Conservation the Idaho Way

IDAHO SOIL & WATER CONSERVATION COMMISSION

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All finished up! Contractors re-built a key portion of Grandad Road, an important public access road for recreation and forest management located in the upper reaches of Dworshak Reservoir. (photo courtesy Clearwater SWCD)

CLEARWATER DISTRICT PARTNERS WITH POTLATCH-DELTIC TO REPAIR GRANDAD FOREST ROAD

By Steve Stuebner

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In the spring of 2012, the Grandad Road got washed out by a flood and had to be closed for 10 years. A 60-inch culvert plugged during the washout and subsequently failed. A half mile away, a big landslide took out the entire road.

A 2.5-mile temporary detour route was opened to avoid the 1.3 miles of damaged road. But a permanent, more sustainable solution was needed.

"Many road users, including log trucks, firefighters, equipment haulers and state and federal agencies, were anxious to see the flatter, shorter, straighter segment repaired," said Annie Connor, Project Manager for the Clearwater Soil and Water Conservation District.

In 2022, PotlatchDeltic approached the Clearwater Soil and Water Conservation District about working together to fund the re-opening of the old route. Clearwater SWCD applied for and received a \$84,000 Flood Management Grant from the Idaho Water Resource Board.

PotlatchDeltic also hired Geo-Professional Innovation, an engineering firm, to analyze the Garden Creek crossing location. The engineering consultants concluded that the site had stabilized and a new, sustainable creek-crossing could be built. The total estimated cost of the project was \$176,458.

The scope was to rebuild 1.3 miles of road, install a new stream-crossing at Garden Creek with a large, arched culvert, and rehabilitate the stream channel.

Construction work occurred between August and October of 2023.

The Grandad Road, also known as the Diamond Camp Road, is a major secondary road in Clearwater County that provides access to the Grandad Bridge, boat ramp, and campground. It's the only road



Above, locator map of the landslide and road project. Right, the washout above Garden Creek, pre-project. (photos courtesy Clearwater SWCD).

that has a bridge-crossing on upper Dworshak Reservoir, so it's a key public access route.

It also provides important access for fire suppression and forest management in the entire north end of Dworshak Reservoir, Connor noted.

By the time the project was completed, the total cost escalated to \$349,172.36, more than twice the original estimate, Connor said.

"Most of the cost-overrun was due to surprises during construction," she said in a final report to the Idaho Water Resource Board.

Fortunately, PotlatchDeltic stepped up to cover the difference.

"I knew it was going to be spendy," Connor said. "It was a really tricky site. I think it looks really good now. We sure appreciate PotlatchDeltic picking up the extra costs."

Challenges encountered during construction

The project began with culvertand fill slope-repair designs and permitting in the fall and winter of 2022. PotlatchDeltic administered the construction work and CSWCD administered the grant and monitored the project, Connor said.

The project began with re-opening the closed road segment to provide access for

construction by removing water-bars and re-installing culverts at small crossings and seeps. The impassable landslide was opened for temporary access by moving the road template into the cut-slope just enough to get equipment to the site, she said.

Once contractors began excavating the Garden Creek crossing site, they ran into issues removing the old culvert, among other things, Connor said.

"In particular, the old, failed culvert (which had been pulled, but not to grade) was sitting on a large quantity of logs and unsuitable material, which needed to be hauled away to a waste site. This was particularly difficult due to the depth and steepness of the draw," she said.

"To access the unsuitable material, the construction team had to rip and drill a large amount of bedrock. The excavation was larger than



anticipated in order to extract the unsuitable material which appeared to be, at least partly, several failed log crossing structures that the old culvert had been sitting on top of."

Contractors also had to shore-up the embankment around the stream crossing and hairpin turn. They were able to do so by widening the

LOW INTEREST LOANS FOR IDAHO SOIL & WATER CONSERVATION





Contractors install concrete footings for an arched culvert to be placed at the Garden Creek crossing. (Clearwater SWCD)

radius of the curve around the crossing, borrowing material from the far, cut-slope bank. This also improved the alignment of the road, she said.

Next, the road was widened to a standard 20-foot width by installing vertical Hilfiker retaining walls on the fill side. Trucks bringing in rock for fill for the walls and aggregate to place over the slide areas had to back up for the last quarter mile into the site because there was no space to build a turnaround, she said.

Finally, in September, construction crews had access to the Garden Creek stream crossing. They excavated the site, removing over 500 cubic yards of unsuitable material, and rebuilt a channel to grade with rock weirs, she said. Then they set the concrete footers, placed and bolted together the structural plates to form the bottomless arch culvert on the footers.

They also placed riprap at the inlet and outlet, backfilled the culvert



Arched culvert allows for fish passage in the restored creek bed. (Clearwater SWCD)

while building retaining walls at the inlet and outlet, and brought the road up to grade. The new 60-footlong bottomless arched culvert is 15 feet wide with a 7-foot, 9-inch rise. It's set on an 8 percent grade with a geotextile and riprap slash pad at the outlet.

The new culvert is fish-friendly, Connor noted, and should benefit resident fish and aquatic life.

The cost of the Garden Creek crossing alone was \$205,021 including design, engineering, the culvert, footers, and appurtenances, and installation. The IWRB flood grant funds will be used to reimburse PotlatchDeltic 39 percent of the crossing cost, or \$84,085, she said.



Contractors work on placing the arched culvert on top of the concrete footings at the Garden Creek crossing. (photo courtesy Clearwater SWCD)



PotlatchDeltic provided \$265,088 in total project match funds (76 percent of the total costs).

"I can't emphasize enough how valuable this project is to future access on the Grandad Road and the upper portions of Dworshak Reservoir for recreation and forest management," Connor said.

"The project reopened a 1.3-mile segment of road that has been closed for over 10 years. The reopened road segment is a benefit to road users and water quality. It saves over a mile of driving for those accessing Dworshak Reservoir and surrounding attractions.

"Lowboys hauling equipment for logging, construction or fire control no longer need an assist to navigate the steeper, narrower bypass road, and log trucks will have a shorter haul, resulting in an economic boost," she said. "Additionally, the steep bypass route that had many small fill failures and eroding ditchlines was difficult to grade and otherwise maintain. That whole section of eroding roadway will soon be closed to traffic."

That closure will have lasting water quality benefits, Connor said.

Steve Stuebner writes for Conservation the Idaho Way on a regular basis.

New road reconstruction in the landslide area. (courtesy Clearwater SWCD)

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