



Local Operational Research Assistance (OPERA) Program

Side-Dumping Plow Truck

Hauling is an essential function for nearly all Minnesota road agencies. But capacity limitations often lead to a continual procession of dump-truck trips while also consuming lots of staff time and incurring other expenses, such as fuel and vehicle wear and tear.

Inspired by lessons learned from the Minnesota Truck-Weight Education Program, Nicollet County Public Works staff sought to adapt a Mack Super Truck from its usual winter snowplow configuration to also haul a much larger side-dumping trailer in summer.

Increased hauling capacity

Nicollet County Public Works received a \$20,000 grant through the Minnesota Local Road Research Board's Local Operational Research Assistance (OPERA) Program to find a way to connect a side-dumping trailer to a universal plow truck chassis and use it to increase the agency's legal load capacity.

County public works staff had discovered that a side-dumping trailer could haul more than twice as much as a conventional dump box. But, to make it work, they needed a side-dumping trailer compatible with the hydraulic pump used for snowplow equipment on the Super Truck. Maintenance staff spent many hours of research before settling on the purchase of a Trail King side-dumping trailer.

Improved maintenance team efficiency

Once the Super Truck with the new side-dumping trailer was operational, the Nicollet County team quickly found the vehicle was good for hauling more than just gravel as initially intended. In fact, the combination has become one of its most used pieces of equipment, primarily because it has increased productivity without increasing the size of the maintenance crew.

A conventional tandem dump body can haul 9.5 tons, but the side-dumping trailer routinely carries 20 tons, and up to nearly 23.5 tons when using special over-weight permits available from the state.

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OPERA Funding

\$20,000





Side-dumping trailer uses:

- Stockpile gravel
- Place gravel on gravel roads
- Stockpile sealcoat rock
- Haul tree-trimming debris
- Haul ditch-cleaning spoils
- Deliver riprap to jobsites
- Demolition clean-up
- Stockpile sand
- Stockpile road salt

“LTAP’s OPERA grant has been very beneficial for us because it gives us the opportunity to think outside the box, to really change the way we do things to become more efficient.”

— Mike Suska, Nicollet County Public Works

Adding a side-dumping trailer to the fleet was part of a larger strategy to increase hauling capacity. The strategy also included the addition of two belly-dumping trailers, which were not part of the OPERA project. With these larger trailers in the fleet, Nicollet County Public Works has increased its hauling capacity from 300 tons per day to 1,200 tons per day and freed up three staff to perform other maintenance tasks.

“For us as a government agency, to use a side dump to be more efficient definitely has an impact for us as well as public’s perception,” says Mike Suska, highway maintenance manager for Nicollet County Public Works, “because we’re out there doing as much work as we possibly can with that one man in the truck.”

The Local Operational Research Assistance (OPERA) Program encourages maintenance employees from all cities and counties to get involved in operational, “hands-on” research. OPERA helps to develop innovations in the construction and maintenance operations of local government transportation organizations and share those ideas statewide.



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