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NEW FHWA MANUALS FOR MITIGATION MEASURES AIMED AT REDUCING WILDLIFE-VEHICLE COLLISIONS AND PROVIDING SAFE CROSSING OPPORTUNITIES FOR WILDLIFE

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Abstract

Under SAFETEA-LU Transportation Legislation, the Secretary of Transportation was directed to conduct a national wildlife-vehicle collision (WVC) reduction study. The study was to advance the understanding of the causes and impacts of WVCs and identify solutions to this growing safety problem. The Federal Highway Administration (FHWA) report, which reviewed over 40 mitigation measures aimed at reducing wildlife-vehicle collisions, was submitted to the U.S. Congress in 2007. In addition, a FHWA manual was compiled that focuses on the design considerations and technical specifications of the measures that are considered "best practices" for reducing wildlife-vehicle collisions. The title of the manual is "Wildlife-vehicle Collision Reduction Study: Best Practices Manual". The measures described in the manual include planning at different stages and different spatial scales, wildlife fencing, under- and overpasses for wildlife, without or combined with other uses (e.g. humans, vehicles, water), animal detection systems, vegetation management in the right-of-way, and wildlife culling. While the manual is mostly oriented to mitigation measures that reduce collisions with large wild ungulates (i.e. deer, elk, and moose), other sections of the manual focus on collision reduction measures for species or species groups for which direct road mortality is among the major threats to their survival. These species include reptiles, amphibians, birds, and mammals. A second FHWA manual, initiated before the SAFETEA-LU Transportation Legislation was put into effect, focused on the design considerations and technical specifications of safe crossing opportunities for wildlife, specifically wildlife under- and overpasses. This manual is in draft and titled "Guidelines for Designing and Evaluating North America Wildlife Crossing Systems" and includes recommended crossing structure types, dimensions, and landscape and land-use attributes that may influence the effectiveness of the crossing structures for different species. The two manuals include recommendations for monitoring the effectiveness of mitigation measures in reducing wildlife-vehicle collisions and providing connectivity for wildlife. The ultimate purpose of the two manuals is to provide transportation and natural resource management agencies with the best available information on the planning, design, and monitoring of measures aimed at reducing wildlife-vehicle collisions and measures that allow for safe wildlife crossing opportunities across roads. We expect that the two manuals will be used heavily by transportation and natural resource management agencies in projects that aim for roads that are safer for humans and more permeable for wildlife.

Biographical Sketches


Tony Clevenger has carried out research during the last 12 years assessing the performance of mitigation measures designed to reduce habitat fragmentation on the Trans-Canada Highway (TCH) in Banff National Park, Alberta. Since 2002, he has been a research wildlife biologist for the Western Transportation Institute (WTI) at Montana State University. Tony is currently a member of the U.S. National Academy of Sciences Committee on Effects of Highways on Adaptation of Change
Natural Communities and Ecosystems. Since 1986, he has published over 40 articles in peer-reviewed scientific journals and has co-authored three books including, Road Ecology: Science and Solutions (Island Press, 2003).

Pat McGowen obtained his B.S. and M.S. in Civil Engineering from Montana State University, and his Ph.D. from University of California Irvine in Transportation Systems Engineering. He has been a licensed professional civil engineer in Montana since April 2000. He is an assistant professor jointly appointed between the Western Transportation Institute (WTI) and Civil Engineering Department at Montana State University where he has worked on projects relating to rural ITS, transportation impacts to wildlife, safety and travel and tourism. Dr. McGowen is a national expert on highway-wildlife interactions. He developed the Artemis Clearinghouse, a wildlife-vehicle collision mitigation web-based clearinghouse. He has been involved in projects including the Roadside Animal Detection System Testbed, the National Wildlife Vehicle Collisions Study, and Habitat Connectivity and Rural Context Sensitive Design. Dr. McGowen is the founder and co-chair of the TRB subcommittee on Animal Vehicle Collisions (ANB20-2). Dr. McGowen, along with other colleagues at WTI was awarded the 2008 Best of ITS Award from the Intelligent Transportation Society of America for Best New Innovative Practices for Partnerships for Deploying Animal Vehicle Crash Mitigation Strategies.

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