

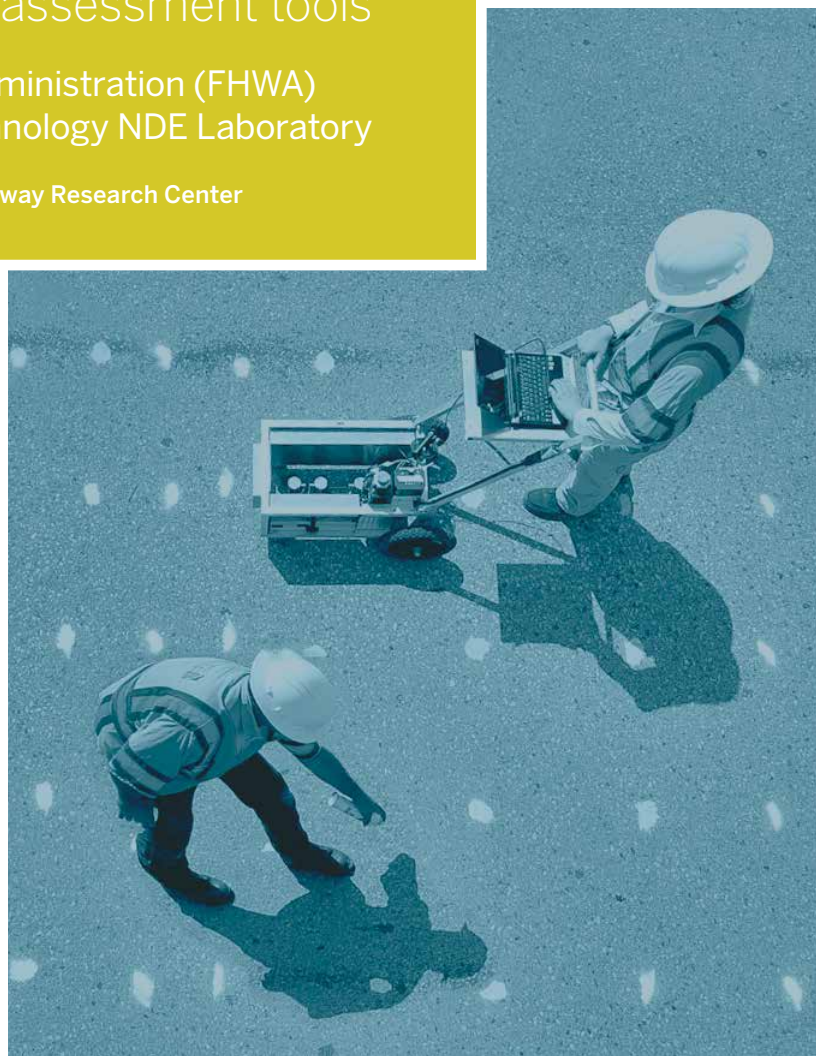


# NDE Web Manual

An interactive resource on  
nondestructive evaluation (NDE)  
technologies and assessment tools

Federal Highway Administration (FHWA)  
Advanced Sensing Technology NDE Laboratory

Turner-Fairbank Highway Research Center





An aerial photograph of a paved road. In the upper left, an orange and white traffic cone sits on the asphalt. In the lower right, a small, white, four-wheeled vehicle with a sensor array on top is driving on the road. The road has white dashed lines and a blue painted '30' on the right side. A tree with green leaves is in the upper right corner.

## What is the NDE Web Manual?

The NDE Web Manual is an interactive Web resource that provides concise information about common NDE technologies and assessment tools.

NDE can be used to locate, identify, and measure flaws, deterioration, or damage in bridge components that generally cannot be seen during visual inspection.

While several independent product Web sites and generic online guidelines already exist, the “Find Technology” feature in the NDE Web Manual takes that information one step further. It provides unbiased recommendations on the best technologies available to detect and characterize a specific problem or concern.

[fhwaapps.fhwa.dot.gov/ndep](https://fhwaapps.fhwa.dot.gov/ndep)



## Why was it developed?

FHWA developed the NDE Web Manual to fill a critical knowledge gap between highway infrastructure practitioners dealing with performance challenges on a daily basis and researchers developing and refining NDE technologies to support that effort.

Over the last decade, new NDE assessment tools have exploded on the market. Unfortunately, accurate, comprehensive documentation that should accompany these new products is not nearly as abundant and rarely includes actual performance data.

## How does it work?

The NDE Web Manual's simple interface allows users to select the type of highway infrastructure (i.e., bridge, pavement, or tunnel), material, structural element, and target of investigation. After selecting these variables, the online tool generates a list of recommended assessment technologies best suited for that particular set of parameters.

From that list, users can choose a technology and learn more about its physical principles, applications, advantages, limitations, best practices, and procedures. The NDE Web Manual offers illustrative photos and diagrams. Users can generate a printer-friendly report of this information with the click of a button.

As an alternative to selecting the type of highway infrastructure, the tool allows users to pick a target of investigation and learn about it and the best technologies for assessing it.

Currently, the NDE Web Manual only covers applications associated with highway bridge assessment. Research conducted under the Second Strategic Highway Research Program (SHRP2) was incorporated, and work is underway to develop content relating to NDE for pavement and tunnels.

The NDE Web Manual also provides a glossary of terms and a list of acronyms and abbreviations commonly used in highway infrastructure NDE.

## When was it developed?

The NDE Web Manual's content has been under development for several years. As technologies and materials evolve and change, so will this online resource, offering users the most up-to-date information possible.

## Who wrote it?

The NDE Web Manual is a product of the FHWA Advanced Sensing Technology (FAST) NDE Laboratory at Turner-Fairbank Highway Research Center. The information in this manual was developed and reviewed by experts in the field. Every effort was made to ensure that the information presented is accurate, adequately detailed, and technically sound—with the benefit of making the information easily accessible to users.

## How can the NDE Web Manual help my agency?

The use of NDE technologies for condition assessment of highways, bridges, and other infrastructure assets is increasing. This can be attributed to the fact that NDE technologies have proven effective in quality control and quality assurance of new construction and in condition assessment of existing structures.

The effectiveness and success of NDE has resulted in an upsurge of new products, but not a comparable proliferation of clear and thorough reference material on how and when to use them.

The NDE Web Manual will help practitioners and end users cut through the clutter and select the proper NDE tools to assess the condition of their highway assets.



# U.S. Department of Transportation Federal Highway Administration

## Online NDE resource for bridge managers

The NDE Web Manual's simple interface allows users to select the type of highway infrastructure, material, structural element, and target of investigation and generates recommendations for the best suited assessment technologies.

From these recommendations, users can choose a technology and learn more about its physical principles, applications, advantages, and limitations—plus best practices and procedures, complete with illustrative photos and diagrams.

### Contact:

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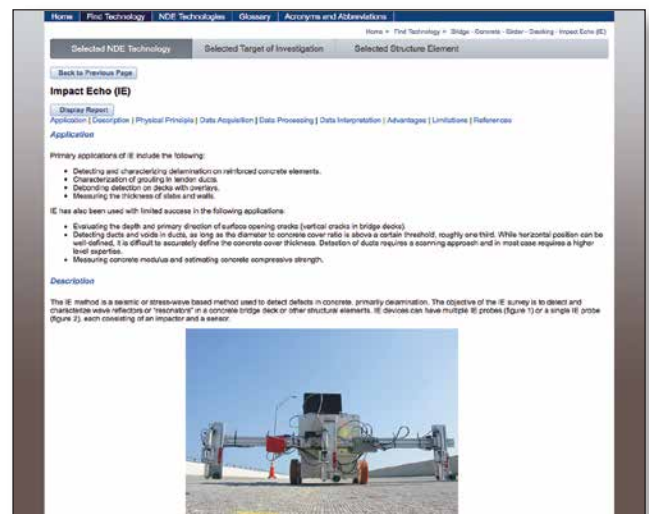
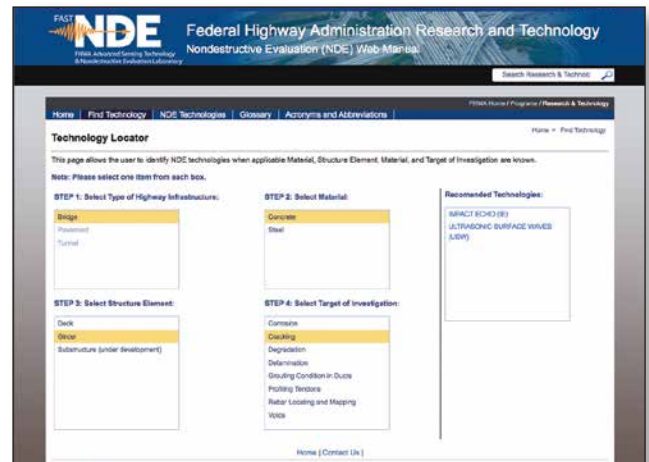
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