

MOUNTAIN-PLAINS CONSORTIUM

PROJECT BRIEF | December 2015

Developing A Methodology to Inspect and Assess Conditions of Short Span Structures on County Roads in Wyoming



the ISSUE

Even though the FHWA's National Bridge Inspection Standards are a very comprehensive tool for bridge inspection, they only apply to structures with spans of more than 20 feet. WYDOT inspects these larger bridges on regular intervals, but there is currently no formal inspection procedure for assessing the condition of short-span structures, especially culverts.

the RESEARCH

Many counties in Wyoming do not have the resources to maintain detailed records on the condition of their culverts. Consequently, culverts can become neglected and fall into disrepair. Problems or deficiencies with the culverts may not be noticed until a much larger problem arises.

A standard inspection procedure for culverts in Wyoming was developed using WYDOT's Bridge Inspection Reports as well as the PONTIS CoRe Element Report. Inspection sheets used for culvert studies by other agencies, including the report from FHWA's Culvert Inspection Manual were examined to determine important components that should be recorded. The resulting inspection procedure follows a methodology that ensures consistency and gives local agencies the ability to easily identify maintenance steps that should be taken. The procedure also identifies the level of debris present in the pipe and uses that data as a governing factor in the pipe condition rating because a high level of debris affects the pipe's performance and may increase the chances of flooding.



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the FINDINGS

A decision tree was developed using element-level inspections and the level of debris in the pipe as governing factors to assign overall condition ratings. Because there is little to no information available on short-span bridges, a preliminary inspection procedure for these structures was also developed to gather initial information that can be used to refine the inspection procedure. The culvert methodology was then implemented in Goshen County for testing and other counties were considered for the short-span bridge methodology.

the IMPACT

This study will provide county and other local agencies tools for inspecting short-span structures and assessing their condition so that they can easily identify and document necessary maintenance for each structure.

The methodology helps agencies establish the overall investment in these short-span structures. Necessary maintenance for each structure can also be recognized easily based on the data inputs. Therefore, the required investment to achieve a rating of “good” can be calculated by determining the costs of required maintenance. Comparing data from various structures will allow agencies to more clearly discern which structures should allocated resources for repair or replacement.

For more information on this project, download the entire report at <http://www.ugpti.org/resources/reports/details.php?id=829>

For more information or additional copies, visit the Web site at www.mountain-plains.org, call (701) 231-7938 or write to Mountain-Plains Consortium, Upper Great Plains Transportation Institute, North Dakota State University, Dept. 2880, PO Box 6050, Fargo, ND 58108-6050.



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