

Chapter 41

PEDESTRIAN AND BICYCLE FACILITIES

MDT ENVIRONMENTAL MANUAL

October 2010

Table of Contents

| <u>Section</u> | <u>Page</u> |
|--|-------------|
| 41.1 OVERVIEW..... | 41-1 |
| 41.2 LAWS, REGULATIONS AND GUIDANCE..... | 41-2 |
| 41.2.1 23 USC 217(g) “Bicycle Transportation and Pedestrian Walkways; Planning and Design” | 41-2 |
| 41.2.2 <i>Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users</i> (SAFETEA-LU), Section 1404 – Safe Routes to School Program..... | 41-2 |
| 41.2.3 23 USC 139 “Efficient Environmental Reviews for Project Decision-Making” | 41-2 |
| 41.2.4 23 CFR 450 “Planning Assistance and Standards” | 41-3 |
| 41.2.5 23 CFR 652 “Pedestrian and Bicycle Accommodations and Projects”..... | 41-3 |
| 41.2.6 28 CFR 36 “Appendix A to Part 36 - Standards for Accessible Design”... | 41-3 |
| 41.2.7 36 CFR 1191 “ <i>Americans with Disabilities Act</i> (ADA) Accessibility Guidelines for Buildings and Facilities; <i>Architectural Barriers Act</i> (ABA) Accessibility Guidelines” | 41-3 |
| 41.2.8 49 CFR 37 “Transportation Services for Individuals with Disabilities (ADA)”..... | 41-4 |
| 41.2.9 Revised Draft <i>Guidelines for Accessible Public Rights-of-Way</i> | 41-4 |
| 41.2.10 MCA 60-3-301 through 304 | 41-4 |
| 41.2.11 Uniform Federal Accessibility Standards (UFAS)..... | 41-4 |
| 41.2.12 ADA Best Practices Tool Kit for State and Local Governments | 41-5 |
| 41.2.13 <i>Designing Sidewalks and Trails for Access, Part I of II: Review of Existing Guidelines and Practices</i> | 41-5 |
| 41.2.14 <i>Designing Sidewalks and Trails for Access, Part II of II: Best Practices Design Guide</i> | 41-5 |
| 41.2.15 FHWA Guidance – Bicycle and Pedestrian Provisions of Federal Transportation Legislation | 41-5 |
| 41.2.16 <i>Guide for the Development of Bicycle Facilities</i> , American Association of State Highway and Transportation Officials (AASHTO) | 41-5 |
| 41.2.17 <i>Guide for the Planning, Design and Operation of Pedestrian Facilities</i> , AASHTO | 41-5 |
| 41.2.18 FHWA Advisory T6640.8A..... | 41-6 |
| 41.2.19 <i>TranPlan 21</i> | 41-6 |
| 41.2.20 MDT Bicycle and Pedestrian Transportation Policy Paper..... | 41-6 |
| 41.3 PROCEDURES..... | 41-7 |
| 41.3.1 General..... | 41-7 |
| 41.3.2 Definitions..... | 41-7 |
| 41.3.3 Widened Shoulder Design Guidance | 41-9 |
| 41.3.4 Information Gathering..... | 41-9 |
| 41.3.5 Analysis and Findings..... | 41-9 |
| 41.3.6 Mitigation and Commitments | 41-11 |

List of Figures

Figure 41-1 — PEDESTRIAN/BICYCLE FACILITY ANALYSIS41-8

Chapter 41

PEDESTRIAN AND BICYCLE FACILITIES

41.1 OVERVIEW

Federal law (23 USC 217) and associated regulations (23 CFR 450 and 23 CFR 652) recognize the importance of accommodating the needs and safety of pedestrians and bicyclists in the development and implementation of transportation system plans and projects. In addition, pursuant to the *National Environmental Policy Act* and *Montana Environmental Policy Act* and associated implementing regulations, effects on pedestrians, bicyclists and the facilities that serve their needs must be identified and evaluated as a component of environmental impact analyses for proposed highway projects. This Chapter provides guidance and procedures for identifying and ensuring consideration of the effects of project alternatives on pedestrian and bicycle facilities, and the needs those facilities serve. This includes the effects of accommodation measures described for each alternative. Pedestrian and bicycle facilities are increasingly used for other non-motorized modes of travel (e.g., in-line skates, wheelchairs, skateboards). Although, the text in this Chapter refers to pedestrians, bicyclists, and pedestrian and bicycle facilities, inclusion of other non-motorized travel modes is understood.

41.2 LAWS, REGULATIONS AND GUIDANCE

41.2.1 23 USC 217(g) “Bicycle Transportation and Pedestrian Walkways; Planning and Design”

This section of the *United States Code* (USC) includes the following requirements:

Bicyclists and pedestrians shall be given due consideration in the comprehensive transportation plans developed by each metropolitan planning organization and State. ... Bicycle transportation facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities, except where bicycle and pedestrian use are not permitted.

Transportation plans and projects shall provide due consideration for safety and contiguous routes for bicyclists and pedestrians. Safety considerations shall include the installation, where appropriate and maintenance of audible traffic signals and audible signs at street crossings.

41.2.2 Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), Section 1404 – Safe Routes to School Program

This provision of SAFETEA-LU requires the Secretary of the US Department of Transportation to establish and carry out a safe routes to school program for the benefit of children in primary and middle schools. The purposes of the program include:

- enable and encourage children, including those with disabilities, to walk and bicycle to school;
- make bicycling and walking to school a safer and more appealing transportation alternative; and
- facilitate the planning, development and implementation of projects and activities to improve safety and reduce traffic, fuel consumption and air pollution in the vicinity of schools.

41.2.3 23 USC 139 “Efficient Environmental Reviews for Project Decision-Making”

This part of the USC requires specific consultation measures for projects involving preparation of an environmental impact statement and for environmental assessments being prepared in accordance with the FHWA “SAFETEA-LU Environmental Review Process Final Guidance”. At appropriate times during the study process, the lead agency or agencies for the project must collaborate with agencies serving as participating agencies to determine the methodologies to be used and the level of detail required for assessing impacts, including pedestrian and bicycle facility impacts. See [Chapter 11 “Preparing Environmental Documentation,”](#) [Chapter 13 “Environmental Assessment/FONSI”](#) and [Chapter 14 “Environmental Impact Statement/ROD”](#) for further guidance on this requirement.

41.2.4 23 CFR 450 “Planning Assistance and Standards”

This part of the *Code of Federal Regulations* (CFR) includes requirements for development of transportation plans and improvement programs that facilitate the safe and efficient management and operation of transportation systems that will serve the mobility needs of people, including accessible pedestrian walkways and bicycle transportation facilities.

41.2.5 23 CFR 652 “Pedestrian and Bicycle Accommodations and Projects”

This part of the CFR provides policies and procedures relating to the provisions of pedestrian and bicycle accommodations on Federal-aid projects and Federal participation in the cost of these accommodations. In accordance with these regulations, the safe accommodation of pedestrians and bicyclists should be given full consideration during the development and construction of Federal-aid projects. Key requirements of the policies in this part include the following:

- the special needs of the elderly and persons with disabilities must be considered in all Federal-aid projects that include pedestrian facilities;
- where current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility;
- on highways without full control of access where a bridge deck is being replaced or rehabilitated, and where bicycles are permitted to operate at each end, the bridge must be reconstructed so bicycles can be safely accommodated, when it can be done at a reasonable cost; and
- consultation with local groups of organized bicyclists is encouraged in the development of bicycle projects.

41.2.6 28 CFR 36 “Appendix A to Part 36 - Standards for Accessible Design”

This part of the CFR contains US Department of Justice *ADA Accessibility Guidelines for Buildings and Facilities*. The *Guidelines* address requirements for accessibility to places of public accommodation and commercial facilities by individuals with disabilities. These *Guidelines* are to be applied during the design, construction and alteration of such buildings and facilities to the extent required by regulations issued by Federal agencies, including the US Department of Justice, under the *Americans with Disabilities Act* of 1990.

41.2.7 36 CFR 1191 “Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines”

This part of the CFR contains scoping and technical requirements for accessibility to sites, facilities, buildings and elements by individuals with disabilities. The requirements are applied during the design, construction, additions to and alterations of sites, facilities, buildings and

elements to the extent required by regulations issued by Federal agencies under the *Americans with Disabilities Act* of 1990.

41.2.8 49 CFR 37 “Transportation Services for Individuals with Disabilities (ADA)”

This part of the CFR implements the transportation and related provisions of Titles II and III of the *Americans with Disabilities Act* of 1990. Among its many subparts, it includes provisions addressing “Standards for Accessible Transportation Facilities,” “Construction of Transportation Facilities by Public Entities” and “Alteration of Transportation Facilities by Public Entities.”

41.2.9 Revised Draft Guidelines for Accessible Public Rights-of-Way

The US Access Board plans to undertake rulemaking to implement these draft *Guidelines* that are available on the Access Board website. These *Guidelines*, published November 23, 2005, will be in addition to the ADA and ABA accessibility guidelines in 36 CFR 1191. The intent of the new *Guidelines* will be to ensure that access for persons with disabilities is provided wherever a pedestrian way is newly built or altered, and that the same degree of convenience, connection and safety afforded the public generally is available to pedestrians with disabilities. The *Guidelines* would not require alterations to existing public rights-of-way, but would apply where a pedestrian route or facility is altered as part of a planned project to improve existing public rights-of-way. (In a memorandum dated August 17, 2010, MDT adopts these *Guidelines* as the official guidance for addressing accessibility in the design of MDT transportation projects.)

41.2.10 MCA 60-3-301 through 304

These parts of the *Montana Code Annotated* (MCA) codify the provisions of the *Montana Footpath and Bicycle Trail Act* of 1975 and provide the following:

- definition of a “bicycle trail” (i.e., a publicly owned and maintained lane or way designated and signed for use as a bicycle route);
- authority for who can establish footpaths and bicycle trails and brief criteria on where they may and may not be established; and
- the role of MDT to recommend construction standards for footpaths and bicycle trails, and to provide a uniform system of signing footpaths and bicycle trails. This signing will apply to paths and trails under the jurisdiction of the transportation commission and cities and counties.

41.2.11 Uniform Federal Accessibility Standards (UFAS)

UFAS, available on the US Access Board website, sets standards for facility accessibility by persons with physical disabilities for Federal and Federally-funded facilities. These standards are to be applied during the design, construction and alteration of buildings and facilities to the extent required by the *Architectural Barriers Act* of 1968, as amended.

41.2.12 ADA Best Practices Tool Kit for State and Local Governments

The Tool Kit, available via the US Department of Justice ADA webpage, is designed to teach State and local government officials how to identify and fix problems that prevent people with disabilities from gaining equal access to State and local government programs, services and activities. The Tool Kit also teaches State and local officials how to conduct accessibility surveys of their buildings and facilities to identify and remove architectural barriers to access.

41.2.13 Designing Sidewalks and Trails for Access, Part I of II: Review of Existing Guidelines and Practices

This July 1999 publication, available through the FHWA webpage, present the results of a study sponsored by FHWA for review of guidelines and practices for designing sidewalks and trails for access, including persons with disabilities. The information in the report provides the foundation for development of a best practices design guide; see [Section 41.2.14](#).

41.2.14 Designing Sidewalks and Trails for Access, Part II of II: Best Practices Design Guide

This September 2001 *Guide*, available through the FHWA webpage, is the second part of a two-phase project focused on designing sidewalks and trails for access. The *Guide* was created to provide planners, designers and transportation engineers with a better understanding of how sidewalks and trails should be developed to promote pedestrian access for all users, including people with disabilities.

41.2.15 FHWA Guidance – Bicycle and Pedestrian Provisions of Federal Transportation Legislation

This guidance, updated April 4, 2007, discusses Federal transportation policy for increasing non-motorized transportation, improving conditions for bicycling and walking and increasing the safety of the two modes. It also provides information on funding, planning, streamlining procedures, project selection and design criteria for bicycle and pedestrian facility projects.

41.2.16 Guide for the Development of Bicycle Facilities, American Association of State Highway and Transportation Officials (AASHTO)

This 1999 *Guide* provides information to help accommodate bicycle traffic in most riding environments. It is intended to provide sound guidelines that will be valuable in attaining good design sensitive to the needs of both bicycles and other highway users.

41.2.17 Guide for the Planning, Design and Operation of Pedestrian Facilities, AASHTO

This 2004 *Guide* provides information on the planning, design and operation of pedestrian facilities along streets and highways. Specifically, the *Guide* focuses on identifying effective measures for accommodating pedestrians on public rights-of-way. Appropriate methods for

accommodating pedestrians, which vary among roadway and facility types, are described in this *Guide*.

41.2.18 FHWA Advisory T6640.8A

The FHWA Technical Advisory T 6640.8A, dated October 30, 1987, provides guidance for considerations relating to pedestrians and bicyclists. This guidance can be found on the FHWA website.

41.2.19 TranPlan 21

Montana's long-range transportation plan, *TranPlan 21*, which was adopted in 1995, with an update completed in 2002, identified key goals for bicycle and pedestrian transportation. One of these goals is to continue to improve bicycle and pedestrian facilities and institutionalize these modes of travel in Montana. Another goal is to target bicycle and pedestrian improvements based upon current use, anticipated use and in coordination with local planning. In early 2008, MDT completed a limited amendment of *TranPlan 21*.

41.2.20 MDT Bicycle and Pedestrian Transportation Policy Paper

This policy, available on the MDT website via the links for "Publications" and "Brochures/Reports/Studies," documents the MDT *TranPlan 21* policy goals and actions for bicycle and pedestrian transportation. The policy was amended in 2007.

41.3 PROCEDURES

41.3.1 General

Planning for bicycle and pedestrian facilities begins in the scoping phase and is fully integrated throughout the highway project development process to result in safe and effective accommodations in the completed project. Pedestrian and bike facility choices must be coordinated and integrated with existing or planned nearby bikeways and pedestrian facilities to ensure optimum safety and cost-effectiveness. Coordination with local units of government is required.

The following sections of the *MDT Road Design Manual* provide guidance, policy and procedures on topics relating to pedestrian and bicycle facilities:

- Section 11.2.2 “Shoulders,”
- Section 11.2.7 “Sidewalks,”
- Section 11.2.8 “Paved Walkways,” and
- Section 18.2 “Bikeways.”

Figure 41-1 provides a flowchart of recommended procedures for analyzing impacts to pedestrian and bicycle facilities.

41.3.2 Definitions

The following are key terms for bicycle and pedestrian facilities:

1. **Bikeway**. Any road, path or way, which in some manner, is specifically designated as being open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or will be shared with other transportation modes.
2. **Widened Shoulder**. Any roadway upon which a bicycle lane is not designated and that may be legally used by bicycles regardless of whether such facility is specifically designated as a bikeway.
3. **Bicycle Path**. A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Bicycle paths may assume different forms, as conditions warrant. They may be two-direction, multilane facilities or, where the path would parallel a roadway with limited right-of-way, a single lane on both sides of the road.
4. **Bicycle Lane**. A portion of a roadway that has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists. It is distinguished from the travel portion of the roadway by a physical or symbolic barrier. Bicycle lanes may also assume varying forms but are typically included in one of the following categories:
 - bicycle lane between parking lane and travel lane; or
 - bicycle lane between roadway edge and travel lane, where parking is prohibited.

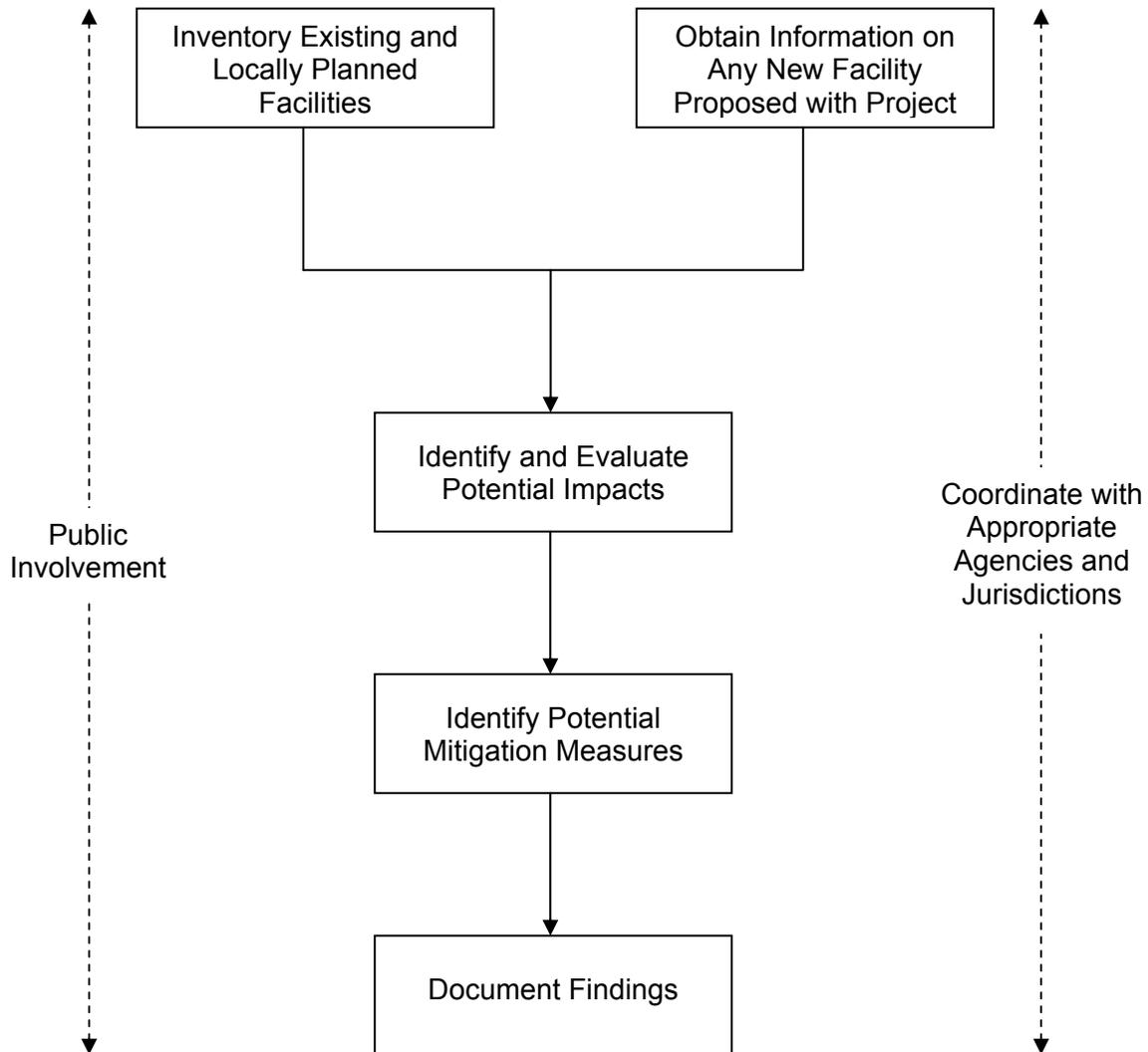


Figure 41-1 — PEDESTRIAN/BICYCLE FACILITY ANALYSIS

5. Bicycle Route System. A system of bikeways designated by the jurisdiction having authority with appropriate directional and informational route markers, with or without specific bicycle route numbers. Bike routes should establish a continuous routing, but may be a combination of any and all types of bikeways.
6. Shared Roadway. A roadway that is open to both bicycle and motor vehicle travel. This may be an existing roadway, street with wide curb lanes or road with paved shoulders.
7. Shared-Use Path. A path physically separated from motorized vehicular traffic by an open space or barrier, and either within the highway right-of-way or within an independent right-of-way.
8. Sidewalk. The portion of a street or highway right-of-way designed for preferential or exclusive use by pedestrians.

9. Trail. A path of travel for recreation and/or transportation within a park, natural environment or designated corridor that is not classified as a highway, road or street.

See the *AASHTO Guide for the Development of Bicycle Facilities* and the *AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities* for additional information on bicycle and pedestrian facilities.

41.3.3 Widened Shoulder Design Guidance

According to the *MDT Road Design Manual*, the desirable width of a widened shoulder should vary with traffic volumes, percentage of trucks and running speeds on a route. The *AASHTO Guide for the Development of Bicycle Facilities* recommends that paved shoulders should be at least 4 ft (1.2 m) wide to accommodate bicycle travel. However, where 4 ft (1.2 m) widths cannot be achieved, any additional shoulder width is better than none at all. The measurement of usable shoulder width should not include the width of a gutter pan, unless the pan width is 4 ft (1.2 m) or greater.

A shoulder width of 5 ft (1.5 m) is recommended from the face of guardrail, curb or other roadside barriers. It is desirable to increase the width of shoulders where higher bicycle usage is expected. Additional shoulder width is also desirable if motor vehicle speeds exceed 50 mph (80 km/h), or the percentage of trucks, buses and recreational vehicles is high or if static obstructions exist at the right side of the roadway. In general, AASHTO's recommendations for shoulder width, as described in *AASHTO A Policy on Geometric Design of Highways and Streets*, are the best guide for bicycles because wider shoulders are recommended on heavily traveled and high-speed roads and those carrying a large numbers of trucks. Shoulders must be paved in order to be usable by bicyclists.

41.3.4 Information Gathering

Begin the pedestrian/bicycle facility analysis by compiling an inventory of existing non-accessible and accessible pedestrian/bicycle facilities in the affected area of the project. Determine the locations of existing sidewalks, pedestrian bridges, footpaths, bike routes and designated trails. These facilities are identified through local maps, aerial photos, on-site reviews and discussions with the MDT bicycle coordinator, local professionals and users (e.g., bicycle or alternative transit groups). Next, consult with local officials (e.g., city and/or county recreational planners) and/or review available planning documents for the area (e.g., specific pedestrian and bicycle plans, trail plans, recreation plans, land use plans, transportation plans, other similar plans) to identify any locally proposed pedestrian/bicycle facilities. Coordinate with the project design team to obtain information on any measures planned for incorporation in the proposed project to accommodate pedestrians and/or bicyclists (e.g., type of facility, fit with project alternatives, basis for inclusion). As necessary, prepare maps showing existing and planned pedestrian and bicycle facilities and their relationship to the project alternatives.

41.3.5 Analysis and Findings

Using maps showing existing and planned pedestrian and bicycle facilities, preliminary design documents and coordination with the design team, identify and evaluate any potential impacts

that project alternatives under consideration will have on existing pedestrian and/or bicycle facilities. Evaluate the consistency of the project alternatives with local or regional plans that include provisions for pedestrian and/or bicycle facilities. Factors for consideration include actual physical destruction or relocation of facilities, temporary disruption of facilities during construction, impacts to pedestrian access to storefronts or other services and pedestrian safety. In evaluating potential impacts, consider the typical number of users of the affected facility on a daily basis and the travel modes used (e.g., in-line skates, bicycles). Also, evaluate whether a project alternative will sever an existing major route for non-motorized transportation traffic. If so, in accordance with 23 USC 109(n), the project will need to provide a reasonable alternative route or demonstrate that a route exists.

If the project alternatives will impact an existing or planned pedestrian or bicycle facility, coordinate with the design team to evaluate measures for avoiding or mitigating adverse impacts. Also, seek input from the municipality or agency with jurisdiction and the public in developing alternatives and/or mitigation measures for the project's pedestrian/bicycle facility impacts.

Note that, if an affected pedestrian or bicycle facility is on land that is publicly owned, or the facility itself is publicly owned, and it functions for significant public recreational purposes, use of land from the facility is subject to compliance with Section 4(f). Section 4(f) is discussed in further detail in [Chapter 15 "Section 4\(f\) Evaluations"](#).

Based on the results of the pedestrian/bicycle facilities analysis, document the following findings:

- Current and anticipated use of affected bicycle/pedestrian facility or facilities.
- Special user needs of facilities and features that principally serve elderly/disabled communities.
- Potential impacts of the project alternatives on the facility or facilities.
- Proposed measures to avoid or reduce adverse impacts to the facility or facilities; see [Section 41.3.6](#).
- Results of assessment of potential for severing an existing major route for non-motorized transportation traffic and, if applicable, provision or existence of a reasonable alternative route.
- Where new pedestrian/bicycle facilities are proposed as part of the project, the basis for providing the new facilities and the proposed facilities' design, aesthetics, safety and functional relationship with the adjoining roadway(s).
- Public involvement efforts concerning pedestrian and bicycle facilities.

The PDE uses information from the pedestrian and bicycle facilities analysis to prepare the environmental documentation for the project. See [Chapter 11 "Preparing Environmental Documentation,"](#) [Chapter 12 "Categorical Exclusion,"](#) [Chapter 13 "Environmental Assessment/FONSI"](#) and [Chapter 14 "Environmental Impact Statement/ROD"](#) for guidance on

the presentation of the pedestrian and bicycle facilities information in the environmental documentation.

41.3.6 Mitigation and Commitments

Where impacts are anticipated to be temporary, mitigation measures may include providing pedestrian/bicycle detours, posting signage to make users aware of construction and using fencing or other barriers to close off unsafe areas. For longer-term or permanent impacts, mitigation measures may include more substantial changes in the project (e.g., changing the project alignment, providing overpass or underpass structures). In determining appropriate mitigation measures and commitments for addressing anticipated pedestrian and bicycle facility impacts, give careful consideration to the results of public involvement and agency coordination on these issues.

