Capstone Assignment

Capstone 1 - Unplanned Freight Disruptions

Your state is a large geographic state with a rich history of agricultural products, timber, and more recently is attracting automotive production, automotive manufacturing suppliers and e-commerce distribution centers due to its central location. The majority of your state’s area is sparsely populated rural. However, your state’s economic development agency and the three large non-adjacent metropolitan areas in the state are actively marketing to the manufacturing and freight industries in hopes of taking advantage of the state’s central location and diverse transportation infrastructure to spur economic development in the state. They have attracted multiple firms to the state and are in the final 2 locations with several site selectors representing additional freight dependent companies.

Your state has a large network of interstate highways that are generally in good shape and carry about 80% of all traffic in the state. The rural portions of these interstates do not have outer roads. These rural portions of the interstate are nearing capacity but function well as long as nothing interrupts the flow of traffic such as a slow moving passenger car, a steep hill, a crash, or a work zone. In those instances, traffic backs up quickly causing safety concerns for drivers. The remaining portion of the roadway network is in fair to poor shape for freight traffic with several weight-limit posted bridges and 2-lane roads without shoulders winding through small towns. The recent state freight plan states that 50% of all freight moving on the interstates and rail is through traffic, neither starting nor stopping in your state.

The governor and legislature are very excited about the new e-commerce and distribution centers that have located in your state. The governor included that as a success in his state of the state address and has charged his entire cabinet with finding ways to support this initiative. The Secretary of Economic Development has contacted the Secretary of Transportation and advised that some site selectors the state is courting have indicated concern about recent events in your state that hampered transportation reliability and are considering eliminating your state from consideration as a result. The site selectors have agreed that if your state can demonstrate a plan for freight transportation reliability and resiliency for their outgoing products and incoming resources they will keep your sites in contention.

The incidents the site selectors refer to have occurred over the last 18 months and have generated a lot of bad media coverage, the ire of the trucking industry, your governor, members of the general assembly, and other states who rely upon freight moving through your state.

- The expansion joint on a major river bridge broke and was sticking up out of the pavement causing multiple flat tires. Your DOT had to reduce the driving lanes from 4 (2 in each direction) to 3 lanes for 4 days while it was repaired. Traffic was backed up on the interstate for over 15
miles causing issues with hours of service for the trucking industry, and additional public backlash from motorists caught in the back-up.

- An unexpected cold front moved through the state, glazing the interstate with black ice. Vehicle crashes and secondary crashes blocked the interstate, it took 15 hours to fully clear the crashes and return traffic to normal flow. Many truckers, who stayed on the interstate, exceeded hours of service regulations and missed their 1 hour windows for delivery and pickups at the company sites. The entire supply chain was disrupted for 4 days.
- Recently, an oversized vehicle hit a bridge girder and caught on fire causing part of the interstate bridge to collapse. Repairs are anticipated to take at a minimum, 4 months. Supply chains are completely disrupted due to traffic backups on all routes and truck restrictions on local roads (no trucks on certain roads by local ordinance or weight limits on bridges).
- A local levee was overtopped during heavy rains causing 2-3 mile segments of the interstate to close due to 2’ of water in low spots. This has happened several times in the last decade, and given recent climate trends, is anticipated to happen again if the infrastructure remains as is.

A common thread among a number of complaints focused on the lack of current and reliable information on road conditions and delays available to the public. Truckers in particular had difficulty getting a clear picture of road conditions and travel delay times. Detour information, when it was available, did not clearly address if the roads could accommodate over-dimensional vehicles and this impacted specialized carriers traveling through the state including some responding with equipment needed for recovery. Truckers traveled through neighboring states with robust travel information systems, but those states had no advance warning for them about the road status in your state. The Freight Office, which you direct, is assigned to outline and brief the Secretary on issues and potential solution and recommendations that may be undertaken to address reliability and resiliency for freight transportation to prepare her for discussions with other cabinet members and the governor to develop the overall state response. The Governor has signaled willingness to consider some financial investment in solutions to mitigate these concerns, however, she wants assurances that the various industry sectors have had input to any proposed solutions and would desire ways to reduce the state’s financial burden in recommended approaches. The Secretary she will need the following aspects included at a minimum:

- Who are the external stakeholders you will engage for input to determine their stance on the issues and solutions? Who are the internal stakeholders – within your DOT and beyond, that you might engage? How will you engage each? What role should they play in the solutions?

- Identify some planning and operational strategies to reduce the freight disruption resulting from the unexpected events like the four described.
  - What would need to happen to implement these options?
  - In identifying options, define whether there are opportunities in these for public/private generated solutions as well as public solutions.

- Are there any statutory or regulatory roadblocks to the solutions you identified?
• Do you have or need data to support or implement these decisions? What is the source of that data or how is data part of a solution?

• If solutions identified, what sources of funding might be utilized?

Capstone Team:
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Travis Black – USDOT Maritime Administration
Jack Lord – FHWA Resource Center (Team Leader)
Justin Ryan – FL DOT
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Daniel Studdard – Atlanta Regional Commission
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STATE OF DISRUPTION
CAPSTONE REPORT

2017 Freight Academy – Team 1:

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FINAL DRAFT – September 15, 2017
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INTRODUCTION

The Great State of Disruption is a large, centrally-located state with a rich history in agricultural products and timber. Our state has generally been a "pass through" for freight movements, but recently Disruption has been attracting new sources of economic development activity, particularly in automotive production, automotive manufacturing suppliers, and e-commerce distribution centers. Although sparsely populated, Disruption's three large metropolitan areas have been actively marketing to manufacturing and freight industries and have enjoyed recent success, attracting multiple firms wishing to take advantage of our central location and diverse transportation infrastructure.

Disruption has a large network of interstate highways that are in generally good condition and carry approximately 80% of the state's traffic. The rural portions of the interstates are near capacity but function well absent any serious interruptions.

The economic vitality and competitiveness of Disruption relies heavily on the resiliency of the state's roadways. Disruption continues to entertain multiple prospects from direct investors (food, manufacturing, and technology) as well as e-commerce retailers, all of whom have business strategies based on highly functioning multimodal transportation networks. Representatives of companies like Amazon, e-Bay distribution, Crayola, Budweiser Brewing, BMW, Tesla, Ethan Allen furniture, Apple, Google, and others indicate that a reliable roadway system for their businesses and goods will result in bringing Disruption to a new state of economic prosperity.

Unfortunately, the State has seen several incidents in the last year and a half that have stretched our capabilities, revealed our weaknesses in communications and alternative transportation routes, and resulted in a reluctance for new economic generators to locate in Disruption. The incidents all brought about issues with hours of service for the trucking industry and interrupted supply chains. The incidents include:

- An expansion joint on a major river bridge broke, causing severe damage to vehicles, reducing the capacity by 25% for four days while it was repaired, and creating backups for more than 15 miles.
- An unexpected winter weather event moved into the state, glazing the interstate with black ice and creating primary and secondary crashes that took nearly 15 hours to clear.
- Recently, an oversized vehicle hit a bridge girder and caught fire, causing part of the interstate bridge to collapse. Repairs are expected to take more than four months and freight movements are jeopardized because of traffic backups and an absence of alternative roads in local jurisdictions due to truck restrictions and weight limits.
- Heavy rains caused a breach in a local levee that resulted in large (two to three mile) sections of the interstate closing because of water depths up to two feet.

To that end, the Disruption Department of Transportation (DDOT) Freight Department offers this report, which outlines the objective to implement strategic highway improvements in Disruption related to freight movement, and further details an array of solutions that will place the welcome square at Milepost 1 on every highway within our state.
1.0 CURRENT FREIGHT ROUTE CONDITIONS

The National Highway Freight Network (NHFN) was designated by Federal law to acknowledge those routes throughout the United States that convey the bulk of our goods commercially along the highway transportation system. Within Disruption, numerous major freight routes, referred to as “T-1 and T-2” routes based on the tonnage of goods moved, traverse the state. T-1 moves more than 10 million tons per year; T-2 moves between 4 and 10 million tons per year.

In addition to the NHFN, Disruption has designated 122 miles of highway in the state as “critical urban or critical rural freight corridors,” areas of the T-1 and T-2 network that are considered critical to localities (typically areas near ports, warehousing districts, or other nodes in the transportation system).

In addition to these strategic freight corridors, Disruption maintains similar rail and waterway corridor systems that link with the T-1 and T-2 routes at specific location (ports, rail yards, etc.).

Highway and specific freight movement reliability is pivotal to economic growth in Disruption. The current condition of the highway network, especially where the highway intersects with rail and waterway corridors, is detailed below.

Of the 80,000 miles of centerline roadway in Disruption, 18,000 are along T-1/T-2 routes. Of the 18,000 miles, 40% is considered to be in “poor” pavement condition due to the sheer weight of vehicles along the road, the lack of funding historically to fix it, and colder/wetter weather trending over the last 5-10 years. Disruption also has 3,700 bridges throughout the state, with 850 bridges along the T-1/T-2 freight routes considered to be in “poor” or “very poor” condition, due to age, weight loads, and other limitations.

The “Level of Service” (LOS) information along the T-1/T-2 routes in Disruption can be deceptive. While this highway freight system is said to operate at an LOS rating of “C” (think “report card”), trend analyses over the last 5 calendar years indicate that enough incidents have occurred in specific locations to lower the LOS to F over periods of time (hours, days, or weeks). While the LOS C rating indicates little problem with the roadway, factors “beyond the highway” itself are reducing the overall LOS in a practical manner of speaking.

The 23% of bridges that are in poor or very poor conditions are beginning to show their age. Expansion joints may break, as was the case in a recent situation where DDOT closed two lanes of the Well I’ll Be River Bridge in Awshucks, backing up all traffic for more than 15 miles, adding to the delays in freight delivery.

The recent collapse of the interstate bridge along Tater Tot Creek, caused by an oversized load hitting the girders and catching fire, has become the poster child for Disruption’s well-publicized needs for upgrading and preserving the highway system throughout the state. Rerouting around the loss of this bridge will take more than 16 weeks, and has resulted in delays for our commercial stakeholders as well as the traveling public at large.

Over the winters of 2015 and 2016, both Interstates experienced ice storms, for a total of 18 separate incidents where black ice formed on stretches of these highways and caused a total of 73 multi-vehicle accidents. While there was no loss of life, and injuries were relatively few, the estimated aggregate loss of hours for freight delivery was significant—approximately 17,000 hours.
delay, due to the accidents directly, or loss of hours due to missing connections (airlines, loading dock times, wait times and ports, etc).

In addition, the interstate experienced a significant closure in three separate years due to flooding along levee breaches along the Well I’ll Be River. In each case, the interstate was closed for several days in both directions, creating freight delivery lost hours amounting to more than 120,000.

In each of these events, regional and national media (TV) displayed the multi-vehicle accidents and flooding, the bridge backups, and the Tater Tot bridge collapse, adding to the sense that these incidents happen routinely. In fact, the total of these incidents amount to less than one percent of time, taking into consideration all the roadways. Media also repeat roadway flooding and ice storm issues when there are traffic accidents that add to the “sensationalist” approach of the evening news, such as vehicle fires.

In short, there is a somewhat valid perception that Disruption has highway infrastructure problems. While the proportion of problems to the overall transportation network is inflated due to media attention, the problems are real nevertheless, and DDOT will use this effort to pinpoint and find solutions for the transportation infrastructure issues related to freight movement.

2.0 Challenges

In general, the challenges Disruption faces at the federal and state levels are primarily funding-related. Although the State has a MAP-21 and FAST Act compliant State Freight Plan, the amount of funding available from federal and state sources is inadequate to solve the immediate needs created by the catastrophic events of the previous couple of years. In addition, there are numerous local restrictions preventing trucks from accessing facilities that could be used as alternate routes during emergencies.

The challenges for the State of Disruption and DDOT can be summarized as follows:

- Challenge 1: Bridge state of good repair – the recurring issues with local levees must be fixed.
- Challenge 2: Need faster response time in bad winter weather.
- Challenge 3: Need faster response times to incidents/interruptions.
- Challenge 4: Need better messaging about being able to deliver goods within delivery windows.
- Challenge 5: We are not up to par with neighboring states, which exacerbates the problem.

The table below indicates various options to evaluate toward these issues, displays the advantages and disadvantages of each option, and cites the very general regulatory considerations.
<table>
<thead>
<tr>
<th>Challenge</th>
<th>Solution</th>
<th>Advantage</th>
<th>Disadvantage</th>
<th>Regulatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bridge State of Repair</td>
<td>Analyze and create a freight route via the best (not posted) bridges. Barring ability to do that, could fix the worst bridges, focusing the state bridge funds on these &quot;special, short term&quot; projects for &lt;5 years.</td>
<td>Chance of leaving other bridges in disrepair. Communications / messaging.</td>
<td>Follow bridge inspection and priority work laws and regulations.</td>
</tr>
<tr>
<td>1, 5</td>
<td>Funding – ER</td>
<td>Very quick. Could be used to fix or widen the highway if new culvert/drainage work was put in place for the levee breeches.</td>
<td>Must make a case for this type of funding quickly.</td>
<td>Must follow law and language of an ER event. May not meet the timeline for ER requirement.</td>
</tr>
<tr>
<td>1, 2, 3, 4, 5</td>
<td>Funding – TIGER</td>
<td>Relatively quick (&lt;2 years to start). Possible big payout. Use for any of the issues.</td>
<td>Strong competition across country; small percentage chance to win. Match will be required.</td>
<td>Must meet several &quot;shovel ready&quot; requirements of TIGER to compete.</td>
</tr>
<tr>
<td>2, 3, 4, 5</td>
<td>Funding – More $$ into TIM</td>
<td>More resources for robust TIM response could be an easy ramp-up with support of Governor and Secretary. Could use number of tools available. Could develop agreements with numerous tow-truck companies for quick removal of vehicles. ITS / communication would be lower cost tool.</td>
<td>Equipment necessary, such as plows, sanders, tow trucks.</td>
<td>Could ask for FMCSA funding as well as ITS, TDM, -- many funding sources available, depending on how FMCSA and USDOT reads the regulatory application of TIM to the &quot;problem.&quot;</td>
</tr>
<tr>
<td>3, 4, 5</td>
<td>Agricultural Loans and Grants</td>
<td>Funding leverages more local dollars.</td>
<td>Competitive; would still need to work through the engineering for better developing the freight system.</td>
<td>Regulatory limitations may apply if the projects are too narrowly defined (that is, agriculture products movement vs. &quot;freight&quot; movement).</td>
</tr>
</tbody>
</table>
3.0 Stakeholder Outreach

Partner Engagement Strategy

DDOT’s intent for this strategic planning effort is to –

- develop a thorough understanding of private sector challenges,
- identify and influence infrastructure investment decisions to prevent, and/or mitigate to the greatest extent possible future disruptions to the State’s transportation network.

As a state agency, DDOT understands that our planning processes and timelines are very different from our private sector stakeholders. As such, we seek to deploy a strategy that maximizes the return on investment of time and capital for all involved parties. This strategy will illustrate how DDOT plans to engage internal and external stakeholder groups. To generate the most feedback, DDOT will establish (2) two external stakeholder groups and (2) internal stakeholder groups. Engagement techniques are designed to generate value, ensuring all stakeholder groups remain engaged during and after this planning effort.

Roles & Responsibilities of DDOT

DDOT’s role is to improve roads at strategic locations in Disruption to enhance and take advantage of imminent economic development opportunities by addressing highway infrastructure system deficiencies quickly. To do this, the DDOT will develop and implement context sensitive solutions that address current infrastructure challenges and mitigate future challenges. The transportation network interruptions in the State have far-reaching economic impacts and threaten economic development opportunities. DDOT will kick off outreach with industry Stakeholder groups, establishing communication and feedback loops, and vetting potential solutions to provide recommendations to the governor.

Roles & Responsibilities of Stakeholders

The DDOT Freight Team will establish cross-functional groups of freight industry stakeholders from the private sector, government, and nonprofits. To achieve diverse and candid feedback desired, DDOT will establish two distinct stakeholder groups. The first group is the Project Partners Group (“The Partners”). The Partners represents a range of trucking and logistics companies that includes agriculture, auto haulers, drayage, liquid and dry bulk haulers, freight forwarders, intermodal, and refrigerated trucks. The second group is the General Stakeholder Group (“The Stakeholders”). The Stakeholders is the voice of the larger transportation community that includes staff and elected representatives of transportation and land use planning agencies, modal partners (air, rail, and sea), intermodal entities, economic development groups, environmental advocates, and other representatives from the transportation industry.
External Engagement Methods

The Partners

The Partners will engage in up to 50 one-on-one meetings with representatives from the freight industry and from state, county and local agencies, as well as local enforcement and state regulatory agencies. Meeting with every trucking and logistics company is beyond the capabilities of the Freight Office; however, these meetings will reach a cross-section of the industry geographically and by commodities and services. The one-on-one setting should provide for a neutral environment that will generate focused and candid feedback.

The Stakeholders

The Stakeholders will create a large-scale, all-inclusive process for stakeholder engagement, including methods for obtaining input from stakeholders, providing responses to stakeholders, comment tracking, and documentation. The methods deployed to reach this audience will include an interactive project website, e-mail blasts, online surveys, and opportunities to participate in stakeholder forums.

Internal Engagement Methods

The Freight Infrastructure Subject Matter Experts Group ("The Experts")

The Experts is a task-driven project management team comprised of subject matter experts who will develop solutions to improve the resiliency and reliability of the State's freight transportation infrastructure. At the beginning of this exercise, The Experts will use three tools from their tool box:

- The first will be for communication, and may include SharePoint, Google for Work, Huddle, etc., to provide an environment for team communication and sharing.
- The second will be for project management software, such as Project, Redmine, Wrike, Basecamp, etc., to allow The Experts to manage, track, and report project tasks.
- The third and final tool is contact management software (CMS), such as Access or Salesforce to manage interactions with our stakeholders.

DDOT has identified a project manager who, along with DOT executives, will develop a project management plan (PMP). The PMP will focus specifically on time, cost, quality assurance/quality control (QA/QC), communication strategies, risk mitigation, and management of the stakeholder outreach. After the PMP is put into place, a work plan will be shared for comment with The Policy and Finance Group (see below) and ultimately implemented. The purpose of the work plan is to ensure a transparent and predictable process among all stakeholders. The final document will be a communication plan that will guide how The Experts and the Policy and Finance Group communicate for successful project delivery and outcomes.

The Policy and Finance Group ("The Policy and Finance Group")

This cross-functional team comprised of Cabinet Members, Agency Heads, and DDOT Department Directors will be formed to advise the Secretary of DDOT. The Policy and Finance Group will be the decision-making board responsible for evaluating recommendations resulting from stakeholder
input and The Experts’ vetting. The projects that make it through to The Policy and Finance Group’s will be evaluated for financial feasibility, return on investments, and economic impacts to determine the timing and financing of improvements. The Policy and Finance Group will work according to established standing meeting dates and communications protocols with The Experts and those outside the agency (that is, the public and media).

**Tools for All Stakeholders**

**Project Website**

The website will serve as an online information portal, regarding projects that will address freight transportation reliability and resiliency projects throughout the State. The website will feature the project undertakings, updates on milestones, and opportunities to participate and provide feedback. It will also be designed for use as a resource to implement follow-up actions and remain engaged with our internal and external stakeholders.

**Online Survey**

All stakeholders and the public will have opportunities to participate in online surveys. The periodic surveys will be designed and conducted by The Experts to provide ongoing guidance for program and project priorities.

**Stakeholder Forums**

Forums will be held at the kickoff, midpoint, and conclusion of the project, at a central location that is easy to access for those traveling. The purpose of the forums is to share progress and solicit feedback from all stakeholder groups. Forums will include presentations and outreach activities designed to engage the stakeholders and encourage their input into solutions proposed by the freight office.

### 4.0 DATA AND ANALYSIS

The DDOT has been working over the last several years to demonstrate compliance with the MAP-21 and FAST Act legislation that currently guides transportation policy and funding. As part of those efforts, we have enhanced and expanded our data collection efforts, allowing us to move quickly toward implementing immediate and short-term needs identified in this report.

There is a variety of available data that will help inform issues and solutions related to the reliability and resiliency of our State of Disruption’s transportation system. All data needed for immediate and short-term development and implementation is currently collected by the State or can be acquired in cooperation with other public agencies.

**Traffic Data**

We conduct ongoing traffic counts that cover the entire state system over a three-year period. These counts are collected as part of our HPMS compliance efforts and support various modeling functions at both the State and MPO levels.
**Average Annual Daily Traffic (AADT)** – Average Annual Daily Traffic (AADT) is the theoretical estimate of the total number of vehicles using a specific segment of roadway (in both directions) on any given day of the year. This estimate represents the total number of cars per year divided by 365 and is developed using factors to adjust for season, day of the week, and vehicle type. Having an AADT count on the State of Disruption’s freight routes, when paired with the AADTT count, both tells us how heavily trafficked the road is, and what percentage of the traffic is trucks.

**Average Annual Daily Truck Traffic (AADTT)** – Average Annual Daily Truck Traffic (AADTT) is the theoretical estimate of the total number of heavy commercial vehicles (trucks) using a specific segment of roadway (in both directions) on any given day of the year. This estimate represents the total number of heavy commercial vehicles per year divided by 365 and is developed using factors to adjust for season. Having an AADTT count on the State of Disruption’s freight routes, when paired with the AADT count, both tells us how heavily trafficked the road is, and what percent of the traffic are trucks.

**Bridge Information**

Bridges represent a critical infrastructure category for freight movement, and can prove to be a vulnerable bottleneck. DDOT complies with the National Bridge Inspection Standards (NBIS) and uses the National Bridge Investment Analysis System (NBIAS). The various types of bridge data that are needed for this analysis include:

- **Bridge Sufficiency Ratings** – The bridge’s sufficiency rating is an overall rating of a bridge’s fitness for the duty that it performs, and is indicative of how long a bridge can remain in service.
- **Load-Limited Bridges** – Knowing where our state’s load limited bridges are located tells us where trucks over a certain weight cannot cross.
- **Height-Restricted Bridges** – Knowing where our state’s height restricted bridges are located tells us where trucks over a certain height cannot pass.

**Asset Information**

The DDOT has had an Asset Management plan in place for several years. Having timely information on DDOT’s assets is critical to this effort. Beyond the bridge information highlighted above, we also have measures and rating information for our pavement, highway culverts, storm tunnels, overhead signs (including all variable message signs), tow trucks, plow and salt trucks, closed-circuit television/cameras, and light poles. Knowing the age and condition of many of these critical pieces of infrastructure helps us better respond to accidents as they occur, and perform preventative maintenance on areas that are vulnerable.
**Intermodal Connectors**

The State of Disruption’s network of intermodal connectors represents our most critical routes for freight movement. These routes should be given specific attention in planning for reliability and resiliency.

**Land Uses**

An evaluation of our state’s existing industrial and freight oriented land uses, as well as locations for potential future development of this type, gives us a sense of where freight traffic will originate and travel to, and will help plan for potential disruptions to our transportation network’s reliability and resiliency. The designation process for our state’s Critical Urban and Critical Rural Freight Corridors involves criteria relating to industrial land, so that process may be viewed as a potential data source for this exercise. In addition to getting relevant industrial land data from this designation process, we also plan to work with the State of Disruption’s Economic Development Agency as well as the state’s MPOs and regional commissions to identify existing industrial land uses and locations for potential future industrial development.

**5.0 POTENTIAL FUNDING PROGRAMS**

Following is a list of potential funding from federal sources. The current level of State funding for DDOT is not sufficient to ensure

**U.S. Department of Transportation Programs**

**Federal-Aid Grants**

- **National Highway Freight Program (NHFP):** Formula funding for States to improve movement of freight on the National Highway Freight Network (NHFN). Up to ten percent of NHFP funds are eligible for inside the gate port projects.
- **Surface Transportation Block Grants (STBG):** Formula funding for States and MPOs for priority projects. Transportation projects that facilitate direct intermodal interchange, transfer, and access of freight into and out of a port terminal are eligible.
- **Congestion Mitigation and Air Quality (CMAQ):** Formula funding for States and Metropolitan Planning Organizations (MPOs) to meet the requirements of the Clean Air Act. Non-road vehicles and non-road engines used in port-related freight operations in non-attainment or maintenance areas are eligible.

**Federal Loan Programs**

- **Transportation Infrastructure Finance and Innovation Act (TIFIA):** Financing assistance for surface transportation projects.
- **Private Activity Bonds (PABs):** Tax-exempt financing issued through a public conduit for privately developed infrastructure.
- **Railroad Rehabilitation & Improvement Financing (RRIF):** Financing assistance for railroad infrastructure.
Competitive Grants

- **Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD):** Grant funding to develop & deploy advanced transportation technologies to improve safety, efficiency, system performance, and infrastructure ROI.
- **America’s Marine Highway Grants:** Funding to establish or expand marine highway operations.
- **Nationally Significant Freight and Highway Projects (NSFHP):** Grant funding for nationally significant freight and highway projects, including multimodal projects. The FY2016/2017 notices of funding availability referred to this program as FASTLANE Grants.
- **Passenger Ferry Grants:** Funding for projects that support passenger ferry systems in urbanized areas.

Other US Government Programs

- **Economic Development Programs (EDA):** Funding for a variety of project elements including infrastructure and facilities, as well as for planning services in economically distressed areas.
- **Diesel Emission Reduction Act (EPA):** Grant funding for upgrades that reduce diesel emissions from existing engines.
- **Water Infrastructure Finance and Innovation Act (WIFIA):** Federal credit assistance to finance water and wastewater infrastructure projects.
- **Port Security Grants (PSG):** Grant funding for maritime transportation infrastructure security activities.
- **USDA Rural Development:** Loans, grants and loan guarantees to support essential services in rural areas.

For a complete list of potential funding sources and eligibility, please see Table X in the Appendix.
6.0 Planning and Operational Strategies

Effective planning allows the State of Disruption Department of Transportation (DDOT) to prevent disruptions whenever possible, and reduce their impacts when they cannot be prevented. This requires a transportation network that is reliable to minimize the frequency of disruptions, and is also resilient to minimize their impacts. Planning and operational strategies to address disruptors are identified in the Action Plan in Table 6-1. This plan includes immediate implementation needs that will be done within six months; short-term actions that can take place over the next three years; mid-term solutions for the next three to five years; and long-term solutions that will take place five or more years in the future.

Table 6-1: Action Plan

<table>
<thead>
<tr>
<th>Action</th>
<th>Project Type</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Communications</td>
<td>Operations</td>
<td>Immediate, Ongoing</td>
</tr>
<tr>
<td>Emergency Management Improvements</td>
<td>Operations</td>
<td>Immediate</td>
</tr>
<tr>
<td>Freight and Logistics Stakeholder Outreach</td>
<td>Planning</td>
<td>Immediate, Ongoing</td>
</tr>
<tr>
<td>Freight Plan Supplement</td>
<td>Planning</td>
<td>Short-Term</td>
</tr>
<tr>
<td>Freight Corridor Expansion Plan</td>
<td>Planning</td>
<td>Mid-Term</td>
</tr>
<tr>
<td>ITS Implementation</td>
<td>Infrastructure</td>
<td>Mid-Term</td>
</tr>
<tr>
<td>High Priority Bridge Maintenance/Replacement</td>
<td>Infrastructure</td>
<td>Mid-Term</td>
</tr>
<tr>
<td>Freight Plan 5-Year Update</td>
<td>Planning</td>
<td>Long-Term</td>
</tr>
<tr>
<td>Capital Implementation</td>
<td>Infrastructure</td>
<td>Long-Term</td>
</tr>
<tr>
<td>Freight Plan 10-Year Update</td>
<td>Planning</td>
<td>Long-Term</td>
</tr>
</tbody>
</table>

Real Time Communications Improvements – Immediate

As has been demonstrated recently, the transportation system could be disrupted at any time, so improved communications are needed today. This should be an omni-channel communications approach that seeks to reach truck drivers regardless of their preferred communications medium. This approach will include:

- **ITS/Variable Message Signage:** Truck drivers are not allowed to use their smartphones while driving. Therefore, ensuring that variable message signs on highways in the state have up-to-date information is a key way to reach drivers.
- **Traditional Media:** During a transportation disruption, the DDOT public relations staff will give frequent updates to radio stations, TV stations, and other local media throughout the state. This will be supplemented as needed by press conferences from DDOT leadership.
- **511:** Frequently update information available through the state's 511 call system. Real time data will also be displayed through the state's 511 website.
- **Online:** Some travelers may visit the DDOT website seeking travel information. Details about upcoming road construction, closures, detours, and other roadway information will be provided here. The DDOT site will also direct users to the 511 website for real time travel information.
- **Social Media/Apps:** During a transportation disruption, DDOT will post information frequently to DDOT’s Facebook and Twitter accounts, reaching users on whichever platform they prefer. Social media posts will link to the 511 website for additional information.
DDOT has an existing contract with Waze and partners with them through their Connected Citizens program. Through this existing program, Waze will provide real-time crowdsourced traffic data in exchange for information on construction, road sensors, and pre-planned road closures. DDOT will also create a developer’s app page where other companies can link their apps to DDOT data. This will support existing apps, particularly those focused on the trucking industry, as well as support future apps that don’t exist yet.

- Future Communications Methods: Facebook was founded in 2004, while Twitter was founded in 2006. Neither platform was widely used (if used at all) for real-time transportation information 10 years ago. It’s impossible to know what the new communications methods will be 10 years from now, but DDOT is committed to staying current with technology changes to reach drivers via their preferred platform.

**Emergency Management Improvements – Immediate**

The state emergency management agency handles winter weather planning and response in the state as well as other significant emergencies and disasters. They coordinate directly with the Governor’s office, DDOT, FEMA, first responders and other key agencies. However, they were caught by surprise by the recent ice storm that resulted in supply chain disruptions for four days.

To address this, meteorologists from the National Weather Service as well as television stations from the three large metropolitan areas in our state will be included in communications channels as a part of the state emergency management agency’s operations. This will allow them to provide real-time weather forecasts so that DDOT can make decisions and deploy resources (i.e. salt trucks/snow plows) with the best possible information. A slight temperature change would have turned the recent ice storm into rain, with no impact to the supply chain. However, if the weather had been colder, the weather system likely would have brought snow instead of ice, and a different response would have been needed.

A representative from the state motor trucking association or other industry group will remain a part of the DDOT Partners group and will receive emergency management updates as appropriate. This will allow them to assist with providing real-time data directly to truck drivers and other industry organizations in the state.

**Freight and Logistics Stakeholder Outreach – Immediate**

As previously discussed, external outreach to freight and logistics businesses in the state is key to freight planning and operations. Work has begun to establish this group, with ongoing efforts to add key players and new businesses. This group will serve as an advisor on all the other actions identified in this plan.

**Freight Plan Supplement – Short-Term**

The recently completed state freight plan provides in-depth data analysis for freight movement throughout the state. This supplement is intended to go a step further on a few key issues related to freight disruptors:

- Comprehensive Communication Plan – When a disruption impacts the state's transportation system, it is too late to figure out how to communicate information to truck drivers, businesses, and residents. A comprehensive communication plan will identify the best, most efficient methods to communicate real-time information to these groups. This
task will involve seeking input from freight and logistics stakeholders, reviewing best practices from other state DOTs, working with communications professionals to identify communications methodologies, and anticipating potential future communications methods. Freeway Traffic Incident Management plans will be developed to pre-determine alternate routes that can be used by trucks when there is a disruption to the existing freight network.

- **Freight Corridor Designation** – The current plan identifies interstate highways and a small number of other highways and arterials as state freight routes. However, many of these routes do not have alternate routes nearby. For these corridors, alternate routes will be designated where feasible and practical based on truck height/weight restrictions, geometric design, and other constraints. While these will not be the preferred truck routes in the state, they will become a part of the freight route network because they do not have load limited bridges or height restrictions under any bridges/overpasses.

- **Bridge Maintenance Prioritization** – Review and prioritize bridges in the state for maintenance and/or replacement. All bridges that are load limited or have height restrictions preventing trucks from driving under them should be part of this prioritization process. These restrictions, along with the bridge sufficiency rating, AADT, AADTT, nearby freight land uses, proximity of alternate routes, and other data should be used to determine how to have the maximum positive impact with available transportation funding.

- **ITS** – Identify needed ITS improvements that support freight movement throughout the state. This includes additional variable message signage, which is key to reaching truck drivers who can’t use their smartphones while driving. A data exchange serving DDOT and multiple local jurisdictions will integrate data sharing statewide. ITS data network improvements and expansion will provide resiliency in the overall ITS network. This will prevent a network failure in one location from impacting a widespread area.

**Freight Corridor Expansion Plan – Mid-Term**

The Freight Plan Supplement identified alternate routes to the existing state designated freight corridors. This freight corridor expansion plan is the next step for expanding the network. It will analyze the condition of those secondary corridors and identify ways to make these roadways more truck friendly. These enhancements may include adding/ expanding shoulders, improving access management, intersection modifications to better accommodate trucks, additional signage, and other corridor enhancements. Locations where bypasses around small towns are needed will also be identified in this plan.

**ITS Implementation – Mid-Term**

The Freight Plan Supplement will identify additional ITS improvements throughout the state. While these are not inexpensive improvements, they typically cost a fraction of major roadway capacity projects. Design and implementation can take place relatively quickly if funding is available. ITS design should begin immediately after completion of the Freight Plan Supplement, with implementation taking place in the next 3-5 years.
High Priority Bridge Maintenance/Replacement – Mid-Term

Bridge maintenance is ongoing throughout the state to extend the useful life of bridges. The cost of bridge replacement is typically far costlier than ITS improvements. However, the highest priority bridge replacement projects identified in the Freight Plan Supplement should begin implementation during the next 3-5 years.

Freight Plan 5-Year Update – Long-Term

This update will take place approximately 5 years after completion of the Freight Plan Supplement. With other ongoing planning efforts, it may seem too soon to consider an update to the overall freight plan. However, the 2014 Material Handling & Logistics US Roadmap, delving into the rate of change in the freight industry, said, “What may have sounded fantastical just five years ago now seems to be on the horizon.” They waited only 3 years to release an update to this plan – the Material Handling & Logistics US Roadmap 2.0 was released in April 2017. This document included the following “During the workshops held to collect information for Roadmap 2.0, one of the participants expressed the rate of change this way. ‘Warehousing has changed so much in the past 5 years that I have to be careful not to hire experienced people who do not recognize the shifts.’” The private sector sees a clear need to stay current with changes in the industry. The public sector must be equally responsive and conduct regular freight plan updates to address these changes.

Capital Project Implementation – Long-Term

Each of the plans discussed so far will result in recommended capital projects. In addition to ITS improvements, these may include roadway capacity expansion, intersection operations projects, bridge replacements, and other capital projects that facilitate freight movement in the state. Moving these projects towards implementation will be a priority for DDOT, and will be an ongoing part of DDOT’s work program in the future.

Freight Plan 10-Year Update – Long-Term

The 10-year update of the freight plan will be a full update that looks at everything included in the original state freight plan as well as related planning efforts that have been completed since the initial plan completion. This will be a great opportunity to seek more input from freight stakeholders in the state, identify new stakeholders, assess how the freight and logistics industry has changed, and update the freight projects list.
7.0 Conclusions

In recent years, the State of Disruption has been attracting new sources of economic development activity, particularly in manufacturing and distribution centers. The state's road and highway network has been a key selling point for these businesses. Unfortunately, there have been several recent incidents that have stretched our capabilities, revealed our weaknesses in communications and alternative transportation routes, and resulted in a reluctance for new economic generators to locate in the State. The incidents all brought about issues with hours of service for the trucking industry and interrupted supply chains.

Improving the input process from the trucking industry and other freight and transportation experts is a key step towards addressing future disruptions. To do this, the DDOT Freight Team will establish cross-functional groups of freight industry stakeholders from the private sector, government, and nonprofits. Information from these groups will be gathered through one-on-one meetings, an interactive website, e-mail blasts, online surveys, and stakeholder forums. A separate Policy and Finance group will also be established consisting of Cabinet Members, Agency Heads, and DDOT Department Directors. This group will use input from the industry stakeholders, DDOT staff, and future planning efforts to advise the Secretary of DDOT on an ongoing basis.

The transportation system could be disrupted at any time, so improvements in external communications to truck drivers should be pursued immediately. This initial approach focuses primarily on better utilization of existing resources, including ITS/Variable message signage, traditional media, the 511 call system, websites, and social media/apps. DDOT will also begin immediately seeking ways to improve coordination with the state emergency management agency, meteorologists, law enforcement, and other relevant agencies so DDOT can more effectively plan for disruptions, make real time operations adjustments, and provide more useful information through the external communications systems. A separate short-term action item for DDOT will be the development of a more thorough Comprehensive Communications Plan focused on identifying the most effective external communications methods currently available as well as ways to best utilize changing communication methods in the future.

DDOT will also move forward with a supplement to the state's freight plan as a short-term action item. This will focus on additional freight corridor designations, bridge maintenance prioritization, ITS improvements, and the Comprehensive Communications Plan. Existing transportation and freight data as well as relevant land use data and economic development information will be used for this planning effort. This plan will lay the groundwork for project implementation as well regular freight plan updates for the state.
Secretary’s Actions

To effectively move forward with these immediate and short-term tasks, as well as project implementation and future planning updates, the following is requested from the DDOT Secretary:

- Funding
  - Immediate funding is needed to advance ITS improvements, expand our incident and emergency management framework, and increase staffing resources to continue and enhance coordination efforts and stakeholder outreach.
  - Short-term funding needs will focus on improving the T1 and T2 routes and bridges in poor condition, as well as consultant assistance for the freight plan updates and related efforts. Funding may also be needed for data purchases above and beyond what is already available from DDOT and other planning agencies.
  - Mid and long-term funding will be significantly greater and will focus on project implementation, including ITS upgrades, bridge maintenance/replacements, and roadway improvements.
- Communicate the need for improved coordination before and during emergencies with the state emergency management agency and law enforcement leadership. This will allow staff to begin the dialogue process with these groups.
- Make freight planning and addressing future disruptions a high priority for DDOT staff.
  - Meet with all appropriate internal DDOT leadership to ensure their focus on these issues and availability of appropriate staff to work on these tasks.
  - Continue to stress the importance of this work in future internal communications.
- Meet with the Governor and the Secretary of Economic Development to communicate how DDOT is moving forward with addressing future disruptions in terms of immediate actions, short and long-term planning, project implementation, and funding needs.
- Distribute a press release communicating DDOT’s efforts to address future transportation disruptions. Follow this up with interviews with media throughout the state. DDOT state will post similar information online and on social media to effectively reach a broad audience through multiple channels.
  - Seek to have similar outreach efforts from the Governor and the Secretary of Economic Development.
  - This outreach will show DDOT’s commitment to existing freight businesses, future business prospects, and residents of the state that transportation disruptions are a priority for DDOT.
  - This combined outreach will also show the value for members of the private sector and other stakeholders to be a part of DDOT’s future planning efforts.

Through implementation of the actions identified in this report, DDOT seeks to prevent transportation disruptions when possible and better manage disruptions when they can’t be prevented. This will help prevent truck drivers from unexpectedly violating their hours of service requirements, will reduce supply chain disruptions, and will generally improve travel for residents, businesses, and visitors to the State of Disruption.
## APPENDIX A – LISTS OF STAKEHOLDERS

### Table 3-1: External Stakeholders

<table>
<thead>
<tr>
<th>Company/Agency/Authority</th>
<th>Sector/Specialty</th>
<th>Stakeholder Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advocacy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Association of Port Authorities</td>
<td>Ports</td>
<td>General Stakeholder</td>
</tr>
<tr>
<td>American Shortline and Regional Railroad Association</td>
<td>Rail</td>
<td>General Stakeholder</td>
</tr>
<tr>
<td>American Trucking Association</td>
<td>Trucking</td>
<td>General Stakeholder</td>
</tr>
<tr>
<td>Association of American Railroads</td>
<td>Rail</td>
<td>General Stakeholder</td>
</tr>
<tr>
<td>Disruption Logging &amp; Hauling Association</td>
<td>Timber</td>
<td>Project Partner</td>
</tr>
<tr>
<td>Disruption Trucking Association</td>
<td>Trucking</td>
<td>Project Partner</td>
</tr>
<tr>
<td>Manufacturers Association of Disruption</td>
<td>Manufacturing</td>
<td>Project Partner</td>
</tr>
<tr>
<td>National Association for Industrial and Office Parks</td>
<td>Real Estate</td>
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<td>Disruption Farm Bureau</td>
<td>Agriculture</td>
<td>Project Partner</td>
</tr>
<tr>
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<tr>
<td>Disruption Association of Cities and Counties</td>
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<tr>
<td>National Retail Federation</td>
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</tr>
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</tr>
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<td>Waitinline Regional Economic Development Commission</td>
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<td>Project Partner</td>
</tr>
<tr>
<td>Across the River Export Council</td>
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<td>Project Partner</td>
</tr>
<tr>
<td>Through the Woods Chamber of Commerce</td>
<td>COC</td>
<td>Project Partner</td>
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<td><strong>Port Authorities</strong></td>
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<td></td>
</tr>
<tr>
<td>Port of Last Resort</td>
<td>Liquid Bulk (Fuels, Chemicals, Food Grade)</td>
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</tr>
<tr>
<td>Port of Call</td>
<td>Container</td>
<td>Project Partner</td>
</tr>
<tr>
<td>Port of Ports</td>
<td>Bulk/RO-RO/Container</td>
<td>Project Partner</td>
</tr>
<tr>
<td>Port Thwart</td>
<td>Inland Barge Port</td>
<td>Project Partner</td>
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<td>Company/Agency/Authority</td>
<td>Sector/Specialty</td>
<td>Stakeholder Group</td>
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<td><strong>Sector/Specialty</strong></td>
<td><strong>Stakeholder Group</strong></td>
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<td><strong>Advocacy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Government Agencies</strong></td>
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<td></td>
</tr>
<tr>
<td>U.S. Department of Transportation (FHWA, FMCSA, MARAD)</td>
<td>Federal</td>
<td>Project Partner</td>
</tr>
<tr>
<td>US Army Corps of Engineers</td>
<td>Federal</td>
<td>Project Partner</td>
</tr>
<tr>
<td>State of Disruption Department of Transportation</td>
<td>State</td>
<td>Project Partner</td>
</tr>
<tr>
<td>Cabinet Level Executive Agencies (Agriculture, Trade, Utilities)</td>
<td>State</td>
<td>Project Partner</td>
</tr>
<tr>
<td>State of Disruption Commercial Vehicle Enforcement Division of</td>
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<td>Project Partner</td>
</tr>
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<td>General Stakeholder</td>
</tr>
<tr>
<td>Northern State of Disruption Regional Transportation Commission</td>
<td>Regional</td>
<td>General Stakeholder</td>
</tr>
<tr>
<td>Northeast Disruption Transportation Planning Organization</td>
<td>Large-Urban-Local</td>
<td>General Stakeholder</td>
</tr>
<tr>
<td>Tractors and Minivan Land Transportation Planning Organization</td>
<td>Small-Medium-Local-Rural/Suburban</td>
<td>General Stakeholder</td>
</tr>
<tr>
<td><strong>Private Sector</strong></td>
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<td></td>
</tr>
<tr>
<td>Gulf to Wide Transport</td>
<td>Truck/Rail/Warehouse/LTL</td>
<td>Project Partner</td>
</tr>
<tr>
<td>Specific Logistics</td>
<td>Freight Forwarder</td>
<td>Project Partner</td>
</tr>
<tr>
<td>Bulk Bulk Bulk</td>
<td>Dry Bulk Trucking</td>
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</tr>
<tr>
<td>ABC Wholesale Services</td>
<td>Food Distribution</td>
<td>Project Partner</td>
</tr>
<tr>
<td>Eggs &amp; More Eggs</td>
<td>Egg Producer</td>
<td>Project Partner</td>
</tr>
<tr>
<td>Ton of Grain &amp; Ingredients</td>
<td>Food Distribution: Hopper, Dump, Live</td>
<td>Project Partner</td>
</tr>
<tr>
<td>Crow Liner Services</td>
<td>Logistics – Ocean Carrier</td>
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</tr>
<tr>
<td>Crow Logistics</td>
<td>Trucking, TL, LTL, Drayage</td>
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</tr>
<tr>
<td>XSC Intermodal Terminals</td>
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</tr>
<tr>
<td>SN Intermodal Terminals</td>
<td>Rail Intermodal</td>
<td>Project Partner</td>
</tr>
<tr>
<td>Hot Rock &amp; Full Tank Lines</td>
<td>Chemical Bulk Tanker</td>
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</tr>
<tr>
<td>Suzy &amp; Sally Auto Transport</td>
<td>Auto Hauler</td>
<td>Project Partner</td>
</tr>
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<td>Whatever Brands</td>
<td>MRO product distributor</td>
<td>Project Partner</td>
</tr>
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<td>US Distributor Company</td>
<td>Trans-continental, dedicated fleets,</td>
<td>Project Partner</td>
</tr>
<tr>
<td>Justin In time Enterprises</td>
<td>Petroleum carrier</td>
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</tr>
<tr>
<td>Star of the Land</td>
<td>Freight Forwarder</td>
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<tr>
<td>Company/Agency/Authority</td>
<td>Sector/Specialty</td>
<td>Stakeholder Group</td>
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<td>-------------------------------------------------------</td>
<td>-------------------</td>
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<tr>
<td>Advocacy</td>
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<td>Mustard Fertilizer Inc.</td>
<td>Grain, Feed, Hay. Chemicals.</td>
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<td>Pub Super Markets</td>
<td>Food distribution</td>
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<td>Dragline Corp</td>
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<td>Hawk Transport Co.</td>
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<td>Green Acres Milk</td>
<td>Milk Tanker</td>
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<td>Small packages/Freight/Expedited</td>
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<td>Marts of Wall Transportation</td>
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<td>The Cold Stuff Transport Corp</td>
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### Table 3-2: Internal Stakeholders

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<th>Agency/Department/ Branch</th>
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<td><strong>Freight Infrastructure Subject Matter Experts Group (FISMEG)</strong></td>
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<tr>
<td><strong>Freight Planning</strong></td>
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<tr>
<td>Freight, Logistics, and Passenger Operations Office</td>
<td>Freight Planning, Rail Office, Ports, Aviation, Motor Carrier Size &amp;</td>
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<tr>
<td><strong>Project Development</strong></td>
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<tr>
<td>Planning &amp; Environmental Management</td>
<td>Design, Program Management, Environmental Management, General</td>
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<td><strong>Operations</strong></td>
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<td>SODDOT Construction</td>
<td>Construction Project Management</td>
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<td>SODDOT Maintenance</td>
<td>Asset Management, Bridge Maintenance</td>
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<tr>
<td>SODDOT Safety</td>
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<td>SODDOT Traffic Operations</td>
<td>TSM&amp;O</td>
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<td>Governor’s Chief of Staff</td>
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<td>Executive Branch</td>
<td>Cabinet Members</td>
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<tr>
<td>Legislative Branch</td>
<td>Speaker of the House, Senate President</td>
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<tr>
<td>Freight Planning Unit</td>
<td>Office of the Assistant Secretary of Intermodal Infrastructure</td>
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<tr>
<td>Transportation Commission</td>
<td>Commission Representative</td>
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<td>Disruption Department of Economic Development</td>
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<tr>
<td><strong>Port Authorities</strong></td>
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<td><strong>Finance</strong></td>
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<td>Department of Financial Services</td>
<td>Comptroller</td>
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# APPENDIX B – FUNDING PROGRAMS

## Table 5-1 – Funding Programs

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<tr>
<th>Program</th>
<th>Planning</th>
<th>Equipment</th>
<th>Infrastructure</th>
<th>Dredging</th>
<th>ITS</th>
<th>Grant</th>
<th>Finance</th>
<th>Max (% of cost)</th>
<th>Size</th>
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<td></td>
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<td>X</td>
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<td>50</td>
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<td>AMH</td>
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<td>X</td>
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<td>X</td>
<td></td>
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* Variety of programs offered; eligibility requirements vary by program
Tackling Unplanned Freight Disruptions in the State of Disruption

2017 Freight Academy
- Sharleen Bakeman, USDOT Federal Highway Administration, WA
- Travis Black, USDOT Maritime Administration, DC
- Jack Lord, USDOT Federal Highway Administration Resource Center, CO
- Justin Ryan, Florida Department of Transportation
- Tim Snow, Delaware Department of Transportation
- Daniel Studdard, Atlanta Regional Commission, GA
- David Tomporowski, Minnesota Department of Transportation
Ice storms......
Bridge collapse......
Agenda

- Context
- Problem Statement
- Purpose and Need
- Current Conditions
- Challenges
- Stakeholder Outreach
- Data and Analysis
- Potential Funding Programs
- Planning/Operational Strategies
- Conclusions
Context

- **State of Disruption**
  - Geographically large, predominantly rural, sparsely populated with three large non-adjacent metropolitan areas
- **Economy**
  - Agriculture
  - Automotive production and manufacturing suppliers
  - E-commerce distribution centers
- **Central location within the U.S.**
- **Diverse transportation infrastructure**
- **Attracting new manufacturing and freight industries**
State of Disruption

- Large network of interstate highways
  - Good condition
  - 80% of all traffic
  - Rural portions with no outer roads
- Remaining roadway network
  - Fair to poor condition
  - Several weight-limit posted bridges
  - Two-lane facilities without shoulders
- Estimate: 50% of freight moves **through** the state on interstates and rail
Problem Statement

- The Governor has directed the State Department of Transportation to find solutions: reduce the impacts to the transportation system and the economy caused by recent interruptions in the movement of freight.

- Several major companies’ have voiced reluctance to locate in Disruption because of the perception that the existing system is inadequate and would not support new business.
Purpose and Need

- Several events within the last 18 months
  - Broken expansion joint on a major river bridge on the interstate
    - Travel lanes reduced from four to three for four days
    - Traffic backed up for 15 miles causing issues with hours of service for truckers and severe delays for the public
  - Unexpected cold front created black ice on the interstate
    - Crashes blocked the interstate
    - Took 15 hours to clear – supply chain was interrupted for four days
Purpose and Need

- Several events within the last 18 months
  - Oversize vehicle hit an interstate bridge girder causing massive fire and bridge collapse
    - Repairs anticipated to take four months
    - Supply chain interrupted due to traffic backups on alternate routes and local truck restrictions
  - Heavy rains caused a breach in a local levee
    - Several segments of the interstate were closed due to up to two feet of water
Purpose and Need

Features

- Lack of current, reliable, and real-time information on road conditions and delay available to the public
  - Truckers
  - Neighboring states
- Roadway infrastructure is inadequate
Current Freight Route Conditions

- National Highway Freight Network
  - Tier 1 – moves more than 10 million tons annually
  - Tier 2 – moves between 4 million and 10 million tons annually
  - 18,000 centerline miles along T-1/T-2 routes
    - 40% in poor condition
  - 850 Bridges (23% of state total) along T-1/T-2 routes
    - Poor to Very Poor condition
  - Nominally operating at LOS C

- Critical Urban and Critical Rural Freight Corridors
  - Total of 122 miles designated
Challenges

- Federal
  - MAP-21 and FAST Act Freight Provisions
    - State of Disruption has a compliant State Freight Plan that includes a prioritized listing of projects eligible for NHFP funds, but funding is inadequate

- State
  - Existing State legislation and regulation is aligned with the Federal legislation and regulation, but state funding priorities have targeted other agencies

- Local
  - Numerous Local governments have truck restrictions on local roads, preventing their use during emergencies
Stakeholder Outreach

- **Partner Engagement Strategy**
  - Disruption Department of Transportation will –
    - Engage our stakeholders, internal and external, public and private sectors,
    - Understand their needs, and
    - Work to identify, influence, and implement transportation investments that address future disruptions to the State’s transportation System
Stakeholder Outreach

- **External Groups**
  - **Project Partners Group (The Partners)**
    - Represent trucking and logistics companies from numerous industries within the State
  - **General Stakeholders Group (The Stakeholders)**
    - Represents the larger transportation community
    - Private sector groups
    - General public
    - Public sector agencies
      - Local Governments
      - Neighboring States
Stakeholder Outreach

Internal Groups

- Freight Infrastructure Subject Matter Experts Group (The Experts)
  - Management team comprised of subject matter experts
  - Task is to develop solutions to improve resiliency and reliability of the State’s freight transportation infrastructure

- The Policy and Finance Group
  - Comprised of Cabinet Members, State Agency Directors, DDOT Department Directors
  - Decision-making board responsible for evaluating other groups’ recommendations
Stakeholder Outreach

- Outreach Tools
  - Project Website
  - Online Survey
  - Stakeholder Forum
Data and Analysis

- **Traffic Information**
  - Average Annual Daily Traffic
  - Average Annual Daily Truck Traffic
  - Travel Time (trucks and other vehicles)

- **Bridge Information**
  - Inspection information and ratings
  - Load limits
  - Height Restrictions
Data and Analysis

- Asset Information
  - Pavement Condition
  - ITS (message signs, other architecture)

- Facilities and Land Uses
  - Land uses conducive to industrial Development
  - Intermodal connector locations and condition
Potential Funding Programs

- State of Disruption
  - Transportation Trust Fund
  - State General Fund

- Federal Funding
  - Federal-Aid Grants
    - National Highway Freight Program (NHFP)
    - Surface Transportation Block Grants (STBG)
    - Congestion Mitigation and Air Quality (CMAQ)
  - Federal Loan Programs
  - Competitive Grants
  - Other
Planning and Operational Strategies

- Action Plan
  - Identified strategies by implementation timeframe
    - Immediate needs and ongoing functions (within six months)
    - Short-term (six months to three years)
    - Medium-term (three years to five years)
    - Long-term (greater than five years)
  - Includes diverse mix of program and project types
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Conclusions

- Critical needs
  - Funding
    - Immediate infusion of state funds for –
      - ITS improvements
      - Emergency and Incident Management
      - Increase staff resources for coordination and outreach
    - Short-term
      - Advance projects that improve facilities and bridges on T1/T2 routes
  - Coordination with Local Governments
    - Temporary relief from restricted access to alternate facilities
QUESTIONS?