



Federal Highway Administration (FHWA) Research and Technology Agenda

Meeting the Challenge: Planning, Environment, and Realty

When developing projects, transportation professionals must consider the complex relationships among a variety of factors affecting individuals, communities, the economy, and the environment. FHWA's Planning, Environment, and Realty research supports this work by assessing new tools and processes that make better decisions, leading to improved outcomes.

FHWA provides tools, technical assistance, proven processes, and data so State and local agencies can perform effective project planning, environmental, and realty decisionmaking. Enhanced coordination across disciplines leads to more efficient project delivery and better resource conservation. The result is a safer, more reliable, and accessible transportation system that is environmentally sound and responsive to the public's needs.

FHWA's research promotes techniques and processes that help society to adapt to extreme weather and climate change by constructing or renovating infrastructure to withstand these events. It also evaluates projects based on sustainability principles. FHWA is also researching project impacts on adjacent communities from air quality and noise changes.

FHWA helps transportation professionals strengthen their processes by providing new tools and strategies. Expanded geographic information systems (GIS) technologies will incorporate livability principles into transportation planning. Environmental impact mitigation will be better coordinated with climate change adaptation.

Additional areas of focus include:

- Context sensitive solutions.
- Economic development.
- Nondiscrimination and environmental justice.
- Community improvements.
- Community impact assessment.
- Pedestrians and bicyclists.

Following the principles of integrated transportation decisionmaking, FHWA forms partnerships with professionals in the fields of transportation planning, resource conservation, and realty to refine its research priorities. Together, they are identifying opportunities and developing new approaches that advance the practice.

Objective: 1: Promote more informed transportation decisionmaking to improve transportation planning, programming, operations, and coordination.

Strategies

- Help transportation agencies build institutional capacity to support transportation planning, programming, operations, and management decisionmaking.
- Identify and promote cutting-edge technologies that support stakeholders in meeting Federal planning, environmental, and realty requirements.
- Research, develop, and promote strategies that improve surface transportation system planning, operation, and management, as well as environmental, planning, and realty decisionmaking.

Showcase Activities

- Mapping the National Highway System
- Integrating Demand Management into the Transportation Planning Process: A Desk Reference
- Asset Sustainability Index
- Performance-Based Planning and Programming: Guidebook Series
- Option Contracts Research Study
- Implementation of

Electronic Right-of-Way Management Systems Versus Paper Systems

- Early Acquisition: Statewide Land Use, Environment and Transportation Planning Requirements

Mapping the National Highway System

The National Highway System (NHS) includes the Interstate, other principal arterials, the Strategic Highway Network, and intermodal connectors. FHWA uses geographic information system (GIS) databases and maps to continuously record and maintain the official map record of the NHS. The research supports mapping activities to aid environmental, planning, and realty decisionmaking. The map sets are coded onto a geospatial digital highway network that FHWA uses to produce maps posted on the NHS Web site.

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Additional Resources

- [FHWA: National Highway System](#)

Integrating Demand Management into the Transportation Planning Process: A Desk Reference

This desk reference provides the reader with a better understanding of where, how, and when to integrate Travel Demand Management (TDM) into performance-based transportation planning processes. It also discusses how TDM can be integrated into four levels of transportation planning from the State down to the local level and includes information on tools available for evaluating the effectiveness of TDM measures.

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Additional Resources

- [FHWA: Integrating Demand Management into the Transportation Planning Process](#)

Asset Sustainability Index

This report examines the concept of a suite of proposed performance measures centered on an Asset Sustainability Index (ASI). The metrics are examined primarily for State transportation agency officials, but they could be useful to all who manage transportation networks at the national, State, regional, or local level, as these officials increasingly are expected to demonstrate the responsibility and transparency of their operations.

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Additional Resources

- [FHWA: Asset Sustainability Index: A Proposed Measure for Long-Term Performance](#)

Performance-Based Planning and Programming: Guidebook Series

To address the need for technical information on performance-based planning and programming (PBPP), FHWA has engaged partners and stakeholders to help develop a series of three guidebooks, as follows:

- Performance-Based Planning and Programming (PBPP) Guidebook
- Model Long-Range Transportation Plans: A Guide for Incorporating Performance-Based Planning (LRTP)
- Performance-Based Electronic STIP (E-STIP)

The guidebooks will serve as practical resources to help State departments of transportation, metropolitan planning organizations, regional transportation planning organizations, and transit agencies understand the key elements of PBPP, and how this approach fits within the existing statewide and metropolitan planning and programming processes.

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Additional Resources

- [Performance-Based Planning and Programming \(PBPP\) Guidebook](#)
- [Model Long-Range Transportation Plans: A Guide for Incorporating Performance-Based Planning \(LRTP\)](#)

Option Contracts Research Study

Under the provisions of The Moving Ahead for Progress in the 21st Century Act (MAP-21), Subtitle C-Acceleration of Project Delivery, Sec. 1302, there are various amendments to Title 23 of the United States Code, Section 108. One of these amendments establishes the term real property interests, in place of the terms, real property, right-of-way, and rights-of-way referenced previously in the statute. One of the changes afforded by this amendment allows the possible utilization of property acquisition option techniques. Because public agencies historically or typically have not used option techniques in acquisition situations, the applicability of this concept--in which one pays for the right to have the first chance of purchasing a piece of property--required further analysis. This research study reviewed and evaluated the use of option contracts in federally-funded advance acquisition projects, which included the methods and factors an agency should use in its decisionmaking process related to option contracts, i.e., whether to use an option, how to value it, and how to determine the option consideration.

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Implementation of Electronic Right-of-Way Management Systems Versus Paper Systems

This research study will provide FHWA, State, and local departments of transportation with a tool kit using tangible and easily understandable documentation with quantitative metrics and nine case studies. This toolkit will assist planning right-of-way professionals to obtain leadership buy-in to support implementation of Integrated Electronic Right-of-Way Management Systems. The final report is available online under the title, "Implementation of Electronic Right-of-Way Management Systems Versus Paper Systems" and report number FHWA-HEP-16-001.

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Additional Resources

- [Implementation of Electronic Right-of-Way Management Systems Versus Paper Systems](#)

Early Acquisition: Statewide Land Use, Environment and Transportation Planning Requirements

FHWA-sponsored research to learn more about how State departments of transportation (DOTs) have implemented comprehensive and coordinated land use, environment and transportation planning processes in the early acquisition process. FHWA reviewed State DOT implementation challenges and aims in order to help States further identify their needs. This report will help FHWA provide future guidance, tools, and opportunities to assist States in further utilizing a comprehensive planning process to advance the acquisition process.

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Additional Resources

- [FHWA: Acquisition: Acquiring Real Property for Federal and Federal-Aid Programs and Projects](#)
- [FHWA: Relocation: Your Rights and Benefits as a Displaced Person](#)

Objective: 2: Promote integrated planning that improves transportation safety and addresses environmental, social, and economic needs.

Strategies

- Investigate and promote strategies that integrate safety into the planning and project development processes.
- Investigate and promote strategies that facilitate transportation coordination among diverse stakeholders and improve the exchange of information.
- Investigate and promote strategies to facilitate cross-border transportation planning, decisionmaking, and coordination.
- Research and promote strategies that support environmental streamlining and stewardship for transportation projects, and improve projects' environmental sustainability.
- Research, develop, and improve models, indicators, and tools to evaluate the economic, social, and environmental performance of transportation systems.
- Conduct research and provide technical assistance to transportation stakeholders to help them incorporate environmentally sustainable practices in transportation project development, programming, and planning.

Showcase Activities

- National Transportation Liaison Community of Practice
- Infrastructure Voluntary Evaluation Sustainability Tool
- United States/Canada and United States/Mexico Binational Planning and Operations
- Metropolitan Area Transportation Planning for Healthy Communities
- Transportation Scenario Planning
- A Performance-Based Approach to Addressing Greenhouse Gas Emissions through Transportation Planning

National Transportation Liaison Community of Practice

Transportation liaisons facilitate the environmental and permit review processes for transportation projects by providing technical assistance and coordinating between resource and regulatory agencies, State departments of transportation (DOTs), and metropolitan planning organizations. FHWA created a Transportation Liaison Community of Practice (CoP) to assist liaisons in sharing information and resources. The CoP includes a Web site open to transportation liaisons and liaison managers, as well as State DOT, FHWA, and resource and regulatory agency staff. The Web site features a resource library, calendar of events, and profiles of liaison peers. The Web site allows users to indicate their areas of expertise and post resources and events to the Web site's calendar of events. FHWA also supports five national liaisons, who help coordinate activities between their agencies and FHWA at a national level. The five liaisons are located in the U.S. Army Corps of Engineers; U.S. Coast Guard; Environmental Protection Agency; U.S. Fish and Wildlife Service;

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Additional Resources

and the Advisory Council on Historic Preservation. In addition, FHWA works to develop outreach and technical assistance materials to continue to support transportation liaisons.

- [FHWA: Transportation Liaison Community of Practice](#)
- [FHWA: Transportation Liaison Community of Practice Discussion Board](#)

Infrastructure Voluntary Evaluation Sustainability Tool

The Infrastructure Voluntary Evaluation Sustainability Tool (INVEST) is an online resource that identifies characteristics of sustainable highways and provides information and techniques to help stakeholders with limited resources make informed decisions while balancing the economic, social, and environmental factors associated with transportation projects. The tool was developed with input from State and local transportation leaders and several professional organizations, and content was reviewed by subject matter experts at several Federal agencies, including U.S. Department of Transportation. Since its release in 2012, stakeholder feedback and input have been used to revise, upgrade, and develop new versions of the tool as needed.

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Additional Resources

- [FHWA: INVEST Tool](#)

United States/Canada and United States/Mexico Binational Planning and Operations

Binational planning for the efficient and safe cross-border movement of goods and people, while protecting the environment, brings special challenges to State, regional, and Federal transportation and security agencies. This program will develop and deliver a combination of research, education, best practices, and roundtable work sessions that are specifically targeted to enhance cross-border transportation planning, project development, and improved flow between the United States and Canada and Mexico. This research effort will address binational and North American issues and bring together transportation planners, environmental specialists, security experts, and other experts to engage in dialog and implement research to improve cross-border coordination for transportation planning, project development, and enhanced operations.

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Additional Resources

- [FHWA: United States/Mexico Border Transportation Planning Web Sites](#)

Metropolitan Area Transportation Planning for Healthy Communities

This report proposes a framework for metropolitan planning organizations and partners to use to integrate health into metropolitan area transportation planning, and how they can consider health during all stages of the metropolitan area transportation planning process. The report identifies a "holistic" approach to health; including consideration of active transportation, safety, air pollution, and access to opportunities for healthy lifestyles.

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Additional Resources

- [FHWA: Metropolitan Area Transportation Planning for Healthy Communities](#)

Transportation Scenario Planning

Regional transportation scenario planning has emerged as a common planning technique to help transportation professionals prepare for the future. In scenario planning, transportation professionals are provided a framework to help them develop a shared vision by analyzing various forces that affect growth. The practice of evaluating land use has more recently involved the analysis of other nontraditional factors, such as climate change, housing, and economic development.

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Additional Resources

- [FHWA Scenario Planning and Visualization in Transportation](#)

A Performance-Based Approach to Addressing Greenhouse Gas Emissions through Transportation Planning

The intent of this practitioner handbook is to serve as a resource for State departments of transportation and metropolitan planning organizations interested in addressing greenhouse gas emissions through performance-based planning and programming. Building on resources that address performance-based planning and programming as well as mobile source emissions analysis, the handbook describes the use of greenhouse gas performance measures and other performance management techniques to support investment choices and decisionmaking.

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Additional Resources

- [FHWA: A Performance-Based Approach to Addressing Greenhouse Gas Emissions through Transportation Planning](#)

Objective: 3: Accelerate the project delivery process.

Strategies

- Research and promote strategies and tools available to accelerate project delivery and evaluate how to accomplish project delivery under a range of circumstances.
- Provide technical assistance to support stakeholders in improving project delivery processes.

Showcase Activities

- e-NEPA Tool
- Eco-Logical
- Center for Environmental Excellence
- Public Involvement Reference Tool

e-NEPA Tool

The National Environmental Policy Act (NEPA) requires Federal agencies to assess the environmental effects of their proposed actions prior to making decisions. Such assessments include decisions on permit applications, Federal land management actions, constructing highways and other publicly-owned facilities, and more. e-NEPA is a real-time electronic collaboration tool that allows State departments of transportation to share documents, track comments, schedule tasks with participating agencies, and perform concurrent reviews of their environmental impact statements and environmental assessment projects.

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Additional Resources

- [Improving Collaboration and Quality Environmental Documentation \(eNEPA and IOED\)](#)

Eco-Logical

A team of representatives from Federal Highway Administration (FHWA) and seven other Federal agencies developed Eco-Logical, an infrastructure development process based on an ecosystem viewpoint. Eco-Logical integrates plans and data across agency and disciplinary boundaries and encourages Federal, State, Tribal, and local partners' involvement in infrastructure planning, design, review, and construction. FHWA continues to engage signatory agency leadership to ensure the use and support of Eco-Logical. Products include writing three issues of Eco-Logical Successes (with a fourth edition in development) and developing the Eco-Logical Webinar Series, which highlights the practices, concepts, and case studies through a series of monthly Eco-Logical webinars.

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Additional Resources

- [FHWA: Eco-Logical](#)

Center for Environmental Excellence

The Center for Environmental Excellence (CEE) promotes environmental stewardship and encourages the use of innovative ways to streamline the transportation delivery process. The CEE serves as a one-stop source for transportation professionals seeking technical assistance, training, information exchange, partnership-building opportunities, and quick and easy access to environmental tools. The current CEE is funded by FHWA and managed by the American Association of State Highway and Transportation Officials via a competitively solicited cooperative agreement.

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Additional Resources

- [Center for Environmental Excellence Web Site](#)

Public Involvement Reference Tool

The Public Involvement Reference Tool is a technical resource for transportation professionals and the public. The reference tool is designed to help users find specific public involvement documents, discover and share best practices, and to assist State transportation agencies to improve their transparency, efficiency, and accountability. This reference tool encourages more open governmental decisionmaking that facilitates citizen participation and collaboration.

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Additional Resources

- [FHWA: Public Involvement Reference Tool](#)

Objective: 4: Minimize environmental impacts of transportation investments.

Strategies

- Develop and promote strategies, tools, and capacity-building opportunities that improve mitigation and adaptation responses to climate change, and improve stakeholders' understanding of the effects of climate change on transportation.
- Conduct research to develop and promote strategies that improve transportation stakeholders' abilities to address transportation-related air quality issues.

Showcase Activities

- Assessing Transportation Impacts on Air Quality
- Near Road Studies
- The Gulf Coast 2 Study
- Near Road Air Quality Pooled Fund Study
- Transportation Air Quality Selected Facts and Figures
- Air Quality and Congestion Mitigation Measure Outcomes Assessment Study
- Greening Transportation at the Border: Analysis of Air Quality

Assessing Transportation Impacts on Air Quality

Transportation agencies employ air quality models to assess emissions levels and make informed planning and programming decisions. The Environmental Protection Agency model, called Motor Vehicle Emission Simulator (MOVES), estimates emissions for mobile sources, including cars, trucks, and motorcycles for a broad range of pollutants. FHWA researched and developed methods that help stakeholders convert data to use with MOVES; shared information with stakeholders regarding anticipated data changes; and identified additional data collection and research needs to fully utilize the capabilities of MOVES and other related tools and models. As a result of these activities, transportation planners and others using MOVES are able to take full advantage of the model's capabilities to better assess emissions and air quality impacts of transportation programs and projects.

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Additional Resources

- [Volpe: MOVES2010a Regional Sensitivity Analysis](#)
- [FHWA: Advances in Project Level Analyses Final Report](#)
- [FHWA: Modifying Link-Level Emissions Modeling Procedures for Applications within the MOVES Framework Final Report](#)

Near Road Studies

FHWA is focused on enhancing the understanding of mobile source emissions associated with major highway facilities. The Near Road Studies examine the concentration and physical behavior of Mobile Source Air Toxics, mobile source Particulate Matter 2.5, and other criteria pollutants in regions nationwide. These studies give stakeholders hands-on knowledge about the dispersion of mobile source emissions, enhance the credibility of State officials when addressing related issues for projects, and encourage more informed transportation and environmental decisions.

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Additional Resources

- [FHWA: Las Vegas, Nevada: Near Roadway Vehicle Emissions Study](#)

- [FHWA: Detroit, Michigan: Near Road Collaboration Project](#)

The Gulf Coast 2 Study

FHWA is conducting a multiphase study of climate change in the Central Gulf Coast region to enhance understanding of potential climate change impacts on transportation infrastructure and the resulting vulnerabilities in the region; identify adaptation strategies for this region and the Nation; and develop transferable processes and tools. Phase two of this study, focused on Mobile, AL, assesses the vulnerability of the most critical transportation assets to climate change impacts. Using this information, FHWA is developing risk management tools to help transportation system planners, owners, and operators assess vulnerabilities and determine which assets to protect and how to protect them. The methods and tools developed are designed to be replicable in regions nationwide.

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Additional Resources

- [Gulf Coast Study](#)

Near Road Air Quality Pooled Fund Study

FHWA participated in the Near Road Air Quality Pooled Fund established by the Washington State Department of Transportation (DOT) with support from several State DOTs, including Arizona, California, Texas, and Virginia, to help agencies identify and address a broad range of near-road issues. The pooled fund study provides a forum dedicated to information and technology transfer regarding near-road pollution issues, while allowing for coordinated sharing of critical research developments, evaluation techniques, and study results. The objectives of the study are to increase knowledge of the relationship between traffic conditions and monitored air quality data; improve best practices for project-level analyses; increase knowledge of operational and construction mitigation measures that support near-road air quality improvements; and improve interagency exchange of information. The impacts are overall cost reduction and promotion of project delivery in addressing air quality issues in the near-road environment. The results of the study also help agencies meet the Clean Air Act requirements.

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Additional Resources

- [Near Road Air Quality Research Study Pooled Fund Site](#)

Transportation Air Quality Selected Facts and Figures

This brochure is an update to the 2006 publication of the same name and provides an overview of recent transportation and air quality trends from across the Nation. The brochure highlights information regarding Federal tailpipe control standards, new air quality standards, recent travel and congestion rates by city, sources of greenhouse gas emissions, transportation policy strategies, and other useful sources of air quality-related information.

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Air Quality and Congestion Mitigation Measure Outcomes Assessment Study

Section 1113(c) of the Moving Ahead for Progress in the 21st Century Act (MAP-21) requires that the U.S. Department of Transportation, in consultation with the Environmental Protection Agency, examine the outcomes of actions funded under the Congestion Mitigation and Air Quality Improvement (CMAQ) Program since the enactment of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. This study examined the outcomes of projects funded under the CMAQ Program between 2006 and 2012. Researchers assessed the emissions reductions, air quality, and human health impacts of actions intended to reduce emissions or lessen traffic congestion. The goals of this study are to assess emission reductions and human health outcomes of surface transportation actions, increase the knowledge of factors determining the human health changes associated with these transportation actions, and assess the validity of

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Additional Resources

estimation and modeling routines.

- [MAP-21 Air Quality and Congestion Mitigation Measure Outcomes Assessment Study](#)

Greening Transportation at the Border: Analysis of Air Quality

This research establishes a baseline inventory of vehicle emissions data availability at United States/Mexico land border crossings needed for emissions modeling. The study creates an emissions analysis template that can be used along the United States/Mexico border to measure emissions and impacts from delay at the border and for analyzing proposed infrastructure or operational improvements to existing or new facilities.

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Objective: 5: Improve the way transportation contributes to economic development and communities' quality of life.

Strategies

- Identify and promote strategies that strengthen national security and economic development through transportation planning, programming, operations, and management.
- Identify and promote strategies that address congestion reduction efforts to improve quality of life and economic development.
- Identify and promote strategies that support equity, access, and public engagement to strengthen the ability of communities to respond to citizens' needs.
- Research and promote strategies to advance livability and improve transportation planning, programming, operations, management, and decisionmaking in rural areas and small communities.

Showcase Activities

- Stochastic Empirical Loading and Dilution Model
- Assessment of the National Highway System (NHS) Passenger Connectors
- Uniform Act Public Discussion Group
- Transportation and Health Tool
- Newtown Pike Case Study Video

Stochastic Empirical Loading and Dilution Model

Stochastic Empirical Loading and Dilution Model (SELDL) uses information and data about a highway site, water quality of upstream receiving waters, precipitation events, storm-flow, and the performance of mitigation measures to help determine pollutant loading levels for planning of National Environmental Policy Act-level studies. This robust model was tested by FHWA, many State departments of transportation, the U.S. Environmental Protection Agency, academia, and several other regulatory agencies.

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Additional Resources

- [U.S. Geological Survey: National Highway Runoff Water-Quality Data and Methodology Synthesis](#)
- [Stochastic Empirical Loading and Dilution Model](#)

Assessment of the National Highway System (NHS) Passenger Connectors

NHS passenger intermodal connectors help connect every American to the global economy. This research will produce a comprehensive look at NHS passenger intermodal connectors and suggest possible recommendations for improvement. In particular, the study will examine existing passenger connector conditions and factors affecting condition and investment, illustrate how passenger connectors are used by U.S. residents, illustrate how changes in the economy and employment affect the use connectors, and examine how NHS passenger intermodal connectors serve to connect disadvantaged and underserved populations to employment opportunities.

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Additional Resources

- [FHWA: National Highway System Intermodal Connectors](#)

Uniform Act Public Discussion Group

FHWA has enjoyed a long and productive relationship with the International Right of Way Association (IRWA). In view of the goals of the IRWA/FHWA partnering agreement, which was codified approximately 15 years ago, the agencies created a virtual IRWA chapter in the form of a Uniform Act Public Discussion Group. The group is accessible on the IRWA Web site and provides a central place to easily share information about the Uniform Act among interested participants. The Web site supports group notifications, provides a shared group calendar, and hosts participation in group discussions of interest. Participants may post announcements, download various reference resources, and survey site members. The site is also used as a platform for collaborative work among professionals across a range of topics. IRWA membership is not required; the group is open to everyone.

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Additional Resources

- [International Right of Way Association Web Site](#)

Transportation and Health Tool

The Centers for Disease Control and Prevention (CDC) and the U.S. Department of Transportation are leading efforts to support the consideration of public health goals in transportation decisionmaking that align with the National Prevention Strategy. A key component of these efforts is the development of an online Transportation and Health Tool (THT). The goals of this resource are to help transportation decision makers understand many of the issues in play at the intersection with public health; inform health-supportive State and regional transportation policies and project decisions; and strengthen collaborations between the transportation and public health sectors.

The THT will enable transportation and public health professionals to understand how their region or State is performing in a variety of health and transportation indicators; to compare this performance with other regions and States; and to see how their transportation plans, policies, programs, and investments align with public health goals.

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Additional Resources

- [Transportation and Health Tool](#)
- [FHWA: Metropolitan Area Transportation Planning for Healthy Communities White Paper](#)

Newtown Pike Case Study Video

The Newtown Pike Case Study video is meant for local, State, Federal, and consultant highway project developers and the public to better understand: 1) how Community Impact Assessments (CIA) were conducted under the National Environmental Policy Act (NEPA) during the development of the Newtown Pike Extension Project; 2) how the highway project preserved and enhanced the Davistown community, which was under threat from both the road expansion and strong urban development pressures; 3) the unique mitigation strategies used, including the Community Land Trust that provided sustainable housing opportunities, temporary relocations, use of community liaison and social workers; and 4) how the project is implementing the six livability principles identified by FHWA. The video will be disseminated to stakeholders to promote community preservation and livability. A pamphlet about the project was developed to show how transportation planning, project development, and design can enhance quality of life in a community.

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Additional Resources

- [FHWA: Newtown Pike Case Study Pamphlet](#)
- [The Road that Rebuilt a Neighborhood The Newtown Pike Extension Project](#)

Objective: 6: Promote transportation policy that supports multimodal transportation.

Strategies

- Help transportation agencies build capacity to support an integrated, safe, and convenient transportation system for all users.
- Identify, share, and promote effective and successful tools and information necessary to assess and bridge the gaps in multimodal transportation connectivity.
- Research, develop, and promote strategies that improve multimodal transportation connectivity.

Showcase Activities

- Multimodal Conflict Points
- Flexibility in Pedestrian and Bicycle Facility Design
- The Strategic Agenda for Pedestrian and Bicycle Transportation
- Pedestrian and Bicycle Information Center

Multimodal Conflict Points

Multimodal conflict points are areas in which multiple modes of transportation--typically roads and sidewalks--converge, thereby increasing the risk of accidents. This report will focus on planning and design improvements needed in locations where various transportation modes come together, such as near transit stations, bus stops, street crossings, schools, and essential services. These improvements will result in improved pedestrian safety, accessibility, and mobility.

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Flexibility in Pedestrian and Bicycle Facility Design

In 2013, FHWA released a memorandum to express its support for taking a flexible approach to bicycle and pedestrian facility design. This effort was collaborative between FHWA, the American Association of State Highway and Transportation Officials, the National Association of City Transportation Officials, and the Institute of Transportation Engineers. This new project will provide design and process-related examples of design flexibility as a followup to FHWA's 2013 Bicycle and Pedestrian Facility Design Flexibility Memorandum.

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Additional Resources

- [FHWA: Bicycle and Pedestrian Facility Design Flexibility Memorandum](#)

The Strategic Agenda for Pedestrian and Bicycle Transportation

The Strategic Agenda for Pedestrian and Bicycle Transportation will provide a strategic action-oriented framework for issues such as data collection and management; network implementation and documentation; research; training; and national design guidance. The strategic framework will inform future investments, coordinate policies, and promote partnerships.

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Pedestrian and Bicycle Information Center

The Pedestrian Bicycle Information Center (PBIC) is a national clearinghouse for information about health and safety, engineering, advocacy, education, enforcement, access, and mobility for pedestrians (including transit users) and bicyclists. PBIC connects communities with information and resources needed to create safe places for walking and bicycling.

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Additional Resources

- [Pedestrian and Bicycle Information Center](#)

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