



IMPLEMENTATION SUMMARY

Questions?

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LRRB PROJECT COST:

\$92,831



Up-to-date information and forecasts are critical to planning road construction and maintenance priorities.



Putting Research Into Practice: Forecasting Software Eases Local Road Planning

What Was the Need?

Many county road agencies present updated five- or 10-year plans to their county boards annually. In these plans, road system managers describe current roadway condition, traffic volumes and user needs, and illustrate the projects that could be completed with the current and projected funding options.

These five-year plans and budgetary assessments require up-to-date pavement inventory and condition information along with a method to project future roadway performance. Pavement management software can help with inventory data, but many of these programs are expensive, require staff expertise in geographic information systems (GIS) or information technology (IT), and demand attention that can be difficult for budget-conscious road agencies to prioritize. Without the aid of such software, the process of inventorying roads, predicting future pavement conditions and maintenance updates, and analyzing countywide needs and priorities is cumbersome and challenging.

Simple roadway inventory management software would be invaluable to local road agencies, allowing agency staff to predict future pavement conditions based on current conditions and on maintenance and construction plans, and to generate visualizations and reports.

What Was Our Goal?

The Local Road Research Board (LRRB) sought to develop a pavement condition forecasting tool that would allow county agencies to predict future conditions on their roadway networks. LRRB proposed augmenting an inexpensive and user-friendly web-based roadway inventory management tool known as GRIT—Geographic Roadway Inventory Tool—to allow users to update inventory data and automatically combine it with updated pavement condition, traffic information, and maintenance and construction plans. The improved tool would also produce maps, graphs and reports on potential future pavement conditions.

What Did We Implement?

Investigators from the Upper Great Plains Transportation Institute (UGPTI) at North Dakota State University, which developed and manage GRIT, augmented the software with the pavement condition forecasting model.

Available to counties in North Dakota, South Dakota and Minnesota, GRIT allows local road agencies to enter data on roads for storage and review, focusing on construction history, culverts and small bridges, load restrictions and construction planning. The new module automatically updates the Minnesota GRIT database of construction and maintenance history with pavement condition and traffic data collected by MnDOT, requiring no additional effort by GRIT users.

LRRB research led to the development of pavement condition forecasting capabilities within an existing roadway inventory software known as GRIT. County road agencies can generate maps and reports showing how roadway conditions will look in different construction scenarios for decades into the future.

