

Intelligent Transportation Systems in National Parks & DOI Public Lands

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In 2005, the John A. Volpe National Transportation Systems Center completed a baseline inventory and preliminary program assessment of Intelligent Transportation Systems (ITS) in the National Park Service (NPS). This report, in addition to providing an inventory of ITS applications in operation, suggests research activities and programmatic strategies to further develop the understanding of the potential for ITS to meet NPS transportation needs. As part of the 2011 update to this report, the Volpe Center has updated and expanded the inventory to capture emerging ITS technologies and expand the scope to all Departments of the Interior (DOI) units. Additionally, research and interviews with public lands units across the nation has contributed to several important conclusions related to the operation of specific ITS technologies in public lands settings and the management and maintenance of ITS among public lands staff. The study has also established an understanding of how public lands units are perceiving the potential for ITS to address transportation challenges.

Of the ITS technologies analyzed in this study, small-scale deployments such as the enactment of dynamic message signs (DMS), highway advisory radio (HAR), and integration into local 511 traveler information systems offer the most cost-effective and straightforward solutions. Other important findings include the advantages of coordinating ITS activities with local, regional, and state transportation agencies, as well as the widespread prevalence of network and power connectivity issues which plague the functioning of systems in many locations. It was noted that several public lands units are pressured into planning and implementing more complex and advanced systems than is necessary for the transportation issues present. This can prove problematic due to the failure to follow a systems engineering process, inadequate staff time, and limited staff expertise in ITS operations. Each of these problems has been experienced by public lands units. Costs and benefits of a project must be properly weighed beforehand to judge whether an ITS solution is appropriate to address the problem at hand.

The results of this study has implications on how ITS is viewed within public lands units, in regions and states with dynamic public lands activity, and among DOI agencies. It provides pragmatic guidance for public lands units as to which technologies may offer the greatest returns based on specific unit characteristics.