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INTELLIGENT TRANSPORTATION SYSTEMS

Improved DOT Collaboration and Communication Could Enhance the Use of Technology to Manage Congestion

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Highlights

Highlights of GAO-12-308, a report to the Committee on Science, Space, and Technology, House of Representatives

Why GAO Did This Study

Traffic congestion burdens the nation's quality of life and will likely grow substantially if current trends continue. Intelligent Transportation Systems (ITS) are a range of technologies that can reduce congestion at less cost than some other approaches. The U.S. Department of Transportation's (DOT) Research and Innovative Technology Administration (RITA) is responsible for promoting and supporting the use of ITS in coordination with other modal administrations, including the Federal Highway Administration (FHWA). Since 1994, DOT has overseen the allocation and expenditure of more than $3 billion for deploying and researching ITS. GAO was asked to address (1) the current and emerging uses of ITS technologies by state and local governments, (2) the challenges these governments face in using ITS, and (3) the extent to which DOT's efforts to promote and support ITS address these challenges and follow leading practices. To conduct this work GAO visited four sites, and interviewed and analyzed documents and data from DOT and state and local transportation officials, ITS experts, and other stakeholders.

What GAO Recommends

GAO recommends that the Secretary of Transportation clearly define the roles of RITA and FHWA in promoting the use of ITS, improve the usefulness of ITS information on the agencies' websites, and include in its strategy plans to further enhance communication on ITS activities. DOT reviewed a draft of this report, said it would consider our recommendations, and provided technical comments.

View GAO-12-308. For more information, contact David J. Wise at (202) 512-2834 or wised@gao.gov.

What GAO Found

State and local governments currently use ITS technologies in various ways to monitor and control traffic and inform travelers. For example, transportation agencies use cameras to monitor traffic conditions, signal technologies to control traffic flow, and dynamic message signs to inform travelers about travel conditions. By interviewing experts, GAO identified several emerging uses of ITS that have significant potential to reduce traffic congestion. For example, integrating traffic and emergency services data can allow for enhanced detection of and response to roadway incidents. However, some cities use ITS and the emerging uses to a much greater extent than others.

State and local governments face multiple challenges in using ITS technologies to manage traffic congestion. For example, some agencies do not fully integrate ITS into their planning processes. Funding the deployment and maintenance of ITS technologies is also an issue, because of funding constraints and competition with other needed infrastructure projects. Further, agencies struggle to attract and retain staff with the skills necessary to manage and maintain ITS systems and may not have leaders who support ITS. Finally, coordination among agencies can enhance the effectiveness of ITS through such activities as synchronized traffic signals along a corridor, but such coordination can be difficult given agencies' differing perspectives and priorities.

RITA's and FHWA's activities to promote and support the use of ITS technologies help address these challenges. Both offer ITS-related training and technical assistance and provide guidance and information on their websites. FHWA estimates that states used about $800 million to $1.3 billion of their eligible 2010 federal aid highway funds and $798 million to $1.3 billion of American Recovery and Reinvestment Act funds on ITS. Further adoption of leading practices could improve these efforts. RITA's and FHWA's respective roles in these efforts are not clearly defined, potentially inhibiting their ability to effectively leverage resources. Some experts and transportation agencies noted that ITS-related information on RITA's and FHWA's websites is not always presented in a way that is useful and some agencies lack awareness of some ITS activities sponsored by DOT. Several options have been proposed to improve communication about ITS-related activities and facilitate the sharing of ITS information among state and local officials. While RITA intends to develop a new strategy in 2012 for promoting the use of ITS, it has not yet determined whether it will incorporate any of these proposals.

Uses of ITS technologies include posting travel times on dynamic message signs (left) and synchronizing traffic signals to increase traffic flow (right).

Sources: Minnesota Department of Transportation (left) and GAO (right).