PERFORMANCE DATA COMPLETENESS AND RELIABILITY

Performance measurement is dependent on the availability of useful data that will indicate level of performance and helps progress toward organizational goals. Because all data are imperfect in some fashion, pursuing perfect data may consume public resources without creating appreciable value. For this reason, there must be an approach that provides sufficient accuracy and timeliness but at a reasonable cost. This section of the report provides information on how DOT uses performance data, assesses limitations of the data, and plans to improve DOT's data.

IN GENERAL

In an attempt to bring consistency and quality to its performance reporting, DOT has implemented some general rules regarding the data it uses and how it is evaluated.

Annual Data—Whenever available, the data in this document are reported on a Federal Government fiscal year basis. However, there are instances where fiscal year data are not available so calendar year data are used instead. This often occurs when data are collected and reported to DOT by external sources and a calendar year reporting requirement is specified in the implementing regulation.

Completeness of Data for Annual Results—If available, the results for the most recent year in the report are listed as Actual in the shaded box for each performance measure. However, given the November 15 deadline for submission of the Performance and Accountability Report, not all data have been compiled and finalized for the entire year. When an actual value is not available for the current year, either an estimate or a projection is provided instead. In general, estimates are based on partial-year data that are extrapolated to cover a full 12-month period. Historical trend information, supplemented by program expertise, is then applied to estimate the remaining months of performance for which actual data is unavailable. The result is identified as a preliminary estimate in the report. If partial-year data are not available, then past trend information is analyzed and supplemented by program knowledge to develop a projected value for the annual performance measure. The result is identified as a projection in the report. As data are finalized, the projections and preliminary estimates are replaced by actual results, with resulting changes denoted by an *(r)*. Results are also amended as errors and omissions are identified in the data verification process, as updated information is provided by the reporting sources, or because of legal or other action that changes a previously-reported value.

Reliability of Measurement Data—DOT performance data are generally reliable (useful to program managers and policy makers). But because performance results in a given year are influenced by multiple factors, some of which are beyond DOT's control, and some of which are due to random chance, there may be considerable variation from year to year. A better "picture" of performance may be gained by looking at results over time to determine if there is a trend.

Virtually all data have errors. We have compiled Source and Accuracy Statements for each of the DOT data programs used in this report, which can be found at http://www.bts.gov/programs/statistical_policy_and_research/source_and_accuracy_compendium/index.html. The Source and Accuracy Statements give more detail on the methods used to collect the data, sources of variation and bias in the data, and methods used to verify and validate the data.

Assessing and, where possible, eliminating sources of error in DOT data collection programs has always been an important task for data program managers. As part of their ongoing work, managers of departmental data programs use quality control techniques to identify where errors can be introduced into the data collection system. Program managers also use computerized edit checks and range checks to minimize errors that may be introduced into the data of their respective programs. In addition, quality measurement techniques are employed to measure the effects of unanticipated errors. These include verification of data collection and coding, as well as coverage, response and non-response error studies to measure the extent of human error affecting the data. As sources of error are identified, data collection is improved.

The data used in measuring performance come from a wide variety of sources. Much of it originates from sources outside the Department and, therefore, outside the direct control of the Department. The data often come from administrative records or from sample surveys. While DOT may not have a strong voice in improving the quality of outside data, the Department takes all available information about the limitations and known biases in outside data into account when using the data.

To help the OAs address these issues, the Bureau of Transportation Statistics (BTS) is developing a statistical policy framework where the OAs will work together to identify and implement the current statistical best practices in all aspects of their data collection programs. This project is consistent with the data capacity discussions found in the DOT Strategic Plan.

See *Other Accompanying Information* in the Financial Report for detailed explanations of completeness and reliability for each performance measure.

DATA LIMITATIONS

DOT Data Source Limitations —Timeliness is the most significant limitation for DOT performance measurement data. Some DOT data are not collected annually. For example, the National Household Travel Survey and the Commodity Flow Survey each collect data every five years. Data that are collected each year (or more frequently) require time to analyze, confirm and report results. For example, Highway Performance Monitoring System vehicle-miles traveled (VMT) data require several months of post-collection processing, making final results unavailable for this performance report.

Other performance measurement data limitations are identified in the previously mentioned Source and Accuracy Statements for DOT data programs. These statements contain descriptions of data collection program design, estimates of sampling errors (if applicable), and discussions of non-sampling errors. Non-sampling errors include under-coverage, item and unit non-response, interviewer and respondent response errors, processing errors, and errors made in data analysis.

Estimating and Projection Techniques Used—As discussed under completeness, most of the FY 2005 measures must be projected from either partial-year data or historical trends. The projections based on partial-year data from FY 2005 are more likely to reflect changes effected by current DOT policies and programs. The measures projected from FY 2004 and prior historical data reflect continuing trends from ongoing programs, but do not reflect the effects of changes implemented in FY 2005.

External Data Source LimitationsData that originates from external or third-party sources are not directly controlled by DOT. These data often come from administrative records or from sample surveys. Timeliness is also a significant limitation. For example, many DOT internal data programs rely on data provided by State DOTs. DOT partners closely with the States, but does not have direct control over these programs.