See above	No	See above	N/A	See above	N/A

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5	Survey Question #s	Survey Topics								Draft NY Downstate Bridge-Tunnel Policy provided/facilities have close coordination, meetings, TRANSCOM during closures
19			Flooding	USGS River Gauges and offshore buoy information	See above	see above	See above	N/A	See above	Downstate Authorities: Bridges are vulnerable to surge if their approach roads and management facilities are within a flood zone. Even if wind thresholds for roadway closure have not been met, a facility may still be at risk from surge flooding depending on the nature of the storm. NYSDOT: Flooding - Numerous bridges are on the state flood watch list. Site specific closures are mandatory when high water reaches pre-set levels. These types of bridges are generally limited to state routes (not on interstates). These bridges are systematically re-opened once waters recede
20			Hazardous Weather	Possibly wind gusts.	See above	see above	See above	N/A	See above	No preset triggers set by NYSDOT. Site specific closures depending on deteriorating conditions
21			Connecting/ Neighboring Jurisdiction Closing	Ferry service, offshore Buoys, Coast Guard, NWS Weather Observations	See above	N/A	See above	N/A	See above	See above; also NYSDOT: Site specific based on traffic management criteria.
22			Anticipated Events	N/A	See above	see above	Major bridge may be closed to permit the transport of large natural gas deliveries by ship traveling under the bridge; this happens about once per week.	See above	See above	No pre-set guidance by NYSDOT

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4			Survey Respondents →	Maine DOT	New Hampshire	VT DOT	MASS DOT	RI DOT	ConnDOT	NYSDOT and New York Downstate Bridge/Tunnel Agencies/NYC Region
5	Survey Question #s	Survey Topics								Draft NY Downstate Bridge-Tunnel Policy provided/facilities have close coordination, meetings, TRANSCOM during closures
23			Other	Overload permits need to be reviewed.	See above	see above	See above	Wind direction also considered. RIDOT does not currently own any of the high clearance bridges over Narragansett Bay, however the RI Turnpike & Bridge Authority has closure procedures based on wind direction (perpendicular to the deck) and speed - truck restriction at 45mph; all vehicles at 65mph.	See above	Restrictions due to wind speeds etc are not applied to every bridge across the state. Bridge profile, geometry, and historic conditions are factored into the decision.
24	3	All Triggers are used as...	Guidelines	YES	N/A	N/A	See above	YES	See above	YES
25			Hard Triggers	NO	N/A	N/A	See above	NO	See above	NO, but encouraged
26			Both	NO	N/A	N/A	See above	NO	See above	See above
27	4	Span Bridges Restrictions		Wind speeds	N/A	N/A	YES	YES	See above	YES; No distinction between the guidelines
28	4	Causeway Restrictions		Wind speeds, splashover, and debris	N/A	N/A	No	NO	See above	YES; No distinction between the guidelines

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4			Survey Respondents →	Maine DOT	New Hampshire	VT DOT	MASS DOT	RI DOT	ConnDOT	NYSDOT and New York Downstate Bridge/Tunnel Agencies/NYC Region
5	Survey Question #s	Survey Topics								Draft NY Downstate Bridge-Tunnel Policy provided/facilities have close coordination, meetings, TRANSCOM during closures
29	5	Hard Closure Definition		Bridge/road failure, bridge/road damaged, debris closing bridge/road, bridge/road flooded	N/A	N/A	See above	Coordinated with RI State Police	See above	Depending on incident conditions and the scope of road network closures required, facilities may implement hard closures to physically limit access to roadways. Hard closures require extensive support from transportation and law enforcement agencies. The availability of resources needed to implement hard closure on a region-wide basis will be assessed in the lead-up to the event. Agencies and individual facilities may implement hard or soft closures as required by the incident and as available resources allow. Closures will be coordinated with regional partners to ensure situational awareness.
30	5	Soft Closure Definition		Wind picking up, debris starting to be deposited on road, water rising	N/A	N/A	See above	Based upon field operations personnel and supervisors, such as limiting work beyond wind speeds 40mph	See above	Soft closures occur when it is no longer safe to conduct normal bridge and tunnel field operations (e.g. maintenance, patrol, toll collection, roadway assistance). Agency personnel remaining on site at facilities will have moved to a secure location and all equipment will have been secured or relocated.
31	6	Authority to issue Hard Closure	DOT Division Staff	YES	We have no vehicular traffic related bridge closure procedures for significant weather events. The only procedures we have are for closure to marine traffic at the lift bridges.	N/A	YES	YES	See above	YES
32			DOT Headquarters Staff	YES		N/A	YES	N/A	See above	YES

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4			Survey Respondents →	Maine DOT	New Hampshire	VT DOT	MASS DOT	RI DOT	ConnDOT	NYSDOT and New York Downstate Bridge/Tunnel Agencies/NYC Region
5	Survey Question #s	Survey Topics								Draft NY Downstate Bridge-Tunnel Policy provided/facilities have close coordination, meetings, TRANSCOM during closures
33			Dept. of Public Safety/Law Enforcement	YES	See above	N/A	YES	YES	See above	YES; Note: NYSDOT may close highways however, as a rule of practice, emergency closures are co-decision with Law Enforcement
34			Dept. of Public Safety/Law Enforcement - Approval Level	Trooper/Deputy	See above	N/A	Decisions are made by the District Highway Director, but work in conjunction with State and Local Police	None stated	See above	See above and below
35			Other	Public Official	See above	N/A	Personnel in the field.	Coordinated with RI State Police; In the interest of public safety Division of Highway & Bridge Maintenance may enact a highway closure if necessary.	See above	Elected officials can issue orders to prohibit traffic on roadways for public safety purposes, as needed. This will be done in coordination with law enforcement agencies and roadway operators. Traffic bans may be announced, as per normal operating procedures, in conjunction with executive orders by elected officials.
36	6	Full Closure Authority requires approval	Secretary/Commissioner	NO	See above	N/A	Decisions are made by the District Highway Director, but work in conjunction with State and Local Police	YES	See above	NYSDOT: YES; downstate agencies vary - see above
37			Governor's Office	NO	See above	N/A	See above	YES	See above	No
38			Other Elected Official	Other Elected Official for confirmation and reporting purposes	See above	N/A	See above	No	See above	See above
39			Local Officials	See above	See above	N/A	See above	No	See above	Elected Officials can issue bans, as coordinated with Law Enforcement and Agencies
40			Other	Maine DOT crew onsite understanding the significance of safety	See above	N/A	See above	Chief Engineer	See above	NYSDOT Commissioner is informed of need for closures. Law Enf. has auth to close w/o NYSDOT approval.

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4			Survey Respondents →	Maine DOT	New Hampshire	VT DOT	MASS DOT	RI DOT	ConnDOT	NYSDOT and New York Downstate Bridge/Tunnel Agencies/NYC Region
5	Survey Question #s	Survey Topics								Draft NY Downstate Bridge-Tunnel Policy provided/facilities have close coordination, meetings, TRANSCOM during closures
41	6	Soft Closure Authority requires approval		N/A	See above	N/A	See above	Operations staff seeking safety is at the discretion of the crew/supervisor	See above	Soft closures occur when it is no longer safe to conduct normal bridge and tunnel field operations (e.g. maintenance, patrol, toll collection, roadway assistance). Agency personnel remaining on site at facilities will have moved to a secure location and all equipment will have been secured or relocated. Elected officials can issue orders to prohibit traffic on roadways for public safety purposes, as needed. This will be done in coordination with law enforcement agencies and roadway operators. Traffic bans may be announced, as per normal operating procedures, in conjunction with executive orders by elected officials.
42	6	Enforcement of Soft Closure		Periodic inspections by responsible crew/technician	See above	N/A	State Police	Enforcement of highway restrictions is handled by RI State Police	See above	Decisions to enforce traffic bans through hard closures are made through the Unified Operations Section in coordination with other bridge and tunnel operating agencies, regional roadway operators, and appropriate law enforcement agencies.
43	6	Enforcement of Hard Closure		None stated	See above	N/A	State Police	Enforcement of highway restrictions is handled by RI State Police	See above	Law Enforcement; physical barriers used
44	7	Coordination with Neighboring Jurisdictions	Via Phone to Neighboring Jurisdictions	YES	NO with respect to road closures.	N/A	See below	YES	See above	Downstate Authorities: YES, typically 48 hours in advance of "zero hour"
45			Via Phone to Municipalities/ Local Jurisdictions	NO	NO with respect to road closures.	N/A	See below	YES	See above	YES statewide; Downstate Authorities: Yes, typically 48 hours in advance of "zero hour"
46			Via Email to Neighboring Jurisdictions	YES	NO with respect to road closures.	N/A	See below	YES	See above	Downstate Authorities: YES, typically 48 hours in advance of "zero hour"

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4			Survey Respondents →	Maine DOT	New Hampshire	VT DOT	MASS DOT	RI DOT	ConnDOT	NYSDOT and New York Downstate Bridge/Tunnel Agencies/NYC Region
5	Survey Question #s	Survey Topics								Draft NY Downstate Bridge-Tunnel Policy provided/facilities have close coordination, meetings, TRANSCOM during closures
47			Via Email to Municipalities/ Local Jurisdictions	YES	NO with respect to road closures.	N/A	See below	YES	See above	YES statewide; Downstate Authorities: YES, typically 48 hours in advance of "zero hour"
48			Systematic Coordinated Closure	None stated	N/A	N/A	See below	None stated	See above	YES; typically 48 hours in advance of "zero hour"
49			Other	Use a regional notification system that vertically and horizontally notifies all interested authorities of the closure.	NO with respect to road closures.	N/A	When the State Emergency Operations Center is activated, Mass DOT sends out information to all Districts across the state.	None	See above	Statewide: Reach out to all affected jurisdictions, as much as possible. Support is typically needed for EMS, Fire, Police, etc. Coordination with closures and re-opening of facilities is critical. Downstate Authorities: Meetings held and coordination through TRANSCOM.
50	8	Informing Travelers	VMS timing	YES, when the closing has occurred.	YES	N/A	See above	When the closure occurs	See above	Statewide: YES, Advanced msgs (if possible) and during closure. Downstate Authorities: YES, in advance of the Hard Closure, typically 48 hours in advance of "zero hour." Messaging will be disseminated through various media and highway signage to discourage people from attempting to use crossings.
51			511 timing	YES, when the closing has occurred.	YES	N/A	See above	When the closure occurs	See above	Statewide: Yes, Advanced msgs (if possible) and during closure. Downstate Authorities: YES, in advance of the Hard Closure, typically 48 hours in advance of "zero hour"
52			Social Media timing	NO	YES	N/A	See above	When the closure occurs	See above	Statewide: Advanced msgs (if possible) - feeds from 511; Downstate Authorities: YES, in advance of the Hard Closure, typically 48 hours in advance of "zero hour"

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4			Survey Respondents →	Maine DOT	New Hampshire	VT DOT	MASS DOT	RI DOT	ConnDOT	NYSDOT and New York Downstate Bridge/Tunnel Agencies/NYC Region
5	Survey Question #s	Survey Topics								Draft NY Downstate Bridge-Tunnel Policy provided/facilities have close coordination, meetings, TRANSCOM during closures
53			Other	Email notifications and RSS feeds	None stated	N/A	See above	Prior to closure we may issue a press release notifying of the potential for closures	See above	Downstate Authorities: Media
54	9	Special policy for Emergency Vehicle Crossings	Bridge Closure	NO	NO	N/A	Decisions are made by the District Highway Director, but work in conjunction with State and Local Police	NO	See above	Coordinated with Public Safety on a case-by-case basis/no set formal policy.
55	10		Highway Closure	NO	NO	N/A	Decisions are made by the District Highway Director, but work in conjunction with State and Local Police	NO	See above	Coordinated with Public Safety on a case-by-case basis/no set formal policy.
56										
57	11	Contact for Questions		Clifton Curtis, Assistant Highway Maintenance Engineer, Maine DOT, 207-624-3600, clifton.curtis@maine.gov	Mark Kirouac, Assistant Administrator, NHDOT Bureau of Highway Maintenance, 603-271-2693, mkirouac@dot.state.nh.us	Scott Rogers, Scott.Rogers@state.vt.us or Chief Engineer Richard Tetreault, Richard.Tetreault@state.vt.us	David Long, Mass DOT, Mgr TIM Program, 617-946-3046; david.long@state.ma.us	Joseph D. Baker, Administrator, RIDOT Div. of Highway and Bridge Maintenance, 401-734-4800, Joseph.Baker@dot.ri.gov	Hal Decker, ConnDOT, Harold.Decker@ct.gov	Todd Westhuis, Director, Office of Traffic Safety & Mobility, 518-457-0271, Todd.Westhuis@dot.ny.gov

	B	C	K	L	M	N	O	P	Q	R	S
1	Aug-Sept 2013										
2											
3											
4		Survey Respondents →	New Jersey Turnpike	Pennsylvania	DELDOT	Maryland DOT	Virginia DOT	North Carolina	SC DOT	Georgia DOT	FL DOT & FHP
5	Survey Topics										North Florida Policy provided
6	Routine Highway Closure Restrictions	Snow - inches per hour	The Authority does not close the highway for weather events. We do not have hard criteria for closing the roadway other than for construction. We have 24/7 maintenance and operations personnel that monitor and respond to weather events such as snow and ice to treat the problem and keep the roadway open. We have policies to reduce the speed limit in response to weather events like hard rain and fog and during salting operations for snow and ice. The requests to reduce the speed usually come from field personnel such as State Police based on conditions they experience on the roadway. We have guidelines for visibility using a table with the number of reflectors visible along the roadway equaling the recommended speed limit. We do not close the road unless the roadway is physically blocked by debris, has been washed out, damaged or is flooded to the point where it is not safe to pass.	None	N/A	None	None	None	None	N/A	If road is iced over, then closed since Florida has no means of clearing iced roadways.
7		Wind Speed mph	See Above	None	N/A	None	45 mph	None	39	N/A	N/A
8		Tidal Surge/Flooding	YES when unsafe to pass	May restrict certain off ramps pre-event in areas where we know flooding is historic. Remainder of closures for flooding are implemented as necessary.	Roadways or portions of roadways are closed on a case-by-case basis. DELDOT will close roads when field personnel determine it is unsafe to let vehicles use all or a portion of the roadway. Factors include water depth and speed, road damage, visibility, etc.	Standing water on roadway that makes passage unsafe	None	In NC closures are made only when conditions do not allow vehicles to pass -ie debris or vehicles prohibit other vehicles from passing. We have closed a road to allow it to be treated for snow and ice but that is on a case by case basis and very rare.	Should the condition be imminent.	N/A	Closed when the road is actually flooded.
9		Hazardous Weather	See Above	Triggers are based on input from the field where for operational reasons closures or restrictions are necessary	On a case-by-case basis.	None	None	Same as Flooding	Should the condition threaten the movement of traffic.	N/A	The Florida Highway Patrol determines when a highway requires closing, based on conditions.

	B	C	K	L	M	N	O	P	Q	R	S
1	Aug-Sept 2013										
2											
3											
4		Survey Respondents →	New Jersey Turnpike	Pennsylvania	DELDOT	Maryland DOT	Virginia DOT	North Carolina	SC DOT	Georgia DOT	FL DOT & FHP
5	Survey Topics										North Florida Policy provided
10		Connecting/ Neighboring Jurisdiction Closing	See Above	We will close certain facilities in response to neighboring states closing their facilities and detour traffic to alternate routes in advance of the closure.	DELDOT does not normally close roadways because an adjacent jurisdiction has closed a roadway or facility. DeLDOT works with the adjacent jurisdiction and implements required changes.	None	None	Same as Flooding	Same as above.	N/A	actual hazard
11		Anticipated Events	See Above	In anticipation of a weather event, we hold state-wide conference calls with our Engineering Districts. During these calls we are briefed by weather services. Based on the briefing and historic knowledge, pre-emptive restrictions may be enacted.	DeLDOT does not close roads because of wind speed; will close bridges. DeLDOT issues advisories. DeLDOT has levels of driving restrictions based on the impact of the weather event. Driving restrictions are issued by the Governor.	None	None	None	This is generally under hurricane conditions for S.C. We want all off the road when wind speed is 39 mph	N/A	Movable Bridges are not required to open for vessels when wind speeds exceed 39 mph. Also movable bridges may be locked down for evacuation prior to arrival of tropical storms.
12		Other	Blocked by debris	PA follows a phased approach to restricting Interstate travel. Each phase is progressively more restrictive until the total highway system is closed for travel. The phases are: VMS warnings, reduced speed limit, commercial vehicle restrictions, on ramp restrictions, total system closure.	See above	None	None	Same as Flooding	None	Any time water rises to the beams on the bridge, the bridge is closed.	Fires (smoke) and Fog are monitored, and roads closed if visibility is poor.
13		Heavy Vehicle-specific restrictions	See Above	YES; Initial restrictions include double trailers, RV, motorcycles, empty trailers, non-CMV hauling trailers, oversize and overweight loads progressive restrictions escalate to include all commercial vehicles .	None	None	None	Restricted access criteria can be established by Executive Order or by Emergency Management personnel.	NO, but Closure may affect high profile vehicles first. This is done with County/ State Emergency Management consensus in each case.	None	None stated

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5	Survey Topics										North Florida Policy provided
14	Bridge Closure Restrictions	Wind Speed mph - All Traffic	See Above	Triggers are based on input from the field where for operational reasons closures or restrictions are necessary; Our interstate restriction policy is for both highways and bridges. It does not differentiate, the same procedures will be used for both facilities	50	55	45 mph	At about 30 mph NCDOT will not raise moveable spans for boat traffic, but we do not have a policy or procedure to close bridges to vehicle traffic.	39	None	40
15		Wind Speed mph for Heavy Vehicles with Empty Trailers	See Above	See above	50	40	45 mph	None	39	None	40
16		Wind Speed mph for Motorcycles	See Above	See above	50	50	45 mph	None	39	None	40
17		Wind Speed based on Gusts or Sustained Winds or Both	See Above	See above	Sustained Winds	Sustained winds and/or gusts within a specific time fame	Sustained	N/A	Bridges closed for wind are done by county law enforcement on a case by case basis. 39 mph is the guide for this.	N/A	BOTH. Based on 2 minutes sustained winds.FHP has sole authority to close, and their decision is based on their evaluation of conditions.
18		Snow - inches per hour	See Above	See above	See below	None	None	see below	None	None	N/A

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5	Survey Topics										North Florida Policy provided
19		Flooding	See Above	Initial restrictions include double trailers, RV, motorcycles, empty trailers, non-CMV hauling trailers, oversize and overweight loads progressive restrictions escalate to include all commercial vehicles .	DeLDOT will close a bridge if depth of water or velocity threatens the safety or integrity of the structure.	None	None	In NC closures are made only when conditions do not allow vehicles to pass - ie debris or vehicles prohibit other vehicles from passing.	Should the condition be imminent.	If a flood touches the beams of a bridge, we close the bridge.	Low lying bridges are closed based upon the 40 mph sustained windspeed, at the request of the city with jurisdiction. Typically close when flooding reaches the bottom chord elevation of bridge superstructure. Also, will seek bridge closure if waves continuously splash onto the roadway, creating a driving hazard.
20		Hazardous Weather	See Above	same as above	DELDOT makes decisions on a case-by-case basis with a goal of keeping as much of the transportation system open as possible.	severe Derecho type weather; severe thunderstorms with windshear	None	See above		None	See above
21		Connecting/ Neighboring Jurisdiction Closing	See Above	same as above	DELDOT monitors what neighboring facilities are doing as an input into the decision process.	None	None	See above	Should the condition threaten the movement of traffic.	None	See above
22		Anticipated Events	See Above	same as above	DeLDOT will stage resources based on forecasts, but actual restrictions or closures are on actual conditions.	severe Derecho type weather; severe thunderstorms with windshear	None	See above	This is generally under hurricane conditions for S.C. We want all off the road when wind speed is 39 mph.	None	See above

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23		Other	See Above	Our interstate restriction policy is for both highways and bridges. It does not differentiate, the same procedures will be used for both facilities	See above	None	None	See above	None	None	See above
24	All Triggers are used as...	Guidelines	See Above	YES	YES; DeIDOT makes decisions on a variety of factors on a case-by-case basis. DeIDOT limits what personnel do when sustained winds reach 40 mph.	NO	Yes	YES	YES	No	See below
25		Hard Triggers	See Above	NO unless discussion mandates	NO	YES	No	NO	NO	YES	See below
26		Both	See Above	YES; restrictions are typically soft restrictions unless through discussion with other agencies or operations dictate a hard closure	NO	YES; they are hard triggers but early closing can occur if the need exists	No	NO	NO	No	YES; FHP decides.
27	Span Bridges Restrictions		See Above	YES, but policies are the same	YES	YES	Yes	YES	YES; When the hazard creates an unsafe condition, closure is an option.	Yes	YES; 40 mph 2-minutes sustained windspeed; FHP decides.
28	Causeway Restrictions		See Above	YES, but policies are the same	NO	NO	No	YES	YES; When the hazard creates an unsafe condition, closure is an option.	No	YES; 40 mph 2-minutes sustained windspeed; FHP decides.

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29	Hard Closure Definition		See Above	Implemented by a combination of Department Force, State police and during large scale events PA National Guard	On a case-by-case basis.	Closed to all traffic	N/A	We never close it due to weather conditions of any kind unless the weather condition causes it to be impassable due to something in the road (vehicle or trees, or rocks, etc.).	No difference	N/A	Closed to all traffic, with alternative routes set.
30	Soft Closure Definition		See Above	Conveyed to the traveling public through DMS, 511, HARs press releases, State and local EMA, social media, Governor's press releases	DeIDOT limits what personnel do when sustained winds reach 40 mph.	Restrictions for certain vehicles and/or loads	N/A	See above	No difference	N/A	FHP decides.
31	Authority to issue Hard Closure	DOT Division Staff	See Above	NO	YES	NO	Yes	YES	YES	YES	YES; but FHP decides.
32		DOT Headquarters Staff	See Above	YES	See below	YES	Yes	YES	YES	YES	See below

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33		Dept. of Public Safety/Law Enforcement	See Above	Individual law enforcement officers can temporary close roads for unsafe conditions (this is not a coordinated action but typically reactionary)	See below	YES	Yes - State Police; 1st Sergeant	YES	YES	N/A	The Florida Highway Patrol has sole authority to open/close roads and bridges. Triggers are based on their criteria. DOT can if they are on-scene first and recognize there is imminent danger, but FHP has the legal authority to do so. In these situations, DOT would notify FHP of the situation so they could respond and make an official determination.
34		Dept. of Public Safety/Law Enforcement - Approval Level	See Above	None stated	See below	None	State Police; 1st Sergeant	Incident Commander on scene or higher	None stated	N/A	YES - FHP at the Troop Level
35		Other	See Above	None stated	Closures are coordinated through the TMC and the Office of the Secretary.	None	N/A	Governor by Executive Order	County Law Enforcement	N/A	No
36	Full Closure Authority requires approval	Secretary/ Commissioner	See Above	YES	YES; Closures are coordinated through the TMC and the Office of the Secretary.	YES	N/A	NO	YES	N/A	No
37		Governor's Office	See Above	NO	NO	N/A	N/A	NO	NO	N/A	No
38		Other Elected Official	See Above	NO	NO	N/A	N/A	NO	NO	N/A	No
39		Local Officials	See Above	NO	NO	N/A	N/A	NO	Sheriff, County Emergency Management Director	N/A	No
40		Other	See Above	Secretary has delegated this responsibility to Deputy Secretary, BOMO Director and certain Area Commanders	NO	Modal Administrator for MD Transportation Authority and MdSHA, or designee	District Administrator or Resident Administrator	NO	Any closure anywhere is coordinated thru local and State Emergency Management in major events.	N/A	YES - FHP at the Troop Level, based upon safety of the motoring public; coordinate with DOT field personnel

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41	Soft Closure Authority requires approval		See Above	Secretary has allowed all Area Commanders to independently restrict interstate speeds. All other restrictions require some upper level of management direction.	See above	Same as above	N/A	NO	No difference between soft and hard closures.	N/A	FHP
42	Enforcement of Soft Closure		See Above	PSP enforces all restrictions; PSP uses a variety of enforcement actions from actual active enforcement to additional fines for those involved in incidents while restrictions are in effect	N/A	electronic scales	N/A	None stated	None stated	N/A	See below
43	Enforcement of Hard Closure		See Above	State Police	See above	law enforcement	See above	None stated	None stated	N/A	Detours are established; staffed by FHP, assisted by FDOT personnel.
44	Coordination with Neighboring Jurisdictions	Via Phone to Neighboring Jurisdictions	See Above	YES to neighboring DOT jurisdictions	Notifications are determined on a case-by-case basis.	None stated	Yes	YES	NO	Anytime we close a bridge or road, we try to inform local agencies.	FHP notifies emergency agencies and FDOT through state and local Emergency Ops Centers; FDOT also telephones/emails other local and neighboring jurisdictions.
45		Via Phone to Municipalities/ Local Jurisdictions	See Above	Inform our State EMA (PEMA) and allow them to follow up with local municipal EMA.	Notifications are determined on a case-by-case basis.	None stated	Yes	YES	YES	See above	See above
46		Via Email to Neighboring Jurisdictions	See Above	NO	Notifications are determined on a case-by-case basis.	None stated	Yes	YES	NO	See above	See above

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47		Via Email to Municipalities/ Local Jurisdictions	See Above	NO	Notifications are determined on a case-by-case basis.	None stated	Yes	YES	YES	See above	See above
48		Systematic Coordinated Closure	See Above	See above	On a case-by-case basis.	See below	Yes	Don't close facilities typically.	YES; we use I-95 STIX for incident and closures on all interstates to inform other jurisdictions	N/A	See above
49		Other	See Above	PA motor truck association receives direct e-mail notification.	Notifications are determined on a case-by-case basis.	We make notification that bridge WILL be closing so adjoining jurisdictions can take appropriate actions	N/A	See above	NO	N/A	See above
50	Informing Travelers	VMS timing	See Above	1 hour prior to restriction unless conditions warrant immediate action	As soon as possible	Immediately plus advance notice of possible closing	YES; immediately	YES when facility is closed	We use I-95 STIX system for Incidents and closures on all Interstates.	YES	Warnings first, establish alternative routes, post notice, then close the facility.
51		511 timing	See Above	Strive to post 1 hour prior unless restrictions are reactionary	N/A	Immediately plus advance notice of possible closing	YES; immediately	YES when facility is closed	When the incident is known to affect traffic.	YES	Warnings first, establish alternative routes, post notice, then close the facility.
52		Social Media timing	See Above	tied to 511 reporting	Twitter, Facebook -- At all stages of the process	Immediately plus advance notice of possible closing	YES; immediately	YES when facility is closed	No	YES	At the time of closing

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53		Other	See Above	HAR, Press releases	HAR - WTMC 1380AM; DeIDOT Website; DeIDOT App; Contact with Media	I-95 Corridor Coalition, website postings, direct email and phone calls	N/A	Website and Media notification	I-95 STIX	N/A	FHP has a website that is updated 24/7 with the official road and bridge closure information; FDOT website has real-time traffic information, including closures.
54	Special policy for Emergency Vehicle Crossings	Bridge Closure	See Above	When a bridge is closed unless specifically identified, all vehicles are prohibited to traverse (including Emerg Veh)	DeIDOT will attempt to keep bridge access to emergency vehicles at all times unless there is a concern for structure integrity.	at operators discretion/risk with approval by law enforcement	NO	NO	Case by case by law enforcement at the scene.	YES, If the road or bridge is closed, emergency vehicles aren't allowed on it.	NO
55		Highway Closure	See Above	When a total closure of the interstate system is enacted, specific provisions are discussed to either allow emergency vehicle passage or to completely restrict the interstate.	DeIDOT does not have a written policy but will make every effort to provide emergency vehicle access unless conditions would make it unsafe for emergency vehicles.	at operators discretion/risk with approval by law enforcement	NO	NO	Case by case by law enforcement at the scene.	YES, If the road or bridge is closed, emergency vehicles aren't allowed on it.	NO
56											
57	Contact for Questions		Christine Bugel, NJ Turnpike Authority, bugel@turnpike.state.nj.us	Jon Fleming Roadway Program Manager II, Emergency/Incident Management Section Chief, PA DOT, Bureau of Maintenance and Operations 717-772-1771; jonfleming@pa.gov	Gene Donaldson, TMC Operations Manager, 302-659-4601, gene.donaldson@state.de.us	Bud Frank, Director Homeland Security/Emergency Mgmt., 410-865-1161, bfrank@mdot.state.md.us	Dean Gustafson, Div. Administrator, or Perry Cogburn, ADA Field Operations, VDOT, 804-786-2978; dean.gustafson@vdot.virginia.gov	Kelly E. Wells, PE Traffic Systems Operations Unit, NCDOT Mobility & Safety Division, (919) 825-2615; kwells@ncdot.gov OR First Sgt Jeff Gordon, NC State Highway Patrol, 919-733-5027, jeff.d.gordon@ncdps.gov	Richard Jenkins, State Traffic Management Engineer, 803-737-1454, jenkinsrf@scdot.org	Andy Doyle, P.E., Georgia DOT, State Bridge Maintenance Engineer, 404-635-2893, adoyle@dot.ga.gov	Lt. Colonel Kelly Hildreth, Florida Highway Patrol, 850-617-2367, kellyhildreth@flhsmv.gov OR John Lanham, Emergency Coordination Officer, FDOT, 850-414-4350, john.lanham@dot.state.fl.us