

# BUREAU OF TRANSPORTATION STATISTICS STRATEGIC PLAN

July, 2018

## THE MISSION

The Bureau of Transportation Statistics (BTS) of the U.S. Department of Transportation (DOT) provides timely, accurate, credible information on the U.S. transportation system, the movement of people and goods, and the consequences of transportation for the economy, society and the environment.

## VISION

BTS is the preeminent source of statistics on commercial aviation, multimodal freight, and transportation economics, and provides context to decision makers and the public for understanding statistics on transportation. BTS assures the credibility of its products and services through rigorous analysis, transparent data quality, and independence from political influence. BTS promotes innovative methods of data collection, analysis, visualization, and dissemination to improve operational efficiency, to examine emerging topics, and to create relevant and timely information products that foster understanding of transportation and its transformational role in society. The Bureau's National Transportation Library (NTL) is the permanent, publicly accessible home for research publications from throughout the transportation community; the gateway to all DOT data; and the help line for the Congress, researchers, and the public for information about transportation.

## WHY BTS MATTERS

Transportation is important for how it serves and affects individuals, businesses, the economy, the environment, and the nation. Statistics, maps, and their interpretation inform public and private decisions about transportation. BTS is the source for many of those statistics and maps, and BTS provides interpretations that are policy-neutral and free of perceived political bias.

## BTS PRODUCTS AND SERVICES

BTS produces a wide range of documents, maps, apps, dashboards, tables, and databases to meet the varied needs of its customers. BTS also provides statistical services to DOT and the transportation community. BTS products and services are summarized on the following tables.

TYPE OF PRODUCT	DESCRIPTION	EXAMPLES	PRIMARY CUSTOMERS
Interpretive reports	Context for the numbers; explanations of what the numbers mean	Transportation Statistics Annual Report, special reports, issue briefs	Congress and other policymakers; transportation planners, logisticians and other analysts; researchers; educators; media; the public
Statistical summaries	Pre-defined tables and maps with limited explanatory text to highlight major trends and to support understanding of how to use the statistics	Facts and Figures series, Industry Snapshots, Pocket Guide, data releases	Congress and other policymakers; educators; media; the public
Dashboards, tables, graphics, and maps	Tables and interactive or static figures created by BTS for the BTS website or for BTS publications	Information Gallery, National Transportation Statistics, National Transportation Atlas	Individuals looking for specific facts and illustrations
Applications for build-your-own tables, graphics, and maps	Applications for creating tables, graphics, and maps and for extracting portions of databases	Transtats, Freight Analysis Framework tabulation tool, National Transportation Atlas Viewer	Transportation planners, logisticians and other analysts; researchers; educators; media; the public
Data files	Downloadable files created or compiled by BTS and its partners; files stored by BTS in the NTL repository	Airline origin-destination files, Transportation Satellite Account, Census Transportation Planning Products	Power users among transportation planners, logisticians and other analysts, researchers, educators, students
Guidance documents	Guides to good statistical practice	BTS Statistical Standards Manual	Transportation planners, logisticians and other analysts; researchers; educators
NTL document collection	Electronic collection of transportation documents, including all DOT research reports	Reports from the National Highway Traffic Safety Administration Behavioral Safety Research program	Transportation planners, logisticians and other analysts; researchers; educators; media; the public
Information searching and usage aids	Data dictionaries, acronym guides, instruction manuals	Repository and Open Science Access Portal (ROSA_P), Directory of Transportation Data Sources, DATA.GOV inventory	Transportation planners, logisticians and other analysts; researchers; educators; media; the public

TYPE OF SERVICE	DESCRIPTION	EXAMPLES	PRIMARY CUSTOMERS
Public information service	Answers to relatively simple questions, referrals to sources of data and expertise for more complex questions	800-853-1351; Ask a Librarian; BTS director of public affairs	Congress and other policymakers, media, public
Confidential Close Calls Reporting Program	Reimbursable service for collecting, analyzing, and protecting the confidentiality of data on close calls	Washington rail and bus transit; off shore oil production and transport	Transportation organizations that use confidential systems to encourage proactive responses to safety problems
Statistical policy leadership	Represent transportation community needs to federal statistical and geographic data agencies; encourage collaboration and quality improvement among DOT statistical programs; BTS Director is by law senior advisor to the Secretary on data and statistics	BTS participation in Interagency Council on Statistical Policy, Federal Geographic Data Committee, DOT Geospatial Data Council; sponsorship of the Committee on National Statistics and the Transportation Research Board; participation in the American Statistical Association	Transportation statistics providers and users; federal agency partners
Statistical consulting	BTS advises DOT operating administrations on good statistical practice, performance measurement, geographic data coordination, and minimization of response burden	BTS participation in the DOT Safety Council; BTS best practices guidance; statistical reviews of DOT Information Collection Requests	DOT executive staff, DOT operating administrations
Knowledge management	Provide cataloging and other information exchange services; coordinate transportation collections among repositories; digitize historical documents	Research data archiving policies, National Transportation Knowledge Network	Librarians and archivists, logisticians and other analysts, researchers, historians

## MAJOR OBJECTIVES

The *U.S. Department of Transportation Strategic Plan for FY 2018-2022* highlights data in general and BTS in particular as part of the Secretary's strategic objectives for a systematic approach to safety, for improved infrastructure operations and performance, and for targeted infrastructure investments to support economic competitiveness (especially for freight and rural transportation). The Secretary's strategic objectives for innovation encourage the use of data to identify and evaluate strategies and technologies. The Secretary's strategic objectives for accountability emphasize streamlining processes, improving systems, and maximizing employee performance, development, and engagement to make efficient and effective use of the Department's resources.

BTS must carefully manage its static budget and a reduced staff to serve the Secretary's strategic objectives, fulfill the Bureau's legislated mandates, and meet a growing demand for transportation statistics with useful, timely, and credible products. To achieve this balance, BTS will concentrate its activities on its core areas of expertise and on improvements in developing and delivering BTS products.

To improve freight statistics, BTS will:

- Update and improve the quality of estimates from the Freight Analysis Framework (FAF) with results of the Commodity Flow Survey and establish experimental FAF products that provide greater geographic detail in estimates of region-to-region flows and commodity detail in estimates of network flows.
- Enhance the Port Performance Freight Statistics Program with additional measures that maximize use of probe data and remote sensing.
- Establish new freight data sources to measure attributes of shippers, carriers, and shipments that are important to public and business decisions.

To improve economic statistics, BTS will:

- Corroborate, expand, and enhance statistics on transportation employment, investment, finance, and costs.
- Develop statistics on government revenues and expenditures that assure proper accounting of public-private partnerships and innovative finance.
- Reflect e-commerce, new forms of vehicle sharing, vehicle automation, and other aspects of the digital economy in BTS products.

To improve airline information, BTS will:

- Complete modernization of information processing systems.
- Maximize the use of real-time data from the Federal Aviation Administration for improved timeliness and quality of BTS products and reduced respondent burden.
- Establish new statistical products, including real-time information displays, that highlight the state of aviation from the traveler perspective.

To improve product development and delivery, BTS will:

- Enhance the BTS website to make BTS products easy to find and use, to serve customers seeking brief answers and power users seeking data to explore, to

encourage serendipity, to reduce time and resources needed for updating and adding new material, and to reinforce the BTS brand.

- Improve the speed and nimbleness of the product development process by replacing static presentations of information with continually updated, interactive dashboards; by building publications on components of the website rather than building the website on publications; and by publishing short, frequent briefing materials primarily on topics in BTS core areas.
- Expand NTL collections and data curation services.
- Support continuous improvement of BTS products based primarily on product usage and customer feedback.

BTS will undertake activities in other areas only after carefully considering whether BTS has the expertise and resources to create useful products. Specifically, BTS will:

- Support the Secretary's Safety Data Initiative and manage the visualization challenge.
- Initiate a system for reporting surface transportation congestion and transportation network disruptions.
- Develop experimental products built on network analysis, advanced visualization, spatial statistics, and new forms of data analytics.
- Restore the Vehicle Inventory and Use Survey following approval by departmental leadership.

In addition to these major initiatives, BTS will continue to provide existing products and services as required by law and customer expectations, such as the Transportation Statistics Annual Report, the Port Performance annual report, the Railroad Tank Car annual report, and the National Transportation Atlas Database. BTS will also continue to investigate new methods of data collection, processing, analysis, quality assurance, dissemination, and preservation to enhance future products and services.

## STAFF

BTS currently includes the Director, Deputy Director, 7 office directors, a public affairs director, 2 support staff, and over 40 statisticians, economists, and specialists in geo-spatial data, information technology, and library science.

While BTS has extensive expertise in many forms of data collection and analysis, deep knowledge of transportation as a subject is limited, and staff turnover and retirements may reduce the Bureau's statistical expertise in the near future. BTS is also weak in the discipline of operations research to support sophisticated network analysis, as well as in the emerging field of data science (including big data analytics).

In order to enhance staff expertise, BTS will:

- Cultivate staff knowledge of transportation through responsibilities to understand and manage BTS web pages and through increasingly complex analytical and interpretive assignments.
- Recruit recent graduates through the fellows program to expose BTS staff to new techniques and ideas for new products.

- Provide training, temporary assignments, and other professional development opportunities to BTS staff to cultivate skills and capabilities needed by the Bureau.

## FINANCIAL RESOURCES

BTS depends on 4 sources of funding to support its activities:

- Contract authority: BTS activities specified in Chapter 63 of Title 49, U.S. Code, are funded as an allocation from the Federal-aid Highway Program. Unlike budget authority that must be appropriated each year, funds under contract authority are authorized to be obligated and do not disappear at the end of the year. Current funding is \$26 million per year.
- Budget authority: the Federal Aviation Administration is authorized to spend \$4 million per year out of its appropriations for operations to support the BTS Office of Airline Information. Additional work by the office may be funded through interagency agreements.
- Cooperative and interagency agreements with external customers: the Confidential Close Calls Reporting Program is funded through agreements with the Washington Metropolitan Area Transit Authority and the Bureau of Safety and Environmental Enforcement of the U.S. Department of the Interior. Current reimbursable agreements total approximately \$4 million per year. All staff and other costs are covered by the reimbursable agreements except the salary of the program manager.
- Product sales: selected products of the Office of Airline Information are sold to vendors, raising approximately \$17,000 per year. These sales are based on policies in place before the office was integrated into BTS and are limited to data that have restrictions on use. Product sales will remain an insignificant funding source since the commercial market for BTS products is small. Charging for unrestricted data products is not consistent with the open data policies of the federal government and with the Bureau's longstanding philosophy of democratizing data by removing all barriers to data availability.

The Bureau's contract authority must be renewed with reauthorization of the surface transportation programs at the end of FY 2020. The reimbursable agreement between BTS and the Federal Aviation Administration must be renewed each year and does not cover activities beyond those of the Office of Airline Information. Reimbursable agreements with external customers are extended at the discretion of the customers.

## PARTNERS AND STAKEHOLDERS

BTS is part of four communities, each with its own set of partners and stakeholders:

- The transportation community: BTS serves DOT as a source of statistical expertise and of objective information on transportation (especially from the perspective of system users rather than from suppliers of modal components); BTS serves the larger transportation community as a portal to and an integrator of diverse information sources; and BTS serves both DOT and the broader transportation community as a repository of research, data, and institutional knowledge through the NTL and the Bureau's activities through partners like the Transportation Research Board.

- Federal statistical agencies: BTS represents the transportation community on the Interagency Council on Statistical Policy, chaired by the Office of Management and Budget, and collaborates with individual federal statistical agencies such as the Census Bureau to meet the information needs of the transportation community.
- Federal geographic data and mapping community: BTS is the principal integrator of geographic data related to transportation and works with a variety of organizations that develop and compile geo-spatial data to establish a high-quality, comprehensive, detailed electronic map of transportation that can be used throughout government and industry.
- The knowledge management community: BTS works through the NTL with the Library of Congress, the National Library of Medicine, the National Agricultural Library, state DOT libraries, universities, and others to assure that transportation data, results of research relevant to transportation, and institutional memory are maintained and shared in forms that are readily accessible to the transportation community.

## CHALLENGES

BTS provides varied statistics used throughout the transportation community as a foundation for planning, performance measurement, analysis, and research. The Bureau's efforts to establish a comprehensive picture of the transportation system and the system's consequences support decisions involving traditional issues such as congestion relief and new issues such as the consequences of vehicle automation. A growing emphasis in the transportation community on performance management and evidence-based decisions places special demands on timely, detailed, accurate statistics. At the same time, open data initiatives and expanded numbers of users increase opportunities to reveal problems with the quality of data behind the statistics published by BTS and its partners.

While the demands for data and statistics continue to grow, methods of collection are undergoing major change. Surveys remain a major source of data, but their cost-effectiveness is declining. The widespread replacement of paper with electronic transactions in businesses, the growth of on-line shopping, the exploding use of electronic sensors for controlling everything from vehicle engines to traffic signals, extensive coverage of cell phones, and the complete coverage of publicly available aerial imagery provide new sources of data on transportation and its consequences. These new data sources often involve unexplored privacy concerns, data sharing complications, poorly documented data quality problems, and data integration challenges. BTS programs and staff expertise must evolve to overcome the problems and take advantage of the new data sources.

In addition to its own data collection activities, BTS compiles data and statistics from a wide range of sources. In many cases, data are collected by state and local agencies and processed by another federal agency before the results are assembled into BTS products. When BTS identifies a questionable statistic from another source, BTS must decide whether or not to publish the statistic. If BTS includes questionable numbers in its publications, the Bureau encourages the transportation community and others to use potentially erroneous information and gets the blame if someone else confirms an error. If

BTS excludes questionable statistics in its publications, the Bureau can appear to be incomplete or irrelevant. The proper approach often requires BTS to work through a long supply chain of data collectors and providers to validate or correct any questionable statistics.

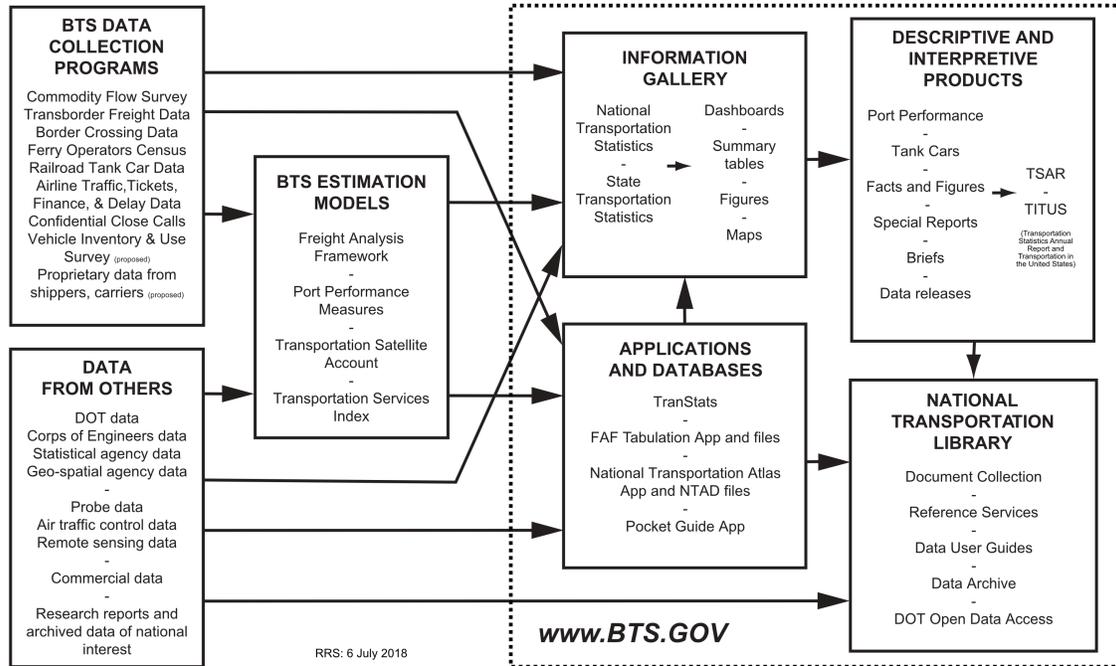
BTS recognizes the diversity of its customers. Some are power users who want access to source data to build their own statistics and create their own maps. Some are experts in aspects of transportation but need guides to information on other facets of the subject that they are now confronting. Some have only personal experience in transportation and are looking for a story to increase their understanding of the topic. Many are looking for pre-made tables and maps to use in reports and analyses. BTS must design a range of products to serve the range of customer needs.

#### BTS IN THE YEARS AHEAD

In the years ahead, BTS will be recognized for delivering robust, credible products in each of the topic areas identified in legislative mandates and departmental goals. Product integration will improve timeliness and assure quality. BTS will be a great place to work because the intellectual challenges are great, responses to the problems are creative and effective, and the Bureau's products are useful and used throughout the nation.

## APPENDIX

### BTS INFORMATION FLOW



## MANDATES

Congress requires BTS to create:

- Intermodal Transportation Database, which includes “information on the volumes and patterns of movement of goods, including local, interregional, and international movement, by all modes of transportation and intermodal combinations, and by relevant classification; information on the volumes and patterns of movement of people, including local, interregional, and international movements, by all modes of transportation (including bicycle and pedestrian modes) and intermodal combinations, and by relevant classification; information on the location and connectivity of transportation facilities and services; and a national accounting of expenditures and capital stocks on each mode of transportation and intermodal combination.”
- National Transportation Atlas Database (NTAD) “comprised of geospatial databases that depict transportation networks; flows of people, goods, vehicles, and craft over the networks; and social, economic, and environmental conditions that affect or are affected by the networks.”
- National Ferry Database, which contains “current information regarding ferry systems, including information regarding routes, vessels, passengers and vehicles carried, funding sources, including any Federal, State, and local government funding sources, and such other information as the Secretary considers useful.”
- Information on railroad tank cars that carry flammable material.

- An annual report on the capacity and throughput of the largest ports by tonnage, container traffic, and dry bulk.
- Comprehensive information on transportation performance and impacts summarized annually in the Transportation Statistics Annual Report, including “transportation safety across all modes and intermodally; the state of good repair of United States transportation infrastructure; the extent, connectivity, and condition of the transportation system; economic efficiency across the entire transportation sector; the effects of the transportation system on global and domestic economic competitiveness; demographic, economic, and other variables influencing travel behavior, including choice of transportation mode and goods movement; transportation-related variables that influence the domestic economy and global competitiveness; economic costs and impacts for passenger travel and freight movement; intermodal and multimodal passenger movement; intermodal and multimodal freight movement; and consequences of transportation for the human and natural environment.”

Congress requires BTS to operate the National Transportation Library (NTL) to “acquire, preserve, and manage transportation information and information products and services for use by the Department, other Federal agencies, and the general public; provide reference and research assistance; serve as a central depository for research results and technical publications of the Department; provide a central clearinghouse for transportation data and information of the Federal Government; serve as coordinator and policy lead for transportation information access; provide transportation information and information products... [and] coordinate efforts ... with the goal of developing a comprehensive transportation information and knowledge network...”

Congress requires BTS to:

- “establish on behalf of the Secretary a program to effectively integrate safety data across modes; and to address gaps in existing safety data programs of the Department.”
- “continually improve surveys and data collection methods of the Department to improve the accuracy and utility of transportation statistics; encourage the standardization of data, data collection methods, and data management and storage technologies... issue guidelines for the collection of information by the Department of Transportation ... and carry out modeling, economic assessment, and program assessment activities to ensure that such information is accurate, reliable, relevant, and in a form that permits systematic analysis.”
- “improve the coordination of information collection efforts with other Federal agencies.”

The Secretary of Transportation directs BTS to collect and publish information required by Congress on airline traffic, airline passenger origins and destinations, flight and tarmac delay, and airline finance.