

# Executive Summary

This report summarizes the findings from the scan “Leading Practices in Modifying Agency Organization and Management to Accommodate Changing Transportation System Technologies.” The purpose of the scan was to investigate and exchange information about how Departments of Transportation (DOTs) are changing their organizations, institutional arrangements, and management practices to improve transportation system performance through the implementation of new technologies and/or other innovative programs, while at the same time maintaining their traditional role in capital improvement, operations, and maintenance programs. However, the focus of this scan was not on technology deployments; rather, it was on exposing its panel members to detailed examples of new organizational structures and management approaches that foster greater collaboration and communication across the entire DOT agency.

A scan team consisting of representatives from state DOTs, the Federal Highway Administration (FHWA), and the American Association of State Highway and Transportation Officials (AASHTO) was formed to guide the scan and develop findings, recommendations, and implementation actions. Michael Lewis, former director of the Colorado DOT (CDOT) chaired the scan team.

The scan team ultimately decided to interview and study various cultural, leadership, organization, staffing, business process, performance management, and collaboration aspects of the state transportation agencies of Utah, Maryland, Washington State, Tennessee, Iowa, and Minnesota. These states were asked to consider a list of amplifying questions as they prepared their presentations. The scan team did not require the presenters to formally submit written responses to the amplifying questions, but it did ask that the presenting teams address as many topics contained in the amplifying questions as possible. The topics were ultimately organized into the following thematic areas, as were the findings, observations, recommendations, and implementation strategies:

- Leadership and Cultural Traits of Highly Successful Organizations
- People – Knowledge, Skills, and Abilities and the Strategies to Attract Them
- Organizational Structures – A Study of Principles
- Business Process Improvements
- Performance Management
- Collaboration at Its Finest

While the technologies deployed in transportation initiatives are often the highlight of the discussions and information sharing, the most critical aspect currently facing DOTs is the collaboration that occurs among all the relevant functional areas within any one DOT (traditional and innovative). As the scan team investigated and studied each agency invited to participate

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in the scan, the team turned its attention to identifying successful strategies to change agency culture, acquiring and retaining talent, and organizing in ways that eliminate the need for traditional silos typically found in transportation agencies. The team also focused on practices that improved business processes, performance management, and on better internal and external collaboration.

The scan team spent time discussing and contemplating these examples to determine the best or leading practices and, in doing so, gained a deeper understanding about the collaboration that is possible and what factors helped collaboration occur. Summarizing the scan study and this report one might conclude the following:

- Establishing and sustaining an agency culture that is conducive to greater collaboration and innovation starts with its leadership.
- Acquiring and retaining employees for a technology-driven agency will require new and innovative techniques and strategies and will need a staff that has capabilities in a diverse set of core competencies. Job responsibilities may include data analysts, programmers, electrical and communications engineers, as well as cybersecurity and artificial intelligence specialists.
- There are various types of organizational structures, and there is no one perfect structure for all DOT organizations everywhere. However, the organizations that seem to work best allow for flexibility, are nimble, cut across traditional silos, engage field and headquarters staff, and, above all, encourage collaboration.
- When it comes to business process improvements, strategic planning, program planning, and the development of service layer plans seem to hold a great deal of promise.
- While great strides have been made in performance reporting and measurement, there is still work to be done, and research is required in managing transportation organizations from a few key strategic performance measures.
- While most of the strategies above focused on internal collaboration, considerable emphasis during the scan also included the need for external collaboration. The nontraditional transportation partner becomes incredibly important in the implementation and use of the newest innovations surrounding connected and automated vehicles (CAV) and cooperative automated transportation (CAT) strategies.

These techniques and strategies form the basis of the scan's in-depth reporting that follows. This scan provided a rich source of material, as well as DOT contacts, that other transportation agencies can utilize as they begin to contemplate their own organizational structure in an age and industry that is increasingly driven by technology. Finally, the scan team identified and is pursuing an extensive set of outreach activities to disseminate the scan's findings.