GAO Highlights

TRANSPORTATION RESEARCH

Additional Actions Could Improve DOT's Internal Collaboration and Reliability of Information on Research Activities

Why GAO Did This Study

DOT's research activities are critical to DOT's mission to make the nation's transportation system safer and more efficient. To meet current research needs and prepare for emerging technologies, DOT partners with public and private entities. In fiscal year 2018, DOT funded about 2,300 partners and had a research budget exceeding $1 billion.

GAO was asked to review DOT's research activities. This report addresses: (1) how DOT prioritizes and selects which research activities it will undertake; (2) the extent to which DOT facilitates research collaboration with external stakeholders and across the department; and (3) the extent to which DOT ensures its Research Hub database contains complete and accurate project information. GAO reviewed documents and analyzed data from DOT; observed DOT-funded research; interviewed DOT officials from OST-R and four selected modal administrations; and used GAO's leading collaboration practices to assess the extent of collaboration. GAO also interviewed 17 DOT research partners, including universities and associations.

What GAO Recommends

GAO recommends that OST-R (1) take steps to ensure the topical-research working groups follow all leading collaboration practices, and (2) take additional steps to ensure the information in the Research Hub is complete and accurate. DOT concurred with GAO's recommendations.
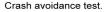
What GAO Found

The Department of Transportation (DOT) uses a multistep, centralized process to prioritize and select research activities it will fund. DOT's modal administrations—which focus on specific modes of transportation like air, rail, and highways—conduct and manage most of DOT's research. The modal administrations GAO spoke to used a variety of methods to prioritize and select research, including soliciting stakeholders' feedback on research needs. The Office of the Assistant Secretary for Research and Technology (OST-R) is responsible for reviewing this proposed research to ensure alignment with DOT's strategic plans and to prevent duplicative research efforts, as required by statute.

DOT has multiple efforts to facilitate research collaboration both externally and internally, but in guidance to promote collaboration, OST-R did not incorporate all leading practices. Specifically, OST-R established topical-research working groups on 12 multimodal subject areas in October 2018 and issued accompanying guidance. This guidance incorporated some leading collaboration practices, such as directing working groups to identify leadership roles and relevant participants. However, the guidance did not incorporate two leading practices—defining and monitoring progress toward long-term outcomes and regularly updating and monitoring written agreements. Taking steps to ensure the working groups follow these practices could provide OST-R greater assurance that the groups coordinate their efforts effectively, better plan long-term research, and better position themselves to address future transportation challenges.

OST-R has taken some steps to help ensure that its public database on DOT-funded research projects (the Research Hub) contains complete and accurate information, as required by DOT's data management policy; however, data reliability issues remained. For example, as of July 2019—the latest available data at the time of GAO's analysis—36 percent of records in the database were missing research partners' contact information, hindering the research community's ability to obtain current project details. Taking additional steps, such as providing instructions to the modal administrations on how to improve the completeness and accuracy of the information they give OST-R for the Research Hub, would help ensure the database is fulfilling DOT's intended purpose that it serve as a reliable source of information on the department's research portfolio.

Examples of Research Activities on Advanced Driver-Assistance Systems and Connected Vehicles Funded by the U.S. Department of Transportation

Crash avoidance test.

Wireless equipment for testing.

Source: National Highway Traffic Safety Administration (left) and GAO (right). | GAO-20-622

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