Executive Summary

Risk Management and State DOTs: Building Momentum and Sustaining the Practice

National Cooperative Highway Research Program

NCHRP 08-151

EXECUTIVE SUMMARY

Risk Management Definition -- Risk management is the process to identify, evaluate, respond, and prioritize threats and opportunities through various strategies and tools, which allows individual risk events and/or overall risk to be proactively understood. Risk management can take place at different levels of the organization supporting different objectives.

State Departments of Transportation (DOT) continue to face new and increasing uncertainties and disruptions that highlight the need for integrating formal risk management practices into transportation decision-making. For example, the disruption to transportation system operations due to the COVID-19 pandemic and the resulting decreases in revenues for transportation point to a need for risk management to identify response strategies and manage risks to overall strategic objectives. Emerging technologies, economic uncertainty, a changing workforce, a changing climate, and the ongoing requirement to develop and maintain risk-based Transportation Asset Management Plans (TAMPs) also drive the relevance and requirement of adoption of formal risk management by state DOTs. In response, several risk-management tools and resources for state DOTs have been developed. However, these are not in common use and have not been widely adopted by transportation agencies. Additional resources are needed to support those working to overcome barriers and initiate, build momentum for, and sustain formal risk-management practices.

NCHRP (08-151) Risk Management at State DOTs: Building Momentum and Sustaining the Practice was conducted to develop content for any state DOT, regardless of maturity level, to utilize and integrate risk management practices within its agency. The research focused on three levels of risk management: Enterprise, Program, and Project. Each of these levels has its own challenges and benefits. This project identified lessons learned and successful practices from risk management practitioners across the globe, and then created a website and digital content accessible to all state DOTs and practitioners with guidance, examples, and tools to aid in the effort to successfully build and sustain formal risk management within their agencies.

This report and digital content offers guidance to agencies looking to accomplish the following four key components within a risk management program:

1 Establish and communicate the value of risk management

2 Initiate organizational changes at all levels within the agency that enable and strengthen risk management

3 Champion risk management within the organization

4 Develop and sustain a risk-management mindset and agency culture that integrates risk management across programs and into key decision-making processes.

CHALLENGES FACING AGENCIES WHEN BUILDING AND SUSTAINING RISK MANAGEMENT

Many transportation agencies have some type of risk management policies or processes established that they consider to be effective; in many cases, these policies or processes are a mix of formal and informal, Many also follow a framework including guidance, methodology, policy, and tools to systematically assess risk and adopt strategies and policies to manage it. For some, the lack of clear policy results in inconsistent practices across the agency. NCHRP 08-151 Risk Management at State DOTs: Building Momentum and Sustaining the Practice identified the need for more consistent and accessible guidance for state DOTs and other transportation agencies on how to build and sustain risk management activities.

The development of this report and digital content produced by this project came from direct engagement with transportation agencies across the country and industry stakeholders with diverse backgrounds and experiences to understand their practices. Practitioners shared their personal experiences with integrating risk management within their agencies and the following key needs, challenges, and knowledge gaps were identified:

Risk management *champion* and executive *leadership support*.

Clear policies that integrate risk management into strategic planning and performance management processes.

Communication strategy for incorporating risk management within agencies including *basic principles and terminology* of risk management.

Well-defined roles and responsibilities for leadership and staff to promote integration at all levels of the organization.

Lack of dedicated staff and adequate staff to build and sustain a risk management program.

Unclear or siloed business processes that hinder integration of risk management practices across state DOTs.

Lack of easy to implement pre-existing standards and policies regarding collecting and using data, tools, and resources and agency structure, personnel, and skills development.
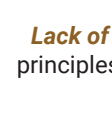
Lack of access to educated well-trained staff on the principles and application of risk management within a state DOT.

Lack of simple online databases, dashboards, and risk procedures for internal agency staff to easily understand how risk is being utilized at agencies.

KEY ELEMENTS OF RISK MANAGEMENT

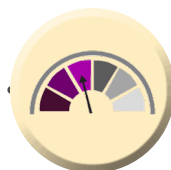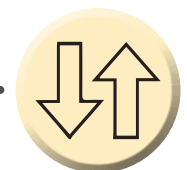Value Proposition
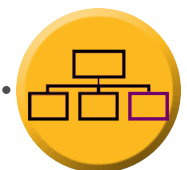
Quantification of Risk

Organization/ Resources

Data and Tools

Culture of Risk

Communication and Promotion

Process Improvement

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Eventually, four overarching categories emerged in this research that stand out as the key findings to successfully build and sustain risk management across the varying levels of a transportation organization (Figure E-1).
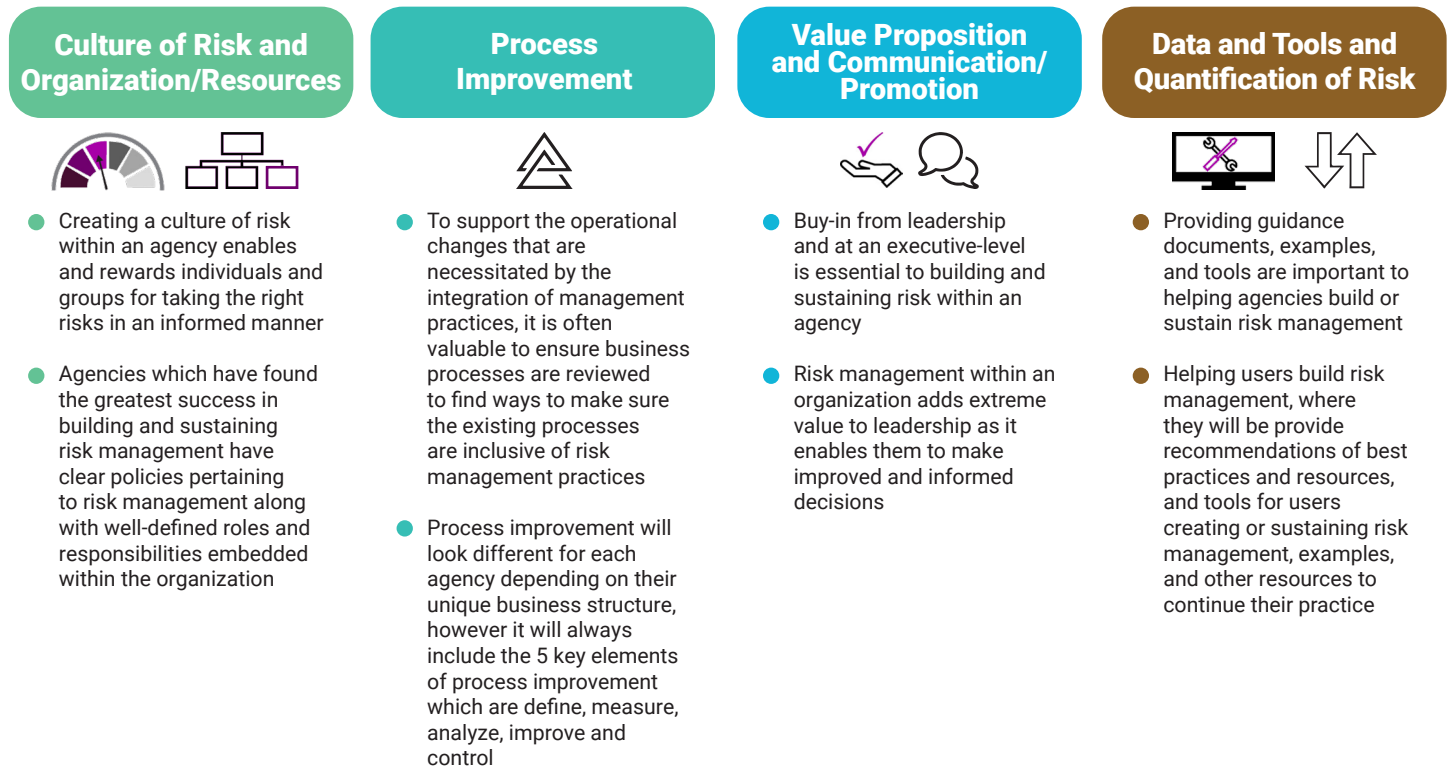
Culture of Risk and Organization/Resources	Process Improvement	Value Proposition and Communication/ Promotion	Data and Tools and Quantification of Risk
• Creating a culture of risk within an agency enables and rewards individuals and groups for taking the right risks in an informed manner	• To support the operational changes that are necessitated by the integration of management practices, it is often valuable to ensure business processes are reviewed to find ways to make sure the existing processes are inclusive of risk management practices	• Buy-in from leadership and at an executive-level is essential to building and sustaining risk within an agency	• Providing guidance documents, examples, and tools are important to helping agencies build or sustain risk management
• Agencies which have found the greatest success in building and sustaining risk management have clear policies pertaining to risk management along with well-defined roles and responsibilities embedded within the organization	• Process improvement will look different for each agency depending on their unique business structure, however it will always include the 5 key elements of process improvement which are define, measure, analyze, improve and control	• Risk management within an organization adds extreme value to leadership as it enables them to make improved and informed decisions	• Helping users build risk management, where they will be provide recommendations of best practices and resources, and tools for users creating or sustaining risk management, examples, and other resources to continue their practice

Figure E-1 Key Findings to Successfully Build and Sustain Risk Management

OUTCOME OF THE RESEARCH PROJECT

Findings from the literature review and gap assessment, industry round-table, case studies, and state DOT focus group were used to develop a digital deliverable: a website that directs an audience of DOT executives, managers, and staff to resources based on the maturity-level of the agency. Based on the key needs, challenges, and knowledge gaps discovered through the findings, a hub was created of consolidated resources from state DOT and other agencies.

By asking, "What do you want to do today?", users are able to control their experiences and get what they need from the platform. To provide further value, the website includes a maturity assessment available to all users to develop their own feedback on their agency's risk management practice. There are spreadsheets and data tools, communications tools and diagrams, standard operating procedures and internal guidance, and a concise reference to relevant research The website will be housed on the Transportation Management Hub on the American Association of State Highway & Transportation Officials website.
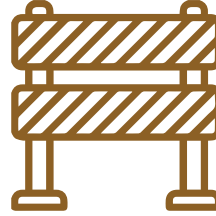
Content designed for the website covers the following topics:

The value of risk management in transportation decision-making and how that value can be communicated

Relevant concepts of change management

Commonly encountered barriers to adopting and sustaining formal risk management and strategies to overcome these barriers
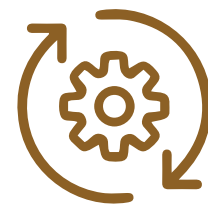
Ways to foster an organizational culture that supports the use of formal risk management

Examples of best practices deployed by state DOTs in implementing and sustaining successful risk management programs

Insights about risk management practices drawn from the public and private sectors

Communications pieces focused on key topics of risk management, organizational change, and implementation designed for outreach within a state DOT and to external partners

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