LTBP InfoBridge: an intuitive and user-friendly interface to access, visualize, and analyze bridge performance data.

The Long-Term Bridge Performance (LTBP) Program is a Federal Highway Administration (FHWA) long-term research effort to help the bridge community better understand bridge performance. The overall objectives of the LTBP Program are to monitor representative samples of bridges nationwide to collect, document, maintain, manage, and disseminate high-quality quantitative performance data over an extended time horizon. This will be accomplished by taking advantage of advanced nondestructive evaluation (NDE) and structural health monitoring (SHM) technologies in addition to traditional visual bridge inspection approaches. Achieving these objectives requires close collaboration with State transportation departments, academia, and industry. The LTBP Program is designed to collect critical performance data that are not available elsewhere and merge them with data gathered from available sources.

The LTBP InfoBridge web portal is a centralized gateway providing efficient and quick access to bridge performance-related data and information. The portal includes multiple tools that facilitate bridge data analytics. It provides for storage, retrieval, dissemination, analysis, and visualization of data collected through State, National, and LTBP Program efforts to provide users with the ability to holistically assess bridge performance on a network or individual bridge basis.

Data   **Analytics**   **Library**

LTBP InfoBridge provides a user-friendly web front-end that includes intuitive tools for finding, viewing, and analyzing bridge performance information. It gives users the ability to efficiently share data selections and summary reports. Our goal at FHWA is to make LTBP InfoBridge a comprehensive bridge performance portal enabling researchers to develop tools and products that will enhance understanding of the performance of highway bridge assets leading to more efficient design, construction, rehabilitation, maintenance, preservation, and management of those assets.

For more information about LTBP InfoBridge or the LTBP program, contact the LTBP Customer Support Service Center at 202-493-3035 or ltbp@dot.gov.

LTBP InfoBridge can be accessed at: https://infobridge.fhwa.dot.gov

LTBP InfoBridge

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Gateway to Bridge Performance Information

U.S. Department of Transportation
Federal Highway Administration

Long-Term Bridge Performance Program

The Federal Highway Administration (FHWA) Long-Term Bridge Performance (LTBP) program's web portal, LTBP InfoBridge™, is a centralized gateway to bridge performance data and information. It provides an efficient interface with visualization capabilities enabling users to perform bridge data analytics. The following describes some of InfoBridge modules and features:
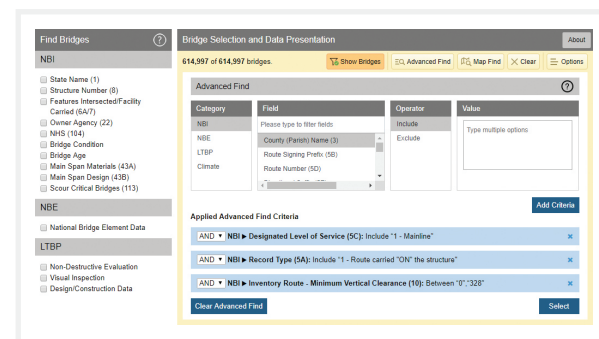
Find Bridges

This feature consists of data filter attributes grouped under different categories such as National Bridge Inventory (NBI), National Bridge Elements (NBE), and LTBP. This feature enables the user to efficiently query the database and present the results in a paginated tabular view and on a map. Performance data and statistics are presented on the dashboard. Query and filter criteria can be saved for future use.
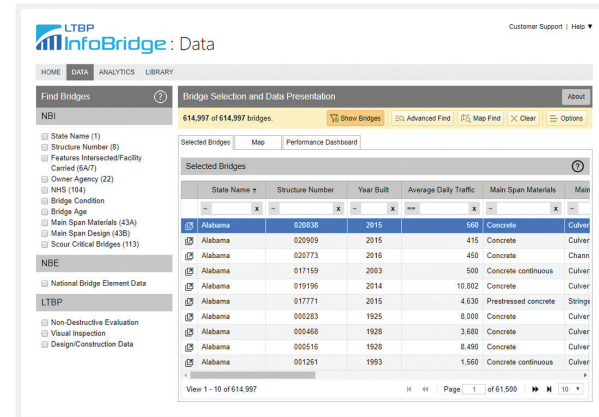
Advanced Find

While the "Find Bridges" feature works on basic data attributes, the "Advanced Find" feature enables users to further narrow down their selection criteria by using all data attributes available under different categories. This feature works in conjunction with the "Find Bridges" feature and can be utilized to apply sophisticated data searches on the underlying bridge data.

Map Find

The "Map Find" feature plots the selected bridges on an interactive map. By using drawing tools, the selection criteria can be changed and the results can be viewed on the map. This feature can be used independently as well as in conjunction with the "Find Bridges" and "Advanced Find" features to further refine the selected dataset.
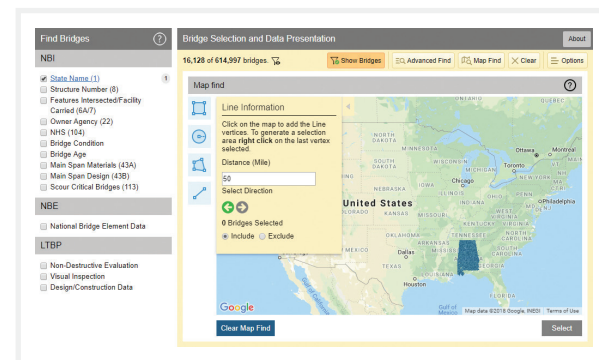
Performance Dashboard

The "Performance Dashboard" feature displays bar charts, tabulated summaries, and historical performance graphs corresponding to the selected bridges. It enables users to view performance summaries at a glance. As in all InfoBridge modules, the user can print or download the data displayed on the dashboard.

Source: FHWA

Source: FHWA
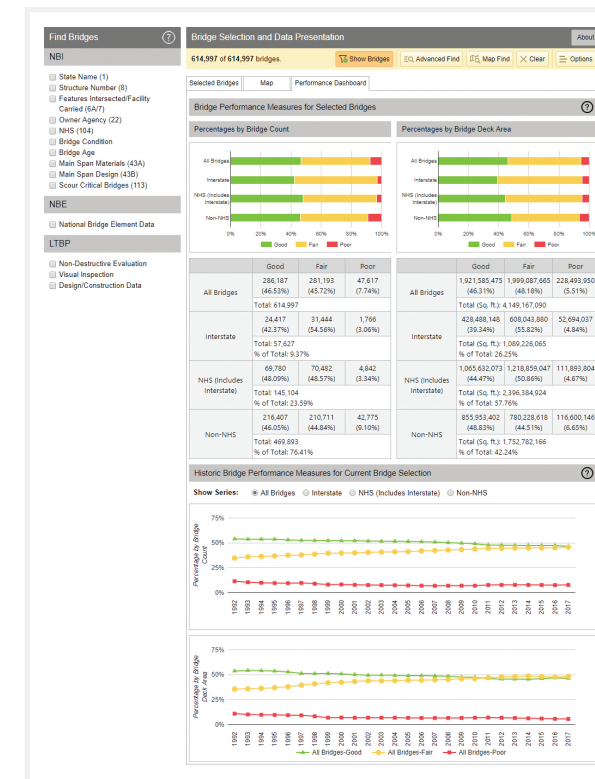
Source: FHWA
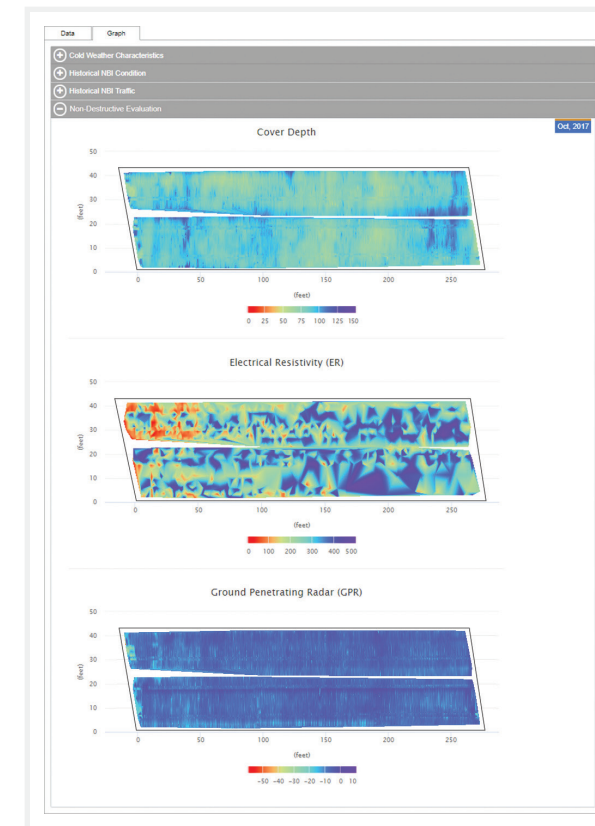
Source: FHWA

Source: FHWA

Bridge Information

Selecting a given bridge from the "Selected Bridges" table or map displays the bridge details under the Bridge Information section. The Bridge Information section is categorized in different tabs including Overview, NBI, NBE, Climate, and LTBP tabs. The overview tab displays the key data attributes and overall extent of the data availability for the selected bridge. The remaining tabs provide access to the bridge data for the corresponding data category. This feature also provides the ability to generate a bridge report for the selected bridge.

Visualize Bridge Data

Different visualization options are provided for reviewing and analyzing individual bridge data. Graphs and charts depict historical bridge condition data, bridge component deterioration modeling, and climatic data. LTBP program bridges have additional data associated with them such as nondestructive evaluation results and design/construction information. Innovative visualization techniques are used to model bridge component deterioration interactively.

Bridge Analytics

The "Bridge Analytics" feature enables researchers to use the extensive bridge performance data contained within InfoBridge to view, develop, and improve forecasting models for bridge performance. While the focus of data analysis is on understanding the past, data analytics focuses on the discovery, interpretation, and communication of meaningful patterns in data. InfoBridge offers state-of-the-art tools and techniques that enable users to apply data analytics to bridge performance data.

Library

The "Library" feature provides access to LTBP program products and publications. Included are LTBP protocols used to establish a consistent methodology covering the planning, field collection, and postprocessing of bridge performance data. Additionally, historical changes in bridge materials and design specifications are displayed in chronological order.

Help

The LTBP InfoBridge "Help" feature consists of the sitemap and frequently asked questions sections. In addition, it contains a Contact Us page enabling users to submit questions and provide feedback to the LTBP Customer Support Service Center.