

GAO Highlights

Highlights of [GAO-16-638](#), a report to the Committee on Transportation and Infrastructure, House of Representatives

Why GAO Did This Study

Public transit providers are adopting electronics and information-processing applications called ITS to help improve operations and service. ITS technologies can play an important role in facilitating multimodal choices in a rapidly changing transportation environment. This report describes: (1) the extent to which selected transit providers in large urbanized areas are using ITS, (2) the extent to which transit providers in small urban and rural areas are using ITS, (3) the benefits and challenges these transit providers experience in deploying ITS, and (4) the extent to which transit providers have utilized DOT resources to promote and support ITS.

GAO reviewed DOT's ITS deployment data and ITS studies; interviewed DOT officials and public transit stakeholders; conducted three site visits, selected based on geographic dispersion and DOT recommendations; interviewed 31 transit providers serving large urbanized areas selected for geographic dispersion and use of multiple transit modes; and conducted a national survey of small urban and rural transit providers to obtain information on ITS technologies used.

What GAO Recommends

GAO recommends that the Secretary of Transportation develop a strategy to raise awareness of federal resources for ITS deployment in the transit community and include ITS adoption by small urban and rural transit providers in ITS-monitoring efforts. DOT agreed with the recommendations and provided technical comments, which GAO incorporated.

View [GAO-16-638](#). For more information, contact Mark Goldstein at (202) 512-2834 or goldsteinm@gao.gov.

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INTELLIGENT TRANSPORTATION SYSTEMS

Urban and Rural Transit Providers Reported Benefits but Face Deployment Challenges

What GAO Found

Selected large and medium urban transit providers have deployed most Intelligent Transportation Systems (ITS) technologies, such as automatic vehicle location (AVL) and electronic fare payment. Most of these providers reported sharing data collected from ITS with the public or regional transportation providers to enable technology innovations and improve regional planning. Large and medium urban transit providers have also deployed advanced types of ITS technologies, such as smart phone applications to provide passengers with travel information and mobile ticketing. GAO estimates that small urban and rural transit providers are using security systems, computer-aided dispatch, AVL, and geographic information systems to, among other things, monitor safety and security and improve record-keeping and billing capabilities. However, most small urban and rural transit providers are not using other ITS technologies—such as automatic passenger counters or electronic fare payment—due to the cost of the technologies or because there is no perceived need.

Transit providers GAO surveyed and interviewed reported various benefits from ITS including improved scheduling and routing, on-time performance and schedule adherence, and customer satisfaction. In addition, many large and medium urban transit providers reported that using combinations of technologies can increase benefits. By using technologies such as AVL and electronic fare payment together, for example, transit providers can obtain more precise ridership information, which can further improve their planning. However, transit providers GAO interviewed and surveyed noted that it can be difficult to quantify the benefits of using ITS technologies because, as reported by large and medium urban providers, it may be difficult to identify a unit of measurement, such as for greater staff efficiency, or attribute benefits to either ITS deployment or a specific technology. Transit providers also face an assortment of deployment challenges, including competing for funding internally with state-of-good-repair needs, reluctance from the transit workforce and leadership to embrace ITS technologies, coordinating deployment across regional agencies, and integrating technologies purchased from different vendors.

The Department of Transportation (DOT) offers a variety of information resources to support ITS deployment, but few of the transit providers interviewed or surveyed reported using these resources. DOT officials, selected large and medium transit providers, and other public transit stakeholders told GAO that the transit community may not be using these resources because transit providers lack sufficient staff and the information provided may not reflect the transit community's needs. Additionally, DOT does not include small urban and rural transit providers in its ITS deployment survey, a tool officials said is used in designing information resources. DOT could improve the awareness and applicability of ITS resources by developing a strategy to raise awareness of DOT's resources available to the transit community and monitoring the adoption of ITS by transit providers in small urban and rural areas. Without greater efforts from DOT to make the transit community more aware of federal ITS resources and to tailor these resources to the needs of smaller providers, transit providers may be missing information that could help them make the most informed ITS deployment decisions.