



# The National Park Service Fact Sheet

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## Intelligent Transportation Systems (ITS) in National Park Units

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### Intelligent Transportation Systems (ITS)

use advanced information and communications technologies to improve transportation safety and efficiency. ITS technology includes traffic detectors, weather sensors, computer databases, and variable message signs.

Nineteen National Park Service (NPS) units are using or planning for ITS technologies to improve the visitor experience, reduce traffic congestion on park roads and in parking areas, protect natural and cultural resources, and provide information on park resources. ITS allows NPS units to provide visitors with a wide variety of useful information, including driving directions, road and weather conditions, traffic congestion updates, and lodging information. In addition, NPS units can use ITS in conjunction with Alternative Transportation Systems (ATS).

Examples of NPS units using ITS include Acadia National Park, Cumberland Gap National Historical Park, Massachusetts Bay Parks, and Gateway National Recreation Area.

The NPS is working with several partners – including the U.S. Department of Transportation, the California Department of Transportation (Caltrans) and the Western Transportation Institute – to further study what ITS applications might best be suited for further park development.

### FOR MORE INFORMATION...

NPS Alternative Transportation Program ITS:  
<http://www.nps.gov/transportation/alt/its.htm>

### USING INTELLIGENT TRANSPORTATION SYSTEMS TO PROTECT NATIONAL PARK UNITS

Visitation to our national park units continues to grow each year, leading to traffic congestion on park roads and in parking areas. Along with causing visitor frustration, traffic congestion can result in air and noise pollution, haze, and impacts to fragile natural and cultural resources.

To help improve the visitor experience, the National Park Service (NPS) is beginning to use Intelligent Transportation Systems (ITS). Using ITS technology like computer databases, traffic detectors, remote sensors, and programmable message signs, NPS units can provide visitors and local residents with up-to-the-minute information on roadway congestion, parking and lodging availability, shuttle bus schedules, and other useful information. ITS help visitors make informed travel decisions in a variety of ways, including:



A 1.7-mile-long line of cars waited to enter the South Rim Entrance Station at Grand Canyon National Park during the 2002 Memorial Day weekend, causing delays and visitor frustration.



With ITS, park rangers can redirect visitors to available parking areas and to alternative transportation options.

NPS units can also use ITS technology to reduce traffic congestion on park roads and in parking areas and to enhance visitor safety and security by:

- Rerouting traffic to available parking areas and to alternative transportation options during times of congestion.
- Monitoring and reporting emergency incidents in order to clear them quickly and reroute traffic.
- Gathering data on park pavement, bridges, traffic, and visitor counts that can be used for transportation planning.

### ALTERNATIVE TRANSPORTATION SOLUTIONS

NPS is using ITS technology along with Alternative Transportation Systems (ATS) to accommodate more visitors, alleviate traffic congestion, and protect park resources. ATS integrate all modes of travel within a park, including land and water based transportation. Examples of alternative transportation include shuttle buses, trams, trolleys, and water-based transportation.

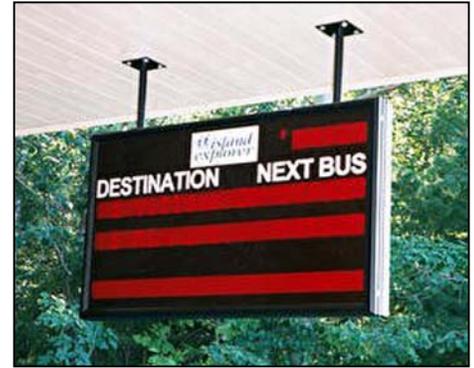


ATS – such as the Island Explorer shuttle bus system at Acadia National Park – can be used with ITS technology to alleviate traffic congestion and improve the visitor experience.

## EXAMPLES OF ITS AT WORK IN NATIONAL PARK UNITS

### ACADIA NATIONAL PARK IN MAINE

In 1999, Acadia National Park received funding from the Federal Highway Administration, the Federal Transit Administration, and the U.S. Department of the Interior to cooperatively test ITS in the field. One of the most visited NPS units, Acadia, as well as its surrounding communities, was experiencing traffic congestion, air pollution, and haze. Acadia implemented its propane-powered Island Explorer shuttle bus system in 1999 to take visitors and residents to campgrounds, beaches, and other park attractions. In 2000, NPS worked with environmental groups, civic and business organizations, local and state tourism agencies, local transit operators, and state and federal transportation agencies to enhance the Island Explorer shuttle bus system by using ITS technology. The "Island Explorer Operational Enhancement System" provides visitors and residents with real-time information on parking availability, shuttle bus arrival and departure times, and weather conditions. By using alternative transportation and ITS, Acadia is improving the visitor experience, reducing parking demand, preventing unsafe overflow parking on state and local highways, and reducing traffic congestion.



To provide visitors and residents with useful travel information, Acadia National Park uses ITS technologies like automated bus signs with voice announcements of bus arrival times and destinations.

### CUMBERLAND GAP NATIONAL HISTORICAL PARK IN KENTUCKY AND TENNESSEE

NPS, the Federal Highway Administration, the Kentucky Transportation Cabinet, and the Tennessee Department of Transportation used ITS to improve the safety and efficiency of travel through the Cumberland Gap Tunnel as it was being constructed in 2000. Traffic surveillance and control features, such as closed circuit cameras and magnetic loop detectors, were used to monitor traffic and to count vehicles within the tunnel. Tunnel operations teams used dynamic message signs, AM and FM radio signals, and lane use signals to communicate with drivers approaching the tunnel. For example, signs were used to let drivers know when vehicles carrying hazardous materials were being escorted through the tunnel. In addition, variable speed limit signs were used to change the speed limit during hazardous conditions or emergencies. NPS is now working with its partners to expand the use of ITS in the vicinity of the Cumberland Gap Tunnel to manage traffic and provide travelers with information related to the operation of the tunnel, including information on congestion, incidents, weather-related problems, and tourist attractions. New ITS technologies that NPS may use include highway advisory radio and an automatic system for locating and identifying hazardous-materials vehicles.

### MASSACHUSETTS BAY PARKS

Massachusetts Bay Parks is developing a regional traveler information system that will ease visitor travel to each of its 18 national park units. An educational web site will provide visitors with pre-trip planning information, including directions to each park unit and information on each park unit's presidential, maritime, industrial, or American Revolutionary history. At the interactive web site, visitors will be able to specify how many people are in their party, when they want to visit, and their preferred modes of travel. Based on this information, the web site will identify the Massachusetts Bay Parks units, events, and travel plans that best match their interests and circumstances.



### SANDY HOOK, GATEWAY NATIONAL RECREATION AREA IN NEW JERSEY

Before using ITS technology, on peak summer weekend days, nearly 17,000 motor vehicles competed for 4,100 parking spots at Sandy Hook, a Gateway National Recreation Area beach in New Jersey that is located 16 miles south of Manhattan. When Sandy Hook parking areas filled, traffic backed up for miles on state and local highways. To help solve its parking and traffic problems, Sandy Hook implemented an ITS parking management system. Using portable variable-message signs and highway radio advisories, Sandy Hook now lets visitors know when its nine parking areas are full or nearly full. Accessing real-time parking information via a central computer database, park rangers direct visitors to bus and ferry options or to alternative parking areas.

Sandy Hook uses ITS technology, such as this monitor/transmitter, to count cars entering and leaving its nine parking areas. Park rangers easily access this real-time information from a central computer database.

This is one proposed design for a web-based traveler-information system that encompasses all 18 Massachusetts Bay Parks.