RESOURCES AND RESEARCH THAT SUPPORT WALKING

Washington, DC
October 29, 2015

U.S. Department of Transportation
Federal Highway Administration
Agenda

1. Background and Context
2. Themes
   a. Connect Networks
   b. Improve Safety
   c. Increase Activity
   d. Promote Equity
3. Next Steps
4. Questions and Discussion
Background and Context

Mayors’ Challenge for Safer People, Safer Streets

- Complete Streets
- Fix Barriers
- Gather Data
- Design Right
- Create Networks
- Improve Laws
- Educate and Enforce
Background and Context

- FHWA Support For:
  - An integrated, safe, and convenient transportation system for all users
  - Sustainable transportation policies and practices
  - Design flexibility
  - Connected pedestrian and bicycle networks
  - Pedestrian and bicycle data
  - Performance Based Practical Design

Safety is the #1 Priority
Policy Statement on Bicycle and Pedestrian Accommodation

The DOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Because of the numerous individual and community benefits that walking and bicycling provide — including health, safety, environmental, transportation, and quality of life — transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes.
Background and Context

FHWA supports **livability** through its work with:

- Partnership for Sustainable Communities (PSC)
- FHWA Livability Initiative
- Environmental Justice (EJ)
- Transportation Alternatives Program (TAP)
- Bicycle and Pedestrian Activities

These focus areas advance livability and the integration of human environment and community considerations into transportation program delivery to enhance where people live, work, and recreate.
Background and Context

Livability Resources and Tools

• Community Vision Metrics (CVM)
• PlaceFit
• Context Sensitive Solutions
• EJ Reference Guide
• Other resources such as case studies, fact sheets, videos, livability discussion board, newsletter, etc.

http://www.fhwa.dot.gov/livability
## Four Themes

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<td>Connect Networks</td>
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Connect Networks

Chapters

1. What are Separated Bike Lanes?
2. Overview of the Guide and Planning Process
3. Why Choose Separated Bike Lanes?
4. Planning Separated Bike Lanes
5. Menu of Design Recommendations
6. Moving Forward
Guide Highlights

Planning Elements

• Planning Considerations
• Installation Opportunities
• Project Evaluation
• Additional Context and Other Planning Issues
Guide Highlights

Planning and Design Process Diagram

- Users
- Connections
- Context
- Constraints
- Installation opportunities

- Directional & width characteristics
- Intersection Design
- Forms of Separation
- Midblock Considerations

**PLAN for Potential Separated Bike Lanes**

- Make DESIGN element decisions

- Analyze FUNDING options

- Perform OUTREACH

- Collect DATA for project evaluation

**IMPLEMENTATION**

- Potential to implement projects via a pilot approach

- Project EVALUATION

**Figure 6**

- General Public
  - Including public education in SBLs

- Local Residents
  - Living on SBL corridor

- Local Businesses
  - Located on SBL corridor and local Business Improvement Districts

- Local Transit Agencies

- State or County Departments of Transportation

- Public Health
  - And other related organizations

- SBL Advocacy Groups

- Local Maintenance Agencies
  - And maintenance partners

- Advocates for Persons with Disabilities

- Enforcement
  - Such as Police and Traffic Control Agencies.
Guide Highlights

Midblock Considerations Transit Stops
Guide Highlights

Midblock Considerations
Accessible Parking, Located Midblock within Parking Lane
Guide Highlights

Intersection Design Turning Movements
Design Resource Index

The Design Resource Index identifies the specific location of information in key national design manuals for various pedestrian and bicycle design treatments. The Design Resource Index will help practitioners quickly access the right resources and should reduce the amount of time it takes to search through multiple design guides to find the information they need.

- For the navigable Excel version, click here
- For a printable 11x17 version, click here

As you use this document, we encourage you to share your observations and feedback. For example, we would like to get input on existing gaps in design guidance, research needs, and additional tools and resources that would help you navigate between various design resources. Please email this feedback to daniel.goodman@dot.gov.
## Pedestrian Facility Design Treatments

### 3/2/2015

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### A. General Roadway

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<td>Diverters</td>
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### A17 Sidewalks

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[http://www.pedbikeinfo.org](http://www.pedbikeinfo.org)
Bicycle and Pedestrian Funding, Design, and Environmental Review: Addressing Common Misconceptions

- Transportation Alternatives Program and other Federal funding sources for pedestrian and bicycle projects
- Federal transportation funds to enhance the local roadway network
- *Separated bike lanes* and Federal funds
- Federal funds and road diets
- Nonmotorized projects and CMAQ funding
- Design standards that can be used on Federal-aid highway projects
- Lane widths on the National Highway System and when Federal funds are used on local roads
- Curb extensions, trees, and roundabouts on the NHS
- Speed limits and the 85th percentile
- Existing Right of Way and eligibility for Categorical Exclusions

http://www.fhwa.dot.gov/environment/bicycle_pedestrian/
Multimodal Conflict Points

Cut Sheet Topics
1. Shared Use Paths
2. Pedestrian and Bicycle Networks
3. Turning Vehicles
4. Separated Bike Lanes
5. Freight Interaction
6. Retrofitting Suburban Transit Station Access
7. Transit Conflicts
8. New Construction Transit Station
9. School Access
10. Shared Streets
11. Accessibility
12. Path and Roadway Intersections
TURNING VEHICLES

Motor vehicles making turns at intersections can be a hazard for pedestrians and bicyclists. Data from the National Highway Traffic Safety Administration (NHTSA) indicates that most fatal pedestrian (69%) and bicyclist (50%) crashes occur at intersections, predominantly in urban areas. In a recent study, the City of Seattle found that the most significant crash type was a turning motorist crossing the path of a bicyclist or pedestrian. Left-turning motorist crashes account for 19 percent of bicyclist and 31 percent of pedestrian crashes and right-turning motorist crashes accounted for 15 percent of bicyclist and 17 percent of pedestrian crashes.

Left-turning motorists on two-way streets are often focused on finding gaps in oncoming traffic and may not be looking for crossing pedestrians or bicyclists. Scanning and awareness becomes more difficult for motorists on roadways with higher speeds and multiple travel lanes.

Right-turning motorists generally have an easier time scanning for bicyclists or pedestrians as they are less focused on finding a gap in traffic. Conflicts typically result from bicyclists or motorists approaching from behind the spot.

Turning movement conflicts may be addressed by reducing motor vehicle speeds, minimizing gaps at conflict points, maximizing visibility and presence, and separating movements through

DESIGN STRATEGIES

**SIGNALIZED INTERSECTIONS**

Traffic signals may be installed at locations where the continual flow of vehicles on one roadway results in excessive delay or hazard to crossing vehicles, bicyclists, or pedestrians. The decision to install a signal should be based on meeting the requirements in the Manual on Uniform Traffic Control Devices (MUTCD).

Pedestrian signals with countdown timers should be provided at all signalized intersections to inform pedestrians when they may enter the roadway and how much time remains for their crossing (MUTCD, Part 5A). Minimum pedestrian walk intervals of 10 seconds should be provided except in rare circumstances where pedestrian volume is negligible. (ITE Traffic Control Devices Handbook, 2nd Edition)

Reducing left and right hooks can be achieved through partially or fully separating vehicle turning movements from conflicting pedestrian or bicycle movements. Partially separated movements are called left-in movements. A leading left-in movement increases visibility, allows bicyclists or pedestrians to make their way of travel, and provides a head start into the intersection before turning vehicles. Leading left-ins are typically used in areas where bicycle or pedestrian volumes are low.

**RECESSED CROSSINGS**

Recessed crossings are crosswalks built into the roadway to allow a turning motorist space to navigate an intersection at a time. Recessed crossings should provide space for a turning vehicle to pass safely through the intersection and bicycle traffic after they have turned from the main roadway. Bicycle and pedestrian crossings should be designed as a recessed path of travel. A crossing island can also be installed to provide a refuge for pedestrians and bicyclists, in turn, slows left-turn traffic speeds. If bicyclists can be informed of the crossing, they should be considered when designing the road to accommodate bicyclists with traffic.

**OTHER STRATEGIES**

Educational campaigns can help to inform users about where to travel to be most visible to other users, where to expect other users to be traveling, and the actions of different users. Best practices include educational programs through Safe Routes to School, bicycle and pedestrian curriculum in driver’s education and license tests, and educational materials on safe stop and go signs and their uses to residents, or available at public events.

EDUCATION

No Regrets When You Drive With Care

- Drive at a speed that is appropriate for the road.
- Keep an eye out for children, bicycles, and pedestrians.
- Use your headlights at all times.
- Be patient and give for travelers.

PHONE DOWN! BUCKLE UP!

ACCESS MANAGEMENT

Management techniques can be applied to reduce the frequency of turning movement conflicts caused by left-turning traffic. Ideas include:

- Designing cycle coordination signals.
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For more information on how to reduce crashes, including barriers, refer to the chart entitled "Weight interaction on page 8."
Flexibility in Pedestrian and Bicycle Facility Design

Cut Sheet Topics

1. Design Criteria
2. Separated Bike Lanes (Cycle Tracks)
3. Crossing Treatments
4. State Highways Transitioning to Main Street
5. Traffic Calming (Safe Speeds)
6. Shoulders
7. Intersection Geometry
8. Bridge Design
9. Road Diets and Multimodal Traffic Analysis
10. Rural/Suburban Stop Access
11. Signalized Crossings
12. Context Sensitive Public Space Design
INTERSECTION GEOMETRY

INTERSECTION design must balance the needs of drivers, transit users, pedestrians, bicyclists, and accommodate a comfortable environment for all. To improve safety for vulnerable road users, such as pedestrians and bicyclists, intersections should have short turning distances, clear motor vehicle space, and provide good visibility.

The selection of a design vehicle significantly impacts intersection design. Vehicles, pedestrians, and cyclists should have the same turning radius, and intersections should be taken into account when selecting a design vehicle.

According to existing guidelines, it is not necessary to design intersections for the largest vehicle that may approach an intersection at any time or at any time of day with large sweeping curves. Geometric features, such as small turning radii, pedestrian refuge islands, or bicycle lanes, can lighten intersections and allow vehicle turning envelopes to improve walking and bicycling conditions.

OTHER RELEVANT GUIDELINES

APPLYING DESIGN FLEXIBILITY

LAYOUT
To the extent feasible, intersections should meet at right angles. This increases sight distance and can help drivers with visual impairments (Green Book, pp. 54-55). Horizontal intersections are generally not ideal, especially for large vehicles.

CURB RADIUS AND CURB EXTENSIONS
Curb radii should be designed for the vehicle that turns at the intersection most frequently. Smaller curb radii and curb extensions promote safer turns, whereas larger radii can result in larger turning paths for smaller vehicles.

SPEED OF TURNING VEHICLE
The Green Book states that vehicles making turns for less than 15 mph are risk factors. The effective curb radius can be further reduced.

CASE STUDIES

DESIGN VEHICLE VS. ACCOMMODATE VEHICLE
SAN FRANCISCO BETTER STREETS PLAN
The San Francisco Better Streets Plan provides guidance on design and construction of new streets. The plan recommends that designers should choose the design vehicle that will be used in the facility, providing a more balanced approach to design and flexibility.

MOUNTABLE TRUCK APNOS
PORTLAND, OREGON
The City of Portland installed mountable truck aprons at an intersection in a neighborhood that had previously had low volumes of large trucks passing through the intersection.

ICE VS. ACCOMMODATE VEHICLE
SOUTH ORANGE COUNTY, NEW JERSEY
Sauve Engineering’s Office reconstructed the town of County Route 105 and 106 in New Jersey. Relatively high-speeds were common on this road, so the town added mountable truck aprons to accommodate large trucks.

MOUNTABLE TRUCK APNOS
In instances where large trucks are more common, consider mountable truck aprons. Mountable truck aprons are designed to accommodate larger trucks and reduce conflicts between larger vehicles and smaller vehicles.

CHANNELIZED RIGHT TURNS
Channelized right turns are typically less congested and can be used to accommodate larger vehicles. The Green Book suggests channelizing right turns with smaller vehicles, with larger vehicles having dedicated right-turn lanes.

MEANDERS
The speed and shape of meanders are determined by factors such as design vehicle selection, turning speeds, and lane widths. Meanders are generally used for pedestrians, allowing a more comfortable route for larger vehicles. The Green Book provides guidance on designing meanders.
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<td>Research</td>
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SAFER PEOPLE, SAFER STREETS
USDOT Pedestrian and Bicycle Safety Initiative

The DOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes.

Pedestrian and bicyclist fatalities have increased in recent years, as auto occupant deaths declined

Fatalities in rural vs urban areas
The majority of pedestrian and bicyclist fatalities occur in urban areas.

Fatalities and time of day

Case Study: Implementing a Road Diet To Improve Safety for Everyone, including Pedestrians and Bicyclists
After implementing a road diet that added a turn lane and bike lanes on Lawyers Road in Fairfax County, the Virginia Department of Transportation documented a 69% reduction in overall crashes.

Case Study Graph:
- 69% Reduction in Total Crashes
- 11.2 Property Damage Only
- 8.4 Injury
- 1 Fatality

For more Information on road diets, visit: http://safety.virginia.gov/road_diet

Source: Virginia Department of Transportation

Notes:
- Data from 2010 U.S. Census
- Deaths per 100 miles and 1 billion vehicle miles traveled
- Values may not sum to 100% due to rounding
- Source: 2010 NHTS
- Source: 2012 Preliminary
- Source: 2013 Preliminary
BICYCLE ROAD SAFETY AUDIT GUIDELINES AND PROMPT LISTS
Office of Safety
Proven Safety Countermeasures

These nine countermeasures address crashes that occur in the focus areas of intersections, pedestrians, and roadway departure.

Improving safety is a top priority for the U.S. Department of Transportation, and FHWA remains committed to reducing highway fatalities and serious injuries on our Nation's highways. We are highly confident that certain processes, infrastructure design techniques, and highway features are effective and their use should be encouraged.

2012 “Guidance Memorandum on Promoting the Implementation of Proven Safety Countermeasures” (HTML, PDF 78 KB)

In January 2012, FHWA issued a "Guidance Memorandum on Promoting the Implementation of Proven Safety Countermeasures". This guidance takes into consideration the latest safety research to advance a group of countermeasures that have shown great effectiveness in improving safety. Safety practitioners are encouraged to consider this set of countermeasures that are research-proven, but not widely applied on a national basis.

Click on one of the nine countermeasures below for more information and a downloadable fact sheet. Each fact sheet provides more detailed descriptions, related research studies, and evaluations of each of these countermeasures. Further information on each countermeasure can also be found at the Crash Modification Factors Clearinghouse (http://www.cmfclearinghouse.org/).

- Roundabouts
- Corridor Access Management
- Backplates with Retroreflective Borders
- Longitudinal Rumble Strips and Stripes on Two-Lane Roads
- Enhanced Delineation and Friction for Horizontal Curves
- Safety Edge
- Medians and Pedestrian Crossing Islands
- Pedestrian Hybrid Beacon
- Road Diet

http://safety.fhwa.dot.gov/provencountermeasures/
Pedestrian-Bicycle Focus Cities/States

- Los Angeles
- Chicago
- Houston
- Phoenix
- New York City
- San Antonio
- Dallas
- Fort Worth
- Philadelphia
- Detroit
- Austin
- Miami
- Jacksonville
- Fresno
- Baton Rouge
- San Francisco
- San Diego
- Charlotte
- Indianapolis
- Tucson
- Tampa
- Fort Lauderdale
- St. Petersburg
- Newark
- St. Louis
- Atlanta
- San Jose
- Bakersfield
- Santa Ana
- San Diego
- Bakersfield
- Los Angeles
- Santa Ana

Phasing out: DC, Kentucky, Puerto Rico, Oklahoma

- 16 Focus States (3 new)
- 9 New Focus Cities
- 25 Continuing Focus Cities
Capacity Building
Themes

- Connect Networks
- Improve Safety
- Increase Activity
- Promote Equity

Policy
Capacity Building and Training
Data
Research
Chapter 4  TRAFFIC MONITORING FOR NON-MOTORIZED TRAFFIC

4.1 INTRODUCTION

This is the first edition of the Traffic Monitoring guide to include information on monitoring pedestrians, bicyclists, and other non-motorized road and trail users. Even though both of these modes preceded the automobile, the monitoring of non-motorized traffic has not been systematic or widespread in the U.S. and, even today, is not nearly as comprehensive as motorized traffic monitoring.

This chapter provides basic guidance intended to improve the state-of-the-practices in non-motorized traffic volume monitoring (other attributes like origin-destination, gender, and helmet use are not addressed in this Guide). In many cases, however, this guidance is limited because the systematic monitoring of pedestrians and bicyclists is still an emerging area that requires more research. Limited information is known about the best and most cost-effective ways to automatically collect non-motorized traffic data, especially because non-motorized traffic levels are typically much lower and more variable than motorized traffic levels.

One of the key differences in state-of-the-practice between non-motorized and motorized traffic monitoring is the scale of data collection. Most non-motorized data collection programs have a much smaller number of monitoring locations, and these limited location samples may not accurately represent the entire geographic area of interest. In many cases, the non-motorized monitoring locations have been chosen based on highest usage levels or strategic areas of facility improvement.

Given limited data collection resources and specific data uses, these site selection criteria may be appropriate. However, one should recognize that these limited location samples might represent a biased estimate of overall usage and trends for a city or State. More research is needed to identify statistically representative site selection criteria.

A second key difference is that non-motorized traffic will typically have higher use on lower functional class roads and streets as well as shared use paths and pedestrian facilities, simply because of the more pleasant environment of lower speeds and volumes of motorized traffic. Conversely, motorized traffic monitoring focuses on higher functional class roads that provide the quickest and most direct route for motorized traffic.

A third key difference in current practice is a tendency to use very short duration counts (i.e., as short as 2 hours) for non-motorized traffic monitoring, primarily because of the perceived difficulty of automatically counting pedestrians and bicyclists (as well as the desire to collect gender and bicycle helmet use). Although this practice is not prohibited by the Guide, data users should recognize that these very short-duration counts can introduce significant overall error when non-motorized traffic use is low and inherently variable. If short-duration non-motorized counts are to be used, then it is essential that longer counts be taken to establish hourly patterns and a statistical basis for extrapolation of these counts. This issue will be addressed in more detail in Sections 4.4 and 4.5.

Finally, a fourth key difference is that technologies for counting pedestrians and bicyclists still are evolving and error rates associated with different technologies are not well known. All methods for counting both motorized and non-motorized traffic have error rates and provide estimates that only approximate actual use; however, the error rates for technologies used to count motorized traffic generally are better understood, as are the procedures for managing or reducing these errors.

4.2 NON-MOTORIZED TRAFFIC MONITORING TECHNOLOGY

This section describes the various technologies that are commonly used to count non-motorized (i.e., bicyclists and pedestrians) traffic volumes at fixed locations. The discussion differentiates between those technologies best suited to count bicyclists versus those best suited to count pedestrians. The
Bicycle-Pedestrian Count Technology Pilot Project

- Providence Metropolitan Planning Organization (Providence, Rhode Island)
- Greater Buffalo-Niagara Regional Transportation Council (Buffalo, New York)
- Richmond Regional Transportation Planning Organization (Richmond, Virginia)
- Puerto Rico Metropolitan Planning Organization (San Juan, Puerto Rico)
- Palm Beach Metropolitan Planning Organization (Palm Beach County, Florida)
- Fresno Council of Governments (Fresno, California)
- Indianapolis Metropolitan Planning Organization (Indianapolis, Indiana)
- Ohio-Kentucky-Indiana Regional Council of Governments (Cincinnati, Ohio)
- Southeastern Wisconsin Regional Planning Commission (Milwaukee, Wisconsin)
- Memphis Metropolitan Planning Organization (Memphis, Tennessee)
# Guidebook for Evaluating, Establishing, and Tracking Pedestrian and Bicycle Performance Measures

## Goals
- Economic
- Equity
- Environment
- Health
- Livability
- Safety

## Application
- Project Prioritization
- Alternatives Comparison
- Scenario
- Benchmarking
- Standard

## Geography
- Local
- Regional
- State
Guidebook for Evaluating, Establishing, and Tracking Pedestrian and Bicycle Performance Measures

Goals

- Economic
- Equity
- Environment
- **Health**
- Livability
- Connectivity
- Safety

Sample Measures

- Population served by walk/bike/transit
- Mode split
- VMT impacts
- Density of destinations
- Volume
- Access to parks
- Miles of bicycle facilities and sidewalks
- Crosswalk spacing
- Number and rate of crashes
- Perception of safety
MEASURE 13

PEDESTRIAN & BICYCLE VOLUME

GOALS
- Health
- Environment

CONTEXT
(PREFERRED OR POSSIBLE FOR EACH)
PERFORMANCE MEASURE APPLICATION
(HOW COULD THIS MEASURE BE USED?)
- Project Prioritization
- Benchmarking
- Scenario Evaluation (possible)
- Alternatives Comparison (possible)

GEOGRAPHY
(WHAT SCALE OR LEVEL IS APPROPRIATE?)
- State
- Region
- Local

LAND USE CONTEXT
(WHAT SETTING WOULD THIS APPLY TO?)
- Urban
- Suburban
- Rural (Possible)

DATA NEEDS & SOURCES
- Bicycle and pedestrian volume counts
- Classification data (e.g., gender, race, terrain used)

PEERS TRACKING THE MEASURE
- Arlington, Virginia uses 32 permanent and 6 portable count stations to collect volume data at locations throughout the county.
- Delaware Valley Regional Planning Commission collects counts throughout the region using automated equipment and makes this available to the public via an interactive website.
- North Carolina DOT has a nonmotorized count pilot program that utilizes automated equipment to collect short- and long-duration counts and representative locations throughout the pilot region.
- Washington State DOT collects manual counts throughout the state each fall by providing a network of city staff, bicycle club members, and other volunteers to collect counts using a consistent process.

HOW TO TRACK
Pedestrian and bicyclist volumes can be used in a number of ways including establishing baselines and measuring usage, evaluating before-and-after data on projects, multimodal modeling, and project prioritization and safety analyses. Depending on your data goals, pedestrian and bicyclist volumes can be collected in a number of ways, from short-duration counts that are counted by a person over a few hours or the course of a day, to longer-duration counts collected by automated equipment. Due to the lower variability inherent in counts involving lower volumes and that pedestrians and bicyclists are more susceptible to the effects of weather, a combination of long- and short-duration counts can provide geographic coverage and seasonal insights to more accurately apply counts. The journey to work data provided by the American Community Survey can provide additional insight on how people are travelling.

NOTES
Collecting volume data can be time consuming, complex, and expensive, and the guidance on counting and formatting volume data can be unclear for many situations. Advances in both counting technology and improved guidance will help move towards more consistency in pedestrian and bicycle volume counts.
Themes

- Connect Networks
- Improve Safety
- Increase Activity
- Promote Equity

Policy
Capacity Building and Training
Data
Research
LADDERS OF OPPORTUNITY

Revitalize — Connect — Work —

U.S. Department of Transportation

“Through transportation, we can help ensure that the rungs on the ladder of opportunity aren’t so far apart—and that the American dream is still within reach for those who are willing to work for it.” — Secretary Anthony Foxx

Transportation plays a critical role in connecting Americans and communities to economic opportunity. Access to reliable, safe, and affordable transportation for all Americans is central to Secretary Foxx’s agenda. Transportation infrastructure choices made at the Federal, State, and local levels can strengthen communities, create pathways to jobs, and improve the quality of life for all Americans.

The Ladders of Opportunity agenda advances our mission as a Department and ensures a better quality of life for all.

- **REVITALIZE**: Transportation infrastructure can have a dramatic impact on neighborhoods and regions. It can provide support for healthy main street centers and direct more equitable business and residential developments designed to bring everyone closer to opportunities.

- **CONNECT**: A multimodal transportation system provides people with safe, reliable and affordable connections to employment, education, services, and other opportunities. Planning transportation networks that provide low-cost, reliable options enables more people to realize their economic potential and improves businesses’ access to a diverse workforce.

- **WORK**: Transportation projects create pathways to jobs. Through thoughtful workforce programs — built in partnership with industry, and with a focus on disadvantaged businesses — we can help more underserved people find and keep good jobs in the transportation sector.

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**ECONOMIC OPPORTUNITY**

*Transportation and economic opportunity are deeply interconnected:*

**Transportation Costs**

Transportation is second to housing as the largest expense for American households, costing more than food, clothing, and health care.

**Transportation Options**

Greater transportation options can help improve public health and safety, lower infrastructure costs, reduce vehicle miles traveled, and improve air and water quality, among many other benefits.

**Transportation Access**

Research shows that access to opportunity depends on transportation. Lower income Americans rely on walking and bicycling to reach public transportation and jobs, yet too often live in neighborhoods with limited sidewalks and safe bikeways.
The Department of Transportation (DOT) is advancing the following Ladders’ initiatives, as part of the Secretary’s vision to create opportunity for all:

TIGER (Transportation Investment Generating Economic Recovery) Grants provide a unique opportunity for the DOT to invest in road, rail, transit, bicycle/pedestrian, port, and multimodal projects that achieve critical national objectives. Secretary Foxx has prioritized projects that strengthen access to opportunities through transportation improvements and promote Ladders of Opportunity, to the extent permitted by law.

Connectivity Measures encourage State and local decision-makers to consider transportation investments and policies that provide people safe and convenient access to jobs, education, health care, and other essential services to improve their quality of life.

Transportation and Health Tools help transportation decision-makers understand how transportation can help achieve public health goals, like safety, physical activity, and air quality.

Local Hire Contracting Initiative explores new ways to make it easier for states and cities to hire local residents for transportation projects. The pilot program will focus on local or other geographic labor hiring preferences, economic-based labor hiring preferences (i.e., low-income workers), and labor hiring preferences for veterans.

LaddersTEP Transportation Empowerment Pilot provides technical assistance to local cities on game-changing community revitalization projects related to major infrastructure investments.

Location Affordability Portal provides estimates of household transportation and housing costs at the neighborhood level to help consumers, policymakers, and developers make more informed decisions about where to live, work, and invest.

Safer People, Safer Streets Initiative improves the safety of Americans walking, bike, and/or taking transit to important destinations including work, job training, school, healthcare and community services.
## Strategic Agenda for Pedestrian and Bicycle Transportation

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<td>Improve Safety</td>
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<td>Promote Equity</td>
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Take Home Messages

1. Design details matter
2. Data informs design
3. Comfort matters
4. Design for the behavior you want to see
5. Prioritize seamless and efficient movement
6. Focus on connected networks
Next Steps

1. Continue to engage with Mayors’ Challenge cities
2. Facilitate assessment follow-up events
3. Implement 2016 FHWA Strategic Implementation Plan
4. Publish additional resources
5. Finalize Strategic Agenda
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