

TECH NEWS

TECHNOLOGY NEWS

March-April 2005

Spring checkup for local bridges

Conducting basic bridge maintenance and inspection at this time of year can help local agencies ensure that local bridges remain as strong and safe as possible for the duration of their service life.

Record keeping

Accurate, up-to-date records are the heart of a good bridge maintenance and inspection program.

Organize. Start a file folder for each bridge in your jurisdiction. Put reports, photos, and completed work orders in it. Plan a visual inspection as you plan pavement surface condition ratings.

If a consultant does your safety inspections, go along and ask questions about items needing maintenance.

Make a list of work that's needed, set priorities, and schedule repairs.

Develop emergency phone list. Don't wait for a flood to discover you have an old phone number for a critical person. Organize or update an emergency response plan with names, home and cell phone numbers, and a sequence of contacts in an emergency.

Distribute the plan to employees and emergency services in your area so they have appropriate contacts.

Spring cleaning

Just like your plows, trucks, and spreading equipment, bridges need to be cleaned of salt and sand after a winter of deicing, anti-icing, and sanding activities.

Flush decks, seats, caps, and salt-splash zones with water. Clean drainage systems and expansion joints. Clean and lubricate bearing assemblies.

Editor's note

This article was adapted from information provided in the spring 2005 issue of *Wisconsin LTAP*. Many suggestions in the original article were provided by Bob Kleinschmidt, retired bridge project maintenance manager for Minnesota DOT. Thank you to Michael Todsén, LeRoy Bergmann, and Donna Buchwald at the Iowa DOT for reviewing this article and focusing the content for Iowans.



Seal cracks and joints in the deck, and substructure elements if needed, to keep water from carrying chlorides into rebar and other steel structures.

Get the "shorties"

Bridges less than 20 feet long are not included in the federal bridge inspection program. However, local agencies responsible for those bridges should inspect them regularly and complete a basic condition form in the same manner as bridges longer than 20 feet.

Get down. Go under the bridge and look up at critical parts of the structure. Look for corrosion on beams and for piles of sand and debris around seats, caps, and bearing structures.

Remove brush and woody debris from under timber bridges to reduce the risk of fire damage.

Look down at the stream embankment under the bridge; check that rock is adequate to protect the embankment.

Remove accumulations of loose rock and debris from the stream bed that could restrict normal flow. Debris around piers can change water flow patterns, causing the water to scour away rock and soil. This scouring can undermine piers and weaken the bridge.

Check out even a little debris to make sure it's not a sign of much more under the surface.

Look at loads. Accumulated gravel surfacing and bituminous overlays sometimes get carried over the bridge deck to improve the ride.

The weight of these "dead load" materials can reduce the bridge's capacity to carry vehicles and people. In addition, these materials are porous and let water through them, which can damage the bridge deck underneath.

Remove the extra surface material to improve the bridge's durability and load-carrying ability.

High water—higher alert. Monitor all bridges and culverts during and after high water conditions. Look for signs of scour and erosion and correct the problem.

Improve approaches. The roadway surface leading to the bridge deck will often settle, leaving dips at the deck. Not only does this produce a rough ride, it also stresses the bridge when vehicles launch and land hard on the deck.

Also, clean expansion joints, and repair or replace damaged joint filler material in them.

For more information

If you have questions about bridge inspections, including the National Bridge Inspection Standards (NBIS), contact Michael Todsén, Iowa DOT Office of Bridges and Structures, 515-233-7726, michael.todsén@dot.iowa.gov.

Obtaining funding for bridge improvements

According to the 2004 National Bridge Inventory, 4,700 of the nearly 20,000 bridges on Iowa's county roads and 310 of the 1,400 bridges on city streets in Iowa are structurally deficient; more than 1,200 county road bridges and 160 city bridges are functionally obsolete.

If you have a bridge that is in poor condition (structurally deficient) or too narrow (functionally obsolete) you may contact the Iowa DOT Office of Local Systems for assistance on available funding.

For city bridges, contact Donna Buchwald, 515-239-1051, donna.buchwald@dot.iowa.gov; for county bridges, contact LeRoy Bergmann, 515-239-1506, leroy.bergmann@dot.iowa.gov.

You can also find information on various funding programs available for road and bridge projects, including application deadlines, at www.dot.state.ia.us/fundguid.htm.