

Bus Stop Accessibility: A Guide for Virginia Transit Systems and Public Entities for Complying with the Americans with Disabilities Act of 1990

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The Americans with Disabilities Act of 1990 mandates the elimination of discrimination against persons with disabilities. Compliance with the act requires covered entities to provide transportation services, vehicles, and facilities that are accessible. The compliance activities required on the part of public entities with respect to bus stops and walkways and pathways leading to bus stops are discussed. The Virginia Department of Transportation standards for curb ramps (as recently revised) are discussed. The following technical materials for use in evaluating bus stop accessibility are provided: new bus stop accessibility checklist; existing bus stop accessibility checklist; and accessible site plan for bus stop, pad, and shelter.

The Americans with Disabilities Act (ADA) of 1990 (Public Law 101-336) provides a comprehensive mandate for the elimination of discrimination against persons with disabilities. Accessible public transportation services are a major focus of the regulation. Regulations issued by the U.S. Department of Transportation (USDOT) on September 6, 1991 (49 CFR Part 37), provide that no covered entity shall discriminate against a person with disability in connection with the provision of transportation services. Covered entities include public entities, private entities that provide specified public transportation, and private entities that are not primarily engaged in the business of transporting people but that operate transportation services.

Compliance with the nondiscrimination requirements of the ADA and the regulations requires covered entities to provide for accessible transportation services, vehicles, and facilities. The regulations define the requirements and standards for providing accessible services (49 CFR Part 37), accessible vehicles (49 CFR Part 38), and accessible facilities (49 CFR Part 37, Appendix A). In addition, regulations issued by the U.S. Department of Justice, Office of the Attorney General, apply to places of public accommodation (28 CFR Part 35).

Transportation facilities are defined as all or any portion of buildings, structures, sites, complexes, equipment, roads, walks, passageways, parking lots, or other real or personal property, including the site where the building, property, structure, or equipment is located (49 CFR Part 37.3). Bus

stops, bus stop pads, bus stop shelters, and the paths leading to these structures are all covered by the regulation.

PURPOSE

This paper addresses compliance activities required on the part of public entities with respect to bus stops and walkways/pathways leading to bus stops. First, regulatory background is provided for those who may not be familiar with ADA transit facility accessibility guidelines; some of the key issues in bus stop accessibility are also discussed. Second, the Virginia Department of Transportation (VDOT) standards for curb ramps (as recently revised) are discussed. Finally, this paper provides the following technical materials for use in evaluating bus stop accessibility: new bus stop accessibility checklist; existing bus stop accessibility checklist; and accessible site plan for bus stop, pad, and shelter.

REQUIREMENTS COVERING EXISTING AND NEW BUS STOP CONSTRUCTION

49 CFR Part 37, Subpart A—General

There are two key elements of this section. First, USDOT's regulations (49 CFR 37.9, "Standards for accessible transportation facilities") indicate that transportation facilities shall be considered accessible if they meet the requirements of the ADA Accessibility Guidelines, hereafter referred to as ADAAG (49 CFR Part 37, Appendix A).

Second, this section states that public entities shall ensure that the construction of new bus stop pads is in compliance with section 10.2.1(1) of ADAAG, to the extent that construction specifications are within their control.

The USDOT regulations [49 CFR Part 37.9(c)] also state that public entities must exert control over the construction of bus stop pads if they have the ability to do so. The preamble to the regulation recognizes that, in most cases, bus stop design may be out of the control of a transit provider. Where the transit agency does have control, however, it must use its power to ensure that the standards are met.

49 CFR Part 37, Subpart C—Transportation Facilities

This section governs the construction or alteration of transportation facilities. "New facilities," defined as those facilities where the notice to proceed on construction was provided after January 25, 1992, must be constructed so that the facility is readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs.

49 CFR Part 37, Appendix A—ADAAG for Buildings and Facilities

Section 10 of ADAAG addresses transportation facilities. Section 10.1 requires that bus stops and bus stop pads comply with Sections 4.1 through 4.35 of the guidelines, which relate to the scope and technical elements of accessibility features and spaces.

Section 10.2.1(1) states that where new bus stop pads are constructed at bus stops, bays, or other areas where a lift or ramp is to be deployed, they must

- Have a firm surface;
- Have a minimum clear length of 96 in. (measured from the curb or vehicle roadway edge) and a minimum clear width of 60 in. (measured parallel to the vehicle roadway) to the maximum extent allowed by legal or site constraints;
- Be connected to streets, sidewalks, or pedestrian paths by an accessible route (as defined in the guidelines); and
- Have a slope, to the extent practical, the same as the parallel roadway.

This section does not require that "pads" be built at bus stops, but it does specify the standards that a bus stop pad must meet if constructed by the covered public entity.

Illustrative ADAAG Compliant Bus Stop Pad and Shelter

Figure 1 shows the ADAAG requirements (minimums) for an accessible bus stop location with a bus stop shelter. In the drawing, a bus stop pad 60 in. wide (measured parallel to the roadway) and 96 in. long (measured from the curb edge) has been constructed. A firm and stable surface (concrete in Figure 1) has been provided. The pad is connected to an accessible route with 36 in., minimum, width.

A bus stop shelter has been placed at the rear of the pad, thereby allowing a wheelchair user to enter from the accessible route. The interior of the bus stop shelter must provide for a minimum clear floor area 30 in. wide by 48 in. deep entirely within the perimeter of the shelter to allow access to the wheelchair or mobility aid user. Entrance to the shelter interior provides for a minimum clear doorway of 32 in. The threshold at the shelter access does not exceed 3/4 in. in height, beveled with a slope no greater than 1:2.

28 CFR Part 35, Subpart D—Program Accessibility

This regulation, promulgated by the U.S. Department of Justice, Office of the Attorney General, is entitled "Nondiscrimination on the Basis of Disability in State and Local Government Services." The rule implements the provisions of Subtitle A of Title II of the ADA, which prohibits discrimination on the basis of disability by public entities. The rule requires that public entities (including local governments) complete a self-evaluation of current services policies and practices, and the effects thereof, that do not or may not meet the requirements of the rule. To the extent that modification of any such services, policies, and practices is required, the public entity must proceed to make the necessary modifications. Subpart B of the rule specifies the general prohibition against discrimination. Subpart D prescribes accessibility re-

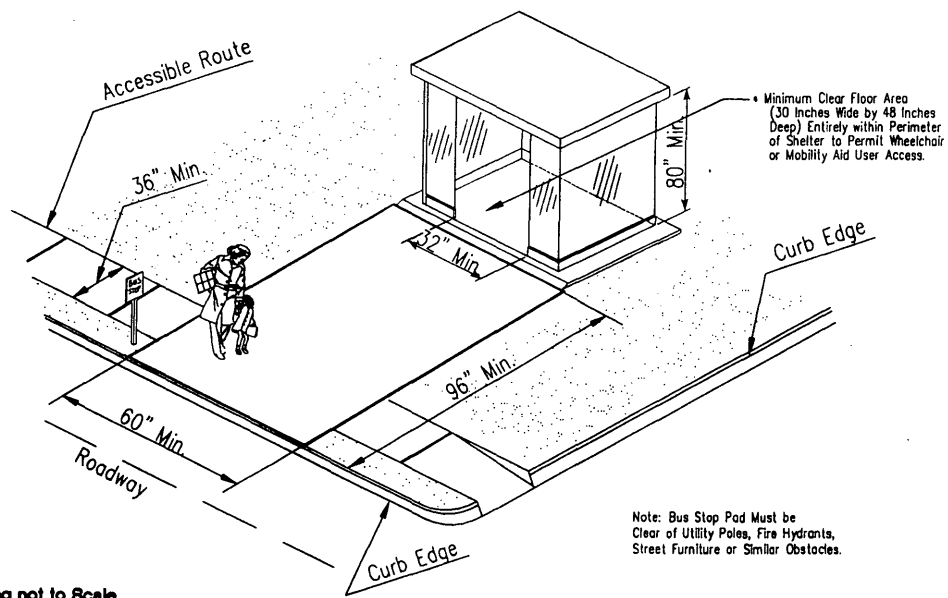


FIGURE 1 Accessible bus stop pad and shelter—minimum ADAAG dimensions.

quirements in existing facilities and the circumstances under which alteration of facilities shall occur. This part requires public entities with 50 or more employees to develop a transition plan if structural changes to facilities will be undertaken to achieve program accessibility. The rule's deadline for completion of structural changes is January 26, 1995, but "in any event as expeditiously as possible."

For public entities that have responsibility or authority over streets, roads, or walkways, the transition plan must include a schedule for providing curb ramps or other sloped areas where pedestrian pathways cross curbs, giving priority to walkways serving entities covered by the act (which include state and local government offices and facilities, transportation, places of public accommodation, and employers), and then walkways serving other areas. Under the Department of Justice regulations, public entities have the option to comply with either the Uniform Federal Accessibility Standards (UFAS) (28 CFR Part 36, Appendix A) or the ADAAG. The regulations differ to some extent in their requirements for accessible routes and curb ramp construction. The sections below provide more details on the ADAAG and UFAS requirements.

PUBLIC ENTITIES, TRANSIT PROVIDERS, AND THE ISSUE OF CONTROL

Most transit agencies do not have legal control over the right-of-way where bus stops are typically located. Under these circumstances, ADA compliance issues would not be a factor for the agency. However, most transit systems in Virginia are owned by a county, city, town, or transit district whose membership consists of local governments. As noted in the summary of applicable Department of Justice regulations, all local governments are required to develop a transition plan for those bus stop boarding areas that are under their control.

Accessible Routes

Regulatory Requirements

Compliance with the bus stop and bus stop pad requirements are not deemed burdensome. Of some concern to public entity transit providers are the provisions for accessible pathways and routes to the bus stop.

The Department of Justice regulations require that public entities ". . . shall operate each service, program, or activity so that the service, program or activity, when viewed in its entirety is readily accessible to and usable by individuals with disabilities."

The regulation does not necessarily require the entity to make all of its facilities accessible to and usable by individuals with disabilities. The regulations allow entities alternative methods for providing accessibility, including delivery of services at alternative sites, reassignment of services to accessible areas, and other methods.

As a practical matter for public transit operators, the fact that the regulations do not require the installation of sidewalks but do require the construction of curb ramps at pedestrian crosswalks presents both an opportunity and some difficulties. First, the opportunity offered to the transit operator is to work with the locality to identify areas along the transit system's routes that are of high priority for construction of accessible

routes including sidewalks and curb ramps that access public services. A second opportunity exists to encourage "transit friendly" pedestrian access in developing areas by sharing these guidelines with planners and developers.

The difficulty comes in understanding the technical differences between UFAS (currently in use by many localities and state departments of transportation) and ADAAG and how they affect transportation facilities. The sections below present basic information on the differences between these standards and explain the specific legislative authority over curb ramps delegated to VDOT.

The main differences between ADAAG and UFAS with respect to curb ramps are as follows:

- ADAAG specifies that a detectable warning extending the full width and depth of the ramp be installed; UFAS has no similar requirement.
- ADAAG requires that these detectable warnings consist of raised "truncated domes."
- ADAAG requires that a color contrasting surface be provided on curb ramps, either light-on-dark or dark-on-light.

VDOT Standards for Curb Ramps and Sidewalks

The Code of Virginia (Section 15.1-381) requires that all cities, counties, and towns with streets with curbs construct curb ramps at intersections with pedestrian crosswalks. The law requires that such curb ramps comply with VDOT *Road and Bridge Standards*. Local option, variance, or waiver of these standards is prohibited. Local public works officials should be alerted that the VDOT curb ramp standards were amended in March 1992. The most significant amendment to the standards for curb ramps (Standard CG-12) is the requirement for exposed aggregate finish for detection by visually impaired persons. Instructions are included in VDOT's *Road and Bridge Standards*, Instructional and Informational Memorandum LD-92 (D) 55.3.

VDOT has adopted UFAS as the standard for construction of its facilities. With the Standard CG-12 amendment, the department effectively goes beyond the federal UFAS standard but not to the point of specifically requiring a curb ramp detectable warning surface consisting of "raised truncated domes." VDOT has submitted its CG-12 standard to FHWA under the "equivalent facilitation" process and has received approval. The department is conducting a study through its Research Council to evaluate various methods, including raised dome tiles and concrete stamping machines, for use as detectable warning surfaces for curb ramps.

Design Element Considerations

For accessible routes to bus stops, it is necessary to consider factors and detailed requirements for the following:

- Minimizing travel distance where a separate accessible route is being provided or considered;
- Providing a firm, nonskid surface in wet and dry conditions;
- Avoiding small changes in levels and discontinuities that can cause stumbles or impede a wheelchair or other mobility aid;

Date: _____ Site/Stop Inspector: _____

Location of Stop: On (Street): _____ At (Street): _____

Directions: East West North South Location: Near Far Middle

SITING (ADAAG 10.2.2)

The site chosen must allow for compliance with the specifications. To the maximum extent practicable, sit must allow for safe deployment of the wheelchair lift.

BOARDING AREA

Surface of bus stop pad must have a firm, stable, and slip-resistant surface. Asphalt or concrete are the preferred materials.

The boarding area must have, to the maximum extent practicable or allowed by legal or site constraints, a minimum clear length of 96 inches (measured from the curb edge or vehicle roadway).

The boarding area must have, to the maximum extent practicable or allowed by legal or site constraints, a minimum clear width of 60 inches (measured parallel from the curb edge or vehicle roadway).

Bus Stop Pad Dimensions

The diagram shows a perspective view of a rectangular bus stop pad. The pad is situated on a sidewalk that is adjacent to a road. Two 'Curb Edge' labels point to the edges of the sidewalk. Dimension lines indicate a minimum width of 60 inches and a minimum length of 96 inches for the boarding area.

The boarding area must be connected to the public way (streets, sidewalks, pedestrian paths) by an "accessible route" (See Accessible Route).

To the extent practicable, the slope of the pad parallel to the roadway must be the same as that of the roadway.

To allow for drainage, the slope of the pad perpendicular to the roadway can be a maximum of 2% (1:50).

Note: Bus stop pads are not required; however, if a pad is constructed it must meet accessibility standards for (1) a firm and stable surface, (2) a minimum clear length (96") and minimum clear width (60"), (3) connection to streets, sidewalks or pedestrian paths by an accessible route; and (4) meet maximum slope requirements (1:50 or 2%).

FIGURE 2 New bus stop accessibility checklist (new construction). (continued on next page)

ACCESSIBLE ROUTE TO BUS STOP (ADAAG 4.3)

- The accessible route must have a clear width of at least 36 inches.
- If an accessible route is less than 60 inches clear width (the minimum width needed to allow passage of two wheelchairs), then passing spaces should be constructed at intervals of every 200 feet. A T-intersection of two corridors or walks is an acceptable passing space.
- The running slope of the route can be no greater than 1:20 (rise/run). A pathway with a slope greater than 1:20 shall be considered a ramp, and shall be subject to additional requirements (see below).
- Changes in level along the route cannot exceed 1/2 inch, unless a ramp or lift is provided.
- Changes in level along an accessible route between 1/4 inch and 1/2 inch shall be beveled with a slope no greater than 1:2.
- The surface of the route must be stable, firm, slip-resistant, and designed to prevent the collection of water.
- If gratings are part of the design, elongated spacing must not be greater than 1/2 inch with the long dimension perpendicular to the travel path.
- If accessible route crosses a curb, a curb ramp shall be provided.
- If curb ramps (curb cuts) are part of the route, they must have a minimum width of 36 inches (excluding flared sides).
- If a curb ramp is located where other pedestrians might generate cross traffic and where it is not protected by hand or guard rails, it must have flared sides. The slope of the flared sides can be no more than 1:10.
- Curb ramps must have a detectable warning consisting of raised truncated domes 0.9 inches in diameter and 0.2 inches high at a spacing of 2.35 inches center-to-center. The detectable warning must run the full width and depth of the ramp and must contrast visually with adjoining surfaces, either light-on-dark or dark-on-light. The contrasting material must be an integral part of the walking surface.
- The slope of the curb ramp cannot exceed 1:12.
- The transition from the curb ramp to gutters, streets, or walks must be flush and free of abrupt changes.
- Curbs ramps that are built-up cannot project into vehicular traffic lanes.
- If an accessible path to a bus stop crosses a roadway with a raised island, the island shall be cut through level with the street or have curb ramps at both sides and a level area at least 48 inches long between the curb ramps in the part of island intersected by the crossing.

FIGURE 2 (continued)

SIGNAGE (ADAAG 4.30.2, 4.30.3, and 4.30.5)

- If signs are suspended or projected overhead, they must have a minimum clear headroom of 80 inches or a warning barrier.
- Letters and numbers must have a width to height ratio between 3:5 and 1:1 and a stroke-width-to-height ratio of between 1:5 and 1:10.
- Characters and numbers are to be sized according to the viewing distance from which they are to be read. If signs are suspended or projected overhead, character height must be no less than 3 inches (measured using an uppercase X).
- Sign characters and background must be eggshell, matte, or other non-glare finish.
- Sign characters and symbols must contrast with their background - either light on dark or dark on light.

SHELTERS (ADAAG 10.2.1(2))

- A minimum clear entrance (doorway) of not less than 32 inches must be provided. Dependent upon the design of the shelter, the entrance could be construed to be a part of the "path of travel" and if so, must be a minimum of 36 inches.
- A minimum clear floor area measuring 30 inches wide by 48 inches long (deep), completely within the perimeter of the shelter, must be provided.
- A wheelchair or other mobility aid user must be able to enter the shelter from the public way and reach the 30 inch by 48 inch clear floor area.
- The shelter must be connected to the boarding area by an accessible route (see standards above).

FIGURE 2 (continued)

- Selecting a surface material that will meet these criteria;
- Considering long-term affects such as those due to landscaping and tree growth;
- Avoiding placement or carefully considering the effect of any obstacles such as street furniture or gratings on accessible use (maximum signaling size and orientation are stipulated in the regulations);
- Providing passing areas at appropriate intervals (not more than 200 ft) if continuous passage of wheelchairs in either direction (60-in. minimum width) is not possible; and
- Minimizing all gradients wherever possible.

Other factors are as follows:

- Are there at-grade crossings of rail tracks? These are designated as hazardous areas under the regulations and are

required to have 36 in. of detectable warning surfaces on either side within the path of travel.

- Sidewalks that are not differentiated from roadways by a curb can be considered hazardous intersections.
- Are bus stop areas provided? Can they meet (where practical) the clear area and other requirements? Do they have to serve buses with both front and rear door lifts?

SUMMARY

ADA requirements related to accessible bus stops will not provide meaningful access to transit services by persons with disabilities if the pathways to these bus stops are not similarly accessible. The preceding discussion of the issues of control and accessible pathway design suggests that the transit provider will need to work cooperatively with both state department of transportation officials and local public works

Date: _____	Stop Inspector: _____
Location of Stop: On (Street): _____	At (Street): _____

Directions: East West North South	Location: Near Far Middle
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1. ACCESSIBLE ROUTE

- a. Existing Sidewalk: _____ Yes _____ No
- Existing Trail: _____ Yes _____ No
- Both Directions from Stop: _____ Yes _____ No

- b. If there is no sidewalk, what is the surface of the pathway?

_____ grass:	_____ hard surface (firmly packed)	or	_____ soft surface
_____ dirt:	_____ hard surface (firmly packed)	or	_____ soft surface
_____ gravel:	_____ firmly packed surface	or	_____ loose surface

- c. Existing 36" clear width of path: _____ Yes _____ No

- d. Path width: _____ inches
- Is a 60" pathway located within 200'? _____ Yes _____ No

- e. Are there any changes in level? _____ Yes _____ No
- Slope: _____ Level _____ Steep _____ Very Steep

- f. Any obstacles or barriers in pathway? _____ Yes _____ No
- If yes, explain: _____
- _____

2. CURB CUTS (Ramps)

- a. Location of closest curb cut: _____ feet from bus stop.
- b. Curb cut located in both directions from stop? _____ Yes _____ No
- c. Curb and gutter: _____ Yes _____ No
- d. 36" wide curb cut (exclusive of flared sides): _____ Yes _____ No

FIGURE 3 Existing bus stop accessibility review form. (continued on next page)

- e. Flared sides on curb cut? Yes No
- f. Ramp Slope: Adequate Slope Slope Too Steep

3. SURFACE OF STOP LOCATION

- concrete: pavement
 grass: hard surface (firmly packed) or soft surface
 dirt: hard surface (firmly packed) or soft surface
 gravel: firmly packed surface or loose surface

4. LOCATION OF STOP

- a. Minimum Clear Length of 96": Yes No
- b. Minimum Clear Width of 60": Yes No
- c. Connected to an accessible pathway: Yes No
- d. Any obstacles that would prevent the proper operation of a lift? Yes No

If yes, what? _____

5. SHELTER/BENCH

- a. Bench: Yes No
- b. Shelter: Yes No
- c. Windscreen on shelter: Yes No
- d. Clear floor within shelter; 30" by 48": Yes No
- e. Able to enter the shelter via a public path: Yes No
- f. Is the path an accessible route? Yes No
- f. Shelter entrance clear width 32" minimum? Yes No

6. SIGNAGE

- a. Sign located at stop: Yes No
- b. Sign in accessible format: Yes No

7. OTHER OBSTACLES OR BARRIERS AT STOP

8. OVERALL ACCESSIBILITY ASSESSMENT (Field Observation)

- Fully accessible
 Partially accessible
 Not accessible

FIGURE 3 (continued)

officials to ensure proper coordination and compliance with the facility requirements associated with the ADA.

USE OF ADA BUS STOP ACCESSIBILITY CHECKLISTS

In Figures 2 and 3, a bus stop accessibility checklist and an existing bus stop accessibility review form are provided for

use by local officials in assessing the level of compliance of bus stops within the transit system.

The checklists for new and existing bus stops are based on the ADAAG guidelines. This should be considered when working with a particular locality, because there are differences between ADAAG and UFAS guidelines.

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