



Volpe
National
Transportation
Systems
Center

Volpe Center Highlights

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Director's

Notes



Dr. Richard R. John

Meeting Environmental Challenges Across the Nation

Innovation in transportation is vital to a healthy economy. However, advancement at the expense of the environment has unacceptable impacts on our quality of life. The Volpe Center is committed to protecting and enhancing the human and natural environment, and we are especially qualified to address the varied and complex challenges presented by environmental issues. Our staff's excellent technical and management skills, and our traditional role as an integrator and innovator, have made the Center a nationally significant provider of environmental services.

The Center offers expertise in the full spectrum of environmental activities: planning, measurement, modeling, policy development, regulatory development, operational support, site assessment, and site restoration. We work on projects throughout the United States – including Maine, Montana, Alaska, Hawaii, Florida and California – in support of all major modal administrations and other federal and state agencies. Internationally, our presence is growing in the fields of noise, air quality, and climate change.

As attention to environmental issues increases, noise is becoming a growing concern. Since 1970, we have been

Continued on page 7

Focus

Volpe's Recommendations for Improving Transportation on Cape Cod this Summer are Unanimously Approved (CCTTF)

The natural beauty and relaxed lifestyle of Cape Cod, Massachusetts, attract more people every year. The regional population triples every summer, and the year-round population is the fastest growing in the Northeast. This popularity has resulted in increased traffic congestion as well as increased demand for public transit. Many year-round residents, such as the elderly, are transit-dependent and in need of human services.

In February 2000, a Transit Summit was held to develop a community consensus on the future of public transportation on Cape Cod. A major directive of the Summit was the need for a plan for improved transportation in and among Cape Cod, the islands of Martha's Vineyard and Nantucket, and southeastern Massachusetts. In response, State Secretary of Transportation Kevin Sullivan created the Cape Cod Transit Task Force (CCTTF), which adopted the goals and objectives set by the Transit Summit, particularly the development of a short-term strategy for improving public transportation.



Most visitors to Cape Cod use one of two bridges that connect the Cape to Southeastern Massachusetts. Bottlenecked summertime traffic, as shown above, can detract from the relaxing atmosphere people seek. Recently, the Cape Cod Regional Transportation Authority voted unanimously to adopt all of the Volpe Center's early-implementation recommendations to improve public transportation to, from, and on the Cape starting this summer.

Continued on page 2

Inside...

Safety _____	3	Human and Natural Environment _____	5
Mobility _____	4		



Under the direction of Mr. Terry Sheehan of the Service Assessment Division, the Volpe Center is working with the CCTTF to develop the Cape Cod Five-Year Public Transportation Plan. It is anticipated that the Plan's findings will be deployed for the existing transportation network, and will also serve as a basis for a subsequent, more comprehensive, 25-year plan. The CCTTF holds regular public meetings that include discussion of the Volpe Center's work on the Plan and provide a comment period for citizens and public officials. The Center's contributions include skills in facilitating input from diverse groups and building consensus.


The second annual Cape Cod Transit Summit was held in Hyannis, Massachusetts, on March 12, 2001. Massachusetts Congressman William Delahunt (D-MA-10th Congressional District) and Massachusetts Secretary of Transportation Kevin Sullivan were keynote speakers. The primary purpose of the summit was to brief members of the CCTTF, invited guests, and the public on the Volpe Center's findings regarding viable and fiscally responsible approaches to improved public transportation on Cape Cod. Potential "early-implementation" items, which would help improve transportation as soon as this summer, were highlighted. Mr. Sheehan presented these initial findings and recommendations.

A key Volpe Center recommendation offers public transportation to people who would ordinarily drive their automobiles from the Boston area to Woods Hole on Cape Cod to take the ferry to Martha's Vineyard. On weekends from June 29 through September 3, 2001, "Relax and Ride" will provide

45-foot luxury buses to transport travelers from a 2,600-space, multimodal commuter rail parking lot in Westwood, Massachusetts, to the Steamship pier in Woods Hole. There will be "one-price" ticketing for the bus, Steamship ferries, and Martha's Vineyard Regional Transit Authority. Bus schedules will be coordinated with the schedules of steamships, commuter rail trains, and Amtrak Northeast Corridor trains, including the Acela high-speed trains.

Additional early-implementation recommendations include: schedule coordination of all modes to, from, and on the Cape; Sunday transit service on the Cape's fixed-route transit system; coordination of social service-related transportation; air service improvements; satellite parking for the Cape Cod National Seashore; and creation of associations to engage private-sector employers in the deployment of transportation strategies.

On March 21, 2001, the Cape Cod Regional Transportation Authority Board of Directors unanimously voted to adopt all of the Volpe Center's early-implementation recommendations for the Summer 2001 season. (The timely vote permitted the inclusion of these recommendations in the *Cape Cod Smart Guide 2001*.) The Board is investigating funding mechanisms to implement the Center's recommendations year-round.



The 15-member Cape Cod Transit Task Force (CCTTF) is the main advisory committee for the Cape Cod Five-Year Public Transportation Plan. The CCTTF is composed of stakeholders representing federal, state, and local officials; social service providers; and transportation providers for the Cape Cod region. It is co-chaired by Mr. Mark Forrest, a member of Massachusetts Congressman William Delahunt's staff, and Mr. Thomas Cahir of the Massachusetts Executive Office of Transportation and Construction. The membership includes representatives from: the Massachusetts Highway Department; Cape Cod Commission; Cape Cod Chamber of Commerce; Cape Cod Central Railroad; Southeastern Massachusetts Private Motor Carriers Association; Barnstable County Assembly of Delegates; Lower Cape Health and Services Coalition; Barnstable County Human Services; Woods Hole, Martha's Vineyard, and Nantucket Steamship Authority; Cape Cod Regional Transit Authority; Cape Air; and Cape Cod National Seashore.

The CCTTF's Web site, www.gocapecod.org/ccttf, provides general information on Cape Cod transit planning as well as links to other sites that help visitors and residents plan car-free transportation to, from, and on the Cape.

Other comments from CCTTF members, stakeholders, and residents are currently under review. The Center will move forward in Summer 2001 to complete the Final Five-Year Plan in a manner that optimizes available state and local funding and other resources, and includes extensive public input.

Safety



Promote public health and safety by working toward the elimination of transportation-related deaths, injuries, and property damage.

Aviation Mail Security Hazardous Materials Support (USPS)

The Volpe Center supports the U.S. Postal Service Hazardous Materials (HAZMAT) Program by developing training and awareness programs for Postal Service employees and customers. In particular, the Volpe Center supports Postal Service efforts to train more than 350,000 postal employees in HAZMAT awareness regarding mail shipped through its transportation and distribution network. As part of this effort, Mr. Glenn Goulet of the Environmental Engineering Division and Mr. Terry Sheehan of the Service Assessment Division have produced a number of training videos. In February 2001, they completed "Can You Handle It? Mail Processing Facility HAZMAT Awareness," which describes the operating procedures for identifying and properly handling declared or potential HAZMAT packages at processing and distribution facilities. Their earlier videos include "Last Line of Defense:

HAZMAT Awareness" and "HAZMAT Awareness: Everything You Need to Know." The former presents the regulatory and operating cases for the control of both declared and undeclared HAZMAT; the latter describes operating procedures for identifying and handling declared or potential HAZMAT packages at air mail facilities.

The Volpe Center also provides technical support to the HAZMAT Program at bi-annual national forums with major customers of the Postal Service. Typically, up to 10,000 people participate in the forums, which provide the latest relevant information and demonstrate improved mailing operations. Mr. Goulet participated in the Spring Forum held from March 25 through 28, 2001, in Orlando, Florida. He prepared the technical portion of the presentation "Hazardous Materials: What a Mailer Needs to Know," which was given by Postal Service employees; he responded to audience questions; and he provided follow-up consultations with customers on specific HAZMAT issues.

Volpe Staff Participate in FAA Traffic Management "Tools Day" (FAA)

The Federal Aviation Administration (FAA) recently released new traffic management tools that will be used to combat aviation delays during the Spring – Summer 2001 severe weather season. On April 16 and 17, 2001, in Herndon, Virginia, the FAA's Traffic Flow Management Integrated Product Team sponsored a "Tools Day" to showcase the new tools for representatives from the aviation industry and FAA who will be using them. Ms. Linda Whitehead, Mr. Rick Olesen, and Mr. Matt Maki of the Automation Applications Division demonstrated tools developed by the Volpe Center for use in the FAA's Enhanced Traffic Management System (ETMS). ETMS is the real-time operational computer system developed and supported by the Center that the FAA uses to predict, detect, and handle airspace congestion problems. Volpe-developed tools that were demonstrated include:

- Runway Visual Range Web Page: provides airlines and FAA facilities with real-time information about the visibility at airports;
- Diversion Recovery Web Page: notifies FAA traffic managers and airlines when there is a diverted flight that requires special handling;
- Flow Constrained Areas Function: allows an FAA traffic manager to define a volume of airspace that is of interest, e.g., because it contains severe weather, and to examine flights entering that airspace during a selected time period;
- Sector Management Tool: identifies traffic entering a congested sector and recommends schedule changes to meet sector capacity requirements;
- Common Constraint Situation Display: provides information to airlines on constraints in the system, such as congested sectors; and
- Web-Based Traffic Situation Display: provides smaller FAA facilities with a Web-based geographic display for viewing ETMS data such as flights, alerts, and weather.

Enhancing Weather Information for Improved Railroad Safety (FRA)

Accurate and timely weather information is one of the important elements in planning and maintaining safe rail operations. As part of the Volpe Center's support to the Federal Railroad Administration (FRA) Office of Research and Development, Volpe staff are coordinating an effort to help the rail community apply new technology to react to adverse weather conditions. On March 27, 2001, Mr. James Lamond of the High Speed Ground Transportation Division and Mr. Michael Rossetti of the Transportation Strategic Planning and Program Development Division attended a workshop, Surface Transportation Weather for Railroads, at the Association of American Railroads (AAR) headquarters in Washington, D.C. The goal of the workshop was to bring together representatives of the railroad and weather communities to identify problem areas in weather forecasting systems for railroads. The meeting also enabled the Office of the Federal Coordinator for Meteorology to gather information for the development of weather requirements for rail transportation.

Later this year, the Volpe Center will co-sponsor – with the AAR, the FRA, and the National Center for Atmospheric Research (NCAR) – a symposium on Enhanced Weather Information for Improved Railroad Safety and Productivity. The symposium will expand on areas introduced in the March AAR workshop, and will give weather organizations the opportunity to explain to the railroads the latest technologies available to benefit railroad operations. The Center will participate in and help run the symposium, which will be held at NCAR facilities in Boulder, Colorado, on October 17 and 18, 2001.



Ensure that the transportation system is accessible, integrated and efficient, and offers flexibility of choices.

Volpe Supports Reorganization of the District of Columbia Department of Public Works and Division of Transportation (DDOT)

The District of Columbia is unique in that it must plan and support transportation functions as both a state and a city. To help meet this challenge, the District of Columbia Division of Transportation (DDOT) proposed an organizational redesign: separation from the Department of Public Works (DPW) to form its own department reporting to the Deputy Mayor. Since January 2001, the Volpe Center's Dr. Jeff Bryan of the Change Management Division and Ms. Cassandra Callaway of the Economic Analysis Division have been working with the DDOT on this issue. Volpe's initial work involved: examining organizational structures and practices in other city and state transportation agencies of similar size; conducting stakeholder interviews in the District; and facilitating

an off-site retreat for the DPW and DDOT.

Volpe's review of city and state organizational structures revealed four distinct business models that reflected how the public agencies differentiated among planning, construction, and maintenance of the highway, street, and bridge facilities. This review was reported to the top managers of the DDOT and the DPW, as well as to the Deputy Mayor. The stakeholder interviews revealed the unique issues that the District faces, which are related to the department's history as well as its current challenges. Volpe staff developed recommendations of organizational options based on the data collected and reported them back to the DPW managers.

Based on the Volpe staff's work, the Deputy Mayor approved the DDOT's proceeding to the next step—implementing a specific organizational design. Dr. Bryan and Ms. Callaway then developed and facilitated a one-day, off-site retreat for the DDOT and DPW managers as well as external stakeholders from the Federal Highway Administration District of Columbia Division Office and the City Council. The retreat resulted in a consensus around some of the more difficult implementation issues. At the end of April 2001, the Mayor approved the reorganization plans. The Volpe Center is continuing organizational design work to help implement project management teams for street and bridge design and construction.

Volpe Employees Participate in Force Projection Symposium (U.S. Army TACOM)

The Volpe Center is supporting the U.S. Army Tank-automotive and Armaments Command (TACOM) by providing technical expertise pertaining to transport of personnel and equipment. Accordingly, from April 1 through April 3, 2001, several Volpe employees participated in the National Defense Industrial Association Symposium on Force Projection, held in Charleston, South Carolina. "Force projection" is the ability to project military personnel and materiel from the continental United States, or another theatre, in response to requirements for military operations. The symposium brought together government and industry representatives to discuss issues relevant to meeting future force projection missions. Volpe attendees included Mr. Rodney Cook, Chief of the Technology Applications and Deployment Division; Mr. Mike Buonopane of the Technology Applications and Deployment Division; Mr. Paul Bushueff, Chief of the Advanced Vehicle Technologies Division; and Mr. Ross Gill, Mr. Edgard Medina, Mr. Barry Mickela, and Ms. Jennifer Papazian of the Advanced Vehicle Technologies Division.

The Volpe exhibit showcased the force projection services that the Center provides to TACOM watercraft and rail programs. The Center provides marine engineering, naval architecture, and program management for the life-cycle support of the Modular Causeway System, which helps to quickly move cargo from ship to shore in situations where ports are unavailable or inadequate. And during the last 10 years, the Center has provided engineering, acquisition services, and field support to the Rail Modernization Program for the U.S. Army rail fleet and infrastructure.

On April 5, 2001, Mr. Cook and Mr. Gill participated in work sessions at the Force Projection Center of Excellence, also in Charleston. The sessions addressed the Army's needs, requirements, and limitations for land, sea, and air transportation.



Protect and enhance communities and the natural environment affected by transportation.

Coordination of International Efforts Regarding Aviation-Related Emissions (FAA)

The Volpe Center is supporting the Federal Aviation Administration (FAA) Office of Environment and Energy in the area of aviation-related emissions. This work involves improving and validating air-quality modeling tools, and evaluating and assessing instrumentation and procedures for the measurement of airport air quality and aircraft exhaust emissions. An area of particular interest is the successful development and international acceptance of emission models developed in the United States and in Europe. As part of this effort, during the week of April 1, 2001, Mr. Gregg Fleming, Chief of the Safety and Environmental Technology Division, and Dr. Roger Wayson, also of the Division, visited

Manchester, England, and Cologne, Germany. In Manchester, they participated in discussions at the Airport Air Quality/Inventory Workshop sponsored by AERONET (the Thematic Network of the European Commission on Aircraft Emissions and Reduction Technologies), which was attended by European government representatives. They also met with Dr. David Lee of the British Defense Environmental Research Agency, who is responsible for the development of a global aircraft emissions model. In Cologne, they met with Dr. Andres Doppeleers, who has pioneered a novel method for measuring particulates in aircraft engine exhaust.

Volpe Employee Awarded for Superior Service at Libby, Montana (EPA)

On April 10, 2001, Mr. John McGuiggin of the Environmental Engineering Division received the Environmental Protection Agency (EPA) Silver Medal for Superior Service from EPA Administrator Christie Whitman in Washington, D.C. The citation reads: "For extraordinary action in providing Federal Agency science, technical, legal and program resources to address the vermiculite asbestos health and environmental emergency response at Libby, Montana." Since the project's inception in November 1999, Mr. McGuiggin has been the Project Manager of the Volpe Center's ongoing environmental work for EPA Region 8 in Libby, Montana, related to environmental releases of asbestos fibers from vermiculite mining in the area. He accepted the award on behalf of the entire Volpe project team. (See related story next page.)

Asbestos Removal Assessment Support (EPA Region 9)

The Volpe Center is supporting the Environmental Protection Agency (EPA) by providing Removal Assessment Support at seven sites in EPA Region 9. All seven sites received vermiculite from a mine in Libby, Montana, contaminated with asbestos. Mined vermiculite was transported from Libby in bulk rail shipments to approximately 50 processing (exfoliating) plants throughout the United States for the manufacture of building insulation and light-weight concrete aggregates, and for use as an agricultural soil additive. Twenty-one sites in EPA Region 9 either processed the Libby vermiculite or received the vermiculite for manufacturing. Anticipated future Volpe work will involve Removal Assessment Support at the other 14 Sites of Concern during Summer 2001. Each Removal Assessment seeks to determine if a current potential exists for site asbestos exposure, or if past operations or conditions resulted in any of the asbestos and/or contaminated vermiculite being transported off site.

Between February 20 and March 2, 2001, the Volpe Project Manager, Mr. Mark Raney of the Environmental Engineering Division, and Mr. Paul Kudarauskas of the Advanced Vehicle Technologies Division led Removal Assessments at three sites in Arizona, three sites in California, and one site in Hawaii. Each assessment involved sampling of air, soil, dust, and other bulk/waste materials for asbestos, as well as gathering information regarding relevant past and current site operations. The results will be used to determine the need for any additional investigative and/or corrective actions.

At Libby, Montana, since November 1999, the Volpe Center has provided environmental engineering, remediation, and information systems support; laboratory analyses; and technical coordination related to environmental releases of asbestos fibers from the past vermiculite mining in the area. Volpe's removal assessment efforts in EPA Region 9 are a direct result of EPA's requirement to determine the national extent of asbestos contamination associated with the mining operations in Libby.



Twenty-one processing plants located in EPA Region 9 received asbestos-contaminated vermiculite from a mine in Libby, Montana, that operated from 1925 until 1990. The Volpe Center is currently providing Removal Assessment Support at 7 of these Sites of Concern. Anticipated future work will include assessing the other 14 sites.

Hazardous Materials Abatement at the Grand Canyon Airport (FAA)

The Volpe Center is supporting the Federal Aviation Administration (FAA) Western Pacific Region by providing environmental engineering support at the Grand Canyon National Park Airport, Grand Canyon, Arizona. The FAA is replacing the existing Air Traffic Control Tower (ATCT) and Remote Transmitter/Receiver (RTR); before these buildings can be abandoned, abatement of hazardous materials must be performed, as required by FAA Order 1050.19 for Lease Terminations. In support of this effort, Ms. Julie Borgesi of the Environmental Engineering Division visited the site to identify the hazardous materials requiring abatement at the ATCT and RTR buildings. These materials consist mainly of peeling and flaking lead-based paint as well as lead-acid batteries, which, if left in the abandoned buildings, could adversely affect human health or the environment. Lead is a cumulative poison that affects children and adults; it is also very toxic to aquatic life. Lead-based paint is of concern both as a source of direct exposure through ingestion of paint chips, and as a contributor to lead in interior dust and exterior soil. Battery components are toxic and corrosive – lead and sulfuric acid can contaminate the air, soil and water, and direct contact with sulfuric acid can burn the skin and eyes. Ms. Borgesi prepared the Final Abatement Specification to address abatement of these materials and submitted it to the FAA on March 29, 2001.



involved with all aspects of transportation-related noise and vibration measurement and modeling, particularly aircraft and highway noise. The Acoustics Facility supports the Federal Aviation Administration's (FAA) Integrated Noise Model for predicting aircraft noise levels, and the Federal Highway Administration's Traffic Noise Model.

The Center's Air Quality Facility supports the FAA in its ongoing efforts to study and improve the analysis and modeling of air quality at airports. Facility activities include emissions and dispersion measurement, as well as computer modeling. A current example is the System for assessing Aviation's Global Emissions (SAGE), now in the early stages of development, which will allow the FAA to make informed policy decisions regarding global emissions from aircraft.

Transportation is responsible for more than a quarter of all domestic, human-induced, greenhouse gas emissions, which many scientists believe are capable of causing global warming. Volpe's support of DOT's Center for Climate Change and Environmental Forecasting includes examining cost and benefits of alternative fuels, studying market-based strategies such as emissions trading, evaluating roles of state and local planning, and supporting domestic and international policy development.

The increased number of commercial air tour operators at national parks has raised concerns about adverse impacts on natural and cultural resources, visitor experiences, and tribal lands. The Center supports the FAA's Air Tour Management Plan Program with technical services that include National Environmental Policy Act (NEPA) compliance and noise research.

The *Focus* story in this issue covers our transportation planning for Cape Cod, Massachusetts, an environmentally sensitive region whose population is outgrowing its transportation infrastructure. The Center is supporting the development of the Cape Cod Five-Year Public Transportation Plan, which aims to balance seasonal increases in travel demand, year-round needs, future investments in infrastructure, and preservation of the historical and natural environment.

President Bush is expected to lift the moratorium on cross-border transit for most Mexican trucks and buses by January 2002. In anticipation, the Federal Motor Carrier Safety Administration (FMCSA) is preparing rules addressing certification regulations as well as safety and training procedures for carriers operating under the North American Free Trade Agreement. Volpe staff will assist FMCSA in developing an Environmental Assessment for the proposed rules. The next issue of *Highlights* will address Volpe's work related to this issue.

The Center also assesses the effectiveness of remediation technologies. Our support to the U.S. Coast Guard includes assessing existing technologies used for the control of invasions of aquatic nuisance species, which are introduced to our waters via ship ballast and are a threat to native animals.

Our work for the Environmental Protection Agency (EPA) is expanding. We are conducting two environmental assessments for EPA Region 1 in support of the Brownfields Initiative, which promotes the cleanup and sustainable redevelopment of certain industrial and commercial facilities. (See the March issue of *Highlights*.) In Libby, Montana, where past vermiculite mining resulted in environmental releases of asbestos fibers, we continue to provide EPA Region 8 with environmental engineering, remediation, and information-systems services. To determine the national extent of associated asbestos contamination, we have begun removal assessment support at sites in Regions 8 and 9 that received vermiculite shipments from Libby. (Region 9 work is covered in this issue.) The Libby project has received national media attention, as large-scale remediation projects often do; however, preventing the development of environmental problems is one of our foremost concerns.

Our Environmental Assessments and Environmental Impact Statements (EISs) have guided the development of many transportation projects. For the past 3 years, the Center has been providing environmental, system-safety, and planning support to the Federal Railroad Administration's Maglev Deployment Program, whose goal is construction of a magnetic levitation (maglev) public transportation system. We recently completed the Maglev Final Programmatic EIS, which addresses potential impacts on the human and natural environment and suggests possible mitigation measures for adverse impacts. The Center will continue to provide environmental support during testing of a maglev system in Germany and technical oversight of the preparation of two site-specific EISs.

Assessing the environmental and health impacts of transportation is becoming an integral part of our traditional system-safety analysis and technology assessment. We are working to cultivate awareness in the transportation community and to integrate environmental issues into transportation planning, development, and operations to avoid costly remediation and mitigation down the line.

In the past year, we have successfully supported several DOT Administrations in developing new policy options and regulations to streamline the NEPA process for transportation projects, as mandated by TEA-21. Environmental streamlining is increasingly important to the expansion of both surface and aviation infrastructure, as DOT works to balance sometimes-conflicting goals and tradeoffs: to improve capacity, mobility, and safety while protecting the environment. The Volpe Center will continue to expand its role in the vital area of environmental service as we do our part to make the world a better place.



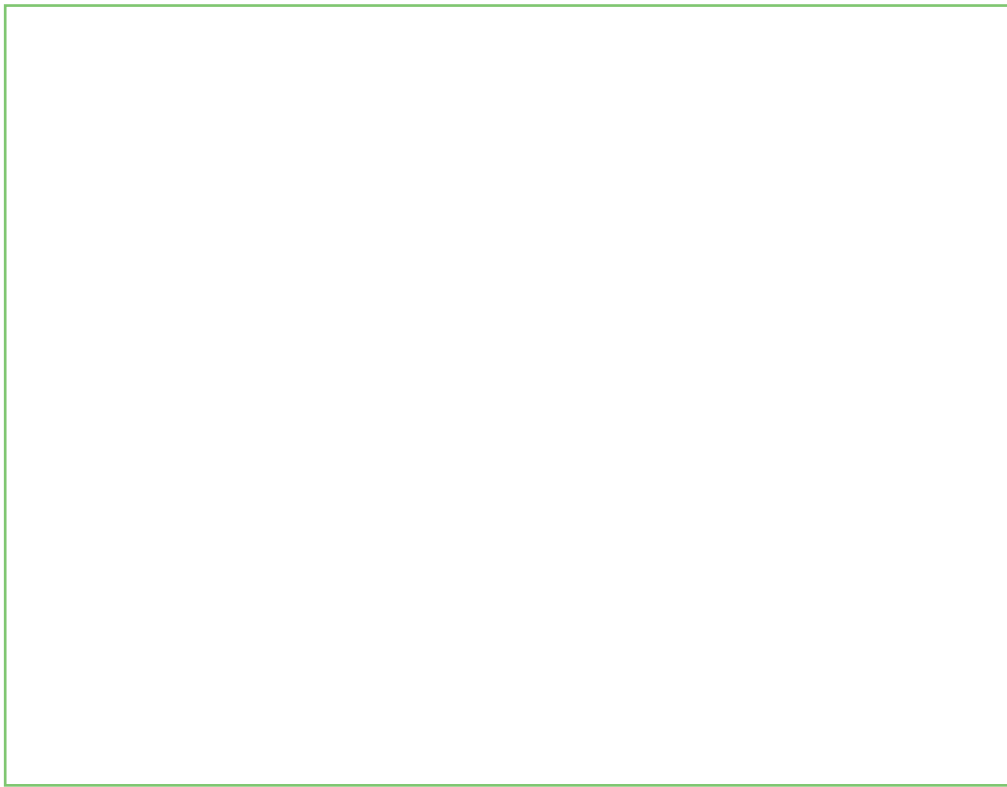
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In This Issue... Meeting Environmental Challenges Across the Nation