

GAO@100 Highlights

Highlights of [GAO-21-104249](#), a report to congressional committees

Why GAO Did This Study

In 2021, U.S. bridges, including those on the NHS, were estimated to need billions of dollars in repairs, including efforts to mitigate the effects of corrosion. House Report 116-106 included a provision for GAO to review the status of states' bridge corrosion-control planning. This report examines: (1) trends in the condition of bridges on the NHS and what is known about how corrosion affects bridge condition, (2) practices states use to address corrosion on NHS bridges and how selected states prioritize efforts to address corrosion, and (3) how FHWA assists states in addressing bridge corrosion.

GAO reviewed applicable statutes, regulations, guidance, and studies related to corrosion prevention and management, and analyzed data on NHS bridges. GAO selected five states—Florida, Illinois, Kansas, Rhode Island, and Wyoming—based on factors, such as the percentage of bridge deck area in good and poor condition and geographic diversity. Finally, GAO interviewed FHWA, state transportation, and various association officials and assessed FHWA's actions against internal controls for using quality information.

What GAO Recommends

GAO is recommending that FHWA's ongoing bridge preservation efforts include activities that focus on addressing the challenges states face with determining the circumstances under which specific corrosion practices and materials are most effective. DOT agreed with our recommendation and provided technical comments, which we incorporated as appropriate.

View [GAO-21-104249](#). For more information, contact Andrew Von Ah at (202) 512-2834 or vonaha@gao.gov.

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HIGHWAY BRIDGES

Federal Highway Administration Could Better Assist States with Information on Corrosion Practices

What GAO Found

According to the Federal Highway Administration's (FHWA) database of information on bridges' condition, the percentage of deck area, a measure that accounts for the size of a bridge, for National Highway System (NHS) bridges in poor condition has decreased since 2012. However, since 2016, the percentage of deck area for NHS bridges in good condition has also decreased, while the percentage of deck area for bridges in fair condition has increased. Although these data do not indicate the extent to which corrosion affects bridges' condition, studies GAO reviewed and stakeholders GAO spoke with—including FHWA, five selected states, and six associations—indicate a significant relationship between corrosion and bridge condition. (See figure.)

Examples of Bridge Corrosion



Sources: Rhode Island Department of Transportation (left), Wyoming Department of Transportation (middle), and Kansas Department of Transportation (right). | [GAO-21-104249](#)

State practices to prevent and manage corrosion vary based on environmental factors and bridge condition. For example, states exposed to sea water and deicing chemicals may clean bridges to remove materials that could accelerate corrosion. Four of the five selected states prioritized rehabilitating and replacing poor condition bridges, while the fifth state said it took steps to address corrosion to preserve and maintain bridges in good and fair condition. States are transitioning to asset management practices that emphasize bridge preservation strategies. However, officials from the selected states said limited information about specific corrosion practices' effectiveness is a challenge to implementing asset management practices. For example, officials from some selected states said they use sealant on bridge decks to prevent corrosion while officials from another said they do not because they do not know how effective it is.

FHWA, within the Department of Transportation, helps states address corrosion through research and technical assistance. However, FHWA efforts have generally focused on overall bridge condition and may not meet states' needs to determine the circumstances in which to use specific practices. For example, FHWA's *Bridge Preservation Guide* identifies practices that can be part of a bridge preservation approach but does not indicate under what circumstances they are most effective. Although FHWA does not endorse specific practices, officials recognize their role in helping states make well-informed decisions regarding bridge corrosion. As states continue transitioning to an asset management approach, providing information about the circumstances under which different corrosion practices are most effective could help states make best use of their resources.