



The Road Less Traveled

Creating America's Wildlife Highway

By Grant Jones FASLA

ABOVE: Rather than following the "straight shot" route of the old road, the new U.S. Highway 93 gently curves, visually conforming to the hilly terrain and undulating landforms in the larger landscape.

Most highways are built for speed. This is a story about building a highway for people and wildlife, communities and the land. The highway is in Montana, a state that, until 1999, had no speed limit at all—a fact that could account for the bumper sticker “Pray for me, I drive U.S. 93.”

U.S. Highway 93 runs from Arizona to Canada. It's a two-laner through much of Montana, passing through Missoula and the Flathead Indian Reservation before exiting into Canada. Filled with tourists as well as commercial and local traffic, the road has been Montana's most dangerous two-lane highway not only for people, but for animals.

To address rising safety concerns, the Montana Department of Transportation (MDT) began plans to expand U.S. 93 into a divided, four-lane highway in 1988. However, the Confederated Salish and Kootenai tribes (CSKT) opposed the plans, expressing concerns about their natural, cultural, recreational, and scenic resources on the 55-mile stretch of highway that traversed the Flathead Indian Reservation.

The tribes believed the road expansion would harm their land and its diverse animal population. Wildlife and the places they feed, mate, birth, and travel hold considerable meaning for the Salish, Kootenai, and Pend d'Orielle people. For the CSKT, safeguarding animals is part of perpetuating Indian culture.

Expanding the highway wouldn't just add lanes, tribal members pointed out. It would also promote higher speeds, which would increase the number of animals killed by speeding traffic—a safety issue for both wildlife and motorists.

Despite several efforts to bring opposing sides together, the project stalled.

Change begins with an unorthodox approach

In 1998, at the request of the tribes, Jones & Jones Architects + Landscape Architects + Planners of Seattle came in to help resolve the decade-long impasse between the MDT, CSKT and the Federal Highway Administration (FHWA)—which was threatening to withhold funding if the project didn't get support from tribal authorities.

The tribes had learned about work Jones & Jones had done for the Paris Pike, a breakthrough project in Kentucky horse farm country that demonstrated the many benefits of land-driven highway design.

For the Montana project, Jones & Jones proposed that MDT set aside the conventional engineers' approach to road building, which achieves “level of service” (LOS) goals by straightening curves and adding lanes. (LOS measures delay; i.e. the length of traffic backups). This approach inherently focuses on facilitating speed.

Instead, Jones & Jones proposed a road-building method, established in the 1930s by landscape architects, which achieves LOS goals with continuous spiral curves and occasional passing lanes on straight stretches. This strategy results in more even spacing between cars and thus maintains flow.

Because it takes its cues from the land, the road has a more respectful presence. In fact, by letting the land reshape the road, the project respects the way of life in rural towns along its route and restores fragmented habitat, while giving travelers a more pleasant, safer trip and a better understanding of the tribal people and their scenic homelands.

The design treaty

Through a yearlong negotiation process in which team members met



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LEFT: Rather than following the "straight shot" route of the old road, the new U.S. Highway 93 gently curves, visually conforming to the hilly terrain and undulating landforms in the larger landscape. RIGHT: 56 wildlife crossings, such as this large culvert, give bear, elk, moose, and other mammals safe passage under US 93.



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monthly, the Jones & Jones concept was articulated and a series of design guidelines and parameters established to address them.

These were made binding through a formal Memorandum of Agreement (MOA) signed in late 2000 by the CSKT, MDT, and FHWA. The MOA established the framework for every segment of the new road and set down a comprehensive design where all highway elements would blend with the natural and cultural landscape. Integrated features include place-specific roadway designs for the four historic rural towns along the road, protection and restoration of native plant communities, and a visitor information system of roadside pull-offs and interpretive signs.

One of the project's biggest successes is the integration of 56 wildlife-crossing structures along the highway—an unprecedented move that will double the number of such structures on highways nationwide once construction is complete in 2009. The structures, based on four prototypes ranging from small box culverts to major over-crossings, allow bear, elk, moose, mountain lion and other mammals, as well as amphibians, waterfowl and fish, to pass under and over the highway.

Reshaping the road

In reshaping the new highway based on cues from the land, the road not only looks better but, in tandem with the wildlife crossings, improves safety for all while achieving LOS goals.

No longer arrow-straight, the new highway gently curves, conforming to the undulating landforms of the larger landscape. Horizontal and vertical alignments were fine-tuned to reduce cuts and fills. Where cuts occur, slopes are rounded and shaped to look like natural hillsides. Surfaces of major culvert and bridge structures are textured to look like stone or tinted to blend with the soil.

The reconstruction of U.S. 93 represents a radical realignment of priorities in the planning and design of a major highway. Birds and grizzlies, tufted wheatgrass and willow, ancient stories about a mountain or river canyon, were given as much consideration in the road design as the safe and efficient movement of vehicles. The result? A safe, beautiful highway in harmony with its natural and human setting. ■

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Lessons from America's Wildlife Highway

Every project is driven by culture, values and standards. Change is made possible when the dominant culture makes room for another mindset with place-based goals. The changes represented in Montana's U.S. 93 were realized not because prevailing safety and efficiency standards were compromised, but because they were met by non-standard means; i.e. by looking to the place and its people for direction. Lessons learned include—

1. Organize and authorize a community of interest. A window for change opens when differing, empowered voices, such as the CKST or Kentucky horse farmers, are made part of the process.

2. Consider a different yardstick. By re-framing how road service can be improved, the team created a better highway

that respects natural and cultural features.

3. Demand exceptions. Established standards typically exaggerate minimum acceptability. Our job is to make use of the full range of latitude within standards, pushing the standards to their limits in order to broaden the designer's ability to adapt to the land and context.

4. Understand your scope of work. Negotiating and implementing change is incremental, time-consuming work before, during and after design. Factor it in.

5. Hold stakeholders accountable. The MOA was a binding agreement. Recognizing that much of the project's success depended on decisions made during design and construction, the MOA called for a Technical Oversight Committee and a Project Oversight Group (POG). The POG was

comprised of the designers at Jones & Jones and Skillings Connelly, along with representatives of the state, tribal, and federal governments.

6. Draw on a broad context. Full consideration of ecological, cultural, scenic, geographical, and historical influences shaped a design that achieved visual, political, fiscal, and environmental harmony.

7. Seek local wisdom. The inclusion of tribal representatives, citizens, and local environmental groups fostered public trust and led to better information.

8. Forge Equal Partnerships. Equal design roles for landscape architects and engineers resulted in successfully fitting the road to the land.