

Regulatory Assessment of Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way

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Executive Summary

This report assesses the potential costs and benefits of proposed accessibility guidelines issued by the Access Board for pedestrian facilities in the public right-of-way. The report also analyzes the potential impacts of the proposed guidelines on small governmental jurisdictions with populations less than 50,000.

The Access Board is responsible for developing accessibility guidelines for the design, construction, and alteration of facilities to ensure that the facilities are readily accessible to and usable by individuals with disabilities. The Access Board's guidelines play an important part in the implementation of three laws that require newly constructed and altered facilities to be accessible to individuals with disabilities: the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and the Architectural Barriers Act. These laws require other federal agencies to issue regulations which include accessibility standards for the design, construction, and alteration of facilities that are consistent with the Access Board's guidelines. The regulations issued by the other federal agencies adopt, with or without additions and modifications, the Access Board's guidelines as accessibility standards and establish the effective dates for compliance with the accessibility standards.

In the Americans with Disabilities Act, Congress directed the Access Board to issue accessibility guidelines to eliminate the discriminatory effects of architectural, transportation, and communication barriers experienced by individuals with disabilities. The Access Board's current accessibility guidelines were developed primarily for building and facilities on sites. The proposed guidelines are developed specifically for pedestrian facilities in the public right-of-way, and address conditions and constraints that exist in the public right-of-way. The guidelines ensure that sidewalks, pedestrian street crossings, pedestrian signals, and other facilities for pedestrian circulation and use constructed or altered in the public right-of-way by state and local governmental units are readily accessible to and usable by pedestrians with disabilities. For ease of reference, these state and local governmental units are referred to as "state and local transportation departments" in this report but may go by different names (e.g., public works departments, or highway or streets departments) in their respective jurisdictions.

All state transportation departments and most local transportation departments maintain design manuals and standard drawings for improvements in the public right-of-way. The local transportation department design manuals and standard drawings are generally consistent with their state transportation department design manuals and standard drawings. State and local transportation departments use publications issued by the American Association of State and Highway Transportation Officials (AASHTO) in their design manuals and standard drawings, including the "Policy on Geometric Design of Highways and Streets" (2004) (commonly referred to as the "AASHTO Green Book") and the "Guide for the Planning, Design, and Operation of Pedestrian Facilities" (2004) which incorporate accessibility in the design of sidewalks and pedestrian street crossings. The Federal Highway Administration as part of its stewardship and oversight responsibilities has also worked with state transportation departments to incorporate accessibility in their design manuals and

standards drawings. The Federal Highway Administration has issued guidance that the accessibility standards in the Department of Justice regulations implementing Title II of the Americans with Disabilities Act and the Department of Transportation regulations implementing Section 504 of the Rehabilitation Act are to be used to the extent feasible for the design of pedestrian facilities in the public right-of-way until new accessibility standards are adopted for these facilities.

In the absence of the proposed guidelines, the regulatory assessment assumes that state and local transportation departments will use the 2010 Standards in the Department of Justice regulations implementing Title II of the Americans with Disabilities Act ("DOJ 2010 Standards") to the extent feasible when designing, constructing, or altering pedestrian facilities in the public right-of-way, consistent with the guidance issued by the Federal Highway Administration, as well as other applicable standards and industry practices. An analysis of the proposed guidelines compared to the DOJ 2010 Standards, other applicable standards, and industry practices is included in the appendix to the regulatory assessment. The analysis identified four requirements in the proposed guidelines that will have more than minimal impacts on state and local transportation departments. The factors used to identify whether the requirements in the proposed guidelines will have more than minimal impacts are discussed in this report under the Baseline. The four requirements in the proposed guidelines that will have more than minimal impacts on state and local transportation departments are summarized in the table below, along with a description of the governmental units affected by proposed requirements and questions in the preamble to the proposed guidelines that seek additional information on the governmental units affected.

Requirements in Proposed Guidelines That Will Have More Than Minimal Impacts on State and Local Transportation Departments

Requirement: Detectable warning surfaces required on newly constructed and altered curb ramps and blended transitions at pedestrian street crossings (R208.1 and R305) Will affect state and local transportation departments that do not currently provide detectable warning surfaces on curb ramps

Governmental Units Affected: All state transportation departments currently specify detectable warning surfaces on curb ramps in their standard drawings; most local transportation departments maintain standard drawings that are consistent with standard drawings maintained by their state transportation departments

Questions 4, 5, and 6 in preamble seek information on state and local transportation departments that do not currently provide detectable warning surfaces on curb ramps

Requirement: Accessible pedestrian signals and pushbuttons required when pedestrian signals newly installed or replaced at signalized intersections (R209)

Governmental Units Affected: Will affect state and local transportation departments that do not currently provide accessible pedestrian signals and pedestrian pushbuttons when pedestrian signals are newly installed or replaced at signalized intersections

Some state and local transportation departments currently provide accessible pedestrian signals and pedestrian pushbuttons when pedestrian signals are newly installed or replaced at signalized intersections; TEA-21 (23 U.S.C. 217 (g)) directed that audible traffic signals be included in transportation plans and projects where appropriate

Question 9 in preamble seeks information on state and local transportation departments that currently provide accessible pedestrian signals and pedestrian pushbuttons when pedestrian signals are newly installed or replaced at signalized intersections

Requirement: Maximum cross slope of 2 percent required on pedestrian access routes, including within pedestrian street crossings with yield or stop control (R204.3 and R302.6)

Governmental Units Affected: Will affect state and local transportation departments that construct new tabled intersections in hilly urban areas which contain pedestrian street crossings with yield or stop control

Question 14 in preamble seeks information on the current design policies and practices of state and local transportation departments with respect to tabling newly constructed intersections in hilly urban areas, particularly with respect to extending the tabling to pedestrian street crossings with yield or stop control

Requirement: Pedestrian activated signals required at roundabouts with multi-lane pedestrian crossings (R206 and R306.3.2)

Governmental Units Affected: Will affect state and local transportation departments that construct new roundabouts with multi-lane pedestrian street crossings

The Access Board entered into an interagency agreement with the Volpe National Transportation Systems Center (Volpe Center) to gather data and prepare cost estimates for the regulatory assessment. The cost estimates prepared by the Volpe Center are summarized in the table below, along with questions in the preamble to the proposed guidelines that seek additional information to refine the cost estimates.

Estimated Total Annual Costs for Requirements That Will Have More Than Minimal Impacts on State and Local Transportation Departments

Requirement:

Detectable warning surfaces required on newly constructed and altered curb ramps and blended transitions at pedestrian street crossings (R208.1 and R305)

Additional Costs Per Element or Facility Due to Requirement:

\$48 to \$240 for detectable warning materials for typical curb ramp

Question 8 in preamble seeks additional information on costs for detectable warning materials and installation of the materials on typical curb ramp

Number of Elements or Facilities Constructed or Altered on Annual Basis:

No information available

Question 7 in preamble seeks information on number of curb ramps that are constructed or altered on an annual basis in the public right-of-way

Total Annual Costs for Requirement:

No estimate provided

Total annual costs will depend on number of state and local transportation departments that do not currently provide detectable warning surfaces on curb ramps, and number of curb ramps that they construct or alter on an annual basis

Requirement:

Accessible pedestrian signals and pushbuttons required when pedestrian signals newly installed or replaced at signalized intersections (R209)

Additional Costs Per Element or Facility Due to Requirement:

\$3,600 per signalized intersection

Question 10 in preamble seeks additional information on costs for providing accessible pedestrian signals and pedestrian pushbuttons at signalized intersections

Number of Elements or Facilities Constructed or Altered on Annual Basis:

Pedestrian signals newly installed or replaced at 13,095 signalized intersections on an annual basis

Total Annual Costs for Requirement:

\$47 million

Requirement:

Maximum cross slope of 2 percent required on pedestrian access routes, including within pedestrian street crossings with yield or stop control (R204.3 and R302.6)

Additional Costs Per Element or Facility Due to Requirement:

\$60,000 per tabled intersection

Question 15 in preamble seeks additional information on costs to extend tabling of newly constructed intersections in hilly urban areas to pedestrian street crossings with yield or stop control

Number of Elements or Facilities Constructed or Altered on Annual Basis:

No information available

Question 16 in preamble seeks information on number of tabled intersections which contain pedestrian street crossings with yield or stop control that are newly constructed in hilly urban areas on an annual basis

Total Annual Costs for Requirement:

No estimate provided

Total annual costs will depend on number of tabled intersections which contain pedestrian street crossings with yield or stop control that are newly constructed in hilly urban areas on an annual basis

Requirement:

Pedestrian activated signals required at roundabouts with multi-lane pedestrian crossings (R206 and R306.3.2)

Additional Costs Per Element or Facility Due to Requirement:

\$90,000 to \$230,000 per roundabout

Question 19 in preamble seeks additional information on costs to provide pedestrian activated signals at roundabouts with multi-lane pedestrian crossings

Number of Elements or Facilities Constructed or Altered on Annual Basis:

27 new roundabouts with multi-lane pedestrian street crossings constructed on an annual basis

Total Annual Costs for Requirement:

\$2.4 million to

\$6.2 million

The Access Board will analyze the information received in response to the questions in the preamble to the proposed guidelines and revise the regulatory assessment when the final guidelines are issued.

REGULATORY ASSESSMENT OF PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY**Introduction**

The Architectural and Transportation Barriers Compliance Board (Access Board) is an independent federal agency established by section 502 of the Rehabilitation Act (29 U.S.C. 792).¹ The Access Board is responsible for developing accessibility guidelines for the design, construction, and alteration of facilities to ensure that they are readily accessible to and usable by individuals with disabilities. The Access Board has proposed accessibility guidelines for pedestrian facilities in the public right-of-way. The Access Board has prepared this regulatory assessment of the proposed guidelines pursuant to Executive Orders 12866 and 13563. The report also includes an initial regulatory flexibility analysis pursuant to the Regulatory Flexibility Act (5 U.S.C. §§601 et seq.).

Statutory and Regulatory Background

The Access Board's guidelines play an important part in the implementation of three laws that require newly constructed and altered facilities to be accessible to individuals with disabilities: the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and the Architectural Barriers Act.

Americans with Disabilities Act

The Americans with Disabilities Act (42 U.S.C. 12101 et seq.) is a federal civil rights law that prohibits discrimination against individuals with disabilities. Title II of the

Americans with Disabilities Act covers state and local governments.² The Department of Justice is responsible for issuing regulations to implement Title II of the Americans with Disabilities Act, except for the public transportation parts.³ The regulations issued by the Department of Justice include accessibility standards for the design, construction, and alteration of facilities (other than facilities used in the provision of public transportation covered by regulations issued by the Department of Transportation).⁴ The Department of Justice's accessibility standards adopt, with additions and modifications, the Access Board's current guidelines, which are discussed below under the Need for Rulemaking.⁵ See 28 CFR 35.104 and 35.151.

The Department of Transportation is responsible for issuing regulations to implement the public transportation parts of Title II of the Americans with Disabilities Act.⁶ The regulations issued by the Department of Transportation include accessibility standards for the design, construction, and alteration of facilities used in the provision of public transportation covered by the public transportation parts of Title II of the Americans with Disabilities Act. The Department of Transportation's accessibility standards adopt, with additions and modifications, the Access Board's current guidelines, which are discussed below under the Need for Rulemaking. See 49 CFR 37.9 and Appendix A to 49 CFR part 37.

The Department of Justice is responsible for overall enforcement of Title II of the Americans with Disabilities Act. The Department of Justice has designated the Department of Transportation as the federal agency responsible for investigating complaints and conducting compliance reviews "relating to programs, services, and regulatory activities relating to transportation, including highways." See 28 CFR 35.190 (b) (8).

Section 504 of the Rehabilitation Act

Section 504 of the Rehabilitation Act (29 U.S.C. 794) (hereinafter referred to as "Section 504") prohibits discrimination against individuals with disabilities under any program or activity receiving federal financial assistance. The term "program or activity" includes all the operations of a state or local government entity that receives federal financial assistance directly or indirectly from the federal government. See 29 U.S.C. 794 (b). Each federal agency that provides federal financial assistance is responsible for issuing regulations to implement Section 504 that are consistent with requirements established by the Department of Justice. See Executive Order 12250 in Appendix A to 28 CFR part 41. The Department of Justice requires facilities designed, constructed, or altered by recipients of federal financial assistance to be accessible to individuals with disabilities. See 28 CFR 41.58.

The Department of Transportation provides federal financial assistance to state and local governments for the development of transportation networks, including pedestrian facilities in the public right-of-way.⁷ The regulations issued by the Department of Transportation to implement Section 504 require facilities designed, constructed, or altered by recipients of federal financial assistance from the Department to comply with accessibility standards included in the Department's regulations implementing the public transportation parts of Title II of the Americans with Disabilities Act, or the Uniform Federal Accessibility Standards. See 49 CFR §27.3. As discussed above, the accessibility standards included in the Department of Transportation regulations implementing the public transportation parts of Title II of the Americans with Disabilities Act adopt, with additions and modifications, the Access Board's current guidelines, which are discussed below under the Need for Rulemaking. See 49 CFR 37.9 and Appendix A to 49 CFR part 37.

The Department of Transportation is responsible for investigating complaints and conducting compliance reviews under Section 504 relating to recipients of federal financial assistance from the Department. See 49 CFR 27.121 and 27.123.

Architectural Barriers Act

The Architectural Barriers Act (42 U.S.C. 4151 et seq.) requires certain facilities financed with federal funds to be accessible to individuals with disabilities. The Architectural Barriers Act covers facilities financed in whole or part by a federal grant or loan where the federal agency that provides the grant or loan is authorized to issue standards for the design, construction, or alteration of the facilities.⁸ See 42 U.S.C. 4151 (3). The General Services Administration is required to issue accessibility standards for facilities covered by the Architectural Barriers Act.⁹ See 42 U.S.C. 4156. The accessibility standards issued by the General Services Administration adopt, without any additions or modifications, the Access Board's current guidelines, which are discussed below under the Need for Rulemaking. See 41 CFR 102-76.65.

The Access Board is responsible for enforcing the Architectural Barriers Act. See 29 U.S.C 792 (b) (1) and (e).

Need for Rulemaking

This section discusses the Congressional findings in the Americans with Disabilities Act that establish the need for accessibility guidelines, the Access Board's current accessibility guidelines, and why the Access Board is proposing to issue accessibility guidelines for pedestrian facilities in the public right-of-way.

Congressional Findings of Discrimination

The Americans with Disabilities Act was enacted in 1990 by overwhelming bipartisan majorities in the House of Representatives (377 – 28) and in the Senate (91 – 6).¹⁰ Congress compiled an extensive record of the discrimination experienced by individuals with disabilities in critical areas such as employment, public accommodations, state and local government services, and transportation. Congress found that "despite some improvements such forms of discrimination against individuals with disabilities continue to be a serious and pervasive social problem." 42 U.S.C. 12101 (a) (2). Among the forms of discrimination that Congress found to be a continuing problem are "the discriminatory effects of architectural, transportation, and communication barriers." 42 U.S.C. 12101 (a) (5). Congress found that "the continuing existence of unfair and unnecessary discrimination and prejudice denies people with disabilities the opportunity to compete on an equal basis and to pursue those opportunities for which our free society is justifiably famous, and costs the United States billions of dollars in unnecessary expenses resulting from dependency and nonproductivity." 42 U.S.C. 12101 (a) (9). Congress declared that "the Nation's proper goals regarding individuals with disabilities are to ensure equality of opportunity, full participation, independent living, and economic self-sufficiency for such individuals." 42 U.S.C. 12101 (a) (8).

The purpose of the Americans with Disabilities Act is "to provide a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities" and "to provide clear, strong, and consistent, enforceable standards addressing discrimination against individuals with disabilities." 42 U.S.C. 12101 (b) (1) and (2). Congress directed the Access Board to supplement the accessibility guidelines developed earlier for the Architectural Barriers Act to include "additional requirements, consistent with this Act, to ensure that buildings, facilities, rail passenger cars, and vehicles are accessible in terms of architecture and design, transportation, and communication, to individuals with disabilities." 42 U.S.C. 12204 (b).

Current Guidelines Developed Primarily for Buildings and Facilities on Sites

The Access Board's current accessibility guidelines were issued in 2004 and are known as the Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines (hereinafter referred to as "2004 ADA and ABA Accessibility Guidelines").¹¹ 69 FR 44083 (July 23, 2004). The 2004 ADA and ABA Accessibility Guidelines revised and updated the Americans with Disabilities Act Accessibility Guidelines, which were issued by the Access Board in 1991 (hereinafter referred to as "1991 ADAAG"). 56 FR 35408 (July 26, 1991). The requirements in the 1991 ADAAG and 2004 ADA and ABA Accessibility Guidelines were developed primarily for buildings and facilities on sites.¹² Some of the requirements can be

readily applied to pedestrian facilities in the public right-of-way. However, other requirements need to be adapted for pedestrian facilities in the public right-of-way.

Proposed Guidelines Developed Specifically for Pedestrian Facilities in the Public Right-of-Way

The proposed guidelines are developed specifically for pedestrian facilities in the public right-of-way and address conditions and constraints that exist in the public right-of-way. The requirements in the proposed guidelines make allowances for typical roadway geometry and permit flexibility in alterations to existing facilities where existing physical constraints make it impractical to fully comply with new construction requirements. The proposed guidelines also include requirements for elements and facilities that exist only in the public right-of-way such as pedestrian signals and roundabouts.

Rulemaking History

The Access Board began developing accessibility guidelines for pedestrian facilities in the public right-of-way shortly after the Americans with Disabilities Act was enacted in 1990. Proposed guidelines for state and local government facilities, including pedestrian facilities in the public right-of-way, were initially issued in 1992. 57 FR 60612 (December 21, 1992). Interim guidelines were issued in 1994. 59 FR 31676 (June 20, 1994). Final guidelines were issued in 1998, but did not include requirements for pedestrian facilities in the public right-of-way because comments submitted on the proposed and interim guidelines demonstrated a need for additional research, as well as education and outreach. 63 FR 2000 (January 13, 1998).

The Access Board subsequently sponsored research on accessible pedestrian signals and pedestrian pushbuttons, detectable warning surfaces, and pedestrian facilities at roundabouts.^{[13](#)} The Access Board also produced a series of videos, a design guide, and an accessibility checklist for pedestrian facilities in the public right-of-way, and conducted training programs around the country. The Access Board coordinated its work with organizations representing state and local transportation officials and transportation industry professionals, including the American Association of State Highway and Transportation Officials, Institute of Transportation Engineers, National Committee on Uniform Traffic Control Devices, and Transportation Research Board.

The Access Board established a federal advisory committee in 1999 to recommend accessibility guidelines for pedestrian facilities in the public right-of-way. The advisory committee included representatives of state and local governments, the transportation industry, disability organizations, and other interested groups.^{[14](#)} The advisory committee provided significant sources of expertise and produced consensus recommendations for accessibility guidelines for pedestrian facilities in the public

right-of-way. The advisory committee presented its recommendations, "Building a True Community: Final Report of the Public Rights-of-Way Access Advisory Committee", to the Access Board in 2001.[15](#)

The Access Board developed draft accessibility guidelines for pedestrian facilities in the public right-of-way based on the advisory committee's recommendations, and made the draft guidelines available for public review and comment in 2002.[16](#) 67 FR 41206 (June 17, 2002). The Access Board revised the draft guidelines in 2005 and made the revised draft guidelines available for public review to facilitate the gathering of data for the regulatory assessment. 70 FR 70734 (November 23, 2005). The Access Board entered into an interagency agreement with the Volpe National Transportation Systems Center (Volpe Center) to gather data and prepare cost estimates for the regulatory assessment.[17](#)

Overview of Proposed Guidelines

The proposed guidelines apply to pedestrian facilities in the public right-of-way. The proposed guidelines define the public right-of-way to mean "public land or property, usually in interconnected corridors, that is acquired for or dedicated to transportation purposes" (see R105.5). The proposed guidelines ensure that the following facilities for pedestrian circulation and use located in the public right-of-way are readily accessible to and usable by pedestrians with disabilities:

- Sidewalks, pedestrian overpasses and underpasses, and other pedestrian circulation paths, including requirements for pedestrian access routes, alternate pedestrian access routes when pedestrian circulation paths are temporarily closed, and protruding objects along or overhanging pedestrian circulation paths;
- Pedestrian street crossings, medians, and pedestrian refuge islands, including requirements for curb ramps or blended transitions, and detectable warning surfaces;
- Pedestrian street crossings at roundabouts, including requirements for detectable edge treatments where pedestrian crossing is not intended, and pedestrian activated signals at multi-lane pedestrian street crossings;
- Pedestrian street crossings at multi-lane channelized turn lanes at roundabouts and at other signalized intersections, including requirements for pedestrian activated signals;
- Pedestrian signals, including requirements for accessible pedestrian signals and pedestrian pushbuttons;
- Transit stops and transit shelters for buses and light rail vehicles, including requirements for boarding and alighting areas at sidewalk or street level, boarding platforms, and route signs;

- Pedestrian at-grade rail crossings, including requirements for flangeway gaps;
- On-street parking that is marked or metered, and passenger loading zones;
- Pedestrian signs, including requirements for visible characters on signs and alternative requirements for audible sign systems and other technologies;
- Street furniture for pedestrian use, including drinking fountains, public toilet facilities, tables, counters, and benches; and
- Ramps, stairways, escalators, handrails, doors, doorways, and gates.

The proposed guidelines require a pedestrian access route to be provided within sidewalks and other pedestrian circulation paths, pedestrian street crossings, and pedestrian overpasses or underpasses (see R204).¹⁸ A pedestrian access route is a continuous and unobstructed path of travel provided for pedestrians with disabilities within or coinciding with a pedestrian circulation path in the public right-of-way (see R105.5). Pedestrian access routes in the public right-of-way ensure that the transportation network used by pedestrians is accessible to pedestrians with disabilities. Pedestrian access routes in the public right-of-way are analogous to accessible routes on sites in that they connect to accessible elements, spaces, and facilities in the public right-of-way, including accessible pedestrian signals and pedestrian pushbuttons, accessible street furniture, accessible transit stops and transit shelters, accessible on-street parking spaces and parking meters and parking pay stations serving those parking spaces, and accessible passenger loading zones. Pedestrian access routes in the public right-of-way also connect to accessible routes at building and facility site arrival points.¹⁹

The proposed guidelines were developed for new construction work. However, most of the improvements in the public right-of-way involve alterations to existing facilities. Where elements, spaces, or facilities are altered, each altered element, space or facility within the scope of the project is required to comply the applicable requirements for new construction (see R202.3).²⁰ The proposed guidelines permit flexibility in alterations to existing facilities. Where existing physical constraints make it impracticable for altered elements, spaces, or facilities to fully comply with the requirements for new construction, compliance is required to the extent practicable within the scope of the project (see R202.3.1). Existing physical constraints include, but are not limited to, underlying terrain, right-of-way availability, underground structures, adjacent developed facilities, drainage, or the presence of a notable natural or historic feature.

Governmental Jurisdictions Affected

The proposed guidelines will affect state and local governmental jurisdictions and, in particular, transportation, public works, and other departments that construct streets

and highways.²¹ For ease of reference, the affected governmental units are referred to as "state and local transportation departments" in this report but may go by different names in their respective jurisdictions. The number of local governmental jurisdictions affected is shown in the table below.

Local Governments	Number	Population 100,000 or More	F
Source: US Census Bureau 2002 Census of Governments available at: http://www.census.gov/prod/2002pubs/c2kbr02-1.pdf does not provide population data for the districts.			
County	3,034	473	383
Municipal	19,429	241	364
Town or Township	16,504	36	97
Total	38,967	750	844

The proposed guidelines will not affect all local governments the same. Local governments within areas classified by the US Census Bureau as urban have higher population densities and generally construct more pedestrian facilities in the public right-of-way. Local governments within areas classified by the US Census Bureau as rural have lower population densities and generally construct fewer pedestrian facilities in the public right-of-way.²²

Baseline

The proposed guidelines are compared to a baseline to assess their potential costs and benefits. The baseline is how state and local transportation departments would construct pedestrian facilities in the public right-of-way in the absence of the proposed guidelines. All state transportation departments maintain design manuals and standard drawings for improvements in the public right-of-way.²³ Most local transportation departments also maintain design manuals and standard drawings for improvements in the public right-of-way that are consistent with the design manuals and standard drawings maintained by their state transportation departments. State and local transportation departments use publications issued by the American Association of

State and Highway Transportation Officials (AASHTO) in their design manuals and standard drawings, including the "Policy on Geometric Design of Highways and Streets" (2004) (commonly referred to as the "AASHTO Green Book") and the "Guide for the Planning, Design, and Operation of Pedestrian Facilities" (2004) which incorporate accessibility in the design of sidewalks and pedestrian street crossings.²⁴ The Federal Highway Administration as part of its stewardship and oversight responsibilities has also worked with state transportation departments to incorporate accessibility in their design manuals and standards drawings. The Federal Highway Administration has issued guidance that the accessibility standards in the Department of Justice regulations implementing Title II of the Americans with Disabilities Act and the Department of Transportation regulations implementing Section 504 "are to be used to the extent feasible" for the design of pedestrian facilities in the public right-of-way until new accessibility standards are adopted for these facilities.²⁵ The Federal Highway Administration has also issued guidance that the 2005 draft of the proposed guidelines for pedestrian facilities in the public right-of-way "are the currently recommended best practices, and can be considered the state of the practice that could be followed for areas not fully addressed" in the existing accessibility standards.²⁶

In the absence of the proposed guidelines, this assessment assumes that state and local transportation departments will use the revised accessibility standards in the Department of Justice regulations implementing Title II of the Americans with Disabilities Act (hereinafter referred to as "DOJ 2010 Standards") to the extent feasible when designing, constructing, or altering pedestrian facilities in the public right-of-way, consistent with the guidance issued by the Federal Highway Administration, as well as other applicable standards and industry practices.²⁷ An analysis of the proposed guidelines compared to the DOJ 2010 Standards, other applicable standards, and industry practices is included in the appendix to this report. The analysis consists of three tables.

Table 1. Proposed Guidelines Contain Same Requirements as in DOJ 2010 Standards

Table 1 analyzes requirements in the proposed guidelines that are the same as requirements in the DOJ 2010 Standards.²⁸ The requirements in the proposed guidelines in Table 1 will have no impacts on state and local transportation departments compared to the requirements in the DOJ 2010 standards because the requirements are the same.

Table 2. Proposed Guidelines Adapt Requirements in DOJ 2010 Standards

Table 2 analyzes requirements in the proposed guidelines that adapt requirements in the DOJ 2010 Standards to allow for conditions and constraints in the public right-of-

way.²⁹ The requirements in the proposed guidelines in Table 2 do not establish greater requirements for accessibility in the public right-of-way than the requirements in the DOJ 2010 Standards and industry practices. Some of the requirements in the proposed guidelines in Table 2 establish lesser requirements for accessibility in the public right-of-way than the requirements in the DOJ 2010 Standards. For example, where the pedestrian access route in a sidewalk is contained within the street or highway right-of-way, the grade of the pedestrian access route is permitted to equal the general grade established for the adjacent street or highway to allow for typical roadway geometry instead of the running slope requirements for accessible routes on sites. The requirements in the proposed guidelines in Table 2 will have no impacts on state and local transportation departments compared to the requirements in the DOJ 2010 Standards and industry practices, except for the 2 percent maximum cross slope requirement for pedestrian access routes contained within pedestrian street crossings with stop or yield control where vehicles slow or stop before proceeding through the intersection (see R204.3 and R302.6). This requirement will have more than minimal impacts on the design and construction of new tabled intersections in hilly urban areas that contain pedestrian street crossings with stop or yield control. The impacts are analyzed in this report.

Table 3. Proposed Guidelines Contain Requirements Not in DOJ 2010 Standards

Table 3 analyzes requirements in the proposed guidelines for which there are no corresponding requirements in the DOJ 2010 Standards.³⁰ The requirements in the proposed guidelines in Table 3 are compared to other applicable accessibility standards and the 2009 edition of Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD). Where the requirements in the proposed guidelines in Table 3 are the same as the requirements in other applicable accessibility standards or the MUTCD, the requirements will have no impacts on state and local transportation departments. Where a requirement in the proposed guidelines in Table 3 differs from a corresponding requirement in other applicable accessibility standards or there is no corresponding requirement in other applicable accessibility standards, the analysis used the following factors to identify whether the requirement will have more than minimal impacts on state and local transportation departments:

- Whether the requirement can be easily incorporated into the design of the element or facility?
- Whether the requirement adds features to the element or facility?
- Whether the requirement reduces space needed for other purposes?
- What are the additional costs due to the requirement compared to the total design and construction costs for the element or facility?

A requirement that can be easily incorporated into the design of an element or facility, and does not add features to the element or facility or reduce space needed for other purposes will have minimal impacts on state and local transportation departments. A requirement that cannot be easily incorporated into the design of an element or facility, adds features to the element or facility, or reduces space needed for other purposes and that results in additional costs compared to the total design and construction costs of the element or facility which are not negligible (i.e., are worth considering) will have more than minimal impacts on state and local transportation departments.

The analysis identified three requirements in the proposed guidelines in Table 3 that will have more than minimal impacts on state and local transportation departments:

- Detectable warning surfaces on curb ramps and blended transitions at pedestrian street crossings (see R208.1 and R305);
- Accessible pedestrian signals and pedestrian pushbuttons (see R209); and
- Pedestrian activated signals at roundabout intersections with multi-lane pedestrian street crossings (see R206 and R306.3.2).

The impacts of these requirements are analyzed in this report. Questions 1 and 2 in the preamble to the proposed guidelines requests comments on whether other requirements in the proposed guidelines will have more than minimal impacts on state and local transportation departments, in addition to the requirements identified in Tables 2 and 3, and whether the requirements in the proposed guidelines will have any unintended positive or negative consequences.

Detectable Warning Surfaces on Curb Ramps and Blended Transitions

Detectable warning surfaces consist of small truncated domes built in or applied to a walking surface that are detectable underfoot. On pedestrian access routes, detectable warning surfaces indicate the boundary between a pedestrian route and a vehicular route where there is a flush rather than a curbed connection for pedestrians who are blind or have low vision. The proposed guidelines require detectable warning surfaces to be installed on newly constructed and altered curb ramps and blended transitions at pedestrian street crossings (see R208.1 and R305).[31](#)

Current Requirements for Detectable Warning Surfaces on Curb Ramps

When the Access Board issued the 1991 ADAAG, the guidelines contained a requirement for detectable warning surfaces on curb ramps. The requirement was temporarily suspended between 1994 and 2001 pending additional research and review of issues relating to requirement. The Access Board deferred addressing

detectable warning surfaces on curb ramps in the 2004 ADA and ABA Accessibility Guidelines pending completion of the guidelines for pedestrian facilities in the public right-of-way. As a result of these actions, there are different requirements for detectable warning surfaces on curb ramps in the accessibility standards included the regulations issued by the Department of Justice implementing Title II of the Americans with Disabilities Act and by the Department of Transportation implementing Section 504.

When the Department of Justice initially issued regulations in 1991 implementing Title II of the Americans with Disabilities Act, the regulations required state and local governments to use accessibility standards (hereinafter referred to as the "DOJ 1991 Standards") that included the 1991 ADAAG which contained a requirement for detectable warning surfaces on curb ramps, or the Uniform Federal Accessibility Standards (UFAS) which did not contain a requirement for detectable warning surfaces on curb ramps.³² When the Department of Justice adopted the DOJ 2010 Standards, those standards included the 2004 ADA and ABA Accessibility Guidelines which do not contain a requirement for detectable warning surfaces on curb ramps.

The Department of Transportation regulations implementing Section 504 require state and local governments that receive federal financial assistance directly or indirectly from the Department to use accessibility standards that include the 2004 ADA and ABA Accessibility Guidelines, as modified by the Department, or UFAS. See 49 CFR 27.3 (b). The Department of Transportation modified the 2004 ADA and ABA Accessibility Guidelines by retaining certain requirements from the 1991 ADAAG, including the requirement for detectable warning surfaces on curb ramps. See 406.8 in Appendix A to 49 CFR part 37.

State and local transportation departments will be affected differently by the requirement in the proposed guidelines for detectable warning surfaces on curb ramps depending on the accessibility standards that they use for curb ramps in the public right-of-way. The Access Board reviewed the standard drawings for the design of curb ramps on state transportation department websites and found that the transportation departments in all 50 states and the District of Columbia specify detectable warning surfaces on curb ramps in the standard drawings.³³ Most local transportation departments use standard drawings for the design of curb ramps that are consistent with the standard drawings maintained by their state transportation departments. These state and local transportation departments use either the DOJ 1991 Standards, which include the 1991 ADAAG requirement for detectable warning surfaces on curb ramps, or the Department of Transportation accessibility standards, which include the 2004 ADA and ABA Accessibility Guidelines as modified by the

Department to include the requirement from the 1991 ADAAG for detectable warning surfaces on curb ramps.[34](#)

Governmental Units Affected

State and local transportation departments are divided into four groups for the purpose of evaluating the impacts of the requirement in the proposed guidelines for detectable warning surfaces on curb ramps:

- Group 1 consists of state and local transportation departments that use UFAS for curb ramps as currently permitted by the Department of Justice and Department of Transportation regulations implementing Title II of the Americans with Disabilities Act and Section 504. UFAS did not contain a requirement for detectable warning surfaces on curb ramps. The Access Board is not aware of any state and local transportation departments that use UFAS. The Department of Justice regulations do not permit the use of UFAS on or after March 15, 2012. See 28 CFR 35.151 (c) (3). Thus, Group 1 will cease to exist as of March 15, 2012, and any state and local transportation departments currently in Group 1 will fall into one of the other groups.
- Group 2 consists of state and local transportation departments that receive federal financial assistance directly or indirectly from the Department of Transportation. State and local transportation departments in Group 2 are required to comply with the accessibility standards in the Department of Justice regulations implementing Title II of the Americans with Disabilities Act and the Department of Transportation regulations implementing Section 504. Where the requirements in the accessibility standards in the Department of Justice and Department of Transportation regulations differ, the more stringent requirement must be used. Excluding any state and local transportation departments in Group 1, state and local transportation departments in Group 2 must comply with the requirement for detectable warning surfaces on curb ramps in the Department of Transportation regulations because it is the more stringent requirement. All state transportation departments and most local transportation departments are in Group 2 and specify detectable warning surfaces on curb ramps in their standard drawings. The requirement in the proposed guidelines for detectable warning surfaces on curb ramps will not have any impacts on state and local transportation departments in Group 2.
- Group 3 consists of local transportation departments that do not receive federal financial assistance directly or indirectly from the Department of Transportation. Local transportation departments in Group 3 are required to comply only with the accessibility standards in the Department of Justice

regulations implementing Title II of the Americans with Disabilities Act. Excluding any local transportation departments in Group 1, local transportation departments in Group 3:

- Used the DOJ 1991 Standards, which include the 1991 ADAAG and contain a requirement for detectable warning surfaces on curb ramps, before September 15, 2010. See 28 CFR 35.151 (c) (1).
- Are permitted to use the DOJ 1991 Standards, which include the 1991 ADAAG and contain a requirement for detectable warning surfaces on curb ramps, or the DOJ 2010 Standards, which include the 2004 ADA and ABA Accessibility Guidelines and do not contain a requirement for detectable warnings on curb ramps, between September 15, 2010 and March 14, 2012. See 28 CFR 35.151 (c) (2).
- Must use the DOJ 2010 Standards, which include the 2004 ADA and ABA Accessibility Guidelines and do not contain a requirement for detectable warnings on curb ramps, on or after March 15, 2012. See 28 CFR 35.151 (c) (3).

Thus, local transportation departments in Group 3 were required to provide detectable warning surfaces on curb ramps before September 15, 2010; may or may not be required to provide detectable warning surfaces on curb ramps between September 15, 2010 and March 14, 2012 depending on the accessibility standard they use (DOJ 1991 Standards or DOJ 2010 Standards); and are not required to provide detectable warning surfaces on curb ramps on or after March 15, 2012 pending the future adoption of accessibility standards for pedestrian facilities in the public right-of-way by the Department of Justice.

- Group 4 consists of state and local transportation departments that do not comply with accessibility standards for curb ramps in the public right-of-way. The Department of Justice and Federal Highway Administration have provided guidance on the accessibility standards that apply to curb ramps in the public right-of-way, including the requirement for detectable warning surfaces.³⁵ Despite the guidance provided by the Department of Justice and Federal Highway Administration on the accessibility standards that apply to curb ramps in the public right-of-way, there may be state and local transportation departments that do not comply with the standards.

The impacts of the requirement in the proposed guidelines for detectable warning surfaces on curb ramps on state and local transportation departments in Groups 1, 2, 3, and 4 are summarized in the table below.

Group 1

Standards Used: UFAS – did not contain requirement for detectable warning surfaces on curb ramps

Impacts:

Not aware of any state and local transportation departments in Group 1

Question 4 in preamble to proposed guidelines seeks information on state and local transportation departments in Group 1

Group 1 will cease to exist as of March 15, 2012, and any state or local transportation departments currently in Group 1 will fall into one of the other groups

Group 2*

Standards Used: Standards in Department of Transportation regulations implementing Section 504 – contains requirement for detectable warning surfaces on curb ramps

Impacts:

Group 2 consists of state and local transportation departments that receive federal financial assistance directly or indirectly from the Department of Transportation No impacts on state and local transportation departments in Group 2 compared to standards currently used

Group 3*

Standards Used:

Standards in Department of Justice regulations implementing Title II of the Americans with Disabilities Act

Before September 15, 2010: DOJ 1991 Standards – contains requirement for detectable warning surfaces on curb ramps

Between September 15, 2010 and March 14, 2012:

DOJ 1991 Standards – contains requirement for detectable warning surfaces on curb ramps; or DOJ 2010 Standards – does not contain requirement for detectable warning surfaces on curb ramps

On or after March 15, 2012: DOJ 2010 Standards – does not contain requirement for detectable warning surfaces on curb ramps

Impacts:

Group 3 consists of local transportation departments that do not receive federal financial assistance directly or indirectly from the Department of Transportation

Impacts will depend on standards used and whether behavior will change as a result of DOJ 2010 Standards

Question 5 in preamble to proposed guidelines seeks information on whether local transportation departments in Group 3 will continue or discontinue providing detectable warning surfaces on curb ramps pending the future adoption of accessibility standards for pedestrian facilities in the public right-of-way by the Department of Justice

Group 4

Standards Used: Do not comply with accessibility standards for curb ramps

Impacts:

Unknown how many state and local transportation departments are in Group 4

Question 6 in preamble to proposed guidelines requests comments on whether the future adoption of accessibility standards for pedestrian facilities in the public right-of-way by the Department of Justice and Department of Transportation will have a positive or negative effect, or no effect on compliance rates by state and local transportation departments, particularly with respect to providing detectable warning surfaces on curb ramps

* Groups 2 and 3 exclude state and local transportation departments in Group 1.

Administration, "Information on Detectable Warnings" (May 6, 2002)

at: <http://www.fhwa.dot.gov/environment/bikeped/dwm.htm>.

Costs to Provide Detectable Warning Surfaces on Curb Ramps

Detectable warning surfaces are available in a variety of materials. The Volpe Center gathered data from local transportation departments and vendors on various detectable warning materials and estimated the costs of 8 square feet of the materials for a typical curb ramp as shown in the table below. The estimates do not include installation costs.

Detectable Warning Materials	
Concrete pavers	\$48 to \$8
Brick pavers	\$128
Polymer and composite materials	\$120 to \$
Stainless steel or cast iron products	\$240

Questions 7 and 8 in the preamble to the proposed guidelines seek additional information on the costs for detectable warning materials and installation of the materials on a typical curb ramp, and the number of curb ramps that are constructed or altered on an annual basis in the public right-of-way by state and local transportation departments.

Accessible Pedestrian Signals and Pedestrian Pushbuttons

An accessible pedestrian signal and pedestrian pushbutton is an integrated device that communicates information about the WALK and DON'T WALK intervals at signalized intersections in non-visual formats (i.e., audible tones and vibrotactile surfaces) to pedestrians who are blind or have low vision. The pedestrian pushbutton has a locator tone for detecting the device and a tactile arrow to indicate which pedestrian street crossing is served by the device. The MUTCD contains standards for accessible pedestrian signals and pedestrian pushbuttons, but does not require that they be provided. The proposed guidelines require accessible pedestrian signals and pedestrian pushbuttons to be provided when new pedestrian signals are installed (see R209.1). For existing pedestrian signals, the proposed guidelines require accessible pedestrian signals and pedestrian pushbuttons to be provided when the signal controller and software are altered, or the signal head is replaced (see R209.2). Accessible pedestrian signals and pedestrian pushbuttons must comply with the referenced standards in the MUTCD and the technical requirements for operable parts in Chapter R4.

Governmental Units Affected

The Transportation Equity Act for the 21st Century (TEA-21) directed that audible traffic signals be included in transportation plans and projects where appropriate. See 23 U.S.C. 217 (g). Some state and local transportation departments currently provide accessible pedestrian signals and pedestrian pushbuttons when pedestrian signals are newly installed or replaced at signalized intersections. The requirement in the proposed guidelines for accessible pedestrian signals and pedestrian pushbuttons will have impacts on state and local transportation departments that do not currently provide accessible pedestrian signals and pedestrian pushbuttons when pedestrian signals are newly installed or replaced at signalized intersections.

Question 9 in the preamble to the proposed guidelines seeks information on how many state and local transportation departments currently provide accessible pedestrian signals and pedestrian pushbuttons when pedestrian signals are newly installed or replaced at signalized intersections.

Costs to Provide Accessible Pedestrian Signals and Pedestrian Pushbuttons

The Volpe Center estimated the additional cost for an accessible pedestrian pushbutton compared to conventional pushbutton is \$350 per unit. For a typical intersection with four crosswalks, two accessible pedestrian pushbuttons would be required at each corner for a total of eight units per intersection and a total additional cost of \$2,800 for the eight units. The cost of the units is expected to decrease as a result of the proposed guidelines due to greater standardization of customer requirements and increased orders. The total additional cost to provide accessible pedestrian signals and pedestrian pushbuttons, including labor and other equipment such as stub poles and conduit, will vary by location. The Volpe Center estimated that the total additional costs are \$3,600 per intersection based on a published cost study and interviews with local transportation departments.

Question 10 in the preamble to the proposed guidelines seeks information from state and local transportation departments that currently provide accessible pedestrian signals and pedestrian pushbuttons on the additional costs to provide the accessible pedestrian signals and pedestrian pushbuttons.

The Volpe Center estimated that pedestrian signals are newly installed or replaced at 13,095 signalized intersections on an annual basis based on the following assumptions:

- There are over 300,000 existing signalized intersections in the United States using a rule-of-thumb of one signalized intersection per 1,000 population.[36](#)
- There are 2,550 new signalized intersections in the United States each year based on the US Census Bureau forecast of future population growth (0.85 percent).

- Ninety (90) percent of new and existing signalized intersections in the United States provide pedestrian signals.
- The life cycle or replacement rate for existing pedestrian signals is 25 years.

The Volpe Center estimated that the total annual costs are \$47 million for requiring accessible pedestrian signals and pedestrian pushbuttons when pedestrian signals are newly installed or replaced at signalized intersections.

Question 11 in the preamble to the proposed guidelines requests comments on the assumptions used to estimate the total annual costs for requiring accessible pedestrian signals and pushbuttons when pedestrian signals are newly installed or replaced at signalized intersections.

Newly Constructed Tabled Intersections That Contain Pedestrian Street Crossings with Yield or Stop Control

Cross slope is the slope perpendicular to the direction of pedestrian travel (see R105.5). Cross slope impedes travel by pedestrians who use wheeled mobility devices since energy must be expended to counteract the perpendicular force of the cross slope. Cross slope makes it more difficult for pedestrians who use wheelchairs to travel on uphill slopes and to maintain balance and control on downhill slopes. Cross slope also negatively affects pedestrians who use braces, lower limb prostheses, crutches, or walkers, as well as pedestrians who have gait, balance, or stamina impairments. The proposed guidelines specify a maximum cross slope of 2 percent for pedestrian access routes, including pedestrian access routes within sidewalks and pedestrian street crossings with yield or stop control where vehicles slow or stop before proceeding through the intersection (see R204.3 and R302.6).[37](#)

In new construction, where pedestrian access routes within sidewalks intersect at corners, the 2 percent maximum cross slope requirement will result in level corners (i.e., the slope at the corners will not exceed 2 percent in each direction of pedestrian travel). The level corners will provide a platform for providing level spaces for curb ramps and blended transitions, pedestrian street crossings, and accessible pedestrian signals and pedestrian pushbuttons. The cross slope of the pedestrian access route within the pedestrian street crossing is the longitudinal grade of the street being crossed, and the 2 percent maximum cross slope requirement will impact the vertical alignment of streets in the vicinity of the intersection. In new construction, street intersections in hilly urban areas are typically cut-and filled to produce relative flat or tabled intersections. Where pedestrian street crossings with yield or stop control are provided at newly constructed tabled intersections, the tabling would be extended to the pedestrian street crossings to comply with the 2 percent maximum cross slope for pedestrian access routes within the pedestrian street crossings.

Governmental Units Affected

The 2 percent maximum cross slope requirement for pedestrian access routes in the proposed guidelines will affect state and local transportation departments that do not extend the tabling of newly constructed intersections to pedestrian street crossings with yield or stop control.

Question 14 in the preamble to the proposed guidelines seeks information on the current design policies and practices of state and local transportation departments with respect to the tabling newly constructed intersections in hilly urban areas, particularly with respect to extending the tabling to pedestrian street crossings with yield or stop control.

Costs to Extend Tabling to Pedestrian Street Crossings with Yield or Stop Control

In new construction, extending the tabling of intersections to pedestrian street crossings with yield or stop control involves additional costs for site preparation, grading, and earthwork. The Volpe Center roughly estimated the additional costs for extending the tabling to pedestrian street crossings with yield or stop control are \$60,000 per intersection based on information provided by a transportation official to the Access Board. The costs will vary by site.

Questions 15 and 16 in the preamble to the proposed guidelines seeks information on the additional costs to extend the tabling of newly constructed intersections to pedestrian street crossings with yield or stop control, and the number of tabled intersections which contain pedestrian street crossings with yield or stop control that are newly constructed in hilly urban areas on an annual basis by state and local transportation departments.

Pedestrian Activated Signals at Roundabouts with Multi-Lane Pedestrian Street Crossings

A roundabout is a circular intersection with yield control at entry, which permits a vehicle on the circulatory roadway to proceed, and with deflection of the approaching vehicle counter-clockwise around a central island (MUTCD section 1A.13). The continuous traffic flow at roundabouts removes many of the audible cues that pedestrians who are blind use to navigate pedestrian street crossings. At new roundabouts with multi-lane pedestrian street crossings, the proposed guidelines require pedestrian activated signals to be provided for each multi-lane segment of each crossing, including the splitter island (see R206 and R306.3.2). The pedestrian activated signals are required to comply with the MUTCD standards for accessible pedestrian signals and pedestrian pushbuttons.

Pedestrian Hybrid Beacons can be used at roundabouts (see MUTCD sections 4F.01 through 4F.03). Pedestrian Hybrid Beacons are traffic signals that consist of a yellow signal centered below two horizontally aligned red signals. The signals are normally dark (i.e., not illuminated). The signals are initiated only upon pedestrian activation and can be timed to minimize the interruption of traffic. The signals cease operation after the pedestrian clears the crosswalk. When activated by a pedestrian, the following signals are displayed to drivers: a flashing yellow signal, then a steady yellow signal, then two steady red signals during the pedestrian walk interval, and then alternating flashing red signals during the pedestrian clearance interval. The following signals are displayed to pedestrians: a steady upraised hand (symbolizing DONT WALK) when the flashing or steady yellow signal is operating, then a walking person (symbolizing WALK) when the steady red signals are operating, and then a flashing upraised hand (symbolizing DONT WALK) when the alternating flashing red signals are operating.

Governmental Units Affected

The requirement for pedestrian activated signals at roundabouts with multi-lane pedestrian street crossings will affect state and local transportation departments that construct new roundabouts with multi-lane pedestrian street crossings. The Volpe Center estimated that state and local transportation departments construct 27 new roundabouts with multi-lane pedestrian street crossings on an annual basis.[38](#)

Costs to Provide Pedestrian Activated Signals at Roundabouts with Multi-Lane Pedestrian Street Crossings

The Volpe Center estimated the cost to provide pedestrian activated signals at new roundabouts with multi-lane pedestrian street crossings to range from \$90,000 to \$230,000 per roundabout, and the total annual costs for requiring pedestrian activated signals at new roundabouts with multi-lane pedestrian street crossings to range from \$2.4 million to \$6.2 million. Questions 18 and 19 in the preamble to the proposed guidelines seek additional information on the number of roundabouts with multi-lane pedestrian street crossings that are newly constructed on an annual basis by state and local transportation departments, and the costs to provide pedestrian activated signals at newly constructed roundabouts with multi-lane pedestrian street crossings.

Benefits

The proposed guidelines will benefit pedestrians with disabilities. The U.S. Census Bureau reports that 54.4 million Americans, about one in five U.S. residents, reported some level of disability in 2005.[39](#) The number of individuals with disabilities is

almost equal to the combined total population of California and Florida. The U.S. Census Bureau provides this breakdown of the population of people aged 15 and older:

- 27.4 million (11.9 percent) had difficulty with ambulatory activities of the lower body;
- 22.6 million people (9.8 percent) had difficulty walking a quarter of a mile;
- 21.8 million (9.4 percent) had difficulty climbing a flight of stairs;
- 10.2 million (4.4 percent) used a cane, crutches, or walker to assist with mobility;
- 3.3 million (1.4 percent) used a wheelchair or other wheeled mobility device; and
- 7.8 million (3 percent) had difficulty seeing words or letters in ordinary newspaper print, including 1.8 million who are completely unable to see.

Executive Order 13563 states that to the extent permitted by law federal agencies must "propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify)" and that "where appropriate and permitted by law, each agency may consider and (discuss qualitatively) values that are difficult or impossible to quantify, including equity, human dignity, fairness, and distributive impacts." The proposed guidelines promote important societal values that are difficult or impossible to quantify. As discussed above under the Need for Rulemaking, when enacting the Americans with Disabilities Act, Congress found "the discriminatory effects of architectural, transportation, and communication barriers" to be a continuing problem that "denies people with disabilities the opportunity to compete on an equal basis and to pursue those opportunities for which our free society is justifiably famous, and costs the United States billions of dollars in unnecessary expenses resulting from dependency and nonproductivity." 42 U.S.C. 12101 (a) (5) and (9). Congress declared that "the Nation's proper goals regarding individuals with disabilities are to assure equality of opportunity, full participation, independent living, and economic self-sufficiency." 42 U.S.C. 12101 (a) (8). The proposed guidelines promote the goals declared by Congress by eliminating the discriminatory effects of architectural, transportation, and communication barriers in the design and construction of pedestrian facilities in the public right-of-way. The proposed guidelines are also important to achieving the benefits of the other parts of the Americans with Disabilities Act. As the House Report for the Americans with Disabilities Act stated, "[t]he employment, transportation, and public accommodation sections . . . would be meaningless if people who use wheelchairs were not afforded the opportunity to travel on and between the streets." H.R. 485, 101st Cong., 2d Sess. 84 (1990).

Impacts on Small Governmental Jurisdictions

The impacts of the proposed guidelines on small governmental jurisdictions with a population of less than 50,000 are discussed below. This information is required by the Regulatory Flexibility Act (5 U.S.C. §603).

Reasons for issuing proposed accessibility guidelines

The Access Board's current accessibility guidelines, the 2004 ADA and ABA Accessibility Guidelines, were developed primarily for buildings and facilities on sites. Some of the requirements in the 2004 ADA and ABA Accessibility Guidelines can be readily applied to pedestrian facilities in the public right-of-way, but other requirements need to be adapted for pedestrian facilities in the public right-of-way. The proposed guidelines are developed specifically for pedestrian facilities in the public right-of-way and address conditions and constraints that exist in the public right-of-way.

Objectives of, and legal basis for, proposed accessibility guidelines

The Access Board is required to issue accessibility guidelines by the Americans with Disabilities Act (42 U.S.C. §12204) and Section 502 of the Rehabilitation Act (29 U.S.C. §792) to ensure that newly constructed and altered facilities are readily accessible to and usable by pedestrians with disabilities.

Small governmental jurisdictions affected by proposed accessibility guidelines

The number of small governmental jurisdictions with a population less than 50,000 affected by the proposed guidelines is shown in the table below.

Government Jurisdictions	
Source: US Census Bureau 2002 Census of Governments available at: http://www.census.gov/prod/2002pubs/c2kbr02-1.pdf	
County	2,178
Municipal	18,824
Town or Township	16,371

Government Jurisdictions	
	Total 37,375

Almost 70 percent of municipal governments (13,038) and more than 75 percent of towns and townships (12,331) have a population of less than 2,500. Many of these small governmental jurisdictions are located in rural areas, which generally do not construct pedestrian transportation networks (e.g., sidewalks, pedestrian street crossings, and pedestrian signals).

Compliance requirements

The proposed accessibility guidelines address the design, construction, and alteration of pedestrian facilities in the public right-of-way, including sidewalks, pedestrian street crossings, pedestrian overpasses and underpasses, curb ramps and blended transitions at pedestrian street crossings, pedestrian signals, street furniture (i.e., drinking fountains, public toilet facilities, tables, counters, and benches), pedestrian signs, transit stops and transit shelters for buses and light rail vehicles, on-street parking that is marked or metered, and passenger loading zones. The Section-by-Section Analysis of the preamble describes the proposed accessibility guidelines. Compliance with the proposed accessibility guidelines is not mandatory until they are adopted, without or without additions and modifications, as accessibility standards by other federal agencies. There are no reporting or recordkeeping requirements.

Other federal rules

The Department of Justice, Department of Transportation, and General Services Administration are responsible for issuing accessibility standards that are consistent with the accessibility guidelines issued by the Access Board and are expected to conduct rulemaking to adopt the proposed guidelines, with or without additions and modifications, as accessibility standards in regulations implementing Title II of the Americans with Disabilities Act (28 CFR part 36 and 49 CFR part 37), Section 504 of the Rehabilitation Act (49 CFR part 27), and the Architectural Barriers Act (41 CFR part 102). Additional information on these laws and regulations is provided under the Statutory and Regulatory Background in the preamble to the proposed guidelines.

Significant alternatives which minimize any significant economic impacts on small entities

The regulatory assessment analyzes the following four requirements in the proposed guidelines that will have more than minimal impacts on state and local transportation departments:

- Detectable warning surfaces required on newly constructed and altered curb ramps and blended transitions at pedestrian street crossings (see R208.1 and R305). Detectable warning surfaces consist of small truncated domes that are detectable underfoot. Where curb ramps or blended transitions are provided at pedestrian street crossings, detectable warning surfaces indicate the boundary between a pedestrian route and a vehicular route for pedestrians who are blind or have low vision in place of the missing curb.
- Accessible pedestrian signals and pedestrian pushbuttons required when pedestrian signals newly installed or replaced at signalized intersections (see R209). Accessible pedestrian signals and pedestrian pushbuttons communicate the information about the WALK and DON'T WALK intervals at signalized intersections in non-visual formats (i.e., audible tones and vibrotactile surfaces) to pedestrians who are blind or have low vision.
- Maximum cross slope of 2 percent required on pedestrian access routes, including within pedestrian street crossings with yield or stop control. Cross slope is the slope perpendicular to the direction of pedestrian travel. Cross slope impedes travel by pedestrians who use wheeled mobility devices since energy must be expended to counteract the perpendicular force of the cross slope. The 2 percent maximum cross slope required on pedestrian access routes has more than minimal impacts on the construction of new tabled intersections in hilly urban areas that contain pedestrian street crossings with yield or stop control where vehicles slow or stop before proceeding through the intersection.
- Pedestrian activated signals at roundabouts with multi-lane pedestrian street crossings. A roundabout is a circular intersection with yield control at entry, which permits a vehicle on the circulatory roadway to proceed, and with deflection of the approaching vehicle counter-clockwise around a central island. Pedestrian activated signals are required at roundabouts with multi-lane pedestrian street crossings to facilitate crossing by pedestrians who are blind or have low vision. Small governmental jurisdictions with a population less than 50,000 are not likely to construct roundabouts with multi-lane pedestrian street crossings and will not be affected by this requirement.

There are no significant alternatives that will minimize any significant impacts of these requirements on small governmental jurisdictions and achieve the objectives of the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and the Architectural Barriers Act to eliminate the discriminatory effects of architectural,

transportation, and communication barriers in the design and construction of pedestrian facilities in the public right-of-way.

Conclusion

Based on the analysis of the information in this report, the Access Board has made a preliminary determination that the benefits of the proposed guidelines justify the costs. The Access Board has also analyzed the impacts of the proposed guidelines on small governmental jurisdictions and determined that there are no significant alternatives that will minimize any significant impacts on small governmental jurisdictions and achieve the objectives of the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and the Architectural Barriers Act to eliminate the discriminatory effects of architectural, transportation, and communication barriers in the design and construction of pedestrian facilities in the public right-of-way.

Notes

1 The Access Board consists of 13 members appointed by the President from the public, a majority of which are individuals with disabilities, and the heads of 12 federal agencies or their designees whose positions are Executive Level IV or above. The federal agencies are: The Departments of Commerce, Defense, Education, Health and Human Services, Housing and Urban Development, Interior, Justice, Labor, Transportation, and Veterans Affairs; General Services Administration; and United States Postal Service.

2 Other titles of the Americans with Disabilities Act cover employers (Title I), private entities that own, lease, or operate places of public accommodation and commercial facilities (Title III), and telecommunications (Title IV). This report focuses on Title II because pedestrian facilities in the public right-of-way are constructed and altered by state and local governments.

3 Title II of the Americans with Disabilities Act contains two subtitles. Subtitle A applies to all state and local government programs, services, and activities. Subtitle B contains two parts. Subtitle B, Part I applies to designated public transportation provided by state and local governments by bus, rail, or other conveyance (other than aircraft or intercity or commuter rail) as a general or special service (including charter service) to the general public on a regular and continuing basis. Subpart B, Part II applies to public transportation provided by the National Railroad Passenger Corporation and commuter authorities by intercity and commuter rail. The Department of Justice is responsible for issuing regulations to implement Subtitle A of Title II, except for matters within the scope of authority of the Department of Transportation under Parts I and II of Subtitle B of Title II. See 42 U.S.C. 12134. The

Department of Transportation is responsible for issuing regulations to implement Parts I and II of Subtitle B of Title II. See 42 U.S.C. 12149 and 12164.

4 Subtitle A of Title II of the Americans with Disabilities Act requires that the regulations issued by the Department of Justice include accessibility standards that are "consistent with the minimum guidelines and requirements issued by the Architectural and Transportation Barriers Compliance Board." 42 U.S.C. 12134(c). The accessibility standards issued by the Department of Justice can include additional or modified requirements provided they are consistent with the Access Board's guidelines.

5 In September 2010, the Department of Justice issued regulations with revised accessibility standards for Titles II and III of the Americans with Disabilities Act (DOJ 2010 Standards). See 75 FR 56164 (September 15, 2010). Compliance with the DOJ 2010 Standards is required on or after March 15, 2012. State and local governments are permitted to comply with earlier standards (DOJ 1991 Standards without the elevator exception or UFAS) or the DOJ 2010 Standards between September 15, 2010 and March 14, 2012. Additional information on the applicable standards and their effective dates is available on the Department of Justice website at: http://www.ada.gov/revised_effective_dates-2010.htm. The DOJ 2010 Standards are available on the Department of Justice website at: http://www.ada.gov/2010ADAstandards_index.htm.

6 Parts I and II of Subtitle B of Title II of the Americans with Disabilities Act require that the regulations issued by the Department of Transportation include accessibility standards that are "consistent with the minimum guidelines and requirements issued by the Architectural and Transportation Barriers Compliance Board." 42 U.S.C. 12149 (b) and 12163. The accessibility standards issued by the Department of Transportation can include additional or modified requirements provided they are consistent with the Access Board's guidelines.

7 See Department of Transportation "Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations" at: <http://www.dot.gov/affairs/2010/bicycle-ped.html>.

8 The Architectural Barriers Act also covers facilities constructed, altered, or leased by federal agencies; and facilities constructed or altered by the Washington Metropolitan Area Transit Authority. See 42 U.S.C. 4151 (1), (2), and (4).

9 The accessibility standards issued by the General Services Administration apply to all facilities covered by the Architectural Barriers Act, except for postal, military, and residential facilities. The United States Postal Service is responsible for issuing

accessibility standards for postal facilities; the Department of Defense is responsible for issuing accessibility standards for military facilities; and the Department of Housing and Urban Development is responsible for issuing accessibility standards for residential facilities. See 42 U.S.C. 4153, 4154, and 4154a.

10 101 Cong. Rec. H4629 and 4630 (July 12, 1990); 101 Cong. Rec. S9695 (July 13, 1990).

11 The 2004 ADA and ABA Accessibility Guidelines are codified in 36 CFR part 1191 and consist of six appendices:

- Appendix A is the Table of Contents to the guidelines;
- Appendix B contains ADA Chapters 1 and 2, which include application and scoping requirements for the design, construction, and alteration of facilities covered by the Americans with Disabilities Act;
- Appendix C contains ABA Chapters 1 and 2, which include application and scoping requirements for the design, construction, and alteration of facilities covered by the Architectural Barriers Act;
- Appendix D contains Chapters 3 through 10, which include common technical requirements for the design, construction, and alteration of facilities covered by the Americans with Disabilities Act or the Architectural Barriers Act;
- Appendix E contains the index of terms and list of figures included in the guidelines; and
- Appendix F contains additions and modifications to the guidelines issued by the Department of Transportation.

The DOJ 2010 Standards and the Department of Transportation standards for transportation facilities used in the provision of transportation services covered by the transportation parts of Title II of the ADA and facilities covered by Section 504 adopt Appendices B and D, with additions and modifications. The General Services Administration standards for facilities covered by the Architectural Barriers Act adopt Appendices C and D, without additions and modifications.

12 The term "site" is defined in the 1991 ADAAG (see 3.5) and 2004 ADA and ABA Accessibility Guidelines (see 106.5 and F106.5) as a "parcel of land bounded by a property line or a designated portion of a public right-of-way."

13 The reports on the research sponsored by the Access Board and technical assistance materials on accessible design of pedestrian facilities in the public right-of-way are available on the Access Board website at:

<http://www.access-board.gov/prowac/index.htm>.

14 The following organizations were members of the advisory committee: AARP, America Walks, American Association of State Highway and Transportation Officials, American Council of the Blind, American Institute of Architects, American Public Transit Association, American Public Works Association, Association for Education and Rehabilitation of the Blind and Visually Impaired, Bicycle Federation of America, Californians for Disability Rights, Canadian Standards Association (Technical Committee on Barrier-Free Design), City of Birmingham (Department of Planning, Engineering and Permits), Council of Citizens with Low Vision International, Disability and Business Technical Assistance Centers, Disability Rights Education and Defense Fund, Federal Highway Administration, Hawaii Commission on Persons with Disabilities, Hawaii Department of Transportation, Institute of Traffic Engineers, Los Angeles Department of Public Works (Bureau of Street Services), Massachusetts Architectural Access Board, Municipality of Anchorage, National Center for Bicycling and Walking, National Council on Independent Living, National Federation of the Blind, New York State Department of Transportation, Paralyzed Veterans of America, Portland Office of Transportation, San Francisco Mayor's Office on Disability, State of Alaska, TASH, Texas Department of Transportation, and The Seeing Eye.

15 The advisory committee report is available on the Access Board website at: <http://www.access-board.gov/prowac/commrept/index.htm>.

16 The 2002 and 2005 draft guidelines and comments submitted on the 2002 draft guidelines are available on the Access Board website at: <http://www.access-board.gov/prowac/commrept/index.htm>.

17 See Volpe Center, "Cost Analysis of Public Rights-of-Way Accessibility Guidelines" (November 29, 2010). The document is available in the rulemaking docket (ATBCB-2011-0004) at: <http://www.regulations.gov>.

18 A pedestrian circulation path is a prepared exterior or interior surface provided for pedestrian travel in the public right-of-way (see R105.5).

19 The 2004 ADA and ABA Accessibility Guidelines require accessible routes on sites to connect to site arrival points, including public streets and sidewalks (see 206.2.1 and F206.2.1).

20 The proposed guidelines do not address existing facilities that are not altered. The Department of Justice regulations implementing Title II of the Americans with Disabilities Act contain requirements for state and local governments regarding program accessibility and existing facilities. See 28 CFR 35.150. The Department of Transportation regulations implementing Section 504 also contain requirements for

recipients of federal financial assistance from the Department on compliance planning. See 49 CFR 27.11 (c). When the Department of Justice and Department of Transportation conduct rulemaking to include accessibility standards for pedestrian facilities in the public right-of-way in regulations implementing Title II of the Americans with Disabilities Act and Section 504, they will address the application of the accessibility standards to existing facilities that are not altered.

21 Private entities that design, construct, or alter places of public accommodation or commercial facilities on sites are required to comply with accessibility standards included in regulations issued by the Department of Justice to implement Title III of the Americans with Disabilities Act. See 28 CFR 36.401 through 36.406. State or local laws may require sites with frontage on the public right-of-way or frontage that will revert to the public right-of-way to make frontage improvements in accordance with state or local standards which contain accessibility requirements that are similar to the proposed guidelines.

22 The US Census Bureau criteria for classification of urban and rural areas are available on the web at: http://www.census.gov/geo/www/ua/ua_2k.html.

23 Links to the design manuals and standard drawings maintained by state transportation departments are available on the Federal Highway Administration website at: <http://www.fhwa.dot.gov/programadmin/statemanuals.cfm> and <http://www.fhwa.dot.gov/programadmin/statestandards.cfm>.

24 The AASHTO "Policy on Geometric Design of Highways and Streets" and "Guide for the Planning, Design, and Operation of Pedestrian Facilities" incorporate accessibility in the design of sidewalks, including minimum clear width, passing spaces, grade, cross slope, protruding objects, and surface treatments; curb ramps, including detectable warning surfaces; pedestrian overpasses and underpasses; and transit stops and transit shelters.

25 See Federal Highway Administration, Office of Program Administration, "Pedestrians and Accessible Design" at: <http://www.fhwa.dot.gov/programadmin/pedestrians.cfm>. When the guidance was issued, the applicable accessibility standards in the Department of Justice regulations implementing Title II of the Americans with Disabilities Act and the Department of Transportation regulations implementing Section 504 adopted the 1991 ADAAG and permitted the Uniform Federal Accessibility Standards to be used.

26 See Federal Highway Administration, "Public Rights-of-Way Access Advisory" (January 23, 2006) at: <http://www.fhwa.dot.gov/environment/bikeped/prwaa.htm>.

27 See [footnote 5](#) regarding the DOJ 2010 standards and effective dates.

28 The requirements analyzed in Table 1 include: drinking fountains, public toilet facilities, tables, counters, passenger loading zones, ramps, stairways, handrails, doors, doorways, gates, operable parts, clear spaces, knee and toe clearance, and reach ranges.

29 The requirements analyzed in Table 2 include: sidewalks and other pedestrian circulation paths, pedestrian street crossings, pedestrian overpasses and underpasses, pedestrian at-grade rail crossings, curb ramps and blended transitions, protruding objects, transit stops and transit shelters used by buses and light rail vehicles, on-street parking, and escalators. The requirements for transit stops and transit shelters used by buses and light vehicles are compared to the accessibility standards in the Department of Transportation regulations implementing the public transportation parts of Title II of the Americans with Disabilities Act.

30 The requirements analyzed in Table 3 include: alternate pedestrian access routes, pedestrian signal phase timing, accessible pedestrian signals and pedestrian pushbuttons, pedestrian street crossings at roundabouts, detectable warning surfaces on curb ramps and blended transitions at pedestrian street crossings, detectable warning surfaces on pedestrian at-grade rail crossings not located within a street or highway, pedestrian signs, and benches.

31 Blended transition perform the same function as curb ramps and connect the pedestrian access route at the level of the sidewalk and the level of the pedestrian street crossing, but have a grade of 5 percent or less (see R105.5). Depressed corners and raised pedestrian street crossings are examples of blended transitions.

32 UFAS was issued in 1984 by the General Services Administration and other federal agencies responsible for issuing accessibility standards for facilities covered by the Architectural Barriers Act. See 49 FR 31528 (August 7, 1984).

33 Links to each state transportation department's standard drawings that specify detectable warning surfaces on curb ramps are available on the Access Board website at: <http://www.access-board.gov/prowac/index.htm>.

34 The DOJ 1991 Standards require detectable warning surfaces to extend the full width and depth of the curb ramp (see 4.7.7, Appendix E to 28 CFR part 36). The Department of Transportation standards require detectable warning surfaces to extend the full width of the curb ramp (exclusive of flared sides) and either the full depth of the curb ramp or 24 inches deep minimum measured from the back of the curb on the ramp surface (see 406.8, Appendix A to 49 CFR part 37). Guidance issued by the

Department of Justice permits the use of the Department of Transportation standards for detectable warning surfaces on curb ramps. See Department of Justice, "ADA Best Practices Tool Kit for State and Local Governments, Curb Ramps and Pedestrian Crossings" (May 7, 2006) at: <http://www.ada.gov/pcatoolkit/toolkitmain.htm>.

35 See Department of Justice, "ADA Best Practices Tool Kit for State and Local Governments, Curb Ramps and Pedestrian Crossings" (May 7, 2006) at: <http://www.ada.gov/pcatoolkit/toolkitmain.htm>; and Federal Highway Administration, "Information on Detectable Warnings" (May 6, 2002) at: <http://www.fhwa.dot.gov/environment/bikeped/dwm.htm>.

36 See MUTCD "Frequently Asked Questions – Part 4 – Highway Traffic Signals" at: http://mutcd.fhwa.dot.gov/knowledge/faqs/faq_part4.htm.

37 Pedestrian access routes within pedestrian street crossings without yield or stop control where vehicles can proceed through the intersection without slowing or stopping are permitted to have a 5 percent maximum cross slope (see R302.6.1).

38 The Volpe Center used the roundabout database at: <http://roundabout.kittelerson.com/> to estimate the number of new roundabouts with multi-lane pedestrian street crossings that are constructed on an annual basis. During the five year period between 2005 and 2009, 435 roundabouts were constructed, of which 117 were multi-lane. The data was adjusted for a small number of roundabouts that are listed in the database as having an "unknown" number of lanes and for roundabouts that do have any pedestrian facilities (i.e., sidewalks and pedestrian street crossings).

39 "Americans with Disabilities: 2005" (2008) available on the web at: <http://www.census.gov/prod/2008pubs/p70-117.pdf>.

Appendix to Regulatory Assessment

Comparison of Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-Of-Way and DOJ 2010 ADA Standards for Accessible Design

Introduction

The regulatory assessment prepared by the Access Board for the proposed accessibility guidelines for pedestrian facilities in the public right-of-way assumes that, in the absence of the proposed accessibility guidelines, state and local transportation departments will use the DOJ 2010 ADA Standards for Accessible

Design (hereinafter referred to as “DOJ 2010 Standards”) in the Department of Justice regulations implementing Title II of the Americans with Disabilities Act (28 CFR part 35) to the extent feasible when designing, constructing, or altering pedestrian facilities in the public right-of-way, consistent with the guidance issued by the Federal Highway Administration.¹ The DOJ 2010 Standards are available on the Department of Justice website at: http://www.ada.gov/2010ADASTandards_index.htm.

The proposed accessibility guidelines for pedestrian facilities in the public right-of-way are compared to DOJ 2010 Standards, other applicable standards, and industry practices in the tables below.

Table 1. Proposed Guidelines Contain Same Requirements as in DOJ 2010 Standards

Table 1 analyzes requirements in the proposed guidelines that are the same as requirements in the DOJ 2010 Standards.² The requirements in the proposed guidelines in Table 1 will have no impacts on state and local transportation departments compared to the requirements in the DOJ 2010 Standards because the requirements are the same.

Table 2. Proposed Guidelines Adapt Requirements in DOJ 2010 Standards

Table 2 analyzes requirements in the proposed guidelines that adapt requirements in DOJ 2010 Standards to allow for conditions and constraints in the public right-of-way.³ The requirements in the proposed guidelines in Table 2 do not establish greater requirements for accessibility in the public right-of-way than the requirements in the DOJ 2010 Standards and industry practices. Some of the requirements in the proposed guidelines in Table 2 establish lesser requirements for accessibility in the public right-of-way than the requirements in the DOJ 2010 Standards. For example, where the pedestrian access route in a sidewalk is contained within the street or highway right-of-way, the grade of the pedestrian access route is permitted to equal the general grade established for the adjacent street or highway to allow for typical roadway geometry instead of the running slope requirements for accessible routes on sites. The requirements in the proposed guidelines in Table 2 will have no impacts on state and local transportation departments compared to the requirements in the DOJ 2010 Standards and industry practices, except for the 2 percent maximum cross slope requirement for pedestrian access routes contained within pedestrian street crossings with stop or yield control where vehicles slow or stop before proceeding through the intersection (see R204.3 and R302.6). This requirement will have more than minimal impact on the design and construction of new tabled intersections in hilly urban areas that contain pedestrian street crossings with stop or yield control.

Table 3. Proposed Guidelines Contain Requirements Not in DOJ 2010 Standards

Table 3 analyzes requirements in the proposed guidelines for which there are no corresponding requirements in the DOJ 2010 Standards.⁴ The requirements in the proposed guidelines in Table 3 are compared to other applicable accessibility standards and the 2009 edition of Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD). Where the requirements in the proposed guidelines in Table 3 are the same as the requirements in other applicable accessibility standards or the MUTCD, the requirements will have no impacts on state and local transportation departments. Where a requirement in the proposed guidelines in Table 3 differs from a corresponding requirement in other applicable accessibility standards or there is no corresponding requirement in other applicable accessibility standards, the analysis used the following factors to identify whether the requirement will have more than minimal impacts on state and local transportation departments:

- Whether the requirement can be easily incorporated into the design of the element or facility?
- Whether the requirement adds features to the element or facility?
- Whether the requirement reduces space needed for other purposes?
- What are the additional costs due to the requirement compared to the total design and construction costs for the element or facility?

A requirement that can be easily incorporated into the design of an element or facility, and does not add features to the element or facility or reduce space needed for other purposes will have minimal impacts on state and local transportation departments. A requirement that cannot be easily incorporated into the design of an element or facility, adds features to the element or facility, or reduces space needed for other purposes and that results in additional costs compared to the total design and construction costs of the element or facility which are not negligible (i.e., are worth considering) will have more than minimal impacts on state and local transportation departments.

The analysis identified three requirements in the proposed guidelines in Table 3 that will have more than minimal impacts on state and local transportation departments:

- Detectable warning surfaces on curb ramps and blended transitions at pedestrian street crossings (see R208.1 and R305);
 - Accessible pedestrian signals and pedestrian pushbuttons (see R209); and
 - Pedestrian activated signals at roundabout intersections with multi-lane pedestrian street crossings (see R206 and R306.3.2).
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[1] See Federal Highway Administration, Office of Program Administration, “Pedestrians and Accessible Design” at: <http://www.fhwa.dot.gov/programadmin/pedestrians.cfm>.

[2] The requirements analyzed in Table 1 include: drinking fountains, public toilet facilities, tables, counters, passenger loading zones, ramps, stairways, handrails, doors, doorways, gates, operable parts, clear spaces, knee and toe clearance, and reach ranges.

[3] The requirements analyzed in Table 2 include: sidewalks and other pedestrian circulation paths, pedestrian street crossings, pedestrian overpasses and underpasses, pedestrian at-grade rail crossings, curb ramps and blended transitions, protruding objects, transit stops and transit shelters used by buses and light rail vehicles, on-street parking, and escalators. The requirements for transit stops and transit shelters used by buses and light vehicles are compared to the accessibility standards in the Department of Transportation regulations implementing the public transportation parts of Title II of the Americans with Disabilities Act.

[4] The requirements analyzed in Table 3 include: alternate pedestrian access routes, pedestrian signal phase timing, accessible pedestrian signals and pedestrian pushbuttons, pedestrian street crossings at roundabouts, detectable warning surfaces on curb ramps and blended transitions at pedestrian street crossings, detectable warning surfaces on pedestrian at-grade rail crossings not located within a street or highway, pedestrian signs, and benches.

Table 1: Proposed Guidelines Contain Same Requirements as in DOJ 2010 Standards

Element or Facility	DOJ 2010 Standards	
Drinking Fountains	211 Requires drinking fountains to comply with 602. 602.1 to 602.6 Contains requirements for clear space, operable parts, spout height and location, and water flow.	R212.1 Requires DOJ 2010 Standards
Public Toilet Facilities	206.2.4 Requires accessible routes within facilities.	R212.1 Requires DOJ 2010 Standards 603 to

Table 1: Proposed Guidelines Contain Same Requirements as in DOJ 2010 Standards

Element or Facility	DOJ 2010 Standards	
	<p>213 Requires toilet facilities to comply with 603 to 610. Where multiple single-user portable units are clustered at a location, at least 5 percent required to comply with 213.</p> <p>603 to 610 Contains requirements for toilet rooms, water closets and toilet compartments, urinals, lavatories and sinks, bathtubs, shower compartments, grab bars, and seats.</p>	<p>user un require</p>
Tables	<p>226 Requires at least 5 percent of tables to comply with 902.</p> <p>902 Contains requirements for clear space and height.</p>	<p>R212. Requir DOJ 2</p>
Counters	<p>227 Requires counters to comply with 904.</p> <p>904 Contains requirements for approach.</p>	<p>R212. Requir Stand</p>
Passenger Loading Zones	<p>209 Requires one accessible passenger loading zone complying with 503 for each 30 m (100.0 ft) of continuous loading zone space.</p> <p>503 Contains requirements for vehicle pull-up space and access aisle.</p>	<p>R216 Requir with R zone s</p> <p>R310 Contai aisle.</p>
Ramps	<p>405 Contains requirements for running and cross slopes, width, rise, landings, surfaces, handrails, and edge protection for ramps that are part of accessible routes.</p>	<p>R407 Contai rise, la ramps</p>

Table 1: Proposed Guidelines Contain Same Requirements as in DOJ 2010 Standards

Element or Facility	DOJ 2010 Standards	
Stairways	<p>210 Requires stairways that are part of means of egress to comply with 504.</p> <p>504 Contains requirements for treads and risers, nosings, and handrails.</p>	<p>R216 Requires stairways to comply with 504.</p> <p>R408 Contains requirements for handrails.</p>
Handrails	<p>403.6 Requires handrails provided on walking surfaces to comply with 505.</p> <p>405.8 Requires handrails complying with 505 on ramp runs with rise greater than 150 mm (6 in).</p> <p>504.6 Requires handrails complying with 505 on stairways.</p> <p>505 Contains requirements for sides, continuity, height, clearance, gripping surface, cross section, surfaces, fittings, and extensions. Requirements for sides, continuity, and extensions apply only to ramps and stairways.</p>	<p>R217 Requires handrails to comply with 505.</p> <p>R407 Requires handrails on ramp runs with rise greater than 150 mm (6 in).</p> <p>R408 Requires handrails on stairways.</p> <p>R409 Contains requirements for gripping surfaces, cross section, surfaces, fittings, and extensions. Requirements for sides, continuity, and extensions apply only to ramps and stairways.</p>
Doors & Doorways, Gates	<p>206.5 Requires doors, doorways, and gates providing user passage to comply with 404.</p> <p>404 Contains requirements for manual, automatic, and power-assisted doors and gates, including clear width, maneuvering clearances, thresholds, doors and gates in series, hardware, closing speed, opening force, surfaces, vision lights, controls, and break out opening.</p>	<p>R218 Requires doors, doorways, and gates to comply with 404.</p>

Table 1: Proposed Guidelines Contain Same Requirements as in DOJ 2010 Standards

Element or Facility	DOJ 2010 Standards	
Operable Parts	<p>205 Requires operable parts on accessible elements and accessible routes, and in accessible rooms and spaces to comply with 309.</p> <p>309 Contains requirements for clear space, height, and operation.</p>	R403 Contains requirements for operable parts and pedestrian stations.
Clear Spaces, Knee & Toe Clearance	<p>305, 306 Contains requirements for surfaces, size, position, approach, maneuvering space, and knee and toe clearance for clear floor or ground spaces required at operable parts and accessible elements.</p>	R404, Contains requirements for maneuvering spaces and transit spaces.
Reach Ranges	<p>308 Contains requirements for forward and side reach to operable parts and accessible elements.</p>	R406 Contains requirements for operable parts and accessible elements.

Table 2: Proposed Guidelines Adapt Requirements in DOJ 2010 Standards

Element or Facility	DOJ 2010 Standards	Proposed Guidelines
* DOT Standards apply to transportation facilities used in the provision of dedicated transportation services.		
Sidewalks & Other Pedestrian Circulation Paths	<p>206.2.2 Requires accessible routes complying with 401 to 410 within sites.</p> <p>106.5 Site defined to include “parcel of land bounded by a property line or a designated portion of a public right-of-way.”</p>	<p>R204.2 Requires pedestrian access routes complying with R302 within sidewalks and pedestrian circulation paths located within the public right-of-way.</p> <p>105.5 Public right-of-way defined to include the area between the sidewalk and the street.</p>

Table 2: Proposed Guidelines Adapt Requirements in DOJ 2010 Standards

Element or Facility	DOJ 2010 Standards	Proposed Guidelines
		land or property, usually in in corridors, that is acquired for transportation purposes.”
Width	403.5.1 915 mm (3.0 ft) minimum	R302.3 1.2 m (4.0 ft) minimum
Passing Spaces	403.5.3 Where clear width less than 1.5 m (5.0 ft) wide, requires passing spaces 1.5 m (5.0 ft) by 1.5 m (5.0 ft) minimum at intervals of 61 m (200.0 ft) maximum.	R302.4 Where clear width less than 1.5 m (5.0 ft) wide, requires passing spaces 1.5 m (5.0 ft) minimum at intervals of 61 m (200.0 ft) maximum.
Grade	403.4 Walking Surfaces 5 percent maximum 405.2 Ramps 8.3 percent maximum	R302.5 Where pedestrian access route within street or highway right-of-way, grade to equal general grade of adjacent street or highway. Where access route is not contained within highway right-of-way, require maximum grade.
Cross Slope	403.3 2 percent maximum	R302.6 2 percent maximum
Surfaces	302.1, 403.2 Firm, stable, and slip resistant	R302.7 Firm, stable, and slip resistant
Vertical Alignment	403.4 Requires changes in level to comply with 303.	R302.7.1 Requires vertical alignment of access routes to be generally consistent with 303. Breaks to be flush.
Vertical Surface Discontinuities	303 Permits vertical surface discontinuities up to 13 mm (0.5 in) maximum. Requires vertical surface discontinuities between	R302.7.2 Permits vertical surface discontinuities up to 13 mm (0.5 in) maximum. Requires vertical surface discontinuities between

Table 2: Proposed Guidelines Adapt Requirements in DOJ 2010 Standards

Element or Facility	DOJ 2010 Standards	Proposed Guidelines
	surface discontinuities between 6.4 mm (0.25 in) and 13 mm (0.5 in) to be beveled.	in) and 13 mm (0.5 in) to be beveled. the entire vertical surface discontinuity
Horizontal Openings in Gratings & Joints	302.3, 403.2 Must not allow passage of sphere more than 13 mm (0.5 in) in diameter.	R302.7.3 Must not allow passage of sphere more than 13 mm (0.5 in) in diameter.
Pedestrian Street Crossings	Apply accessible route requirements.	Apply pedestrian access route requirements with following modifications: R302.3.1 Width at Medians and Refuge Islands 1.5 m (5.0 ft) minimum R302.5.1 Grade 5 percent maximum R302.6.1 Cross Slope at Crosswalks with Yield or Stop Control 5 percent maximum at crosswalks with yield or stop control (i.e., where vehicle yield or stop control is required at thru intersection without slow down) R302.6.2 Cross Slope at Midblock Crossings Permits cross slope to equal existing grade.
Pedestrian Overpasses & Underpasses	Apply accessible route requirements.	Apply pedestrian access route requirements with following modifications: R204.4 Where overpass, underpass, bridge, or structure is designed for pedestrian use, and approach slope to structure exceeds 5 percent, requires ramp, elevator, or other use/limited application elevator.

Table 2: Proposed Guidelines Adapt Requirements in DOJ 2010 Standards

Element or Facility	DOJ 2010 Standards	Proposed Guidelines
		lift. Where overpass, underpass, or similar structure is designed for both pedestrian and vehicle use and the access route is contained within the highway right-of-way, grade-separated access route is permitted to exist at the grade established for adjacent highway.
Pedestrian At-Grade Rail Crossings	402, 810.10 Requires pedestrian at-grade rail crossings to comply with accessible route requirements. Permits flangeway gaps to be 64 mm (2.5 in) maximum.	R302.7.1, R302.7.4 Requires pedestrian access route to be flush with top of rail at crossings and aligned with top of rail. Permits gaps to be 64 mm (2.5 in) maximum for freight rail track, and 75 mm (3 in) for passenger rail track.
Curb Ramps & Blended Transitions	28 CFR 35.151 (c) (i) Requires curb ramps or other sloped areas at pedestrian street crossings on newly constructed or altered streets, roads, highways, and street level pedestrian walkways. 206.2.2, 402.2 Requires accessible routes within sites. Curb ramps are components of accessible routes. 406 Contains requirements for perpendicular curb ramps, including location, landings, flared sides, and counter slope. Permits diagonal curb ramps.	R207.1 Curb ramps, blended transitions, or a combination of curb ramps and blended transitions required to connect accessible routes at each pedestrian crossing (i.e., sidewalk level and street level). R207.2 Permits single diagonal curb ramps at both pedestrian street crossings and highway crossings where existing physical conditions preclude compliance with R207.1. R304 Contains requirements for perpendicular curb ramps (turning space, running space, flared sides); parallel curb ramps (turning space and running slope); blended curb ramps (running slope); and common

Table 2: Proposed Guidelines Adapt Requirements in DOJ 2010 Standards

Element or Facility	DOJ 2010 Standards	Proposed Guidelines
		applicable to curb ramps and transitions (width, grade break, counter slope, and clear space)
Protruding Objects	<p>204, 307.5 Requires protruding objects on circulation paths to comply with 307 and not reduce clear width required for accessible routes.</p> <p>307 Contains requirements for protrusion limits, post-mounted objects, and vertical clearance.</p>	<p>R210 Requires protruding objects and overhanging pedestrian circulation to comply with R402 and not reduce clear width required for pedestrian access.</p> <p>R402 Contains requirements for protrusion limits, post-mounted objects, and vertical clearance.</p>
Transit Stops, Boarding & Alighting Areas	<p>218, 810.2* Contains requirements for bus boarding and alighting areas, including surfaces, dimensions, slope, and accessible route connections.</p>	<p>R213, R308.1.1, R308.1.3 Contains requirements for bus boarding and alighting areas at sidewalk or transit stops, including surface, grade, and pedestrian access route connections. Where transit stops have vehicles with more than one boarding and alighting area, the area must comply with requirements for R213, R308.1.1, and R308.1.3.</p>
Boarding Platforms	<p>218, 810.5* Contains requirements for rail boarding platforms, including platform and vehicle floor coordination and slope.</p>	<p>R213, R308.1.2, R308.1.3 Contains requirements for rail boarding platforms at transit stops, including platform and vehicle floor coordination, slope, surface, and pedestrian access route connections.</p>
Detectable Warning Surfaces	<p>218, 810.5.2* Requires detectable warning surfaces on boarding platforms at rail stations.</p> <p>705* Contains requirements for dome size and</p>	<p>R208 Requires detectable warning surfaces on boarding platforms at transit stops and rail vehicles, and at boarding areas.</p>

Table 2: Proposed Guidelines Adapt Requirements in DOJ 2010 Standards

Element or Facility	DOJ 2010 Standards	Proposed Guidelines
	spacing, contrast, size, and placement of detectable warning surfaces.	<p>lighting areas at sidewalk or transit stops for rail vehicles.</p> <p>R305 Contains requirements for detectable warning surfaces, spacing, contrast, size, and placement of detectable warning surfaces.</p>
Route Signs	<p>218, 703, 810.4, 810.6.2* Requires signs that identify routes served by bus stops and rail stations to comply with requirements for visual characters on signs. Bus route signs required to comply with requirements for character height to maximum extent practicable. Bus route signs not required to comply with requirements for height from ground and line spacing. Permits use of audible signs as an alternative means of compliance for signs at rail stations.</p>	<p>R211.3, R410 Requires signs that identify routes served by bus stops and rail stations to comply with requirements for visual characters on signs. Permits use of audible sign systems and other alternative means of compliance for signs at rail stations.</p>
Transit Shelters	<p>218, 810.3* Requires clear space within bus shelters, and accessible route connections.</p>	<p>R213, R308.2 Requires clear space within transit shelters and pedestrian access route connections. Requires environmental controls to be proximity-actuated, and objects to comply with R402.</p>
On-Street Parking	<p>208 Where parking is provided, requires minimum number of accessible parking spaces complying with 502.</p>	<p>R214 Where on-street parking is provided, marked or metered, requires minimum number of accessible parking spaces complying with R309.</p> <p>R309.2 Requires access aisles at accessible parking spaces.</p>

Table 2: Proposed Guidelines Adapt Requirements in DOJ 2010 Standards

Element or Facility	DOJ 2010 Standards	Proposed Guidelines
	<p>502 Contains requirements for vehicle spaces and adjoining access aisles.</p> <p>216.5, 502.6, 703.7.2.1 Requires accessible parking spaces to be identified by signs displaying International Symbol of Accessibility.</p>	<p>parking spaces, where width of sidewalk or available right-of-way is less than 4.3 m (14.0 f). In alterations, new parking spaces marked or painted (including those installed on existing street), and new parking spaces required where street or sidewalk width for parking spaces is not altered. If access aisles not provided, requires parallel parking spaces to be marked with block face.</p> <p>R309.3 Requires access aisles at perpendicular and angled parking spaces. Permits use of accessible parking spaces to serve as an access aisle.</p> <p>R309.4 Requires curb ramps or blended surfaces to connect access aisles to pedestrian routes. Permits curb ramps or blended surfaces at transitions at pedestrian street crossings to serve parking spaces located on the block face.</p> <p>R309.5 Requires parking meters and parking stations serving accessible parking spaces to be located at head or foot of parking space and displays and information accessible to person seated in wheelchair. Requires operable parts to comply with 309.5.1.</p> <p>R211.4, R411 Requires accessible parking spaces to be located on the block face.</p>

Table 2: Proposed Guidelines Adapt Requirements in DOJ 2010 Standards

Element or Facility	DOJ 2010 Standards	Proposed Guidelines
		identified by signs displaying Symbol of Accessibility.
Escalators	810.9 Requires escalators in rail stations to comply with ASME A17.1 Safety Code for Elevators and Escalators sections on steps, and entrance and egress ends.	R216 Requires escalators on pedestrian paths to comply with ASME A17.1 Safety Code for Elevators and Escalators sections on steps, and entrance and egress ends.

Table 3: Proposed Guidelines Contain Requirements Not in DOJ 2010 Standards

Element or Facility	Proposed Guidelines	Other Applicable Standards
Alternate Pedestrian Access Routes	R205, R303 Requires alternate pedestrian access routes to comply with referenced MUTCD standard statements when pedestrian access routes are temporarily closed by construction, alterations, maintenance operations, or other conditions.	Referenced MUTCD standard statements require alternate pedestrian access routes to be accessible when pedestrian access routes are temporarily closed by construction, alterations, maintenance operations, or other conditions.
Pedestrian Street Crossings — Pedestrian Signal Phase Timing	R206, R306.2 Requires pedestrian signal phase timing to comply with referenced MUTCD standard statements.	Referenced MUTCD standard statements contain requirements for pedestrian signal phase timing.
Pedestrian Street Crossings — Accessible Pedestrian Signals and Pedestrian Pushbuttons	R209, R307 Requires pedestrian signals to include accessible pedestrian signals and pedestrian pushbuttons that comply with referenced MUTCD standard statements. Requires operable parts to comply with R403.	Referenced MUTCD standard statements contain requirements for installation of accessible pedestrian signals and pedestrian pushbuttons. However, MUTCD does not contain requirements for accessible pedestrian signals.

Table 3: Proposed Guidelines Contain Requirements Not in DOJ 2010 Stand

Element or Facility	Proposed Guidelines	Other Appli
	<p>R206, R306.5 At signalized intersections, requires pedestrian activated signals complying with R209 at multi-lane channelized turn lanes.</p>	<p>pedestrian signals pushbuttons.</p> <p>Transportation Eq 21st Century (TEA pedestrian signals transportation plan appropriate (23 U</p>
<p>Pedestrian Street Crossings — Roundabouts</p>	<p>R206, R306.2 Requires detectable edge treatment (e.g., grass strip) between sidewalk and curb at roundabouts with pedestrian facilities where pedestrian street crossing is not intended.</p> <p>R206, R306.3 Requires pedestrian activated signals at roundabouts with multi-lane pedestrian street crossings.</p> <p>R206, R306.4 Requires pedestrian activated signals at roundabouts with pedestrian street crossings at multi-lane channelized turn lanes.</p>	<p>None</p>
<p>Pedestrian Street Crossings — Detectable Warning Surfaces on Curb Ramps, Blended Transitions, and Pedestrian Refuge Islands</p>	<p>R208 Requires detectable warning surfaces on curb ramps, blended transitions, and pedestrian refuge islands at pedestrian street crossings. Detectable warning surfaces not required at pedestrian refuge islands that are cut-trough at street level and are less than 1.8 m (6.0 ft) in length in direction of pedestrian travel.</p>	<p>DOJ 1991 Standar warning surfaces o 1991 Standards ca March 15, 2012.</p> <p>DOJ 2010 Standar detectable warnin ramps. DOJ 2010 on March 15, 201 use before this dat</p>

Table 3: Proposed Guidelines Contain Requirements Not in DOJ 2010 Stand

Element or Facility	Proposed Guidelines	Other Appli
		<p>DOT Section 504 detectable warning ramps.</p> <p>DOJ and DOT per UFAS does not re warning surfaces does not permit us after March 15, 20</p> <p>Design manuals is transportation dep detectable warning ramps.</p> <p>AASHTO Green Pedestrian Facilities recommend detect surfaces on curb r</p>
<p>Pedestrian At-Grade Rail Crossings Not Located Within Street or Highway — Detectable Warning Surfaces</p>	<p>R208 Requires detectable warning surfaces at pedestrian at-grade rail crossings not located within street or highway.</p>	<p>None</p>
<p>Pedestrian Signs</p>	<p>R211.2, R410 Requires signs, other than transit signs, that provide directions, warnings, or other information for pedestrians only to comply with requirements for visual characters on signs. Permits use of audible sign systems and other technologies to provide equivalent information as an alternative means of compliance.</p>	<p>None</p>

Table 3: Proposed Guidelines Contain Requirements Not in DOJ 2010 Standard

Element or Facility	Proposed Guidelines	Other Applicable
Benches	R212.6 Requires clear space adjacent to at least 50 percent of benches at each location. Does not apply to benches at tables.	None