

# NEVADA-LED TRANSPORTATION POOLED FUND STUDY SEEKS TO MITIGATE WILDLIFE-VEHICLE COLLISIONS AND IMPROVE DRIVER SAFETY

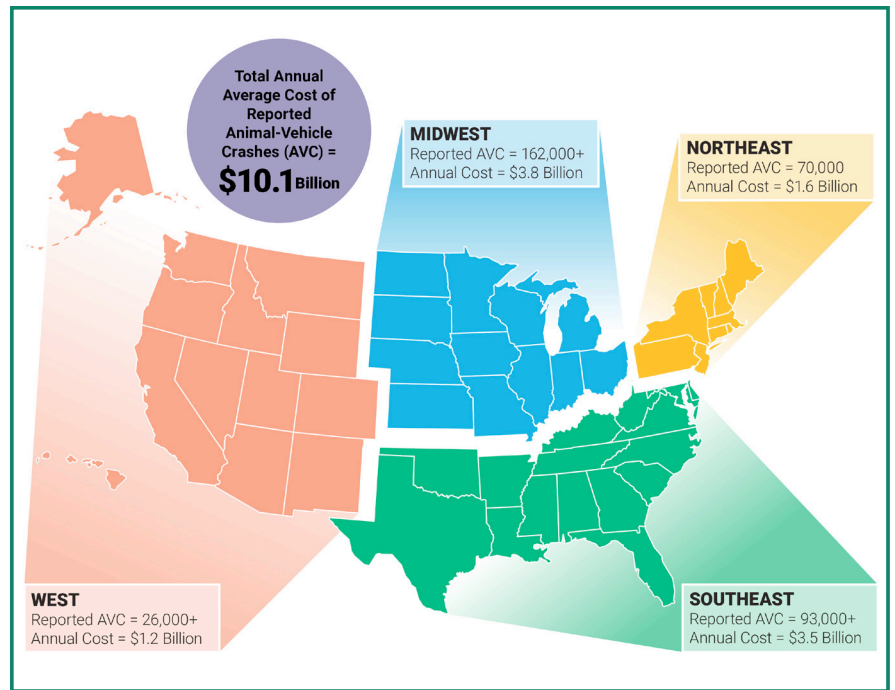
By Dara Burke and Tricia Sergeson

January 2023

## THE CHALLENGE

Wildlife-vehicle collisions have long posed a serious threat to highway safety. Researchers estimate that there are 2–3 million collisions involving large animals per year in the United States, costing victims and public agencies an estimated \$10 billion annually.<sup>1</sup> In Nevada alone, there are an average of more than 500 reported wildlife-related crashes and an estimated 5,000 animal mortalities, costing State residents more than \$19 million each year.<sup>2</sup>

As climate change continues to threaten wildlife resiliency, measures must be taken to ensure animals can migrate for their survival. Collision mitigation measures will help to improve climate sustainability and simultaneously reduce crashes that can lead to property damage as well as driver injury and death throughout the country. Consideration of wildlife is increasingly becoming a part of the transportation planning process. Enhancing habitat connectivity is key to improving the safety of people and animals as well as saving taxpayer dollars.



Courtesy of NDOT Research Division. The figure above represents the annual average number of reported crashes with animals in U.S. regions and the societal cost of those crashes based on a census of all State departments of transportation in 2022 and Federal Highway Administration crash values.<sup>3</sup>

The Transportation Pooled Fund (TPF) Program provides an opportunity to collaborate with transportation stakeholders around the world to help solve transportation problems like wildlife-vehicle collisions. By pooling funds and expertise, transportation agencies are able to develop innovative solutions at a lower cost.

## THE STUDY

Beginning in early 2017, the Nevada Department of Transportation (DOT) led a TPF study called “The Strategic Integration of Wildlife Mitigation into Transportation Procedures” (TPF-5(358)). The study learned from surveying partnering organizations and participating agencies

SUCCESS STORY

how wildlife concerns can be incorporated and addressed in the transportation planning process. Prior to initiating the study, a significant gap existed in guidance for considering wildlife issues during this process.

A subtask of this TPF study included developing and testing several new designs for enhancing habitat connectivity to explore more cost-effective wildlife crossing technologies. Examples include animal detection systems (to warn drivers of nearby large animals), lighting systems, over and underpasses, jump-outs, and fiber-reinforced polymer crossing infrastructures. In order to determine priority locations, researchers identified species of particular conservation concern and the hot-spot areas where wildlife-vehicle collisions are most common.

**THE SOLUTION**

In order to help agencies implement these mitigation methods, the study’s technical advisory committee (TAC) members and research teams collaboratively developed a manual titled *The Strategic Integration of Wildlife Mitigation into Transportation Procedures: a Manual for Agencies and Partners*.<sup>1</sup> TAC members included Parks Canada/Government of Canada, Ontario Ministry of Transportation, Federal Highway Administration (FHWA), ARC Solutions, and the DOTs of Alaska, Arizona, California, Iowa, Michigan, Minnesota, Nevada, New Mexico, Oregon, and Washington. The research teams included the Western Transportation Institute at Montana State University, U.S. Geological Survey, and an independent research team led by



Courtesy of NDOT Research Division. One example of the researched wildlife crossing technologies in this TPF study includes an animal jump-out on U.S. Route 93 in Montana.

Dr. Patricia Cramer. Partner agencies leveraged their research funding for a total combined project budget of more than \$1.2 million. The collective knowledge of the TAC combined with the increased budget expanded the scope of the project and maximized its impact.

Through the process of surveying transportation agencies across the United States and Canada, several themes were identified and used to formulate recommendations. The TPF study’s manual includes case studies for practitioners that illustrate how the guidelines can be implemented and three main recommendations:



Courtesy of NDOT Research Division. This TPF study found that including wildlife crossing structures, like the one pictured here along I-80, in large construction projects early in planning maximizes their impact.

1. Wildlife needs to be considered in a transportation agency’s standardized procedures.
2. Transportation agencies and metropolitan planning organizations should partner with outside agencies and others to plan, fund, and construct wildlife crossing technologies.
3. Transportation professionals need to be inspired to consider wildlife in their everyday actions.

These three changes would help reduce wildlife-vehicle collisions and make roads safer. This manual enables transportation agencies to make research-based decisions for reducing wildlife-vehicle collisions in their jurisdiction.

**THE VALUE**

Beyond safety and money-saving benefits, the work of this TPF study will allow FHWA as well as other Federal and State transportation and wildlife agencies to establish guidance for joint action plans to address wildlife-vehicle collisions and improve habitat connectivity, a clear directive outlined by the recent Bipartisan Infrastructure Law.<sup>4</sup>

Greater habitat connectivity through the use of wildlife crossing technologies reduces highway accidents, carcass removal costs, and carcass disposal-related employee injuries in a given location.<sup>5</sup> These wildlife-vehicle collision mitigation strategies ultimately improve highway safety and save lives and taxpayer money.

## REFERENCES

1. Cramer, P., J. Kintsch, J. Gagnon, N. Dodd, T. Brennan, L. Loftus-Otway, K. Andrews, P. Basting, L. Frazier, and L. Sielecki. 2022. *The Strategic Integration of Wildlife Mitigation into Transportation Procedures: A Manual for Agencies and Partners*. Report No. 700-18-803C. Carson City, NV: Nevada Department of Transportation. <https://static1.squarespace.com/static/60baf2ed8791194056e335f8/t/63094a9dc632184f87c55a25/1661553349966/700-18-803+Final+Report+-+Manual.pdf>, last accessed December 20, 2022.
2. Cramer, P., and C. McGinty. 2018. *Prioritization of Wildlife-Vehicle Conflicts in Nevada*. Report No. 604-16-803. Carson City, NV: Nevada Department of Transportation. <http://dx.doi.org/10.13140/RG.2.2.34371.55846>, last accessed August 2022.
3. Transportation Pooled Fund. n.d. "Wildlife Vehicle Collision Reduction and Habitat Connectivity" (web page). <https://www.pooledfund.org/Details/Study/610>, last accessed November 2022.
4. *Wildlife-vehicle collision reduction and habitat connectivity improvement, U.S. Code 23* (2022), §172. <https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title23-section172&num=0&edition=prelim>, last accessed August 2022.
5. Transportation Pooled Fund. n.d. "Wildlife Vehicle Collision Reduction and Habitat Connectivity" (web page). <https://www.pooledfund.org/Details/Study/610>, last accessed November 2022.

Recommended citation: Transportation Pooled Fund, *TPF Success Story: Nevada DOT* (Washington, DC: 2023) <https://doi.org/10.21949/1521969>

Publication No.: FHWA-HRT-23-026  
HRTM-10/01-23(Web)E



### For more information,

see this [TPF study's web page](#) for how agencies and partners can standardize wildlife considerations in transportation procedures, from planning and projects to everyday maintenance and operations.



### For More Information, on this TPF study, please contact:

**Nova Simpson**

[nsimpson@dot.nv.gov](mailto:nsimpson@dot.nv.gov)

**Daniel Buford**

[daniel.buford@dot.gov](mailto:daniel.buford@dot.gov)

