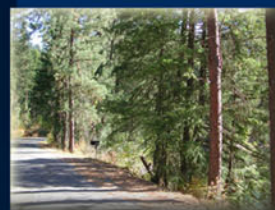


Fernan Lake Road : An Integration of Ecological Restoration, Sustainability and Safety Improvements in the Idaho Panhandle

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1 Sustain Trees
Now: Trees provide a desirable screen between road and lake.
New: Maintain current edge of pavement on lake side to minimize tree loss.



2 Context Sensitive Design
Now: Current road is between lake and steep hills.
New: Safety model shows desired improvement without substantial road widening and straightening.



6 Plant Native Species
Now: Vegetation is sparse on hillsides more than 30-50 years after road construction.
New: Amend disturbed soils and plant locally adapted native plants.



7 Restore Abandoned Creek Channel
Now: Access road and channel modifications divert creek flow from east channel to roadside ditch.
New: Reconnect flow and sediment-starved creek channel on eastern side of lower valley to primary channel and associated springs.



3 Protect Water Quality
Now: No water quality treatment of stormwater from road and drives.
New: Incorporate water quality treatment into rock fall ditches.



4 Promote Safe Parking
Now: Drivers park on roadway and concentrate at some curves.
New: Provide designated parking spots in locations of curve widening.



5 Restore Lilypad Bay
Now: Current road is built on fill across the upper bay.
New: Remove road and fill to restore connectivity in hydrology and aquatic habitat with the bay and lake.



8 Plan Ahead to Control Noxious Weeds
Now: Dalmatian toadflax, spotted knapweed and other non-native invasive plants are common along the existing road.
New: Begin weed control measures two years before construction to reduce seed beds prior to ground disturbance.



9 Restore Creek and Riparian Buffer
Now: Bank-armored channel modification diverts creek to roadside ditch with narrow riparian band.
New: Expand existing ditch bank and riparian vegetation into a wider riparian zone buffering a meandering creek channel.



10 Sustain High Quality Wetland
Now: A wetland providing highly desirable functions and values is located next to the road.
New: Impacts to this wetland will be avoided during final design of the road improvements.



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Abstract: Fernan Lake Road is located in a very scenic and environmentally sensitive setting east of Coeur d'Alene, Idaho. The road is wedged between steep hillsides and either Fernan Lake or Fernan Creek, and it extends the length of the watershed. It is narrow with many blind curves and has a much higher accident rate, including fatalities, than other rural roads with a similar level of traffic. The road is difficult to maintain and has little or no stormwater treatment.

Fernan watershed has experienced many disturbances since the road was constructed in the 1930s. Several thousand feet of Fernan Creek have been diverted across the valley to the roadside ditch in two places. Both private and federal forestlands have been clearcut. Public shooting areas and a private gun club along the creek have been used extensively over a long period of time. Wet meadows in the lower valley, with hydrologic connections to the creek, have been converted to pasture and hayfields. An access road was constructed without culverts across the valley, diverting water from natural springs to the ditch along Fernan Lake Road. In the 1960s a causeway replaced a failed bridge across Lilypad Bay, eliminating most hydrologic connectivity with the rest of the lake. Invasive weeds like spotted knapweed and dalmatian toadflax are common along the road and elsewhere in the watershed. Existing conditions present significant opportunities for ecological restoration and enhancement.

The importance of Fernan Lake Road as a transportation link between Coeur d'Alene and Idaho Panhandle National Forests led to its inclusion in the Forest Highway Program managed by Western Federal Lands Highway Division of the Federal Highway Administration (FHWA). Early preliminary designs of recently proposed road improvements, which used common federal and state design standards, included substantial road widening, fill into the lake and creek, and large cuts into the adjacent hillsides. These potential impacts were a concern of regulatory and resource agencies. None of these consequences were acceptable to local residents and the many recreational users of the area. The road improvements became very controversial, and FHWA decided to prepare an Environmental Impact Statement.

The project team used the Interactive Highway Safety Design Model (IHSDM) to demonstrate that narrower roads better suited to context-sensitive design would be safer, in the Fernan situation, than wider designs with greater environmental consequences. Sustainable elements were identified for incorporation into a context-sensitive final design. Value engineering studies and discussions with local landowners resulted in a mitigation sequencing strategy that would avoid and minimize many impacts to wetlands, Fernan Creek, and Fernan Lake during final design. Lake and creek restoration, riparian enhancements, pre-construction treatments of invasive weeds, and revegetation of disturbed areas with locally-adapted native plants are included in the preliminary conceptual mitigation plan for unavoidable construction impacts. The Fernan Lake Road project demonstrates that ecological restoration, sustainable design, and safety improvements can be successfully integrated in planning a context-sensitive road project.

For more information on the Fernan Lake Road Safety Improvement Project visit:
www.wfl.fhwa.dot.gov/projects/fernand/

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