

Welcome to SNOW-VERWHELMED”—LESSONS FOR RISK MANAGERS FROM THE JANUARY 2022 SHUTDOWN OF I-95 IN VIRGINIA.

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“SNOW-VERWHELMED”— LESSONS FOR RISK MANAGERS FROM THE JANUARY 2022 SHUTDOWN OF I-95 IN VIRGINIA

Presented by AFERM and GW-CEPL

June 7, 2022

Panelists



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Background

- January 2022 began with record-breaking high temperatures and rain in the mid-Atlantic states, but a snowstorm was forecast to hit the area on January 3rd, with 4-6 inches of snow predicted across Central Virginia.
- State agencies prepared for a winter event, readying crews and emergency response personnel.
- The snowstorm overwhelmed the region, and response plans didn't work as expected, resulting in the closure of 48 miles of I-95 in Virginia, stranding hundreds of motorists overnight on the roadway in frigid temperatures.



Traffic at a standstill on I-95 on January 3, 2022

Introduction to the Case Study



Virginia state agencies had readiness and response plans that had been used successfully in the past to minimize and mitigate the impact of snowstorms on the major interstates, including I-95.



A confluence of factors, cascading risks, and unexpected challenges during the January 2022 snowstorm kept those plans from working as expected.



An after-action report (AAR) that was commissioned by State authorities looked into what happened, why it happened, and what could be done to reduce the likelihood of similar events in the future.



The findings and recommendations in this report offer several important lessons that have relevance to and can be applied to any organization's approach to risk management.

Timeline of the I-95 Shutdown



Areas of Blocked traffic on I-95

7:27 a.m. January 3

- A 911 call reports a tractor-trailer blocking a ramp off I-95 in Stafford County.
- More calls are made describing growing problems in both directions of I-95.

8:20 a.m.

- Tractor-trailer jackknives blocking northbound I-95
- This begins a pattern of disabled vehicles blocking lanes

11 a.m.

- Virginia Governor's Office contacts Department of Emergency Management (VDEM) asking if a state of emergency declaration is needed; no request is made

1 p.m.

- Snow begins to taper off, but more than a foot has fallen – double forecasted amounts
- Sen. Tim Kaine leaves Richmond for DC, noting traffic signs for I-95 only advise drivers to proceed with caution

3:30 p.m.

- VDEM call with state agencies, no one requests assistance, even though traffic is blocked in multiple areas on I-95 north and southbound.
- Hundreds of motorists end up stuck overnight on the interstate

4:52 a.m. January 4

- First call is made to notify Virginia's transportation secretary about problems on I-95

5:15 a.m.

- State and local officials close I-95 in Virginia

7 p.m.

- I-95 in Virginia re-opens to traffic

Learning Opportunities: Lesson 1

- **SITUATION:** Planned mitigation strategies weren't available or didn't work and alternative strategies weren't available or hadn't been identified.
 - The roads couldn't be pre-treated because the storm started as rain, before turning to snow
 - Downed trees and power lines slowed the work of snowplow operators in keeping the roads clear and stymied emergency responders and tow trucks from reaching the impacted areas
 - Shelters were opened but there was no way to get stranded travelers to these shelters
 - Communication messages didn't factor in the state of mind of the recipients.
 - As forecasts and travel conditions worsened, messaging was not authoritative or strong enough to change traveler behaviors
 - Transportation and safety officials assumed they could keep at least one lane of traffic open, and didn't plan for shutting down the highway, so hadn't thought through alternatives

Learning Opportunities: Lesson 1

- **IMPLICATIONS:** Mitigations that has been relied upon and used previously weren't available, and alternative back-up strategies had not been considered or identified, thereby increasing the likelihood and impact of a risk event manifesting from this storm.
- **LEARNING OPPORTUNITY:** When identifying mitigations, consider developing back-up plans in case the planned mitigations are unavailable. If back-up mitigations are not available, then plan for heightened monitoring to detect if a risk is manifesting. Be prepared to adjust communications and tailor messaging that takes into consideration the frame of mind/state of mind of the intended audience.



Learning Opportunities: Lesson 2

- **SITUATION:** Risk treatment plans didn't take into account the impact of multiple risk events occurring at the same time.
 - Heavy rain and warm temperatures before the storm weakened the ground. Trees and limbs weighted down with heavy snow fell, bringing power lines with them, resulting in calls the same emergency crews and responders who were also dealing with the situation on I-95.
 - Related power outages knocked out traffic cameras, some cell communications, and a key communications center
 - VDOT maintained detailed snow removal plans, but they did not have plans for handling widespread interstate closures, so they focused on keeping lanes open rather than considering closing the interstate, based on the assumption they could keep up with the snow

Learning Opportunities: Lesson 2

- **IMPLICATIONS:** Risk response plans that may have been effective in addressing a single risk were not scaled to manage multiple risks at the same time, greatly diminishing the sufficiency of these plans in managing the risks.
- **LEARNING OPPORTUNITY:** Use scenario-based planning to consider and map out the impacts of more than one risk event occurring at the same time. Consider risks that may be inter-related, for example, that could share a similar cause or result from common triggering events. Determine how risk response strategies and mitigations can be adjusted or improvised if such situations were to occur. Tabletop exercise are also a good way to test response plans, exercise the muscles for dealing with unexpected events, and prepare for instances when planned mitigations don't work.



Learning Opportunities: Lesson 3

- **SITUATION:** There were delays in informing leadership because field supervisors considered the situation to be stable and under control and because they lacked situational awareness.
 - As long as troopers and tow trucks were responding to calls for help, field supervisors felt that the situation was under control and did not alert leadership to the problems. It wasn't until tow truck operators stopped responding that leadership was notified.
 - State agencies lacked situational awareness – due to communication outages, they could only see what was happening around them and didn't know what was happening up and down the interstate.

Learning Opportunities: Lesson 3

- **IMPLICATIONS:** Because their awareness was limited to what was happening in their immediate area, and they weren't able to see what was happening in areas around them, they didn't have a complete picture and the scale of the storm, and its impact, were severely underestimated.
- **LEARNING OPPORTUNITY:** Review the methods used to enable situational awareness if a risk event occurs in your organization. Are there additional methods, tools or steps that can be taken to extend and enhance the level of awareness to information real time. Are there other parties that could be asked to help with information and communications in the event your normal channels fail? Review the procedures and practices related to elevating and escalating risks to leadership as the risks are emerging, especially for high-velocity type risks that could quickly turn from a risk to an issue to a crisis.



Learning Opportunities: Lesson 4

- **SITUATION:** The areas of Interstate-95 where the initial problems and closures occurred was known for being a “hot-spot” for traffic accidents and delays – yet the emergency response plans for preventing and responding to problems on the highway did not include anything different for these “hot-spot” areas.
- **IMPLICATIONS:** If a problem on I-95 in Virginia was going to manifest during the storm on January 3rd, there was a high likelihood it would occur in this “hot-spot” area. Additional monitoring, crews, or warnings stationed in and around this area may have helped get ahead of or more quickly respond to problems as they began surfacing here.
- **LEARNING OPPORTUNITY:** A one-size fits all approach may not be sufficient when developing risk treatment and mitigation plans. Organizations can also have “hot spots” where teams may be over-stressed and more susceptible to a significant risk manifestation. While leaders work to address those vulnerabilities, more frequent monitoring and check-ins with those units can help get ahead of risks before they turn into problems.

Learning Opportunities: Lesson 5

- **SITUATION:** The risk environment had changed, but risk assessments and risk response strategies hadn't factored in those changes and their implications.
 - Tractor trailer volumes on I-95 had increased by almost 30% since 2019 due to COVID-19 related impacts to the supply chain and shifts in regular commuting patterns
 - There were shortages of field staff due to COVID-19, which limited the availability of staff who would typically be involved in providing data and information used by highway and safety officials to guide their actions
 - Flight cancellations due to the storm and from crew shortages caused by COVID put more people in their cars that day, with traffic volumes 65% higher than on the same days in 2019.



Learning Opportunities: Lesson 5

- **IMPLICATIONS:** Any problems or delays on the roadways, were they to occur, would build and escalate much more quickly than existing plans factored in.
- **LEARNING OPPORTUNITY:** Have there been any significant changes in your organization's internal or external environment that could increase the likelihood and/or impact of risk events were they to materialize? If so, risk assessments should be updated, and risk treatment strategies adjusted accordingly.
- Organizations don't usually know in advance when a risk event may occur, but they do know of situations when risk events may be more likely to happen, such as when bad weather is forecast, or when a scheduled activity or event is slated to occur that has known risks. In these situations, it is worthwhile to consider whether anything else is happening in the internal/external environment that could have an impact on the mitigation and risk response plans and whether any last-minute adjustments may be warranted.

END NOTE:

- Virginia officials acknowledged immediately after the storm and traffic disruptions that things didn't go as planned. They realized they needed to understand what went wrong and then take action to prevent similar risk events in the future.
- As stated in the AAR, the review was not undertaken to lay blame or point fingers. It acknowledged that this incident was multi-faceted and multi-layered. Any negative cascading effects that occurred during the response operations stemmed from multiple issues with the plans, procedures, policies and preparedness, not the actions of any one individual or agency.
- Accordingly, the intent of this case study is only to use the findings from the AAR as an opportunity for others to learn from what happened.

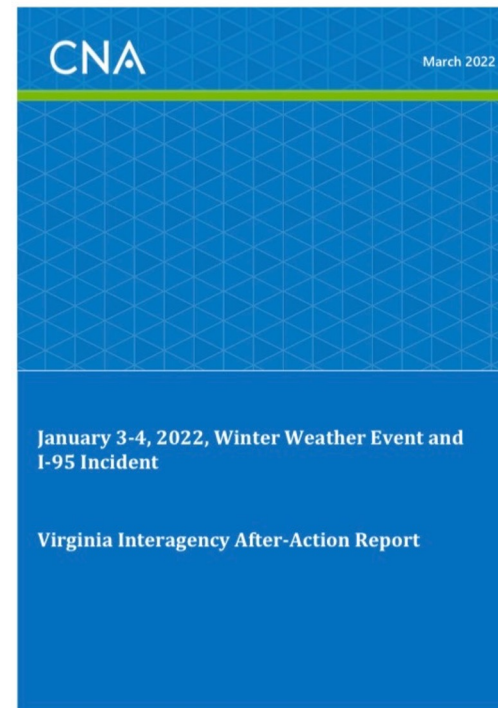
Case Study Recap

1. Planned mitigation strategies weren't available or didn't work as expected and alternative strategies weren't available or hadn't been identified.
2. Risk treatment plans didn't take into account the impact of multiple risk events occurring at the same time.
3. There were delays informing leadership because field supervisors considered the situation to be stable and under control and because they lacked situational awareness.
4. The area of I-95 where the closures occurred was known for being a "hot-spot" for traffic accidents and delays – yet the emergency response and preparedness plans for preventing and responding to problems on the highway did not include anything additional or different for these "hot-spot" areas.
5. The risk environment had changed, but risk assessments and risk response strategies hadn't factored in those changes and their implications.

I-95 Shutdown Case Study

▪ SOURCES:

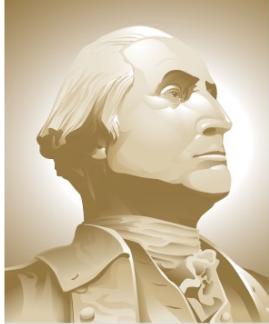
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