

Federal Highway Administration's (FHWA) Surface Transportation Environment and Planning Cooperative Research Program (STEP) FY2008 Accomplishments Fact Sheet

STEP: A Federal Research Program - conducting research that links to practice.



U.S. Department
of Transportation
**Federal Highway
Administration**

What is FHWA's STEP?

STEP is a Federally administered research program authorized in the "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users" (SAFETEA-LU). It improves understanding of the relationship between surface transportation, environment, planning and realty. STEP implements a national research agenda reflecting priorities based on input and feedback from partners and stakeholders.

FHWA's Office of Planning, Environment and Realty (HEP) uses STEP funding to conduct research and develop tools and technologies to advance the state of the practice regarding national environment, planning and realty research initiatives. FHWA uses stakeholder input to help identify and prioritize STEP research topics, develop and implement the national research agenda. Due to obligation limitations and rescissions, \$14.5 million of \$16.875 million authorized was available in Fiscal Year (FY) 2008.

What has FHWA's STEP Accomplished in FY2008?

The FHWA funded 52 projects listed in the FY08 STEP plan. This includes 39 studies, 69 outreach events and the publication of 24 reports. The STEP FY2008 Accomplishments Fact Sheet highlights research activities that were completed and/or that made significant progress during FY2008.

How Can I Learn More About STEP?

To learn more about the STEP and its emphasis areas, please visit:
<http://www.fhwa.dot.gov/HEP/STEP/index.htm>.

FWHA's STEP ENVIRONMENT ACCOMPLISHMENTS

AIR QUALITY & GLOBAL CLIMATE CHANGE

The Congestion Mitigation and Air Quality (CMAQ) Evaluation Study analyzed 67 CMAQ-funded projects. This study is a result of SAFETEA-LU's Section 1808, Congress' requirement of the U.S. Department of Transportation (U.S. DOT), with the Environmental Protection Agency (EPA), to evaluate the impacts of CMAQ-funded projects. Please visit: www.fhwa.dot.gov/environment/cmaqpgs/safetealu1808/index.htm.

The Evaluation and Dissemination of Conformity Practices provided a Web site that serves as an easily searchable repository of examples of transportation conformity documents and processes that could be replicated in other areas of the country. The initial Web site and functionality was presented at the Northern Transportation and Air Quality Summit 2008 and the 2008 FHWA Environmental Conference. Please visit: <http://www.fhwa.dot.gov/environment/conformity/practices/index.cfm>.

The Northern Transportation and Air Quality Summit (NTAQS) 2008 was held on August 4-5, 2008 in Baltimore, MD. The NTAQS brought nearly 130 air quality and transportation professionals and stakeholders together to discuss the current and upcoming regulatory environment, new technologies and current practices. The conference began with a basic orientation of the Mobile Vehicle Emission Simulator, the EPA's latest air quality modeling software, led by FHWA and EPA staff. Please visit: www.marama.org/ntaqs/.

Kentucky's 2008 Regional Air Quality Conference: The FHWA's Kentucky Division Office and the Kentucky Transportation Cabinet co-hosted the 4th biennial Regional Air Quality Conference on April 24, 2008. Several FHWA headquarters and Division air quality staff participated as speakers or organizers. The conference addressed FHWA's and EPA's policy, climate change, new PM2.5 and ozone standards, hot spot analysis, electric vehicles and showcased new technology. This year's conference also included presentations on National Environmental Policy Act (NEPA) and project level conformity. Please visit: http://www.planning.kytc.ky.gov/modal_programs/air_quality_files/2008AirQualityConference/PARTICIPANT%20HANDBOOK.pdf

The Transportation Research Board (TRB) 11th National Tools of the Trade Conference on Transportation Planning for Small and Medium-sized Communities was held on September 17-19, 2008 in Portland, OR. The conference is dedicated to transportation planning for small and medium-sized communities. Transportation planners, engineers and others gathered to present their latest information on topics of mutual interest.

FHWA sponsored an **Air Quality Workshop** hosted by the FHWA Resource Center air quality staff. This workshop provided an overview of the conformity determination process for transportation planning with a specific focus on the needs of small metropolitan and non-metropolitan areas. Please visit: www.trbtoolsofthetrade.org/pdf/conf/2008/program_082608.pdf.

The Mobile Source Air Toxics (MSAT) Near Roadway Dissemination Study began in June 2005, through a settlement agreement with FHWA, Nevada DOT and the Sierra Club. This study was conducted to end the Sierra Club's appeal on the court's finding, which was in favor of FHWA in the matter of a NEPA document for the expansion to US 95. The FHWA agreed to perform a study on the behavior of MSAT concentrations in the near road environment. This new research will substantially further the understanding of how MSAT emissions behave. The first year of the monitoring study is currently underway. Please visit <http://www.fhwa.dot.gov/environment/airtoxicmsat/index.htm>.

WATER/WETLANDS/VEGETATION/WILDLIFE/HABITAT/BROWNFIELDS

The Ecological Program funds projects such as *Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects* and also awarded 15 cooperative agreements that will serve as a demonstration of how infrastructure development and ecosystem conservation can be integrated to harmonize economic, environmental and social needs and objectives. Please visit: www.environment.fhwa.dot.gov/ecological/eco_index.asp.

Synthesis on the Fate and Effects of Chloride from Road Salt Applied to Highways for Deicing summarized research that investigates the typical amounts of deicing materials, specifically chlorides, used in association with a highway operation. It also identified costs, site-specific conditions and their effects on human health, aquatic life, surface water and groundwater quality. Additionally, the research seeks to compare road salt to the other sources of chlorides in the watershed.

Deercrash.com is an effort launched in 2005 to reduce animal vehicle collisions through a combination of research and information dissemination. FHWA is the lead agency. Partners in this effort include Deer-Vehicle Crash Information and Research Center members such as the State Department of Transportations (DOTs) from Connecticut, Iowa, Maryland, Minnesota, New York, Ohio, Texas and Wisconsin. New deer-vehicle crash data, such as the listings of the ten states with the most animal-vehicle collision fatalities has been added to the Web site.

The International Best Management Practices (BMP) Stormwater Database's ongoing and long-term goal is to collect sufficient data to permit improvements in BMP designs to better match the selection of BMPs to the stormwater challenges within a watershed. This research and database provide information on BMPs that is currently available for use in selection, design and performance of storm water management facilities. Please visit: www.bmpdatabase.org.

The Weeds Across Borders (WAB) Conference was held on May 27-30, 2008, in Banff, Alberta, Canada. WAB was a unique North American conference of scientists, practitioners and policy makers, which has become a biennial international peer exchange about costly invasive species and possible solutions. Each participating country reported the current status of the invasive species problem and policy changes. These reports were followed by weed research results, best management practices and partnership examples. The information exchange among Federal, State and Local experts from three countries is unprecedented.

Cooperative Weed Management Area Training is a partnership effort to better leverage personnel and equipment to control the spread of invasive plants or weeds. The FHWA expanded this concept after it was implemented in Idaho. A western grant and an eastern grant were awarded as a result. The western grant supported a national conference hosted by the Center for Invasive Plant Management. The eastern grant has provided training to State DOTs and other agency vegetation managers in Michigan and Illinois.

HISTORIC PRESERVATION

The Research and Innovation Agreement with The Advisory Council on Historic Preservation (ACHP) supports an effort to develop historic preservation stewardship and streamline outcomes. The ACHP provides resources to track patterns and trends in Section 106 case review that identify further areas for streamlining. Some innovations include: a concept paper for integrating historic resources in planning, a web page on the ACHP Web site that lists FHWA programs and information, a research paper on involving tribes in integrated planning and the development, as well as the delivery of the Advanced Section 106 Seminar. Please visit <http://www.achp.gov/>. For more information visit <http://www.achp.gov/106essentials.html>.

Presentations on the STEP are made by the ACHP liaison and FHWA staff at professional associations and research events including: TRB AFF10 (Committee on General Structures-Subcommittee on Bridge Aesthetics), FHWA Environmental Conference, American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on the Environment (Communities and Cultural Resources Subcommittee), TRB ADC50 (Committee on Archeology and Historic Preservation in Transportation) Summer Meeting, the National Trust for Historic Preservation Annual Conference and the Preserving Historic Roads Conference.

BICYCLE/PEDESTRIAN and HEALTH

The Interim Report to the U.S. Congress on the Nonmotorized Transportation Pilot Program demonstrates the extent to which bicycling and walking can carry a significant part of the transportation load and represents a major portion of the transportation solution, within selected communities.

Please visit: www.fhwa.dot.gov/environment/bikeped/ntpp/index.htm.

NOISE

The Tire/Pavement Noise Measurements: Temperature Effects Study investigates the influence of temperature on tire/pavement noise in order to provide guidance on correcting temperature variations in measured sound levels. Several traffic noise and vehicle pass-by data sets are being examined to help determine trends relating to the effects of temperature. Results show that there generally appears to be a trend of slightly decreasing sound levels with increasing temperatures, although the strength of the effect varies by temperature measurement medium (air or pavement), vehicle type, pavement type and age. The variation is enough to warrant an initial recommendation for not applying a general temperature correction to measured data. A report of the study is currently being compiled.

OUTDOOR ADVERTISING CONTROL/REALTY PROGRAM MANAGEMENT

The International Scan in September 2008 entitled, "Integrating and Streamlining Right-of-Way and Utility Processes with Planning, Environment and Design" was conducted with destinations in Australia and Canada. Representatives included Federal and State agencies and AASHTO. The final report is available at http://international.fhwa.dot.gov/links/pub_details.cfm?id=644.

The 11th Annual Educational Conference on the Control of Outdoor Advertising was held August 10-13, 2008, in Kalispell, MT. FHWA sponsored the conference in partnership with the National Alliance of Highway Beautification Agencies and the Montana DOT to share information regarding best practices, program challenges and solutions from Federal, State, Local and industry leading professionals.

Federal Agency Update meetings such as the International Right of Way Association's Annual Public Real Estate Education Symposium held in January 2009 in Nevada are to share best practices and discuss technical and programmatic issues with stakeholders.

2008 FHWA Excellence in Right-of-Way Awards recognized excellence in streamlining or improving the real property acquisition process while protecting the rights of property owners and tenants. The awards recognized outstanding innovations that enhanced the right-of-way professional's ability to meet the challenges associated with acquiring real property for a Federal-aid project. Please visit: www.fhwa.dot.gov/realestate/rowea.htm.

The Commercial Electronic Variable Message Sign (CEVMS) Study on driver attention and distraction evaluates potential risks to safety and its role in congestion. The first phase of the study identified and evaluated the most significant measures and issues involved. The second phase is underway with two sites selected to conduct the field study. The first phase of this CEVMS Study developed research methods needed to secure reliable data information. A report of the first phase of the study is available at <http://www.fhwa.dot.gov/realestate/cevms1.htm>.

Identification and Development of Local Public Agency (LPA) Stewardship Tools and Techniques initiated as a series of teleconferences utilizing a representative cross section of stakeholders. The information gathered indicated that additional course work and training are required in order to mitigate common challenges. Training materials and an instructor led training course that addresses all aspects of the LPA program as it relates to right-of-way are being developed in partnership with the National Highway Institute.

The Use of Incentive Payments in Right-of-Way Acquisition and Relocation Programs peer exchange took place on August 13-14, 2008. Six agencies presented information on the use of right-of-way incentive programs. This data included information on time and cost savings; and lessons learned proved that there is a variation in how states develop procedures and implement incentive payments. A report is available at www.fhwa.dot.gov/realestate/incpeerexch.htm.

The Real Estate Exchange is an online community of practice that provides right-of-way professionals a forum for discussion of programmatic issues. Please visit: <http://knowledge.fhwa.dot.gov/cops/rex.nsf/home>.

ENVIRONMENTAL STREAMLINING AND STEWARDSHIP

The Planning and Environment Linkages Implementation (PEL) Resource Guide helps transportation practitioners from multiple disciplines better understand how to incorporate PEL into transportation decision-making processes. Please visit: <http://www.fhwa.dot.gov/hep/pel/index.htm>.

The Linking Conservation and Transportation Planning (LCTP) Workshop charrette was held in February 2008 to gather input on how to update the current LCTP workshop. LCTP workshops were held at the North Central Texas Council of Governments in November 2007 and Mid-America Regional Council in February 2008 to help local officials, transportation planners and conservation experts frame transportation priorities in the context of natural resource conservation and other community priorities. A draft action plan was developed to identify possible policy and process modifications to help link conservation and transportation planning. Please visit: http://environment.fhwa.dot.gov/integ/resources_training_marc.asp.

The Integrating Transportation Planning and NEPA Decision-Making Webcast on September 23, 2008, provided an overview of how transportation planning and NEPA decision-making can be mutually supportive and presented case studies demonstrating successful integration. The webcast was conducted by the Center for Environmental Excellence by AASHTO in cooperation with the FHWA and the Federal Transit Administration (FTA). Please visit: http://environment.transportation.org/center/products_programs/integrating_webcast.aspx

FHWA's Geographical Information Systems (GIS) for Environmental Streamlining and Stewardship (GIS4EST) Workshop provided an overview of the GIS4EST program, which supported the adoption and development of GIS technologies to promote environmental streamlining and stewardship in transportation decision-making.

The Colorado Department of Transportation (CDOT's) Online Linking Planning and NEPA Training offers an interactive training entitled "Linking Planning and NEPA." The purpose of this training is to provide CDOT, its regional transportation planning partners and other states with guidance to integrate useful NEPA information into statewide and regional transportation planning processes. The applied portion walks participants through the contents of a potential corridor or area plan to illustrate and describe how information typically related to a NEPA process can be effectively incorporated into the planning process. Finally, the course offers case studies of successful examples of "Linking Planning and NEPA" in Colorado and other states. Please visit: http://www.dot.state.co.us/environmental/Training/NEPA_index.asp.

Environmental Stewardship and Streamlining Outreach and Technology Transfer included developing methods, tools and techniques to improve the quality and efficiency of environmental decision-making. FHWA has supported a number of ongoing electronic technology transfers and outreach initiatives such as the Environmental Review Toolkit, which was accessed by 178,000 users in FY2008 and the Re: NEPA/FHWA's active community of practice that includes over 1,500 environmental professionals. Please visit: <http://www.environment.fhwa.dot.gov/>.

Twelve issues of the *Success in Stewardship* newsletter that highlighted current environmental streamlining practices around the world were published in FY2008. Please visit: <http://environment.fhwa.dot.gov/strmlng/index.asp>.

A Pilot Workshop on Endangered Species Act (ESA) Consultation was held in August 2008, in Eureka, CA. The workshop was the culmination of a several-month effort to refine a pilot program to streamline ESA consultation between State and Federal agencies with jurisdiction over protected species in California.

Assessment of the Surface Transportation Project Delivery Pilot Program: Evaluating FHWA's Role in the NEPA Process, which was performed in January 2008 was the first onsite audit of Caltrans under the pilot program. Activities included in the pilot program were the planning of the audit, preparation of the audit team and logistics of the onsite audit. FHWA interviewed Caltrans staff and reviewed documents, compiled and finalized the findings and drafted and finalized the audit report, which was published in the *Federal Register: September 23, 2008*. Please visit: <http://edocket.access.gpo.gov/2008/E8-22131.htm>

CONTEXT SENSITIVE SOLUTIONS (CSS)

The CSS Clearinghouse supports the increased demands for information on innovations and problem-solving strategies related to applying CSS principles to project development. FHWA utilized stakeholder input to transform the current Web site to an expanded and more interactive clearinghouse. Planning is underway to host webinars, podcasts and white papers. Please visit: <http://www.contextsensitivesolutions.org>.

Targeted Technical Assistance supports, facilitates and enables the implementation of CSS among transportation agencies and State DOTs through the active exchange and delivery of best professional practices and existing research results. Some examples of these efforts included New Mexico DOT incorporating CSS into their new design manual and Massachusetts DOT developing a CSS workshop for both roadway and bridge staff. California integrated CSS in corridor planning in addition to the new state requirement for full consideration of bicycle and pedestrian concerns.

FHWA's STEP PLANNING ACCOMPLISHMENTS

CONGESTION

Intelligent Transportation System Deployment Analysis System (IDAS)/Screening for the Intelligent Transportation Systems Workshops demonstrated the use of the IDAS among Metropolitan Planning Organizations (MPOs) and State DOTs by providing technical assistance to software users. The workshop allowed planners to analyze the benefits of Intelligent Transportation Systems and operational improvements in the planning process, as well as delivered presentations on IDAS to planners. Two workshops were conducted, one in Richmond, VA on June 12-13, 2008, and one in Columbus, OH on June 10, 2008.

An Interim Guidebook on the Congestion Management Process (CMP) in Metropolitan Transportation Planning was published in February 2008, and provides information on how MPOs can improve their CMP and use the CMP to integrate operations into the planning process. The interim guidebook is available at: www.ops.fhwa.dot.gov/publications/cmpguidebook/index.htm.

Management and Operations (M&O) in the Metropolitan Transportation Plan: A Guidebook for Creating an Objectives Driven, Performance Based Approach was published in February 2008, to provide a framework for MPOs to utilize as a method for linking operations and the transportation planning process. The publication emphasizes that better linkages between planning and operations has significant congestion benefits because it results in addressing operations strategies on a regional basis, instead of an individual project basis and results in prioritized strategies that make the existing transportation system work more efficiently. The guidebook is available at www.ops.fhwa.dot.gov/publications/moguidebook/index.htm.

Bottlenecks Workshops were held in Seattle, WA, and Vienna, VA in an effort to develop and document case studies on five state processes for identifying congestion bottleneck locations, developing solutions and prioritizing investments. The bottleneck workshops and the congestion bottlenecks primer provided State DOTs, MPOs and local agencies with strategies on how to move forward with relatively low cost, quick and easy-to-implement solutions to traffic congestion. Five State DOT site visits with bottlenecks process interviews have also been completed. Please visit: www.ops.fhwa.dot.gov/publications/bnprimer/index.htm.

CMP Workshops advance the integration of the CMP and M&O strategies in metropolitan transportation planning. The FHWA and FTA, in collaboration with AASHTO, Association of Metropolitan Planning Organizations (AMPO), National Association of Regional Councils (NARC), TRB and others, released two interim guidebooks titled *Management and Operations in the Metropolitan Transportation Plan* and *An Interim Guidebook on the Congestion Management Process in Metropolitan Transportation Planning*. In addition, seven strategically located informational workshops were conducted during the summer of 2008.

These workshops focused on sharing information from the CMP and M&O guidebooks to equip transportation planners and operators from MPOs, State DOTs, transit agencies and local operating agencies to lead transitions toward an objectives-driven, performance-based approach to addressing planning for operations in their regions, in accordance with SAFETEA-LU planning. Please visit:

<http://www.ops.fhwa.dot.gov/publications/moguidebook/moguidebook.pdf> and
<http://www.ops.fhwa.dot.gov/publications/cmpguidebook/cmpguidebook.pdf>.

FREIGHT PLANNING

Building Capacity between Public and Private Sectors in the Freight Community hosted two peer-exchanges. The first workshop was held in Chicago, IL, on September 4-5, 2008 and the second in Tacoma, WA, on October 7-8, 2008. As a result, FHWA will develop a resource manual and identify possible performance measures for involving the private sector in freight planning.

SAFETY PLANNING

Making the Case for Transportation Safety Ideas for Decision-makers is a compilation of the noteworthy safety planning practices that have been implemented at all levels, by states, Tribal Governments, MPOs, transit agencies and their partners. Please visit: <http://tsp.trb.org/assets/Briefing%20Book%20hi-res.pdf>.

The Transportation Planner's Safety Desk Reference identifies and summarizes the information of interest to transportation safety planners in the National Cooperative Highway Research Program Report 500 Series. The report describes an overview of transportation safety, the potential roles that transportation planners can play to advance it, a framework for incorporating safety into the transportation planning process, available sources that may be accessed to fund safety programs and a menu of possible safety strategies.

Please visit http://tsp.trb.org/assets/FR_Safety%20Planner_1_17_07FINAL.pdf.

PUBLIC INVOLVEMENT, ENVIRONMENTAL JUSTICE, & VISUALIZATION IN PLANNING

The FHWA/Florida DOT Community Impact Assessment Web site evaluates the effects of a transportation action on a community and its quality of life. This information can then be used continuously to mold the project and provide documentation of the current and anticipated social environment of a geographic area with and without the action. Please visit: www.ciatrans.net/about_cia.html.

The Public Involvement Techniques Web site provides the building blocks for state and local transportation agencies to create effective public involvement programs and plan, design and build a better transportation system by addressing the challenges and opportunities of the 21st Century. Please visit: www.fhwa.dot.gov/REPORTS/PITTD/COVER.HTM.

The Citizen's Guide to Transportation Decision-Making is currently being updated. The guide will discuss the Federal requirements for the transportation decision-making process and explain how transportation decisions are made at the local, state and national levels. The guide will help citizens better understand and participate in the transportation decision-making process, in order to promote the development of a transportation system that is safe, efficient and responsive to public needs and concerns.

OTHER ACTIVITIES THAT SUPPORT STATE/LOCAL/ TRIBAL PLANNING CAPACITY BUILDING

The 2008 FHWA/FTA Transportation Planning Excellence Awards Program which was co-sponsored by the American Planning Association recognized outstanding initiatives across the country to develop, plan and implement innovative transportation planning practices. Awards were presented to projects, processes and groups that have made outstanding contributions to the field of transportation planning. A list of award recipients can be found at: <http://www.fhwa.dot.gov/planning/tpea/index.htm>.

The FY2008 Planning Capacity Building Program FHWA Broad Agency Announcement funded 17 research efforts to advance the practice and application of transportation planning among state, regional, local agencies and Tribal Governments. Topics include: staffing and administrative capacity of MPOs; reducing energy usage through transportation planning for mega-regions; development of an active management screening tool; sustainability evaluation and planning guidance for transportation systems; and evaluating how land use, transportation infrastructure and policy changes affect travel activity and greenhouse gas emissions.

Peer Exchanges were held in June and July 2008, in cooperation with AASHTO, on asset inventory and condition assessment practices, innovative financing techniques and framework, plans and strategies for aligning and sustaining information, data and technology to support transportation decision-making. These peer exchanges respond to priority capacity building needs identified by an AASHTO task force and focused on infrastructure assets, other than pavements and bridges that can be used in the transportation planning and programming process.

Numerous peer exchanges were also held in FY2008 through the **Transportation Planning Capacity Building Peer Program**, which provides opportunities for sharing solution-based experiences throughout the professional planning community and seeks to recognize, support and promote good statewide, metropolitan, rural and tribal transportation planning practices nationwide. A Peer Program Evaluation report is currently being developed and will be posted online at <http://planning.dot.gov/>.

The Transportation Planning Process: Key Issues: A Briefing Notebook for Transportation Decision-makers, Officials and Staff provided government officials, planning board members, transportation service providers and the public with an overview of transportation planning. It also provided references for additional information discussing transportation planning and its relationship to decision-making, as well as short discussions of the following policy and planning topics. The briefing is available at: www.planning.dot.gov/documents/BriefingBook/BBook.htm.

www.fhwa.dot.gov/HEP/STEP

The Transportation Decision-making: Information Tools for Tribal Governments module series covered the different aspects of tribal transportation planning. The series identified linkage points between Indian Reservation Roads transportation planning, and the statewide and metropolitan planning process and provided an overview of fundamental, conceptual techniques, as well as notable practices. For more information, please visit: <http://www.fhwa.dot.gov/hep/tribaltrans/topics.htm>.

The Development of Regional Transportation Operations Collaboration and Coordination Initiatives advance the integration of the CMP and M&O strategies in metropolitan transportation planning, the FHWA and FTA. This effort is undertaken in collaboration with AASHTO, AMPO, NARC, TRB and others. Two interim guidebooks entitled *Management and Operations in the Metropolitan Transportation Plan* and *An Interim Guidebook on the Congestion Management Process in Metropolitan Transportation Planning* have been developed. Please visit: <http://www.ops.fhwa.dot.gov/publications/moguidebook/moguidebook.pdf> and <http://www.ops.fhwa.dot.gov/publications/cmpguidebook/cmpguidebook.pdf>.

U.S./CANADA & U.S./MEXICO BORDER PLANNING

Border Travel Time studies provide baseline data which will be used in the development of performance measures to evaluate the success of improvement projects, policies and strategies. The following four pilots are underway: El Paso Border Wait Time Study, San Diego Border Wait Time Study, Nogales Border Wait Time Study and Pharr Border Wait Time Study. This effort is part of the U.S./Mexico Joint Working Committee.

Bottlenecks Study Phase II is a study of the transportation infrastructure at the Nogales, AZ, Sonora Ports of Entry. The study identifies potential congestion improvements and highlights those that are low-cost, high impact solutions. This effort is part of the U.S./Mexico Joint Working Committee.

Traffic Studies and Travel Demand Modeling Peer Exchanges were held to discuss the Nogales, AZ and Pharr, TX traffic studies. The Traffic Forecasting and Travel Demand Modeling Peer Exchange meeting was held to improve planning along the U.S./Mexico border. This effort is part of the U.S./Mexico Joint Working Committee.

Regional Border Master Plans: The first Regional Border Master Plan was completed along the U.S./Mexico Border between California and Baja California. This is the first in a series of comprehensive transportation border master plans for the border regions. This effort is part of the U.S./Mexico Joint Working Committee. Please visit: <http://www.borderplanning.fhwa.dot.gov/studies.asp>

Study of the Cost of Delay to Transportation at the Border: A study of the cost of delay along the U.S./Canada border is currently being conducted. This study will develop a methodology to quantify delay cost on a regional basis. This effort is part of the U.S./Canada Transportation Border Working Group (TBWG).

The Border Data Needs Workshop was conducted on June 3-5, 2008, in Dearborn, Michigan to examine current data available, potential new data sources and identify data gaps. This effort is part of the U.S./Canada TBWG.

The Study of Data Needs and Sources along the U.S./Canada Border for Enhanced Transportation Planning and Operations is a follow-up study to the enhanced Data Border Data Needs Workshop. This effort is part of the U.S./Canada TBWG.

The Online Inventory of Land Border Crossings effort included completing data entry for 120 land border crossings (facilities & infrastructure projects) to coordinate infrastructure investment along the border. This effort is part of the U.S./Canada TBWG.

The North American Freight Flow Conference/Understanding Changes and Improving Data Sources was held in September 2008, in Irvine, CA. Representatives of transportation agencies from the U.S./Mexican and U.S./Canadian border regions participated and shared best practices to address changing freight plans between the three countries.

The Innovative Finance Workshops for Border Projects is a continuing series of conferences and workshops that are being planned in the border region to look for innovative methods to finance both transportation and border infrastructure projects. These efforts have facilitated a dialogue between the public and private sector that has resulted in several unique financing packages for better infrastructure investments.

Land Border Port of Entry National Conference was jointly sponsored by the FHWA, General Services Administration and the U.S. Customs and Border Protection to coordinate the planning and construction of land ports-of-entry in the border region. The conference was held in Fort Worth, Texas on September 8-10, 2008.

NATIONAL SECURITY, DEFENSE AND INTERSTATE PLANNING

The National Highway System (NHS) Designation and Product Development included updates to NHS coding on the base GIS network and updates to the NHS maps for reposting on the Internet. Please visit: www.fhwa.dot.gov/planning/nhs/.

FHWA's STEP TOOLS TO SUPPORT ENVIRONMENT & PLANNING ACCOMPLISHMENTS

TRAVEL MODELING

Metropolitan Travel Forecasting: Current Practice and Future Direction was published by the National Academy of Sciences (NAS) Report 288, which concluded that demands on travel forecasting models have grown significantly in recent years as a result of new policy concerns and that existing models are inadequate to address many of those demands. The FHWA conducted site visits as a follow-on to NAS Report 288 and summarized the visits of MPOs in the report *A Snapshot of Travel Modeling Activities*. This report determined how travel demand models and the resulting travel forecasts have been used in the regional planning process and how the travel demand models are used to address emerging issues. The report is available at: <http://tmip.fhwa.dot.gov/resources/clearinghouse/401/>.

The FHWA Travel Model Improvement Program (TMIP) Peer Review Program provides the modeling community with a method to gain insight and experience in the state of the practice for travel demand modeling through peer reviews. A written report was developed for each peer review and a synthesis of peer review issues and recommendations for corrective action has been published. Also information on the peer review program and results are shared at conferences and workshops. Please visit: http://tmip.fhwa.dot.gov/resources/peer_review.

The Travel Model Validation Practice Peer Exchange was held on May 9, 2008, to improve travel model validation practice. The TMIP initiated the exchange in response to the NAS Report 288. The exchange discussed validation errors that occur when validating the ability of a model to predict future behavior and comparing its predictions with information other than that used in estimating the model. A white paper serves as practical advice to travel modeling professionals in Federal, State, Local and private agencies regarding travel model validation. The white paper is available at: <http://tmip.fhwa.dot.gov/>.

TMIP Monthly Webinars focus on topics of interest to the planning, modeling and simulation community. Eleven webinars were held with an estimated attendance of 1,800 for all webinars.

www.fhwa.dot.gov/HEP/STEP

The TMIP Clearinghouse is a comprehensive collection of material on travel demand forecasting and related subjects. The clearinghouse exists to supply documentation and data to the travel model community.

Technical Syntheses provide technical summaries of current discussion topics and generates significant interest from the TMIP stakeholders. The syntheses capture and organize worthwhile thoughts and discussions into one concise document. Five syntheses were published in FY2008. Please visit: http://tmip.fhwa.dot.gov/resources/technical_syntheses/.

GEOGRAPHICAL INFORMATION SYSTEMS (GIS) & SPATIAL INFORMATION FOR IMPROVED DECISION-MAKING

The FHWA's GIS in Transportation Web site was updated to add 50 examples of geospatial technology applications to the State & Local GIS Practices Database. This site serves as a resource for GIS practitioners interested in learning about these types of applications. Please visit: www.gis.fhwa.dot.gov/statepracs.asp.

The GIS Transportation Quarterly Webcast was conducted on November 13, 2008. The webcast focused on Florida DOT's efforts in implementing an enterprise GIS. Please visit: <http://www.gis.fhwa.dot.gov/webcasts.asp>.

Business Models for Implementing Geospatial Technologies in Transportation Decision-Making: Phase II report describes a number of State DOTs' business models for implementing geospatial technologies to help them improve the way they make decisions and how they make them. This report was completed in March 2008, and is available at: http://gis.fhwa.dot.gov/bus_model_rpt_3-08/bus_model_rpt.htm.

Key Practices for Implementing Geospatial Technologies for a Planning and Environment Linkages (PEL) Approach is a report that presented three case studies on how GIS has been used to implement the FHWA's PEL approach. The report provided information and tools to help agencies integrate the consideration of environmental factors in transportation planning. This report was completed in July 2008 and is available at: http://gis.fhwa.dot.gov/documents/geospatialPEL_rpt.pdf.

The GIS & ROW Peer Exchange II hosted representatives from the Federal Aviation Administration, Virginia Tech and State DOTs from Arkansas, California, Minnesota, Missouri, Nevada, Oregon, Washington State and Wisconsin on July 22-23, 2008. Participants shared their knowledge and experiences in implementing GIS in the right-of-way area of transportation. Please visit: www.gis.fhwa.dot.gov/gisrow.asp.

www.fhwa.dot.gov/HEP/STEP

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