Local Contractor Uses In-Situ Rock Crushing to Transform Rocky Areas into Smooth Gravel Roads, Saving Up to 66%

Roadtech Inc. enables Pacific Northwest gravel road repair or construction without costly pit development, commercial gravel, road widening, or turnouts and turnarounds

As industries such as forestry, mining, oil and gas, land management, and even homebuilding demand access to more remote resources and locations, the low-cost repair and construction of unpaved access roads is becoming vital. Now those needing to cost effectively repair or construct unpaved roads in the great Northwest can do so for up to 66 percent less per mile in remote locations by turning to a local contractor, St. Maries, Idaho-based Roadtech Inc. to handle all aspects of the work.

In the states of Idaho, Oregon, Washington, and Montana, Roadtech rehabilitates or creates unpaved roads using in-situ crushing of rock. This process reduces the oversize rock typically found in road subgrade, ditches, or berms into usable gravel road surfaces. It eliminates the need for costly pit development, commercial gravel, or trucking in of gravel. It further eliminates the need for expensive road widening, road turnout or turnaround creation, which are typically required to accommodate the trucks hauling in gravel.

"Unlike costly pit-based mobile crushers or commercial gravel, in-situ crushing of rock with a linear crusher like Roadtech's is all done locally on the existing roadway," says Tony Frost, a retired forest engineer, formerly with Plum Creek Timber Company and Forest Capital Partners, who spent decades on projects in the Northwest. "Since there's no need to buy gravel or haul it with a string of trucks, you eliminate the cost of fill material and trucking, and don't have to widen the road or create turnouts and turnarounds."

What sets Roadtech apart as a road contractor is that it is also a manufacturer of an innovative category of machines called linear crushers, which specialize in in-situ crushing of rock and road conditioning. On road contact work, the contractor achieves in-situ crushing of rock by passing oversize rock through its linear crusher's crushing chamber, which leaves the reduced material in place as a stable crushed layer. The company's linear crushers can pulverize any type of rock native to the Pacific Northwest including hard basalt and quartzite.

According to Frost, when a very remote road must be repaired or created, in-situ crushing of rock with a road contractor like Roadtech may be the only cost effective way to do it. This is often the case when no local rock pit is available, and trucks cannot haul commercial gravel on the road without widening it and creating turnouts and turnarounds.

The Problem with Traditional Road Repair

Rough unpaved roads typically use aggregate to improve the road surface and reduce erosion. But when the road lacks enough gravel, or the gravel will not stay in place, the problem is often with the subgrade.

"Crushed gravel has to stay in place to do any good," says Frost. "If you have boulders or bedrock protruding out of subgrade, using crushed gravel to cover them isn't going to last long around that hard material underneath. Cut and fill is not a good option because you'll end up digging out material like what you're trying to cover up."

In these sorts of conditions, Frost suggests that the only viable option is to do in-situ crushing of rock with road contractor like Roadtech to reduce oversize and to build the subgrade back up.

On one project, Frost had to improve a remote stretch of narrow road on a longer 7-mile project. He had no local source of crushed rock available, and the road was high in quartzite, one of the hardest metamorphic rocks to work with.

When Frost contracted with Roadtech, which performed in-situ crushing of oversize with its linear crusher, the project was finished on schedule and on budget without problems. "They cost effectively turned a bad road into a good one by crushing in place the worst stretches of the road, and rehabilitating areas in between to get them up to standard," says Frost.

As in-situ crushing of rock with a linear crusher gains popularity in the Northwest, industry professionals are looking to it from local contractors like Roadtech for significant cost savings on a range of projects.

Linear crushers can accomplish everything a traditional rock crusher can do, but often at significant savings. For instance, they enable gravel re-processing instead of gravel replacement, and can be used to combine commercial gravel with roadside pulverized rock, gravel, and native soil.

"Using a linear crusher on main and secondary roads that do not require DOT spec gravel resurfacing costs us about \$10,000 per mile including spreading and rolling, which saves us about \$20,000 to \$25,000 per mile compared to the commercial cost of gravel," says Nick Jones, Southeast Region Forest Engineer for the Washington State Department of Natural Resources (DNR). The DNR maintains good road access as part of its mission in managing 5.6 million acres of forest, range, agricultural, aquatic, and commercial lands for the people of Washington.

"Over a 10-year road maintenance cycle, the DNR estimates that about \$4,000 per mile is saved using a linear crusher," adds Jones. "Instead of having to regrade and reshape roads with a native running surface every couple years, we can do so about every five years for roads using the linear crushing process because these roads hold their shape longer and wear better. This makes for a safer, smoother ride for trucks or vehicles on the road."

Jeff Parker, a retired USFS project engineer, concludes, "Linear crushers make sense not only for forestry, but also for mines, logging, oil extraction, counties, and organizations like the Bureau of Land Management. The more remote the road that needs gravel resurfacing, the more sense this equipment makes, particularly in high altitude locations where you'd never get gravel to the road."

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