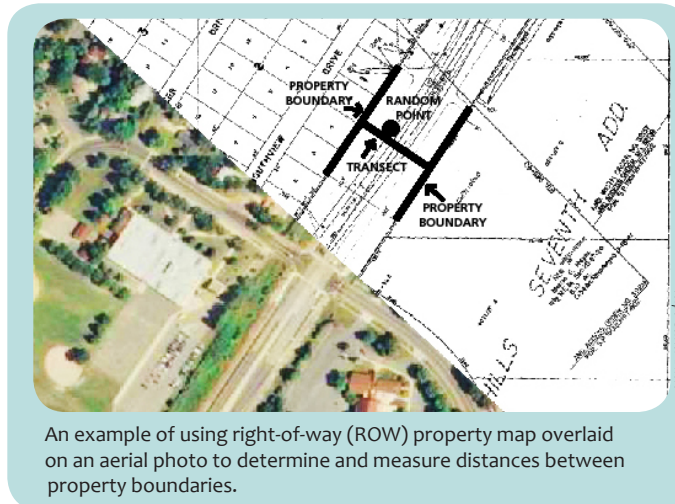


# VOLPE HIGHLIGHTS

## New Report on Groundbreaking Pilot Program Points to Carbon Sequestration Potential

The Federal Highway Administration (FHWA) established the Carbon Sequestration Pilot Program (CSPP) in 2008 to assess how much carbon could be sequestered by native vegetation in National Highway System (NHS) right-of-way (ROW). FHWA asked the Volpe Center's Multimodal Systems Research and Analysis Center of Innovation to assist with this effort.

Recently, FHWA and the Volpe Center released their joint report, "Estimated Land Available for Carbon Sequestration in the National Highway System." The project team used Geographic Information Systems to analyze aerial images, detailed state DOT maps and ROW plans to estimate that the NHS includes about 5 million acres of land. This acreage total is the first known data-based estimate for highway ROW acreage for both individual states and the nation.



An example of using right-of-way (ROW) property map overlaid on an aerial photo to determine and measure distances between property boundaries.

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## Volpe Helps Develop Air Traffic Flow Management System in India

Demand for air travel continues to grow at an annual rate of about 20% in India. In recognition of the importance of aviation to economic growth, the Indian Ministry of Civil Aviation entered into a Memorandum of Understanding (MOU) with the Federal Aviation Administration (FAA) under which the U.S. will assist India in the development of a state-of-the-art traffic flow management (TFM) system. The new system will be based on a comprehensive analysis of current Indian air space, air traffic control/air traffic management procedures and equipment, weather patterns, current and projected travel demand and related information.

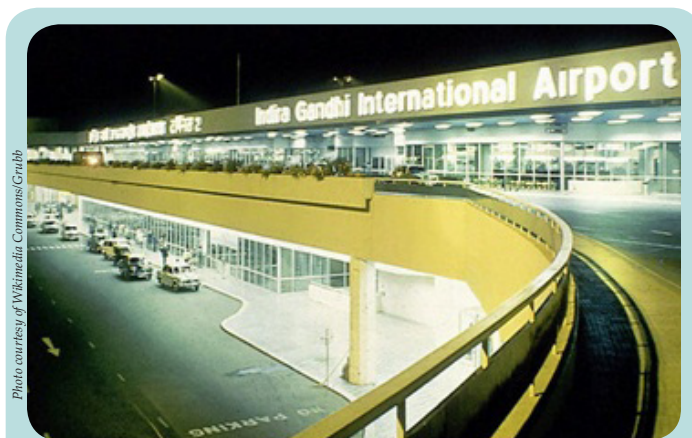


Photo courtesy of Wikimedia Commons/Grubb

The Indra Gandhi International Airport in New Delhi, India. The busiest airport in the region, it handles more than half of the air traffic in South Asia. The demand for air travel continues to grow at an annual rate of about 20% in India.

In support of the FAA, the Volpe Center is developing the high-level systems requirements, systems architecture, concept of operations and qualitative systems requirements for this new Indian TFM system.

As part of this process, Norm Rosenberg from the Volpe Center's Communications, Navigation and Surveillance and Traffic Flow Management Center of Innovation recently spent a week in New Delhi attending a Systems Requirements Workshop with his counterparts from the FAA and Indian aviation officials.

The FAA, with Volpe Center support, will continue its technical assistance to India under this MOU.

## Volpe Center Showcases Multimodal Collaboration in Washington

On June 2, RITA and the Volpe Center, in collaboration with its valued sponsors, welcomed guests from all modes to a special event highlighting multimodal collaboration and commemorating the Volpe Center's 40 years of Federal service to U.S. DOT and the nation.

Volpe Center Day at U.S. DOT Headquarters began with remarks by U.S. Transportation Secretary Ray LaHood, RITA Administrator Peter H. Appel and Volpe Center Director Robert Johns. U.S. Transportation Deputy Secretary John Porcari also joined the special event.

Volpe Center staff and several colleagues from the Federal Aviation Administration, National Highway Traffic Safety Administration, Federal Motor Carrier Safety Administration, Federal Transit Administration, Federal Highway Administration, Federal Railroad Administration, St. Lawrence Seaway Development Corporation, Research and Inland the Office of the Secretary of Transportation led discussions and showcased projects focused on national transportation priorities. Other Federal partners including the Departments of Defense, Homeland Security and Interior participated in the panels and demonstrations.

For more details, please visit [A Special Chronicle: Volpe Center Day at U.S. DOT Headquarters](#)



Secretary Ray LaHood kicks off Volpe Center Day at U.S. DOT Headquarters.

## Sponsors Meet in Cambridge to Discuss Cross-cutting Issues

On June 23, Volpe Center Director Robert Johns welcomed senior representatives of our U.S. DOT sponsoring agencies to a special meeting designed to hear participants' views on the strategic direction of the Volpe Center, brainstorm on research priorities and engage in a discussion of cross-cutting issues and common issues and initiatives that span modes.

The meeting provided an opportunity for sponsors to discuss the value they see in working with the Volpe Center. Sponsors expressed appreciation for the Center's ability to leverage capabilities across the modes; carry out a Federal role; provide an institutional memory for U.S. DOT modes; work objectively on policy issues; produce high quality work and serve as a national resource on multimodal transportation issues. Several suggestions were offered by on how to enhance collaboration between the Volpe Center and its sponsors.



Attendees at the Volpe Center's Sponsor Meeting, from left to right: Julie Marks, Manager, Environmental Policy and Operations, FAA; Robert Tarter, Vice President of Safety Services for the Air Traffic Organization, FAA; Vincent Valdes, Associate Administrator for Research, Demonstration and Innovation, FTA; Barry Scott, Director, Office of Research and Technology Development, FAA; Mark Yachmetz, Associate Administrator, Office of Railroad Policy and Development, FRA; Jeffrey Lindley, Associate Administrator, Office of Operations, FHWA; Steven Lang, Manager, Wake Turbulence Program, FAA; Terry Shelton, Associate Administrator for Research and Information Technology and Chief Information Officer, FMCSA; Pamela Whitley, Manager, NextGen Solution Set Integration Group, FAA; Volpe Center Director Robert Johns; Dr. Steven Dillingham, Associate Administrator and Director, Bureau of Transportation Statistics, RITA; Michael Romanowski, Director, NextGen Integration, and Implementation Office, FAA; Debra Elston, Director, Office of Corporate Research, Technology, and Innovation Management, FHWA.

## Volpe Center Day at U.S. DOT Headquarters



U.S. Transportation Secretary Ray LaHood and RITA Administrator Peter H. Appel discuss collaborative work under way with RITA, ITS JPO, I-95 Corridor Coalition and the Volpe Center in the area of ITS.



Caroline Donohoe of Volpe's Human Factors Research and System Applications Center of Innovation with Volpe's Director Robert Johns. The Volpe Center's ongoing human factors research examines the role operator impairment plays in safety.

## Groundbreaking Pilot Program Points to Carbon Sequestration Potential *(continued from pg 1)*

The project team estimates that vegetation in the NHS ROW has already sequestered 91 million metric tons (MMT) of carbon and that it continues to sequester approximately 3.6 MMT per year nationwide, or the equivalent of the carbon dioxide emissions from about 2.6 million passenger cars. Using a hypothetical price of \$20 per metric ton, the total potential sequestration value of the nation's highway ROW is \$8.5 to \$14 billion nationwide. As part of the overall project, the Volpe Center and FHWA also developed a Highway Carbon Sequestration Estimator as a decision-support tool to help state DOTs assess the return on investment for various carbon sequestration scenarios. The report is available [online](#), and the decision-support tool is available upon request.

## Improving Runway Safety at Small and Medium Airports

Surface surveillance systems can enhance airport safety by providing air traffic controllers with information about aircraft movements on the ground so that collisions can be avoided. However, state-of-the-art systems such as Airport Surface Detection Equipment Model-X (ASDE-X) can cost as much as \$10-12 million each, which is too expensive for many small and medium sized airports. To develop a more affordable solution, the FAA launched the Low Cost Ground Surveillance (LCGS) Program.

As a result of their Runway Safety "Call to Action," the FAA began selecting airport test sites to evaluate vendor technologies for LCGS. Volpe Center's project manager Sarasina Suljoadikusumo spearheaded the site selection process. A cross-disciplinary team of experts from the Volpe Center Communications, Navigation, Surveillance and Traffic Management Systems; Human Factors Research and System Application; and Physical Infrastructure Systems Centers of Innovation is supporting this important effort.

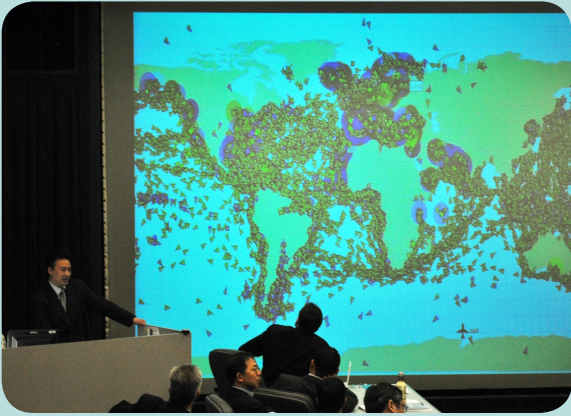
The team of FAA, Volpe Center and contractor staff identified four candidate LCGS radar systems from Northrop Grumman, Sensis, SRA and Thales to be installed at five small or medium airports. These airports are Long Beach, Manchester Boston Regional, Reno-Tahoe International, San Jose International and Spokane International. Each system will undergo two years of user evaluation, testing and data collection, after which the results will be reported. The FAA will use these results to develop criteria for use in certifying candidate systems as approved Commercial-Off-The-Shelf equipment. This will allow airports to purchase and install a tested and pre-approved LCGS system.

The user evaluation report from the first airport, Spokane, will be available in the fall of 2010, around the same time that installation of the system at the second airport, Manchester, will be completed. Volpe Center staff are also developing the user evaluation tests and reports for each of the five sites, writing the overall test and system requirements, developing a test and data collection lab and overseeing the implementation of the Manchester system.



Low Cost Ground Surveillance (LCGS) radar display at Spokane International Airport.

## The 2000s: Emphasis on Safety, Security and Collaboration



The Volpe Center's MSSIS can track the location of commercial vessels globally.

During the past decade, the Volpe Center continued providing thought leadership on emerging issues and supporting national transportation priorities. In the wake of September 11th, the technical strengths that the Volpe Center had previously developed both in physical and cyber security found increasing application to the needs of our sponsors. In support of the Department's safety objectives, the Volpe Center expanded its support to FMCSA's major nationwide commercial vehicle safety effort and broadened its multimodal understanding of the unintended consequences of human-automation interaction. Research emphasis shifted from responding to and analyzing accidents to anticipating and avoiding them. Recently, the Volpe Center participated in the formation of the U.S. DOT Safety Council, a multimodal, action-oriented, data-driven forum for fresh ideas and new perspectives on common issues.

timing systems and their vulnerabilities, was and continues to be applied in a number of programs: the Next Generation Air Traffic Control, Positive Train Control, Intelligent Transportation Systems and the Maritime Safety and Security Information System. On September 10, 2001, the Volpe Center released a landmark report on the vulnerabilities of the GPS system to intentional or unintentional interference. A day later, concern about the vulnerability of our Nation's critical transportation infrastructure became the driving force for national transportation policy.

In the area of environmental sustainability, extensive noise and emission modeling progressed in support of FAA's goals for carbon-neutral growth and greenhouse gas emission reductions. For FAA and the National Park Service (NPS), Air Tour Management Plans were initiated to reduce the intrusion of aviation activities, such as noise, into the national parks. Vital work continued on light duty motor vehicle fuel economy standards for NHTSA, on the potential applications of fuel cells and electric batteries to transit for FTA, on the assessment of alternative transportation for NPS and on the benefits and costs of transportation biofuels for RITA. Toward the end of the decade, the Volpe Center, in collaboration with FHWA and FTA, began support to the President's new "Livable Communities" initiative in coordination with HUD and EPA. The Volpe Center provided key support in the development of transportation conferences, webinars and training sessions on program implementation and professional capacity building for the local, state and national transportation community.

By decade's end, the Volpe Center was well-positioned to continue and expand its collaborative efforts with its sponsors and the broader transportation community. The Center's multidisciplinary workforce is prepared to provide innovative solutions to our Nation's most pressing transportation challenges.

*This is the final in a special series of stories honoring the Volpe Center's 40th anniversary of Federal service to the Nation.*

Read the other stories in this series: [Transition from Space Race](#) | [the 1970s](#) | [the 1980s](#) | [the 1990s](#)



The Volpe Center has analyzed a variety of different transportation fuels, including electricity, biofuels, ethanol and hydrogen.



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U.S. Department of Transportation

**Research and Innovative Technology  
Administration**