

Technology in Rural Transportation



A recent study documented more than eighty proven, cost-effective, “low-tech” solutions to rural transportation needs, most developed or implemented by local transportation professionals. One of these solutions is outlined below:

Learn all about the simple solutions on the Internet at <http://inform.enterprise.prog.org>

The simple solutions report is available from Hau To at (503) 892-2533, or email: to@crc-corp.com

Transportation Operations Optimization

Overall goal:

To redesign snow routes in order to optimize the plowing process.

Technical approach:

The various operations and maintenance activities, involving the dispatching of resources, that are provided by local and state governments were largely designed many years ago using manual processes. With new technologies becoming available, and the ever-evolving combination of resources and needs, these operations may often be re-engineered with new optimization technologies and techniques. A Computer Aided System for Planning Efficient Routes (CASPER) has been completed for the use of maintenance engineers. This software was designed to assist in the design or redesign of network service routes -- snowplow routes in the first instance. Each district within a state performs its own optimization.

Current status:

The system was piloted in two districts in Indiana, now all districts have access to the program to re-design their routes.

Location / geographic scope:

All districts in Indiana.

Agencies involved:

Purdue University, Indiana DOT.

Cost information:

Precise costs for software development are currently not available.

Key contacts:

Dan Shamo, Indiana DOT. (317) 232-5523

Have goals been achieved?

Yes. The developers have documented a reduction of approximately 8 to 10 percent in the total number of routes needed to service the road network in addition to improved service levels for the remaining routes. Developers claim total cost savings of \$11 to \$14 million in reduced equipment and operating costs for winter maintenance activities.



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Solution timeline:

All districts now have access to the system. The system developers are considering enhancing the system to provide more functionality, such as pavement marking maintenance planning, etc.

