U. S. HIGHWAY 93 RECONSTRUCTION ON THE FLATHEAD INDIAN RESERVATION

AN INNOVATIVE PARTNERSHIP IN ROAD ECOLOGY

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Confederated Salish and Kootenai Tribes

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1991 - Montana Department of Transportation (MDOT) began planning for reconstruction of U. S. Highway 93 on the Flathead Indian Reservation.

Justification:
1. Public safety
2. Increasing traffic
3. Increasing population
CSKT’s primary concern related to further dilution of their culture.
Every species is important and has value as an integral part of the whole ecosystem.
Wildlife Movement/Habitat Fragmentation

"Currently, there are 100-200 wildlife crossing structures in the United States. The U.S. 93 project in Montana will make a major contribution to reducing wildlife mortality by increasing the national number of wildlife crossings an amazing 25-50 percent."

— Mary Price, CSKT wetlands biologist
Wildlife/Vehicle Collisions
MDOT’s Preferred Alternative was a divided four-lane highway. The Confederated Salish and Kootenai Tribes disagreed and recommended an improved two-lane highway with safety improvements through their reservation.
Without consensus, the Federal Highway Administration would not authorize and fund the project. Gridlock occurred.

In 1999, the three governments began negotiations to resolve their differences.

In 2000, consensus between the three governments was reached for most of the route, except for the segment including the Ninepipe area and City of Ronan.
The landscape of the Flathead Indian Reservation is a dynamic collection of plants, landforms, animals, and special places. This graphic illustrates the variety of unique features on the reservation, and illustrates how US 93 currently interacts with these features. This graphic was used as a starting point in the process of creating a road that responds to and reflects the character of the landscape and people.
Problem Resolution Process
Context Sensitive Approach
Multi-tiered process for project design
Value engineering to economize
Technical Design Committee: Engineers
Design Engineers
Consultants
Ecologists
Landscape Architects
Policy Oversight Group: MDOT Administrators
FHWA Administrators
Tribal Council
Concrete Box Culvert

Location: North American, British Columbia, Canada
Size: 12 ft (3.7 m) wide, 9 ft (2.7 m) high
Why built: To allow deer and other wildlife to cross the highway
Suitable for: Deer, elk, moose, and other large mammals
Effectiveness: The culvert is designed to accommodate wildlife passage

Bear Underpass

Location: British Columbia, Canada
Size: 9 x 8 ft (2.7 x 2.4 m)
Why built: To allow bears to cross the highway safely
Suitable for: Bears, moose, and other large mammals
Effectiveness: The underpass is designed to accommodate wildlife passage

Prefab Gravel Road Culvert

Location: British Columbia, Canada
Size: 24 in (60 cm) wide, 24 in (60 cm) high
Why built: To allow small mammals, birds, and reptiles to cross the road
Suitable for: Small mammals, birds, and reptiles
Effectiveness: The culvert is designed to accommodate wildlife passage

FISH & WILDLIFE CROSSINGS—Crossing Structures 

Wall with Lip and Culvert

Location: Central Florida
Size: 9 ft (2.7 m) wide, 6 ft (1.8 m) high
Why built: To allow fish and other aquatic wildlife to cross the road
Suitable for: Fish and amphibians
Effectiveness: The wall will be monitored for effectiveness

Concrete Box Culvert

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Size: 12 ft (3.7 m) wide, 9 ft (2.7 m) high
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Large Round Metal Culvert

Location: British Columbia, Canada
Size: 12 ft (3.7 m) wide, 9 ft (2.7 m) high
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Bridges

Open Span Bridge - US HWY 2

Location: Montana
Suitable for: Deer, elk, moose, and other large mammals
Effectiveness: The bridge is designed to accommodate wildlife passage

Open Span Bridges - Trans-Canada Highway

Location: British Columbia, Canada
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Other Examples of Wildlife Overpasses

Location: British Columbia, Canada
Size: 8 x 8 ft (2.4 x 2.4 m)
Suitable for: Small mammals, birds, and reptiles
Effectiveness: The overpass is designed to accommodate wildlife passage

Wildlife Overpass - Red Earth

Location: British Columbia, Canada
Size: 8 x 8 ft (2.4 x 2.4 m)
Suitable for: Small mammals, birds, and reptiles
Effectiveness: The overpass is designed to accommodate wildlife passage

Wildlife Overpass - Wolverine

Location: British Columbia, Canada
Size: 8 x 8 ft (2.4 x 2.4 m)
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US 93 FISH AND WILDLIFE CROSSINGS

23. Copper Creek Fish & Wildlife Crossing
Arlee - Ravalli Segment

This area has great significance for fish and wildlife crossing. The Jocko River is bull trout bearing. Two tributaries in this area, Copper Creek and Spring Creek have been altered by highway fills and embankments. Restoring these water channels will greatly improve fish and wildlife habitat. Raising the road in concert with providing undercrossings, would improve motorist safety and allow wildlife to move through the canyon. Anticipated use by: black bears, grizzly bears, mountain lions, bobcats, coyotes, elk, deer, etc.

Design Recommendations
Recommended crossing type: Open span bridge
Approximate dimensions: 100’ to 150’ span, 12’ min. ht.

Notes:
End 8’ page wire fencing south of Ravalli. Begin fencing south of Schall Flats #4 crossing. Fencing on west side of road to be placed below sight line. Jump-outs are desirable adjacent to bridge structure as studies have shown that animals trapped inside R.O.W. will turn back rather than cross structures.

Mitigation in this area will require coordination between GSKT, MDT, and MRL to ensure appropriately sized companion crossings (across railroad) for fish, wildlife and hydrology.

Criteria for locations of crossings:
1. Winter tracking - NA
2. Summer Game Trails - NA
3. Road Kill Data - Tribal data from 1/95-10/98 combined with MDT data from 12/97-1/00 indicates an extremely high concentration of kills in this area (31 kills).
4. Habitat - The road bisects two areas of good mountain habitat, and runs adjacent to excellent riparian habitat (the Jocko River) fed by two tributaries (Spring Creek and Copper Creek). These tributaries increase the fish and wildlife habitat value.
5. Engineering Practicality - The physical constraints of this canyon pose a challenge.

US 93 DESIGN DISCUSSIONS
Project Consultant: Montana Department of Transportation
Federal Highway Administration
The Confederated Salish & Kootenai Tribes of the Flathead Nation

December 20, 2009
Wildlife Crossing Structures
Crossing Structure Locations

Most crossing structures per mile for longest distance in U.S.
CSKT acquired a 81 ha. tract, restored the wetland and riparian habitat and sold habitat mitigation credits to MDOT.
Ninepipe-Kicking Horse SEIS was completed, but construction is not planned until after 2023. 32 years and counting.
What Works?

• Believing in the partners & process
• Being open to new ideas and concepts
• Communication
• Trust
• Patience – a lot of it
• Focus on resolving the problem and the desired end product
• Working together