



The Federal Highway Administration's (FHWA) Office of Human Environment (HEPH) develops and implements programs and activities that advance multimodal innovation, improves the human environment, and enrich human interaction with transportation systems.

The FHWA Office of Planning, Environment, and Realty (HEP) offers research opportunities to improve transportation decision making and promote efficiency while improving communities, integrating environmental justice in all phases of the transportation decision-making process, and protecting the environment. Within HEP, HEPH supports and conducts research that:

- ◆ Informs Decision Making on Transportation Investments
- ◆ Reduces Negative Environmental Impacts and Enhances Benefits
- ◆ Enhances Quality of Life
- ◆ Accelerates Project Delivery
- ◆ Advances the Transportation Planning Process

### Research Focus

HEPH efforts focus on supporting the advancement of livability, documenting the local and regional economic development impacts of highways, planning, and implementing research, and managing human environment-related funded programs. The resulting research is focused on the following areas:

- Quality of life and environmental justice
- Community impact assessments
- Pedestrians, bicyclists, and micromobility
- Context-sensitive solutions and design
- Economic development
- Research program management and outreach
- The National Highway System (NHS)
- Multimodal networks and recreational trails

These efforts are directed toward providing technical assistance, tools, and training on highway systems and complementary modes of transportation, including transportation enhancements, and bicycle and pedestrian facilities.

HEPH research seeks to identify methods to help transportation practitioners and communities effectively evaluate project and program impacts and identify, improve, and implement sound mitigation options. HEPH aims to improve coordination and communication between State departments of transportation (SDOTs), partner agencies, and the public to ensure project understanding and create new efficiencies.

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### FEATURED RESEARCH ACTIVITIES

#### Fostering Innovation in Pedestrian and Bicycle Transportation Pooled Fund Study

This pooled fund focuses on bicycle and pedestrian network planning, safety, design issues (design flexibility, developing crash modification factors, network connectivity), traffic control devices (experimenting on innovative markings, signals, and signs), and other issues designed by participants. For more information, please visit the [pooled fund website](#).

**Staff Contact:** [Darren Buck](#), 405-465-9878.

## Crosswalk Marking Selection Guide

This guide synthesizes existing research and guidance on the safety, cost, and effectiveness of crosswalk marking patterns and makes recommendations for crosswalk marking selection and application. It includes illustrations, examples, and case studies that will enable practitioners to select the crosswalk markings that will be most effective. The [Crosswalk Marking Selection Guide](#) was published in September 2023.

**Staff Contact:** [Darren Buck](#), 405-465-9878.

## Electrical Bicycle (E-bike) Trends, Impacts, and Opportunities: Literature Review Summary

This literature review provides an overview of the legislative and regulatory context surrounding e-bikes in the United States at the national and state levels. It also examines existing research on the impacts of e-bikes in eight topic areas: ridership trends, safety, physical activity and health, accessibility, equity, trail infrastructure and environment, energy and emissions, and freight use cases. Each of the topic areas include a summary of gaps in research and identifies future research needs. The [Literature Review Summary](#) was published in May 2023.

**Staff Contact:** [Christopher Douwes](#), 202-366-5013.

## Shared Micromobility and Equity Primer

The [Shared Micromobility and Equity Primer](#) provides practitioners with information on the relationship between shared micromobility and transportation equity. The primer includes an overview on shared micromobility and transportation equity, a discussion around policies that jurisdictions may use to incorporate equity into shared micromobility programs, several case studies, and featured resources.

**Staff Contact:** [Bronwen Keiner](#), 202-493-0280.

## Micromobility Regulations and Permitting Equity Synthesis

This synthesis discusses the role of regulations and permitting in advancing equitable micromobility systems, provides a literature review summarizing the existing research on this topic, and identifies areas for future research. (*Anticipated Completion October 2023*)

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## Curbside Inventory Report Curbside Management: Optimizing Curb Productivity

New mobility concepts and solutions, from micromobility and ride-hailing services to innovative demand response bus services, are providing travelers with flexible, and tailored transportation options. This research project explores additional curbside management resources that will allow communities to inventory their streets to make informed decisions on how to best manage their transportation system starting at the curb. The [Curbside Inventory Report](#) gives practitioners research and tools to develop implementation projects. In the long term, this work can help communities develop strategies, and pursue desired curb usage and policies.

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## Rails-with-Trails Design and Engineering Guidebook

This guidebook will provide rail-with-trail (RWT) practitioners with detailed design and engineering guidelines inclusive of variations in RWT context, style, purpose, and limitations. The Guidebook will be applicable to all types of RWT and enable practitioners, planners, designers, and engineers to adequately plan, design, construct, operate, and maintain RWT facilities and adapt RWT designs to specific contexts. It will complement the [Rails-with-Trails - Best Practices and Lessons Learned](#) report issued in June 2021. (*The Task Order contract began September 2023.*)

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## Trails and Resilience: Review of the Role of Trails in Climate Resilience and Emergency Response.

FHWA developed a white paper to provide background on Trails and Resilience. FHWA will develop a complementary Guidebook on Trails as Resilient Infrastructure which will describe climate Resilience and Emergency Response and Preparedness. The Guidebook will help practitioners improve infrastructure resilience and emergency preparedness on shared use paths and recreational trails.

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### Separated Bike Lane on High-Speed Roads Toolkit

This guide synthesizes existing research on separated bicycle lanes, including research on potential benefits and obstacles, and existing design and planning guidance. This research aims to identify key obstacles, considerations, and experiences of those who have designed, implemented, and maintained separated bike lanes on higher-speed roadways.

*(Anticipated Completion December 2023)*

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### A Toolkit for Statewide Walking and Bicycling Volume Data Programs

This toolkit will provide information for States and other transportation agencies to create programs that collect, inspect, maintain, publish, and analyze walking and bicycling volume data that is reliable, representative, and insightful. It will synthesize research and best practices on count programs, provide case studies on how different agencies are structuring their count programs, and provide recommendations for agencies on what to consider in planning their own. *(Anticipated Completion Early 2025)*

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### Tribal Development of Trails and Other Dedicated Pedestrian and Bicycle Infrastructure

This white paper describes the Federal regulations and policies related to trails, key concepts in active transportation and trails planning, benefits of active transportation and trails, and funding and partnership opportunities and identifies resources and tools that are available to support Tribes in their planning and development of trail networks.

*(Anticipated Completion Fall 2023)*

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### Technical Assistance Resources

This document provides a listing of government and non-government entities, programs and tools that provide formal technical assistance that can support disadvantaged communities, biking, multiuse paths, and active transportation. The most recent [Technical Assistance Resources](#) document was published in September 2023.

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### Pedestrian and Bicycle Information Center

FHWA has a cooperative agreement with the University of North Carolina Highway Safety Research Center to develop, synthesize, promote, and distribute bicycling and walking information to improve the quality of life in communities through the increase of safe walking and bicycling as a viable means of transportation and physical activity. For more information, please visit the [PBIC website](#).

**Staff Contact:** [Christopher Douwes](#), 202-366-5013.

### The Corps Network's Trails and Transportation Program

The Corps published four reports to encourage States and project sponsors to enter into contracts and cooperative agreements to use qualified youth service and conservation corps in appropriate projects. The recent reports (available [here](#) with previous reports and case studies) are: Building the Future (Vol II): A Guide for Using Federal Transportation and Trail Programs to Partner with Service and Conservation Corps (Sept 2022), Affinity and Identity-Based Crews and Programs (February 2023), Trail and Transportation Toolkit: A Guide for Supporting Service and Conservation Corps Projects through Federal-Aid Program Funding (October 2023), and Case Studies and Practices for Recruiting the Next Generation of Trail and Transportation Professionals (October 2023).

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