



# Local Operational Research Assistance (OPERA) Program

## Otter Plow Cushion

Winter roads, especially late in the season, can be especially rough, causing more stress on snowplow lift chains and plow lift parts as the heavy plow assembly bounces more. Broken plow lift chains are a common result and can take maintenance vehicles and personnel out of service for hours.

Industrious maintenance personnel with Otter Tail County Highway Department created the Otter Plow Cushion with spare parts during downtime on a cold winter day. The device absorbs the shock of rough roads on the plow assembly and lift chains, improving ride quality and reducing the failure of the plow lift chains and parts. Once their stock of used parts was depleted, the Otter Tail County Highway Department maintenance staff found they could purchase the needed parts new for about \$431 per plow.

Otter Plow Cushion parts list (per snowplow):

- chain lift assembly \$54
- spring \$65
- inner buffer brace assembly \$237
- cage assembly \$75

The Otter Tail County Highway Department received a Local OPERA Program grant to develop the Otter Plow Cushion and perfect its fabrication so the technology can be shared with other agencies in the state and nationwide. So far, Otter Tail County has outfitted 12 of 28 plows, and it has significantly reduced the incidence of broken plow lift chains and improved ride quality.

### Project Leader

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### OPERA Funding

\$5,000





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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Local OPERA Program partners: Minnesota Local Road Research Board (LRRB), Minnesota Department of Transportation (MnDOT), and Minnesota Local Technical Assistance Program (LTAP) at the Center for Transportation Studies, University of Minnesota.

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