

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

Integrated Communications System

Overall goal: The core of the project was to develop a single centralized communications center serving multiple agencies.

Technical approach: GPS equipment is installed on fleet vehicles to allow for quick location identification and deployment. ARTIC also uses mobile data terminals (MDTs) for the ability to send data between the vehicle and dispatching center for increased communication capabilities.

Plows, buses, volunteer, and trooper vehicles are also equipped with cellular phones or pagers for communications. The integrated system allows vehicles on the road to report accidents, stranded motorists, and information on road conditions to the dispatch center. The center will, in turn, direct emergency response or other appropriate action-making everyone feel safer in this rural region. Communications is available with data message exchanges between call center and vehicle.

Current status: Current plans include improving heating and ventilation system control in the communications center, continuing the expansion of the system for State Patrol and Mn/DOT, providing for automated transfer of accident location from GPS to accident reporting software and expanding radio service from Little Fork through the ARTIC Communication Center to the Gilbert Transit Center.

Location / geographic scope: Arrowhead Region (7 counties in the northeastern region of Minnesota).



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:

Agencies involved:

Mn/DOT, FHWA, Minnesota State Patrol, Arrowhead Transit (AEOA), City of Virginia Dial-a-Ride, Qwest Communications

Cost information:

Funding sources include: \$903,000 federal, \$622,000 state, and \$49,000 other partners. GPS equipment is currently available from multiple suppliers with costs ranging from \$300 to \$40,000.

Key contacts:

Dick Maddern, ITS Coordinator, District 8 Virginia, (218) 749-7793 ext. 3804, richard.maddern@dot.state.mn.us

Have goals been achieved?

Success of the interagency cooperative endeavor has spurred interest in creating 9 statewide rural/small urban transportation operation and communication centers.

Solution timeline:

The operational test started in October 1997 and ran through September of 1998. AVL and MDT are functional on 19 emergency response vehicles, and 15 transit buses. An interface has been developed between the MDTs and the sand spreader control on the plow trucks to demonstrate downloading of spreader information to the communications center. The consolidated communication center provides dispatching for the Minnesota State Patrol, Mn/DOT, Virginia Dial-a-Ride and Arrowhead Transit fleet management and emergency response communications equipment and functions. System is currently fully operational. The evaluation report is available as document #13328 in the ITS Electronic Document Library.

