



## 0-6971: Incorporating Wildlife Crossings into TxDOT's Project Development, Design and Operations Processes

### Background

Each year an average of 7,585 crashes are reported to Texas Department of Transportation (TxDOT) that involve either wild or domestic animals. From 2010 to 2017, 160 people lost their lives in these crashes and thousands more sustained injuries. The crash data are limited, however, in that they only represent crashes where a police report is created. Many more animal-vehicle conflicts occur where an individual might not either report the crash or file a claim on their insurance, and the animal may be hurt but moves away into cover, or may be killed but not noted through the official police process. The number of large mammals killed could be five to ten times higher. These collisions diminish human safety and cost Texas citizens millions of dollars every year in vehicle damage, medical costs, carcass pickup and disposal, and other associated time and monetary costs. To reduce these collisions, and make Texas roads safer for the traveling public, it is important to provide opportunities for wildlife to cross beneath or above the roadway via wildlife crossing structures.

### What the Researchers Did

The CTR research team summarized national and statewide efforts to reduce animal-vehicle conflict, analyzed the animal-involved crash data in Texas, developed methodology to identify animal-vehicle crash hot spots, and evaluated the benefits and costs of developing certain wildlife crossing structures. The research team also conducted a comprehensive review of state laws pertinent to wildlife crossings and analyzed the responsibilities of TxDOT under National Environmental Policy Act through the lens of case law. To make consideration of wildlife crossings a routine part of the TxDOT project development

procedure, this project also recommended language modifications to 18 TxDOT manuals and developed a guidelines document on reducing wildlife-vehicle-conflict and promoting wildlife connectivity.

### What They Found

The research team found that if mitigation strategies are developed based on solid data analysis, careful study of the environmental conditions, and coordination among different divisions within TxDOT, the strategies can be cost-effective and deliver results. Mitigation strategies can significantly improve traveler safety, foster wildlife connectivity, alert TxDOT staff to the value in preserving the state's wildlife, and ensure that Texas will demonstrate leadership on this issue for other state DOTs.

The benefit-cost analysis conducted in this project showed high benefit-cost ratios for implementing

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different types of mitigation, especially when underpasses/overpasses are combined with fencing. The benefits include reduced crash costs over time (currently Texas is ranked third among all states in terms of the number of animal-vehicle collision related insurance claims) and wild animal lives saved. TxDOT is required to develop mitigation options for animals with threatened and endangered status as designated by the U.S. Fish and Wildlife Service, such as the ocelot. Creating a highly efficient standardized process across TxDOT divisions to meet that requirement presents another cost savings for the agency.

Several TxDOT districts have already initiated programs to minimize animal-vehicle collisions, have seen successful results, and can provide guidance on planning, designing, construction and maintenance. TxDOT's Pharr District photo evidence of the highly endangered ocelot in front

of one of its newly installed crossings (Figure 1) is a major accomplishment for TxDOT, and will help TxDOT play a vital role in ensuring the protection and recovery of this species.

### What This Means

Developing wildlife crossing structures or other mitigation strategies is a complicated process. It needs to be supported by detailed data analysis and its success is highly dependent on the collaboration within and among different divisions within TxDOT and also other relevant wildlife and resource agencies. The findings and final products of this project are expected to help make wildlife crossing structure consideration and creation a regular part of TxDOT's project development procedure and contribute to TxDOT's role as a leading state in reducing animal-vehicle conflict issues.



(a) Ocelot looking into a crossing on SH 100

(b) Bobcat using a underpass on SH 100

Figure 1: Ocelot and bobcat presence near wildlife crossing structures in TxDOT's Pharr District

### For More Information

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