National Park Service
U.S. Department of the Interior

Federal Lands Transportation Program

Yellowstone National Park Road Reconstruction

A section of the East Entrance Road in Yellowstone N.P., paved in 2008 using warm-mix asphalt. (FHWA photo)

An Aging Road System. The road system in Yellowstone National Park (YELL) is one of the oldest in the National Park Service (NPS). Indeed, the establishment of the early roads system in the park in the early 1880s was the genesis of the NPS Park Road Standards. Construction of crude wagon roads—some of which were operated as toll roads serving the Park—began in the late 1870s, and the Grand Loop Road was completed in 1905.

When the NPS took over the administration of Yellowstone in 1918 the agency began upgrading the road network to accommodate increasing visitation, as well as the growing popularity of the then new automobile.

The last major reconstruction effort was accomplished in the early 1930s, as Yellowstone made the transition of a road system designed and built for animal drawn vehicles to a road system used by ever-increasing numbers of motor vehicles. Some additional minor work was accomplished during the Mission 66 era (1956-1966).

But overall, much of the Yellowstone road system is essentially what was designed and built in the 1930s and 1940s, comprised of roads with a top width varying from 19 to 22 feet, with no shoulders.

New Construction Targets. Zooming forward to the 1980s, the decision was made to reconstruct Yellowstone roads to a 30-foot top width standard, with 11-foot lanes and 4-foot shoulders on all routes except where steep terrain would cause too great an impact on resources. The primary objective of this reconstruction effort is to increase the functionality of an aging, deficient road system to accommodate the increasing number and size of vehicles visitors drive on their vacations. In addition, the use of the YELL road system now includes bicyclists and pedestrians.

In 1988, Yellowstone National Park began what was to have been a 20-year reconstruction program to upgrade the park road network to accommodate current and future visitor use, reduce impacts on resources, improve traveler safety, and provide shoulders for bicycle use.

Mega-Project* Profile: YELL Roads Reconstruction

Estimated cost: $850M to $1,200M (preliminary)

Percentage of IMR's FLTP Annual Allotment: 1520% to 2230%

Percentage of NPS FLTP Annual Allotment: 420% to 615%

Top: Narrow lanes and lack of turnouts result in "Animal Jams" in YELL. (NPS photo)

Middle: Old road bases and sub-bases are more easily damaged by heavy snow loads. (NPS photo)

Bottom: Decaying road shoulders and drop-offs are a continuing safety issue at YELL. (Photo © Sergio Boccardo, Shutterstock)

* Mega Projects: The NPS transportation system is supported, in part, by funds from the Federal Lands Transportation Program (FLTP). Currently, the NPS is authorized an annual budget of $268 million from the FLTP. These funds are apportioned by formula among the seven NPS Regions. Most of these funds are used for "transportation asset management" – that is, to pay for the work required to keep existing assets in good condition. There are some projects, such as a major bridge repair or ship replacement, that require a much larger amount of funding than is available on an annual basis to a Region. These we call "Mega Projects." The NPS is pursuing strategies to fund these projects.

Thirty-five years later—due to a lack of sufficient funding—approximately 135 miles of the 254-mile Grand Loop and Entrance Roads have been reconstructed. Much of the work completed thus far has been the easiest (i.e., least expensive) to accomplish. What remains includes some of the most challenging: Norris to Golden Gate (Phase 1 of at least 3 was completed in fall 2015); Golden Gate to Mammoth, the North Entrance road, Mammoth to Tower, and the replacement of six structurally deficient bridges including the Pelican Creek Bridge—and associated roadway fills—with a viaduct that will allow water movement across a large fen wetland.

Current Road Inventory. The entire remaining portion of the road network is in need of significant work., The road base and sub-base are long past needing to be reconstructed. Numerous overlays of asphalt have also raised the road surface, creating drop-offs at the pavement edge in many places along the corridor. Inattentive drivers, while sight-seeing and viewing wildlife, have been involved in accidents, as wheels drop off pavement edges and the drivers over-correct. In addition, bicyclists are strongly discouraged from riding on the old sections of the Grand Loop, and bicycle tours are no longer allowed on these narrow roads.

Animal Jams. On a road that is 19-22 feet wide, with no pull outs, and large animals pretty much everywhere, Yellowstone visitors often stop their cars in the traffic lanes, causing traffic to back up for long periods of time in both directions, creating "animal jams."

Turnouts and road shoulders allow the traveling public to enjoy nature while alleviating congestion caused by mid-lane stopping. Also, park rangers do not have to be called out to clear the "animal jams."

In addition to improved visitor experience and safety, NPS staff and others with business in the park—including emergency vehicles—can drive through the congested areas that have been reconstructed. While all road work has the potential to disrupt natural and cultural resources, the Park and FHWA are striving to repair damage caused by previous construction, including realigning roads away from hot spots and geologic formations, and making use of using rockery walls to eliminate impacts to cultural resources.

Project Cost Estimates. Personnel at YELL and Western Federal Lands have prepared a program for completing the remaining roadway construction projects. The most current estimate to complete the Grand Loop and three of the Park's five entrance roads is $850M, and the final cost could rise to $1,250M. At the current level of funding it would take more than 75 years to complete the work.