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# DEVELOPMENT OF PUBLIC RIGHT-OF-WAY ACCESSIBILITY GUIDELINE RESOURCE MATERIAL

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## EXECUTIVE SUMMARY

Public agencies are required by state and federal laws to provide accessibility on their right-of-way (ROW). Failure of public agencies to provide accessibility on their ROW has resulted in costly settlements. Accordingly, the Illinois Department of Transportation (IDOT) needs to provide information for local public agencies, consultants, contractors, and IDOT personnel about current accessibility requirements and ways to improve accessibility and avoid costly penalties due to non-compliance. This report presents the findings of a research project funded by the Illinois Center for Transportation (ICT) to develop resource materials on providing accessibility to the public right-of-way to ensure that public works projects are built to meet the latest accessibility requirements.

The objectives of this project were as follows:

- Conduct a comprehensive literature review to gather and analyze the most current resource materials on public right-of-way accessibility requirements, including federal and state laws, regulations, standards, guidelines, best practices, self-evaluations, transition plans, and legal cases.
- Recommend content for public ROW accessibility requirements on an IDOT website that includes (1) accessibility policy, (2) non-discrimination notice, (3) design guidance, (4) field guide, (5) related forms, (6) IDOT transition plan, (7) training courses, (8) grievance procedures, (9) contact information, (10) feedback form, (11) frequently asked questions, (12) accessibility links, and (13) municipality resources.
- Develop a comprehensive and practical field guide for IDOT that can be used by field engineers and construction inspectors to verify compliance with all applicable accessibility laws and regulations in the State of Illinois. The field guide includes accessibility requirements checklists that are organized in 18 sections: (1) Pedestrian Access Routes, (2) Alternate Pedestrian Access Routes, (3) Curb Ramps, (4) Detectable Warning Surfaces, (5) Pedestrian Street Crossings, (6) Accessible Pedestrian Signals and Pedestrian Pushbuttons, (7) Transit Stops and Transit Shelters, (8) On-Street Parking Spaces, (9) Passenger Loading Zones, (10) Street Furniture, (11) Operable Parts, (12) Clear Spaces, (13) Knee and Toe Clearance, (14) Reach Ranges, (15) Ramps, (16) Stairways, (17) Handrails, and (18) Doors, Doorways, and Gates.
- Create e-learning modules on accessibility requirements for IDOT classroom training by updating and expanding existing Americans with Disabilities Act (ADA) classroom training offered by IDOT's Technology Transfer Center. The updated modules include 443 slides that are organized in 19 sections: (1) Introduction; (2) Illinois Requirements; (3) Federal Requirements; (4) Transition Plans; (5) Pedestrian Access Routes (PAR); (6) Alternate Pedestrian Access Routes (APAR); (7) Curb Ramps; (8) Driveways; (9) Detectable Warning Surfaces (DWS); (10) Pedestrian Overpasses and Underpasses; (11) Pedestrian Street Crossings; (12) Roundabouts; (13) Accessible Pedestrian Signals and Pedestrian Pushbuttons; (14) Transit Stops and Transit Shelters; (15) Parking Spaces; (16) Passenger Loading Zones; (17) Entrances, Doors, Doorways, and Gates; (18) Supplementary Technical Requirements; and (19) PROWAG—Wrong or Right?
- Develop recommendations that provide guidance to IDOT on improving compliance with public right-of-way accessibility requirements. These recommendations can be used by IDOT to update and/or expand related IDOT practices, policies, specifications, and standards to maximize compliance with accessibility requirements and avoid potential penalties due to non-compliance.

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# CHAPTER 1: INTRODUCTION

## 1.1 PROBLEM STATEMENT

Public agencies are required by state and federal laws to provide accessibility on their rights-of-way (ROWs). Failure of public agencies to provide accessibility on their ROWs has resulted in costly settlements. Examples within the State of Illinois and other states include (1) City of Chicago, which agreed in 2007 to spend \$50 million of new money over five years to upgrade the public ROW to accessibility standards in addition to \$18 million each year installing curb ramps and sidewalks as a part of the city's annual resurfacing work; (2) California Department of Transportation (Caltrans), which agreed in a settlement in 2010 to spend \$1.1 billion of highway funds over 30 years to upgrade neglected accessibility elements; (3) City of Atlanta, which agreed in 2008 to pay \$3 million to a person with a disability who suffered injuries due to inaccessible conditions; and (4) City of Sacramento, which agreed in 2004 to allocate 20% of its annual transportation fund for the following 30 years to ensure compliance of its pedestrian facilities with the ADA standards. Accordingly, IDOT needs to provide information to local public agencies, consultants, contractors, and personnel within IDOT's own divisions about current accessibility requirements, ways to improve accessibility, and how to avoid costly penalties due to non-compliance.

## 1.2 RESEARCH OBJECTIVES AND METHODOLOGY

The main goal of this research project was to develop resource materials on providing accessibility to the public right-of-way by collecting and organizing resource materials on accessibility of public ROWs to ensure public works projects are built to meet the most current accessibility requirements. To accomplish this critical goal, the research objectives of this project were as follows:

- *Conduct a comprehensive literature review* to gather and analyze the most current resource materials on public right-of-way accessibility requirements, including federal and state laws, regulations, standards, guidelines, best practices, self-evaluations, transition plans, and legal cases.
- *Recommend content for public ROW accessibility requirements on an IDOT website* that includes (1) Accessibility Policy, (2) Non-Discrimination Notice, (3) Design Guidance, (4) Field Guide, (5) Related Forms, (6) IDOT Transition Plan, (7) Training Courses, (8) Grievance Procedures, (9) Contact Information, (10) Feedback Form, (11) Frequently Asked Questions, (12) Accessibility Links, and (13) Municipality Resources.
- *Develop a comprehensive and practical field guide* for IDOT that can be used by field engineers and construction inspectors to verify compliance with all applicable accessibility laws and regulations in the State of Illinois. The field guide includes accessibility requirements checklists that are organized in 18 sections: (1) Pedestrian Access Routes, (2) Alternate Pedestrian Access Routes, (3) Curb Ramps, (4) Detectable Warning Surfaces, (5) Pedestrian Street Crossings, (6) Accessible Pedestrian Signals and Pedestrian Pushbuttons, (7) Transit Stops and Transit Shelters, (8) On-Street Parking Spaces, (9) Passenger Loading Zones, (10) Street Furniture, (11) Operable Parts, (12) Clear Spaces, (13) Knee and Toe Clearance, (14) Reach Ranges, (15) Ramps, (16) Stairways, (17) Handrails, and (18) Doors, Doorways, And Gates.
- *Create e-learning modules on accessibility requirements for IDOT classroom training* by updating and expanding existing Americans with Disabilities Act (ADA) classroom training offered by IDOT's Technology Transfer Center. The updated modules include 443 slides that are organized in 19 sections: (1) Introduction; (2) Illinois Requirements; (3) Federal Requirements; (4) Transition Plans; (5) Pedestrian Access Routes (PAR); (6) Alternate Pedestrian Access Routes (APAR); (7) Curb Ramps; (8) Driveways; (9) Detectable Warning Surfaces (DWS); (10) Pedestrian Overpasses and Underpasses; (11) Pedestrian Street Crossings; (12) Roundabouts; (13) Accessible Pedestrian Signals and Pedestrian Pushbuttons;

(14) Transit Stops and Transit Shelters; (15) Parking Spaces; (16) Passenger Loading Zones; (17) Entrances, Doors, Doorways, and Gates; (18) Supplementary Technical Requirements; and (19) PROWAG—Wrong or Right?

- *Develop recommendations* that provide guidance to IDOT on improving compliance with public right-of-way accessibility requirements. These recommendations can be used by IDOT to update and/or expand related IDOT practices, policies, specifications, and standards to maximize compliance with accessibility requirements and avoid potential penalties due to non-compliance.

### 1.2.1 Proposed Techniques and Methodology

The research team accomplished the project objectives by adopting a rigorous research methodology. The methodology breaks down the research work into five major tasks that are described in more detail in the following chapters, as shown in Figure 1.

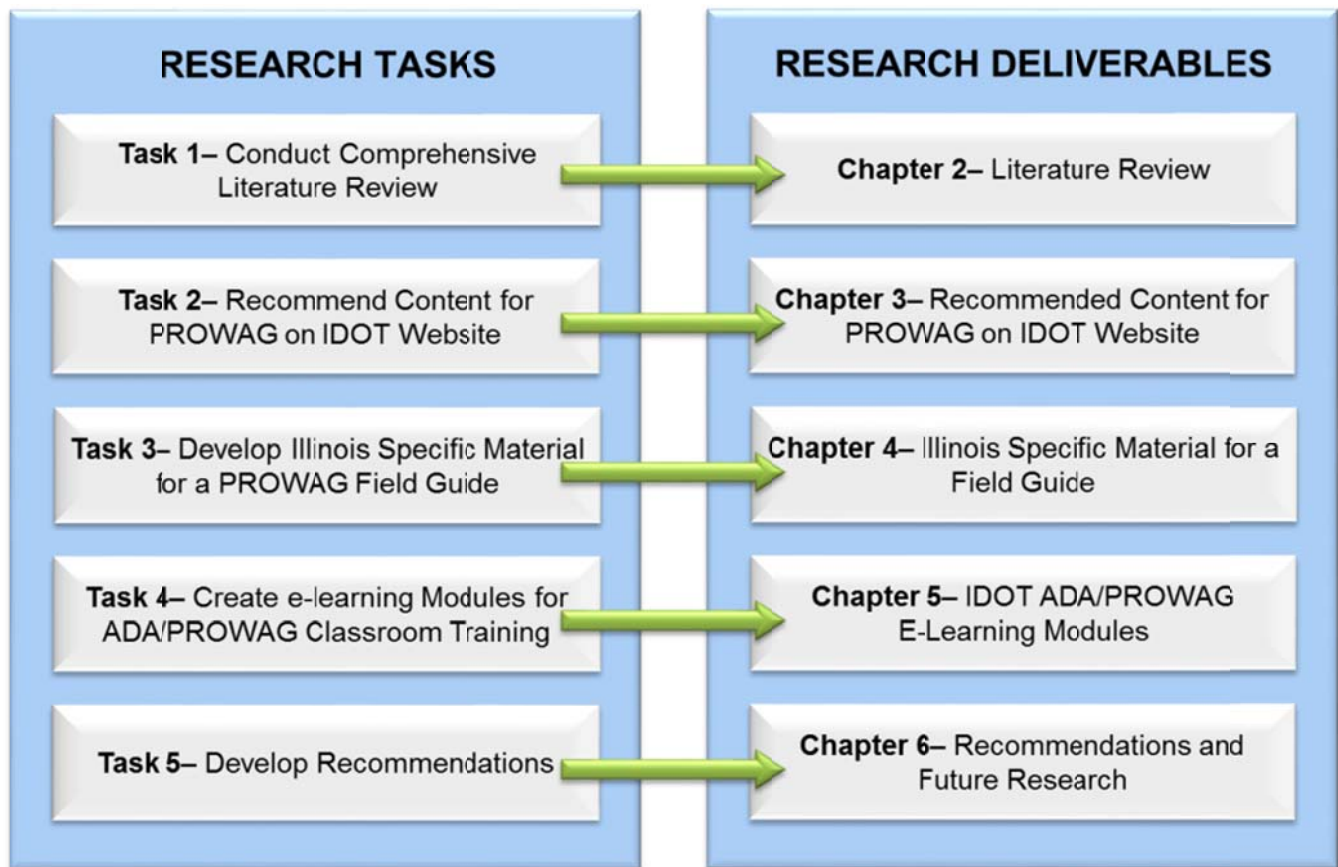


Figure 1: Research tasks and deliverables.



## CHAPTER 2: LITERATURE REVIEW

In this task, the research team conducted a comprehensive literature review to gather and analyze the most current resource materials and best practices on public right-of-way accessibility from other agencies and organizations. The analyzed literature is described in the following five sections that cover (1) federal accessibility laws and regulations, (2) Illinois accessibility laws and regulations, (3) best practices, (4) self-evaluations and transition plans, and (5) legal cases.

### 2.1 FEDERAL ACCESSIBILITY LAWS, REGULATIONS AND STANDARDS

Federal laws, regulations, and standards need to be fully complied with in all states. The following sections provide detailed description of federal accessibility laws, regulations, standards, and guidelines.

#### 2.1.1 Laws

The U.S. Congress has enacted a number of laws to prohibit discrimination against persons with disabilities. These laws include (1) the Architectural Barriers Act (ABA) enacted in 1968; (2) the Rehabilitation Act enacted in 1973; and (3) the Americans with Disabilities Act (ADA) enacted in 1990. The following sections provide a concise review of these three federal laws.

##### 2.1.1.1 Architectural Barriers Act (ABA)

The Architectural Barriers Act (ABA) was enacted by the U.S. Congress in 1968 to recognize the rights of persons with disabilities in the United States (42 U.S.C. §§4151 et seq.). The ABA requires that facilities designed, built, altered, or leased with funds supplied by the United States federal government be accessible to the public. The ABA appointed four federal agencies (General Services Administration, Department of Housing and Urban Development, Department of Defense, and United States Postal Service) to be responsible for implementing the act and developing regulations related to accessibility.

##### 2.1.1.2 Rehabilitation Act

The Rehabilitation Act was enacted by the U.S. Congress in 1973 to prohibit discrimination on the basis of disability in programs or activities receiving federal financial assistance (29 U.S.C. § 701 et seq.). Section 504 of the Rehabilitation Act (29 U.S.C. § 794) states (in part):

No otherwise qualified individual with a disability in the United States, as defined in section 705(20) of this title, shall, solely by reason of her or his disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance or under any program or activity conducted by any Executive agency or by the United States Postal Service.

The Rehabilitation Act guaranteed certain rights to people with disabilities, and it defined “disability” as “a physical or mental impairment, which substantially limits one or more major life activities.” To be eligible for protection under Section 504 of the Rehabilitation Act, an individual must have a physical or mental impairment, a record of an impairment, or be regarded as having an impairment.

##### 2.1.1.3 Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) was enacted by the U.S. Congress in 1990 to prohibit discrimination based on disability (42 U.S.C. § 12101 et seq.). The ADA adopted the same definition of “disability” and the same eligibility criteria as those used under Section 504 of the Rehabilitation Act. The ADA extended the protection already given to persons with disabilities under Section 504 of the Rehabilitation Act to include all programs, services, and activities provided by state and local

governments regardless of federal financial assistance. The ADA defines a “public entity” as “(a) any State or local government; (b) any department, agency, special purpose district, or other instrumentality of a State or States or local government; and (c) the National Railroad Passenger Corporation, and any commuter authority (as defined in section 24102(4) of title 49)” (42 U.S.C. §§ 12131(1)).

In 2008, the ADA was amended by the U.S. Congress. It was signed into law by the president and took effect in 2009. The ADA Amendment Act (ADAAA) focused on clarifying the definition of disability. It was initiated when the Congress believed that the Supreme Court narrowed the definition of disability in the ADA in a way that deprived many eligible persons with disabilities from their right to be protected by the ADA. ADAAA retains the ADA’s basic definition of “disability” as an impairment that substantially limits one or more major life activities, a record of such an impairment, or being regarded as having such an impairment. In addition, it clarifies and expands the definition of disability and it states that it “shall be construed in favor of broad coverage of individuals under this Act, to the maximum extent permitted by the terms of this Act.” It clarifies that the Congress intended the terms to impose less demanding standards than those stated by the Supreme Court in the *Toyota case (Toyota Motor Manufacturing, Kentucky, Inc. v. Williams)*.

The ADA includes five titles: Title I—Employment, Title II—Public Services, Title III—Public Accommodations and Services Operated by Private Entities, Title IV—Wire or Radio Communication, and Title V—Miscellaneous Provisions. Title II of the ADA focuses on public services provided by state and local governments. It consists of two parts: Part A—Prohibition Against Discrimination and Other Generally Applicable Provisions, which provides general rules for non-discrimination in public services; and Part B—Actions Applicable to Public Transportation Provided by Public Entities Considered Discriminatory, which provides rules for non-discrimination in transportation provided by public entities. Title II also defines a qualified individual with disability as follows:

The term “qualified individual with a disability” means an individual who, with or without reasonable modifications to rules, policies, or practices, the removal of architectural, communication, or transportation barriers, or the provision of auxiliary aids and services, meets the essential eligibility requirements for the receipt of services or the participation in programs or activities provided by a public entity. (42 U.S.C. §§ 12131(2))

It should be noted that Title II of the ADA applies to all programs, activities, and services provided or operated by state and local governments, while Section 504 of the Rehabilitation Act applies only to programs or activities receiving federal financial assistance. Accordingly, many state and local government operations that do not receive federal funds are not covered by Section 504; however, they must comply with Title II of the ADA.

### **2.1.2 Regulations**

Each of these federal accessibility laws assigns one or more federal agencies the responsibility to develop regulations for implementing the law and enforcing the regulations. Federal agencies, boards, or commissions issue regulations to explain how they intend to execute the law. Federal regulations are created through a process known as rulemaking.

Federal agencies must consult the public when creating, modifying, or deleting rules in the Code of Federal Regulations (CFR). CFR is an annual publication that lists the official and complete text of federal agency regulations. Once an agency decides that a regulation needs to be added, changed, or deleted, it typically publishes a proposed rule in the Federal Register to ask the public for comments. After the agency considers public feedback and makes changes where appropriate, it then publishes a final rule in the Federal Register with a specific date for when the rule will become effective and

enforceable. When the agency issues a final rule for comment, it must describe and respond to the public comments it received.

The following sections provide a summary of the federal regulations that were developed to enforce the implementation of the three federal accessibility laws.

#### *2.1.2.1 ABA Regulations*

The Architectural Barriers Act of 1968 appointed four federal agencies as standard-setting agencies: General Services Administration, Department of Housing and Urban Development, Department of Defense, and United States Postal Service. These agencies were required to enforce and implement the application of ABA in buildings and facilities under their jurisdiction. These federal agencies implemented ABA by integrating ABA-related sections in their existing regulations, however they did not develop specific and dedicated ABA regulations.

#### *2.1.2.2 Section 504 of the Rehabilitation Act Regulations*

Section 504 of the Rehabilitation Act applies to all programs and activities provided by entities receiving federal financial assistance. Each federal agency has its own set of Section 504 regulations that apply to its own programs and activities. The requirements in these regulations include reasonable accommodation for employees with disabilities, program accessibility, effective communication with people who have hearing or vision disabilities, and accessible new construction and alterations.

Each agency is responsible for enforcing its own Section 504 regulations. The following are examples of Section 504 regulations made by the U.S. Department of Education, U.S. Department of Justice, and U.S. Department of Housing and Urban Development.

In 1980, the U.S. Department of Education published in the Federal Register (34 C.F.R. § 104) its version of Section 504 regulations, *Nondiscrimination on the Basis of Handicap in Programs or Activities Receiving Federal Financial Assistance*. These regulations include seven subparts discussing nondiscrimination in education practices. Subpart C is titled *Accessibility*, and it defines prohibited discrimination as follows:

No qualified handicapped person shall, because a recipient's facilities are inaccessible to or unusable by handicapped persons, be denied the benefits of, be excluded from participation in, or otherwise be subjected to discrimination under any program or activity to which this part applies. (34 C.F.R. § 104.21)

Subpart C of the regulations discusses both existing facilities and new construction requirements to achieve compliance with Section 504. These regulations were amended in 2000 (34 C.F.R. § 104.21–104.23).

In 1982, the U.S. Department of Justice (DOJ) published in the Federal Register (7 C.F.R. §§ 15b.1–15b.42) another version of Section 504 regulations, *Nondiscrimination on the Basis of Handicap in Programs and Activities Receiving Federal Financial Assistance*. These regulations were similar to those made by the U.S. Department of Education. They contain seven subparts including Subpart C, which covers requirements for both existing facilities and new constructions to comply with Section 504. These regulations were updated in 2003.

In 1988, the U.S. Department of Housing and Urban Development (HUD) published in the Federal Register (24 C.F.R. § 8) its own Section 504 regulations, *Nondiscrimination Based on Handicap in Federally Assisted Programs and Activities of the Department of Housing and Urban Development*.

These regulations include four subparts; Subpart C explains requirements that must be followed by all programs and activities receiving federal financial assistance from HUD. The 1988 HUD Section 504 regulations are more detailed than the other two mentioned above. The 1988 HUD Section 504 regulations classify different types of construction separately (e.g., non-housing facilities, housing new construction, housing alteration, and historic buildings). Since 1988, HUD incorporated accessibility standards into these regulations by stating:

Effective as of July 11, 1988, design, construction, or alteration of buildings in conformance with sections 3-8 of the Uniform Federal Accessibility Standards (UFAS) shall be deemed to comply with the requirements of §§8.21, 8.22, 8.23, and 8.25 with respect to those buildings. (24 C.F.R. § 8.32a)

This statement requires all programs and activities that receive federal financial assistance from HUD to comply with the Uniform Federal Accessibility Standards (UFAS) as part of their compliance with Section 504.

### *2.1.2.3 ADA Regulations*

The ADA assigned the responsibility of developing and enforcing regulations related to Title II and Title III of the ADA to the U.S. Department of Justice (DOJ) and the U.S. Department of Transportation (DOT). These regulations require achieving access to all programs, services and activities offered by any public entity at the State and local level (e.g., school district, municipality, city, and county) as well as public accommodations and commercial facilities. These public entities must comply with Title II regulations issued by the U.S. Department of Justice to provide access for persons with disabilities to all their programs, services and activities. This access includes physical access described in the ADA standards for accessible design and programmatic access that might be obstructed by discriminatory policies or procedures of the entity.

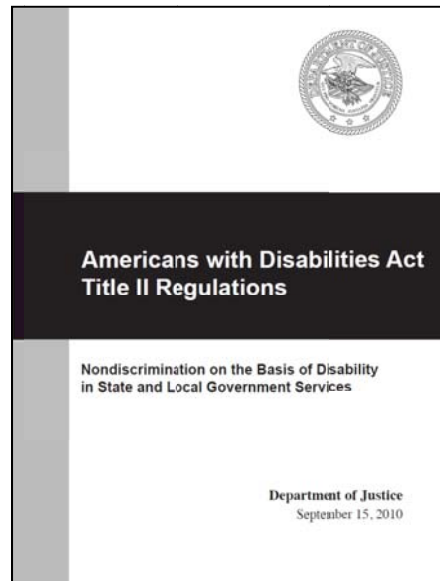
#### 2.1.2.3.1 1991 ADA Regulations

In 1991, the U.S. Department of Justice (DOJ) published ADA regulations in the Federal Register, which included two main parts. The first part, Nondiscrimination on the Basis of Disability in State and Local Government Services, was published under 28 C.F.R. § 35. This part was developed to regulate the application of Title II of the ADA, which focuses on the programs, services, and activities offered by state and local governments. The second part, Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities, was published under 28 C.F.R. § 36. The second part was developed to regulate the application of Title III of the ADA, which focuses on public accommodations and commercial facilities. It also integrated the 1991 accessibility standards into the regulations and was published in the Federal Register as Appendix A of the Title III regulations in the Code of Federal Regulations in July 1994 (28 C.F.R. § 36–Appendix D).

The 1991 ADA Title II regulations included the six subparts: Subpart A—General, which includes four titles explaining the purpose, applications, relationship with other laws, and definitions of Title II; Subpart B—General Requirements, which includes 13 titles, and sets forth the general principles of nondiscrimination applicable to all entities subject to Title II; Subpart C—Specific Requirements, which includes ten titles that provide guidance on the application of the statute to specific situations; Subpart D—New Construction and Alterations, which includes seven titles including guidance on the application of Title II to both new construction and alterations; Subpart E—Enforcement, which includes 8 titles that cover enforcement procedures and authorities related to Title II; and Subpart F—Certification of State Laws or Local Building Codes. In addition, the 1991 ADA Title II regulations included two appendices: Appendix A—Standards for Accessible Design, which includes a copy of the ADA Accessibility Guidelines for Buildings and Facilities, which was published by the U.S. Access Board in 1991; and Appendix B—Preamble to Regulation on Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities.

### 2.1.2.3.2 2010 ADA Title II Regulations

In 2010, the U.S. Department of Justice (DOJ) finalized and published the latest and current set of Title II ADA regulations, as shown in Figure 2. These regulations took effect on March 15, 2011, and were published in the 2011 edition of the Code of Federal Regulations (CFR) under the same code of the 1991 regulations (28 C.F.R. § 35) for Title II regulations and under code 28 C.F.R. § 36 for Title III regulations. The 2010 version of the regulations also maintained the same titles as the 1991 version.



**Figure 2: Cover page of the Americans with Disabilities Act Title II regulations (DOJ 2010).**

The 2010 ADA Title II regulations (28 C.F.R. § 35) includes seven subparts: Subpart A—General, which includes eight titles explaining the purpose, applications, relationship with other laws, self-evaluation, and definitions of Title II; Subpart B—General Requirements, which includes ten titles and it sets forth the general principles of nondiscrimination applicable to all entities subject to Title II; Subpart C—Employment, which includes two titles that cover discrimination in employment; Subpart D—Program Accessibility, which includes five titles that provide guidance on the application of Title II in new construction, alterations, and detention facilities; Subpart E—Communications, which includes 6 titles that cover providing equal opportunity of communications for persons with disabilities; Subpart F—Compliance Procedures, which includes ten titles that cover the enforcement and grievance procedures for Title II; and Subpart G—Designated Agencies, which covers the responsibilities of federal agencies appointed by law to enforce Title II. Additionally, the 2010 ADA Title II regulations includes two appendices: Appendix A—2010 Guidance and Section-by-Section Analysis, which provides guidance on the 2010 regulations; and Appendix B—1991 Preamble and Section-by-Section Analysis, which provides guidance on the provisions of the 1991 regulations. The 2010 Title II regulations included the following new definitions for its adopted standards and guidelines:

- The term “1991 standards” refers to the ADA Standards for Accessible Design, originally published in 1991, and republished as Appendix D to Part 36.
- The term “2004 ADAAG” refers to ADA Chapter 1, ADA Chapter 2, and Chapters 3 through 10 of the Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines, which were issued by the Access Board in 2004 and published in the Code of Federal Regulations in 2009 (36 C.F.R. § 1191, app. B and D).
- The term “2010 standards” refers to the 2010 ADA Standards for Accessible Design, which consists of the 2004 ADAAG and the requirements contained in § 35.151.

Furthermore, the 2010 Title II regulations included several sections that address the public right-of-way (PROW) and highlight the responsibility of state and local governments to provide curb ramps or sloped areas in any newly constructed or altered streets, roads and highways. For example, Subpart D of this regulation states (in part) that

- (1) Newly constructed or altered streets, roads, and highways must contain curb ramps or other sloped areas at any intersection having curbs or other barriers to entry from a street level pedestrian walkway.
- (2) Newly constructed or altered street level pedestrian walkways must contain curb ramps or other sloped areas at intersections to streets, roads, or highways. (28 C.F.R. § 35.151(i)(1), 28 C.F.R. § 35.151(i)(2))

The 2010 Title II regulations require compliance with the 2010 ADA standards. These standards are published as two appendices in Title III regulations: (1) Appendix B, which includes analysis and commentary on the 2010 ADA Standards for Accessible Design; and (2) Appendix D, which includes the original accessibility standards that were published in Appendix A in the 1991 Title III regulations

#### 2.1.2.3.3 Guidance on the Definition of Road Alteration in ADA Regulations

In 2013, the U.S. Department of Justice and the U.S. Department of Transportation collaborated in developing technical assistance to help clarify the scope and definition of alteration in Title II of the ADA. This joint technical assistance was initiated as a response to a court case that was decided in 1993 in the U.S. Court of Appeals, Third Circuit (9 F.3d 1067) to provide further guidance on the scope of the alterations requirement with respect to the provision of curb ramps when streets, roads, or highways are being resurfaced, and to clarify whether particular road surface treatments fall within the ADA definition of alterations or maintenance, which would not trigger the obligation to provide curb ramps.

In this joint technical assistance, the Department of Justice and the Federal Highway Administration (FHWA) defined the conditions in which a resurfacing project would be considered an alteration that would trigger the ADA requirements for providing curb ramps and sloped areas as follows:

Resurfacing is an alteration that triggers the requirement to add curb ramps if it involves work on a street or roadway spanning from one intersection to another, and includes overlays of additional material to the road surface, with or without milling. (DOJ/FHWA 2013)

#### **2.1.3 Standards**

Accessibility standards establish design requirements for the construction and alteration of facilities to ensure access for persons with disabilities. These enforceable standards apply to any facility that falls under the jurisdiction of accessibility laws including places of public accommodation, commercial facilities, and state and local government facilities.

Laws appoint certain federal agencies as standard-setting agencies and give them the authority to develop regulations and adopt standards that are essential for enforcing the law. To cover the technical side of regulations, the standard-setting federal agencies either develop technical design standards or request other governmental entities to develop them. Standards are developed through a detailed rulemaking process that can be divided into two main phases: (1) guidelines development, and (2) standards adoption. The first phase focuses on developing design guidelines in order to provide guidance to architects, engineers, and contractors to help them understand the requirements of the law and its impact on their design and construction. These guidelines are typically developed using a detailed process that involves conducting research, experiments, review of practices, and analysis of comments and suggestions from the public. The second phase focuses on transforming the developed guidelines to enforceable standards. This is typically performed by one of the standard-setting federal agencies (e.g., Department of Justice), which adopts as federal standards the developed guidelines

after any required modifications. These federal standards are then integrated or referenced in the federal accessibility regulations as appendices such as the 2004 ADAAG (36 C.F.R. § 1190 and 1191). Once adopted as part of the federal regulations, these standards act as enforceable minimum design requirements. The following sections provide a concise review of the main federal accessibility standards.

#### *2.1.3.1 ABA Standards*

In 1968, the Architectural Barriers Act (ABA) appointed four federal agencies to be responsible for developing regulations and standards related to accessibility and enforcing these regulations. Following the approval of the ABA by the U.S. Congress, efforts were made by the four standard-setting federal agencies (General Services Administration, Department of Housing and Urban Development, Department of Defense, and United States Postal Service) to develop regulations and standards for the ABA. These efforts were separate, and each agency developed its own standards.

The original standards (A117.1) developed by the American National Standards Institute (ANSI) in 1961 acted as the technical base for accessibility standards adopted by the federal government and most states. ANSI is a private non-profit organization that oversees the development of voluntary consensus standards for products, services, processes, systems, and personnel in the United States (ANSI 2014). ANSI also coordinates U.S. standards with international standards so that American products can be used worldwide. The A117.1 standards were modified in 1986 and in 2003. The current version of the standards was published in 2009 under the title Accessible and Usable Buildings and Facilities (ANSI 2009).

#### *2.1.3.2 Uniform Federal Accessibility Standards (UFAS)*

In 1984, the Uniform Federal Accessibility Standards (UFAS) were published in the Federal Register. The UFAS are the result of a joint effort by the four standard-setting federal agencies appointed by the ABA to develop a master standards that would avoid any contradiction between the different standards prepared by each agency separately. The UFAS focused on minimizing the differences between the standards previously used by these four agencies. The UFAS was first published in the Federal Register on August 7, 1984 (49 FR 31528). Later, each of the four standard-setting agencies took actions in accordance with its own procedures to incorporate the UFAS in its own standards, regulations, or other directives, as the UFAS by itself were not enforceable standards. For example, the GSA adopted the UFAS in its regulations (41 C.F.R. § 101-19.6), effective August 7, 1984; and HUD adopted the UFAS in its regulations (24 C.F.R. § 40), effective October 4, 1984. The UFAS are still in effect to date in many agencies under the ABA and other laws.

#### *2.1.3.3 1991 ADA Accessibility Standards*

The 1991 ADA Accessibility Standards were published in the Federal Register (36 C.F.R. § 1191 Appendix A) with the title of Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities (ADAAG). These standards were adopted based the accessibility guidelines that were developed by the U.S. Access Board that was established by Section 502 of the Rehabilitation Act (29 U.S.C. § 792) in 1973. The Access Board consists of 13 members appointed by the U.S. president from the public, a majority of which are individuals with disabilities, and the heads of 12 federal agencies or their designees. 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 (76 FR 75844).

The Access Board is responsible for developing and updating accessibility guidelines for the design, construction, and alteration of facilities to ensure that they are readily accessible to and usable by individuals with disabilities. These guidelines are used by the Department of Justice (DOJ) and the Department of Transportation (DOT) in setting enforceable standards that the public must follow. The Access Board's guidelines play an important role 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. The regulations issued by other federal agencies to implement these laws typically adopt the U.S. Access Board's guidelines as accessibility standards. When the Access Board's guidelines are adopted, with or without additions and modifications, as accessibility standards in regulations issued by other federal agencies implementing these laws, compliance with the accessibility standards is mandatory (76 FR 75844).

It should be noted that the 1991 ADA Accessibility Standards (36 C.F.R. § 1191 Appendix A) did not provide specific requirements for the public right-of-way (PROW). Instead, the design requirements for various PROW areas were addressed in different chapters of the standards. For example, passenger loading zones, curb ramps, and detectable warning surfaces were mentioned in Chapter 4 as items 4.6, 4.7, and 4.29, respectively. Chapter 15 was titled Recreational Facilities, and it included guidance on items related to public rights-of-way. Chapter 14 was titled Public Rights-of-Way, but it was removed from these standards. The 1991 ADA Accessibility Standards were effective until March 14, 2012, at which time they were replaced by the 2010 ADA standards.

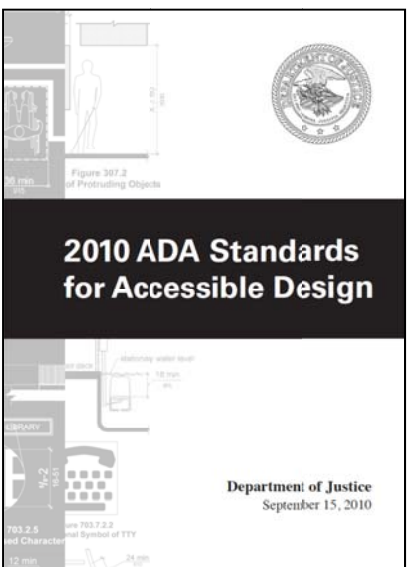
#### *2.1.3.4 2010 ADA Standards*

The Department of Justice published the 2010 ADA Standards for Accessible Design on September 15, 2010 (Figure 3) as part of its 2010 ADA regulations. The 2010 ADA standards were adopted by the Department of Justice based on the Americans with Disabilities Act Accessibility Guidelines (ADAAG) for Buildings and Facilities that were developed by the U.S. Access Board in 2004. The 2010 ADA Standards for Accessible Design consist of two parts. The first part is titled New Construction and Alterations and was published as part of the 2010 ADA regulations (28 C.F.R. § 35.151); and the second part is the 2004 ADAAG (36 C.F.R. § 1191 Appendices B and D).

The first part of the 2010 ADA standards for "new construction and alterations" included 11 sections: (1) Design and Construction, which requires all facilities built by or on behalf of any entity covered by the ADA to be accessible except in cases when its impractical to achieve accessibility; (2) Alterations, which covers alterations to historic properties, path of travel, and primary function; (3) Accessibility Standards and Compliance Date; (4) Scope of Coverage; (5) Social Service Center Establishments; (6) HOUSING at a Place of Education; (7) Assembly Areas; (8) Medical Care Facilities; (9) Curb Ramps; (10) Facilities with Residential Dwelling Units for Sale to Individual Owners; and (11) Detention and Correctional Facilities.

The second part of the 2010 ADA standards is the 2004 Americans with Disabilities Act Accessibility Guidelines (ADAAG) that were developed by the Access Board in 2004. The 2004 ADAAG is commonly known as the ADA Accessibility Guidelines (ADAAG 2004). The 2004 ADAAG consists of ten chapters: (1) Application and Administration; (2) Scoping Requirements; (3) Building Blocks; (4) Accessible Routes; (5) General Site and Building Elements; (6) Plumbing Elements and Facilities; (7) Communication Elements; (8) Special Rooms, Spaces, and Elements; (9) Built-In Elements; and (10) Recreational Facilities. The accessibility requirements for the public right-of-way in the 2004 ADAAG were distributed over several chapters including Chapters 4, 5, and 10. These 2004 ADA accessibility guidelines (ADAAG) are still the latest and most current accessibility guidelines to date.





**Figure 3: Cover page of the 2010 ADA Standards for Accessible Design (DOJ 2010).**

The current ADA standards that are adopted and enforced by the Departments of Justice and Transportation are based on the 2004 ADAAG. Although these two current standards of the Departments of Justice and Transportation are very similar, each of them contains additional requirements that address the specific facilities covered by its respective department. These additional requirements define the types of facilities covered, set effective dates, and provide additional scoping or technical requirements for those facilities.

The Department of Justice stated in its 2010 ADA regulations that all state and local government projects of new construction or alteration starting on or after March 15, 2012, must comply with the 2010 Standards. For projects starting before that date, they need to comply with (1) the 1991 Standards or the UFAS; or (2) the 2010 Standards if the project start date is after September 15, 2010, as shown in Table 1.

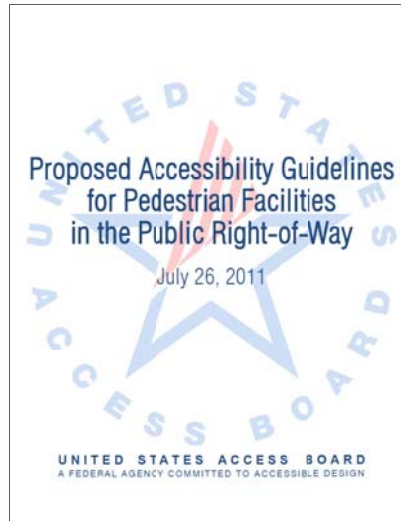
**Table 1: ADA Standards Validity Periods Under Title II of the ADA (28 C.F.R. § 35)**

Project Start Date	July 26, 1991, to September 14, 2010	September 15, 2010, to March 14, 2012	On or after March 15, 2012
UFAS	Effective	Effective	Not effective
1991 Standards	Effective	Effective	Not effective
2010 Standards	—	Effective	Effective

**2.1.4 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG)**

As stated earlier, the process of developing accessibility standards usually starts with the U.S. Access Board developing guidelines that are later adopted by one of the standard-setting federal agencies to become enforceable standards. For example, the 2004 ADAAG later became part of the 2010 ADA standards after it was adopted by the U.S. DOJ in its 2010 update of Title II and Title III regulations. Similarly, in 2011 the U.S. Access Board developed Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (Figure 4). To improve clarity, these 2011 proposed guidelines will be

referred to as “PROWAG” in this report. The 2011 proposed guidelines (PROWAG) are currently undergoing the final stages of their rulemaking process before they can be published as design guidelines.



**Figure 4: Cover page of Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG) (USAB 2011).**

As soon as these proposed accessibility guidelines (PROWAG) are finalized and published, they will address various public right-of-way areas, including access for blind pedestrians at street crossings, wheelchair access to on-street parking, and various constraints posed by space limitations, roadway design practices, slope, and terrain. These new guidelines will cover pedestrian access to sidewalks and streets, including crosswalks, curb ramps, street furnishings, pedestrian signals, parking, and other components of the public right-of-way. The aim of these guidelines is to ensure that access for persons with disabilities is provided wherever a pedestrian way is newly built or altered, and that the same degree of convenience, connection, and safety available to the public generally is available to pedestrians with disabilities. Once these guidelines are adopted by the Department of Justice, they will become enforceable standards under Title II of the ADA.

These proposed guidelines address access to both newly constructed and altered public streets and sidewalks covered by the American with Disabilities Act (ADA) and the Architectural Barriers Act (ABA) or the Rehabilitation Act, in the case of federally funded projects. In case of alteration projects, these requirements apply only to public right-of-way elements (e.g., curb ramps and sidewalks) that are included in the original project scope (76 FR 44664). The Access Board’s ADA and ABA Accessibility Guidelines (ADAAG) address access to buildings and facilities located on sites. Standards based on the ADAAG apply within the boundary of covered sites as defined by public right-of-way and property lines. The new proposed guidelines pick up mainly where the ADAAG leaves off, to cover accessibility requirements in the context of public right-of-way outdoor environments (76 FR 44664).

To ensure consistency and to avoid redundancy, the 2011 proposed guidelines refer to other requirements in (1) the ADA/ABA guidelines for specific elements such as escalators and toilet facilities, and (2) the FHWA Manual on Uniform Traffic Control Devices (MUTCD 2009) for streets and highways. The 2011 proposed guidelines cover pedestrian features in new or altered public rights-of-way, including sidewalks and other pedestrian ways, street crossings, medians and traffic islands, overpasses, underpasses, and bridges. They also cover on-street parking, transit stops, toilet facilities, signs, and street furniture. The guidelines apply to permanent as well as temporary facilities, such as temporary routes around work zones and portable toilets. The proposed guidelines consist of four

chapters: (1) Application and Administration, (2) Scoping Requirements, (3) Technical Requirements, and (4) Supplementary Technical Requirements. A brief description of each of these four chapters is presented in Tables 2 through 5.

**Table 2: Chapter 1 of PROWAG (76 FR 44664–R1)**

Chapter 1: Application and Administration	
Section	Description
Section 1: <i>Purpose</i>	Explains the goal of the document to ensure that facilities for pedestrian circulation and use located in the public right-of-way are readily accessible to and usable by pedestrians with disabilities, and also states that these guidelines do not address existing facilities unless the facilities are included within the scope of an alteration undertaken by an entity covered by Title II of the ADA
Section 2: <i>Equivalent Facilitation</i>	Permits the use of alternative measures and technologies if they will result in equivalent or greater accessibility than the requirements of the guidelines
Section 3: <i>Convention</i>	Explains the use of different conventions, tolerances, and units of measurement throughout the guidelines
Section 4: <i>Referenced Standards</i>	Defines all referenced standards that were used throughout the guidelines
Section 5: <i>Definitions</i>	Defines all legal and technical terms used in these guidelines

**Table 3: Chapter 2 of PROWAG (76 FR 44664–R2)**

Chapter 2: Scoping Requirements	
Section	Description
Section 1: <i>Application</i>	States that all newly constructed facilities, altered portions of existing facilities, and elements added to existing facilities as well as temporary and permanent facilities for pedestrian circulation and use located in the public right-of-way shall comply with the requirements in the guidelines
Section 2: <i>Alterations and Elements Added to Existing Facilities</i>	Covers addition and alteration of elements and prohibits any alterations or additions that could result in reduction of accessibility
Section 3: <i>Machinery Spaces</i>	Excludes machinery spaces from the accessibility requirements mentioned in these guidelines, only if the spaces are solely for the purpose of machinery and maintenance
Section 4: <i>Pedestrian Access Routes</i>	Covers pedestrian access routes and their elements such as sidewalks, street crossings, overpasses, and underpasses
Section 5: <i>Alternate Pedestrian Access Routes</i>	Expands the requirements of pedestrian access routes to any temporary paths, stating that all temporary pedestrian routes should be accessible
Section 6: <i>Pedestrian Street Crossings</i>	Requires pedestrian street crossings to comply with requirements in Chapter 3
Section 7: <i>Curb Ramps and Blended Transitions</i>	Requires curb ramps and blended transitions to comply with requirements in Chapter 3
Section 8: <i>Detectable Warning Surfaces</i>	Requires that detectable warning surfaces be provided at all intersections between pedestrian path and any street or rail
Section 9: <i>Accessible Pedestrian Signals and Pedestrian Pushbuttons</i>	Refers to the requirements in the MUTCD, and also requires that all existing signals and pushbuttons comply with these guidelines whenever altered or modified
Section 10: <i>Protruding Objects</i>	Requires that any elements or objects along or overhanging any portion of the pedestrian path shall not reduce its width

Chapter 2: Scoping Requirements	
Section 11: <i>Signs</i>	Covers scoping requirements for pedestrian signs, transit signs, and accessible parking space and passenger loading zone signs
Section 12: <i>Street Furniture</i>	Provides scoping requirements for drinking fountains, public toilets, tables, counters, and benches
Section 13: <i>Transit Stops and Transit Shelters</i>	Requires transit stops and transit shelters to comply with requirements in Chapter 3
Section 14: <i>On-Street Parking Spaces</i>	Covers the number of accessible parking spaces required in any public parking lot, as shown in Figure 5.
Section 15: <i>Passenger Loading Zones</i>	Requires that at least one accessible passenger loading zone be provided each 100 feet whenever needed
Section 16: <i>Stairways and Escalators</i>	Requires that stairways and escalators comply with these requirements if they are on an accessible path, and also prohibits including them as part of the accessible route
Section 17: <i>Handrails</i>	Requires handrails to comply with requirements in Chapter 3
Section 18: <i>Doors, Doorways, and Gates</i>	Requires compliance with requirements for doors, doorways, and gates in Chapter 3

Public Rights-of-Way Accessibility Guidelines

**R214 On-Street Parking Spaces.** Where on-street parking is provided on the block perimeter and the parking is marked or metered, accessible parking spaces complying with R309 shall be provided in accordance with Table R214. Where parking pay stations are provided and the parking is not marked, each 6.1 m (20.0 ft) of block perimeter where parking is permitted shall be counted as one parking space.

**Table R214 On-Street Parking Spaces**

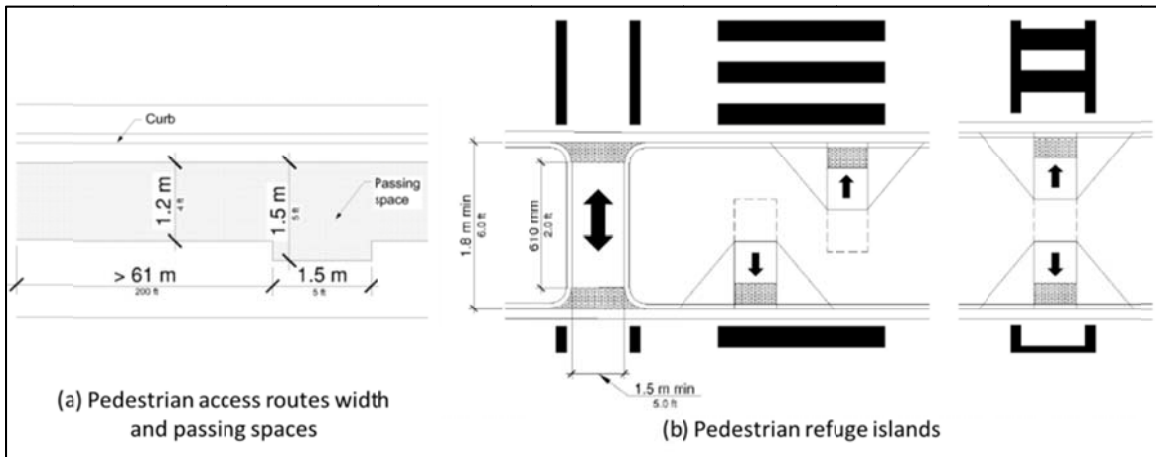
Total Number of Marked or Metered Parking Spaces on the Block Perimeter	Minimum Required Number of Accessible Parking Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 and over	4 percent of total

**Advisory R214 On-Street Parking Spaces.** The MUTCD contains provisions for marking on-street parking spaces (see section 3B.19). Metered parking includes parking metered by parking pay stations. Where parking on part of the block perimeter is altered, the minimum number of accessible parking spaces required is based on the total number of marked or metered parking spaces on the block perimeter.

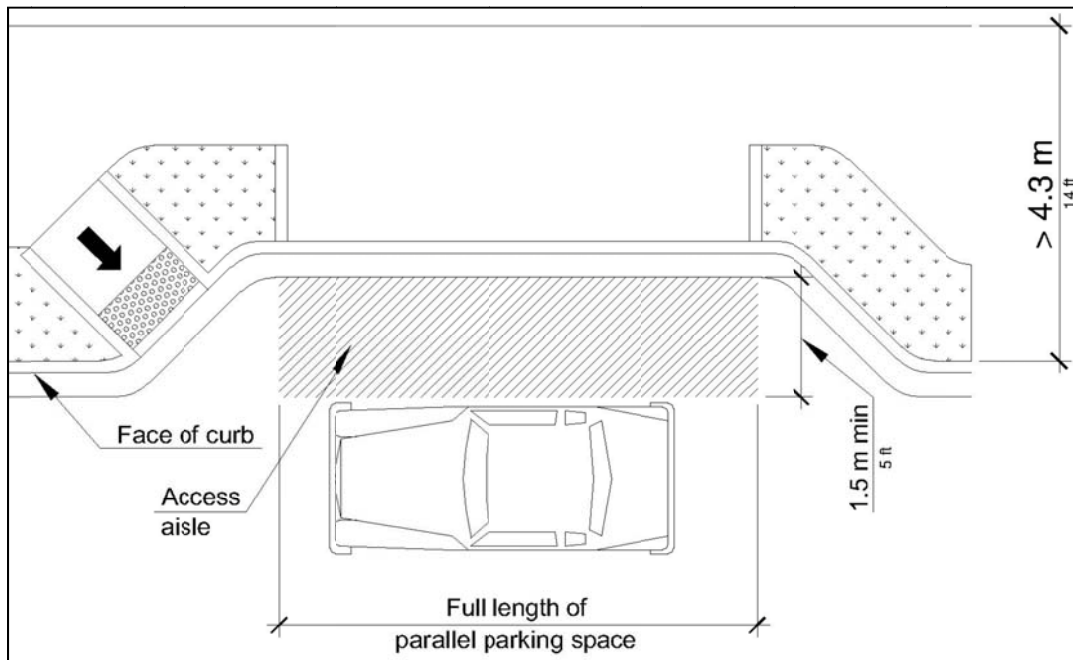
**Figure 5: Sample requirements for on-street parking spaces (USAB 2011).**

**Table 4: Chapter 3 of PROWAG (76 FR 44664 – R3)**

Chapter 3: Technical Requirements	
Section	Description
<b>Section 1: General</b>	States that the technical requirements in this chapter shall apply where required by Chapter 2
<b>Section 2: Pedestrian Access Routes</b>	Covers technical accessibility requirements for the pedestrian access routes such as continuous width, passing space, grade, cross slope, and surface, as shown in Figure 6
<b>Section 3: Alternate Pedestrian Access Routes</b>	Expands the requirements of pedestrian access routes to any temporary paths, stating that all temporary pedestrian routes should be accessible
<b>Section 4: Curb Ramps and Blended Transitions</b>	Provides technical accessibility requirements for perpendicular curb ramps, parallel curb ramps, and blended transitions including turning spaces, running slope, cross slope, flared sides, width, and grade break
<b>Section 5: Detectable Warning Surfaces</b>	Provides technical requirements about dome size, dome spacing, color contrast, size, and placement
<b>Section 6: Pedestrian Street Crossings</b>	Includes requirements for pedestrian signal phase timing, roundabouts, channelized turn lanes at roundabouts, and channelized turn lanes at other intersections
<b>Section 7: Accessible Pedestrian Signals and Pedestrian Pushbuttons</b>	Refers to Section 9 in Chapter 2
<b>Section 8: Transit Stops and Transit Shelters</b>	Includes requirements for boarding and alighting areas, boarding platforms, surfaces, connections, slope, cross slope, and coordination between platform and vehicle floor
<b>Section 9: On-Street Parking Spaces</b>	Includes requirements for parallel parking spaces, perpendicular parking spaces, angled parking spaces, sidewalk width, curb ramps, and parking meters, as shown in Figure 7
<b>Section 10: Passenger Loading Zones</b>	Includes requirements for vehicle pull-up space and access aisle dimensions



**Figure 6: Example accessibility guidelines for pedestrian access routes (USAB 2011).**

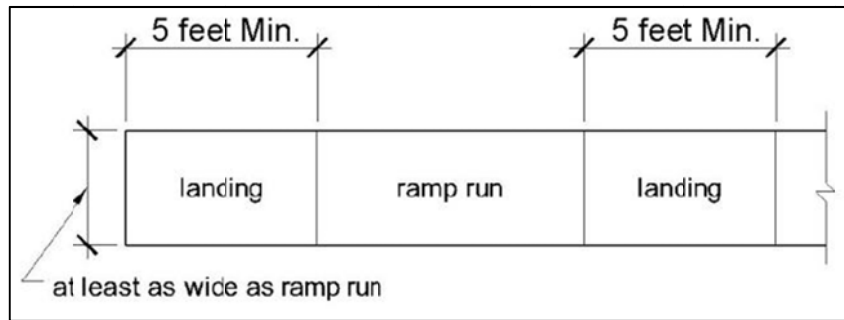


**Figure 7: On-street parking space dimensions (USAB 2011).**

**Table 5: Chapter 4 of PROWAG (76 FR 44664–R4)**

Chapter 4: Supplementary Technical Requirements	
Section	Description
Section 1: <i>General</i>	States that the technical requirements in this chapter shall apply where required by Chapter 2
Section 2: <i>Protruding Objects</i>	Includes requirements on protrusion limits, post-mounted objects, and vertical clearances
Section 3: <i>Operable Parts</i>	Includes requirements for clear space, height, and operations
Section 4: <i>Clear Spaces</i>	Includes requirements for surface, size, knee and toe clearance, position, approach, and maneuvering space
Section 5: <i>Knee and Toe Clearance</i>	Covers the required clearances and dimensions to accommodate persons on wheel chairs
Section 6: <i>Reach Ranges</i>	Includes dimensions and illustrations of reachable space around persons with mobility devices
Section 7: <i>Ramps</i>	Lists the requirements of accessible ramps such as running slope, cross slope, landings, width, rise, change in direction, surfaces, handrails, and edge protection, as shown in Figure 8
Section 8: <i>Stairways</i>	Covers requirements for treads and risers, open risers, tread surface, nosing, and handrails
Section 9: <i>Handrails</i>	Includes requirements for continuity, height, gripping surface, clearance, and cross section
Section 10: <i>Visual Characters on Signs</i>	Includes requirements for finishing contrast, case, style, character proportions, character height, character spacing, and line spacing
Section 11: <i>International Symbol of Accessibility</i>	Includes a figure of the international symbol of accessibility





**Figure 8: Sample requirements for ramp dimensions and landing distances (USAB 2011).**

Although the 2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG) have not become enforceable standards by law, they are expected to be finalized as guidelines and then adopted as enforceable standards in the near future.

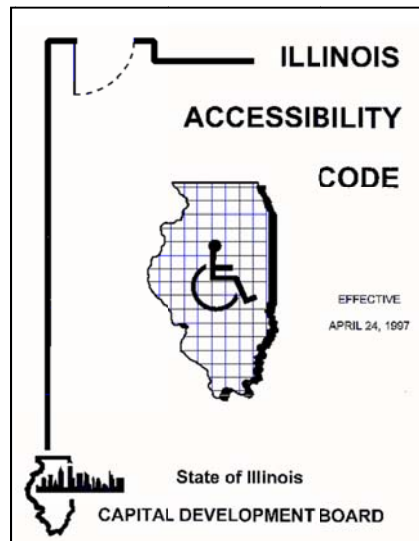
## **2.2 ILLINOIS ACCESSIBILITY LAWS AND CODES**

States have their own sets of laws and codes that are applicable within the jurisdiction of the state. These state laws and codes along with the federal laws and regulations are enforceable within each state. State and local government facilities in the State of Illinois must comply with federal accessibility laws and regulations in addition to any effective Illinois laws and codes. The following section provides a concise review of accessibility laws and codes in the State of Illinois.

### **2.2.1 Illinois Environmental Barriers Act (EBA)**

In 1985, the State of Illinois enacted its own accessibility rights law, the Illinois Environmental Barriers Act (EBA) (410 ILCS 25/1 et seq.). Illinois EBA is the statute that governs physical access for people with disabilities in new construction, additions, and alterations to public facilities within the State of Illinois. The Illinois Accessibility Code (Figure 9) contains the design standards required by the Illinois EBA such as the required width of a door and the number of accessible parking spaces that must be provided.

Within the State of Illinois, state and local governments must comply with all accessibility laws and regulations including (1) the ADA, the Rehabilitation Act, and the ABA; and (2) State of Illinois laws such as the Illinois EBA. The ADA states that all entities subject to Title II and Title III shall comply with ADA regulations and standards only if these regulations and standards provide equal or greater accessibility than state and local laws and regulations. Accordingly, any newly constructed or altered public facility in the State of Illinois must comply with the strictest current federal and state laws and regulations (28 C.F.R. § 35.103).



**Figure 9: Cover page of the Illinois Accessibility Code (CDB 1997).**

### **2.2.2 Illinois Accessibility Code (IAC)**

The Illinois Accessibility Code (IAC) was developed and published by the State of Illinois Capital Development Board in 1997, as shown in Figure 9. It includes a set of rules that were adopted by the Capital Development Board to implement the Illinois Environmental Barriers Act (EBA). The code includes design requirements for buildings, including all spaces and elements within the buildings. The purpose of the code is to ensure that these buildings are designed, constructed, and/or altered to be readily accessible to and usable by persons with disabilities. The IAC has the force of a building code and is law in the State of Illinois. The IAC constitutes minimum requirements for all governmental units in Illinois. It also allows governmental units to adopt stricter requirements to increase access for persons with disabilities (CDB 1997).

The IAC focused on resolving areas of difference between the ADAAG 2004 and the former Illinois accessibility standards, applicable to buildings and facilities in the State of Illinois covered by the Illinois EBA. The IAC adopted the stricter of the former state and federal accessible design standards (CDB 1997). Any building covered by the Illinois EBA must satisfy the IAC requirements, even if the building is also financed by federal funds or covered by the ADA. The Illinois EBA requires a Statement of Compliance by the architect/engineer unless the cost of construction or alteration is less than \$50,000. The statement must certify that the plans and specifications for the building are in compliance with the Illinois EBA.

The IAC includes sections that cover accessibility requirements for new construction, addition, and alteration of public facilities in Illinois, and multistory housing and historic preservation. Although the focus of IAC is on buildings and facilities, it includes sections that contain the public right-of-way accessibility requirements for (1) accessible routes, (2) curb ramps, (3) detectable warnings, (4) parking and passenger loading zones, (5) protruding objects, and (6) temporary buildings and facilities. Compliance with both these IAC sections and the 2010 ADA regulations is mandatory for any public right-of-way work in the State of Illinois (CBD 1997).

### **2.2.3 Rules and Regulations for the City of Chicago**

In 2014, The City of Chicago published its own set of rules and regulations for construction in the public way. The main purpose of these regulations was to “provide utility companies (both public and private), contractors, and developers with a tool that will assist in minimizing conflicts that occur between construction in the Public Way and the vital uses the Public Way provides” (CDOT 2014).



The Chicago rules and regulations cover construction in the public way within the jurisdiction of the City of Chicago. They include four chapters that cover requirements for the coordination, permitting, executing, and compliance of work in the public way. The rules and regulations also include an Appendix B that provides ADA standards for openings, construction, and repair in the public way. The appendix includes four sections that provide (1) 21 plan sheets, as shown in the sample sheet in Figure 10; (2) five alley and driveway sheets; (3) five notes sheets; and (4) three details sheets (CDOT 2014).

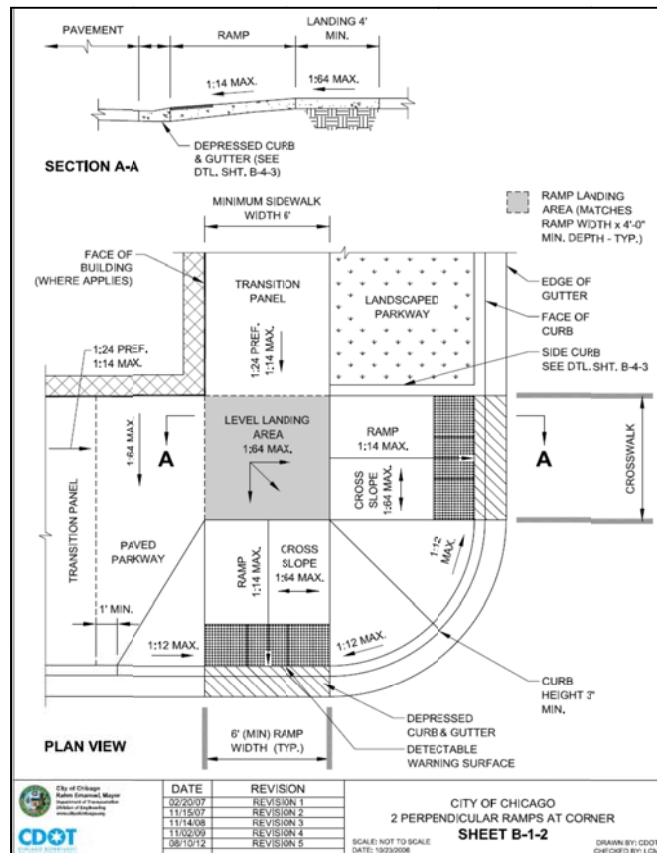


Figure 10: Sample plan sheet (CDOT 2014).

## 2.3 BEST PRACTICES

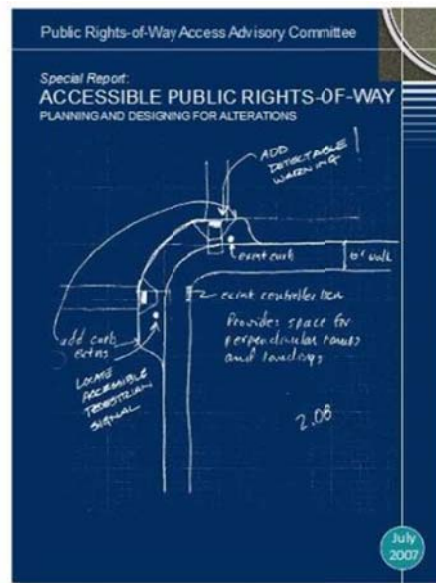
Many federal and state government agencies developed best practices to provide guidance for officials in public entities to ensure their compliance with applicable accessibility laws and regulations. These federal and state best practices include manuals and design guides that are summarized in the following two sections.

### 2.3.1 Federal Manuals and Design Guides

Many federal agencies developed manuals and design guides to provide best practices that can be used to comply with accessibility laws and regulations. These federal best practices include (1) planning and designing for alterations in the public rights-of-way; (2) best practices design guide for designing sidewalks and trails for access; (3) ADA best practices tool kit for state and local governments; (4) guide to best practices for accessible pedestrian signals; (5) ADA Title II Technical Assistance Manual; (6) several guides provided by the Department of Justice; and (7) review of practices for ADA compliance at transportation agencies.

### 2.3.1.1 Accessible Public Rights-of-Way: Planning and Designing for Alterations

In 2007, the public rights-of-way access advisory committee (PROWAAC) published a report, *Accessible Public Rights-of-Way: Planning and Designing for Alterations*, as shown in Figure 11. This design guide provides guidance and recommendations to achieve accessibility in alteration projects within the public rights-of-way. The guide was based on the recommendations of a subcommittee of PROWAAC that developed a model for right-of-way design alternatives, design processes for making alterations, design solutions to specific problems, and case studies demonstrating examples of accessible design practices from across the United States. The goal of this design guide is to improve projects in the public rights-of-way that are classified as alterations under the ADA (PROWAAC 2007). The design guide includes six chapters: (1) Introduction, (2) Alterations, (3) Design Process, (4) Design Solutions, (5) Model Sidewalks, and (6) Curb Ramp Examples.



**Figure 11: The cover page of the PROWAAC 2007 (PROWAAC 2007).**

Chapter 1, Introduction, provides a general background in four sections: (1) The Public Right-of-Way, (2) Accessibility Regulations, (3) Alterations, and (4) Existing Facilities.

Chapter 2, Alterations, focuses on explaining both the nature of alteration projects and the principles of accessibility in seven sections: (1) Terminology, which explains ADA requirements in case of alteration in the context of the public right-of-way; (2) Project Physical Constraints, which focuses on the physical, financial, and architectural constraints that limit the flexibility of alteration projects; (3) Analyzing Accessibility Alternatives, which explains the possible ways of achieving accessibility and the selection criteria for choosing the correct alternative; (4) Project Scope, which focuses on the scoping of alteration projects; (5) How Do You Know When You've Maximized Accessibility?, which explains the measures, metrics and techniques for achieving maximum possible accessibility within an alteration project; (6) Project Approach, which focuses on promoting the accessibility design requirements in the architectural, engineering, and construction industry; and (7) Frequently Asked Questions, which provides answers for frequently asked questions on alterations. This chapter also includes several case studies that illustrate common design challenges, as shown in the example in Figure 12 (PROWAAC 2007).

The reconstruction of a roadway, the upgrading of a sidewalk, or the installation of other elements are alterations when they affect usability, temporarily or permanently, for pedestrians or vehicles.

### Curb Ramps

Under the ADA, an alteration to a sidewalk or street will give rise to an additional obligation to include curb ramps in the scope of the project. From the Title II regulation:

#### Case Study—Steep Terrain at Corner

- Before and after photos show a new segment of sidewalk, with a 2% cross slope and curbs for drainage/erosion control, built to facilitate use of a newly installed curb ramp.
- A level landing on the curbed sidewalk connects to the curb ramp.
- The curb ramp is placed at the flattest portion of the street gutter grade along the radius to minimize warp in the curb ramp to the street.
- Still needed: detectable warnings at street edge.



**Figure 12: Example of an alteration case study (PROWAAC 2007).**

Chapter 3, Design Process, provides guidance on the design process in five sections: (1) Gathering Information, which emphasizes the importance of gathering information about the applicable accessibility laws and regulations in order to assist with the scoping of the design; (2) Planning the Scope of Work, which focuses on determining the actual extent of work to be covered by the project and determining the required accessibility modifications according to the scope of the project; (3) Identification of Constraints and Opportunities, which focuses on the means and methods to identify any barriers or constraints in the project site that can cause further expansions in the scope of work in order to achieve compliance with ADA requirements; (4) Development of Alternatives, which discusses the importance of developing more than one design solution to overcome the constraints and limitations that are typically encountered during alteration projects; and (5) Project Documentation, which focuses on documenting the analysis of every design problem including descriptions of alternatives developed and decisions made. This chapter also includes several case studies to illustrate common design challenges, as shown in the example in Figure 13 (PROWAAC 2007).

### Case Study—Crowded Corners

- This urban corner is crowded with existing signal poles, signal boxes, and utility boxes that limit curb ramp design and placement.
- One solution, shown in the first photo: reduce curb radius to maximize available corner area and ease flares to fit the available space. Still needed: detectable warnings.
- Another option, shown in lower photo: shield ramp sides against pedestrian travel with pedbutton poles and sidewalk furnishings. By eliminating the flares, more corner area is gained. Bonus: returned curb offers useful wayfinding cues for non-visual travel. Note that the curb ramp here is the full width of the crosswalk, another pedestrian benefit. This example is from Barcelona, Spain.



**Figure 13: Example of design challenges in alteration projects (PROWAAC 2007).**

Chapter 4, Design Solutions, provides guidance and examples to solve and overcome most common design problems in nine sections: (1) Accessible Design Is a Safety Best Practice, which highlights the relation between accessibility and safety; (2) Information in This Chapter, which describes the methodology for selecting and analyzing the case studies in the chapter; (3) Design Problems, which defines five common design problems in alteration projects that are discussed along with their solutions in the following five sections; (4) Limited Right-of-Way, which provides guidance on methods to overcome the lack of sufficient right-of-way space to accommodate all accessibility requirements; (5) Above Ground Obstructions, which provides guidance on methods to overcome existing obstructions that reduce the width or accessibility of pedestrian access route; (6) Push Buttons Are Not Accessible, which provides guidance on methods to overcome the inaccessibility of existing pedestrian signals and pushbuttons, as shown in the example in Figure 14; (7) Excessive Roadway Slope, which provides guidance on managing the difference between the existing roadway slope and accessible route slope requirements; (8) Underground Obstructions, which provides guidance on managing the impact of existing underground structures (e.g., drainage structures and utility vaults) on achieving the requirements for running and cross slope in accessible routes; and (9) Accessible Parking Spaces General Discussion, which discusses accessible parking spaces. This chapter also includes case studies that illustrate possible solution for several design problems, as shown in the example in Figure 15 (PROWAAC 2007).



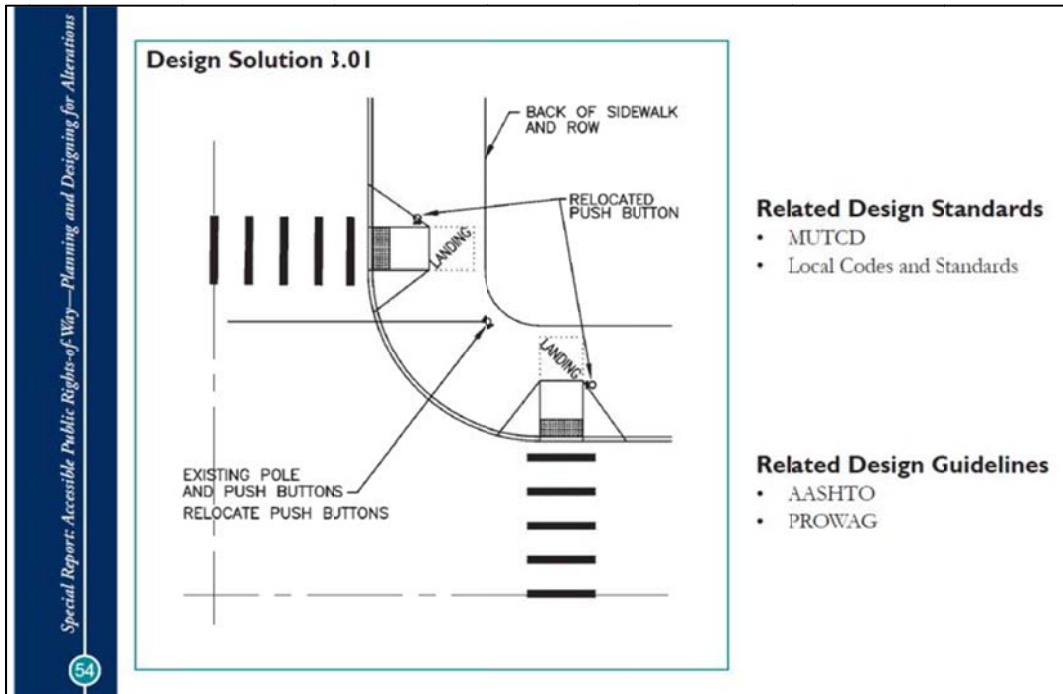


Figure 14: Example for improving accessibility to existing push button (PROWAAC 2007).

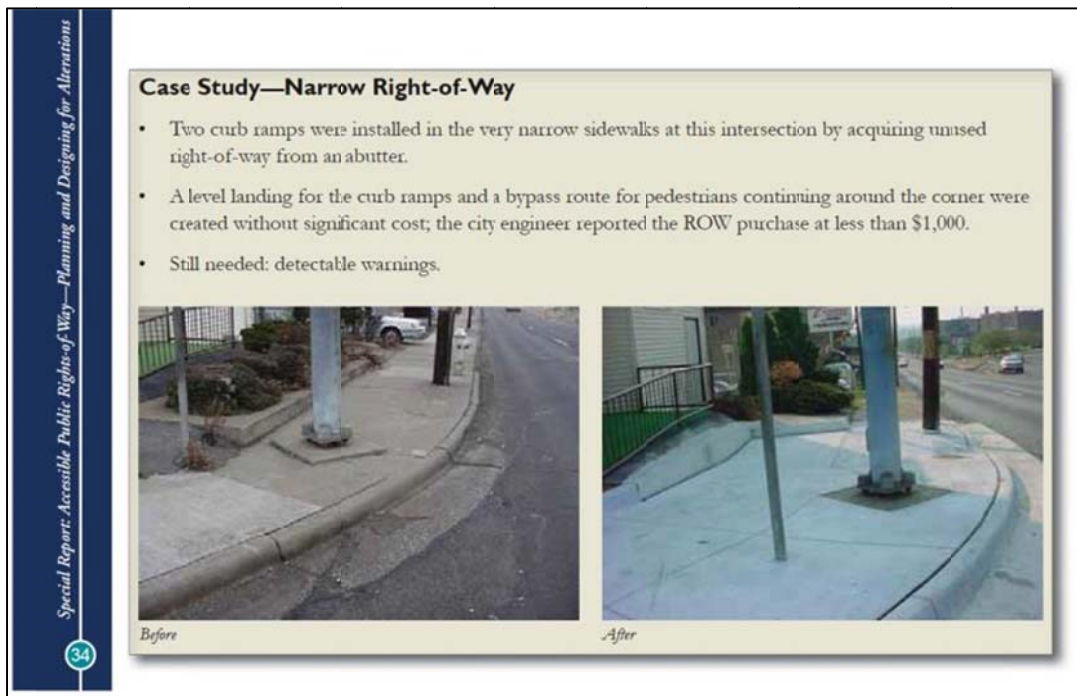
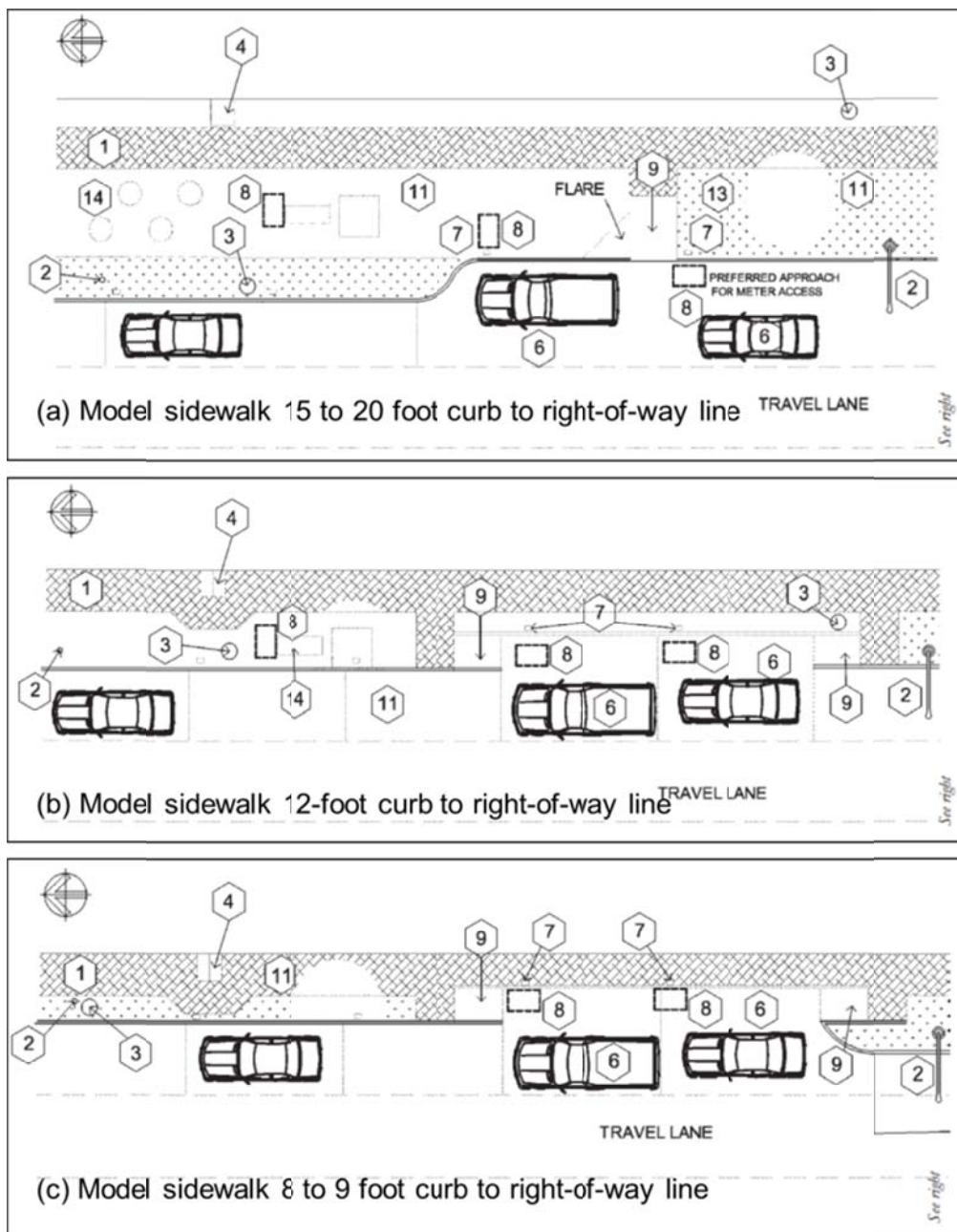


Figure 15: Example solution for narrow right-of-way (PROWAAC 2007).

Chapter 5, Model Sidewalks, provides examples of model sidewalks for varying dimensions of right-of-way in five sections: (1) Model Sidewalks, (2) 15- to 20-Foot Curb to Right-of-Way Line, as shown in Figure 16(a), (3) 12-Foot Curb to Right-of-Way Line, as shown in Figure 16(b), (4) 8- to 9-Foot Curb to Right-of-Way Line, as shown in Figure 16(c), and (5) 4- to 5-Foot Curb to Right-of-Way Line. This chapter also includes one case study that illustrates parallel curb ramps (PROWAAC 2007).




**Figure 16: Examples of model sidewalks (PROWAAC 2007).**

Chapter 6, Curb Ramp Examples, provides examples of different types of curb ramps and turning spaces, as shown in Figure 17. This chapter includes three sections: (1) Curb Ramp Examples, (2) 10-Foot Radius Curb Returns, and (3) 30-Foot Radius Curb Returns. (PROWAAC 2007)

**Case Study—Parallel Curb Ramps and Road Grade**

- The parallel curb ramp shown was placed into a sidewalk/roadway with an existing grade of approximately 4%. The design thus called for a longer uphill ramp run from the central landing to achieve acceptable ramp slopes.
- Both ramp runs slope at 8.3% maximum. On a steeper roadway, it may be necessary to limit the longer ramp run to avoid 'chasing grade' indefinitely. PROWAAC suggests 15 feet as a practical limit.
- Still needed: detectable warnings



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**Figure 17: Case study of parallel curb ramps (PROWAAC 2007).**

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


In 2001, the Federal Highway Administration (FHWA) published a report, *Designing Sidewalks and Trails for Access, Part II of II: Best Practices Design Guide*. This design guide was based on the findings of an earlier FHWA study (FHWA 1999). This best practices design guide provides guidelines for designing sidewalks and trails to ensure their compliance with accessibility requirements. The design guidelines for sidewalks are described in chapters 2 through 11 in this guide including (1) Understanding Sidewalk and Trail Users, (2) Integrating Pedestrians into the Project Planning Process, (3) Sidewalk Corridors, (4) Driveway Crossings, (5) Providing Information to Pedestrians, (6) Curb Ramps, (7) pedestrian Crossings, (8) Traffic Calming, (9) Sidewalk Maintenance and Construction Site Safety, and (10) Sidewalk Assessment. Each of these chapters provides guidance and best practices, as shown in the curb ramp example in Figure 18. The design guide also includes in its appendices several forms and checklists for assessment of sidewalk accessibility, as shown in the example in Figure 19 (Kirschbaum et al. 2001).

# 7

## CURB RAMPS

CHAPTER

**Figure 7-13. PROBLEM:** Decorative patterns used at depressed corners, such as this brick pattern, create a continuous pathway. People with vision and cognitive impairments have difficulty detecting where the street begins and ends.



**Disadvantages of depressed corners**

- Enable large trucks to travel onto the sidewalk to make tight turns, which puts pedestrians at risk;
- Make it much more difficult to detect the boundary between the sidewalk and the street for persons with vision impairments;

**Figure 18: Example best practices for curb ramps (Kirschbaum et al. 2001).**

3. Was the surface easy to walk on?

Yes     Some problems:


- Sidewalk surfaces was not firm
- Sidewalks were covered with snow or ice
- Sidewalks were covered with leaves or other debris
- Sidewalk surfaces were slippery
- Sidewalks were broken or cracked
- Gratings for trees and drainage were unavoidable

Other: \_\_\_\_\_

Locations of problems: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Appendix B.

B-3

**Figure 19: Example checklist of sidewalk accessibility assessment (Kirschbaum et al. 2001).**

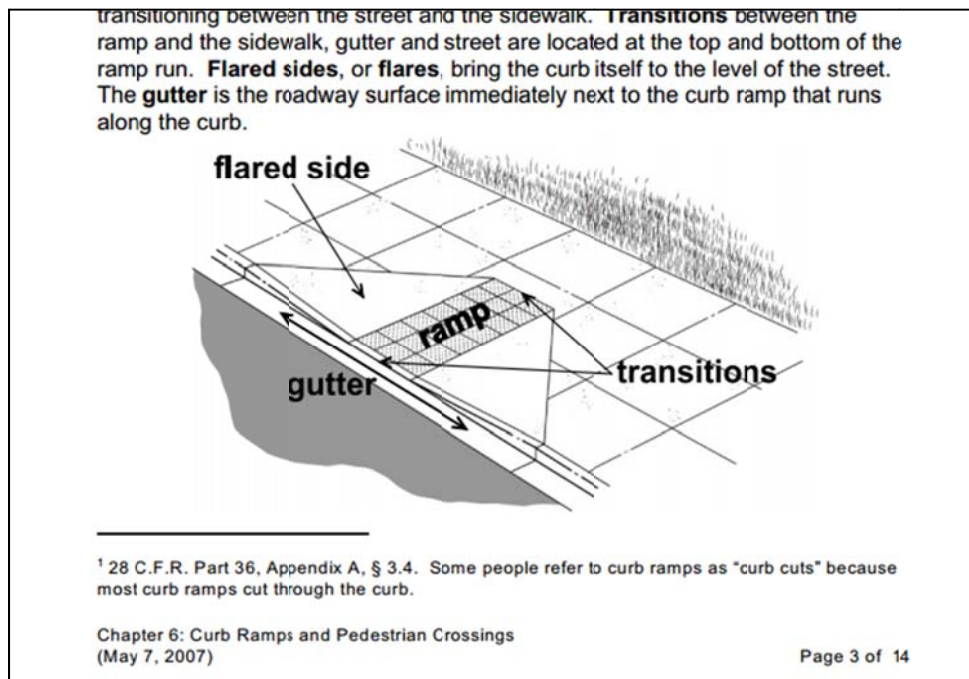
### 2.3.1.3 The ADA Best Practices Tool Kit for State and Local Governments

In 2006, the Civil Rights Department of the U.S. DOJ issued its first installment of a technical assistance publication to aid state and local officials in applying the requirements of Title II of the ADA to their programs, services, activities, and facilities. The technical assistance document was released in seven installments between December 5, 2006, and July 26, 2007, and it was titled The ADA Best Practices Tool Kit for State and Local Governments. The preamble of this toolkit states (in part):

The Tool Kit is designed to teach state and local government officials how to identify and fix problems that prevent people with disabilities from gaining equal access to state and local government programs, services, and activities. It will also teach state and local officials how to conduct accessibility surveys of their buildings and facilities to identify and remove architectural barriers to access.

The tool kit includes seven chapters: (1) ADA Basics, Statutes and Regulations, (2) ADA Coordinator Notice and Grievance Procedure, (3) General Effective Communication Requirements Under Title II of the ADA, (4) 9-1-1 and Emergency Communications Services, (5) Website Accessibility Under Title II of the ADA, (6) Curb Ramps and Pedestrian Crossings (Figure 20), and (7) Emergency Management Under Title II of the ADA. The tool kit also includes two appendices: (A) Survey Instructions for Curb Ramps, and (B) Survey Forms for Curb Ramps. The tool kit includes extensive checklists for ADA Title II requirements. The DOJ highly recommends implementing the best practices that are listed in this tool kit (DOJ 2007).





**Figure 20: Example best practices for curb ramps (DOJ 2007).**

#### 2.3.1.4 Accessible Pedestrian Signals: A Guide to Best Practices

In 2010, The American Association of State Highway and Transportation Officials (AASHTO) sponsored a research study in cooperation with the Federal Highway Administration to develop best practices for accessible pedestrian signals. The findings of this study were published in a report, titled *Accessible Pedestrian Signals: A Guide to Best Practices* (Harkey et al. 2010).

The objective of that research study was to develop guidelines and training materials for implementation of accessible pedestrian signals (APS). The guidelines explained how APS will provide optimal information through media such as tones and tactile or verbal indicators, and under what circumstances their installation is recommended. The training materials aimed to facilitate the application of the guidelines and the installation and operation of APS.

The study included ten chapters: (1) Introduction to APS; (2) Travel by Pedestrians Who Are Blind or Who Have Low Vision; (3) Understanding Traffic Signals and Modern Intersection Design; (4) Features of APS (Figure 21); (5) When to Install APS; (6) Designing APS Installations; (7) Installation, Operation, and Maintenance; (8) Public Education about APS; (9) U.S. Case Studies; and (10) International Practice. It also included five appendices: (A) Current Guidelines, (B) Product Information, (C) Research on APS, (D) APS Prioritization Tool Instructions and Forms, and (E) Glossary (Harkey et al. 2010).

#### ADDITIONAL INFORMATION

It is important that the arrow points in the direction of travel on the crosswalk, as it indicates which crosswalk is controlled by that pushbutton. Tactile arrows provide general alignment information for all pedestrians. However, it is important to note that tactile arrows do not seem to enable the extremely accurate alignment required for blind and visually impaired pedestrians. To align the arrow properly, the installer needs to understand that pedestrians are expecting the arrow to be aligned toward the destination across the street. The purpose is not to point toward the beginning of the crosswalk, or the curb ramp location. Misalignment of the arrow may direct a blind pedestrian into the center of the intersection.

For arrows on the face of the device, the alignment is determined by the installation of the pushbutton on the pole. Arrows on the top of the pushbutton housing are typically glued into place after the pushbutton is installed and their alignment can be adjusted separately from the pushbutton.



Figure 4-2. This APS has a high-contrast, raised tactile arrow on the pushbutton and a high-contrast, recessed tactile arrow on the sign above the button

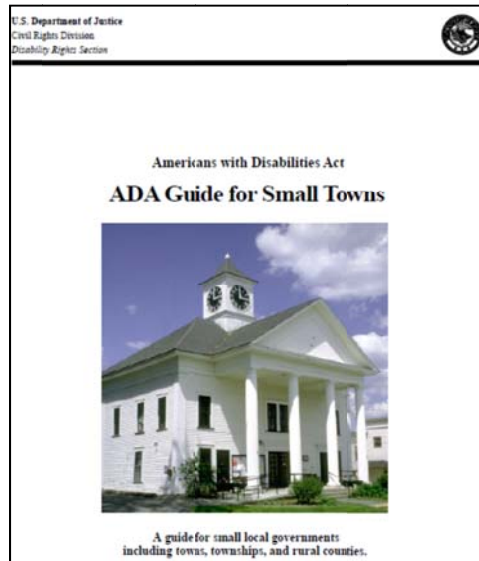
**Figure 21: Example of tactile arrows on pushbuttons (Harkey et al. 2010).**

#### 2.3.1.5 *The Americans with Disabilities Act Title II Technical Assistance Manual*

The ADA Title II Technical Assistance Manual was developed in 1993 to promote voluntary compliance with Title II requirements. The manual states that its purpose “is to present the ADA’s requirements for State and local governments in a format that will be useful to the widest possible audience” (DOJ 1994). The manual provides answers to frequently asked accessibility questions and illustrations to explain ADA Title II requirements. The manual includes nine chapters: (1) Coverage, (2) Qualified Individuals with Disabilities, (3) General Requirements, (4) Employment, (5) Program Accessibility, (6) New Construction and Alterations, (7) Communications, (8) Administrative Requirements, and (9) Investigation of Complaints and Enforcement (DOJ 1994).

#### 2.3.1.6 *Department of Justice Guides*

Since the approval of the ADA, the Civil Rights Division of the U.S. DOJ has published many concise manuals and field guides. Each of these provides guidance on the applications and requirements of the ADA in a specific context. These manuals include (1) ADA Business Brief: Restriping Parking Lots, which explains to small businesses how to organize their parking lots to comply with ADA (DOJ 2001); (2) Common ADA Errors and Omissions in New Construction and Alterations, which focuses on the most common errors and omissions related to accessibility in buildings and outdoors (DOJ 2002); and (3) ADA Guide for Small Towns, which summarizes ADA requirements for small local governments such as towns, townships, and rural counties, as shown in Figure 22 (DOJ 2007).



**Figure 22: Cover page of ADA Guide for Small Towns (DOJ 2007).**

### *2.3.1.7 ADA Compliance at Transportation Agencies: A Review of Practices*

In 2007, the American Association of State Highway and Transportation Officials (AASHTO) sponsored a research study on ADA compliance in transportation agencies. The study was titled *ADA Compliance at Transportation Agencies: A Review of Practices*. The purpose of the study was to gather information and develop a synthesis of practices, including best practices, on the various approaches transportation agencies use to address ADA compliance issues. The focus of the project was on pedestrian infrastructure on the public right-of-way, including sidewalks, curb ramps, pedestrian crossings, and obstructions. The analysis did not include buildings, facilities, or transit infrastructure. The study conducted a comprehensive literature review, a survey, and several interviews. The published report of this study includes five chapters: (1) Introduction; (2) Literature Review of Standards, Guidelines, and Current Practices; (3) Online Survey Procedure and Results; (4) Interviews and Other Information Gathered from Stakeholders; and (5) Summary of Practices (Quiroga and Turner 2008).

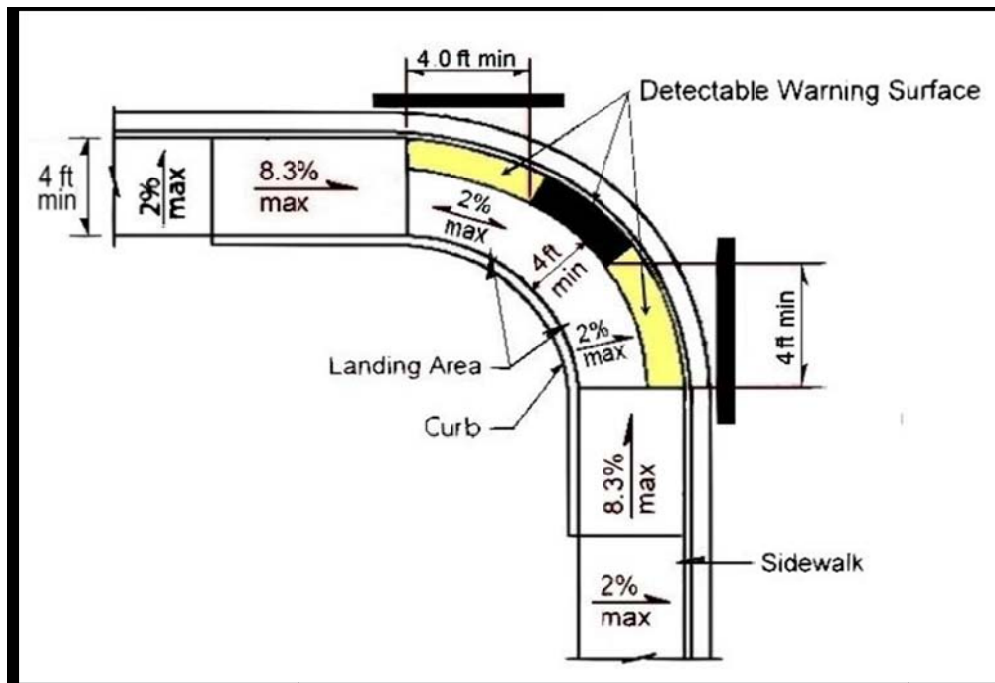
### **2.3.2 State Guidelines**

Many state agencies developed manuals and design guides to provide best practices that can be used to improve compliance with accessibility laws and regulations. In the current project, accessibility-related guidelines developed by other states were gathered, analyzed, and categorized according to their relevance and level of detail. The analysis revealed that a number of these guidelines were too brief, outdated, or irrelevant. This section presents examples of the most relevant, detailed, and current state guidelines, including (1) *Accessible Sidewalk Requirements*, by the Iowa Department of Transportation; (2) *Field Guide for Accessible Public Rights of Way*, by the Washington State Department of Transportation; (3) *ADA Project Design Guide*, by the Minnesota Department of Transportation; (4) *Temporary Pedestrian Facilities Handbook*, by the California Department of Transportation; (5) *Accessibility Policy and Guidelines for Pedestrian Facilities Along State Highways*, by the Maryland Department of Transportation; and (6) *PROWAG/ADAAG Standards —Guidance for Temporary Pedestrian Access Route Facilities and Devices*, by the Minnesota Department of Transportation.

#### *2.3.2.1 WSDOT Field Guide for Accessible Public Rights-of-Way*

In 2012, the Washington State Department of Transportation (WSDOT) published its *Field Guide for Accessible Public Rights of Way 2012 Edition* to provide assistance to its officials and local engineers in achieving compliance with accessibility laws and regulations. The field guide is intended to serve as a pocket guide at actual worksites to facilitate the process of construction and inspection of pedestrian

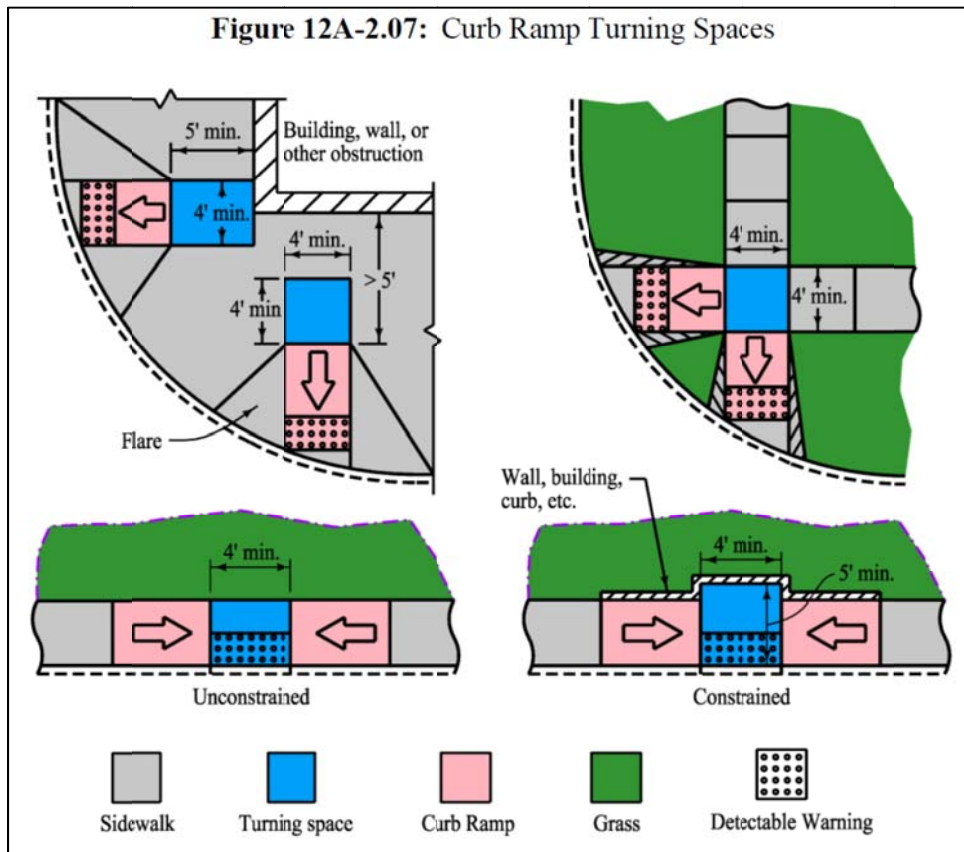
facilities in the public right-of-way. The field guide covers (1) Accessibility Criteria Checklists; (2) Pedestrian Circulation Path (PCP); (3) Protruding Objects/Obstructions; (4) Pedestrian Access Route (PAR); (5) Access Route Surface Elements; (6) Curb Ramps, which includes sections that cover perpendicular-type curb ramp, parallel-type curb ramp, combination-type curb ramp, single-direction parallel-type curb ramp, and diagonally oriented parallel-type curb ramp; (7) Curb Ramp Transitions; (8) Detectable Warning Surfaces (DWS); (9) Pedestrian Push Buttons and Accessible Pedestrian Signals (APS); (10) Crosswalks; (11) Driveways; (12) Bus Stops, and (13) Alternate Pedestrian Circulation Paths and Pedestrian Detours. The field guide includes figures and illustrations that provide clear explanation of accessibility regulations and standards (Figure 23) (Washington DOT 2012).



**Figure 23: Diagonally oriented parallel-type curb ramp (Washington DOT 2012).**

### 2.3.2.2 Iowa DOT Accessible Sidewalk Requirements

In 2012, the Iowa Department of Transportation (Iowa DOT) updated its design manual to include a new section, Accessible Sidewalk Requirements (Chapter 12A-2), which provides guidance on the application of accessibility regulations and standards in the public right-of-way. This section is based on the 2011 Proposed Accessibility Guidelines (PROWAG) and was updated three times, with the most recent update on August 16, 2013. Chapter 12-A2 includes the following: (A) Introduction, (B) Transition Plan, (C) Definitions, (D) Applicability, (E) Standards for Accessibility, (F) Bus Stop, and (G) Accessible Pedestrian Signals. The chapter also includes several illustrations and figures to clarify accessibility requirements (Figure 24) (Iowa DOT 2013).



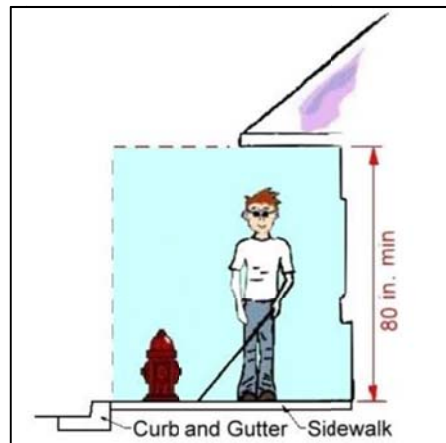
### 2.3.2.3 MnDOT ADA Project Design Guide

In 2012, the Minnesota Department of Transportation (MnDOT) published its ADA Project Design Guide. This guide contains the following sections: (1) Introduction, (2) Scoping, (3) Pre-Design—Determining the Level of Plan Detail & Survey Needs, (4) Design Considerations, (5) Signals, (6) Surveys, (7) Drainage, (8) Materials, (9) Utilities, (10) Right-of-Way, (11) Traffic Control/Temporary Pedestrian Access Routes, (12) Signing/Striping, (13) Pork Chop Islands, (14) Medians, (15) Construction, (16) Trails/Pedestrian Facilities, and (17) Pay Item Guidance. The MnDOT guide is comprehensive; however, it does not include illustrations or figures (MnDOT 2012).

### 2.3.2.4 Caltrans Temporary Pedestrian Facilities Handbook

In 2011, the California Department of Transportation (Caltrans) published a Temporary Pedestrian Facilities Handbook, which focused on the requirements of temporary pedestrian facilities in the public right-of-way. This handbook includes the following: (1) Introduction, (2) Related Caltrans Standards, (3) California MUTCD Requirements, (4) Permanent Facilities, and (5) ADA Checklist (Caltrans 2011). The handbook has several illustrations and figures (Figure 25).





**Figure 25: Pedestrian path width (Caltrans 2011).**

#### 2.3.2.5 MDOT Accessibility Policy and Guidelines for Pedestrian Facilities Along State Highways

In 2010, the Maryland Department of Transportation (MDOT) published a report titled *Accessibility Policy and Guidelines for Pedestrian Facilities along State Highways*. The report focused on conveying the importance of compliance with ADA requirements and explained ADA requirements in an easy-to-understand way. The report also included checklists and detailed illustrations to assist local architects, engineers, and contractors in achieving compliance with ADA requirements (MSHA 2010).

#### 2.3.2.6 MnDOT PROWAG/ADAAG Standards—Guidance for Temporary Pedestrian Access Route (TPAR) Facilities and Devices

In 2010, the Minnesota Department of Transportation issued a draft publication to assist its officials, architects, and engineers in assessing the degree of compliance of any route to determine whether or not it is considered up to pedestrian access route (PAR) standards. The report is titled *PROWAG/ADAAG Standards—Guidance for Temporary Pedestrian Access Route (TPAR) Facilities and Devices*, and it focuses on compiling accessibility standards that are related to ADA and Section 504 (Minnesota DOT 2010).

## 2.4 SELF-EVALUATIONS AND TRANSITION PLANS

Title II of the ADA and Section 504 of the Rehabilitation Act require public entities covered by these laws to (1) perform a self-evaluation process in order to identify barriers in their physical facilities, policies, and practices that could limit compliance with Title II requirements; and (2) if the public entity employs 50 or more persons, to prepare a transition plan that explains how these entities plan to achieve compliance with accessibility regulations.

### 2.4.1 Self-Evaluations

The ADA Title II regulations that were developed by the Department of Justice require all public entities to complete self-evaluations in order to evaluate (1) their current services, policies, and practices, and their compliance with the requirements of Title II of the ADA; and (2) the extent of modification of any such services, policies, and practices that are required for compliance with the ADA Title II requirements (28 C.F.R. § 35.105 (a)).

#### 2.4.1.1 Definition and Scope

The U.S. Department of Justice defines “self-evaluation” in the ADA Title II Technical Assistance Manual as:

A public entity's assessment of its current policies and practices. The self-evaluation identifies and corrects those policies and practices that are inconsistent with Title II's requirements. As part of the self-evaluation, a public entity should:

- 1) Identify all of the public entity's programs, activities, and services; and
- 2) Review all the policies and practices that govern the administration of the public entity's programs, activities, and services. (DOJ 1994)

The U.S Department of Justice in its ADA Title II Technical Assistance Manual states that a public entity's policies and practices are typically reflected in its laws, ordinances, regulations, administrative manuals or guides, policy directives, and memoranda. Other practices, which may not be recorded, may be based on local custom. Once a public entity has identified its policies and practices, it should analyze whether these policies and practices adversely affect the full participation of individuals with disabilities in its programs, activities, and services. The DOJ also states that areas that need to be reviewed in these self-evaluations include the following:

- A public entity must examine each program to determine whether any physical barriers to access exist. It should identify steps that need to be taken to enable these programs to be made accessible when viewed in their entirety. If structural changes are necessary, they should be included in the transition plan.
- A public entity must review its policies and practices to determine whether any exclude or limit the participation of individuals with disabilities in its programs, activities, or services. Such policies or practices must be modified, unless they are necessary for the operation or provision of the program, service, or activity. The self-evaluation should identify policy modifications to be implemented and include complete justifications for any exclusionary or limiting policies or practices that will not be modified.
- A public entity should review its policies to ensure that it communicates with applicants, participants, and members of the public with disabilities in a manner that is as effective as its communications with others.
- A public entity should review its policies to ensure that they include provisions for readers for individuals with visual impairments; interpreters or other alternative communication measures, as appropriate, for individuals with hearing impairments; and amanuenses for individuals with manual impairments.
- A review should be made of the procedures to evacuate individuals with disabilities during an emergency. This may require the installation of visual and audible warning signals and special procedures for assisting individuals with disabilities from a facility during an emergency.
- A review should be conducted of a public entity's written and audio-visual materials to ensure that individuals with disabilities are not portrayed in an offensive or demeaning manner.
- If a public entity operates historic preservation programs, it should review its policies to ensure that it gives priority to methods that provide physical access to individuals with disabilities.
- A public entity should review its policies to ensure that its decisions concerning a fundamental alteration in the nature of a program, activity, or service, or a decision will not cause an undue financial and administrative burden.
- A public entity should review its policies and procedures to ensure that individuals with mobility impairments are provided access to public meetings.
- A public entity should review its employment practices to ensure that they comply with other applicable nondiscrimination requirements, including Section 504 of the Rehabilitation Act and the ADA regulation issued by the Equal Employment Opportunity Commission.

- A public entity should review its building and construction policies to ensure that the construction of each new facility or part of a facility, or the alteration of existing facilities after January 26, 1992, conforms to the Standards designated under the Title II regulation.
- A review should be made to ascertain whether measures have been taken to ensure that employees of a public entity are familiar with the policies and practices for the full participation of individuals with disabilities. If appropriate, training should be provided to employees.
- If a public entity limits or denies participation in its programs, activities, or services based on drug use, it should make sure that such policies do not discriminate against former drug users, as opposed to individuals who are currently engaged in illegal use of drugs. (DOJ 1994)

Once a public entity has identified, in its self-evaluation, any policies and practices that deny or limit the participation of individuals with disabilities in its programs, activities, and services, it should take immediate actions to eliminate the impediments to full and equivalent participation. Structural modifications that are required for program accessibility should be made as soon as possible (DOJ 1994).

#### *2.4.1.2 Public Feedback Requirement*

The ADA Title II regulations require all public entities to provide an opportunity to interested persons, including individuals with disabilities or organizations representing individuals with disabilities, to participate in the self-evaluation process by submitting comments (28 C.F.R. § 35.105 (b)).

Public entities are required to accept comments from the public on the self-evaluation and are strongly encouraged by the U.S. Department of Justice to consult with individuals with disabilities and organizations that represent them to assist in the self-evaluation process. Many individuals with disabilities have unique perspectives on a public entity's programs, activities, and services. For example, individuals with mobility impairments can readily identify barriers preventing their full enjoyment of the public entity's programs, activities, and services. Similarly, individuals with hearing impairments can identify the communication barriers that hamper participation in a public entity's programs, activities, and services.

#### *2.4.1.3 Covered Public Entities*

The ADA Title II regulations require each public entity that employs 50 or more persons, for at least three years following completion of the self-evaluation, to maintain on file and make available for public inspection: (1) a list of the interested persons consulted, (2) a description of areas examined and any problems identified, and (3) a description of any modifications made (28 C.F.R. § 35.105 (c)).

#### *2.4.1.4 Required Updating of Self-Evaluations*

The U.S. Department of Justice in its ADA Title II Technical Assistance Manual strongly recommends that public entities periodically review and update their self-evaluations, especially if they were completed earlier under Section 504 of the Rehabilitation Act. Because most Section 504 self-evaluations were done many years ago, the U.S. Department of Justice states in its Title II Technical Assistance Manual that it expects that many public entities will re-examine all their policies and practices. Programs and functions may have changed significantly since the Section 504 self-evaluation was completed. Actions that were taken to comply with Section 504 may not have been implemented fully or may no longer be effective. In addition, Section 504's coverage has been changed by statutory amendment, particularly the Civil Rights Restoration Act of 1987, which expanded the definition of a covered "program or activity." Therefore, public entities should ensure that all programs, activities, and services are examined fully, except where there is evidence that all policies were previously scrutinized under Section 504 (DOJ 1994).



#### *2.4.1.5 Self-Evaluation Guides*

In 2004, the Division of Community Services of the North Dakota Department of Commerce (NDDOC) published an extensive guide for preparing self-evaluations and transition plans. The guide, Section 504/ADA Technical Assistance Handbook, is divided into three sections. The first section is a checklist to help public entities determine if they need a self-evaluation and whether they need to keep it for three years. The second section discusses self-evaluations and how to achieve them in the most appropriate way, while the third part explains transition plans and their requirements, and includes a checklist (NDDOC 2004).

In 2010, the Massachusetts Department of Housing and Community Development (MDHCD) developed a guide to assist its officials in preparing self-evaluations and transition plans. The guide focused on self-evaluations and transition plans for housing developments; however, its guidelines can be applied to the public right-of-way. The report was prepared by Kessler McGuinness and Associates and is titled ADA/504 Self-Evaluation and Transition Plan Guide (MDHCD 2010).

Another tool for self-evaluations was developed by the Texas Governor's Committee on People with Disabilities and the Office for Civil Rights. The tool is titled Americans with Disabilities Act Self-Evaluation Tool. It consists of four parts: Part I, which deals with issues affecting Title II employers and includes a brief introduction and a summary of key definitions; Part II, which addresses the Title II requirements for self-evaluation; Part III, which provides a "quick look" checklist for accessibility; and Part IV, which is a partial list of agencies, organizations, and disability groups that can provide information and assistance (CPD 2014).

#### **2.4.2 Transition Plans**

The ADA Title II regulations that were developed by the Department of Justice require all public entities to develop a transition plan when (1) the public entity has completed a self-evaluation that requires structural changes to facilities to achieve program accessibility, and (2) the public entity employs 50 or more employees. The transition plan should state the steps necessary to complete the required structural changes (28 C.F.R § 35.150 (d)).

##### *2.4.2.1 Definition and Scope*

The ADA Title II regulations specify the minimum requirements of a transition plan as follows:

The plan shall, at a minimum

- (i) Identify physical obstacles in the public entity's facilities that limit the accessibility of its programs or activities to individuals with disabilities;
- (ii) Describe in detail the methods that will be used to make the facilities accessible;
- (iii) Specify the schedule for taking the steps necessary to achieve compliance with this section and, if the time period of the transition plan is longer than one year, identify steps that will be taken during each year of the transition period; and
- (iv) Indicate the official responsible for implementation of the plan." (28 C.F.R § 35.150 (d) (3))

The ADA Title II regulations state that if a public entity has responsibility or authority over streets, roads, or walkways, its transition plan shall include a schedule for providing curb ramps or other sloped areas where pedestrian walks cross curbs, giving priority to walkways serving entities covered by the Act, including State and local government offices and facilities, transportation, places of public accommodation, and employers, followed by walkways serving other areas (28 C.F.R. § 35.150 (d) (2)).

If a public entity has already complied with the transition plan requirement of a federal agency regulation implementing Section 504 of the Rehabilitation Act of 1973, then these requirements shall

apply only to those policies and practices that were not included in the previous transition plan (28 C.F.R. § 35.150 (d) (4)).

The ADA Title II regulations did not provide a specific time frame or interval for updating transition plans. However, the Department of Justice strongly recommends updating all transition plans on a regular basis to achieve compliance with the latest changes in regulations and standards and to avoid costly penalties in case of non-compliance (DOJ 1994).

#### 2.4.2.2 Public Feedback Requirement

The ADA Title II regulations state that a public entity shall provide an opportunity to interested persons, including individuals with disabilities or organizations representing individuals with disabilities, to participate in the development of the transition plan by submitting comments. A copy of the transition plan shall be made available for public inspection (28 C.F.R. § 35.150 (d) (1)).

#### 2.4.2.3 Transition Plan Guides

In 2012, the Chicago Metropolitan Agency for Planning (CMAP) developed a brochure to explain and promote the process of making and updating self-evaluations and transition plans for the local communities in the Chicago region, as shown in Figure 26. The brochure included sections that cover the definition of a transition plan, who should prepare it, when should it be prepared, which facilities fall under the requirements of a transition plan, and how a local government develops a transition plan (CMAP 2012).

CMAP mentioned in its brochure that updates to transition plans should be completed to reflect new guidelines and standards. These recent guidelines and standards include (1) the 2010 ADA Accessibility Standards that became effective in 2012 (28 C.F.R. § 35), and (2) the 2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG) (USAB 2011). CMAP also recommended that most communities should update their transition plans, if their plans had not recently been updated, to reflect the latest guidelines and standards (CMAP 2012). A sample of the City of Urbana transition plan is shown in Appendix A of this report (City of Urbana 2012).

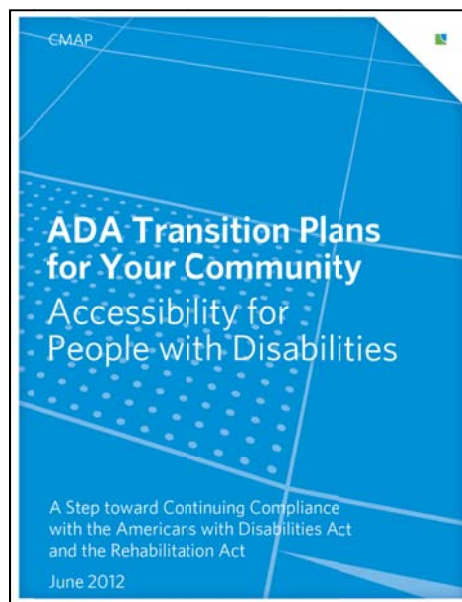


Figure 26: Cover page of ADA transition plan (CMAP 2012).

## 2.5 LEGAL CASES

This section provides a review of court cases and legal settlements that are related to accessibility in the public right-of-way (ROW).

### 2.5.1 Decided Court Cases

In *Kinney v. Yerusalim* (1993), *Kinney et al.* pursued complaints against the Secretary of the Pennsylvania Department of Transportation (Yerusalim) and the Philadelphia Streets Department. Among other findings, the Court of Appeals for the Third Circuit established that the resurfacing of a city street constituted an “alteration” in the language of ADA. Therefore, the court ordered the city to install curb ramps on those portions of streets where resurfacing would take place (including retroactive requirements for those streets that had been resurfaced since January 26, 1992, the effective date of ADA). Also, the court agreed that the “undue burden” language in ADA applies only to existing facilities and does not apply once alterations take place. Therefore, the cost of providing accessible ramps was of no issue once the resurfacing was established as an alteration (9 F.3d 1067, 1993).

In the *Kinney* case, resurfacing was considered an alteration and was defined as “laying at least 1-1/2 inches of new asphalt, sealing joints and cracks, and patching depressions of more than 1 inches, spanning the length and width of a city block” (Quiroga and Turner 2008). This was significant because the court decision and its definition of resurfacing require providing curb ramps at intersections in compliance with the ADA standards. The related sections of the final court decision stated (in part):

Whether resurfacing a street constitutes an “alteration” is thus dependent on whether resurfacing affects the usability of the street. We think that it does. As stated above, the DOJ has indicated that the concept of usability should be read broadly. The ADA is a remedial statute, designed to eliminate discrimination against the disabled in all facets of society. As a remedial statute it must be broadly construed to effectuate its purposes. Unlike merely painting a wall or polishing a floor, resurfacing affects the street in ways integral to its purpose. Resurfacing makes driving on and crossing streets easier and safer. It also helps to prevent damage to vehicles and injury to people, and generally promotes commerce and travel. The surface of a street is the part of the street that is “used” by both pedestrian and vehicular traffic. When that surface is improved, the street becomes more usable in a fundamental way.

Furthermore, the process of resurfacing entails more than minor repair work or maintenance. According to the parties, city streets generally consist of three layers, a sub-base consisting of stone, a base consisting of concrete, and a top layer of asphalt. While sometimes new asphalt may simply be overlaid on top of the old surface, more often the old asphalt is removed by a process known as “milling.” Milling consists of removing and then replacing the top layer of asphalt with the use of heavy machinery. This process may require either that the entire surface from curb to curb be removed, or that seven or eight feet from either curb may be removed, depending on the nature of the street. During this process any necessary reconstruction will be performed, for example any cracks in the concrete base of the road will be repaired and manholes may be raised or lowered to be flush with the street when the resurfacing is complete. We conclude that resurfacing a street is an alteration within the meaning of the regulations and triggers the obligation to install curb ramps or slopes. (9 F.3d 1067)

Whatever the extent of work performed under a contract, the City has certain minimum requirements for resurfacing. Thus, by the City’s own specifications, resurfacing requires laying at least 1 1/2 inches of new asphalt, sealing open joints and cracks, and patching depressions of more than one inch. At issue in this appeal are those resurfacings which cover, at a minimum, an entire street from intersection to intersection. Thus, we are not called upon to decide whether minor repairs or maintenance trigger the obligations of accessibility for alterations under the ADA. (9 F.3d 1067)

In 2013, the Department of Justice (DOJ) provided an updated definition of alteration and the extent to which it affects the application of the ADA standards. The DOJ defined alteration as a process that affects the usability including “reconstruction, rehabilitation, resurfacing, widening, and projects of similar scale and effect.” In addition, the DOJ provided additional clarification to the definition set by the case of *Kinney v. Yerusalim*, and it specified that curb ramps should be provided only on the rights-of-

way that are eligible for pedestrian use and that projects can be classified as resurfacing when the work is “on a street or roadway spanning from one intersection to another, and includes overlays of additional material to the road surface, with or without milling.” The DOJ also clarified that procedures performed to enclose and polish the road surface are not considered an alteration but rather maintenance, and therefore they do not trigger the application of the ADA standards. The document also included a chart that compares maintenance and alteration activities according to the ADA, as shown in Figure 27 (DOJ/DOT 2013).



Figure 27: Maintenance vs. alterations under the ADA (DOJ/DOT 2013).

### 2.5.2 Settlement Agreements

When public entities do not fully comply with ADA regulations, they often face complaints and court cases that are filed by individuals and/or law-enforcing federal agencies. Many of these cases are resolved by reaching a settlement or agreement before rendering a court decision. Although these settlements do not have the same power as a court decision, they provide a general understanding about the consequences of not complying with accessibility laws and regulations. These settlements often include financial and procedural terms. In this literature review, a total of 43 recent public right-of-way settlement agreements were collected and investigated. The following sections provide a concise review of (1) five settlements that included financial terms, as shown in Table 6; (2) six recent settlements in Illinois; and (3) 32 recent settlements in other states.

Table 6: Five Recent Settlements with Financial Terms (DOJ 2014)

City	State	Year	Financial Terms	Duration
City of Sacramento	California	2004	20% of transportation fund	30 years
City of Chicago	Illinois	2007	\$50 million	5 years
City of Atlanta	Atlanta	2008	\$3 million	Once
Caltrans	California	2010	\$1.1 billion	30 years
City of Baltimore	Maryland	2011	\$120,000	Once

#### 2.5.2.1 Settlements with Financial Terms

The following five accessibility-related settlements included financial terms, as shown in Table 6.

##### 2.5.2.1.1 City of Baltimore 2011 Settlement (\$120,000)

In 2011, the City of Baltimore entered into settlement with an individual to avoid an accessibility-related lawsuit. In this settlement, the City of Baltimore agreed to pay \$120,000 to Anita Stevens as

compensation for the damage she was entitled due to an accident that occurred at Ednor Gardens that caused a serious injury to her (Reuter 2014).

#### 2.5.2.1.2 Caltrans 2010 Settlement (\$1.1 Billion over 30 Years)

In 2010, the California Department of Transportation (Caltrans) entered into a settlement with Californians for Disability Rights and California Council for the Blind. In this settlement, Caltrans agreed to pay \$1.1 billion of highway funds over the following 30 years to perform repair and construction projects that provide accessibility to the public right-of-way. Caltrans also agreed to accommodate the ADA requirements on its facilities that are both newly constructed or altered and allow personal requests and input using various communication methods, including its website. This settlement agreement was “the largest architectural access settlement to date,” as stated by Californians for Disability in 2014 (Californians for Disability 2014).

#### 2.5.2.1.3 City of Atlanta 2008 Settlement (\$3 Million)

In 2008, the City of Atlanta entered into a settlement with an individual who filed an accessibility-related complaint. In this settlement, the City of Atlanta agreed to pay \$3 million in compensation for the individual to avoid a lawsuit. The lawsuit was filed against the City of Atlanta because an individual with disabilities suffered severe injuries on a broken sidewalk that he had complained about for years. In addition, the city agreed to repair the sidewalk that caused the injuries and the lawsuit. The estimated cost of the sidewalk repairs was \$2,000 and had the city completed that repair it could have avoided paying \$3 million to settle the lawsuit. This clearly illustrates that the compliance cost with ADA regulations can be much less than the settlement cost of lawsuits that are caused by the failure of state and local governments to comply with ADA requirements (Diggs 2012).

#### 2.5.2.1.4 City of Chicago 2007 Settlement (\$140 Million over 5 Years)

In 2007, the Council for Disability Rights and the City of Chicago entered into a settlement agreement regarding the accessibility of the public right-of-way in Chicago. In this settlement, the City of Chicago agreed to spend \$10 million annually for five years following the agreement to ensure compliance with accessibility laws and regulations regarding existing curb ramps and sidewalks that were not originally planned to be modified. In addition, the City of Chicago agreed to spend approximately \$18 million each year installing curb ramps and sidewalks as part of the city’s annual resurfacing work. The city also agreed to provide accessibility in all alteration or resurfacing projects that are scheduled to start after the agreement date, and to seek input from people with disabilities (Class action settlement 2007).

#### 2.5.2.1.5 City of Sacramento 2004 Settlement (20% of Transportation Fund for 30 Years)

In 2004, the City of Sacramento entered into a settlement agreement with various individuals with disabilities who filed complaints due to the lack of adequate accessibility of the facilities within its jurisdiction. In this settlement, the City of Sacramento agreed to allocate 20% of its annual transportation funds for the 30 years following the agreement to pay for required work on its facilities with pedestrian use to comply with the ADA standards. The settlement agreement also emphasized the city’s responsibility to provide sources of communication to account for the personal requests and opinions of accessibility on its facilities (*Barden v. Sacramento* 2004).

#### *2.5.2.2 Recent Settlements in Illinois*

This section analyzes six recent accessibility-related settlements that were reached between the U.S. Department of Justice and six public entities in Illinois over a period of nine years, as shown in Table 7. Four of these settlements addressed accessibility to the public right-of-way but the remaining two did not (Table 7). The analysis of the four public right-of-way settlements reveals that they had many similar terms including the following:

- Within three months of the agreement, the city will file a report that illustrates its efforts to receive suggestions, opinions, and requests from persons with disabilities on the accessibility of its sidewalks.
- Within three months of the agreement, the city/county should file a written report of all streets, roads, highways, and street level walkways that have been constructed or altered since the ADA took effect on January 26, 1992.
- For existing facilities, the city, within three years of the agreement, will provide accessibility to sloped areas or curb ramps at all existing places where a pedestrian walkway intersects with streets, roads, and highways. This includes intersections with curbs or other barriers to entry with regard to the 2010 ADA standards.
- For new construction and alteration projects, accessibility on curb ramps or sloped areas complying with the 2010 ADA standards will be provided at intersections with curbs or other barriers to entry from street level walkways of all newly constructed or altered streets, roads, or highways beginning no later than three months from the agreement date.
- The standards that were commonly used in these settlements were the 2010 ADA standards and the UFAS.

**Table 7: Settlements Between DOJ and Public Entities in Illinois Since 2001 (DOJ 2014)**

Public Entity	Settlement Date	Address PROW
Warren County	9/06/2001	No
Waukegan Park District	2/27/2004	Yes
Will County	7/25/2005	Yes
City of Waukegan	12/15/2005	Yes
Village of Midlothian	7/29/2009	No
St. Clair County	5/11/2010	Yes

### 2.5.2.3 Recent Settlements in Other States

This section analyzes 32 recent accessibility-related settlements that were reached in other states over the past four years, as shown in Table 8. These settlement agreements were reached between the U.S. Department of Justice’s Project Civic Access (PCA) and public entities in other states. The PCA was initiated by the DOJ to ensure that counties, cities, towns, and villages comply with the ADA by eliminating physical and communication barriers that prevent people with disabilities from participating fully in community life. The DOJ has conducted reviews in all 50 states, as well as Puerto Rico and the District of Columbia, and has posted its agreements with public entities on its website to help additional communities comply with the ADA (DOJ 2014). An analysis of the 32 settlements that were reached in other states reveals that they included similar terms to those listed above in Section 2.5.2.2 (DOJ 2014).

**Table 8: Settlement Agreements Analyzed in the Study (DOJ 2014)**

Public Entity	State	Settlement Date
City of Fort Morgan	Colorado	8/17/2013
Town of Poestenkill	New York	7/19/2013
City of West Columbia	South Carolina	5/31/2013
Stewart County	Georgia	5/9/2013
Jacksonville	Florida	4/19/2013
North Adams	Massachusetts	10/16/2012
Providence	Rhode Island	10/4/2012
Schuylkill County	Pennsylvania	9/13/2012
Kansas City	Missouri	7/25/2012
Randolph County	Georgia	7/24/2012
City of Wills Point	Texas	7/24/2012
Humboldt	Kansas	2/08/2012
Upshur County	Texas	11/22/2011
Town of Warrenton	Virginia	9/28/2011
Montgomery County	Maryland	8/16/2011
City of Madison	Indiana	7/26/2011
Daviess County	Kentucky	7/26/2011
Norfolk County	Massachusetts	7/26/2011
Van Buren County	Arizona	6/28/2011
The City of Independence	Kansas	4/28/2011
The City of Des Moines	Iowa	3/02/2011
The Town of Swansea	Massachusetts	2/15/2011
Fairfax County	Virginia	1/28/2011
Newport	Rhode Island	9/30/2010
Fort Myers	Florida	9/30/2010
Muskegon	Michigan	9/29/2010
Pearl River County	Mississippi	7/20/2010
Town of Pomfret	Connecticut	7/20/2010
Wilson County	North Carolina	7/20/2010
Smyth County	Virginia	6/09/2010
Lancaster County	Pennsylvania	6/09/2010
Wyandotte County & Kansas City	Kansas	4/07/2010

## **CHAPTER 3: RECOMMENDED CONTENT FOR PROWAG ON IDOT WEBSITE**

This chapter provides recommended content for an IDOT accessibility website. The following two sections provide (1) a comprehensive analysis of all state DOT accessibility websites and a detailed analysis of the most comprehensive four, and (2) the development of a prototype IDOT website that organizes accessibility in the public ROW resources and links in 12 main sections: Accessibility Policy, Non-Discrimination Notice, Design Guidance, Field Guide, Related Forms, Self-Evaluation and Transition Plan Resources, Training Courses, Grievance Procedures, Contact Information, Feedback Form, Frequently Asked Questions, and Accessibility Links. An electronic copy of the prototype accessibility website is attached to this report, and a sample of the website screenshots is shown in Appendix B.

### **3.1 ANALYSIS OF STATE DOT ACCESSIBILITY WEBSITES**

This section contains a comprehensive analysis of all state DOT accessibility websites. A full list of these websites was acquired from the FHWA website (FHWA 2014), which includes links to DOT websites in all 50 states in addition to the District of Columbia and Puerto Rico. Each of these FHWA-listed websites was studied to analyze its related ADA accessibility content. The findings of this analysis revealed that (1) 34 state DOTs had a dedicated accessibility website, (2) eight listed their accessibility content as part of other webpages such as design manuals and civil rights, and (3) ten did not provide online accessibility content, as shown in Table 9.

The state DOT accessibility websites were analyzed to identify a comprehensive list of their ADA accessibility resources and links. The findings of this analysis generated a master list of accessibility resources and links that can be organized in 12 main sections: (1) Accessibility Policy, (2) Non-Discrimination Notice, (3) Design Guidance, (4) Field Guide, (5) Related Forms, (6) Self-Evaluation and Transition Plan Resources, (7) Training Courses, (8) Grievance Procedures, (9) Contact Information, (10) Feedback Form, (11) Frequently Asked Questions, and (12) Accessibility links.

The content of each state DOT website was then compared to the list of 12 sections (described above) to determine the degree of comprehensiveness of each website, as shown in Table 9. The results of this comparison show that the total number of state DOT websites that contained an accessibility policy statement is 29, a non-discrimination notice is 29, design guidance is 14, field guide is 6, ADA related forms is 18, self-evaluation and transition plan resources is 24, information about training courses is 3, grievance procedures is 20, contact information is 27, a feedback form is 4, frequently asked questions is 8, and accessibility links is 21 as shown in the last row in Table 9.



**Table 9: Content Analysis of State DOT Accessibility Websites**

No.	State	Abbreviation	Accessibility Dedicated Page	Website Sections												Covered Sections
				Policy	Notice of Non-discrimination	Design Guidance	Field Guide	Forms	Self-evaluation and Transition Plan	Training	Grievance	Contacts	Feedback	FAQ	Accessibility Links	
1	Alabama	AL	N	Y	Y	Y	N	N	N	N	N	N	N	N	Y	4
2	Alaska	AK	Y	Y	Y	N	N	Y	Y	N	Y	Y	N	N	Y	7
3	Arizona	AZ	Y	Y	Y	N	N	N	Y	N	N	Y	N	N	N	4
4	Arkansas	AR	Y	N	Y	N	N	N	Y	N	N	Y	N	N	N	3
5	California	CA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	12
6	Colorado	CO	Y	Y	Y	N	N	N	Y	Y	N	Y	N	Y	Y	7
7	Connecticut	CT	Y	N	N	N	N	N	Y	N	Y	N	N	N	N	2
8	Delaware	DE	Y	Y	Y	N	N	N	Y	N	Y	Y	N	N	N	5
9	District of Columbia	DC	Y	Y	Y	N	N	N	N	N	N	Y	N	N	N	3
10	Florida	FL	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	Y	9
11	Georgia	GA	N	Y	Y	N	N	N	N	N	N	Y	N	N	Y	4
12	Hawaii	HI	Y	N	N	Y	N	N	N	N	N	Y	N	N	Y	3
13	Idaho	ID	N	N	N	N	N	N	Y	N	N	N	N	N	N	1
14	Illinois	IL	N	N	N	Y	N	Y	N	Y	N	N	N	N	N	3
15	Indiana	IN	Y	Y	Y	Y	N	N	Y	N	Y	Y	Y	Y	Y	9
16	Iowa	IA	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	11
17	Kansas	KS	N	N	Y	N	N	N	N	N	N	N	N	N	N	1
18	Kentucky	KY	N	N	N	N	N	N	N	N	N	N	N	N	N	0
19	Louisiana	LA	N	N	N	N	N	N	N	N	N	N	N	N	N	0
20	Maine	ME	Y	Y	N	N	N	Y	N	N	Y	N	N	N	Y	4
21	Maryland	MD	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	2
22	Massachusetts	MA	Y	Y	Y	Y	N	Y	Y	N	Y	N	N	N	Y	7
23	Michigan	MI	N	Y	N	Y	N	Y	N	N	N	N	N	N	N	3
24	Minnesota	MN	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	12
25	Mississippi	MS	N	N	N	N	N	N	N	N	N	N	N	N	N	0
26	Missouri	MO	Y	Y	Y	N	Y	N	Y	N	N	Y	N	N	N	5
27	Montana	MT	Y	N	N	N	N	N	N	N	N	N	N	N	N	0
28	Nebraska	NE	N	Y	Y	Y	N	Y	Y	N	Y	N	N	N	N	6
29	Nevada	NV	Y	Y	Y	N	N	Y	Y	N	Y	Y	N	N	Y	7
30	New Hampshire	NH	N	N	N	N	N	N	N	N	N	N	N	N	N	0
31	New Jersey	NJ	Y	Y	Y	Y	N	Y	Y	N	Y	Y	N	Y	Y	9

No.	State	Abbreviation	Accessibility Dedicated Page	Website Sections												Covered Sections
				Policy	Notice of Non-discrimination	Design Guidance	Field Guide	Forms	Self-evaluation and Transition Plan	Training	Grievance	Contacts	Feedback	FAQ	Accessibility Links	
32	New Mexico	NM	N	N	N	N	N	N	N	N	N	N	N	N	N	0
33	New York	NY	Y	Y	Y	N	N	Y	Y	N	Y	Y	N	Y	Y	8
34	North Carolina	NC	Y	Y	Y	N	N	Y	Y	N	Y	Y	N	N	Y	7
35	North Dakota	ND	N	N	N	N	N	N	Y	N	N	Y	N	N	N	2
36	Ohio	OH	Y	Y	Y	Y	N	N	Y	Y	N	Y	N	N	Y	7
37	Oklahoma	OK	Y	N	N	N	N	N	N	N	N	N	N	N	N	0
38	Oregon	OR	Y	N	N	N	N	N	N	N	N	N	N	N	Y	1
39	Pennsylvania	PA	Y	Y	Y	Y	N	Y	Y	N	Y	Y	N	N	Y	8
40	Puerto Rico	PR	N	N	N	N	N	N	N	N	N	N	N	N	N	0
41	Rhode Island	RI	Y	Y	Y	N	N	N	N	N	Y	Y	N	N	N	4
42	South Carolina	SC	Y	Y	Y	N	N	Y	Y	N	Y	Y	N	N	N	6
43	South Dakota	SD	Y	Y	Y	N	N	Y	Y	N	Y	Y	N	N	N	6
44	Tennessee	TN	Y	N	N	N	N	N	N	N	N	Y	N	N	N	1
45	Texas	TX	N	N	N	N	N	N	N	N	N	N	N	N	N	0
46	Utah	UT	Y	Y	Y	N	N	Y	Y	N	N	Y	N	N	Y	6
47	Vermont	VT	N	N	N	N	N	N	N	N	N	N	N	N	N	0
48	Virginia	VA	N	N	N	N	N	N	N	N	N	N	N	N	N	0
49	Washington	WA	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	11
50	West Virginia	WV	Y	N	N	N	N	N	N	N	N	N	N	N	N	0
51	Wisconsin	WI	N	N	N	N	N	N	N	N	N	N	N	N	N	0
52	Wyoming	WY	Y	N	N	N	N	N	N	N	N	N	N	N	N	0
Total			34	29	29	14	6	18	24	3	20	27	4	8	21	

### 3.1.1 Detailed Analysis of the Most Comprehensive State DOT Accessibility Websites

The last column (Covered Sections) in Table 9 highlights the degree of comprehensiveness of ADA content in each of the analyzed state DOT websites. The results in that column illustrate that the four most comprehensive accessibility websites are provided by the state DOTs of Minnesota, California, Iowa, and Washington. The content and design of each of these four comprehensive state DOT accessibility websites were further evaluated. The findings of this detailed analysis are summarized in the following four subsections.

### 3.1.1.1 Minnesota DOT Accessibility Website

As shown in Table 9, the Minnesota DOT (MnDOT) provides one of the most comprehensive accessibility websites (<http://www.dot.state.mn.us/ada/>). It has links or documents that cover all of the 12 identified sections in the comprehensive list described in the first paragraph of this chapter.

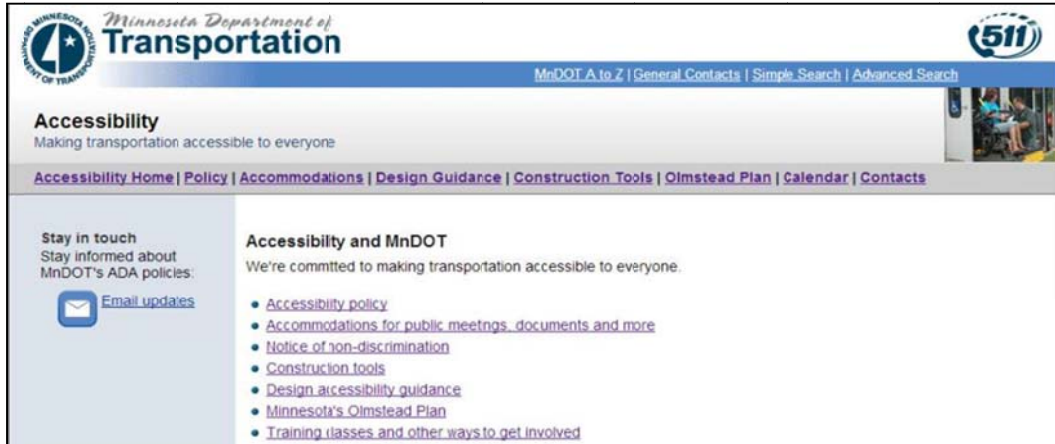
#### 3.1.1.1.1 Content

MnDOT's dedicated accessibility website provides links to the following 12 accessibility sections: (1) accessibility policy in pdf format; (2) notice of non-discrimination in both html and pdf formats; (3) design accessibility guidance, which contains resources and documents to assist in the design of accessible PROW; (4) field guides in pdf format; (5) related forms in pdf format; (6) self-evaluation and transition plan in pdf format, and links to Minnesota's Olmstead plan, which was created as part of a settlement agreement with the Department of Human Services in December 2011; (7) training course information and other ways to get involved; (8) grievance procedures and forms in both html and pdf format; (9) contact information; (10) online form for providing feedback; (11) frequently asked questions in pdf format; and (12) external accessibility links.

#### 3.1.1.1.2 Design

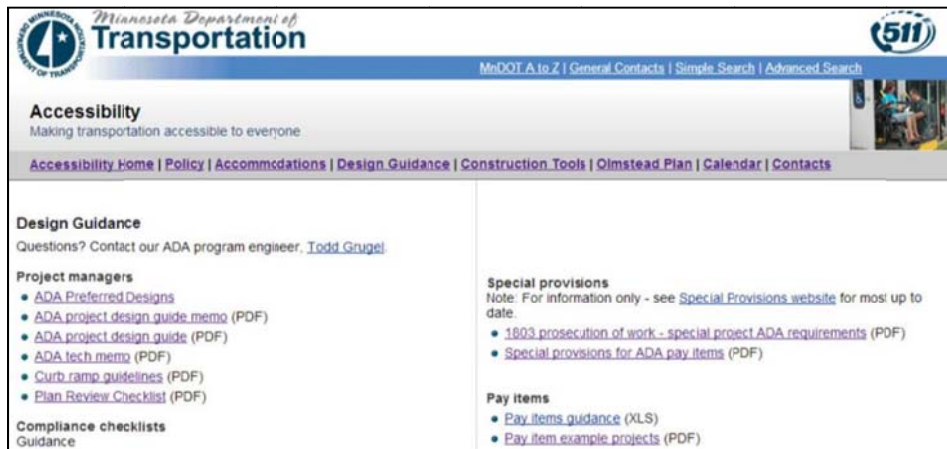
MnDOT's accessibility website is a multi-page website that is divided into six main sub-webpages: (1) policy, (2) accommodations, (3) design guidance, (4) construction tools, (5) Olmsted Plan, and (6) contacts. The 12 accessibility sections were organized and grouped in these six sub-webpages.

This multi-page design provides a top navigation bar that includes links to the six major sections. This top navigation bar appears on all webpages throughout MnDOT's accessibility website. Visitors can click on any of the six titles to go directly to a section, as shown in Figure 28.



**Figure 28: Minnesota DOT accessibility homepage (MnDOT 2014).**

The front page of the MnDOT accessibility website includes links to the major six topics plus links to training and questions. Visitors can navigate and search the website from the front page and the top navigation bar. Accessibility resources and documents in the MnDOT accessibility website are posted in pdf, MS Excel, or html format, as shown in Figure 29.



**Figure 29: Minnesota DOT accessibility design guidance webpage (MnDOT 2014).**

### 3.1.1.2 California DOT Accessibility Website

As shown previously in Table 9, the California DOT (Caltrans) provides one of the most comprehensive accessibility websites ([http://www.dot.ca.gov/hq/bep/ada\\_program.htm](http://www.dot.ca.gov/hq/bep/ada_program.htm)). It has links or documents that cover 11 of the 12 identified sections in the comprehensive list. The only section that is not included on the Caltrans dedicated accessibility website is training; however, accessibility training is listed on a general Caltrans training webpage.

#### 3.1.1.2.1 Content

The Caltrans dedicated accessibility website provides access and links to the following content: (1) accessibility policy in pdf format, (2) notice of non-discrimination in pdf format, (3) design guidance webpage that contains resources and documents to assist in the design of accessible PROW, (4) field guide webpage that contains a handbook on temporary pedestrian facilities and a guide for curb ramp scoping and design, (5) related forms in pdf format, (6) self-evaluation and transition plan webpage that contains an extensive database of all transition plans developed by Caltrans and most of the local governments and public entities within Caltrans's jurisdiction, (7) training course information on a general Caltrans training webpage, (8) grievance procedures, (9) contact information for the statewide ADA coordinator, (10) feedback (same form as grievance), (11) frequently asked questions in pdf format, and (12) external accessibility links.

#### 3.1.1.2.2 Design

The design of the Caltrans accessibility website is clear and simple. It provides all related information, with links to accessibility resources and documents in pdf format to enable visitors to find all accessibility content on one main webpage (Figure 30). In addition, the Caltrans accessibility website includes a link to a dedicated webpage for accessible design in the PROW, as shown in Figure 31.

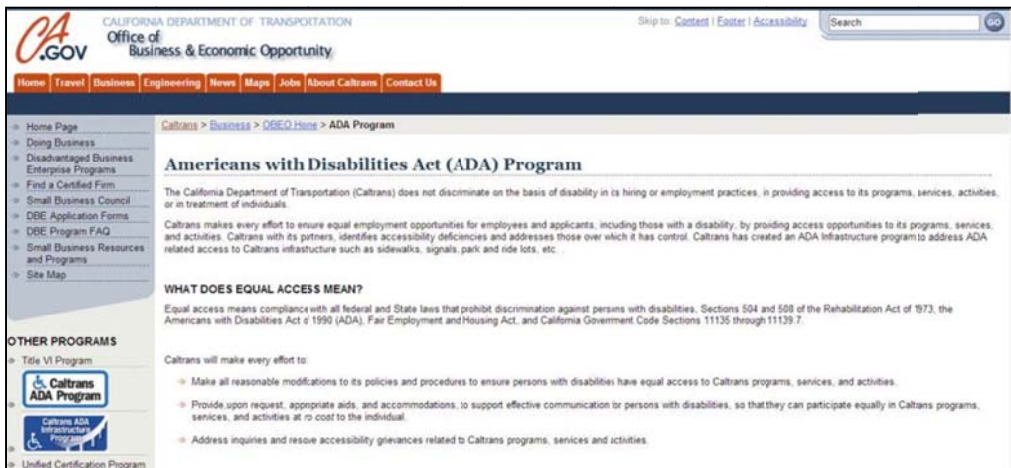


Figure 30: California DOT main accessibility webpage (CDOT 2014).

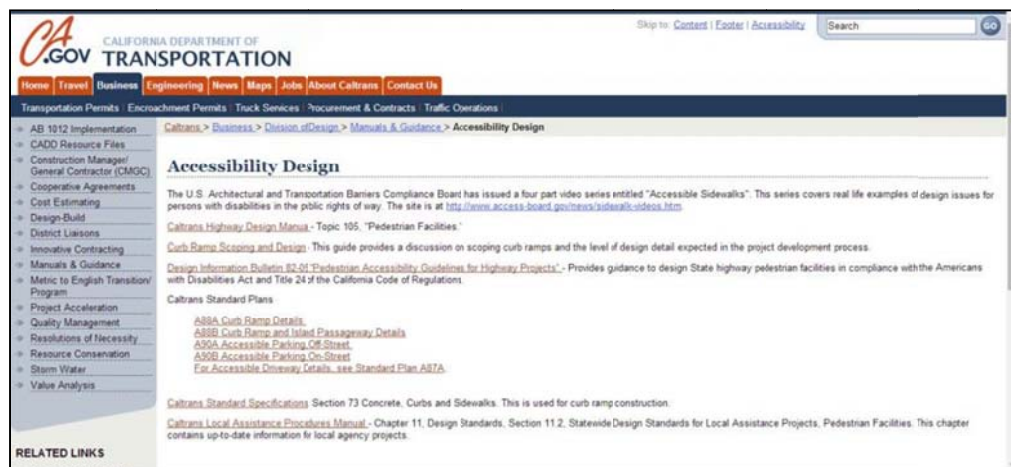


Figure 31: California DOT accessibility design guidance webpage (CDOT 2014).

### 3.1.1.3 Iowa DOT Accessibility Website

As shown previously in Table 9, the Iowa DOT (IowaDOT) provides one of the most comprehensive accessibility websites (<http://www.iowadot.gov/accessiblesidewalks>) and has links or documents that cover 11 of the 12 identified sections in the comprehensive list. The only section not covered is training.

#### 3.1.1.3.1 Content

The IowaDOT accessibility website provides access and links to the following content: (1) accessibility policy in pdf format, (2) notice of non-discrimination in pdf format, (3) design manual that includes chapters focusing on the design of accessible PROW, (4) field guide in pdf format, (5) related forms in pdf format, (6) self-evaluation and transition plan in pdf format, (7) grievance procedures and complaint forms in pdf format, (8) electronic contact form, (9) feedback forms in pdf format, (10) frequently asked questions in html format, and (11) external accessibility links.

#### 3.1.1.3.2 Design

The IowaDOT accessibility website adopted a multi-page website design. The homepage includes few links, but it requires visitors to navigate through multiple links to locate specific accessibility content. A screen shot of the website's homepage is shown in Figure 32.



**Figure 32: Iowa DOT main accessibility webpage (Iowa DOT 2014).**

#### 3.1.1.4 Washington State DOT Accessibility Website

As shown previously in Table 9, the Washington State DOT (WSDOT) provides one of the most comprehensive accessibility websites (<http://www.wsdot.wa.gov/Accessibility/default.htm>), and it has links or documents that cover 11 of the 12 identified sections in the comprehensive list. The only section that is not covered in the WSDOT dedicated accessibility website is training.

##### 3.1.1.4.1 Content

The WSDOT accessibility website provides access and links to the following content: (1) accessibility policy in pdf format; (2) notice of non-discrimination in pdf format; (3) design guidance in pdf and other formats; (4) a field guide titled WSDOT Field Guide for Accessible Rights-of-Way, which contains a handbook about accessible pedestrian facilities design and construction; (5) related forms in pdf format; (6) self-evaluation and transition plan in pdf format; (7) grievance procedures in pdf format; (8) contact information for ADA coordinators statewide and in different districts; (9) feedback forms in pdf format; (10) frequently asked questions in pdf format; and (11) external accessibility links.

##### 3.1.1.4.2 Design

The general design of the WSDOT dedicated accessibility website is a multi-page website design as shown in Figure 33.



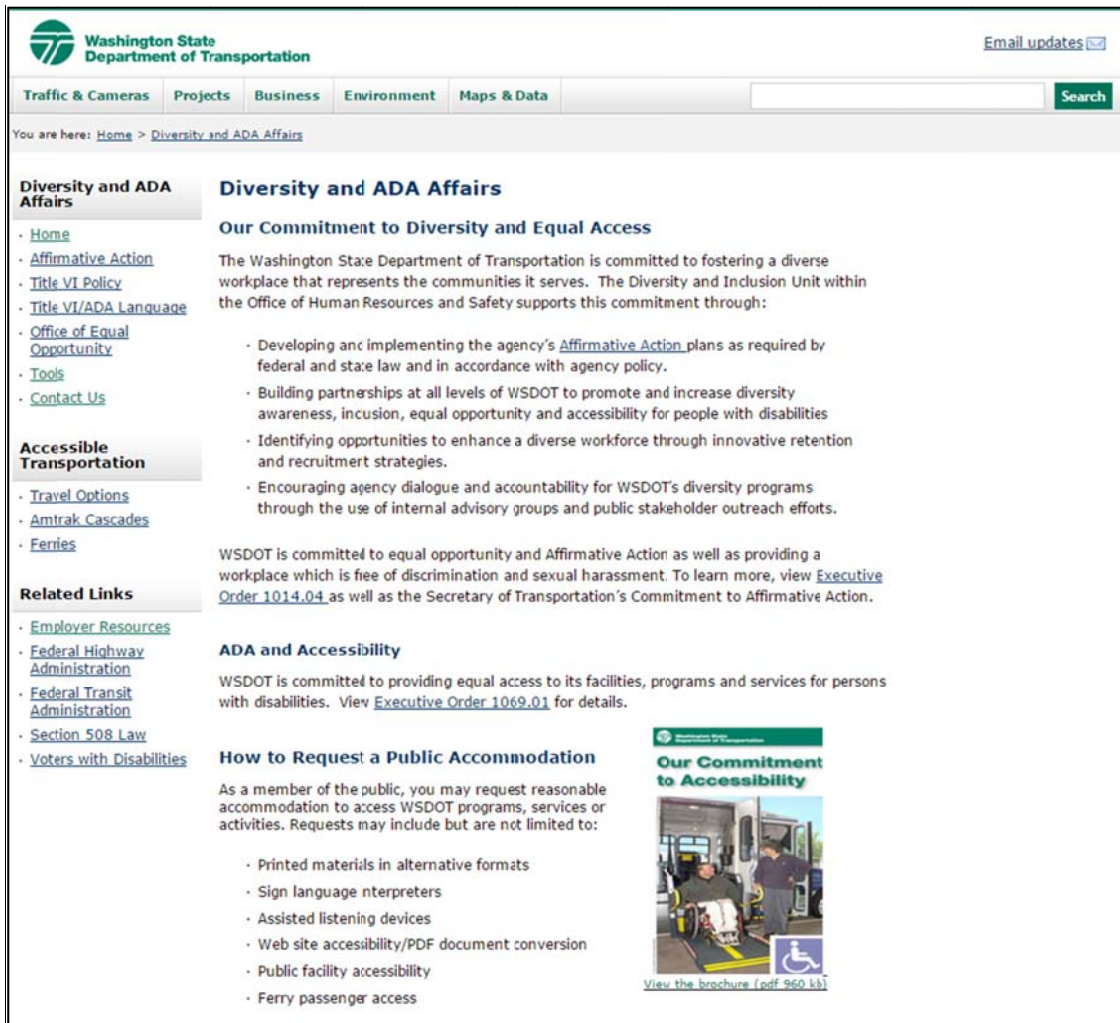


Figure 33: Washington State DOT main accessibility webpage (WSDOT 2014).

### 3.1.1.5 Summary

The MnDOT, Caltrans, Iowa DOT, and WSDOT accessibility websites are similar in content; however, they use different designs to present that content. One of these websites is a single webpage that includes most of the links and documents; the other three are multi-page websites that consist of homepage and several sub-webpages.

The single webpage design yields a relatively long webpage that can make it difficult for users to locate the content they are seeking. The single webpage design also requires users to scroll all the way up and down. The multi-page website design is easier to navigate, assuming its content is properly categorized and the site is organized using tabs and links with clear and concise titles.

## 3.2 PROTOTYPE IDOT ADA ACCESSIBILITY WEBSITE

Based on the data collected to date, the research team developed a prototype IDOT ADA accessibility website. The following two sections describe the prototype website content and design.

### **3.2.1 Recommended Website Content**

The content of a prototype IDOT ADA accessibility website was identified based on a comprehensive analysis of all state DOT ADA accessibility websites. To ensure the comprehensiveness and practicality of the prototype IDOT ADA accessibility website, its content is recommended to include the 12 accessibility sections listed in Section 3.1 and Table 9 in addition to a 13th section for municipality resources that was recommended by the Technical Review Panel (TRP) of this research project.

Accordingly, the recommended content for a prototype IDOT ADA accessibility website is organized and grouped in 13 main sections: (1) accessibility policy, (2) non-discrimination notice, (3) design guidance, (4) field guide, (5) related forms, (6) IDOT transition plan, (7) training courses, (8) grievance procedures, (9) contact information, (10) feedback form, (11) frequently asked questions, (12) accessibility links, and (13) municipality resources.

A separate webpage was designed for each of these 13 main sections in addition to the main homepage. Access to any section is possible from a list on the left side of each page. Access back to the homepage is available along the navigation bar at the top of each page. The following sub-sections describe these 14 webpages.

#### *3.2.1.1 Homepage*

The homepage is the first page that visitors view in the website. It contains a welcome message from IDOT and a statement that “IDOT is committed to making Illinois accessible to everyone.” The homepage includes an IDOT logo that links to the IDOT main website. The homepage also includes links to the 13 sections (each on its own webpage) in the recommended website content. The content of each of these 13 sections is summarized below.

#### *3.2.1.2 Accessibility Policy*

This webpage includes links to accessibility policy documents developed by IDOT, including (1) policy statement, (2) IDOT ADA requirements, (3) special IDOT projects that promote accessibility such as Safe Routes to School and Complete Streets, and (4) links to other documents related to Illinois and federal accessibility policy.

#### *3.2.1.3 Non-Discrimination Notice*

This webpage includes IDOT’s non-discrimination notice in both pdf and text formats.

#### *3.2.1.4 Design Guidance*

This webpage includes (1) a link to the contact information of local ADA coordinators for IDOT and its districts, (2) IDOT ADA field guide, (3) ADA sections in IDOT design manuals, (4) IDOT standards with ADA elements, (5) example compliance checklists, (6) accessibility standards, and (7) design guides.

#### *3.2.1.5 Field Guide*

This webpage will include a link to the IDOT ADA field guide as soon as it is finalized.

#### *3.2.1.6 Related Forms*

This webpage includes official IDOT forms for accessible design and construction.

#### *3.2.1.7 IDOT Transition Plan*

This webpage includes links to (1) IDOT self-evaluation, (2) IDOT transition plan, and (3) IDOT self-evaluation survey form.



### *3.2.1.8 Training Courses*

This webpage includes information about upcoming accessibility training courses offered by IDOT.

### *3.2.1.9 Grievance Procedures*

This webpage includes IDOT grievance procedures, and IDOT grievance forms.

### *3.2.1.10 Frequently Asked Questions*

This webpage includes the most common questions IDOT receives about accessibility in PROW and their answers, and a link to frequently asked questions on the FHWA ADA website.

### *3.2.1.11 Contacts*

This webpage includes contact information for officials in IDOT and the Illinois Capital Development Board, in addition to a map that shows IDOT regions and districts.

### *3.2.1.12 Feedback*

This webpage includes an online form that enables visitors to submit their feedback electronically.

### *3.2.1.13 External Links*

This webpage includes links to useful external websites related to accessibility.

### *3.2.1.14 Municipality Resources*

This webpage includes related ADA resources for local agencies and their consultants. It includes links and information on requirements for self-evaluations and transition plans, examples of self-evaluation and transition plan, IDOT curb ramp design standards, IDOT design manuals, IDOT ADA training, frequently asked questions, IDOT ADA field guide, design guides, and IDOT ADA forms. It is designed to enable municipalities to find what is pertinent without requiring them to search through the entire IDOT ADA website.

## **3.2.2 Prototype Website Design**

The prototype IDOT ADA accessibility website was designed and programmed to enable its users to efficiently and effectively search for related ADA accessibility resources and documents. The design and programming of the prototype IDOT website are described in the following two subsections.

### *3.2.2.1 General Prototype Website Layout*

The layout design of each webpage in this website consists of seven sections (1) top bar, (2) top navigation bar, (3) main banner, (4) sub-banner, (5) left side navigation column, (6) content, and (7) footer, as shown in Figure 34. These seven sections present the PROWAG content in an efficient and effective way. Six of these seven sections are fixed in all the pages throughout the whole website. The only section that varies from one page to another is the content section. Designing all pages to be similar, with only one changing section, provides the user a friendly stable interface. The total width of the website is 900 pixels, so it can fit most computer screens and tablets (Figure 34). The following subsections present a detailed description of the website main sections.

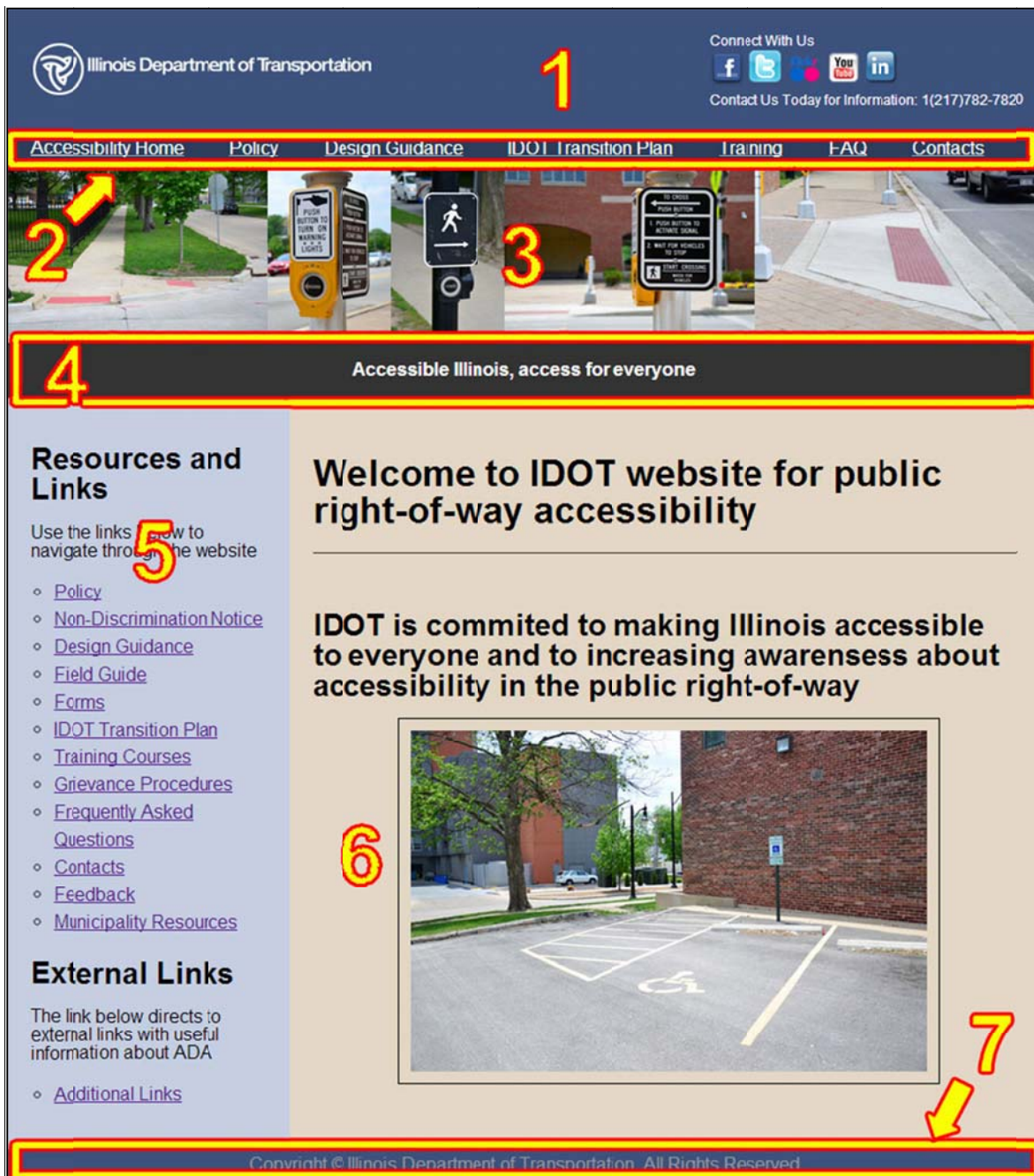


Figure 34: Homepage of the prototype IDOT ADA accessibility website.

### 3.2.2.1.1 Top Bar

The top bar contains the IDOT logo, social media links, and the IDOT phone number. The hotline is a best practice from other states and IDOT can adopt a similar practice, as shown in Figure 35.



Figure 35: Top bar of the prototype IDOT ADA accessibility website.

### 3.2.2.1.2 Top Navigation Bar

The top navigation bar is located below the top bar and contains links to (1) accessibility homepage, (2) accessibility policy, (3) design guidance, (4) self-evaluation and transition plan tools, (5) training courses, (6) frequently asked questions, and (7) contacts (Figure 36).



**Figure 36: Top navigation bar of the prototype IDOT ADA accessibility website.**

### 3.2.2.1.3 Main Banner

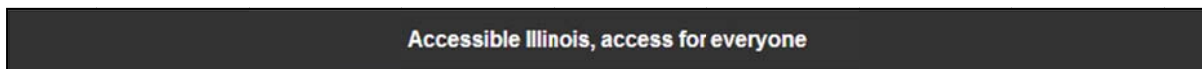
The main banner includes a set of images located below the top navigation bar. These images were captured by the research team in Urbana-Champaign to present examples of accessible public rights-of-way in Illinois, as shown in Figure 37.



**Figure 37: Main banner of the prototype IDOT ADA accessibility website.**

### 3.2.2.1.4 Sub-Banner

The sub-banner includes a statement that highlights the commitment of IDOT to provide accessibility to everyone. The sub-banner is located under the main banner image to form a visual separator between the fixed top of the website and the content area (Figure 38).



**Figure 38: Sub-banner of the prototype IDOT ADA accessibility website.**

### 3.2.2.1.5 Left Side Navigation Column

The left side column is the most important navigation tool in the prototype website design. It includes two main sections: resources and links and external links, as shown in Figure 39. The resources and links section contains links to all webpages on the website: (1) accessibility policy, (2) non-discrimination notice, (3) design guidance, (4) field guide, (5) related forms, (6) self-evaluation and transition plan resources, (7) training courses, (8) grievance procedures, (9) contact information, (10) feedback form, (11) frequently asked questions, and (12) municipality resources.



**Figure 39: Left side navigation column of the prototype IDOT ADA accessibility website.**

### 3.2.2.1.6 Content

The content section varies in each of the 13 webpages described in Section 3.2.2.1 of this report (Figure 40). It displays the content of each page, as shown in Figure 41.



**Figure 40: Content section of the prototype IDOT ADA accessibility website.**



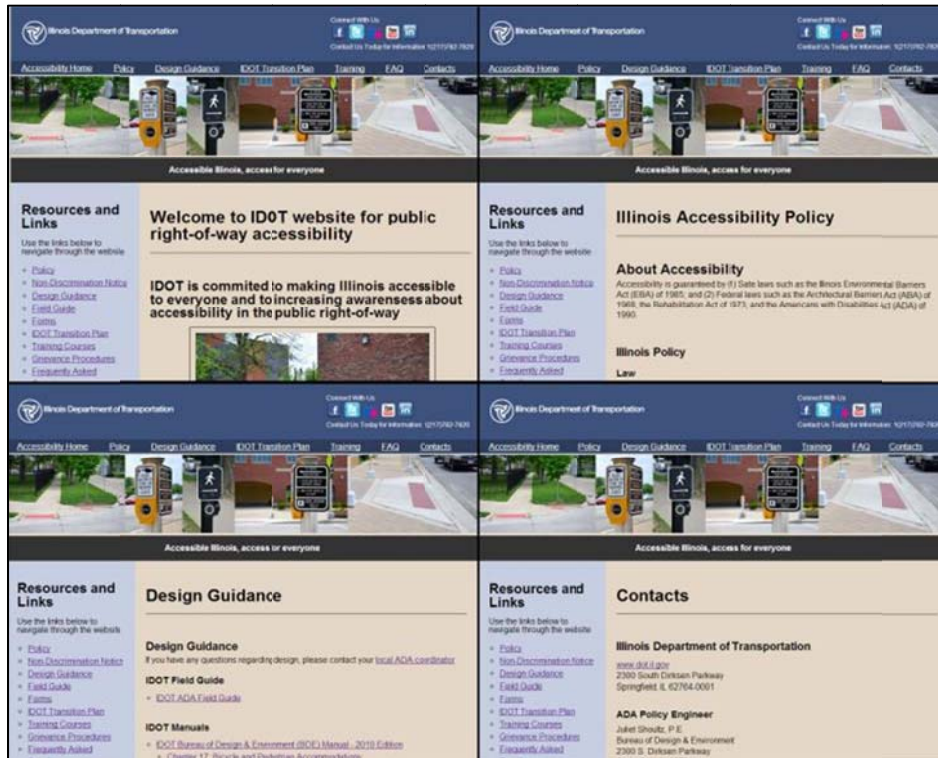


Figure 41: Different pages of the prototype IDOT ADA accessibility website.

### 3.2.2.1.7 Footer

The footer section contains copyright information, as shown in Figure 42.



Figure 42: Footer of the prototype IDOT ADA accessibility website.

### 3.2.2.2 Programming

The website was programmed using Microsoft Expression Web 4. It can easily be edited using any web design software, such as Adobe Dreamweaver. The entire website was built using hypertext markup language (HTML) and cascading style sheets (CSS), making it flexible for editing by any webmaster using standard web software.

The content of this website is categorized by file type and is organized in three folders: root, images, and CSS that contain all the HTML files, images, and CSS files, respectively. This organization makes it easy and intuitive to find, edit, and add files to the website.

## **CHAPTER 4: ILLINOIS-SPECIFIC MATERIAL FOR A FIELD GUIDE**

The chapter presents the development of a field guide that includes checklists to verify compliance with all applicable accessibility laws and regulations in the State of Illinois, including the 2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG), Illinois Accessibility Code (IAC), and IDOT standards. The field guide was developed in three steps that focused on (1) studying all related regulations and standards that are applicable and enforceable in the State of Illinois, (2) analyzing available field guides that were recently developed by other state DOTs, and (3) developing a practical and concise IDOT Accessible Public Right-of-Way Field Guide. These steps are explained in the following three sections of this chapter. A copy of the developed field guide is included in Appendix C.

### **4.1 ANALYSIS OF APPLICABLE REGULATIONS AND STANDARDS**

The analysis of all available accessibility standards and regulations was carried out by the research team in three steps: (1) creating a list of the technical accessibility requirements for all the related elements of the public right-of-way such as pedestrian access routes, curb ramps, and detectable warning surfaces; (2) comparing the requirements for each element in the created list (e.g., curb ram), as shown in Figure 43; and (3) developing requirements for the IDOT field guide to ensure compliance with all accessibility standards and regulations. Tasks involved in these three steps are briefly described in the following sections.

#### **4.1.1 Creating a List of Technical Accessibility Requirements**

A comprehensive list of the technical accessibility requirements for all PROW elements (e.g., curb ramps) was generated based on a detailed comparison of the contents of the applicable standards and regulations. This list includes 17 elements related to accessibility in the public right-of-way that were included in all three documents. These 17 PROW elements are (1) pedestrian access routes, (2) alternate pedestrian access routes, (3) curb ramps, (4) detectable warning surfaces, (5) pedestrian street crossings, (6) accessible pedestrian signals and pedestrian pushbuttons, (7) transit stops and transit shelters, (8) on-street parking spaces, (9) passenger loading zones, (10) street furniture, (11) operable parts, (12) clear spaces, (13) knee and toe clearance, (14) reach ranges, (15) ramps, (16) stairways, and (17) handrails.

#### **4.1.2 Comparing Technical Requirements**

A comparison table (Figure 43) was created to analyze the similarities and differences of accessibility requirements among the standards and regulations. The comparison table consists of four columns and 17 main rows corresponding to the identified accessibility elements. A hierarchy of sub-elements was created for each of these 17 identified elements. For example, the curb ramps element consists of perpendicular curb ramps and parallel curb ramps, and each of these two sub-elements was split into width, running slope, cross slope, flares, and landings.

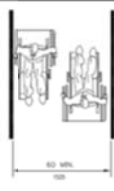
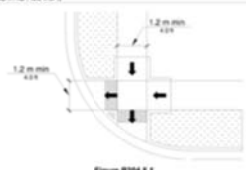
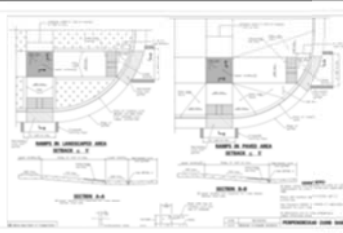
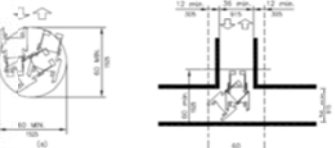
	Illinois Accessibility Code	PROWAG	IDOT Highway Standards
Curb Ramps	 <p>Fig. 2 Minimum Clear Width for Two Wheelchairs</p>	<p>Clear width requirements are contained in ADA 5.1 for curb ramps and blended transitions, and in ADA 4 for ramps.</p> <p>The clear width of curb ramps (including any flared sides), blended transitions, and turning spaces shall be 1.1 m (3.6 ft) minimum.</p> <p>(PROWAG ADA 5.1)</p>  <p>Figure ADA 5.1 Width</p>	
	<p>ICC APPENDIX A ILLUSTRATION (Fig. 2)</p> 	<p>(PROWAG Fig. ADA 5.1)</p> <p>Grade breaks at the top and bottom of curb ramps shall be perpendicular to the direction of the ramp. Grade breaks shall not be permitted on the surface of ramps and turning spaces. Surface slopes that meet at grade breaks shall be flush.</p>	

Figure 43: Sample of the comparison table.

#### 4.1.3 Developing Technical Requirements for IDOT Field Guide

The technical accessibility requirements for each of the 17 identified elements were developed to provide full compliance with all applicable accessibility laws, regulations, and standards in the State of Illinois. For example, the continuous width of a pedestrian access route is required to be 36 inches in the IAC, compared to 48 inches in the 2011 PROWAG. Accordingly, the width requirement was specified to be 48 inches in the developed field guide to ensure full compliance with all related Illinois and federal requirements.

### 4.2 ANALYSIS OF AVAILABLE FIELD GUIDES

A comprehensive search was conducted to identify available field guides for accessibility in the public right-of-way that were developed by other state DOTs. This search identified three accessibility field guides that were developed by Washington State DOT (WSDOT) in 2012, California DOT (Caltrans) in 2011, and Minnesota DOT (MnDOT) in 2010 to assist in the design, construction, and inspection of accessible public right-of-way in each of these states. The following sections summarize these three field guides.

#### 4.2.1 Washington State Field Guide for Accessible Public Rights-of-Way

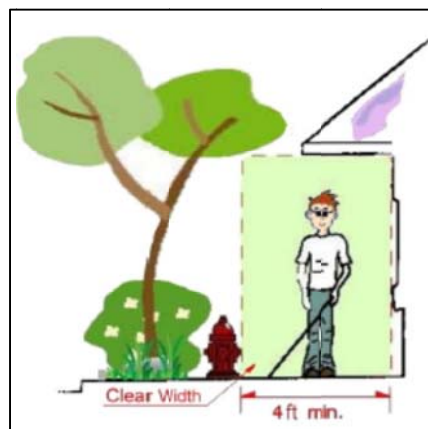
In 2012, the Washington State Department of Transportation (WSDOT) published the Field Guide for Accessible Public Rights of Way, 2012 Edition to provide assistance to its officials and local engineers in achieving compliance with accessibility laws and regulations. The field guide is intended to serve as a pocket guide on worksites to facilitate the process of construction and inspection of accessible pedestrian facilities in the public right-of-way (Figure 44).



**Figure 44: Cover page of WSDOT field guide (WSDOT 2012).**

#### 4.2.1.1 Contents

The field guide covers (1) accessibility criteria checklists; (2) pedestrian circulation path (PCP); (3) protruding objects/obstructions; (4) pedestrian access route (par); (5) access route surface elements; (6) curb ramps, which includes sections that cover perpendicular-type curb ramp, parallel-type curb ramp, combination-type curb ramp, single-direction parallel-type curb ramp, and diagonally oriented parallel-type curb ramp; (7) curb ramp transitions; (8) detectable warning surfaces (DWS); (9) pedestrian push buttons and accessible pedestrian signals (APS); (10) crosswalks; (11) driveways; (12) bus stops, and (13) alternate pedestrian circulation paths and pedestrian detours. The field guide includes illustrations to clarify accessibility regulations and standards, as shown in Figure 45 (WSDOT 2012).



**Figure 45: Pedestrian circulation paths (WSDOT 2012).**

The WSDOT field guide is comprehensive and covers most of the public right-of-way accessible elements. It includes 11 checklists; each covering one of the main elements of the accessible public



right-of-way. In addition, the field guide includes several sections for guidelines. The organization of the guidelines sections follows the same format and hierarchy of the 2011 PROWAG.

#### 4.2.1.2 Size and Layout

The WSDOT field guide consists of 36 pages. Its dimensions are 8 inches long by 4.5 inches wide. The WSDOT website states that this guide is available in a laminated paper hardcopy to make it more durable and resilient to construction conditions.

### 4.2.2 California Temporary Pedestrian Facilities Handbook

In April 2011, the California Department of Transportation (Caltrans) published a field guide titled Temporary Pedestrian Facilities Handbook to provide assistance to its officials and local engineers in achieving compliance with accessibility laws and regulations related to temporary pedestrian facilities. The field guide is intended to serve as a pocket guide on worksites to facilitate the process of construction and inspection of accessible temporary pedestrian facilities in the public right-of-way (Figure 46).

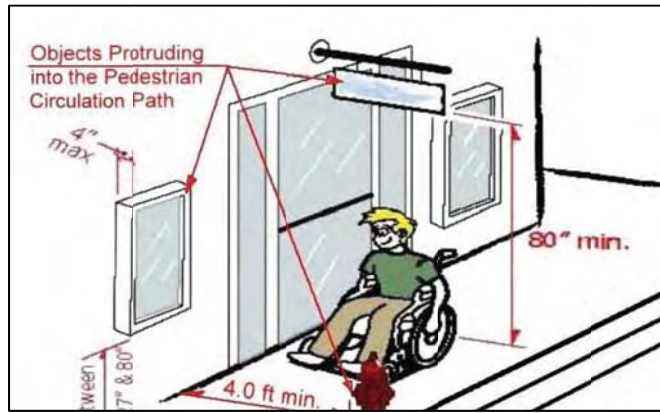


**Figure 46: Cover page of Temporary Pedestrian Facilities Handbook (Caltrans 2011).**

#### 4.2.2.1 Contents

This field guide includes sections that cover (1) related Caltrans standards, (2) California MUTCD requirements, (3) permanent facilities, and (4) ADA checklist. The field guide includes figures and illustrations that provide clear explanation of accessibility regulations and standards (Caltrans 2011).

The Caltrans field guide focuses on temporary pedestrian facilities and therefore does not provide a comprehensive list of all accessibility requirements for the public right-of-way. The guide also includes illustrations (Figure 47) and five checklists that cover (1) accessible route basics, (2) ramps, (3) scaffolding, (4) pedestrian signal buttons, and (5) audible alerts.



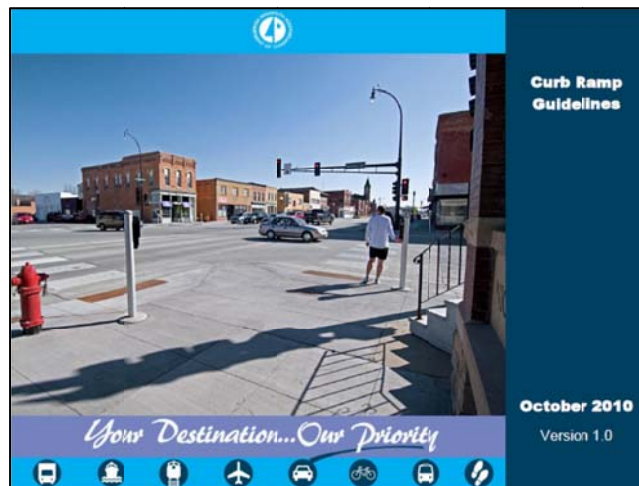
**Figure 47: Protruding objects (Caltrans 2011).**

#### 4.2.2.2 Size and Layout

The Caltrans field guide consists of 14 pages. Its dimensions are 8 inches long by 4.5 inches wide. The Caltrans website states that this guide is available in a laminated paper hardcopy to make it more durable and resilient to construction conditions.

#### 4.2.3 Minnesota Curb Ramp Guidelines

In 2010, the Minnesota Department of Transportation (MnDOT) published a field guide titled Curb Ramp Guidelines to provide assistance to its officials and local engineers on achieving compliance with accessibility laws and regulations. The field guide is intended to serve as a guide to facilitate the process of construction and inspection of pedestrian facilities in the public right-of-way (Figure 48).

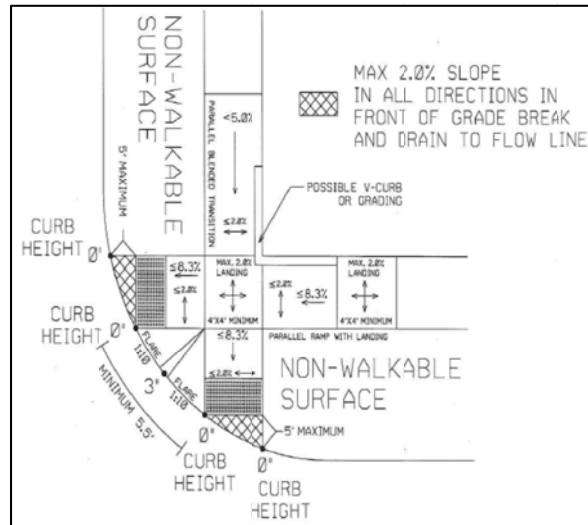


**Figure 48: Cover page of MnDOT Curb Ramp Guidelines (MnDOT 2010).**

#### 4.2.3.1 Contents

The field guide includes sections that cover (1) definitions; (2) basic curb ramp components; (3) pedestrian ramp types; (4) perpendicular curb ramps; (5) combined perpendiculars; (6) one-way directional; (7) parallel ramps; (8) blended transitions; (9) depressed corner; (10) fans; (11) detectable warnings surfaces; (12) curb and gutter; (13) flares; (14) V-curbs, beaver tails, and sloped turf; and (15) signalized intersection and accessible pedestrian signals. It also includes illustrations to clarify accessibility regulations and standards, as shown in Figure 49 (MnDOT 2010). The MnDOT field guide

covers only curb ramps and blended transitions and therefore does not provide a comprehensive list of all accessibility requirements for the public right-of-way.



**Figure 49: Combined perpendicular ramps (MnDOT 2010).**

#### 4.2.3.2 Size and Layout

The MnDOT field guide consists of 45 pages. Its dimensions are 11 inches long by 8.5 inches wide.

### 4.3 DEVELOPING AN IDOT FIELD GUIDE

This section highlights the content, organization, and size of the IDOT Accessible Public Right-of-Way Field Guide developed as part of this research project.

#### 4.3.1 Content

The content of the IDOT field guide was carefully selected by the research team and designed to ensure that it is comprehensive, concise, and practical. The content was identified based on the findings of the previous tasks. Accordingly, the field guide was organized in three main sections (1) Introduction, (2) Accessibility Requirements Checklists, and (3) Defined Terms. The following provides a brief description of these three sections.

##### 4.3.1.1 Introduction

This section explains the purpose and use of the field guide.

##### 4.3.1.2 Accessibility Requirements Checklists

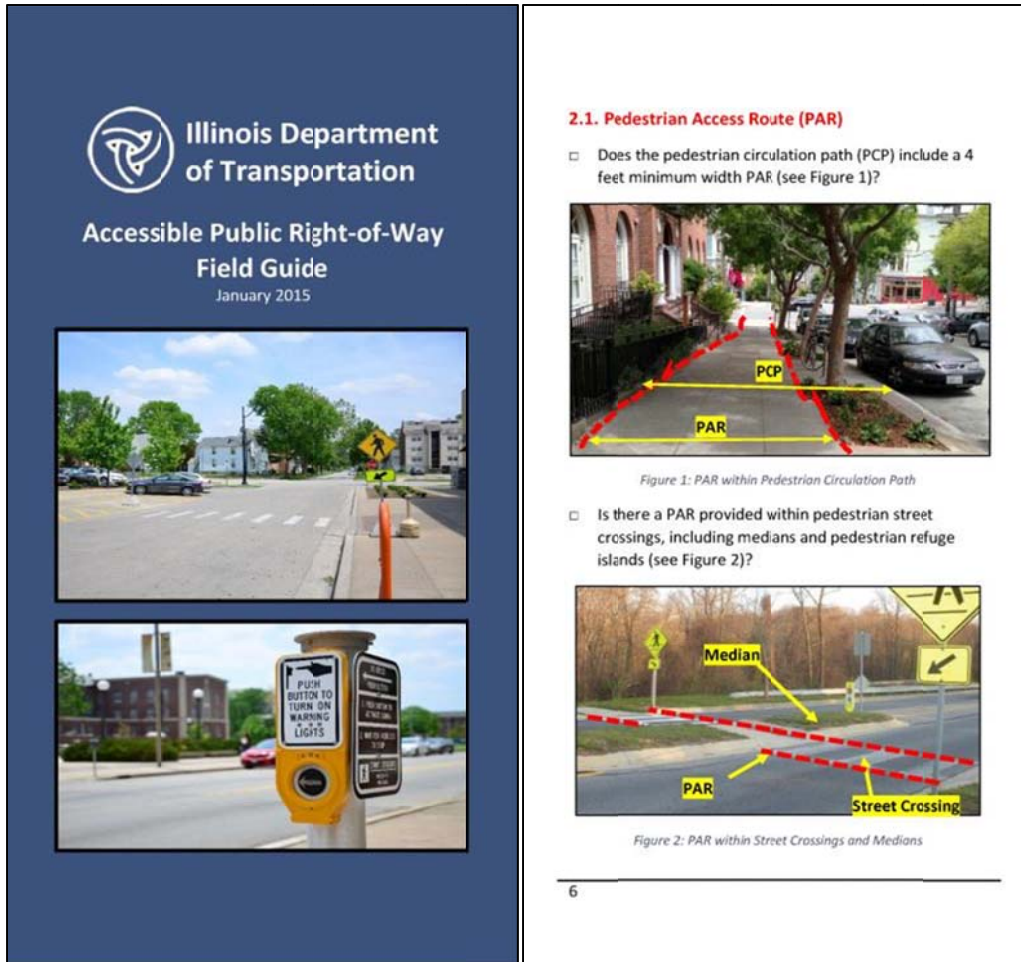
This section includes checklists to verify compliance with accessibility requirements in the public right-of-way. The checklists cover (1) pedestrian access routes, (2) alternate pedestrian access routes, (3) curb ramps, (4) detectable warning surfaces, (5) pedestrian street crossings, (6) accessible pedestrian signals and pedestrian pushbuttons, (7) transit stops and transit shelters, (8) on-street parking spaces, (9) passenger loading zones, (10) street furniture, (11) operable parts, (12) clear spaces, (13) knee and toe clearance, (14) reach ranges, (15) ramps, (16) stairways, (17) handrails, and (18) doors, doorways, and gates.

##### 4.3.1.3 Defined Terms

This section includes accessibility-related terms and their definitions.

### 4.3.2 Size and Layout

The IDOT Accessible Public Right-of-Way Field Guide (Figure 50) consists of 89 pages. Its dimensions are 8.5 inches long by 4.5 inches wide. This size is practical and makes it easier to keep in a pocket or a glove box to facilitate its field use on construction sites. This field guide should be printed on laminated paper to provide protection and resilience.



**Figure 50: Sample pages of the IDOT PROWAG field guide.**

#### 4.3.2.1 Illustrations and Tables

The field guide includes illustrations, figures, pictures, and tables to assist in the clarification of accessibility requirements. Illustrations are either referenced from PROWAG or IAC, or were constructed or photographed by the research team (Figure 51).

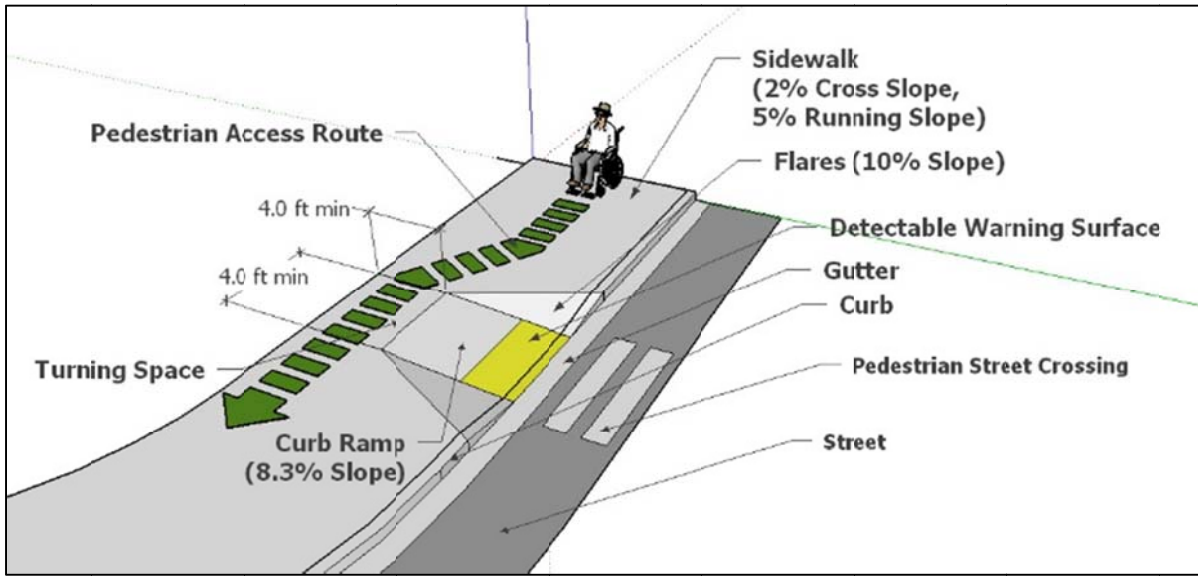


Figure 51: Sample field guide illustrations.

## CHAPTER 5: IDOT ADA/PROWAG E-LEARNING MODULES

This chapter summarizes the development of e-learning modules for IDOT ADA/PROWAG classroom training that updated and expanded existing ADA/PROWAG classroom training offered by IDOT's Technology Transfer Center. The development of these modules was performed in two stages that focused on (1) updating and expanding existing training modules to ensure full and comprehensive coverage of the latest PROWAG requirements, and (2) reorganizing the modules for consistency with the developed field guide. The following sections provide a concise description of these two stages. A sample of the developed modules is included in Appendix D.

### 5.1 UPDATING AND EXPANDING EXISTING TRAINING MODULES

This stage focused on updating and expanding ADA/PROWAG classroom training offered by IDOT's Technology Transfer Center to ensure full and comprehensive coverage of the latest PROWAG requirements. These training modules included 356 PowerPoint slides that were organized in ten sections: (1) Introduction, (2) Illinois Requirements, (3) Federal Requirements, (4) Transition Plans, (5) Pedestrian Access Routes (Permanent and Temporary), (6) Curb Ramps and Detectable Warnings, (7) Crossings and Signals, (8) Parking Bus Stops and Entrances, (9) Supplementary Technical Requirements, and (10) PROWAG—Wrong or Right?

Existing modules were updated and expanded based on the findings of the conducted literature review in Chapter 2 and the developed field guide in Chapter 4 to ensure consistency with the developed field guide and comprehensive coverage of the latest accessibility laws, regulations, standards, and guidelines. Updating and expanding existing training modules was performed in four main steps that focused on (1) comparing the organization of existing training modules and the developed field guide to identify the topics and sections that need to be updated in the training modules, as shown in Table 10; (2) integrating additional accessibility requirements in the e-learning modules to ensure their full coverage of the latest accessibility standards, as shown in the example in Figure 52; (3) replacing low-resolution illustrations and pictures in the training modules with higher resolution ones to improve clarity, as shown in the example in Figure 53; and (4) integrating newly created illustrations and pictures in the training modules to improve clarity and provide additional explanation of accessibility requirements, as shown in the example in Figure 54. The implementation of these four steps resulted in expanding the 365 slides in the existing training modules to 443 slides in the updated modules.

**Table 10: Comparison Between Existing Classroom Training Modules and the Field Guide**

No.	Existing Classroom Training Modules	Field Guide
1	Introduction	Introduction
2	Illinois Requirements	Not included (for designers only)
3	Federal Requirements	Not included (for designers only)
4	Transition Plans	Not included (for designers only)
5	Pedestrian Access Routes, Permanent and Temporary	Pedestrian Access Routes (PAR)
6		Alternate Pedestrian Access Routes (APAR)
7	Curb Ramps and Detectable Warnings	Curb Ramps and Blended Transitions
8		Driveways
9		Detectable Warning Surfaces (DWS)
10	Crossings and Signals	Pedestrian Street Crossings
11		Accessible Pedestrian Signals and Pedestrian Pushbuttons



No.	Existing Classroom Training Modules	Field Guide
12	Parking Bus Stops and Entrances	Transit Stops and Transit Shelters
13		On-Street Parking Spaces
14		Passenger Loading Zones
15	Supplementary Technical Requirements	Operable Parts
16		Clear Spaces
17		Toe and Knee Clearance
18		Reach Ranges
19		Ramps
20		Stairways
21		Handrails
22		Doors, Doorways, and Gates
23	PROWAG—Wrong or Right?	Not included (for designers only)

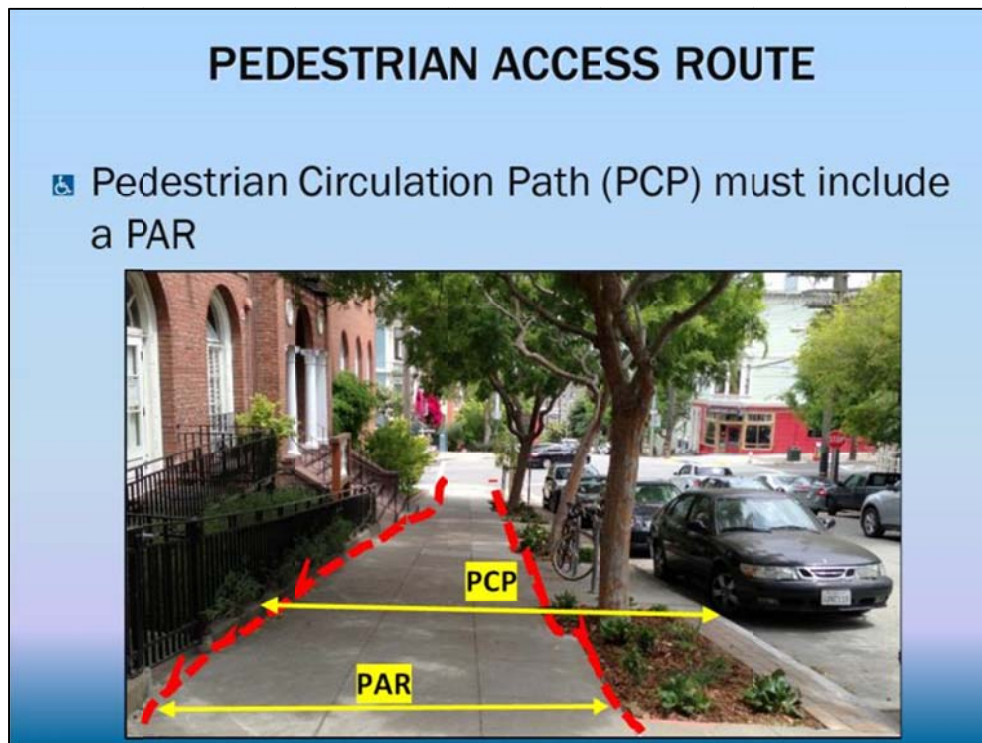


Figure 52: Example of integrating additional requirements in the e-learning modules.

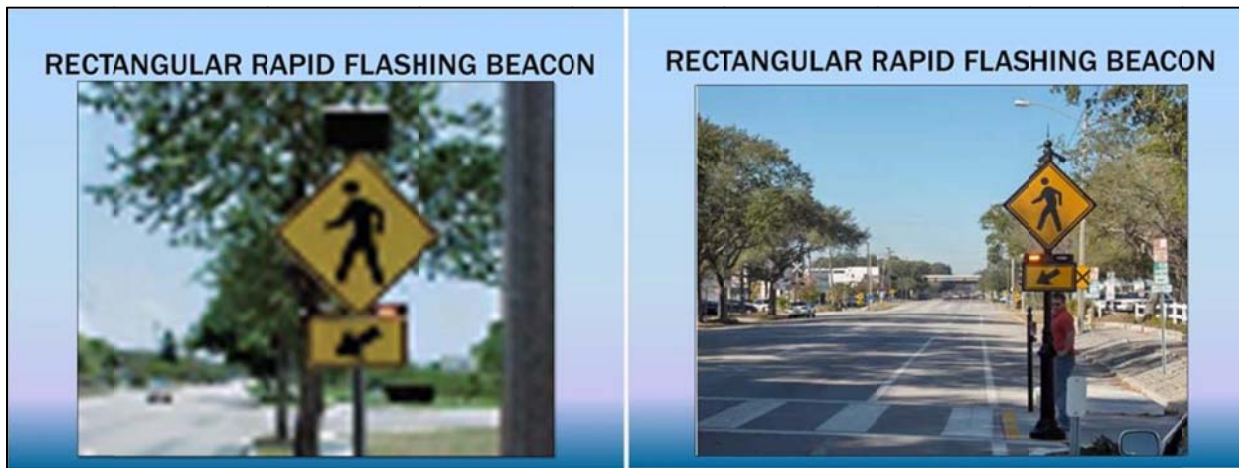


Figure 53: Example of replacing low-resolution images (left) with high-resolution ones (right).

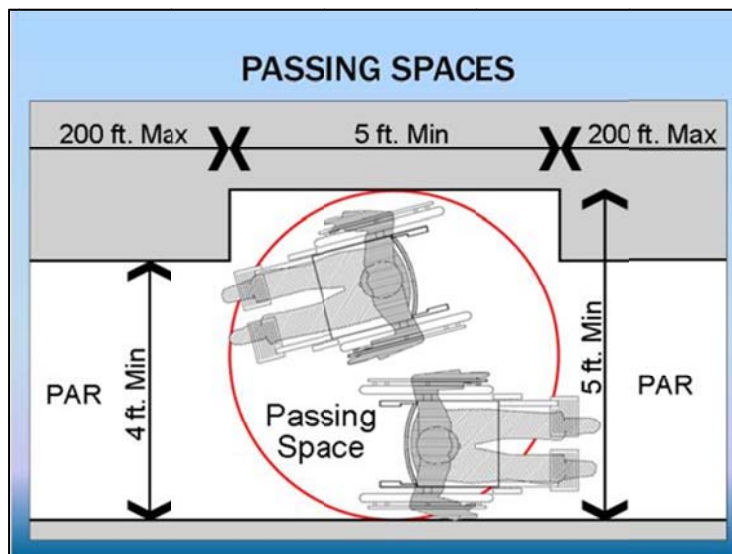


Figure 54: Example of newly added illustrations in the e-learning modules.

## 5.2 REORGANIZING THE UPDATED MODULES

This stage focused on reorganizing the updated and expanded modules to ensure their consistency with the developed field guide. This reorganization resulted in splitting a number of existing sections in the updated modules into more detailed subsections to be consistent with the field guide. For example, the “curb ramps and detectable warnings” section was split into three separate subsections, as shown in Table 11.

Accordingly, the updated and reorganized modules include 19 sections: (1) Introduction; (2) Illinois Requirements; (3) Federal Requirements; (4) Transition Plans; (5) Pedestrian Access Routes (PAR); (6) Alternate Pedestrian Access Routes (APAR); (7) Curb Ramps; (8) Driveways; (9) Detectable Warning Surfaces (DWS); (10) Pedestrian Overpasses and Underpasses; (11) Pedestrian Street Crossings; (12) Roundabouts; (13) Accessible Pedestrian Signals and Pedestrian Pushbuttons; (14) Transit Stops and Transit Shelters; (15) Parking Spaces; (16) Passenger Loading Zones; (17) Entrances, Doors, Doorways, and Gates; (18) Supplementary Technical Requirements; and (19) PROWAG—Wrong or Right?, as shown in Table 11.



**Table 11: Reorganization of E-Learning Modules**

No.	Existing Modules	Reorganized Modules
1	Introduction	Introduction
2	Illinois Requirements	Illinois Requirements
3	Federal Requirements	Federal Requirements
4	Transition Plans	Transition Plans
5	Pedestrian Access Routes, Permanent and Temporary	Pedestrian Access Routes (PAR)
6		Alternate Pedestrian Access Routes (APAR)
7	Curb Ramps and Detectable Warnings	Curb Ramps
8		Driveways
9		Detectable Warning Surfaces (DWS)
10	CROSSINGS and Signals	Pedestrian Overpasses and Underpasses
11		Pedestrian Street Crossings
12		Roundabouts
13		Accessible Pedestrian Signals and Pedestrian Pushbuttons
14	Parking Bus Stops and Entrances	Transit Stops and Transit Shelters
15		Parking Spaces
16		Passenger Loading Zones
17		Entrances, Doors, Doorways, and Gates
18	Supplementary technical Requirements	Supplementary Technical Requirements
19	PROWAG—Wrong or Right?	PROWAG—Wrong or Right?

## CHAPTER 6: RECOMMENDATIONS AND FUTURE RESEARCH

### 6.1 RECOMMENDATIONS

This chapter provides three main recommendations that can be used by IDOT to improve compliance with public right-of-way accessibility laws, regulations, standards, and guidelines. These recommendations were developed based on the main findings of the research tasks, and they can be used to update and/or expand related IDOT practices, policies, specifications, and standards. The three developed recommendations are the following:

1. Existing IDOT website should be updated and expanded to include a concise and comprehensive description of public right-of-way accessibility requirements in the State of Illinois. This can be achieved by integrating the recommended website content for PROWAG in Chapter 3 in addition to an electronic version of the developed field guide in Chapter 4.
2. The developed field guide discussed in Chapter 4 should be used by construction inspectors to identify and evaluate issues that must be addressed along pedestrian access routes that are directly affected or altered by a project. The field guide includes checklists to verify compliance with all applicable accessibility laws and regulations in the State of Illinois, including the 2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG), Illinois Accessibility Code (IAC), and IDOT standards.
3. Existing ADA/PROWAG classroom training offered by IDOT's Technology Transfer Center should integrate the updated and expanded modules described in Chapter 5 to ensure full and comprehensive coverage of the latest PROWAG requirements and consistency with the developed field guide.

### 6.2 FUTURE RESEARCH

During the course of this project, the research team identified two promising research areas that need further in-depth analysis and investigation in a follow-up phase. Building on the accomplishments of this project, the research team foresees an opportunity to continue studying and improving compliance with accessibility requirements by focusing on one or more of the following research areas.

#### 6.2.1 Research Area 1: Improving IDOT Efficiency in Conducting Self-Evaluations and Transition Plans

##### 6.2.1.1 Problem Statement

Self-evaluations are required to assess accessibility conditions on existing roadways and pedestrian facilities, while transition plans need to state, in detail, the actions and measures necessary to bring these roadways and facilities to full compliance with accessibility requirements. Failure of public agencies to provide accessibility on their roadways and pedestrian facilities has resulted in costly settlements to many cities, such as the City of Chicago, which agreed in 2007 to spend \$50 million of new money over five years to upgrade its roadway accessibility. This proposed research will focus on improving IDOT efficiency in conducting self-evaluations and transition plans that are required by federal laws .

##### 6.2.1.2 Objectives and Scope of Proposed Research

The objectives of this proposed research are to develop and deliver (1) a practical and automated method for maximizing the efficiency of conducting self-evaluations of existing accessibility conditions of Illinois roadways and pedestrian facilities using unmanned aerial and/or ground vehicles (UAV/UGV); and (2) a practical decision support system (DSS) for optimizing the development and execution of transition plans.

The first deliverable will utilize commercially available UAVs and/or UGVs that cost less than \$1000 and can (1) capture pictures and videos of roadway conditions using onboard cameras, (2) measure and record dimensions and slopes of pedestrian facilities using efficient image processing algorithms, and (3) identify non-complying elements and document them on a map. The second deliverable (a DSS) will enable optimizing transition plans to minimize compliance issues and meet accessibility requirements while complying with budget and time constraints.

The proposed research will enable IDOT and other agencies to (1) maximize efficiency and cost effectiveness in conducting self-evaluations and transition plans, (2) maximize accessibility of its roadways and pedestrian facilities for people with disabilities, and (3) avoid costly settlements resulting from non-compliance with accessibility laws.

#### *6.2.1.3 Expected Outcome*

The deliverables of this proposed research will enable IDOT to (1) minimize its cost to conduct self-evaluations, including personnel and equipment costs; (2) maximize its frequency of conducting self-evaluations to document changes in road conditions; (3) use digital documentation to cover larger geographical areas more efficiently and economically than manual measures; (4) optimize its transition plans to maximize compliance with accessibility requirements while complying with budget and time constraints; (5) maximize accessibility for people with disabilities; and (6) minimize costly settlements resulting from non-compliance with accessibility laws.

### **6.2.2 Research Area 2: Developing an Interactive Version of the Field Guide**

#### *6.2.2.1 Problem Statement*

IDOT engineers and construction inspectors often encounter challenging cases and site problems that require immediate decisions and resolutions to these urgent problems to avoid the risk of rework and/or project delays. To support engineers and construction inspectors in this challenging task, new interactive and streamlined versions of the developed field guide need to be developed to provide speedy and reliable resolution to these site problems. This can be achieved by developing an application that can be easily downloaded and used on mobile tablets and/or phones that enables efficient and effective navigation and searching of the electronic field guide app. This electronic version can include links to the original text and illustrations of accessibility laws and regulations.

#### *6.2.2.2 Objectives and Scope of Proposed Research*

The objectives of this proposed research are to develop an application that (1) works on both iOS and Android, (2) contains a searchable electronic version of the field guide, (3) utilizes the portability of tablets to bring their powerful search features together with the comprehensiveness of the field guide to construction sites, and (4) includes links to the original sources of accessibility requirements to provide additional explanation of the accessibility requirements listed in the field guide.

#### *6.2.2.3 Expected Outcome*

The deliverables of this proposed research will enable IDOT engineers and inspectors to (1) have available all accessibility requirements and the regulations and standards in an efficient and effective manner on site, (2) document existing conditions using the mobile device's integrated camera, and (3) request additional online guidance and/or submit online accessibility forms.

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**APPENDIX A: SAMPLE OF CITY OF URBANA TRANSITION PLAN**

CITY OF URBANA  
DEPARTMENT OF PUBLIC WORKS



ADA TRANSITION PLAN

2012 UPDATE

PUBLIC RIGHTS OF WAY

AND

SIDEWALK

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### **I. INTRODUCTION**

The 2012 ADA Transition Plan supersedes and takes the place of Section IV. Title II: G. Curb and sidewalk ramps; and, H. Parking accessibility of the City of Urbana Americans With Disabilities Act Compliance Plan, in effect since July, 1993. This plan is in accordance with the guidelines of the Illinois Department of Transportation (IDOT), Americans with Disabilities Act (ADA). When the City of Urbana Transition Plan is in conflict with the IDOT guidelines, IDOT guidelines shall take precedence.

The purpose of this transition plan is to:

- Conduct a new self-assessment and inventory of needs.
- Solicit public input to increase awareness and effectiveness of the plan.
- Incorporate new practices and procedures into the plan.
- Develop an implementation schedule for the plans.
- Compliance attainment with IDOT ADA guidelines.

### **II. BACKGROUND.**

The City of Urbana Department of Public Works surveyed all its sidewalk ramps in 1991 to assess ADA compliance.

In 1993 the city adopted an ADA compliance plan to reconstruct non-compliant sidewalks to meet the then current ADA standards.

### **III. SELF-EVALUATION**

Public Works Department staff will begin a new inventory survey in the summer of 2012. The Public Works Department will create a geographic information system (GIS) based map and database to inventory ramp data. The GIS database will also be utilized to prioritize and track ramp reconstruction activities.

Ramp survey forms are presented in Appendix A.



#### IV. COMPLIANCE PROGRAM

##### Priority system

Priorities can be set by addressing both the needs and physical conditions of the ramps.

From a needs perspective the following should be considered:

- A. Presence of a disabled population or specific complaints and/or requests from a disabled person or advocacy group (10 points).
- B. High volume of pedestrians, such as in the Central Business District or University District, schools (8 points), public buildings, hospitals, senior housing, libraries, public transportation facilities, or parks (6 points).
- C. Low volume pedestrian use areas such as residential subdivisions (2 points).
- D. Alternative ADA compliant sidewalk route within 1 block radius (-3 points). (Deduction meant to lower priority based on close proximity to a compliant route).

From a ramp condition perspective the following should be considered:

1. There is no ramp at a pedestrian crossing in an area with sidewalks (8 points).
2. Existing ramp which is unsafe due to deterioration (1 to 3 points), excessive slopes (1-3 points), or abrupt changes in the surface elevations (maximum of 7 points total).
3. Where ramps are generally safe and in good condition but do not fully comply (no detectable warnings with domes, side tapers are out of compliance, etc.) (1 point).

Each ramp location will be rated according to these criteria. Specific projects designed to replace ramps to correct deficiencies will address those rated numerically highest until budgeted funds are exhausted.

##### Requirement to Act

All new development and redevelopment must have accessible walks and ramps in full compliance with accessibility standards as required in the city's Subdivision and Land Development Code (Section 21-58).

Alterations of facilities in the public right-of-way must make changes to sidewalks and ramps to meet current ADA standards. Alterations are changes which affect the usability and are broadly interpreted to include work such as road reconstruction, sidewalk repairs, asphalt overlay of the street, or utility repairs that affect the sidewalks or ramps. When work involves one corner of an intersection only that corner must have the curb ramps improved to current ADA standards and the adjacent pavement must be resurfaced as necessary to provide for a flush transition. All sidewalk work greater than 10' in length that abuts a curb ramp shall be extended to include affected ramps and those ramps must be improved to current ADA standards.

The city will also reconstruct all non-compliant sidewalk ramps during adjacent street reconstruction and resurfacing projects. The city estimates approximate (40) sidewalk ramps will be reconstructed each year as part of street construction resurfacing projects.

#### V. IMPLEMENTATION SCHEDULE

Winter 2012 – Spring 2012

- Create GIS based inventory system of all Urbana sidewalk ramps.

Spring 2012 – Fall 2014

- Survey all Urbana sidewalk ramps

Fall 2014 – Winter 2015

- Rank and prioritize all non-compliant sidewalk ramps.

Spring 2014 - ???

- Implement sidewalk ramp reconstruction efforts based on inventory priority ranking system.

After completion of the sidewalk ramp survey the City will know how many non-compliant ramps exist and can then finalize a ramp reconstruction schedule to bring those ramps up to current ADA standards.

Sidewalk ramp reconstruction efforts will be tracked in the GIS based sidewalk inventory system to maintain a current list of non-compliant sidewalk ramps and track the number of sidewalk ramp reconstructions that the City has completed as part of its ADA Transition Plan efforts.

**VI. PROGRAM RESPONSIBILITY**

The official responsible for implementation of the City's ADA Transition Plan in Public Rights-of-Way is:

William R. Gray  
Director of Public Works  
706 South Glover Avenue  
Urbana, Illinois 61802  
Telephone: (217) 384-2342  
Fax: (217) 384-2400  
Web site: [www.urbanainillinois.us](http://www.urbanainillinois.us)

The City of Urbana ADA Coordination is the responsibility of the Engineering Division of the Public Works Department.

**VII. PUBLIC INVOLVEMENT**

A meeting was held with the Bike and Pedestrian Advisory Committee (BPAC) on February 21, 2012 to solicit their input on the ADA Transition Plan. The BPAC members did not have any comments regarding the Transition Plan.

The Transition Plan was also reviewed by a member of the Champaign Urbana Urbanized Transportation Study (CUUATS) group. The CUUATS review comments are provided in Appendix B.

The ADA Transition Plan was also posted on the city website for public review and comment from May 11, 2012 to June 15, 2012.

**VIII. ACCOMMODATION PROCEDURE**

The accommodation process is an integral part of the ADA Transition Plan. Accommodations will be evaluated according to the policies, practices, and available funding sources. Within the Department of Public Works, the Engineering Division will receive and evaluate accommodation requests.

Accommodation Process: The Engineering Division acts as the central clearinghouse for curb ramp and sidewalk accommodation requests. Citizens with disabilities requiring curb ramps are encouraged to contact the office directly at 217-384-2342. Accommodation requests received by other departments or agencies will be routed to the Engineering Division. This central accommodation request processing procedure

ensures that the specific needs of each individual are accurately understood and recorded. The deficiency and specific location are then entered into a log and the matter referred to the Engineering Division for inspection and possible action. The Engineering Division then coordinates any work and keeps a record of all formal responses to the requester. A request for accommodation form is provided in Appendix C.

Accommodation requests may be received through a variety of communication methods:

John Lyons, P.E.  
Civil Engineer  
Department of Public Works  
706 South Glover Avenue  
Urbana, Illinois 61802  
Telephone: (217) 384-2342  
Fax: (217) 384-2400  
email: [jglyons@urbanainillinois.us](mailto:jglyons@urbanainillinois.us)

Website [www.urbanainillinois.us](http://www.urbanainillinois.us)

**IX. APPENDICES**

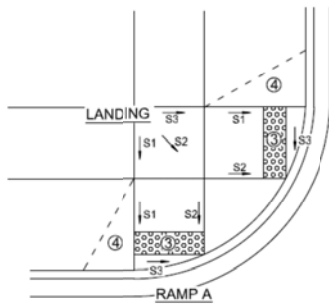
- Appendix A            Inspection Forms
- Appendix B.            CUUATS Comments on ADA Transition Plan
- Appendix C.            Request for Accommodation / Sidewalk Repair Form
- Appendix D.            City Design Standards

### ADA CURB RAMP EVALUATION CHECKLIST

#### PERPENDICULAR RAMPS AT CORNER

Inspection Date: \_\_\_\_\_  
Inspected By: \_\_\_\_\_

Location: \_\_\_\_\_  
Note location on Map, Label Streets



RAMP B

- 1.) Are there existing ramps? Yes / No
- 2.) Is either existing ramp deteriorated? Yes / No  
If Yes, which one? A / B / Both  
(Panels broken into three or more pieces)
- 3.) Are truncated domes present and in satisfactory condition? Yes / No If No, which one? A / B / Both

- 4.) If side tapers are present, are they less than or equal to a 10:1 slope?  
Ramp A: Yes / No / Not Present If No, what is the slope? \_\_\_\_\_  
Ramp B: Yes / No / Not Present If No, what is the slope? \_\_\_\_\_

- 5.) Are manholes, handholes or valves located within the ramps or landing?  
Ramp A: Yes / No Ramp B: Yes / No Landing: Yes / No

- 6.) Do heaved panels exist within the ramps or landing?  
Ramp A: Yes  0.5"-1" / No  1"-2" /  >2"  
Ramp B: Yes  0.5"-1" / No  1"-2" /  >2"  
Landing: Yes  0.5"-1" / No  1"-2" /  >2"

7.)

	RAMP A	RAMP B	LANDING
SLOPE 1 (S1)			
SLOPE 2 (S2)			
SLOPE 3 (S3)			

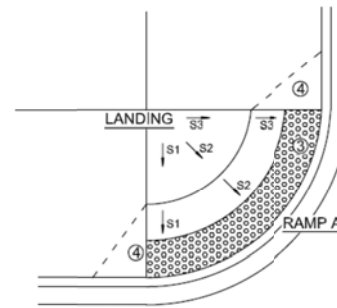
8.) Use back of sheet for additional comments

### ADA CURB RAMP EVALUATION CHECKLIST

#### BLENDED TRANSITION AT CORNER

Inspection Date: \_\_\_\_\_  
Inspected By: \_\_\_\_\_

Location: \_\_\_\_\_  
Note location on Map, Label Streets



RAMP A

- 1.) Is there an existing ramp? Yes / No
- 2.) Is the existing ramp deteriorated? Yes / No  
(Panels broken into three or more pieces)
- 3.) Are truncated domes present and in satisfactory condition? Yes / No

- 4.) If side tapers are present, are they less than or equal to a 10:1 slope? Yes / No / Not Present  
If No, what are the slopes? \_\_\_\_\_

- 5.) Are manholes, handholes or valves located within the ramp or landing?  
Ramp: Yes / No Landing: Yes / No

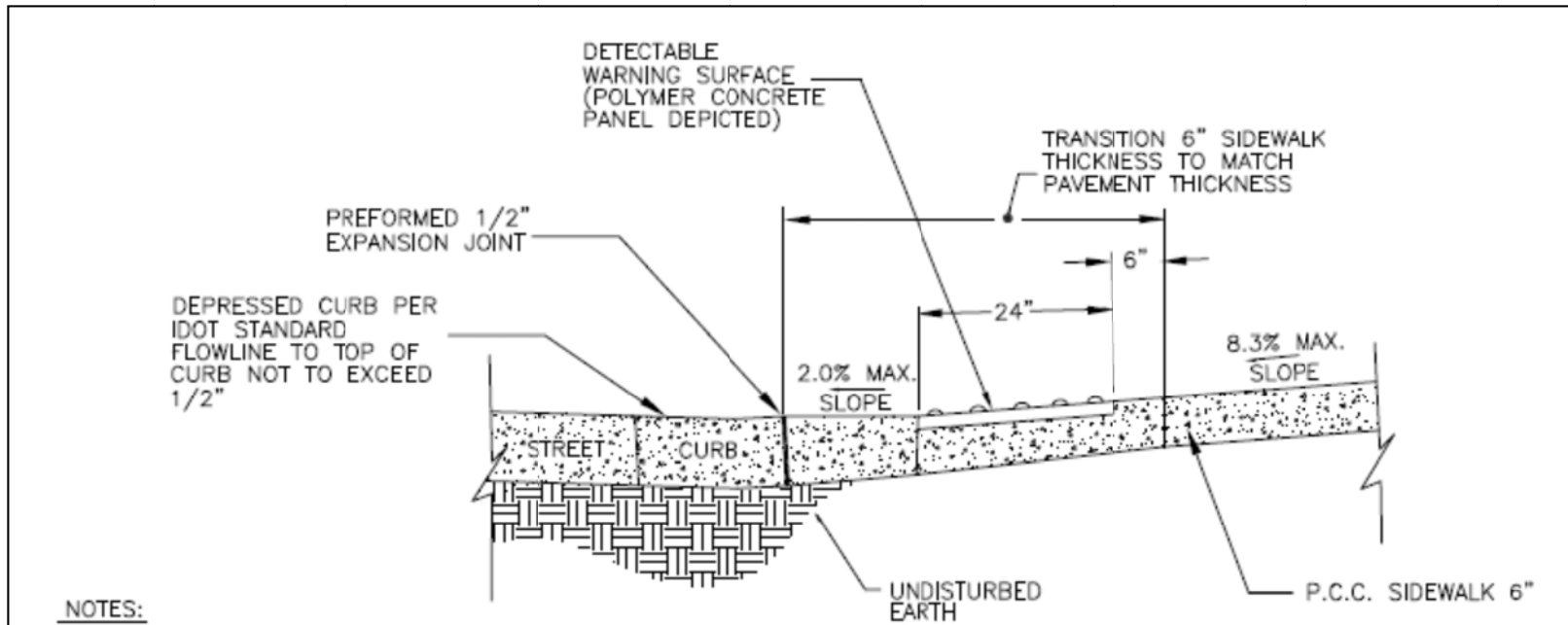
- 6.) Do heaved panels exist within the ramp or landing?  
Ramp: Yes  0.5"-1" / No  1"-2" /  >2"  
Landing: Yes  0.5"-1" / No  1"-2" /  >2"

7.)

	RAMP A	LANDING
SLOPE 1 (S1)		
SLOPE 2 (S2)		
SLOPE 3 (S3)		

8.) Use back of sheet for additional comments

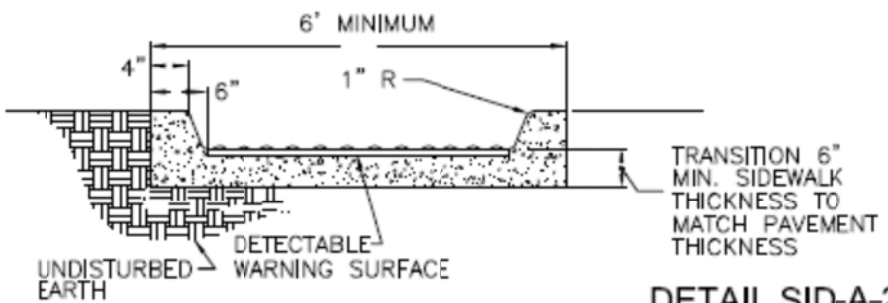




**SECTION A-A**

**NOTES:**

- 1.) DETECTABLE WARNING SURFACE PANELS SHALL BE INSTALLED PER MANUFACTURERS DIRECTIONS.
- 2.) INSTALL 3/8" THICK COMPACTED SAND LEVELING BED UNDER PCC & BRICK ADA PAVERS
- 3.) JOINTS BETWEEN PCC AND BRICK PAVERS SHALL BE 1/8" TO 1/4" WIDE
- 4.) SWEEP FINE GRAIN SILICA SAND INTO PCC & BRICK PAVER JOINTS.
- 5.) SIDEWALKS AND RAMPS SHALL MEET CURRENT ADA DESIGN GUIDELINES.



**SECTION B-B**

**DETAIL SID-A-2  
33**

DATE	REVISIONS
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# APPENDIX B: SAMPLE SCREENSHOTS OF RECOMMENDED CONTENT FOR IDOT PROWAG WEBSITE

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IDOT is committed to making Illinois accessible to everyone and to increasing awareness about accessibility in the public right-of-way



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### Design Guidance

If you have any questions regarding design, please contact your [local ADA coordinator](#)

### IDOT Field Guide

- [IDOT ADA Field Guide](#)

### IDOT Manuals

- [IDOT Bureau of Design & Environment \(BDE\) Manual - \(Revised July 2014\)](#)
  - [Chapter 17: Bicycle and Pedestrian Accommodations](#)
  - [Chapter 31: Basic Design Controls](#)
  - [Chapter 58: Special Design Elements](#)
- [IDOT Bureau of Local Roads & Streets \(BLRS\) Manual - \(See Chapter 41\)](#)

### IDOT Standards

- [IDOT Highway standards](#)
- [District specific standards](#)
- [IDOT highway standards in \(pdf\) format \(effective 01/01/2014\)](#)
  - [Perpendicular Curb Ramps in Drawing \(DGN\) format \(Standard No.424001-07\)](#)
  - [Diagonal Curb Ramps in Drawing \(DGN\) format \(Standard No.424006-01\)](#)
  - [Corner Parallel Curb Ramps in Drawing \(DGN\) format \(Standard No.424011-01\)](#)
  - [Mid-Block Curb Ramps in Drawing \(DGN\) format \(Standard No.424016-01\)](#)
  - [Depressed Corner in Drawing \(DGN\) format \(Standard No.424021-02\)](#)
  - [Entrance Alley Pedestrian Crossings in Drawing \(DGN\) format \(Standard No.424026-01\)](#)
  - [Median Pedestrian Crossings in Drawing \(DGN\) format \(Standard No.424031-01\)](#)

### Compliance Checklists

- [Example Checklists \(From www.adachecklist.org\)](#)
- [Example Checklist for Existing Facilities \(From www.ada.gov\)](#)





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## Municipality Resources

If you have any questions regarding ADA in the Public Right-of-Way, please contact your [local ADA coordinator](#)

### Guides for Preparing Self-Evaluations and Transition Plans

- [ADA Title II Technical Assistance Manual - U.S. Department of Justice](#)
- [ADA Transition Plans for Your Community - CMAP](#)
- [Self Evaluation Guide - Northwest ADA Center](#)
- [ADA Transition Plans: A Guide to Best Management Practices \(NCHRP 20-07/Task 232\)](#)

### Examples of Self Evaluation and Transition Plan

- [IDCT ADA Transition Plan \(Required Document\)](#)
- [IDCT ADA Self-Evaluation \(Required Document\)](#)
- [ADA Transition Plan - City of Springfield, IL](#)
- [ADA Transition Plan - City of Urbana, IL](#)

### Federal Highway Administration PROWAG FAQs

- [FHWA PROWAG frequently asked questions](#)

### IDOT Manuals

- [IDCT Bureau of Design & Environment \(BDE\) Manual - 2010 Edition](#)
  - [Chapter 17: Bicycle and Pedestrian Accommodations](#)
  - [Chapter 31: Basic Design Controls](#)
  - [Chapter 58: Special Design Elements](#)
- [IDCT Bureau of Local Roads & Streets \(BLRS\) Manual - 2005 Edition](#)
  - [Chapter 41: Special Design Elements](#)

### IDOT Standards

- [Curb Ramps for Sidewalks \(Standard No. 424001-05\)](#)
- [Perpendicular Curb Ramps \(Standard No. 424001-07\)](#)
- [Diagonal Curb Ramps \(Standard No. 424006-01\)](#)
- [Corner Parallel Curb Ramps \(Standard No. 424011-01\)](#)

## **APPENDIX C: DEVELOPED IDOT FIELD GUIDE**



# Illinois Department of Transportation

## Accessible Public Right-of-Way Field Guide

January 2016



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## **1. Introduction**

This field guide is intended for use by construction inspectors to identify and evaluate issues that must be addressed along pedestrian access routes that are directly affected or altered by a project. The field guide includes checklists that are developed to verify compliance with all applicable accessibility laws and regulations in the State of Illinois, including the 2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG), Illinois Accessibility Code (IAC), and IDOT standards. The following two sections in the field guide include accessibility requirements checklists and defined terms. Users of this field guide should review the defined terms section and the state standards for curb ramps before applying the requirements described herein.

## **2. Accessibility Requirements Checklists**

The checklists in this section are mostly presented in the form of questions that should have an answer of “yes” (i.e., checked box) to evaluate and verify compliance of the listed items with accessibility requirements.

If the evaluation of an item results in an answer of “no” (i.e., box not checked), the element shall be identified as non-compliant for correction or for recordkeeping in the ADA transition plan.



## 2.1. Pedestrian Access Route (PAR)

- Does the pedestrian circulation path (PCP) include a 4 feet minimum width PAR (see Figure 1)?



*Figure 1: PAR within Pedestrian Circulation Path*

- Is there a PAR provided within pedestrian street crossings, including medians and pedestrian refuge islands?
- Is there a PAR provided within pedestrian at-grade rail crossings (see Figure 2)?



*Figure 2: PAR within Pedestrian At-Grade Rail Crossings*

- Is there a PAR provided within overpasses, underpasses, bridges, and similar structures that contain a PCP?
- Where an overpass, underpass, bridge, or similar structure is designed for pedestrian use only and the approach slope to the structure exceeds 5%, is there a provided ramp, elevator, or limited use/limited application elevator?

### 2.1.1. Continuous Width

- Is the continuous width of the PAR 4 feet or more (minimum 5 feet recommended), exclusive of the width of the curb (see Figure 3)?



*Figure 3: PAR Continuous Width*

- If the PAR width is less than 5 feet, are there passing spaces provided that satisfy the following requirements?
  - Cross slope of passing space is 2% or less.
  - Dimensions of each passing space are 5 feet x 5 feet or more (see Figure 4).
  - Intervals between passing spaces are 200 feet or less (see Figure 4).

Note: Passing spaces are allowed to overlap PAR (see Figure 4).

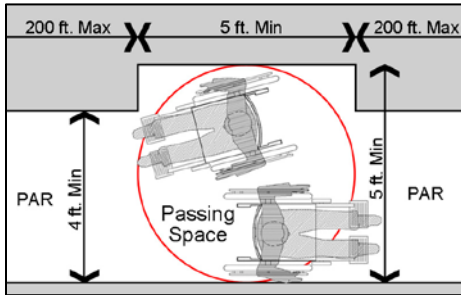


Figure 4: Passing Space Dimensions and Intervals

- Is the clear width of the PAR 4 feet minimum and free of street furniture or any other objects (see Figure 5)?



Figure 5: PAR Width and Street Furniture

- Is the minimum clear width of the PAR within medians and pedestrian refuge islands 5 feet or more (see Figure 6)?

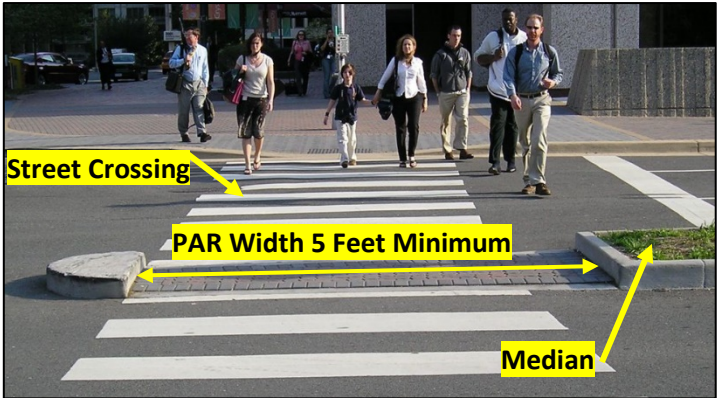


Figure 6: PAR Width within Medians

### 2.1.2. Required Vertical Clearance

- Is the PAR vertical clearance 84 inches for signs and 80 inches for all other objects (see Figure 7)?

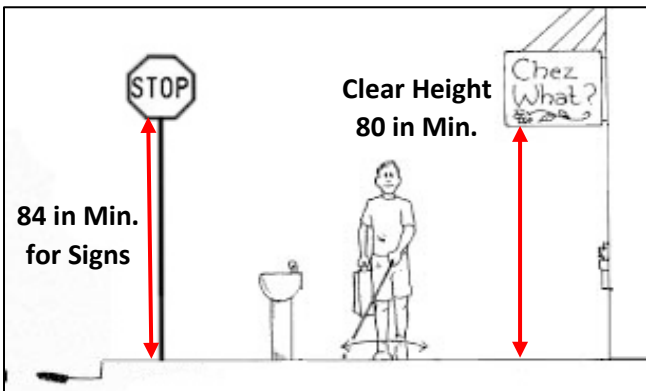


Figure 7: PAR Vertical Clearance

### 2.1.3. Grade

#### 2.1.3.1. Running slope

- Is the PAR running slope 5% or less, where running slope is measured in the direction of pedestrian travel (see Figure 8)?

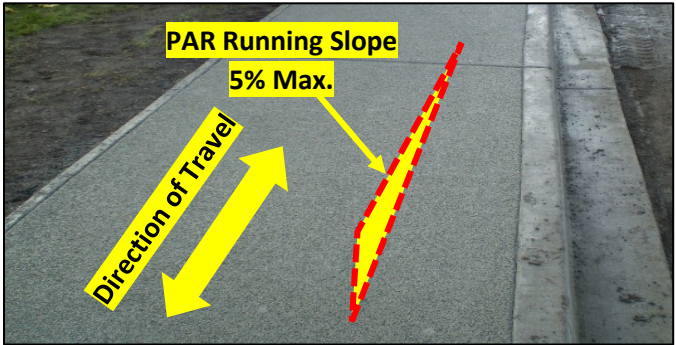


Figure 8: PAR Running Slope

- Where the PAR is contained within a street or highway right-of-way, is the grade of PAR less than or equal to the general grade of the adjacent street or highway (see Figure 9)?



Figure 9: PAR Running Slope Shall Not Exceed Grade of Adjacent Street

- Where the PAR is contained within the pedestrian street crossing, is the PAR running slope 5% or less (see Figure 10)?

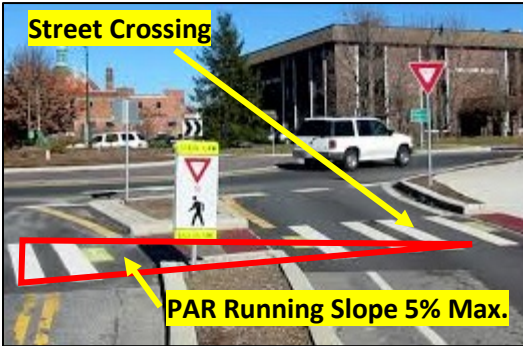


Figure 10: PAR Running Slope within Street Crossings

#### 2.1.3.2. Cross slope

- Is the PAR cross slope 2% or less (1.5% recommended), where PAR cross slope is measured perpendicular to the direction of pedestrian travel (see Figure 11)?

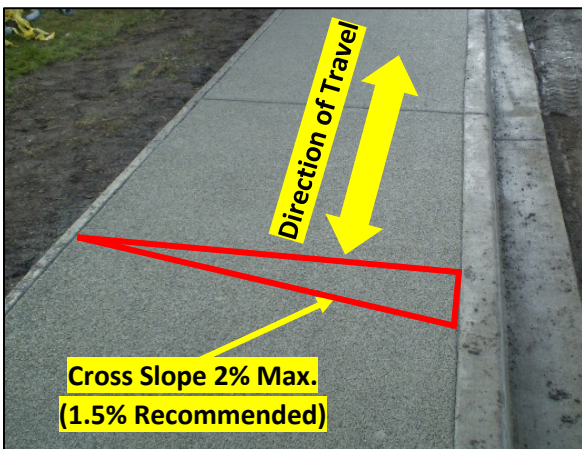


Figure 11: PAR Cross Slope

- Where the PAR is contained within pedestrian street crossings with yield or stop control, is the cross slope of PAR 2% or less (see Figure 12)?



Figure 12: Pedestrian Street Crossing with Stop Control

- Where the PAR is contained within pedestrian street crossings without yield or stop control, is the cross slope of PAR 5% or less (see Figure 13)?

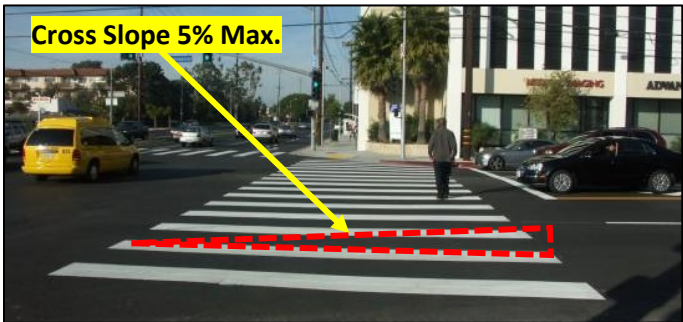


Figure 13: Pedestrian Street Crossing without Yield or Stop Control



Note: Where PAR is contained within a midblock pedestrian street crossing, the cross slope of the PAR shall be permitted to equal the street or highway grade (see Figure 14).



Figure 14: Pedestrian Street Crossing at Midblock

#### 2.1.4. Surfaces

- Is the PAR surface firm, stable, and slip resistant?

##### 2.1.4.1. Vertical alignment

- Is vertical alignment generally planar within the PAR including curb ramp runs, blended transitions, turning spaces, and gutter areas within the PAR?
- Are grade breaks flush (see Figure 15)?

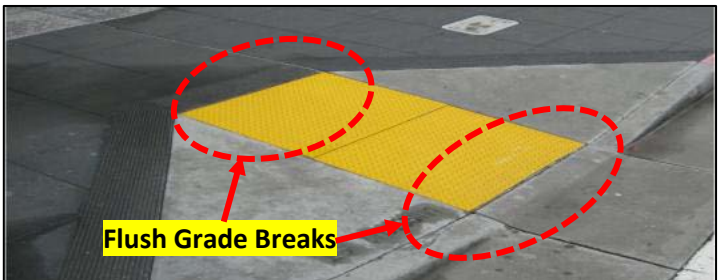


Figure 15: Grade Breaks

- Where the PAR crosses rails at grade, is the PAR surface level and flush with the top of the rail at the outer edges of the rails (see Figure 16)?
- Where the PAR crosses rails at grade, is the surface between the rails aligned with the top of the rail (see Figure 16)?

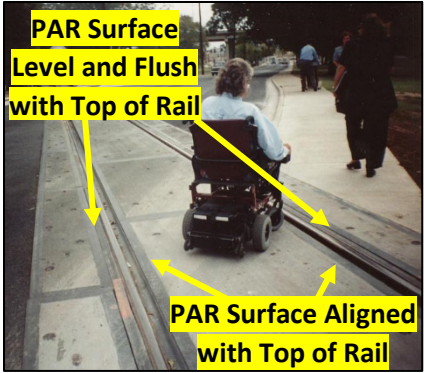


Figure 16: PAR Crossing Rails at Grade

2.1.4.2. Vertical surface discontinuities

- Where vertical surface discontinuity is more than 0.5 inch, is it treated as a ramp (see section 2.15 in this field guide)?
- Where vertical surface discontinuity is between 0.25 inch and 0.5 inch, is it beveled with a slope not steeper than 50% (see Figure 17)?

Note: Vertical surface discontinuities 0.25 inch or less are permitted (see Figure 17).



Figure 17: Vertical Surface Discontinuity

### 2.1.4.3. Horizontal openings

- Do horizontal openings in gratings and joints prevent the passage of a sphere more than 0.5 inch in diameter (see Figure 18)?
- Are elongated openings in gratings placed so that the long dimension is perpendicular to the dominant direction of travel (see Figure 18)?

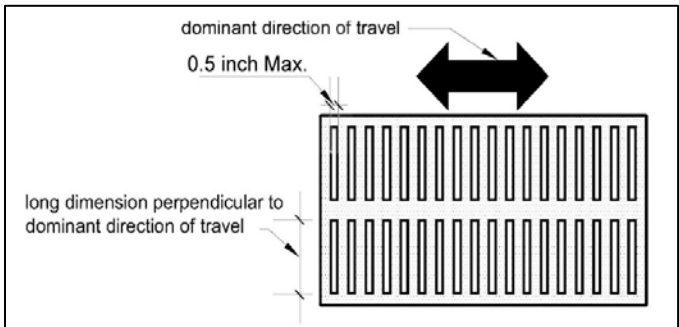


Figure 18: Horizontal Openings

### 2.1.4.4. Flangeway gaps

- Are flangeway gaps at pedestrian at-grade rail crossings 2.5 inches or less on non-freight rail track (see Figure 19) and 3 inches or less on freight rail track (see Figure 20)?

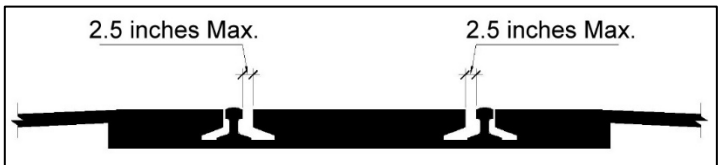


Figure 19: Flangeway Gaps on Non-Freight Rail Track

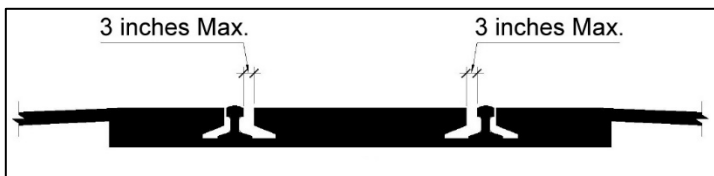


Figure 20: Flangeway Gaps on Freight Rail Track

### 2.1.5. Protruding Objects

- Is the PAR clear width 4 feet or more excluding protruding objects such as sign-posts and planters (see Figure 21)?



Figure 21: PAR Clear Width Excluding Protruding Objects

#### 2.1.5.1. Protrusion limits

- Where there are objects with leading edges between 27 and 80 inches above the finish surface, do they protrude 4 inches or less horizontally into the PCP (see Figure 22)?

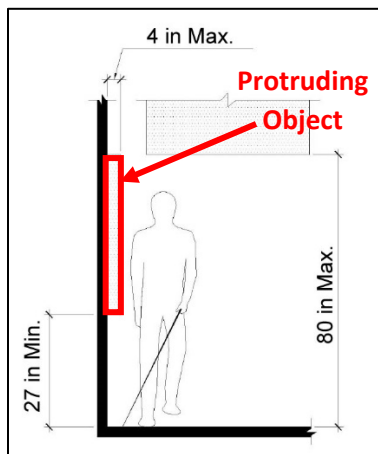


Figure 22: Protrusion Limits

### 2.1.6. Post-Mounted Objects

- Where objects are mounted on free-standing posts or pylons and the objects are between 27 and 80 inches above the finish surface, do they overhang the PCP 4 inches or less measured horizontally from the post or pylon base (see Figure 23)?
- Is the base dimension of free-standing posts or pylons 2.5 inches thick or more (see Figure 23)?

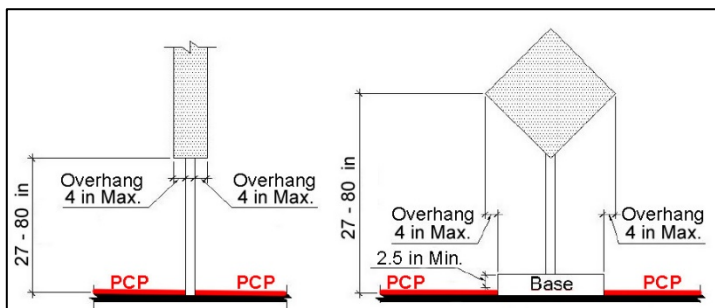


Figure 23: Post-Mounted Objects—Overhang and Base Dimension

- Where objects are mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches, is the lowest edge of the object 27 inches or less (see Figure 24-a), or 80 inches or more above the finish surface (see Figure 24-b)?

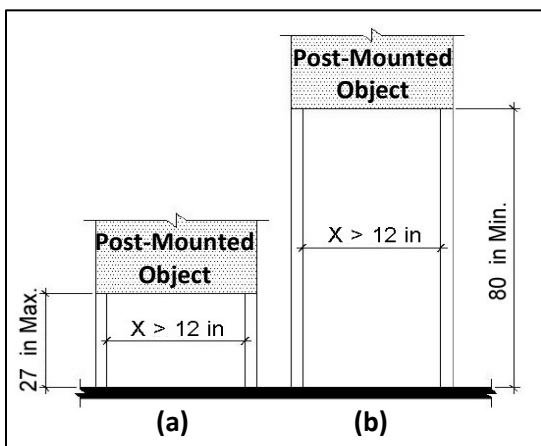


Figure 24: Post-Mounted Objects—Lowest Edge Requirement

### 2.1.7. Reduced Vertical Clearance

- Where the vertical clearance is less than 80 inches high, are guardrails or other barriers to pedestrian travel provided (see Figure 25)?

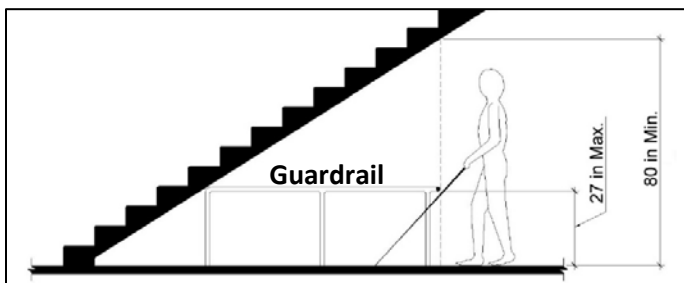


Figure 25: Reduced Vertical Clearance

- Is the leading edge of the guardrail or barrier located 27 inches or less above the finish surface (see Figure 25)?

## 2.2. Alternate Pedestrian Access Routes (APAR)

When a PAR is temporarily closed by construction, alterations, maintenance operations, or other conditions, an alternate pedestrian access route (APAR) complying with sections 6D.01, 6D.02, and 6G.05 of the MUTCD shall be provided. These MUTCD requirements of APAR are listed in the following pages of this section (2.2) of the field guide.

- Is there a provided APAR where the PCP closure affects the movement of pedestrians (see Figure 26)?



Figure 26: Temporary Pedestrian Facilities

- Is the APAR detectable and accessible?
- Does the APAR provide at least the same level of accessibility as the original PAR?

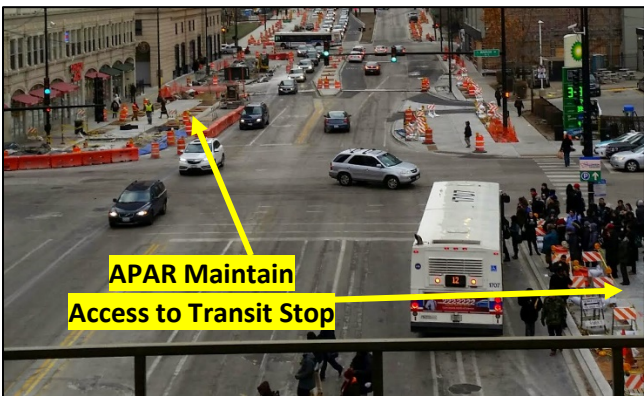


- Are there advanced notifications of the PAR closure (see Figure 27)?



*Figure 27: Advanced Notification of PAR Closure*

- Does the APAR maintain access to transit stops (see Figure 28)?



*Figure 28: APAR Maintain Access to Transit Stop*

- Does the APAR have a smooth, continuous, and hard surface throughout its entire length (see Figure 29)?
- Is the APAR free of any curbs or abrupt changes in grade (see Figure 29)?

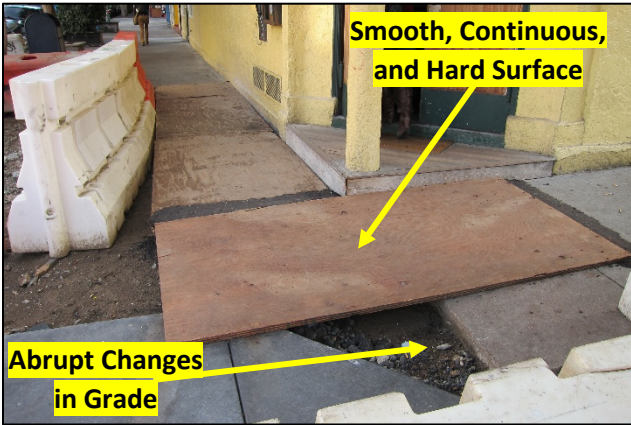


Figure 29: APAR with Abrupt Grade Changes and Treatment

- Does the APAR provide at least the same width as the original PAR (see Figure 30)?



Figure 30: APAR Width

- Does the APAR width comply with the PAR width requirements (see section 2.1.1 of this field guide)?
- In case of channelizing pedestrians, is there a continuous detectable edging (such as curbs, barricades with lower edge 27 inches or less from finish surface, or continuous buffers that can be detected using a cane) provided throughout the length of the APAR (see Figure 31)?



*Figure 31: Detectable Edge Provided Throughout the Length of the APAR*

- Where detectable edges are not continuous, does the APAR provide communication to pedestrians with visual disability (such as audible alerts or voice messages)?
- Does the APAR comply with the PAR protruding objects requirements?
- In case of rerouting pedestrian and vehicular traffic to a closer proximity, are they separated by a temporary traffic barrier that is detectable by a cane?

## 2.3. Curb Ramps and Blended Transitions

### 2.3.1. General

- Is the clear width of the curb ramp excluding any flared sides 4 feet or more (see Figure 32)?



Figure 32: Curb Ramp Width

- Are grade breaks perpendicular to the direction of travel (see Figure 33 and Figure 34)?

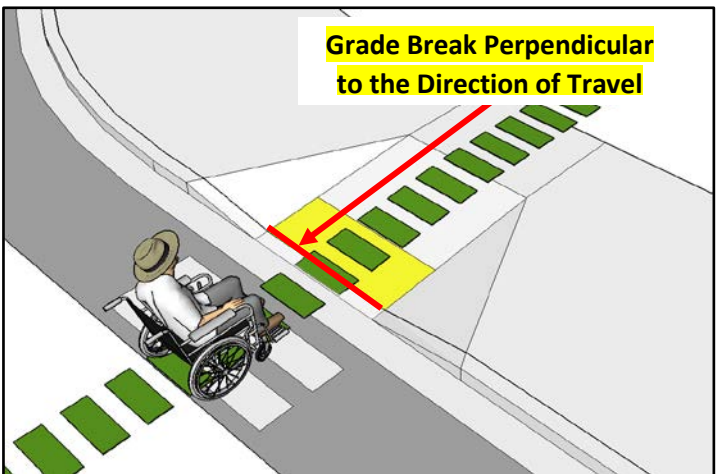


Figure 33: Grade Break

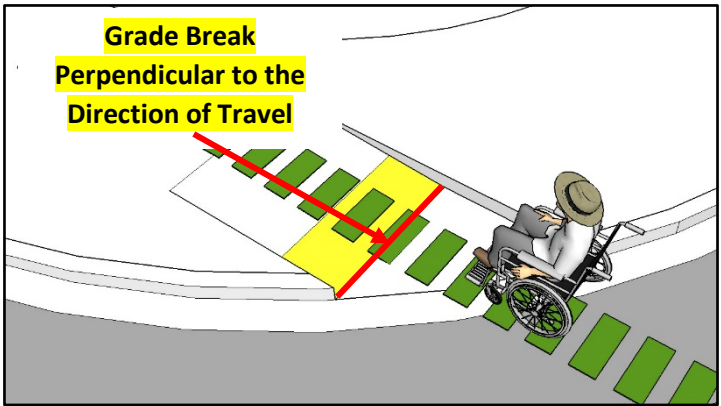


Figure 34: Grade Break

- Are grade breaks flush (see Figure 35 and Figure 36)?

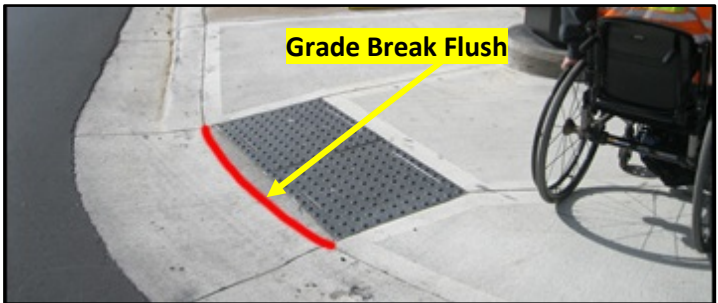


Figure 35: Complying Grade Breaks



Figure 36: Non-Complying Grade Breaks

- Is the cross slope measured perpendicular to the direction of travel 2% or less (1.5% recommended), as shown in Figure 37?

Note: The cross slope shall be permitted to match the street or highway grade at pedestrian street crossings without yield or stop control and at midblock pedestrian street crossings (see section 2.1.3.2 in this field guide).

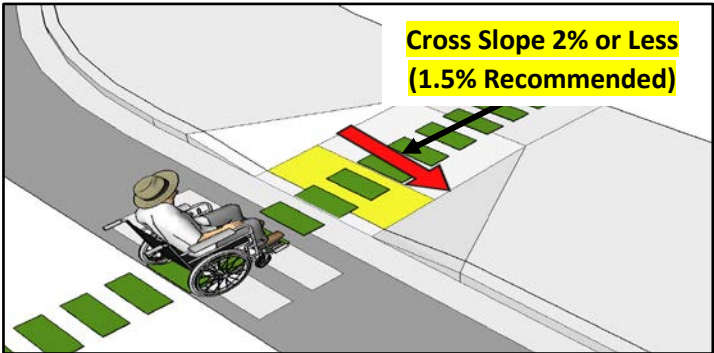


Figure 37: Curb Ramp Cross Slope

- Is the counter slope of the gutter at the foot of curb ramp 5% or less (see Figure 38)?

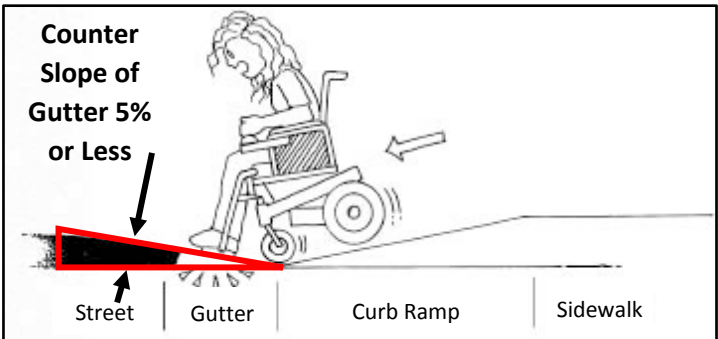


Figure 38: Counter Slope of the Gutter at the Foot of the Curb

Note: Utility covers, vault frames, or gratings should be avoided in gutter areas, curb ramps, and turning spaces (see Figure 39).



Figure 39: Non-Complying Utility Covers

- Is there a clear space at the bottom grade break of the curb ramp (see Figure 40)?
- Are the clear space dimensions 4 feet x 4 feet or more (see Figure 40)?
- Is the clear space within the width of the pedestrian street crossing (see Figure 40)?
- Is the clear space wholly outside the parallel vehicle travel lane (see Figure 40)?

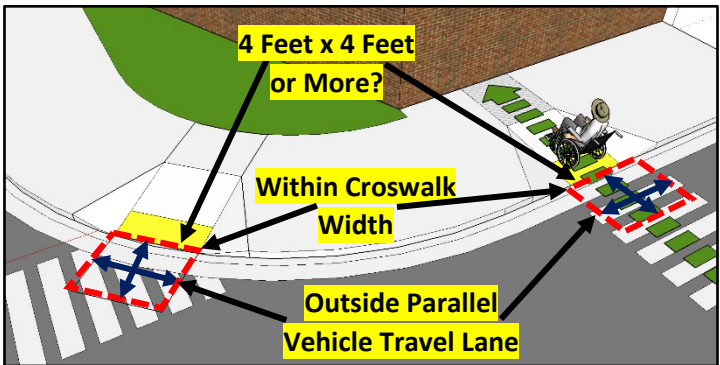
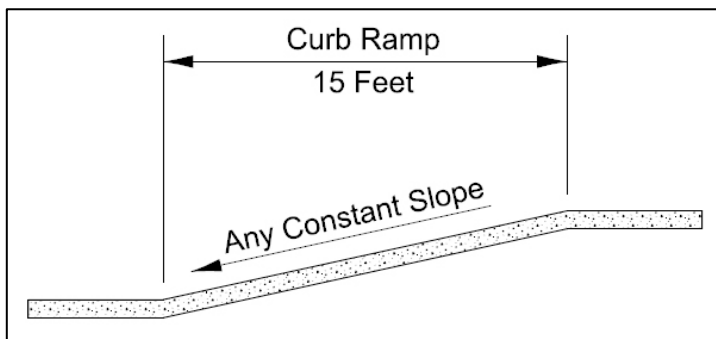


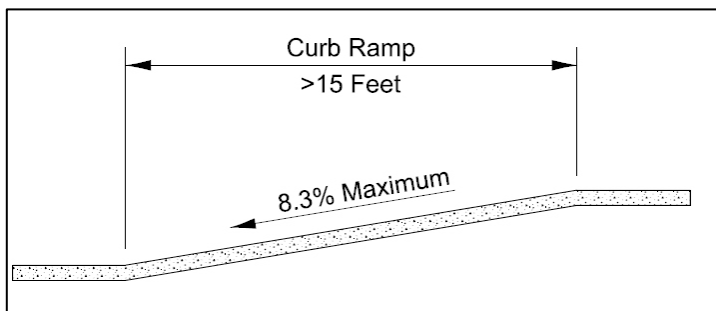
Figure 40: Clear Spaces at the Bottom of Curb Ramps



- Curb ramp lengths can be limited to 15 feet to prevent “chasing grade” indefinitely. When a curb ramp 15 feet long with a running slope of 8.3% would not make up the elevation difference between the bottom of the curb ramp and the existing sidewalk at the top of the ramp, is the curb ramp constructed according to one of the following two options (see Figure 41 and Figure 42)?



*Figure 41: Option 1—Curb Ramp Length of 15 Feet*



*Figure 42: Option 2—Curb Ramp Length of More Than 15 Feet*

### **2.3.2. Perpendicular Curb Ramps**

- Is there a turning space at the top of the curb ramp (see Figure 43)?

- Are the turning space dimensions 4 feet x 4 feet or more (see Figure 43)?

Note: Turning spaces can overlap other turning and clear spaces.

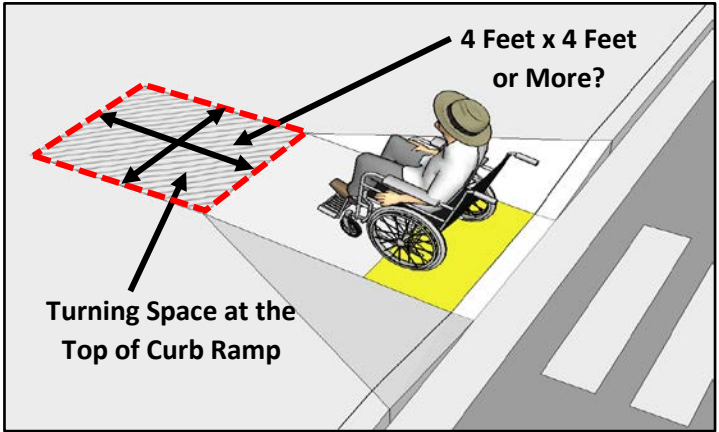


Figure 43: Turning Spaces Dimensions

Note: If the turning space is constrained at the back of the sidewalk, the dimension in the direction of the ramp run shall be 5 feet minimum (see Figure 44).

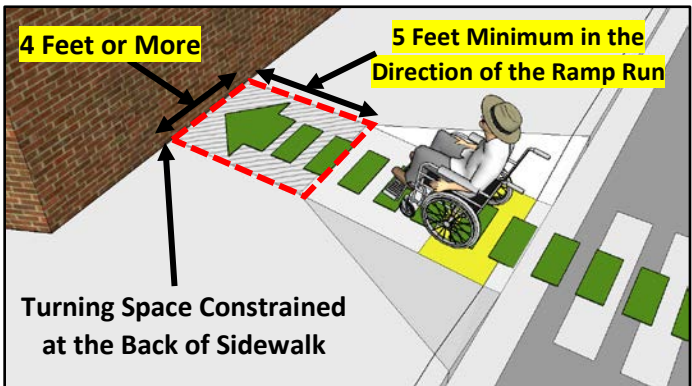


Figure 44: Constrained Turning Spaces

- Is the slope of the turning space 2% or less in all directions (1.5% recommended), as shown in Figure 45?
- Where the ramp cuts through a PCP, is the slope of flared sides 10% or less, measured parallel to the curb line (see Figure 45)?

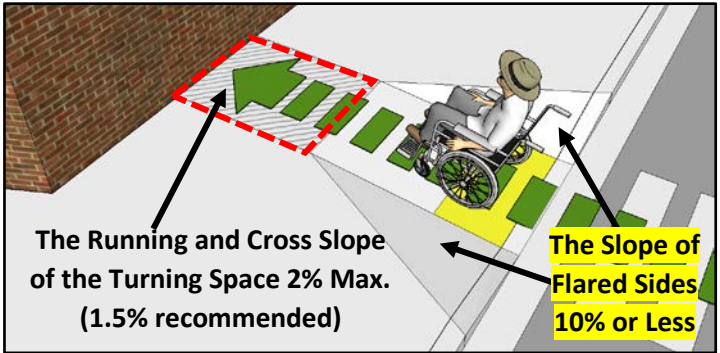


Figure 45: Turning Spaces and Flared Sides Slopes

- Does the curb ramp running slope meet the gutter break and the curb at right angles (see Figure 46)?
- Is the running slope of the curb ramp less than 8.3% (see Figure 46)?

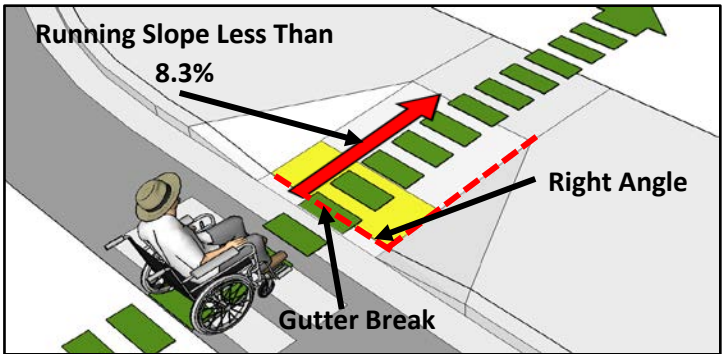


Figure 46: Curb Ramp Running Slope

### 2.3.3. Parallel Curb Ramps

- Are the grade breaks at the top and bottom of the curb ramp perpendicular to the direction of travel (see Figure 47)?

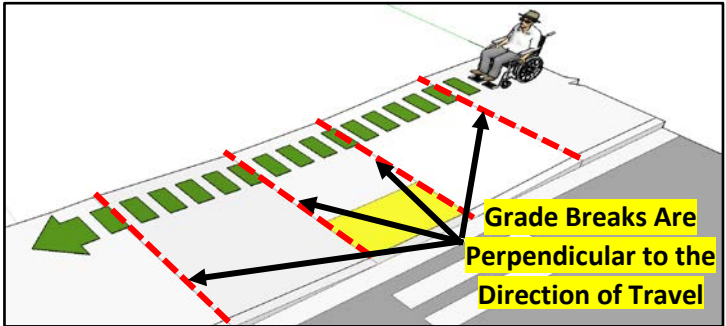


Figure 47: Sidewalk Width for Parallel Curb Ramps

Note: Grade breaks are not allowed on the surface of the ramp runs or turning spaces.

- Is there a turning space at the bottom of the curb ramp?
- Are the turning space dimensions 4 feet x 4 feet minimum (see Figure 48)?

Note: Turning spaces can overlap other turning and clear spaces.

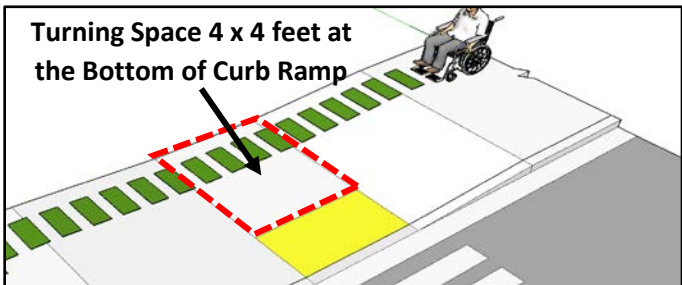


Figure 48: Turning Spaces Dimensions

- Is the slope of the turning space 2% or less in all directions (1.5% recommended)?  
Note: Where the turning space is constrained on two or more sides, the minimum dimensions shall be 4 feet x 5 feet (the 5 feet are measured in the direction of the pedestrian street crossing), as shown in Figure 49.

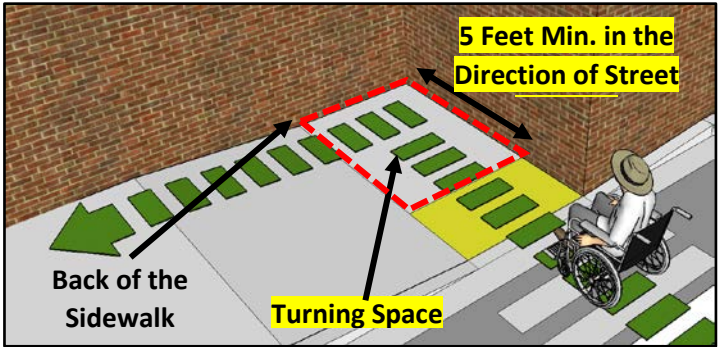


Figure 49: Constrained Turning Spaces

- Is the running slope of the curb ramp less than 8.3% (see Figure 50)?

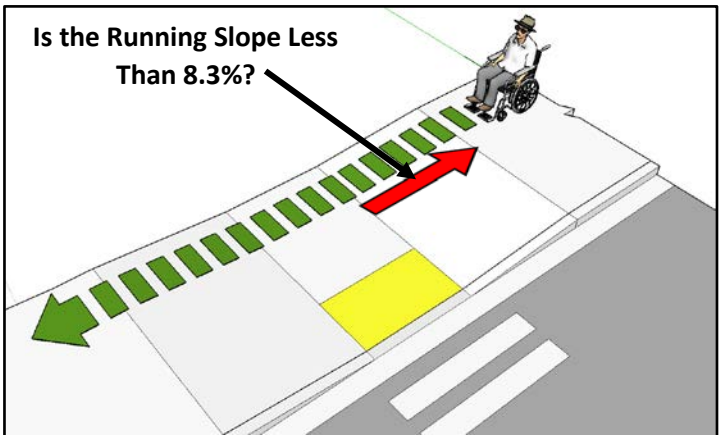


Figure 50: Running Slope and Ramp Length

### 2.3.4. Blended Transitions

Note: If the running slope of a ramp is less than 5%, it is considered a blended transition (see Figure 51).

Note: A 4 feet x 4 feet clear space is required at the bottom of all curb ramps and blended transitions.

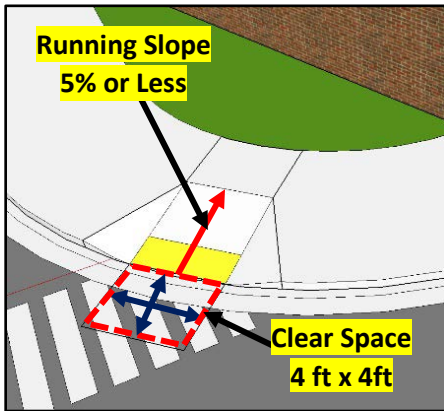


Figure 51: Blended Transitions Running Slope

## 2.4. Driveways

- Where PAR is contained within driveways, is the PAR clear width 4 feet minimum (see Figure 52)?
- Is PAR cross slope measured perpendicular to the direction of the pedestrian travel within driveways 2% or less (1.5% recommended), as shown in Figure 52?  
Note: Driveway cuts in a PAR can comply with PAR accessibility requirements using one of the following suggested methods:

- Method 1: Maintain PAR location, width, slope, and cross slope and locate driveway ramp in the adjacent continuous buffer (see Figure 52).

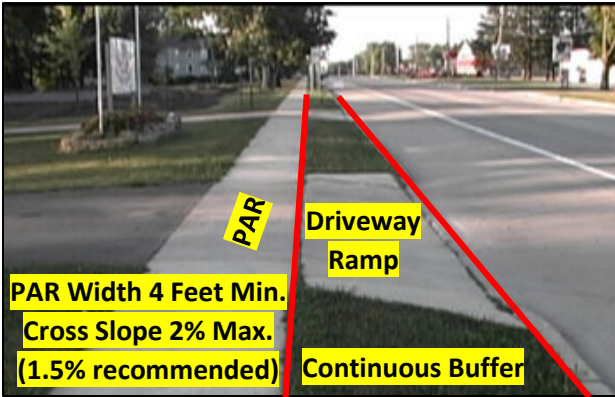


Figure 52: Maintain PAR Location and Place Driveway in Adjacent Buffer

- Method 2: Shift PAR location to provide adequate space between PAR and curb for a driveway ramp while maintaining PAR width, slope, and cross slope (see Figure 53).

Note: Entire PAR must be within roadway ROW.

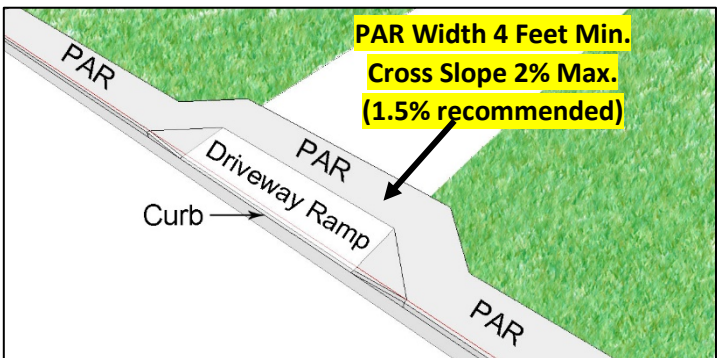
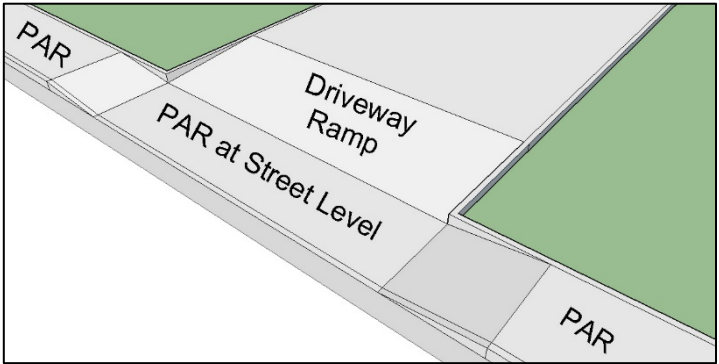


Figure 53: Shift PAR Location to Provide Space for Driveway Ramp



- Method 3: Change PAR level to street level and locate driveway ramp after the PAR while maintaining PAR width and cross slope (see Figure 54).



*Figure 54: Change PAR Level to Street Level*

## **2.5. Detectable Warning Surfaces (DWS)**

Note: DWS shall be placed at curb ramps, blended transitions, pedestrian refuge islands, pedestrian at-grade rail crossings not located within street or highway, top of stairways, boarding platforms, or boarding and alighting areas at sidewalk or street-level transit stops.

Note: DWS shall be installed only at entrances/alleys with permanent traffic control devices (i.e., stop signs, signals).

### 2.5.1. DWS Size

- Is the width of DWS 2 feet or more, measured in the direction of pedestrian travel (see Figure 55)?

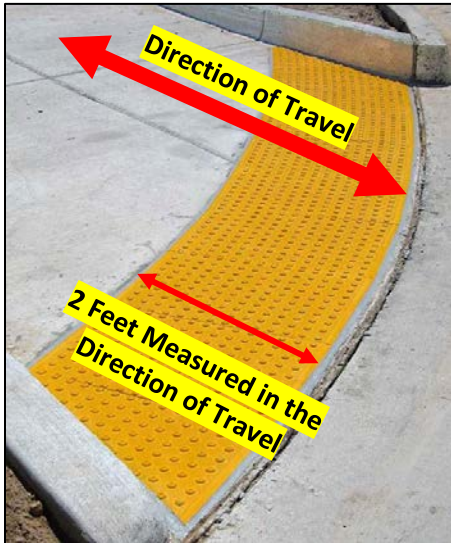


Figure 55: DWS Width

- Does DWS cover the full width of curb ramps (excluding any flared sides, see Figure 56), blended transitions, and landing/turning spaces (see Figure 57)?

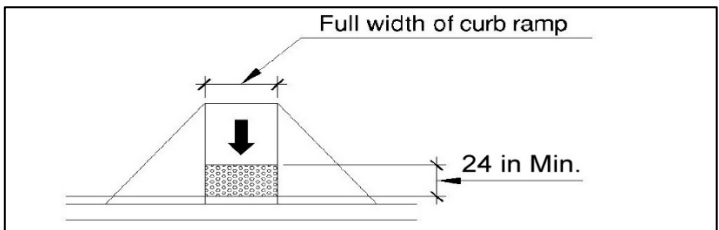


Figure 56: DWS Covers Full Width of Curb Ramp

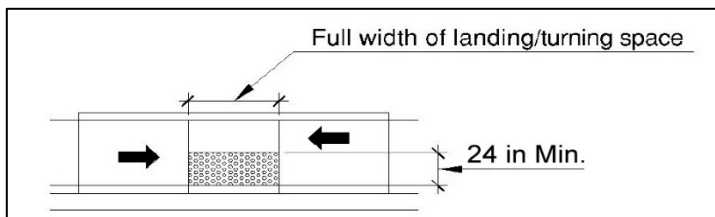


Figure 57: DWS Covers Full Width of Turning Space

- Does DWS cover the full width of pedestrian at-grade rail crossings?
- Does DWS cover the full length of the public use area of boarding platforms for buses and rail vehicles (see Figure 58)?



Figure 58: DWS at Boarding Platforms

- Does DWS cover the full length of boarding and alighting areas at sidewalk or street transit stops for rail vehicles (see Figure 59)?



Figure 59: DWS at Boarding and Alighting Areas

- Are the surfaces of DWS visually contrasting (either light on dark or dark on light) with adjacent gutter, street or highway, and PAR surface (see Figure 60)?

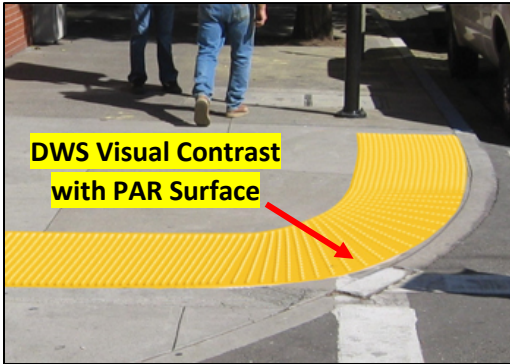


Figure 60: DWS Visual Contrast with PAR Surface

## 2.5.2. DWS Placement

### 2.5.2.1. Perpendicular curb ramps

- Where the ends of the bottom grade break are at the back of the curb, is DWS placed at the back of the curb (see Figure 61)?

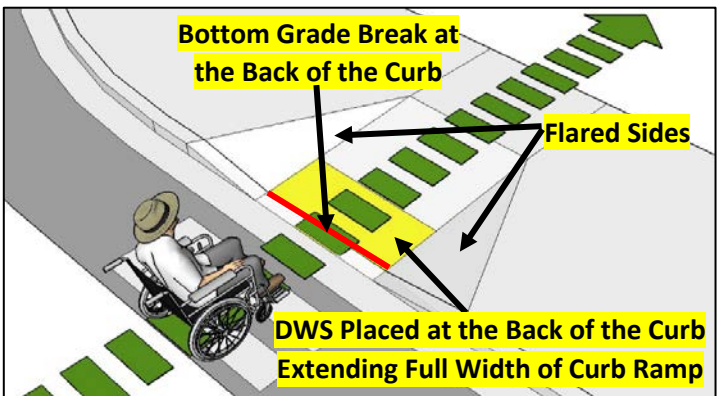
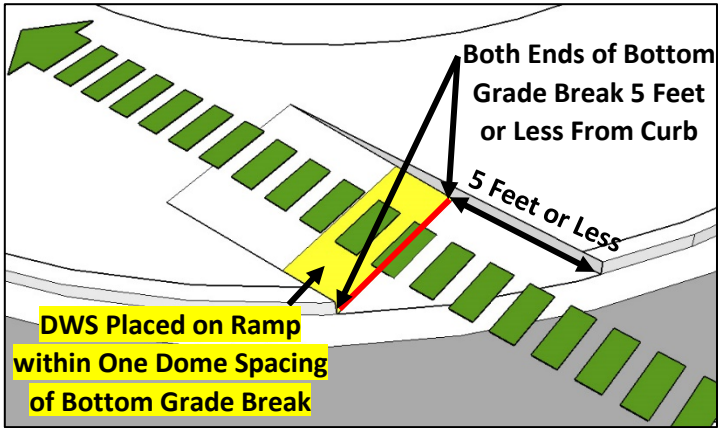


Figure 61: DWS Placement at the Back of the Curb

- Does DWS cover the full width of the curb ramp excluding any flared sides (see Figure 61)?  
Note: A border of 2 inches or less around the DWS is acceptable if required for proper installation of DWS product.
- Where ends of the bottom grade break are behind the back of the curb and the distance from either end of the bottom grade break to the back of the curb is 5 feet or less, is DWS placed on the ramp within one dome spacing of the bottom grade break (see Figure 62)?



*Figure 62: DWS Placement at Bottom Grade Break*

- Where ends of the bottom grade break are behind the back of the curb and the distance from either end of the bottom grade break to the back of the curb is more than 5 feet, is DWS placed on the lower landing at the back of the curb (see Figure 63)?

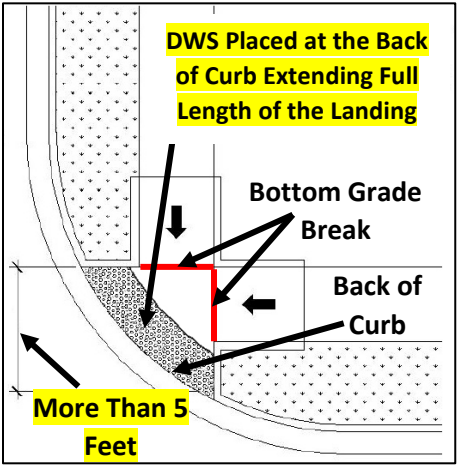


Figure 63: DWS Placement on Lower Landing

- Does DWS cover the full width of the landing (see Figure 63)?  
 Note: Rows in DWS should be aligned perpendicular to the dominant direction of pedestrian travel (see Figure 64).

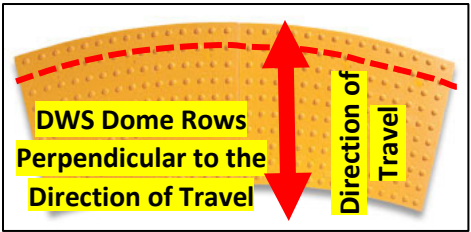


Figure 64: DWS Truncated Domes Alignment

### 2.5.2.2. Parallel curb ramps

- Is DWS provided on the turning space at the bottom of the curb ramp (see Figure 65)?
- Is DWS placed at the flush transition between the turning space and the street (see Figure 65)?

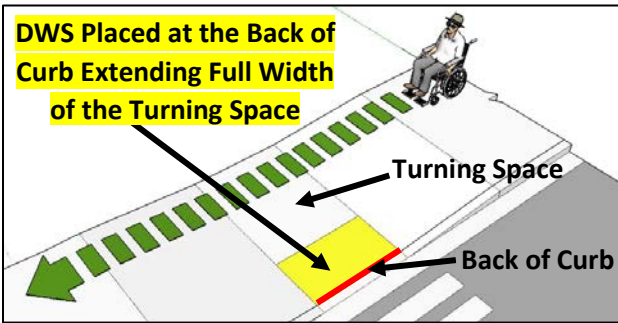


Figure 65: DWS Placement on Parallel Curb Ramps

### 2.5.2.3. Blended transitions

- Are DWS placed at the back of the curb (see Figure 66)?

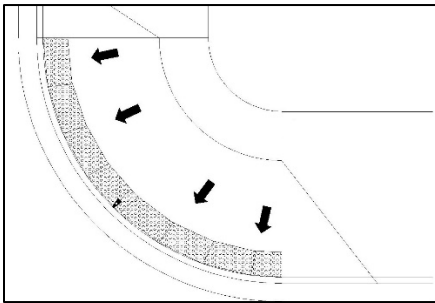


Figure 66: DWS Placement in Blended Transitions

- In case of raised pedestrian street crossings, depressed corners, or other level pedestrian street crossings, is



DWS placed at the flush transition between the street and the sidewalk (see Figure 67)?

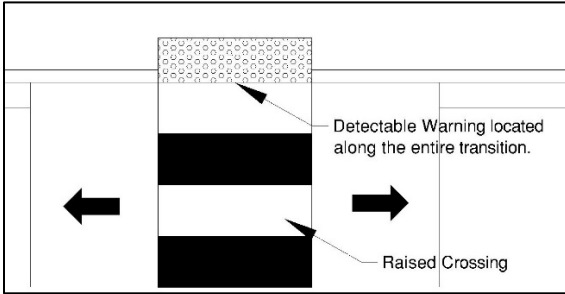


Figure 67: Detectable Warning Surfaces on Blended Transitions

#### 2.5.2.4. Pedestrian refuge islands

- Where a PAR cuts through a pedestrian refuge island and the total width of the island measured in the direction of pedestrian travel is 6 feet or more, is DWS provided at both ends of the island (see Figure 68)?

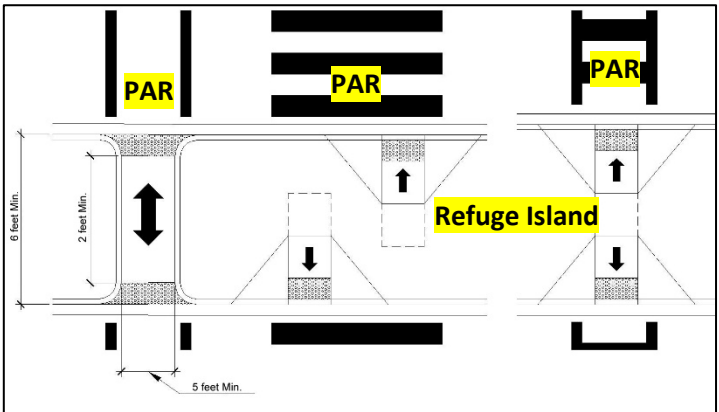


Figure 68: DWS Placement in Pedestrian Refuge Islands

Note: Where the total width of the island is less than 6 feet, no DWS is required.

### 2.5.2.5. Pedestrian at-grade rail crossings

Note: Where PAR is contained within pedestrian at-grade rail crossings that are not located within a street or highway, DWS shall be provided on both sides of the rail crossing (see Figure 69).

- Is the nearest DWS edge between 6 feet and 15 feet from the centerline of the nearest rail (see Figure 69)?
- Where pedestrian gates are provided, is DWS placed on the side of the gates opposite the rail (see Figure 69)?

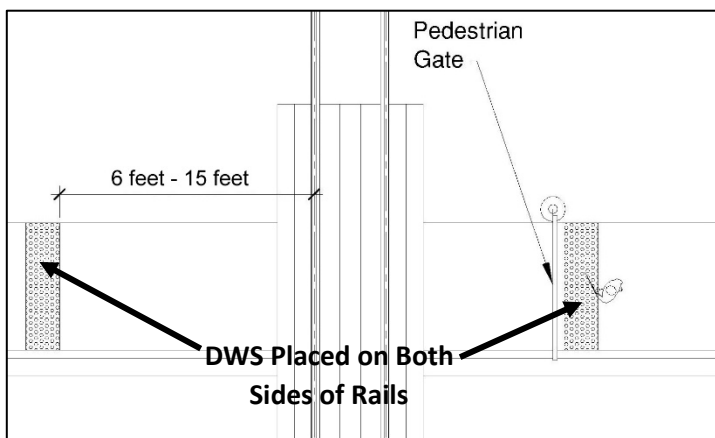


Figure 69: Detectable Warning Surfaces in Pedestrian At-Grade Rail Crossings

### 2.5.2.6. Boarding platforms

- Is DWS provided at boarding platforms for buses and rail vehicles (see Figure 58)?
- Is DWS placed at the boarding edge of the platform (see Figure 58)?

### 2.5.2.7. Boarding and alighting areas

- Is DWS provided at boarding and alighting areas at sidewalk or street-level transit stops for rail vehicles?
- Is DWS placed at the side of the boarding and alighting area facing the rail vehicle (see Figure 59)?

## 2.6. Pedestrian Street Crossings

- Is the clear width of the PAR within medians and pedestrian refuge islands 5 feet or more (see Figure 70)?



Figure 70: PAR Width within Pedestrian Street Crossings

- Where PAR is contained within pedestrian street crossing without yield or stop control, PAR cross slope shall be 5% or less (see Figure 71).



Figure 71: Pedestrian Street Crossing without Yield or Stop Control

- Where PAR is contained within midblock pedestrian street crossings, PAR cross slope shall not exceed the street or highway grade (see Figure 72).



*Figure 72: Pedestrian Street Crossing at Midblock*

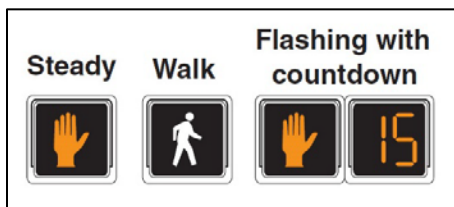
### **2.6.1. Pedestrian Signal Phase Timing**

- All pedestrian signal phase timing shall comply with section 4E.06 of the MUTCD. These MUTCD requirements of pedestrian signal phase timing are listed in the following pages of this section (3.1.1.) of the field guide.
- Is the intersection equipped with pedestrian signal heads (see Figure 73)?



*Figure 73: Pedestrian Signal Heads*

- Are pedestrian signal indications displayed (see Figure 74)?
- Pedestrian signal indications shall not be displayed when the vehicular traffic control signal is being operated in the flashing mode.



*Figure 74: Pedestrian Signal Display*

- Are the signals designed to show a steady or flashing red light to any vehicular traffic that intersects with any crosswalk when that crosswalk is displaying a “WALK” signal or a flashing “HAND” signal?
- Are the signals designed to display the “WALK” signal only when pedestrians are permitted to leave the curb or shoulder?
- Are the signals designed to include a pedestrian change interval, where pedestrian change interval consists of a flashing “HAND” signal indication that begins immediately following the “WALK” signal indication (see Figure 75)?
- Are the signals designed to include a buffer interval following the pedestrian change interval (see Figure 75)?
- The buffer interval consisting of a steady “HAND” signal indication shall be displayed for at least 3 seconds prior to the release of any conflicting vehicular movement.

- The buffer interval shall not begin later than the beginning of the red clearance interval, if used.
- Is the sum of the time of the pedestrian change interval and the buffer interval more than or equal to the calculated pedestrian clearance time (see Figure 75)?
- The pedestrian clearance time should be sufficient to allow a pedestrian who left the curb at the end of the “WALK” signal to travel at a speed of 3.5 feet per second to the far side of the traveled way or to a median of sufficient width for pedestrians to wait.
- If a median is used in calculating pedestrian clearance time, the median shall be equipped with accessible pedestrian signals.
- A walking speed of up to 4 feet per second may be used at locations where a pushbutton has been installed to provide slower pedestrians an opportunity to request and receive a longer pedestrian clearance time (see Figure 75).

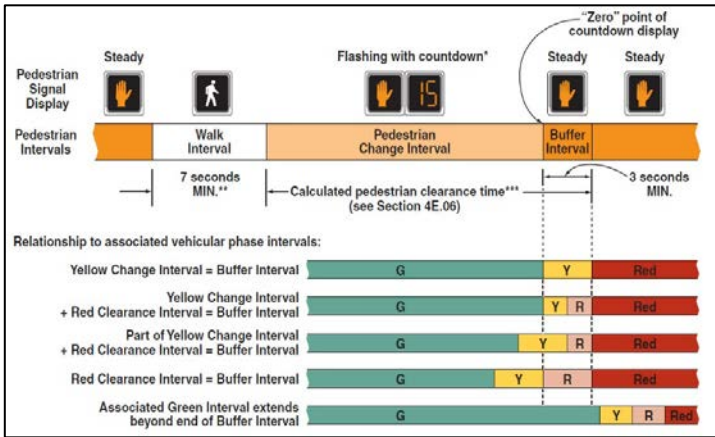


Figure 75: Pedestrian Intervals (MUTCD 2009)

- Do pedestrian street crossings comply with cross slope requirements (see section 2.1.3.2 of this field guide)?

## **2.6.2. Roundabouts**

### *2.6.2.1. Separation*

Note: Where sidewalks are flush against the curb and pedestrian street crossing is not intended, a continuous and detectable edge treatment shall be provided along the street side of the sidewalk. Examples of edge treatment include chains, fencing, stamped brick patterns, or railings.

Note: Detectable warning surfaces shall not be used for edge treatment.

Note: Where chains, fencing, or railings are used for edge treatment, they shall have a bottom edge 15 inches or less above the sidewalk.

### *2.6.2.2. Pedestrian-activated signals*

- Where roundabouts include a multi-lane pedestrian street crossing, is there a pedestrian-activated signal provided for each multi-lane segment, including the splitter island?
- Does every signal clearly identify which pedestrian street crossing segment the signal serves?
- Are pedestrian-activated signals provided at pedestrian street crossings at multi-lane channelized turn lanes?

## **2.7. Accessible Pedestrian Signals and Pedestrian Pushbuttons**

- Where pedestrian signals and pedestrian pushbuttons are provided at pedestrian street crossings, they shall comply with sections 4E.08 through 4E.13 of the MUTCD. These



MUTCD requirements of pedestrian signals and pedestrian pushbuttons are listed in the following pages of this section (2.7) of the field guide.

- Are there signs mounted adjacent to or integral with pedestrian pushbuttons to explain their purpose and use (see Figure 76)?

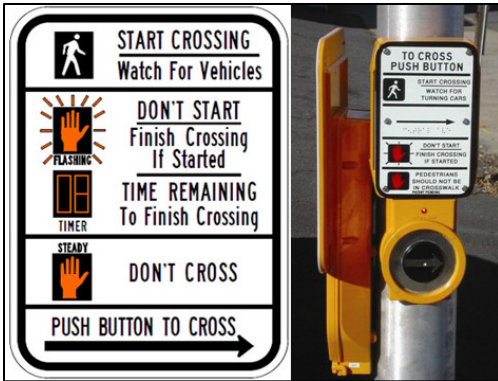
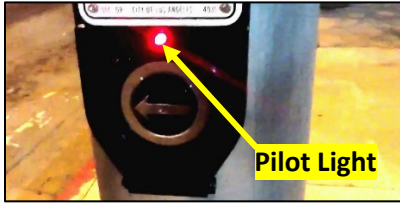


Figure 76: Pedestrian Pushbutton Signs

- Do the positioning and legends on the pedestrian pushbutton signs clearly indicate which crosswalk signal is actuated by each pedestrian pushbutton?
- In locations where the pedestrian clearance time is sufficient only to cross from the curb or shoulder to a median, is there an additional pedestrian detector provided on the median?
- If a pilot light is used (see Figure 77), is the pilot light designed to be illuminated from the time it is actuated until the “WALK” signal is displayed?

- If a pilot light is used (see Figure 77), is each actuation accompanied by a speech message that says “Wait”?



*Figure 77: Pedestrian Pushbuttons with Pilot Light*

- Are accessible pedestrian signals used in combination with pedestrian signal timing (see Figure 78)?



*Figure 78: Pedestrian Signals Combined with Pedestrian Signal Timing*

- Are accessible pedestrian signals not limited in operation by the time of day or day of week?
- Does each pushbutton activate both the walk interval and the accessible pedestrian signals?

#### *2.7.1.1. Location*

- Where two pedestrian pushbuttons are provided on the same corner of a signalized location, are the pushbuttons separated by a distance of at least 10 feet?

Note: Where there are physical constraints on a particular corner that make it impractical to provide the 10-foot separation between the two pedestrian pushbuttons, the pushbuttons may be placed closer together or on the same pole.

- Where there are two or more pushbuttons placed less than 10 feet apart, is each of them equipped with the following four features?
  - A pushbutton locator tone.
  - A tactile arrow.
  - A speech walk message for the “Walk” signal.
  - A speech pushbutton information message.

Note: Pedestrian pushbuttons should be located to meet all of the following criteria (see Figure 79):

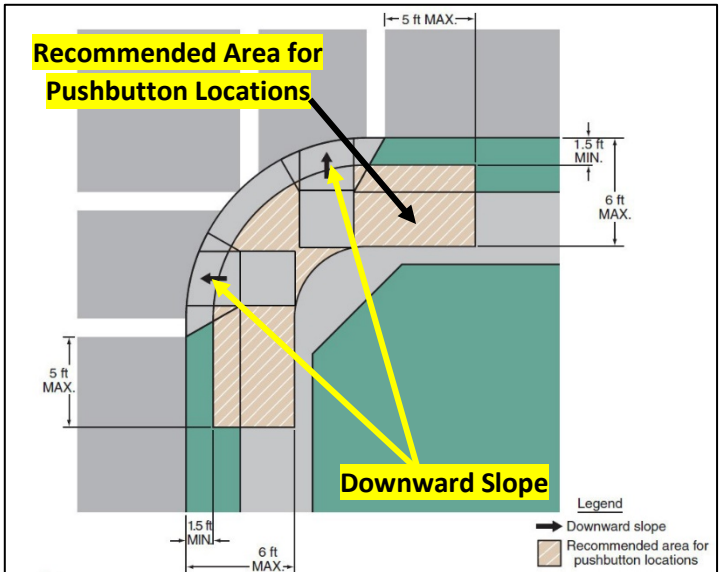


Figure 79: Recommended Area for Pushbutton Location

- A. Unobstructed and adjacent to a level, all-weather surface to provide access from a wheelchair (see section 2.12 of this field guide);
- B. Where there is an all-weather surface, a wheelchair-accessible route from the pushbutton to the ramp;
- C. Between the edge of the crosswalk line (extended) farthest from the center of the intersection and the side of a curb ramp (if present), but not greater than 5 feet from said crosswalk line;
- D. Between 1.5 and 6 feet from the edge of the curb, shoulder, or pavement;
- E. With the face of the pushbutton parallel to the crosswalk to be used; and
- F. At a mounting height between 30 and 42 inches (IDOT standards), and as close to 36 inches as possible, as shown in Figure 80.



Figure 80: Pedestrian-Activated Signals and Pedestrian Pushbuttons

- Is the pedestrian pushbutton adjacent to a firm, stable, and slip-resistant surface, with a running slope

consistent with the grade of the adjacent pedestrian access route and cross slope of 2% maximum?

- Where there are physical constraints that make it impractical to place the pedestrian pushbutton between 1.5 and 6 feet from the edge of the curb, shoulder, or pavement, is it not farther than 10 feet from the edge of curb, shoulder, or pavement?

Note: Suggested typical pushbutton locations are shown in Figure 81-A to Figure 81-H.

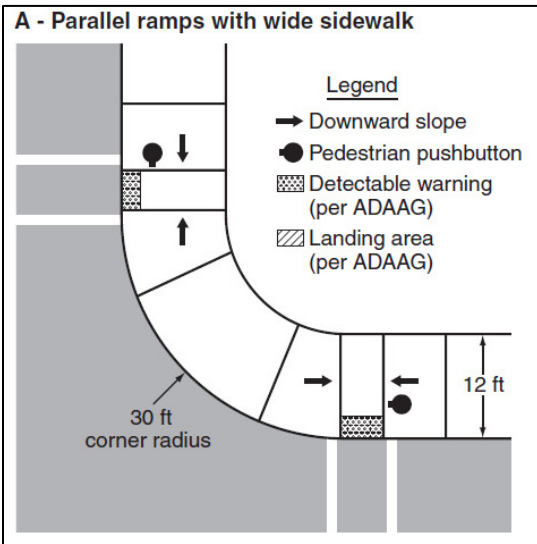


Figure 81-A: Typical Pushbutton Locations (MUTCD 2009)

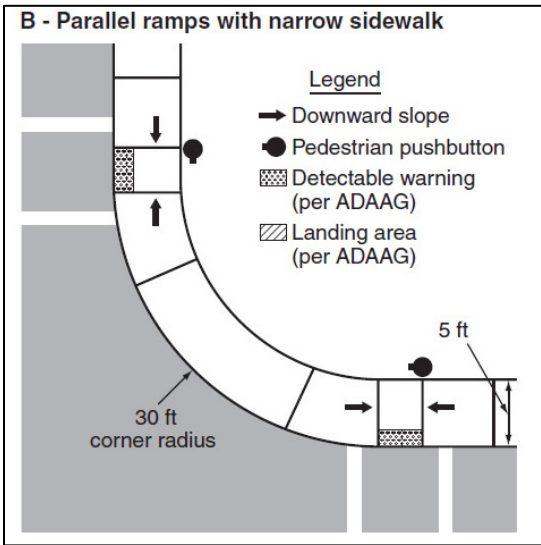


Figure 81-B: Typical Pushbutton Locations (MUTCD 2009)

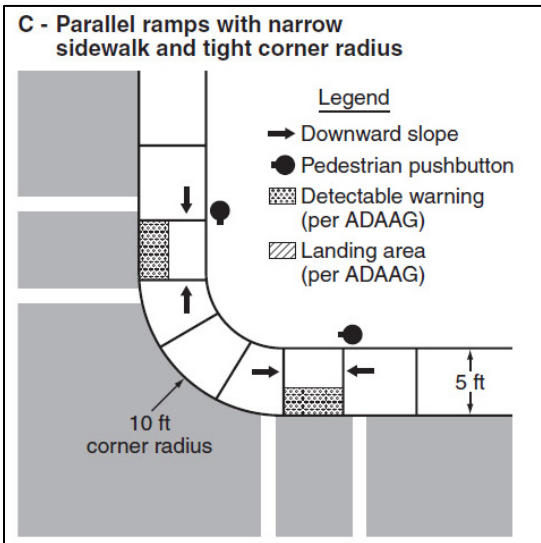


Figure 81-C: Typical Pushbutton Locations (MUTCD 2009)

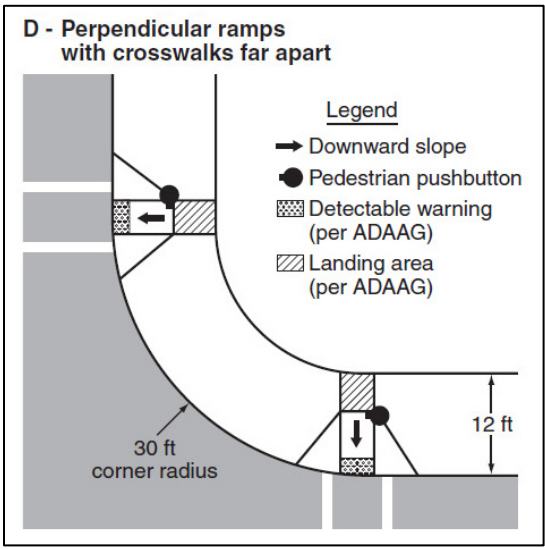


Figure 81-D: Typical Pushbutton Locations (MUTCD 2009)

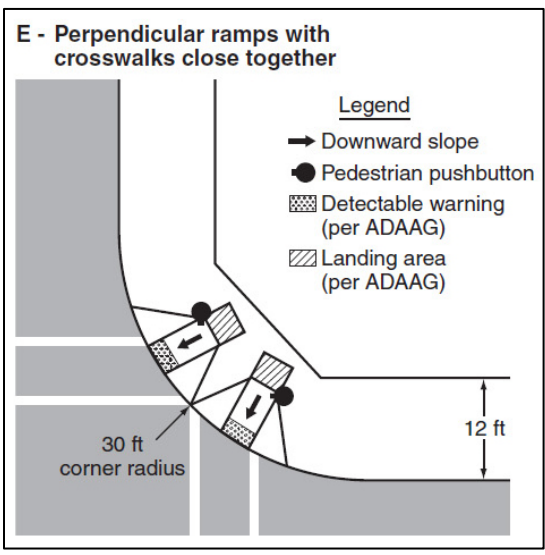


Figure 81-E: Typical Pushbutton Locations (MUTCD 2009)



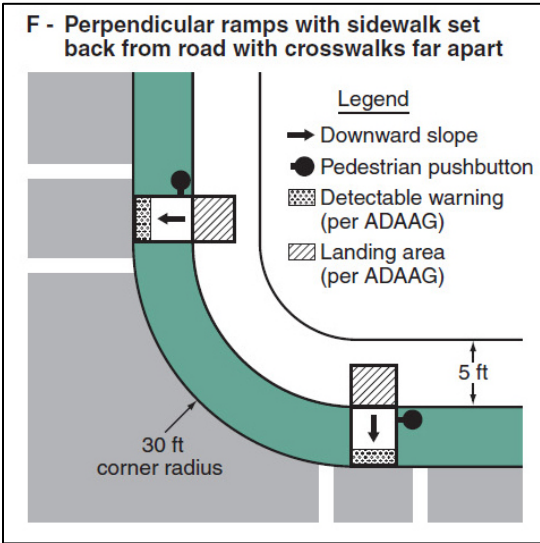


Figure 81-F: Typical Pushbutton Locations (MUTCD 2009)

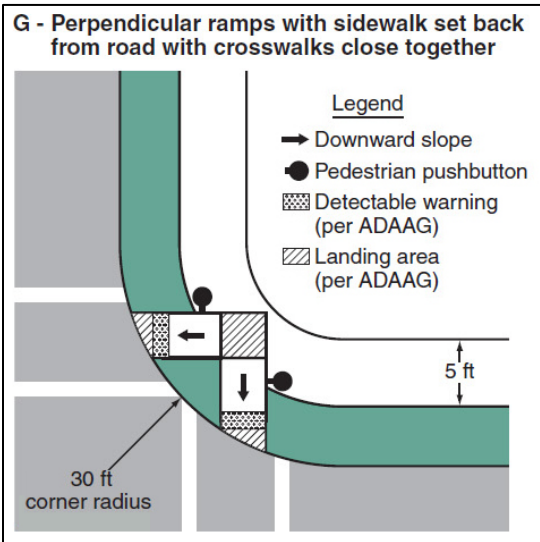


Figure 81-G: Typical Pushbutton Locations (MUTCD 2009)

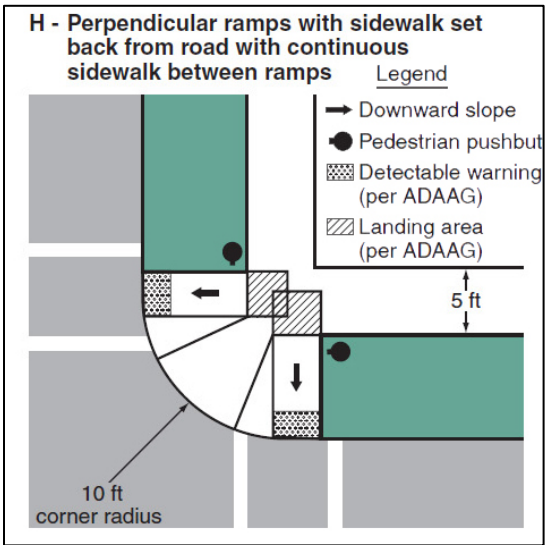


Figure 81-H: Typical Pushbutton Locations (MUTCD 2009)

### 2.7.1.2. Walk indicators

- Are accessible pedestrian signals equipped with both audible and vibro-tactile walk indications?
- Does the pushbutton include a tactile arrow that vibrates during the walk interval (see Figure 82)?



Figure 82: Vibro-Tactile Walk Indicators

- Does the accessible pedestrian signal include an audible walk indication that can be heard from the beginning of the associated crosswalk?

Note: Where there are two accessible pedestrian signals at the same corner and the distance between them is 10 feet or more, walk indication shall be a percussive tone.

Note: Where it is technically infeasible to separate the two accessible pedestrian signals by 10 feet, the audible walk indication shall be a speech message. The speech message shall clearly indicate that the walk interval is in effect and to which crossing it applies.

- Does audible tone walk indication repeat at 8 to 10 ticks per second?
- Does the accessible pedestrian signal include automatic volume adjustment in response to ambient traffic sound level up to 100 dBA?

Note: Where intersections have pedestrian phasing that is concurrent with vehicular phasing, the speech message shall be patterned after the model

“Broadway. Walk sign is on to cross Broadway.”

Note: Where intersections do not have pedestrian phasing that is concurrent with vehicular phasing, the speech message shall be patterned after the model “Walk sign is on for all crossings.”

- Do the accessible pedestrian signals revert to the pushbutton locator tone after the audible walk indication?

#### 2.7.1.3. *Tactile arrows and locator tones*

- Do pushbuttons clearly indicate by means of tactile arrows which crosswalk signal is actuated by each pushbutton?

- Are the tactile arrows located on the pushbuttons?
- Do the tactile arrows have high visual contrast (light on dark or dark on light), as shown in Figure 83?



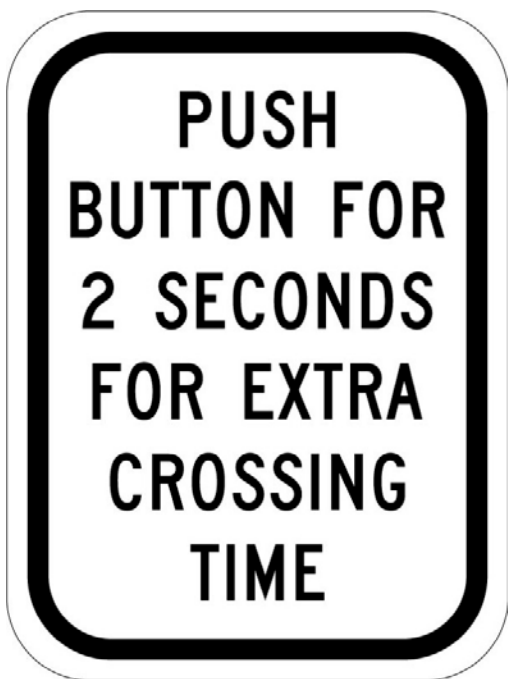
*Figure 83: Tactile Arrow Visual Contrast with Pushbutton*

- Are tactile arrows aligned parallel to the direction of travel on the associated crosswalk?
- Does every pushbutton incorporate a locator tone?
- Does the locator tone have the duration of 0.15 seconds or less and repeat at 1-second intervals?
- Are the pushbutton locator tones intensity responsive to ambient sound?
- Are pushbutton locator tones audible 6 to 12 feet from the pushbutton, or to the building line, whichever is less?

#### *2.7.1.4. Extended pushbutton press feature*

- Where the accessible pedestrian signal includes extended pushbutton press to provide additional feature(s), does a pushbutton press of less than 1 second actuate only the pedestrian timing and any associated accessible walk indication?
- Does a pushbutton press of 1 second or more actuate the pedestrian timing, any associated accessible walk indication, and any additional feature(s)?

- Where additional crossing time can be provided by pressing the pushbutton for extended time, is there a plaque mounted adjacent to or integral with the pedestrian pushbutton (see Figure 84)?



*Figure 84: Extended Pushbutton Press Feature Sign*

## **2.8. Transit Stops and Transit Shelters**

### **2.8.1. Transit Stops**

#### *2.8.1.1. Boarding and alighting areas*

- Is DWS provided at boarding and alighting areas for rail vehicles and at boarding platforms for buses and rail vehicles (see section 2.5 of this field guide)?

2.8.1.1.1. Dimensions

- Does the boarding and alighting area measure 8 feet or more (perpendicular to the curb or street) by 5 feet or more (parallel to the curb or street), as shown in Figure 85?

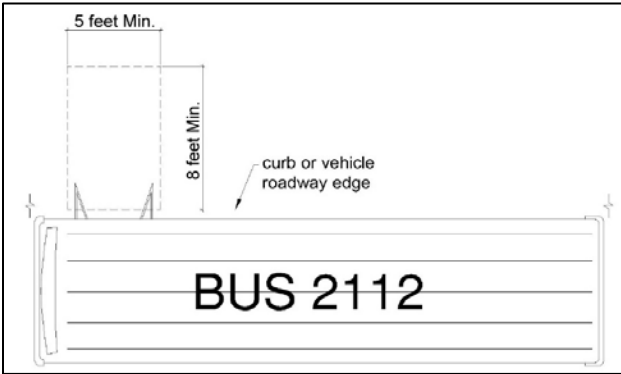


Figure 85: Boarding and Alighting Areas

2.8.1.1.2. Grade

- Is the slope of boarding and alighting areas parallel to the street or highway less than or equal to the general grade of the adjacent street or the highway (see Figure 86)?



Figure 86: Slope of Boarding and Alighting—Parallel to Street

- Is the slope of the boarding and alighting area perpendicular to the street or highway less than or equal to 2% (1.5% recommended), as shown in Figure 87?



*Figure 87: Slope of Boarding and Alighting Areas—Perpendicular to Street*

#### 2.8.1.1.3. Surface

- Do boarding and alighting areas have firm, stable, and slip-resistant surfaces?

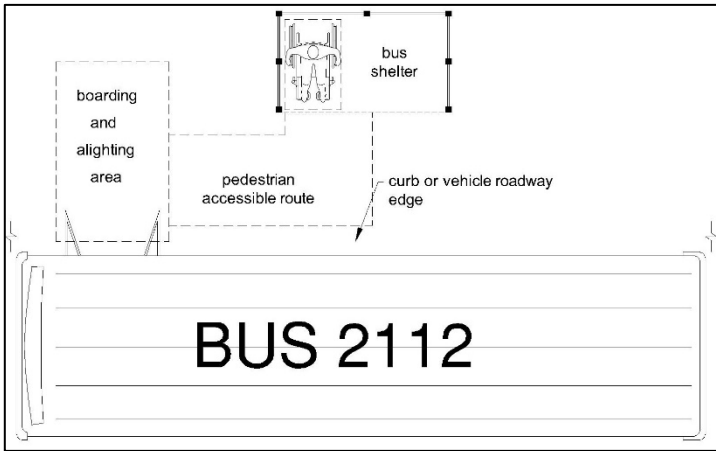
#### 2.8.1.1.4. Connection

- Are boarding and alighting areas connected to streets, sidewalks, or pedestrian paths by a PAR?
- Are both heights of the vehicle floor and station platform coordinated to minimize the vertical and horizontal distance?
- Is the slope of the boarding platform 2% or less (1.5% recommended) in all directions?



## 2.8.2. Transit Shelters

- Are transit shelters connected to a PAR, a boarding and alighting area, or a boarding platform (see Figure 88)?



*Figure 88: Transit Shelter Connection Requirement*

- Is a clear space provided entirely within the shelter (see section 2.12 of this field guide)?
- Where the transit shelter is equipped with seating, is the clear space located at one end of the seat?  
Note: The clear space shall not overlap the area within 1.5 feet from the front edge of the seat.
- Are environmental controls within the transit shelter proximity-actuated?
- Do all protruding objects within the transit shelter comply with PAR protruding objects requirements?

## 2.9. On-Street Parking Spaces

- Where marked or metered on-street parking is provided on a block, are accessible parking spaces provided that comply with Table 1?

Table 1: On-Street Parking Spaces

Total Number of Marked or Metered Parking Spaces on the Block Perimeter	Minimum Required Number of Accessible Parking Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 and over	4 percent of total

Note: Where parking is not marked and parking pay stations are provided, each 20 feet of the block perimeter where parking is permitted shall be counted as one parking space.

Note: Where an alteration project's scope includes altering part of the parking on a block perimeter, the minimum number of accessible parking spaces required is based on the total number of marked or metered parking spaces on the block perimeter, including any unaltered parking spaces.

### 2.9.1. Parallel Parking Spaces

#### 2.9.1.1. Wide sidewalks

- Where the width of the adjacent sidewalk or available right-of-way exceeds 14 feet, is there a provided access aisle at street level the full length of the parking space that connects to a PAR (see Figure 89)?

- Access aisles are not allowed to overlap the adjacent vehicular travel lane.

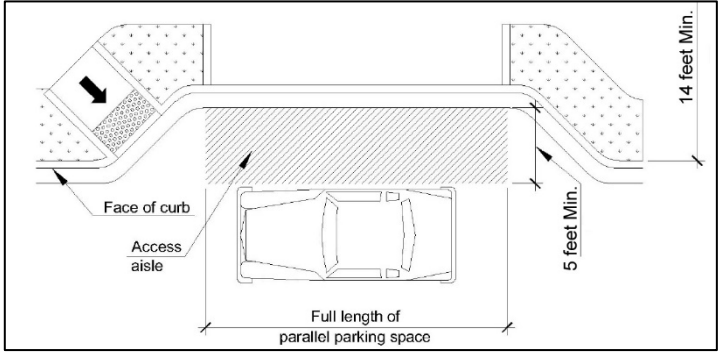


Figure 89: Parallel On-Street Parking Space Next to a Wide Sidewalk

Note: Where a parking space is located at the end of the block face and the street or sidewalk adjacent to the parking space not altered, an access aisle is not required.

2.9.1.2. Narrow sidewalks

- Where the adjacent sidewalk or right-of-way has a width less than 14 feet, is the accessible parking space located at the end of the block face (see Figure 90)?  
 Note: No access aisle is required in this case.

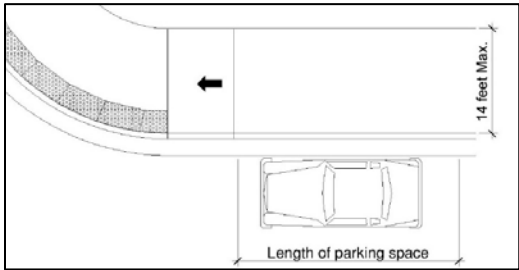


Figure 90: Parallel On-Street Parking Space Next to a Narrow Sidewalk

### 2.9.2. Perpendicular or Angled Parking Spaces

- Where perpendicular or angled parking is provided, is there an access aisle 8 feet wide provided at street level for each parking space (see Figure 91)?
- Is the access aisle connected to a PAR (see Figure 91)?
- Is the access aisle marked (diagonally striped with high-quality yellow paint), as shown in Figure 91?

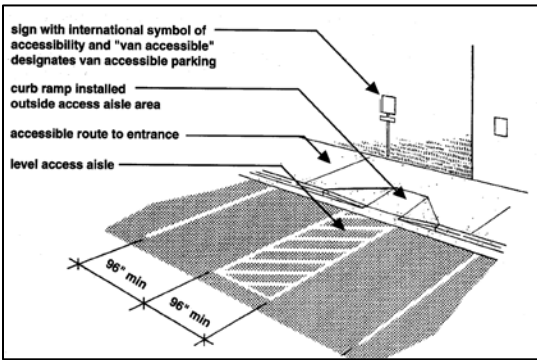


Figure 91: Perpendicular or Angled Parking Spaces

Note: An access aisle cannot be shared by two parking spaces (see Figure 92).

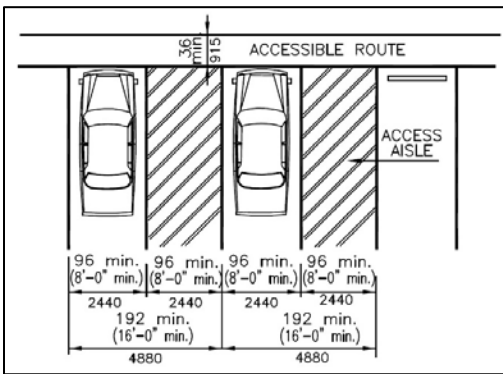


Figure 92: Perpendicular Parking Spaces (IAC 1997)

### 2.9.3. Curb Ramps or Blended Transitions

- Are curb ramps or blended transitions provided to connect the access aisle to a PAR (see Figure 91)?  
Note: Curb ramps shall not be located within the access aisle (see Figure 91).

### 2.9.4. Signs

- Are the accessible parking spaces identified by signs (R7-8) displaying the International Symbol of Accessibility (see Figure 93) and R7-1101 displaying \$250 fine (or up to \$350)?



Figure 93: Accessible Parking Sign (IAC 1997)

- Are the signs vertically mounted on a post or wall at front center of the parking space?
- Are the signs placed at least 5 feet measured from the finish grade to the bottom of the sign?
- Are the signs placed so they cannot be obscured by a vehicle parked in the space?

### 2.9.5. Parking Meters and Parking Pay Stations

- Are parking meters at accessible parallel parking located at the head or foot of the parking space?
- Are displays and information visible from a point located 3.3 feet or less above the center of the clear space in front of the parking meter or parking pay station (see Figure 94)?



Figure 94: Visibility Requirement for Displays at Parking Pay Stations

- Do parking meters comply with operable parts requirements (see section 2.11 of this field guide)?

## 2.10. Passenger Loading Zones

- Are passenger loading zones identified by a sign displaying the International Symbol of Accessibility (see Figure 93)?
- Is there an accessible passenger loading zone for each 100 feet of continuous loading zone space?
- Is there a vehicular pull-up space 8 feet wide x 20 feet long or more (see Figure 95)?

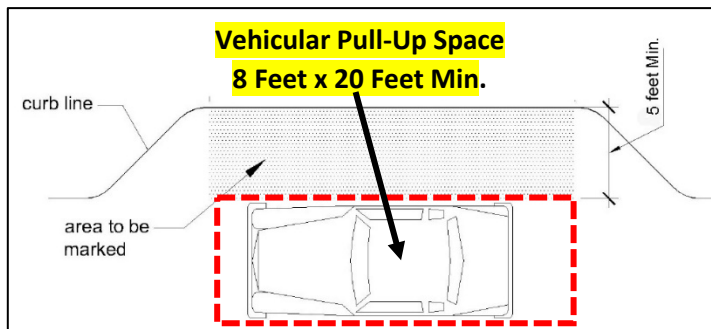


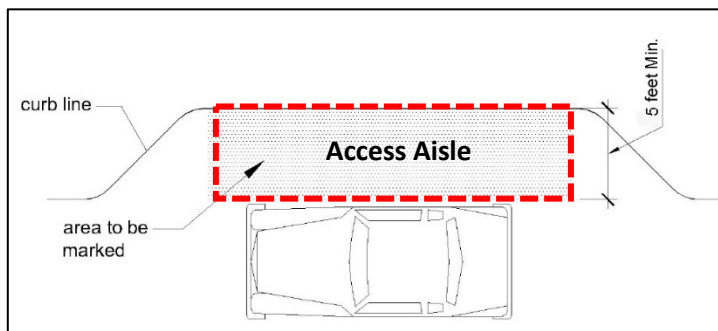
Figure 95: Passenger Loading Zones—Vehicular Pull-Up Space

### 2.10.1. Access Aisle

- Is there an access aisle adjacent to the vehicle pull-up space (see Figure 96)?
- Are access aisles provided at the same level as the vehicle pull-up space they serve?  
Note: Access aisles shall not overlap the vehicular travel lane.
- Is there a curb ramp or blended transition connecting the access aisle to a PAR?  
Note: Curb ramps are not permitted within the access aisle.
- Is the width of the access aisle 5 feet or more?



- Does the access aisle extend the full length of the vehicle pull-up spaces it serves (see Figure 96)?
- Is the access aisle marked (see Figure 96)?
- Does the access aisle have a firm, stable, and slip-resistant surface?



*Figure 96: Passenger Loading Zones—Access Aisle*

## 2.11. Operable Parts

- Is there a provided clear space at operable parts (see section 2.12 of this field guide)?
- Are the operable parts placed within one or more of the accessible reach ranges (see section 2.14 of this field guide)?
- Are the provided operable parts operable with one hand?

Note: Operable parts shall not require tight grasping, pinching, or twisting of the wrist.

- Is the force required to operate operable parts 5 pounds or less?

## 2.12. Clear Spaces

Note: Clear spaces are required at operable parts, accessible pedestrian signals, parking meters, parking pay stations, and benches within transit shelters.

- Are clear space surfaces firm, stable, and slip resistant?
- Are the dimensions of the clear space 2.5 feet x 4 feet or more (see Figure 97)?

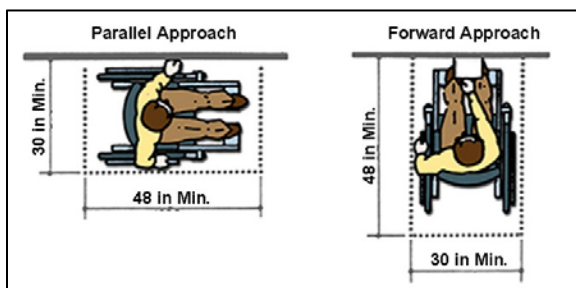


Figure 97: Clear Space Dimensions

- Is the running slope of the clear space consistent with the adjacent PAR?
- Is the cross slope of the clear space 2% or less (1.5% recommended)?
- Is the clear space positioned for forward approach or parallel approach or both approaches to an element?
- Is one full unobstructed side of the clear space adjoining a PAR or another clear space?
- Where clear space is confined on all or part of three sides, is additional maneuvering space provided?

Note: For forward approach, the clear space and additional maneuvering space shall be 3 feet wide or more where the depth exceeds 2 feet (see Figure 98).

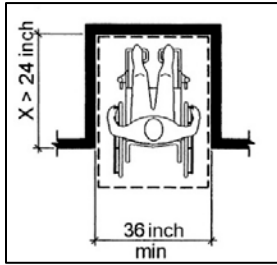


Figure 98: Clear Space for Forward Approach

Note: For parallel approach, the clear space and additional maneuvering space shall be 5 feet wide or more where the depth exceeds 1.25 feet (see Figure 99).

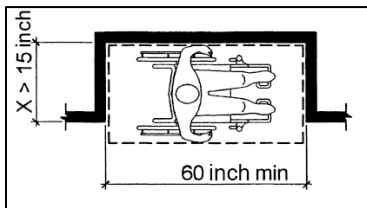


Figure 99: Clear Space for Parallel Approach

## 2.13. Toe and Knee Clearance

### 2.13.1. Toe Clearance

Note: Space under an element between the finish surface and 9 inches above the finish surface shall be considered toe clearance (see Figure 100).

- Does the toe clearance depth extend between 1.4 feet and 2.1 feet under an element (see Figure 100)?

- Is toe clearance 2.5 feet wide or more (see Figure 100)?

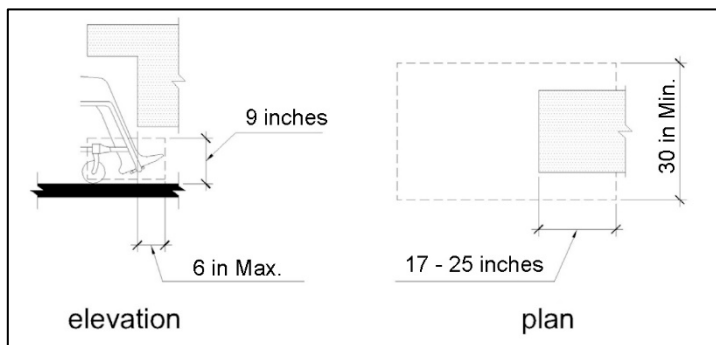


Figure 100: Toe Clearance

### 2.13.2. Knee Clearance

Note: Space under an element between 9 inches and 2.25 feet above the finish surface shall be considered knee clearance (see Figure 101).

- Minimum Depth: Where knee clearance is required under an element as part of a clear space, is the knee clearance 11 inches deep or more at 9 inches above the finish surface, and 8 inches deep or more at 2.25 feet above the finish surface (see Figure 101-a)?
- Maximum Depth: Does knee clearance extend 25 inches or less under an element at 9 inches above the finish surface (see Figure 101-b)?

Note: Between 9 inches and 27 inches above the finish surface, the knee clearance shall be permitted to reduce at a rate of 1 inch in depth for each 6 inches in height (see Figure 101-a).

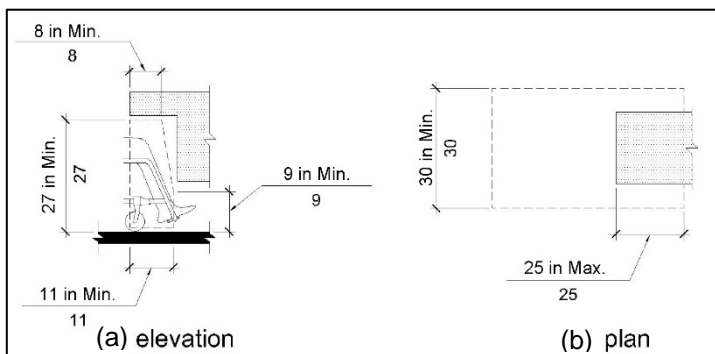


Figure 101: Knee Clearance

## 2.14. Reach Ranges

### 2.14.1. Unobstructed Forward Reach

- Is the range of unobstructed forward reach between 15 inches and 48 inches above the finish surface (see Figure 102)?

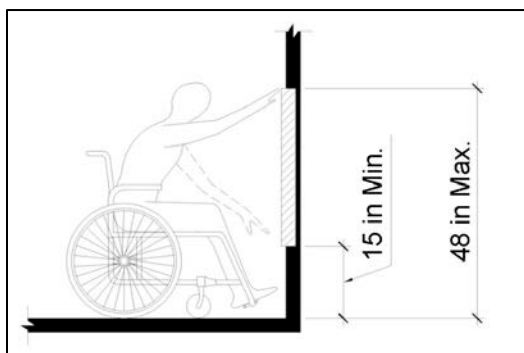


Figure 102: Unobstructed Forward Reach

### 2.14.2. Unobstructed Side Reach

Note: Side reach is used when a clear space allows a parallel approach to an element.

- Is the range of unobstructed side reach between 15 inches and 48 inches above the finish surface (see Figure 103)?

Note: An obstruction with a depth of 10 inches or less between the clear space and the element is permitted (see Figure 103).

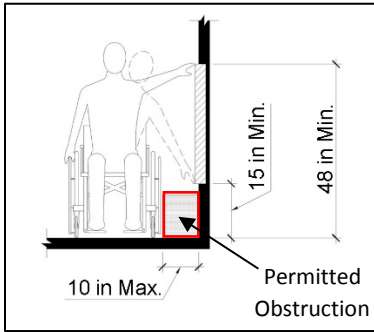


Figure 103: Unobstructed Side Reach

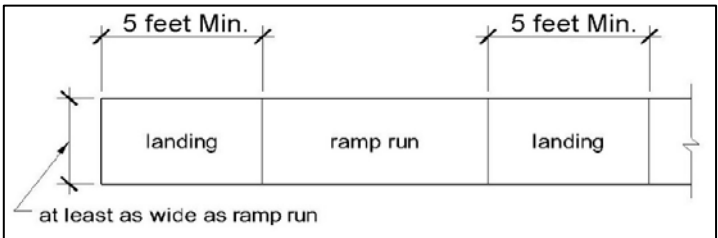
### 2.15. Ramps

- Is the ramp running slope 8.3% or less (see Figure 104)?



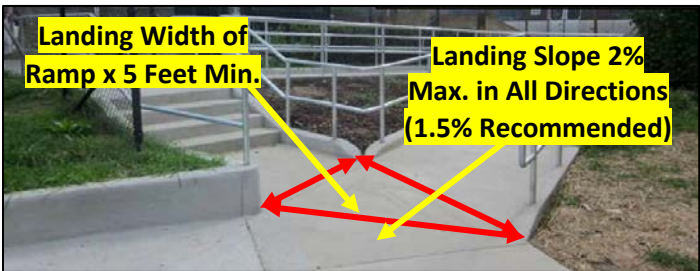
Figure 104: Ramp Running Slope

- Is the ramp cross slope 2% or less (1.5% recommended)?
- Is the rise of each ramp run 2.5 feet or less?
- If the rise of the ramp run is more than 6 inches, are handrails provided?
- Are landings provided at both the top and bottom of each ramp run (see Figure 105)?



*Figure 105: Landing Dimensions—Straight*

- Is the slope of the landing 2% or less in all directions (1.5% recommended), as shown in Figure 106?
- Is the length of the landing 5 feet or more (see Figure 106)?
- Is the width of the landing more than or equal to the width of the ramp (see Figure 105)?



*Figure 106: Landing Slope and Dimensions*



- Where the ramp changes direction, is the landing between the two directions 5 feet x 5 feet or more (see Figure 107)?

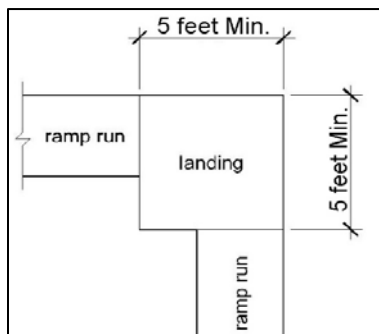


Figure 107: Landing Dimensions—Changing Direction

- Is the ramp surface stable, firm, and slip resistant?

### 2.15.1. Edge Protection

- Is edge protection such as either extended ramp surface, or curb or barrier provided on each side of ramp runs and ramp landings?

#### 2.15.1.1. Extended ramp surfaces

- Does the surface of the ramp extend 1 foot or more beyond the inside face of the handrail (see Figure 108)?

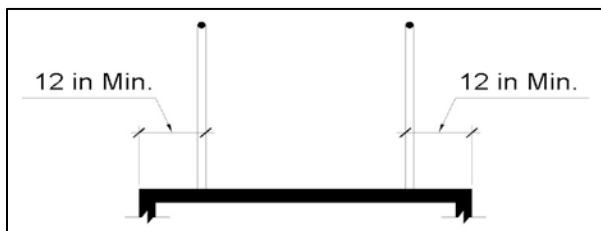


Figure 108: Extended Ramp Surfaces—Section

### 2.15.1.2. Curb or barrier

- Is there a curb or barrier provided that prevents the passage of a 4-inch diameter sphere, where any portion of the sphere is within 4 inches of the finish surface?

## 2.16. Stairways

### 2.16.1. Treads and Risers

- Do all steps on each flight of stairs have uniform riser heights and uniform tread depths (see Figure 109)?



Figure 109: Uniform Riser Height and Tread Depth

- Is the riser height between 4 inches and 7 inches (see Figure 110)?
- Are the treads 11 inches deep or more (see Figure 110)?



Figure 110: Riser and Tread Dimensions

Note: Open risers are not permitted.

Note: Stairway treads shall have a stable, firm, and slip-resistant surface.

Note: Changes in level are not permitted within a tread.

- Are DWS provided at the top of the stairway?

### 2.16.2. Nosing

- Is the radius of curvature at the leading edge of the tread 0.5 inch or less (see Figure 111)?

Note: Risers are permitted to slope under the tread at an angle of 30 degrees or less from vertical (see Figure 111).

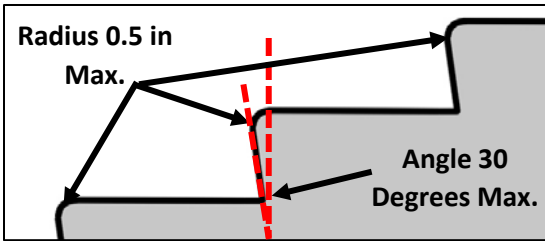


Figure 111: Nosing Detail—Slope and Radius

Note: Nosing that projects beyond risers shall have the underside of the leading edge curved or beveled (see Figure 112).

Note: The permitted projection of the nosing shall extend 1.5 inches or less over the tread below (see Figure 112).

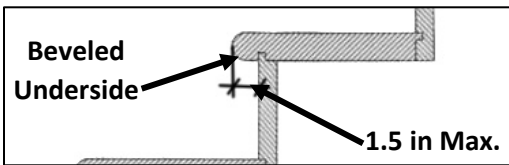


Figure 112: Nosing Detail—Projection beyond Riser

Note: Stairways shall have handrails.

## 2.17. Handrails

- Are handrails provided on both sides of stairways?
- Are handrails provided on both sides of ramps where the rise of the ramp run is more than 6 inches?
- Is handrail continuous within the full length of each ramp run or stair flight?
- Are inside handrails on switchback or dogleg ramps continuous between ramp runs or stair flights (see Figure 113)?

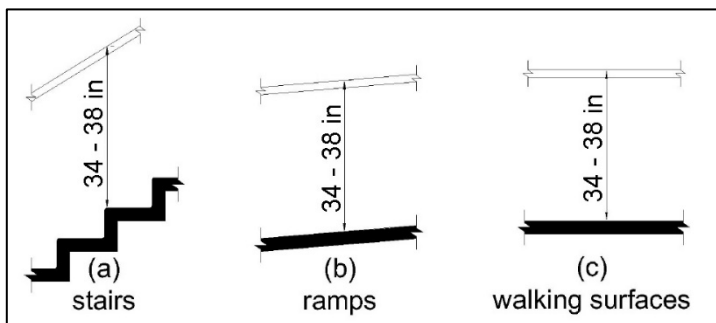


*Figure 113: Handrail Continuity Requirement*

### 2.17.1. Height

- Is the handrail height between 34 inches and 38 inches measured from the finish surface to the top of the handrail (see Figure 114)?

- Is the height constant throughout the entire handrail (see Figure 114)?



*Figure 114: Handrail Height*

### **2.17.2. Clearance**

- Is there 1.5 inches or more of clearance between the gripping surface and any adjacent surface?

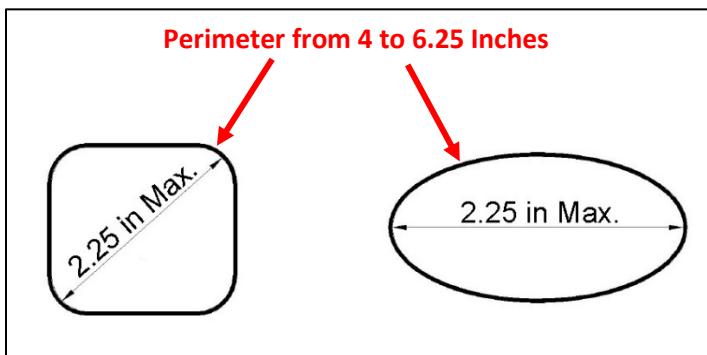
### **2.17.3. Gripping Surface**

- Obstructions are not permitted on the top side of the handrail.
- Obstructions shall not exceed 20% of the bottom side of the handrail.
- A handrail should have a projection of 1.5 inches below the bottom of the handrail gripping surface.
- Sharp and abrasive elements are not permitted on the gripping surfaces and any surfaces adjacent to the gripping surfaces.
- Gripping surfaces and surfaces adjacent to them shall have rounded edges.
- Handrails shall not rotate within their fittings.

- Where expansion joints are necessary for large spans of handrails, the expansion joint is permitted to rotate in its fitting.

#### 2.17.4. Cross Section

- Handrail cross section is either circular or non-circular.
- Does the circular cross section have an outer diameter between 1.25 inches and 2 inches?
- Does the non-circular cross section have a perimeter between 4 inches and 6.25 inches (see Figure 115)?
- Does the non-circular cross section have a cross section of 2.25 inches or less (see Figure 115)?



*Figure 115: Non-Circular Cross-Section Examples*

#### 2.17.5. Extensions

- Do handrail gripping surfaces extend beyond and in the same direction of ramp runs and stair flights (see Figure 116)?
- Extensions shall not be required for continuous handrails at the inside turn of switchback or dogleg ramps and stairways.

- In alterations where handrail extensions would reduce the clear width required for pedestrian access routes, handrail extensions shall not be required.

#### 2.17.5.1. Top and bottom extension at ramps

- Ramp handrails shall extend horizontally above the landing for 1 foot or more beyond the top and bottom of ramp runs (see Figure 116).
- Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent ramp run.

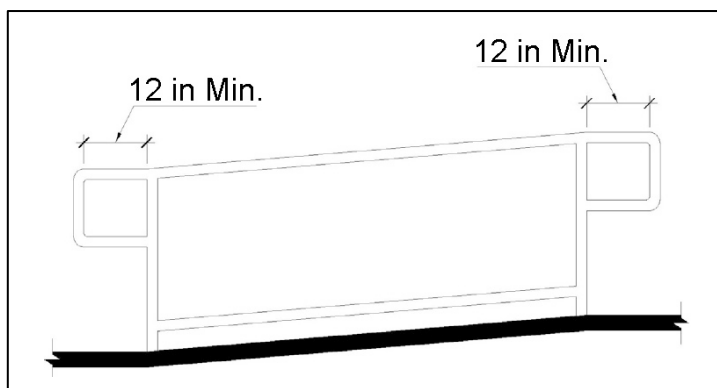


Figure 116: Handrails Extensions

#### 2.17.5.2. Top extension at stairways

- At the top of a stair flight, handrails shall extend horizontally above the landing for 1 foot or more beginning directly above the first riser nosing (see Figure 117).
- Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.



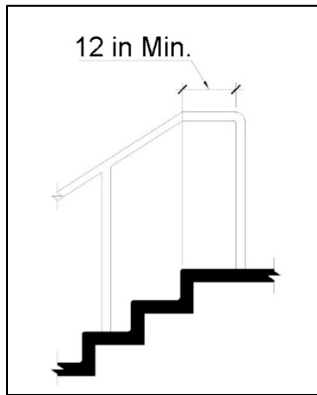


Figure 117: Top Extension at Stairways

#### 2.17.5.3. Bottom extension at stairways

- At the bottom of a stair flight, handrails shall extend at the slope of the stair flight for a horizontal distance at least equal to one tread depth beyond the last riser nosing (see Figure 118).
- Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.

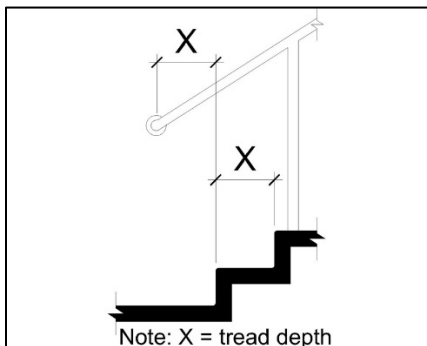


Figure 118: Bottom Extension at Stairways

## 2.18. Doors, Doorways, and Gates

- Where provided at pedestrian facilities, doors, doorways, and gates shall comply with section 404 of Appendix D to 36 CFR part 1191. These requirements of doors, doorways, and gates are listed in the following pages of this section (2.18) of the field guide.
- Does the door have a clear width of 32 inches or more (see Figure 119)?

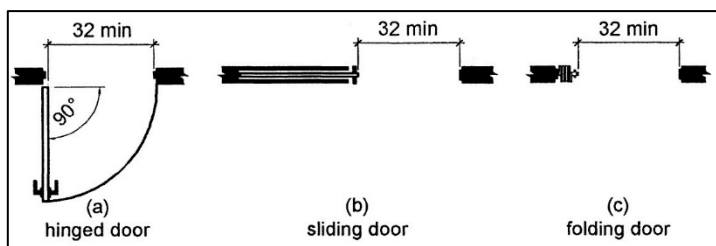


Figure 119: Clear Width of Doors

- Swinging doors and gates shall have maneuvering clearances complying with Table 2 (see Figure 120).

Table 2: Maneuvering Clearances for Manual Swinging Doors and Gates

Type of Use		Minimum Maneuvering Clearance	
Approach Direction	Door or Gate Side	Perpendicular to Doorway	Parallel to Doorway (beyond latch side unless noted)
From front	Pull	60 inches (1525 mm)	18 inches (455 mm)
From front	Push	48 inches (1220 mm)	0 inches (0 mm) <sup>1</sup>
From hinge side	Pull	60 inches (1525 mm)	36 inches (915 mm)
From hinge side	Pull	54 inches (1370 mm)	42 inches (1065 mm)
From hinge side	Push	42 inches (1065 mm) <sup>2</sup>	22 inches (560 mm) <sup>3</sup>
From latch side	Pull	48 inches (1220 mm) <sup>4</sup>	24 inches (610 mm)
From latch side	Push	42 inches (1065 mm) <sup>4</sup>	24 inches (610 mm)

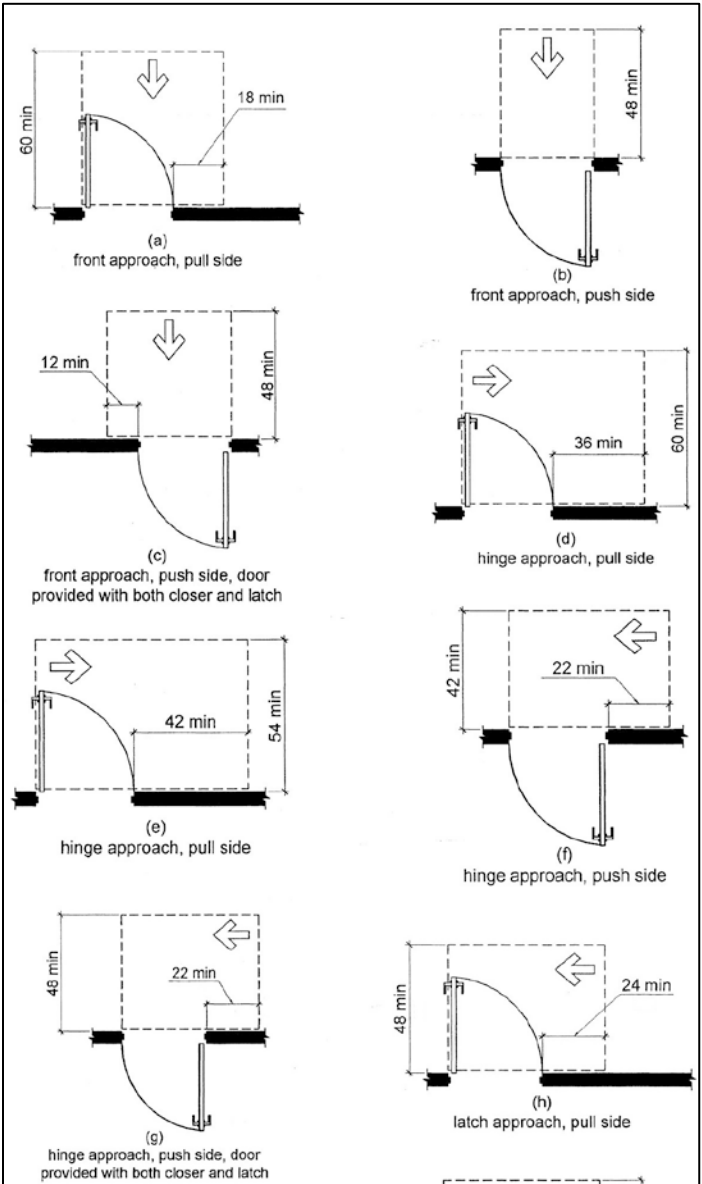


Figure 120: Maneuvering Clearances for Manual Swinging Doors and Gates

- Door closers shall be adjusted to take 5 seconds or more to move the door from the open position of 90 degrees to 12 degrees from the latch.
- Spring hinges shall be adjusted to take 1.5 seconds or more to move the door from the 70 degrees open position to closed position.

### 3. Defined Terms

**Accessible.** A facility that complies with applicable accessibility laws and regulations.

**Alteration.** A change to a facility in the public right-of-way that affects or could affect pedestrian access, circulation, or use. Alterations include, but are not limited to, resurfacing, rehabilitation, reconstruction, historic restoration, or changes or rearrangement of structural parts or elements of a facility.

**Blended Transition.** A raised pedestrian street crossing, depressed corner, or similar connection between the pedestrian access route at the level of the sidewalk and the level of the pedestrian street crossing that has a grade of 5% or less.

**Cross Slope.** The grade that is perpendicular to the direction of pedestrian travel.

**Curb Line.** A line at the face of the curb that marks the transition between the curb and the gutter, street, or highway.

**Curb Ramp.** A ramp that cuts through (or is built up to) the curb. Curb ramps can be perpendicular or parallel, or a combination of parallel and perpendicular ramps.

**Detectable warnings.** A distinctive surface pattern of domes detectable by cane or underfoot that alert people with vision impairments of their approach to street crossings and hazardous drop-offs.

**Element.** An architectural or mechanical component of a building, facility, space, site, or public right-of-way.

**Facility.** All or any portion of buildings, structures, improvements, elements, and pedestrian or vehicular routes.

**Grade Break.** The line where two surface planes with different grades meet.

**Operable Part.** A component of an element used to insert or withdraw objects, or to activate, deactivate, or adjust the element.

**Parallel Curb Ramp.** A ramp that is aligned so that the general pedestrian travel is parallel to the curb.

**Pedestrian Access Route (PAR).** A continuous and unobstructed path of travel provided for pedestrians with disabilities within or coinciding with a pedestrian circulation path.

**Pedestrian Circulation Path (PCP).** A prepared exterior or interior surface provided for pedestrian travel.

**Perpendicular Curb Ramp.** A ramp that is aligned so that the general pedestrian travel is perpendicular to the curb.

**Public Right-of-Way.** Public land or property, usually in interconnected corridors, that is acquired for or dedicated to transportation purposes.

**Qualified Historic Facility.** A facility that is listed in or eligible for listing in the National Register of Historic Places or designated as historic under an appropriate state or local law.

**Running Slope.** The grade that is parallel to the direction of pedestrian travel.

**Vertical Surface Discontinuities.** Vertical differences in level between two adjacent surfaces.



**ILLINOIS CENTER FOR  
TRANSPORTATION**



**Illinois Department  
of Transportation**

## APPENDIX D: SAMPLE OF IDOT ADA/PROWAG E-LEARNING MODULES

# ADA-PROWAG

## Pedestrian Access Route (PAR)





## WHAT'S REQUIRED?

- ❏ PROWAG does not require sidewalks
- ❏ If sidewalks are provided, PAR required
- ❏ Other things that may necessitate a sidewalk
  - Safe-Routes to School
  - Transit Stops
  - Complete Streets (on department highways)
- ❏ Accessible Routes still required on site from public street or sidewalk

## WHAT'S REQUIRED?

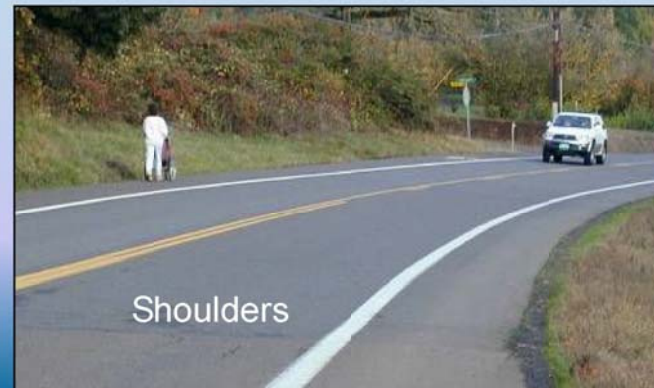
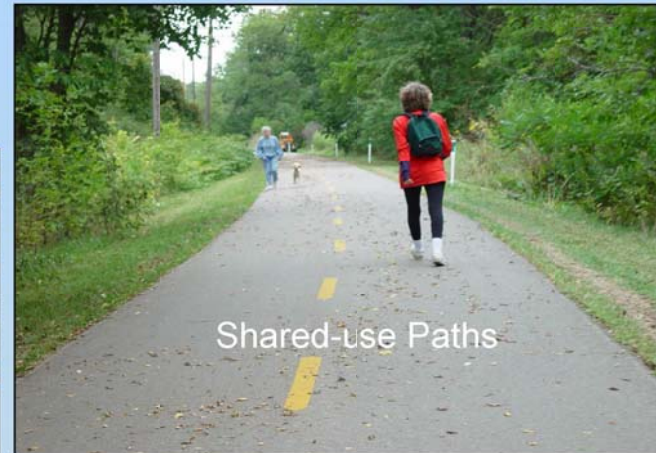
- ❏ Snow removal is required

Refer to the following  
from FHWA for further  
guidance:

[http://www.fhwa.dot.gov/civilrights/programs/  
ada\\_sect504qa.htm](http://www.fhwa.dot.gov/civilrights/programs/ada_sect504qa.htm)



# TYPES OF PEDESTRIAN ACCESS ROUTES



# IS PAR NEEDED?





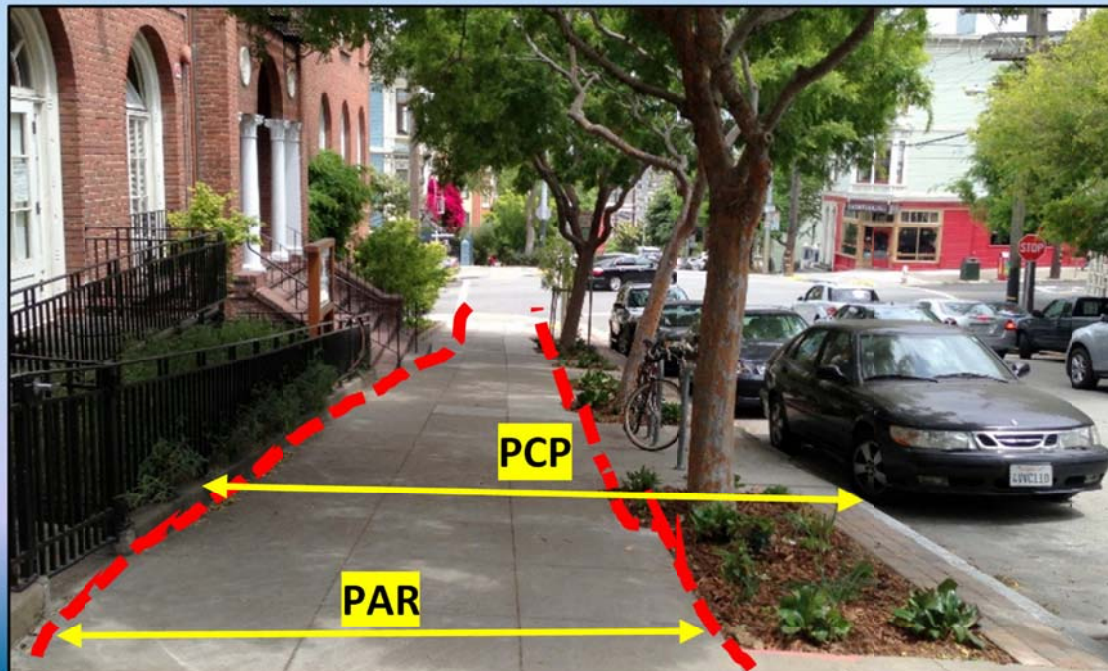
# PEDESTRIAN ACCESS ROUTE

## R302.2 Components

- Sidewalks
- Street/Rail Crossings
- Pedestrian Overpass/Underpass
- Curb Ramps
- Ramps
- Elevators/Lifts
- Doors/Doorways/Gates

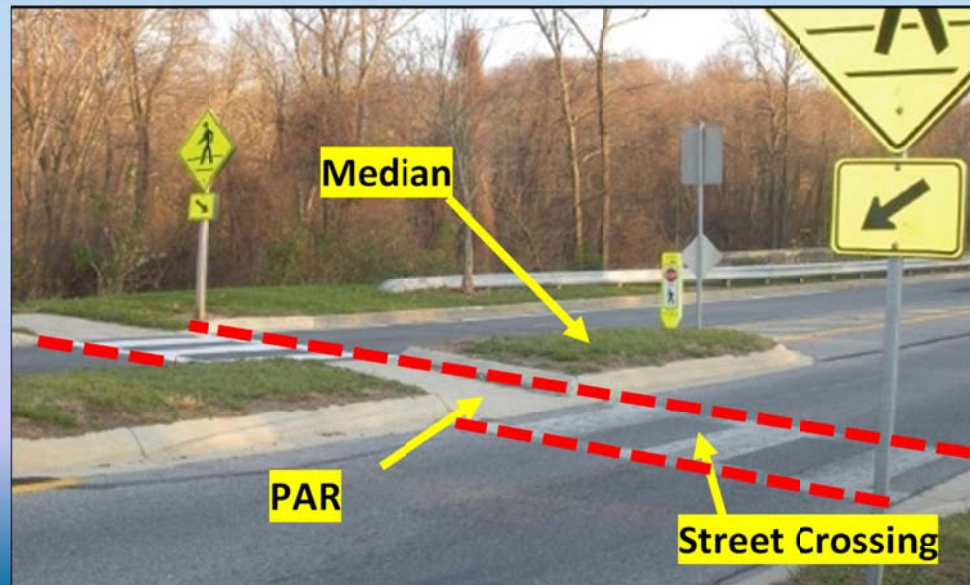
## PEDESTRIAN ACCESS ROUTE

- ♿ Pedestrian Circulation Path (PCP) must include a PAR



## PEDESTRIAN ACCESS ROUTE

- ❏ PAR must continue within pedestrian street crossings, medians and pedestrian refuge islands



## PEDESTRIAN ACCESS ROUTE

### R302.3 Continuous Width

- **5' Preferred** (Required in Medians and Pedestrian Refuge Islands)
- **4' Required** (R302.4 Passing Space required every 200 ft)
- More may be needed for high pedestrian volumes
- Top of curb excluded
- Continue around obstructions



## PEDESTRIAN ACCESS ROUTE



# PEDESTRIAN ACCESS ROUTE

- ♿ PAR width within medians and pedestrian refuge islands



# PEDESTRIAN ACCESS ROUTE





# WHICH ONE MEETS THE REQUIREMENTS?



## WHICH CAME FIRST?

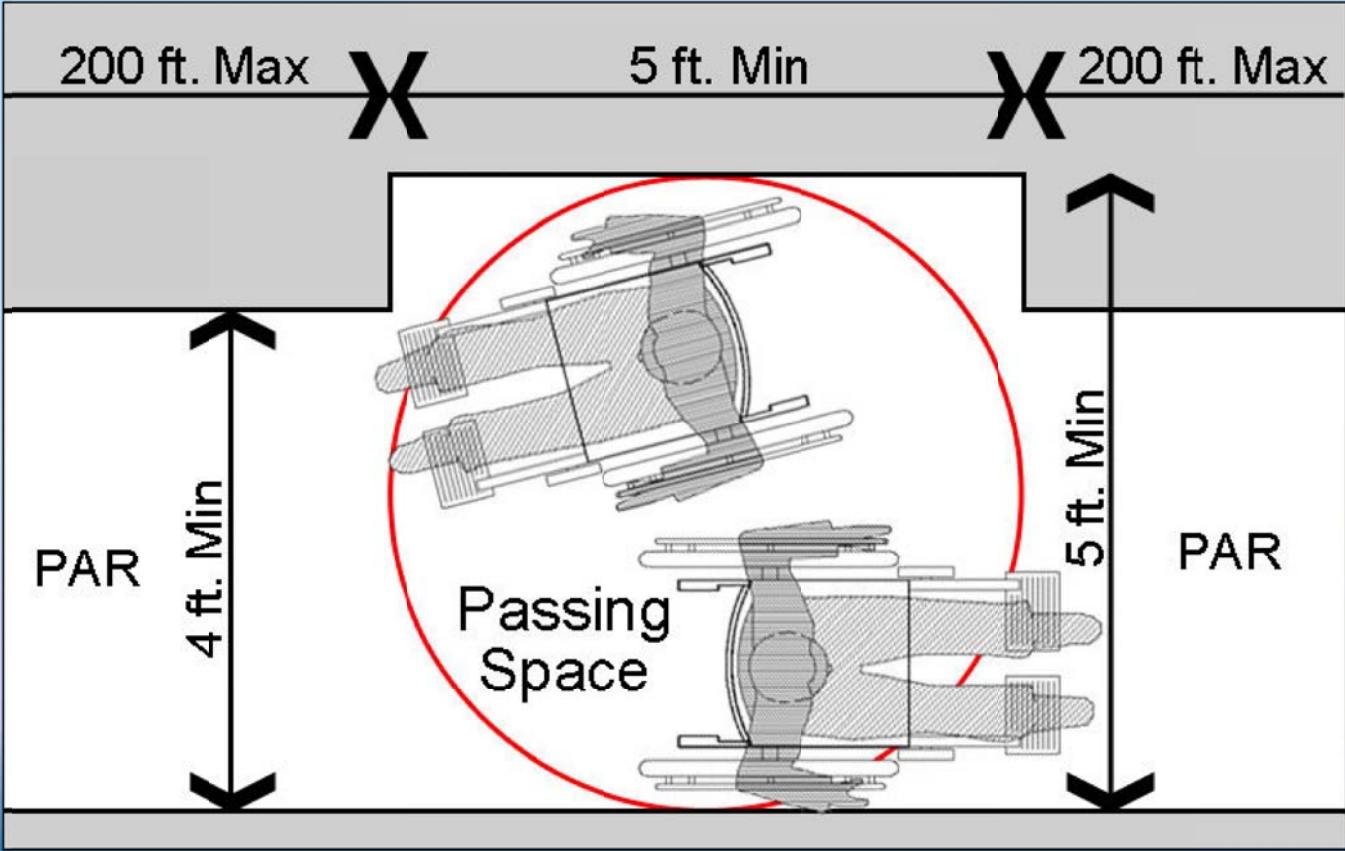


## PAR OBSTRUCTIONS

- ❏ May need to have PAR on highway
- ❏ Not Preferred



# PASSING SPACES



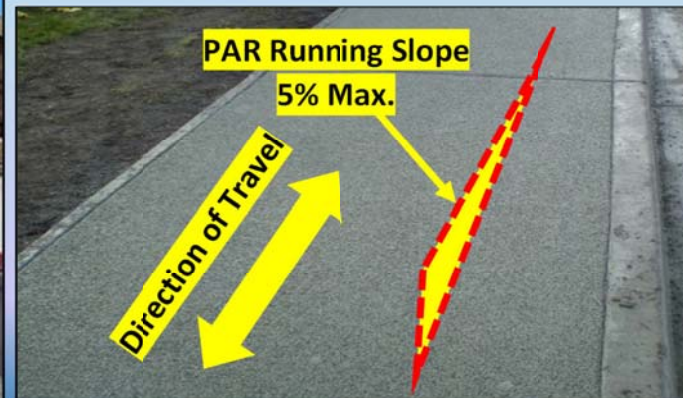


## PEDESTRIAN ACCESS ROUTE

### ♿ R302.5 Grade (or Running Slope)

- **5% (1:20) maximum recommended**

(required on pedestrian street crossings and PARs not contained within highway ROW)





# PEDESTRIAN ACCESS ROUTE

## ♿ R302.5 Grade (or Running Slope)

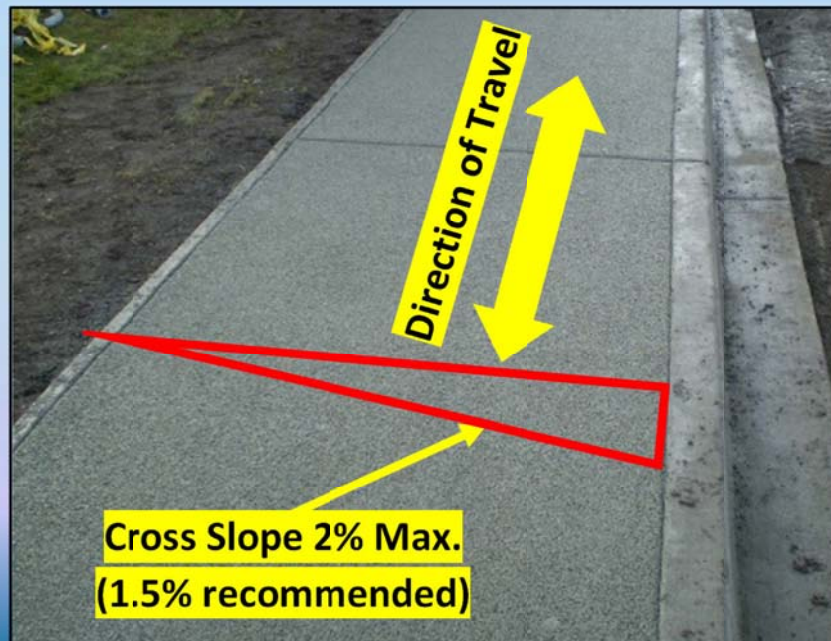
- Not to exceed the general grade established for adjacent highway



## PEDESTRIAN ACCESS ROUTE

### R302.6 Cross Slope

- 2% (1:50) maximum required in most cases




# PEDESTRIAN ACCESS ROUTE

## R302.6 Cross Slope

- **5% (1:20)** maximum within pedestrian street crossings **without yield or stop control**

Cross slope at street crossings **WITH** stop control. 



 Cross slope at street crossings **WITHOUT** stop control.



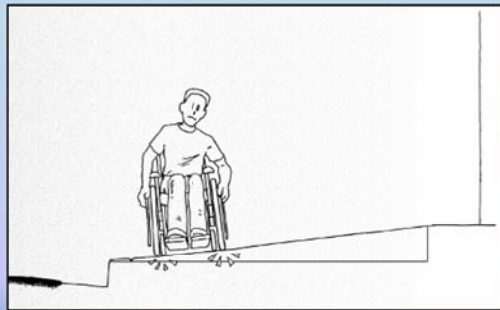
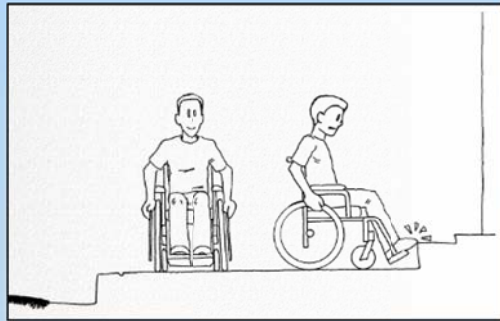
## PEDESTRIAN ACCESS ROUTE

### R302.6 Cross Slope

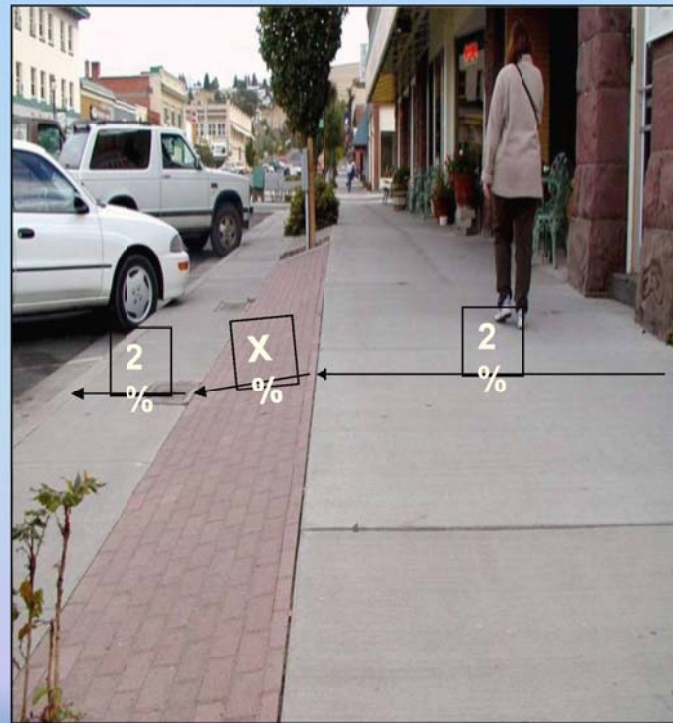
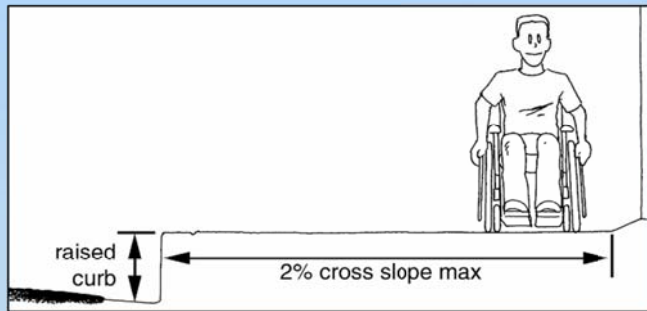
- Equal highway grade within midblock pedestrian street crossings



# CROSS SLOPE - ENTRANCES



# CROSS SLOPE – ENTRANCES



## CROSS SLOPE - DRIVEWAYS





## CROSS SLOPE - DRIVEWAYS



## PEDESTRIAN ACCESS ROUTE

### R302.7 Surfaces

- Firm, Stable, Slip Resistant
- Surface Discontinuities > 0.5" require ramp
- Surface Discontinuities > 0.25" require bevel
- Horizontal openings < 0.5" and perpendicular to direction of travel
- Utility Cover, Vault Frames, Gratings preferred outside PAR
- Flangeway gaps (3" for freight; 2.5" for non-freight)

## SURFACES - GOOD

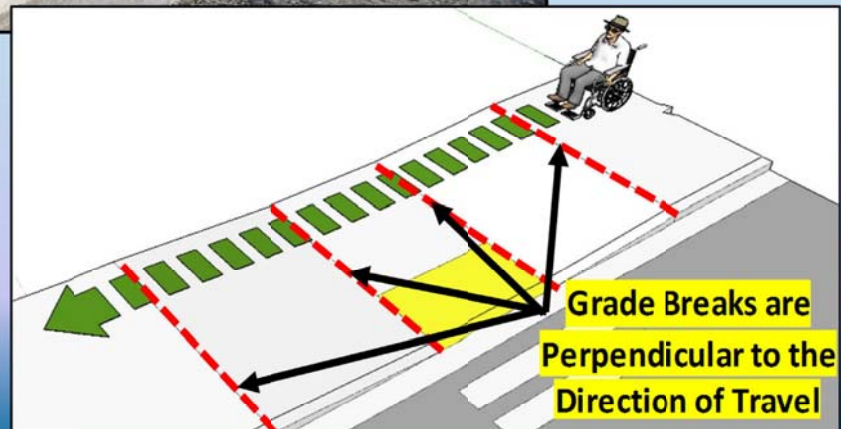
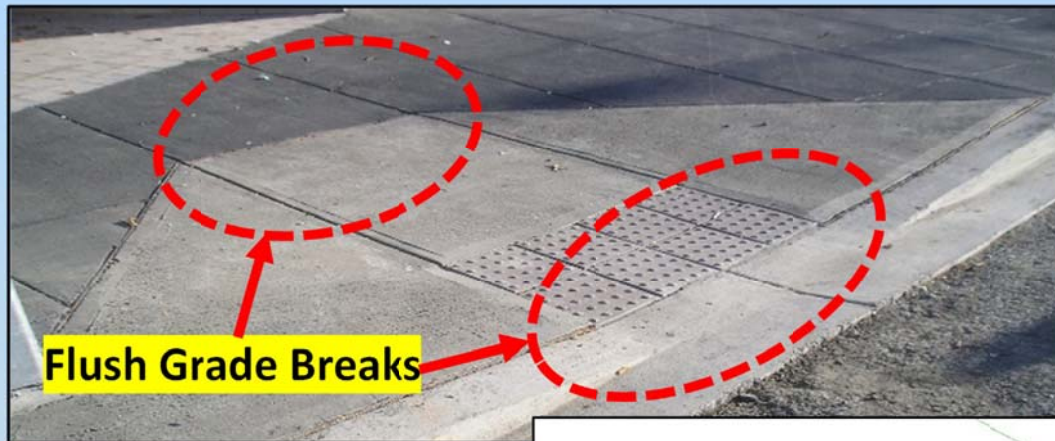


## SURFACES – NOT IDEAL





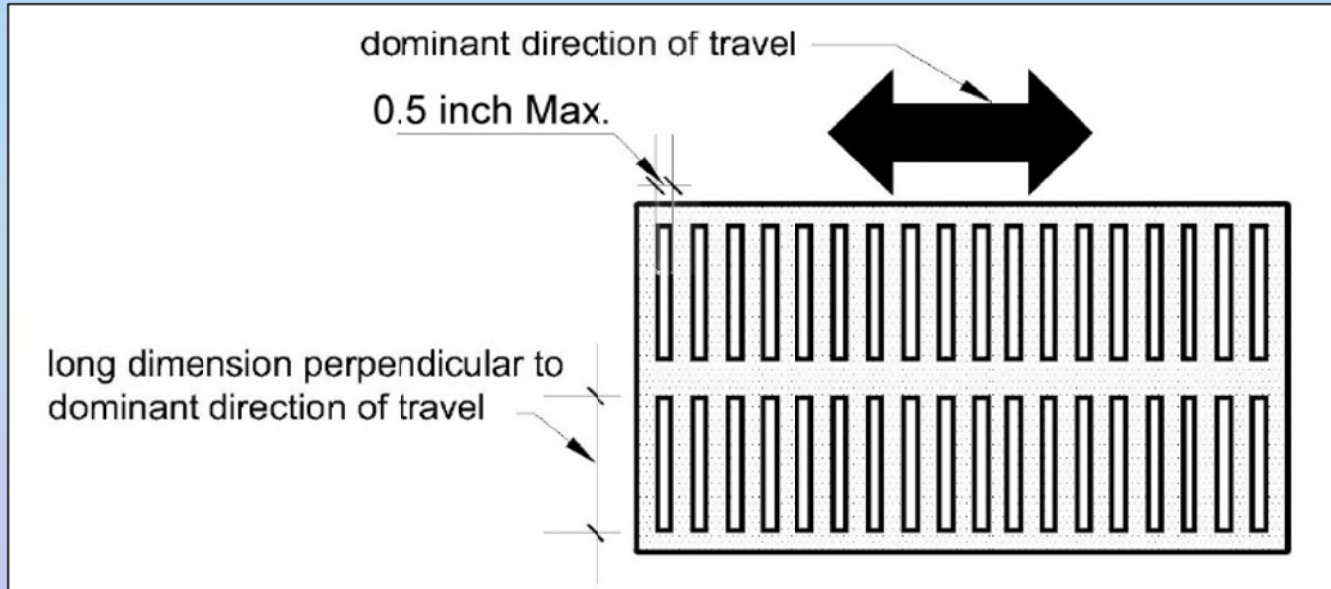
## SURFACES - GRADE BREAKS



## FIGURE R307.7.2 VERTICAL SURFACE DISCONTINUITIES



## FIGURE R307.7.3 HORIZONTAL OPENINGS





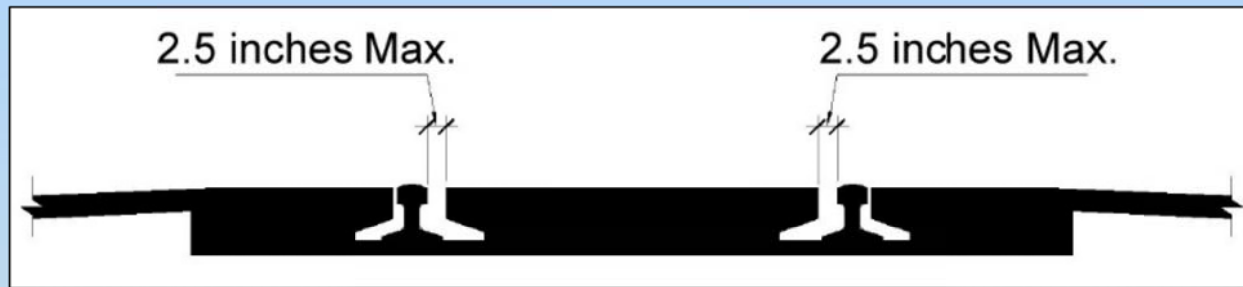
## HORIZONTAL OPENINGS



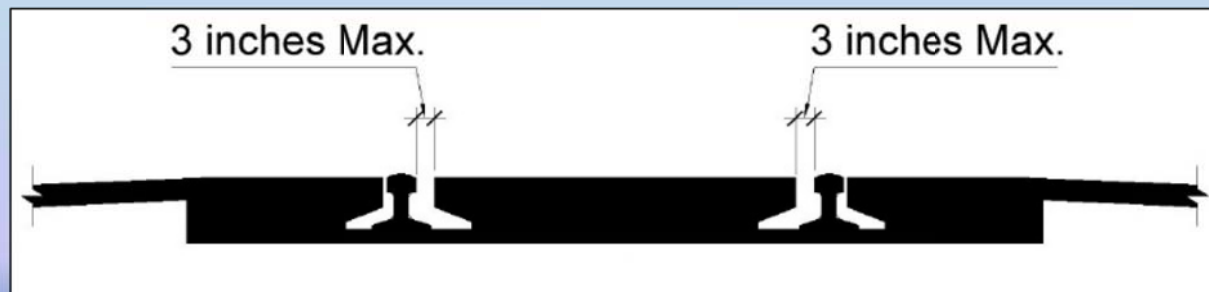
# HORIZONTAL OPENINGS



## FIGURE R307.7.4 FLANGEWAY GAPS



Non-Freight Train Track



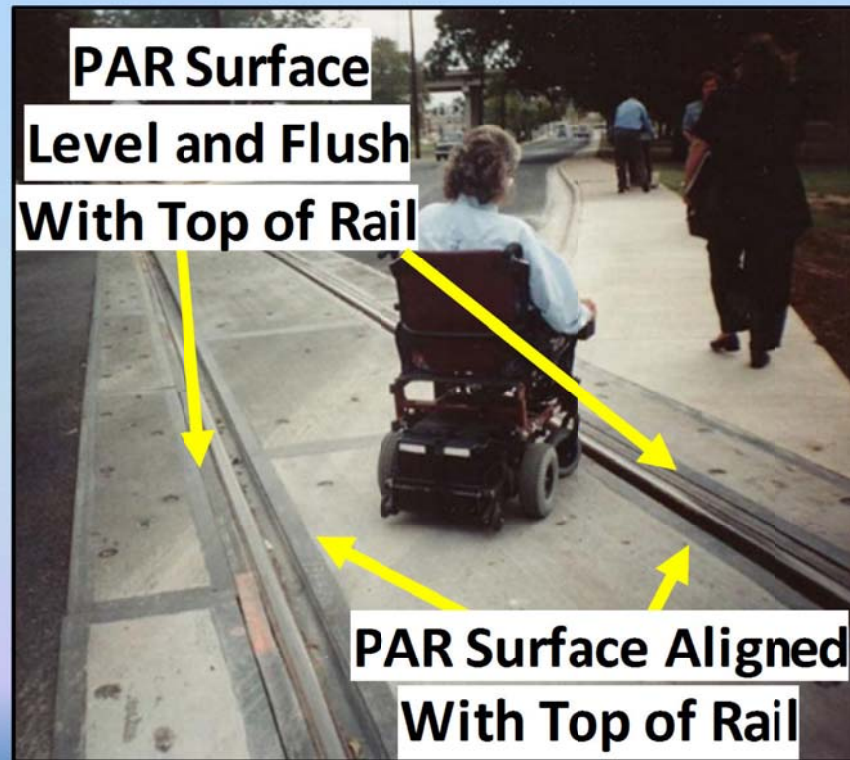
Freight Train Track

# RAILROAD CROSSING





## RAILROAD CROSSING



## PAR CHECKLIST

- ♿ 4ft minimum continuous width
- ♿ 2% (1:50) maximum cross slope
- ♿ No protruding objects within sidewalk
- ♿ Clear floor space at entrances, pedestrian pushbuttons, and other pedestrian features (drinking fountains, telephones, ATMs...)
- ♿ Minimize level changes





