



U.S. Department
of Transportation
**Federal Railroad
Administration**

AMERICANS WITH DISABILITIES ACT OF 1990 (ADA) INTERCITY AND HIGH-SPEED PASSENGER RAIL PLATFORM CONSTRUCTION GUIDANCE AND LESSONS LEARNED

FINAL

Federal Railroad Administration (FRA)

U.S. Department of Transportation

Document Date: April 11, 2022

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U.S. Department
of Transportation
**Federal Railroad
Administration**

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1.0 INTRODUCTION

1.1 Background and Purpose

The Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973 (Rehab Act) prohibit discrimination against persons with disabilities. The purpose of this document is to provide guidance and best practices for platform design and construction in compliance with the ADA, Rehab Act, and supporting regulations.¹ This guidance’s primary audience is the National Passenger Railroad Corporation (Amtrak), but the guidance will also be useful to public or private high-speed-rail, passenger-rail, and commuter-rail operators (hereafter “rail providers”).

In addition to discussing the ADA accessibility requirements in relevant statutes and regulations, this document also recommends certain best practices that go beyond the text of those authorities. This best practice guidance is not legally binding and will not be relied on by the U.S. Department of Transportation (USDOT) or its modal administrations as a separate basis for affirmative enforcement action or other administrative penalty. Conformity with such guidance is voluntary, and nonconformity will not affect rights and obligations under existing statutes and regulations.

USDOT’s regulation 49 C.F.R. § 37.49 describes who bears the legal and financial responsibility for making alterations to stations to make them accessible. Private entities like freight railroads are not responsible for making access improvements at passenger stations. Instead, public entities like Amtrak, commuter authorities, and State or local governments are responsible—usually in proportion to their ownership and use of a station facility.²

Generally, the Federal Railroad Administration (FRA) has ADA enforcement authority over intercity passenger rail (e.g., Amtrak) and high-speed rail (e.g., California High Speed Rail). The Federal Transit Administration (FTA) has ADA enforcement authority over commuter rail (e.g., Long Island Railroad, Chicago Metra, and California Metrolink). Both FRA and FTA are modal administrations within USDOT. Questions about this guidance may be directed to the Office of Civil Rights or grants program office within the applicable agency. Questions about mixed-use intercity and commuter-rail stations, such as Penn Station, New York, may be directed to either agency.

1.2 Goal for this Guidance

FRA’s goal for this guidance is, in one document, to explain minimum ADA accessibility requirements and to provide clarity on best practices for platform construction.

¹ Unless where noted, the acronym “ADA” is used generically throughout to include both laws and their implementing regulations.

² 49 C.F.R. § 37.49.

This guidance includes:

- Requirements from existing statutes and regulations, such as 42 U.S.C. § 12162(e), 49 C.F.R. § 37.41, and the USDOT’s *ADA Standards for Transportation Facilities* (DOT Standards).
- Previously-issued written USDOT guidance, e.g., *ADA and Level Boarding Questions and Answers* providing clarification on USDOT’s September 2011 revisions to 49 C.F.R. Part 37 – Transportation Services for Individuals with Disabilities. Refer to *Appendix B. Relevant Policies and Guidance* for a full list of references.
- Examples and suggested best practices, such as for appropriate platform length, which is based on a station’s characteristics and typical railroad operations.

Per the requirement in 49 C.F.R. § 37.15, the General Counsel of the Department of Transportation has reviewed this document and approved it as consistent with the language and intent of 49 C.F.R. Parts 27, 37, 38, and/or 39, as applicable.

2.0 LEGAL AND REGULATORY REQUIREMENTS

All rail providers are required to comply with ADA and its implementing regulations in 49 C.F.R. Parts 37 and 38 regardless of whether they receive Federal financial assistance. 49 C.F.R. § 37.5(b) states that “an entity shall not, on the basis of disability, deny to any individual with a disability the opportunity to use the entity’s transportation service for the general public, if the individual is capable of using that service.” In addition, when a rail provider receives Federal financial assistance, the recipient’s additional obligation under 49 C.F.R. Part 27 is to provide persons with disabilities “equal opportunity to obtain the same result, to gain the same benefit, or to reach the same level of achievement, in the most integrated setting that is reasonably achievable.”³

2.1 New Facilities: Rail Platform Accessibility Requirements

A rail provider constructing a new passenger rail station must ensure that it is “readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs.”⁴ While the regulations use the general term “station,” platforms are included in the definition of “station” found in 49 C.F.R. § 37.3:

Station means, with respect to intercity and commuter rail transportation, the portion of a property located appurtenant to a right of way on which intercity or commuter rail transportation is operated, where such portion is used by the general public and is related to the provision of such transportation, including passenger platforms, designated waiting areas, restrooms, and, where a public entity providing rail transportation owns the property, concession areas, to the extent that such public entity exercises control over the selection, design, construction, or alteration of the property, but this term does not include flag stops

³ 49 C.F.R. § 27.7(b)(2).

⁴ 49 C.F.R. § 37.41(a).

(i.e., stations which are not regularly scheduled stops but at which trains will stop to board or detrain passengers only on signal or advance notice).

The specific applicable standards for design are contained in 49 C.F.R. § 37.9 (citing 36 C.F.R. Part 1191 and Appendix A to Part 37).

In addition to the general accessibility requirements, when a rail provider is altering a platform or building a new platform, it must ensure that the following performance standard is met:

Individuals with disabilities, including individuals who use wheelchairs, must have access to all accessible cars available to passengers without disabilities in each train using the station.⁵

Generally, level-entry boarding is the required platform configuration since it provides the most efficient and integrated access for all passengers.⁶ But on routes where track passing through the station is shared with existing freight-rail operations or where level-entry boarding is operationally or structurally infeasible, the rail provider may construct a low-level platform and provide access to trains for people with disabilities via mini-high platforms, car-borne or platform-mounted lifts, ramps or bridge plates, or similarly manually deployed devices.⁷ Before altering or constructing any low-level platform, rail providers must submit a plan to FRA (or FTA) describing how service to passengers with disabilities will be provided in an integrated, safe, timely, and reliable manner.⁸

2.2 Alterations to Existing and Historic Public Transportation Facilities

When a rail provider alters an existing passenger-rail station (including its platform[s]) in a way that affects or could affect the usability of all or part of the facility, the rail provider shall ensure that, to the maximum extent feasible, the altered portions of the facility are accessible.⁹

When a rail provider undertakes an alteration that affects or could affect the usability of or access to an area of a station containing a primary function (including boarding platforms), the rail provider shall make the alteration so that, to the maximum extent feasible, the path of travel¹⁰ to the altered area and the bathrooms, telephones, and drinking fountains serving the altered area

⁵ 49 C.F.R. § 37.42(a).

⁶ 49 C.F.R. § 37.42(b).

⁷ 49 C.F.R. § 37.42(c); *see also* DOT Standard 810.5.3, Platform and Vehicle Floor Coordination, available at https://www.access-board.gov/ada/#ada-810_5_3; DOT's *Where the Track Adjacent to A Platform Is Not Shared with Freight, Are There Any Circumstances in which an Approach Other Than Level Boarding Is Allowable?* (Dec. 14, 2011), available at: <https://railroads.dot.gov/elibrary/ada-level-boarding-alternatives>.

⁸ 49 C.F.R. § 37.42(d).

⁹ 49 C.F.R. §§ 37.43(a)(1) and (a)(3).

¹⁰ "Path of travel" is defined as, "a continuous, unobstructed way of pedestrian passage by means of which the altered area may be approached, entered, and exited, and which connects the altered area with an exterior approach (including sidewalks, parking areas, and streets), an entrance to the facility, and other parts of the facility. The term also includes the restrooms, telephones, and drinking fountains serving the altered area. An accessible path of travel may include walks and sidewalks, curb ramps and other interior or exterior pedestrian ramps, clear floor paths through corridors, waiting areas, concourses, and other improved areas, parking access aisles, elevators and lifts, bridges, tunnels, or other passageways between platforms, or a combination of these and other elements." 49 C.F.R. § 37.43(d).

are also made accessible. But alterations to the path of travel, drinking fountains, telephones, and bathrooms are not required if the cost and scope of doing so would be disproportionate.¹¹

If it is infeasible to meet all USDOT ADA Standards, FRA may not require full compliance. However, FRA considers full compliance with USDOT ADA Standards infeasible only in the rare circumstance “where the nature of an existing facility makes it impossible to comply fully with applicable accessibility standards through a planned alteration.”¹² Nonetheless, compliance is still required to the extent feasible on any portion of the facility that can be made accessible. For example, if accessibility for individuals who use wheelchairs would be impossible, but accessibility can be achieved for those who use crutches or who have sight, hearing, or mental impairments, then accessibility for those other persons must be provided.¹³

2.2.1 Clarification on the Difference Between Alterations and Maintenance

USDOT has stated that changes affecting the basic configuration of a platform or the ability of people with disabilities to have access to the platform are alterations. For example, alterations include raising the platform height relative to the top of rail, removing the old surface and/or putting down a new surface, or reconstructing or structurally changing the platform in a way that affects its usability (e.g., to remedy significant degrading of the facility). Adding a ramp or access point or changing the grade of a platform to conform it to ADA requirements would also be alterations.¹⁴

Structurally sound platforms may need maintenance but not replacement or alteration. General maintenance of platforms, such as minor repairs like painting or fixing cracks, would generally not be alterations. The addition of accessibility features that do not affect the basic configuration of or access to the platform (e.g., adding a detectable warning strip along a platform edge, installing a public address system or visual paging system) would also not constitute alterations. In addition, if it is necessary to remove a portion of station platform to perform unrelated maintenance (e.g., replacement of a gas or water main), and replacement of the platform would not be required, FRA would consider these maintenance activities and not alterations.¹⁵

When only maintenance occurs, the requirements in 49 C.F.R. § 37.42 are not triggered and so long as the existing platform is usable by persons with disabilities, the platform need not be reconstructed to a high-level, level-entry boarding or a low-level, 8-inch minimum boarding platform. In addition, at non-key,¹⁶ commuter rail stations, altering the platform would trigger the need for path of travel improvements.¹⁷ All commuter rail key stations and intercity rail

¹¹ 49 C.F.R. § 37.43(a)(2). Alterations made to provide an accessible path of travel to the altered area are disproportionate to the overall alteration when the cost exceeds 20 percent of the cost of the alteration to the primary function area (not including costs of other accessibility modifications). 49 C.F.R. § 37.43(e)(1).

¹² 49 C.F.R. § 37.43(b).

¹³ *Id.*

¹⁴ See 49 C.F.R. § 37.3 (providing “alteration” definition); see also DOT’s *ADA & Level Boarding Q&A - What constitutes an alteration?* (Dec. 14, 2011), available at the following URL: <https://www.fra.dot.gov/eLib/Details/L03692>.

¹⁵ *DOT’s ADA & Level Boarding Q&A - What constitutes an alteration?* (Dec. 14, 2011), available at the following URL: <https://www.fra.dot.gov/eLib/Details/L03692>.

¹⁶ See below Section 2.4 for a discussion of Key Stations.

¹⁷ 49 C.F.R. § 37.43(a)(2); cf. 49 C.F.R. § 37.51(a).

stations are required to be accessible, so their paths of travel are required to be accessible whether or not new platform work is considered an alteration.¹⁸

Per 49 C.F.R. § 37.43(g), “[i]f a public entity performs a series of small alterations to the area served by a single path of travel rather than making the alterations as part of a single undertaking, it shall nonetheless be responsible for providing an accessible path of travel.” Since platforms are part of the path of travel, FRA applies similar logic to platform maintenance activities and uses 15 percent or less of the platform as a rule of thumb when giving guidance on whether maintenance activity rises to the level of an alteration.

Generally, if repair or maintenance activity is made to greater than 15 percent of a platform, FRA is more likely to consider it an alteration. Moreover, a series of small maintenance or repairs cannot be spread over several years to avoid FRA considering the work an alteration.¹⁹ For instance, if 15 percent of the platform is repaired in year one and another 15 percent of the platform length is repaired in year two, FRA may consider this an alteration. Rather than continuing to make small costly repairs, FRA encourages railroads to replace older platforms with new ADA-compliant ones whenever possible.

The following are examples of how grantees have applied this guidance:

EXAMPLE #1: ALTERATIONS TO EXISTING PLATFORM THAT IS NOT ADA-COMPLIANT

A station owner proposed to extend an existing platform that was not ADA-compliant. The owner proposed that only the new platform extension would be ADA-compliant. However, because the project involved constructing or structurally changing the existing platform in a way that affected its usability, this was an alteration and must include ADA compliance for the existing platform and the extension.

EXAMPLE #2: INITIAL MAINTENANCE EFFORTS BECOME AN ALTERATION

A station owner deemed a platform to be in poor condition that required a level of maintenance less than the general alteration threshold of affecting more than 15 percent of the platform. However, during the maintenance work, half the platform face collapsed into the track. This resulted in the need to completely rebuild the platform and the new scope of work was an alteration.

EXAMPLE #3: MAINTENANCE WHEN BRICK PLATFORM SURFACE REMOVED AND RESET

More than 40 feet of brick pavers that made up the platform in Figure 2-1 were removed and reset. The removal and resetting of the brick pavers was considered a maintenance activity because no new construction activity occurred, and no new material was added. This work did not constitute an alteration.

¹⁸ See 49 C.F.R. §§ 37.51(c)(1) (Key commuter rail stations were required to be accessible by July 26, 1994) and 37.55 (Intercity rail stations were required to be accessible by July 26, 2010).

¹⁹ 49 C.F.R. § 37.43(g).



Figure 2-1. At-Top-of-Tie Platform Showing New Brick Pavers That Did Not Constitute an Alteration. Source: USDOT

2.2.2 Alterations to Historic Facilities

As early as possible in the planning process, rail providers should coordinate with FRA (or FTA) when any maintenance activity or alteration may affect an historic property. Section 106 of the National Historic Preservation Act of 1966 requires Federal agencies to consider the effects on historic properties of projects they carry out, assist, fund, permit, license, or approve throughout the country.²⁰ If a Federal or Federally-assisted project has the potential to affect historic properties, a Section 106 review must take place.²¹ The 106 review process has four steps: (1) the FRA (or FTA) Historic Preservation Specialist (Specialist) initiates the 106 process by determining the necessary parties; (2) the Specialist gathers information necessary to determine whether there are historic properties within the area of potential effect; (3) the Specialist determines whether there are adverse effects to the properties identified in Step 2; and (4) the Specialist, along with the consulting parties identified in Step 1, explore alternatives to avoid, minimize, or mitigate adverse effects determined in Step 3.²²

FRA must lead all consultations with the State Historic Preservation Officer, tribes, and the Advisory Council on Historic Preservation.²³ The rail provider should not independently consult with these entities unless FRA specifies otherwise in writing.

To assist with this process, rail providers may be asked to provide FRA with information related to historic properties. This includes properties that might be near or directly affected by the proposed project, listed in the National Register of Historic Places, historic districts, and archaeological sites. Rail providers may also be asked to consider modifications or alternatives to project elements that could avoid, minimize, or mitigate adverse effects to historic properties.²⁴

²⁰ 54 U.S.C. §§ 300101, et seq.; *see also* 36 C.F.R. Part 800.

²¹ 36 C.F.R. §§ 800.4 and 800.5.

²² See <https://www.achp.gov/protecting-historic-properties/Section-106-process/introduction-Section-106>.

²³ 36 C.F.R. § 800.4.

²⁴ 36 C.F.R. § 800.6(a).

Depending upon the project proposed at historic facilities, finding solutions that balance historic preservation and ADA requirements may have time and cost implications. Rail providers should be aware of this for planning purposes and are encouraged to utilize cultural-resource professionals to address these issues throughout their planning process.

2.3 Relationship Between Public and Private Entities in Providing Accessibility

When a station and/or platform are owned by a private entity (e.g., a freight railroad), the public entity rail provider or providers, if the station is used by more than one public entity (e.g., when intercity and commuter rail both stop at a station), are the responsible person(s) for making the station and/or platform accessible.²⁵ The private entity owner is required by 49 C.F.R. § 37.57 to cooperate with the responsible person(s)'s efforts to comply with ADA requirements. Because of the cooperation requirement, a private entity cannot refuse to permit the responsible person(s) to construct an ADA compliant platform.²⁶

2.4 Key Stations: Interchanges Among Intercity and Other Rail Systems

Under 49 C.F.R. § 37.51, unless an exception has been granted by the FTA Administrator, commuter authorities must have made key stations accessible by July 26, 1994. Each commuter authority²⁷ is responsible for determining which stations are to be designated as key stations. Key-station determinations shall be based on the following criteria:

- Stations where passenger boardings exceed average station passenger boardings on the rail system by at least fifteen percent, unless such a station is close to another accessible station.
- Transfer stations on a rail line or between rail lines.
- Major interchange points with other transportation modes, including stations connecting with major parking facilities, bus terminals, intercity or commuter rail stations, passenger vessel terminals, or airports.
- End stations, unless an end station is close to another accessible station.
- Stations serving major activity centers, such as employment or government centers, institutions of higher education, hospitals or other major health care facilities, or other facilities that are major trip generators for individuals with disabilities.²⁸

If a key station has multiple owners and/or multiple users (i.e., commuter and intercity rail service), responsibility for ADA compliance is determined as follows:

- If a station is designated as a key station, the commuter rail provider is responsible for ADA compliance; or

²⁵ 49 C.F.R. § 37.49(c)-(d) (noting that financial responsibility is apportioned by ridership at a station).

²⁶ DOT's *ADA & Level Boarding Q&A - What happens if a private entity objects?* (Dec. 11, 2014) is available at the following URL: <https://www.fra.dot.gov/eLib/Details/L03693>.

²⁷ As defined in 49 C.F.R. § 37.3.

²⁸ 49 C.F.R. § 37.51 (b)(1)-(5).

- If there is a station that functions as an interchange point that is not designated as a key station, the intercity rail provider is responsible for ensuring accessibility.²⁹

If there are additional questions about an individual situation, please contact the funding grantor, FRA, and/or FTA for additional guidance.

3.0 GENERAL PLATFORM REQUIREMENTS AND RECOMMENDATIONS

This section provides guidance on general platform design including ADA and non-ADA requirements and guidelines. The considerations discussed below are the “building blocks” of platform design to provide safe access and boarding for all riders. This section includes guidance and references for slope, detectable warnings, ramps, stairs, exits, handrails, signage, lighting, and shelters.

3.1 General ADA Platform Requirements

General ADA requirements for platforms, such as slope and lighting, consist of accessibility requirements that are standard across all transportation facilities and are largely from the DOT Standards, which were adopted from U.S. Access Board guidelines.³⁰ If the intercity rail provider cannot fulfill these requirements, contact FRA to evaluate feasibility and discuss options/alternatives to provide access to people with disabilities.

3.1.1 Platform Slope

Rail platforms shall not exceed a slope of 1:48 (2.08 percent) in all directions. However, where platforms serve vehicles operating on existing track or track laid in existing roadway, the slope of the platform parallel to the track is permitted to be equal to the slope (grade) of the roadway or existing track.³¹

3.1.2 Tactile Strips/Detectable Warnings

Platform boarding edges not protected by platform screens or guard rails shall have detectable warnings along the full length of the public use area of the platform.³² Detectable warnings shall be 24 inches (610 millimeters) wide running along the edge of the full length of the public use areas of the platform.³³

- **Dome Size:** Detectable warnings shall consist of raised truncated domes with a minimum base diameter of 0.9 inches (23 millimeters) and a maximum of 1.4 inches (36

²⁹ See, generally, 49 C.F.R. § 37.49.

³⁰ See 49 C.F.R. § 37.9 (citing 36 C.F.R. Part 1191); see also U.S. Access Board Americans with Disabilities Act Accessibility Guidelines (ADAAG), ADA Standards for Transportation Facilities, available at: <https://www.access-board.gov/guidelines-and-standards/transportation/facilities/ada-standards-for-transportation-facilities>. USDOT adopted the US Access Board standards as regulations in 2006. See 49 C.F.R. § 37.9(a)-(c).

³¹ DOT Standard 810.5.1.

³² DOT Standard 810.5.2.

³³ DOT Standard 705.2.

millimeters), a top diameter of 50 percent of the base diameter minimum to 65 percent of the base diameter maximum, and a height of 0.2 inches (5.1 millimeters).³⁴

- **Dome Spacing:** Truncated domes in a detectable warning surface shall have a center-to-center spacing of 1.6 inches (41 millimeters) minimum and 2.4 inches (61 millimeters) maximum and a base-to-base spacing of 0.65 inches (17 millimeters) minimum, measured between the most adjacent domes on a square grid.³⁵
- **Contrast:** Detectable warning surfaces shall contrast visually with adjoining walking surfaces—either light on dark or dark on light.³⁶

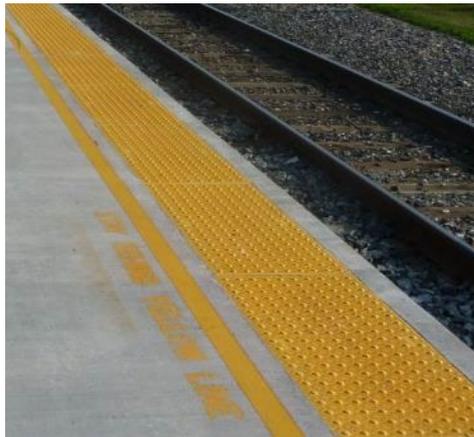


Figure 3-1. Example of Tactile Strips. Source: USDOT

3.1.3 Ramps

Ramps shall comply with all applicable requirements in DOT Standard 405, which covers the layout and design of ramps and landings, including the following:

- With a very few exceptions for existing facilities with limited space, ramps on accessible routes shall have a slope that is not more than 1:12 (8.3 percent).³⁷
- Ramp clear width, including between handrails (when required by DOT Standard 405.8), shall be no less than 36 inches (915 millimeters).³⁸
- Landings must be located at the top and bottom of ramps and must be provided along the length of ramps at intervals to accommodate no more than a 30-inch (760 millimeters) rise for any ramp.³⁹

³⁴ DOT Standard 705.1.1.

³⁵ DOT Standard 705.1.2.

³⁶ DOT Standard 705.1.3.

³⁷ DOT Standard 405.2.

³⁸ DOT Standard 405.5.

³⁹ DOT Standards 405.6, 405.7.

3.1.4 Stairs

Stairways shall comply with the requirements in DOT Standard 504, including the following:

- Steps on a flight of stairs must have uniform tread depths and uniform riser heights.
- Risers shall be 4 inches (100 millimeters) high minimum and 7 inches (180 millimeters) high maximum. Treads shall be 11 inches (280 millimeters) deep minimum.
- Stairways must have handrails complying with DOT Standard 505.

3.1.5 Exits – Platform Egress

FRA recommends, but does not require, that platforms in enclosed stations have emergency egress routes that comply with Chapter 5.5 of National Fire Protection Association (NFPA) 130. Though safe egress routes for all passengers are essential, FRA does not make the specific recommendation that open-air platforms comply with the emergency egress requirements of NFPA 130. Where emergency egress routes are provided, they must be accessible (per applicable DOT Standards) and, where possible, include a route to exit the station.⁴⁰ For example, in the picture below, an emergency egress point has been provided. However, a mobility impaired person would be trapped, and a visually impaired person subject to injury, due to the lack of accessible route from the open landing area to the nearby parking lot. Even if a ramp and accessible route to the parking lot were not feasible, detectable warnings or an additional guardrail with a gate on the open side of the landing would prevent injury caused to a visually impaired person who would not otherwise know about the 9- to 12-inch drop off to the rock surface.



Figure 3-2. Picture Showing A Ramp Leading from the Backside of a Platform to an Emergency Egress Area; The Landing at the Bottom has an Open Side with an Approximately 9- to 12-Inch Drop Off to a Rocky Surface. A parking lot with a truck parked in it is visible in the picture.

Source: USDOT

⁴⁰ 49 C.F.R. Part 37, Appendix A (referring to USDOT modification to DOT Standard 206.3 and noting that “Accessible routes shall coincide with, or be located in the same area as general *circulation paths*.”)

3.1.6 Guardrails and Handrails

FRA recommends that guardrails be located along open-sided walking surfaces, including mezzanines, equipment platforms, stairs, ramps, and landings that are located more than 30 inches (762 millimeters) measured vertically to the floor or grade below at any point within 36 inches (914 millimeters) horizontally to the edge of the open side.⁴¹ FRA recommends that guardrails should be adequate in strength and attachment in accordance with International Building Code (IBC) Sections 1013.1 and 1607.7.

Handrails must be provided on both sides of stairs and ramps.⁴² Handrails used in any location must comply with DOT Standard 505.

3.1.7 Signage and Train Information

3.1.7.1 General

Station signs shall comply with DOT Standard 810.6. Significant sections of Standard 810.6 are detailed where appropriate below.

3.1.7.2 Routes and Destinations

At least one tactile sign identifying the specific station and complying with DOT Standard 703.2 shall be provided on each platform or boarding area. Signs covered by this requirement must, to the maximum extent practicable, be placed in uniform locations within the system.⁴³

3.1.7.3 Station Names

Stations shall have station name identification signs complying with DOT Standard 703.5. Station name signs shall be clearly visible and within the sight lines of standing and sitting passengers from within the railcar on both sides when not obstructed by another vehicle.⁴⁴ FRA recommends that, at a minimum, signs be placed 85 feet apart (i.e., the length of a typical railcar) on both sides of the track, or a minimum of 170 feet apart, alternating from platform and right of way, offset by 85 feet, to ensure that seated and standing passengers can view the sign. FRA further recommends that station identification signs be placed on both ends of the platform along with signs spaced along the length of the platform (depending on the site-specific platform length).

3.1.7.4 Public Address Systems/Passenger Information Display Systems

Where public address systems are provided to convey information to the public⁴⁵ on the platform, a means of conveying the same or equivalent information to persons with hearing loss

⁴¹ See International Building Code (IBC) Section 1013 Guards.

⁴² DOT Standard 505.2.

⁴³ DOT Standard 810.6.2.

⁴⁴ DOT Standard 810.6.3.

⁴⁵ Beneficiaries of Federal financial assistance are required to take reasonable steps to make their programs and services accessible to individuals with limited English proficiency. USDOT guidance on complying with this requirement is available at: <https://www.transportation.gov/civil-rights/civil-rights-awareness-enforcement/dots-lep-guidance>.

or who are deaf shall be provided in a visual format.⁴⁶ DOT Standard 703.5 provides additional requirements for visual characters (e.g., contrast, proportions, height). Additionally, where visual only messaging signs exist, comparable audible information shall be provided.⁴⁷

3.1.7.5 Clocks

Where clocks are provided at a station for use by the public, the clock face shall be uncluttered so that its elements are clearly visible. Hands, numerals, and digits shall contrast with the background—either light-on-dark or dark-on-light. Where clocks are mounted overhead, numerals and digits shall comply with DOT Standard 703.5.⁴⁸ FRA recommends that clocks be placed in uniform locations throughout the facility and system to the maximum extent practicable.

3.2 General Platform Design Recommendations and Preemption

Following State and local building or railroad standards and codes on platform design can help provide better and safer passenger rail services to the public. For example, where they do not conflict with DOT Standards or other applicable Federal laws, rail providers may use State public utility commission standards in the design of platforms to increase safety and cooperation with State and local authorities and the freight railroads. However, Federal law or regulation preempts the State public utility commission standard if the State standard makes it impossible to comply with the Federal law.⁴⁹

For example, at a low-level platform, a commuter authority had installed a setback mini-high platform to provide access to railcars using the station. The setback mini-high platform created a hazardous and noncompliant⁵⁰ condition because the less than 6-foot gap between the low-level platform and mini-high's edge had the effect of channeling passengers too close to passing railcars. To remedy the condition, FRA (and FTA) required the commuter authority to comply with 49 C.F.R. § 37.42(e)(2) and install bollards to block passengers from entering the narrow passage. The commuter authority proposed to install the bollards set back 3 feet and 3 inches from the platform edge because the State's public utility commission railroad clearance standard required a minimum 3-foot, 3-inch clearance between the mini-high platform and the platform edge to be clear of obstructions, including barriers. FRA took exception to the commuter authority's proposal and asserted Federal preemption of the State law because bollards set back that far from the platform edge would not "prevent the flow of pedestrian traffic through" the narrow area circumventing compliance with 49 C.F.R. § 37.42(e)(2).

⁴⁶ DOT Standard 810.7.

⁴⁷ See, generally, 49 C.F.R. § 37.5.

⁴⁸ DOT Standard 810.8.

⁴⁹ See 42 U.S.C. § 12201(b) ("Nothing in this chapter shall be construed to invalidate or limit the remedies, rights, and procedures of any Federal law or law of any State or political subdivision of any State or jurisdiction that provides greater or equal protection for the rights of individuals with disabilities than are afforded by this chapter.").

⁵⁰ See 49 C.F.R. § 37.42(e)(1).



Figure 3-3. Picture Showing A Mini-High Set Back Platform with ADA-Compliant Edge Protection Preventing the Flow of Pedestrians through the Narrow Area; A Tape Measure Shows Where the Commuter Authority Intended to Start the Protection to Comply with the State’s Public Utility Commission Railroad Clearance Standard. Source: USDOT

3.2.1 Platform Construction Materials

In addition to the requirement to comply with DOT Standard 302.1, which requires floor and ground surfaces to be stable, firm, and slip resistant, FRA recommends that platforms be constructed using non-compressible, non-frangible reinforced concrete.

3.2.2 Lighting and Illumination

Primarily for safety reasons, but also to ensure adequate conveyance of information especially for those with low vision, FRA recommends that lighting along circulation routes be of a type and configuration to provide uniform illumination. Illumination levels in the areas where signage is located should be uniform and minimize glare on signs.⁵¹

3.2.3 Canopies and Shelters

If a canopy or shelter is present on a platform, the structure must be ADA compliant (e.g., include proper path of travel clearances).⁵² FRA also recommends that, where possible, seating be included in shelters or elsewhere along platforms to assist passengers who have trouble standing for long periods. DOT Standards for bench-type seating are found in DOT Standard Section 903. Rail providers should consider the impact of these structures on the ability to view

⁵¹ See DOT Standard *Advisories* 703.5.1, 703.6.2, and 703.7.1.

⁵² See, generally, DOT Standards, Chapter 4: Accessible Routes.

platform signage and hear information systems. Any platform obstructions, including canopies and shelters, must follow the requirements of 49 C.F.R. § 37.42(e) and include a minimum six-foot clearance between the obstruction and the platform edge unless a limited exception applies. For further information on this requirement, see below at Subsection 6.1.

4.0 PLATFORM CONFIGURATION AND ACCESS

Rail providers may use different platform configurations based on the services provided at the station, physical space considerations, ridership trends, and a host of other reasons. FRA highly recommends that rail providers consider ADA requirements and FRA guidance during the initial design of new and altered stations to ensure optimal selection of a platform configuration (among other station features). This will also save time and money and result in better accessibility for all.

4.1 General

There are three basic rail platform configurations—side platforms, island platforms, and service platforms. The rail provider should determine which platform configuration(s) is appropriate for the needs of the station while also achieving ADA compliance. Service platforms also used for passengers must be ADA compliant.

4.1.1 Side Platforms

A side platform consists of either one platform alongside a single track or two separate platforms with tracks running between them. A common station design used for a two-track railway line has two side platforms, one for each direction of travel.

Connectivity between side platforms can be provided by the following means, along with recommended practices:

- Grade-separated crossings between platforms are generally used where there is high-frequency service, high-speed rail, or high-level platforms. The two side platforms are connected by either an overhead pedestrian bridge or underground tunnel. Mandatory minimum clearances for overhead pedestrian bridges and obstructions can be found in many State or host-freight railroad clearance standards. If no State or host-railroad standard exists, rail providers can find recommended railroad building and design practices in the *American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering*.
- At-grade pedestrian crossings are generally used for low-frequency and low-ridership routes, but the justification to use at-grade crossings is site and route specific. Active warning systems (e.g., bells, flashing lights, gates) and other safety measures (e.g., gate skirts, fencing with dedicated access points) should be considered to warn pedestrians of oncoming trains and facilitate safe crossing. These conditions often exist where at-grade road crossings are situated at or near the end of active station platforms. Gates and flangeways must meet the requirements in DOT Standards 404 and 810.10.

- Intertrack fencing should be provided, where feasible, to prevent uncontrolled pedestrian crossing of active tracks. This is commonly used in high-speed or high-density train and population applications.

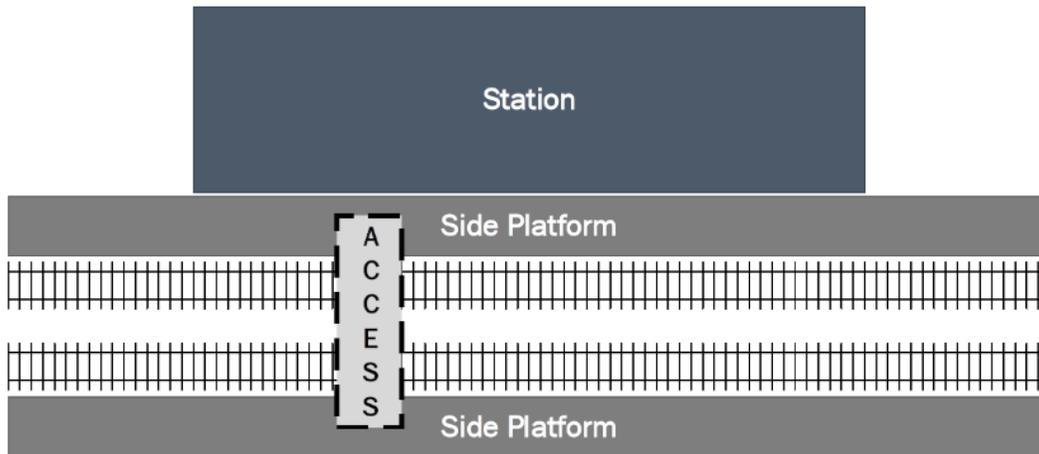


Figure 4-1. Side Platform Example. Source: USDOT

4.1.2 Island Platforms

An island platform consists of a platform located between two tracks passing on either side. Stations with three or more tracks typically have at least one island platform. Access to the platform is usually via an overhead bridge or below-grade tunnel to the center of the platform.

An island platform with vertical access reduces the number of escalators and elevators and/or ramps required for vertical circulation because the escalators and elevators are shared between two tracks rather than requiring separate units for each track.

Access to island platforms can be from the center or one or both ends of the platform. End-loading platforms are typical at major or terminal stations such as Washington Union Station, and Boston South Station. End-loading platforms have the benefit of not having to be as wide as those with vertical access because there are fewer obstructions along the platform requiring a 6-foot clearance.⁵³ However, end loading usually results in additional travel on the platform for riders to spread out along the platform. When considering circulation routes for passengers with disabilities, rail providers must keep DOT Standard 206.3 in mind:

Accessible routes shall coincide with or be located in the same area as general circulation paths. Where circulation paths are interior, required accessible routes shall also be interior. Elements such as ramps, elevators, or other circulation devices, fare vending or other ticketing areas, and fare collection areas shall be placed to minimize the distance which wheelchair users and other persons who cannot negotiate steps may have to travel compared to the general public.

⁵³ See 49 C.F.R. 37.42(e)(1).

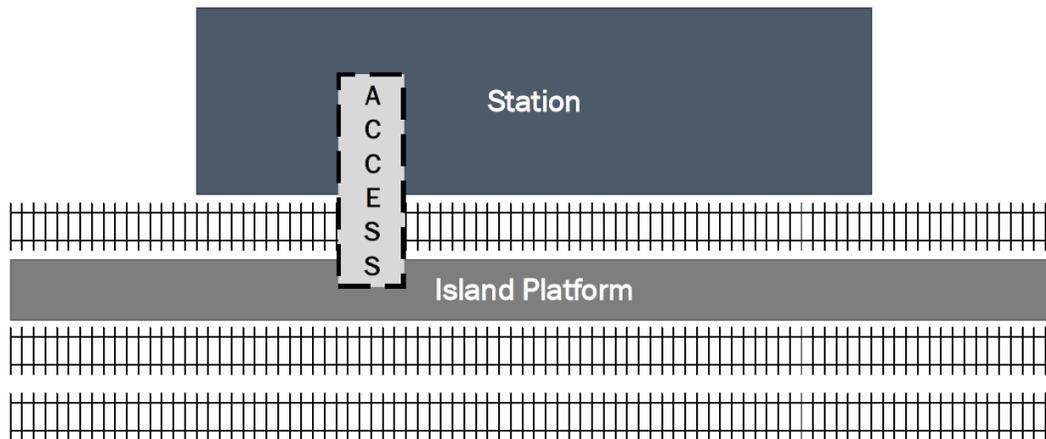


Figure 4-2. Island Platform Example. Source: USDOT

4.1.3 Service and Inspection Platforms

Wherever possible, FRA recommends that rail providers conduct service and inspections in a separate facility not on a platform used to board and alight passengers.

There are a few locations in the United States where it is infeasible to locate the service platform away from passenger areas. At these few locations, crews must conduct daily inspections on revenue-generating, in-service passenger trains and allow for alighting/boarding of passengers on the same platform. In addition, at these locations, unless the track adjacent to the platform is constructed with a service and an inspection pit, the platform would have to be a low-level 8 inches above top of rail (ATR) platform so that the crew can view and inspect the upper and lower parts of the train when stopped at the platform.

If a platform intended to be a service platform is also used for passengers, the platform and circulation path to the platform must be ADA compliant.⁵⁴

4.2 Configuration

The following subsections provide guidance for the safe implementation of common platform configurations for single-track, double-track, and multiple-track railroad stations. They also discuss examples of railroad stations that use each type of configuration to provide passenger service. Refer to Subsections 4.3 and 4.4 of this document for horizontal connectivity between platforms.

4.2.1 Single-Track Railroad Platform Configuration

On a single-track railroad, rail providers can use a platform on either side of the track. The platform can be on the main line or in a siding. Figure 4-3 provides an example of a side-track railroad platform configuration.

⁵⁴ See generally 49 C.F.R. § 37.5(b).



Figure 4-3. Side Single-Track Railroad Platform Configuration. Source: USDOT

4.2.2 Double-Track Railroad Platform Configuration

On a double-track railroad, a rail provider's configuration options include two side platforms or an island platform. Where there is only one side platform, passenger rail traffic can be crossed over to the track served by the existing platform. If there is a center island platform or passenger rail traffic cannot be crossed over to the track served by the existing platform, crossing panels can be utilized to provide access to the station platform. Crossing panel recommendations are presented in Subsection 4.4.2.

With island platforms, the preferred configuration is to build the platform adjacent to tangent track extended a minimum of 150 feet beyond each end of the platform. This configuration would minimize gaps between the train and platform. Figure 4-4 provides an example of a double-track railroad platform configuration.



Figure 4-4. Double-Track Railroad Side Platform Configuration. Source: USDOT

4.2.3 Multiple-Track Railroad Platform Configuration

On a railroad with three or more tracks, a rail provider's options include multiple island platforms or a combination of side and island platforms. Figure 4-5 is an example of three or more track railroad configurations.



Figure 4-5. Multiple-Track Railroad Platform Configuration. Source: USDOT

4.2.4 Turnouts/Crossovers and Platforms

FRA recommends that platforms should not be located adjacent to turnouts or crossovers because either could create a situation where a train is not visible until it reaches the platform causing passengers to become startled and/or not have time to step back from the platform's edge before the train arrives. This would be particularly problematic for deaf passengers who rely on visual cues to detect the presence of incoming trains. FRA also recommends that there should be no signals on the platform or within 50 feet of the end of the platform, due to the potential that activity on the platform could obscure a signal indication for oncoming trains. In addition, at junctions, FRA recommends that platforms should not be located across or through railroad tracks for passenger safety.

4.3 Vertical Access to Platforms

When platforms are not level with the station entrance or outdoor access point, ADA-compliant means of vertical access must be provided to riders per DOT Standard 206.1 (i.e., stairs, ramps, escalators, and/or elevators). Consider maintenance needs, equipment down time, and whether a station is staffed or unstaffed when planning access to platforms with elevators. For example, an unstaffed station may have a unique physical environment with the platform a significant distance above or below the parking lot or access point. In this situation, elevators may be the only practical method of vertical access.

The rail provider would need to make sure that personnel were available onsite during train arrival and departure to ensure elevators are operational and riders can access the platform, or that call boxes (or equivalent means of communication) were in place and functional such that elevator outages could be communicated and passenger assistance provided.

4.3.1 Elevators

Elevators shall comply with DOT Standard 407. Elevators must be well maintained and repaired promptly if out of service. When an accessibility feature is out of order, the rail providers shall take reasonable steps to accommodate individuals with disabilities who would otherwise use the feature.⁵⁵

4.3.2 Escalators

Escalators, except for existing escalators in key stations, shall comply with DOT Standard 810.9.

4.3.3 Ramps/Up and Over

Access to platforms may involve the use of ramps, as well as enclosed overhead pedestrian bridges, known as "up and overs." Up and overs may incorporate elevators, stairs, and/or ramps. Grades and surface design characteristics of the ramps and up and overs shall comply with DOT Standards 403, 405, 407, and 504.

⁵⁵ 49 C.F.R. § 37.161.

4.4 Horizontal Access to Platforms

Horizontal access to platforms must be ADA-compliant, per DOT Standard 206.1. This may also require at-grade track crossings.

4.4.1 Multiple Platforms

When there are multiple platforms at a station, rail providers can provide access between platforms by overhead walkway, tunnel, or at-grade crossings with warning devices (although FRA recommends avoiding grade crossings in stations whenever possible). Rail providers should consider typical train operations at a station when planning for horizontal access. For example, if there is a station with multiple tracks serving passengers and freight, and it is common for stationary freight trains to block potential at-grade crossing areas, the rail provider should implement grade-separated crossings to ensure riders can safely access platforms and the station at all necessary times.⁵⁶

4.4.2 At-Grade Crossings Adjacent to or Within Platforms

Use of at-grade crossings should be limited because they are inherently more dangerous than grade-separated crossings (bridge or tunnel). Pedestrians crossing the tracks at stations located within 2,500 feet of sharp curves may not be able to see an approaching train. If an at-grade crossing is used, typically only at low-speed/low-volume tracks, there should only be a single at-grade crossing to funnel passengers into one safe crossing (Figure 4-6). There should also be train-activated warning systems at stations with at-grade crossings. The preferred location for at-grade pedestrian crossings is adjacent to, and as part of, a controlled roadway grade crossing. Refer to the FRA's April 2012 *Guidance on Pedestrian Crossing Safety at or Near Passenger Stations* for additional guidance when implementing at-grade crossings.⁵⁷

ISLAND PLATFORM CONVERTED TO SIDE PLATFORM

A station owner plans to convert its island platform into a side platform. This will result in trains being able to pass between the station and the platforms. This station will implement an at-grade pedestrian crossing and should plan on implementing a train activated warning system.

⁵⁶ Refer to individual State requirements for mandatory clearances for bridges and obstructions or to the AREMA *Manual for Railway Engineering* for guidelines should no State or railroad-specific requirements exist.

⁵⁷ See FRA Guidance on Pedestrian Crossing Safety at or Near Passenger Stations, April 2012, <https://www.fra.dot.gov/eLib/details/L03533>.



Figure 4-6. Pedestrian At-Grade Crossing. Source: USDOT



Figure 4-7. Roadway At-Grade Crossing. Source: USDOT

Figure 4-7 shows a platform with a pedestrian crossing that is next to a highway crossing located at the north end of the track.



Figure 4-8. Pedestrian At-Grade Crossing with Gate Skirts. Source: USDOT

Figure 4-8 shows a platform with pedestrian crossing with gate skirts to improve pedestrian safety.

FRA recommends that when using prefabricated crossing panels for an at-grade crossing, panels should be level with the top of rail and have a minimum width of 8 feet. It is a best practice to paint a contrasting stripe 6 inches from the edge of the panel to guide pedestrians and prevent stepping off the edge of the panel to the ballast and ties below.

Where it is necessary to cross tracks to reach boarding platforms, the route surface shall be level and flush with the rail top at the outer edge and between the rails, except for a maximum 2.5-inch gap (64 millimeters) on the inner edge of each rail to permit passage of wheel flanges.⁵⁸

FRA recommends that when using crossing panels (track level platform between two tracks with less than 18-foot track centers) for alighting and boarding, the alighting and boarding surface should be at least 32 feet wide (usually four 8-foot panels) and level with top of rail. However, FRA does not recommend the use of crossing panels for regular alighting and boarding. Crossing panels should only be used for alighting and boarding during emergency situations when the permanent platform is not usable by passengers.

DENIED USE OF CROSSING PANEL PLATFORM BOARDING

A grantee proposed using crossing panels to regularly alight and board passengers.

FRA rejected this proposal even though this station has relatively low ridership, because there was heavy train (freight and passenger rail) traffic. Furthermore, the train tracks run parallel to and very close to the roadways. To ensure safe alighting and boarding, the grantee built two side platforms.

⁵⁸ DOT Standard 810.10.



Figure 4-9. Denied Use of Crossing Panel Platform Boarding. Source: USDOT

CENTER OF PLATFORM DIRECTLY AT TOP OF RAIL

A station has two tracks and two platforms, connected by an at-grade crossing in the center of the platforms. At the at-grade crossing, the platforms are at top of rail. Both platforms then ramp up to 8 inches ATR as they move away from the at-grade crossing. It is not feasible to have level-entry boarding when there is an at-grade crossing in the middle of a platform. Therefore, a ramped 8-inch platform was an acceptable alternative at this location.



Figure 4-10. Center of Platform Directly at Top of Rail for At-Grade Crossing. Source: Great American Stations Website

4.5 Sloped Platform Sections

For platforms with sections that slope down to top of rail, the sloped portions of the platform shall not be steeper than 1:20 (5.0 percent). All walking surfaces, including sloped ones, are required to comply with DOT Standard 403.3. In addition, passengers, especially those needing to use a station-based or car-borne lifts, should not board and alight from sloped platform sections.⁵⁹

4.6 Baggage Service

If baggage service is provided at a station/platform, it is recommended that the platform be wide enough to enable baggage loading and discharge, as well as for baggage carts to turn around (Refer below Section 6. Platform Width Requirements).

Necessary baggage service capabilities are site specific (e.g., baggage platforms separate from passenger platforms). For platforms accessed by overhead walkways and tunnels, passengers and baggage cart operations may share elevators and ramps. However, if facilities are shared, it is recommended that the elevators and ramps meet accessibility requirements and have adequate load capacity to accommodate all uses.

⁵⁹ DOT Standard 810.5.1.

5.0 PLATFORM HEIGHT REQUIREMENTS AND RECOMMENDATIONS

Level-Entry boarding is available to passengers when the height of the platform, along with the horizontal offset of the track, aligns with the floor height of the car serving the station.⁶⁰ Rail providers must determine the necessary height required to provide level-entry boarding (predominately 15 or 48 inches ATR). Other attributes to consider include line ownership, configuration, physical environment, and the needs of freight and dimensional load operations, especially if the platform is located on the mainline.

Figure 5-1 shows FRA’s process for determining the platform height required for new and altered platforms.

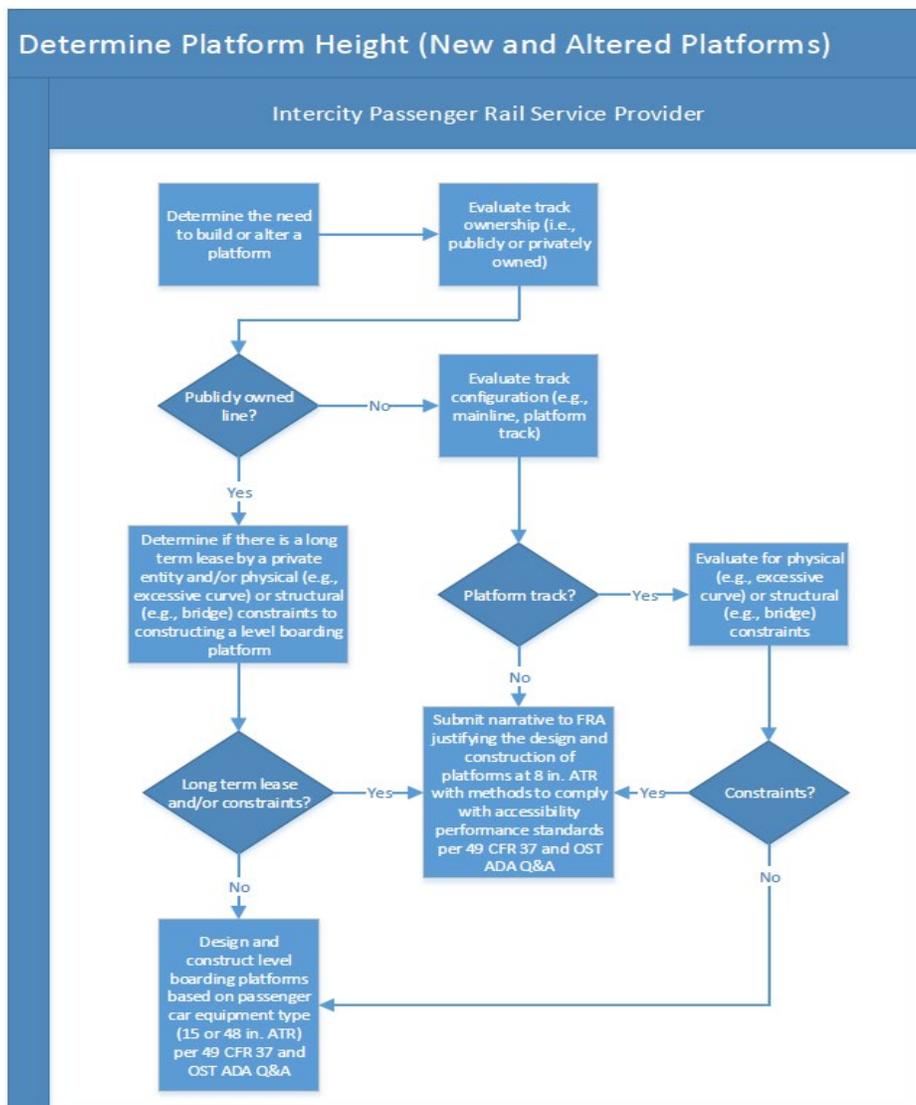


Figure 5-1. Determine Platform Height Process. Source: USDOT

⁶⁰ See 49 C.F.R. § 37.42(b).

5.1 Level-Entry Boarding: Accessibility Performance Requirements

At stations that are approved for entry into final design or that begin construction or alteration of platforms on or after February 1, 2012, individuals with disabilities, including individuals who use wheelchairs, must have access to all accessible cars available to passengers without disabilities in each train using the station.⁶¹ Level-Entry boarding is the easiest way to meet this performance standard. However, level-entry boarding is not always possible or required.

For new or altered stations serving commuter, intercity, or high-speed rail lines or systems, in which no track passing through the station and adjacent to platforms is shared with existing freight rail operations, level-entry boarding is required.⁶²

For new or altered stations serving commuter, intercity, or high-speed rail lines or systems, in which track passing through the station and adjacent to platforms is shared with existing freight rail operations, the rail provider may comply with the performance standard of 49 C.F.R. § 37.42(a) by using of one or more of the following means: (1) Level-Entry boarding; (2) Car-borne lifts; (3) Bridge plates, ramps or other appropriate devices; (4) Mini-high platforms, with multiple mini-high platforms or multiple train stops, as needed, to permit access to all accessible cars available at that station; or (5) Station-based lifts.⁶³

Rail providers should:

- Provide level-entry boarding with the lowest passenger car floor height operating on the track if the platform is located on a:
 - Track with no shared freight operations
 - Publicly owned line
 - Privately owned line with a platform or passing track
- Design and construct an 8-inch ATR platform with methods to meet accessibility performance requirements if the platform is located on a:
 - Privately owned line with freight operations
 - Publicly owned line with a long-term lease by a private entity with freight operations over the line
 - Publicly owned line where it is structurally impracticable to construct a high-level platform (e.g., because of excessive track curvature). Refer to Subsection 5.4 for additional information on line ownership effects on platform height, with examples.

When level-entry boarding is not planned for a new or altered platform, rail providers must get approval from FRA and/or FTA. See Section 5.4, below, for details.

⁶¹ 49 C.F.R. § 37.42(a).

⁶² 49 C.F.R. § 37.42(b).

⁶³ 49 C.F.R. § 37.42(c).

Figure 5-2 shows a platform with level-entry boarding for passenger-only tracks.



Figure 5-2. Passenger-Only Tracks Level-Entry Boarding. Source: USDOT

5.2 Level-Entry Boarding Platforms

The most integrated and efficient platform height and configuration provides true level-entry boarding (i.e., platform is no more than 3 inches horizontal or +/- 5/8 of an inch away from the floor of the passenger car doors) running the entire length of the platform.⁶⁴ However, given the complexities of operating a passenger railroad, this ideal is difficult to achieve and more difficult to maintain. For a detailed definition of “level-entry boarding” and discussion of gaps and platforms, see below, Subsection 5.2.1.

The platform height required for level-entry boarding on a rail line differs based on the type of passenger rail cars operated. For most rail lines (based on current passenger rail operations and equipment), the platform height is 15 or 48 inches ATR to facilitate level-entry boarding, depending on the passenger car type operating on the line. The equipment currently operating on the Northeast Corridor sets a 48-inch ATR standard height, while most equipment types operating elsewhere in the United States set a 15-inch ATR standard.

If a platform being constructed or altered is not adjacent to the track used for freight, but the track and platform are used by more than one rail provider (e.g., Amtrak and a commuter railroad), the possibility of the platform serving cars with different door heights exists. In this situation, the platform should be level with respect to the system that has the lower boarding height. It is never good safety practice to make passengers step down (or be lowered or use

⁶⁴ 49 C.F.R. § 37.42(f).

ramps to get down) to board a train. For example, if Amtrak operates through a station with cars that are 15 inches ATR, and a commuter railroad uses the same platform with cars that are 25 inches ATR, the platform should be 15 inches. The commuter railroad would have to provide another means of access, such as lifts or mini-high platforms (and other methods outlined in Subsection 5.3 of this document).

Where rail providers intend to use mixed-rail equipment, FRA and FTA should be consulted for guidance. In cases where level-entry boarding is not used at platforms approved for entry into final design or that begin construction or alteration on or after February 1, 2012, the rail provider must obtain FTA and/or FRA approval for the means that the rail provider wants to use to meet the performance standard.⁶⁵ Refer to Appendix C of this document, *Basic Intercity Passenger Rail Car Data (First Step and Floor Height)*, for a table of common passenger rail cars currently in use by rail providers.

The following are typical offsets from centerline of track on tangent sections that facilitate level-entry boarding, although other offset dimensions determined by State statutes may be applicable so long as they do not conflict with an FRA regulation:

- **48-inch ATR platforms for single-level passenger cars:** 5-foot-and-7-inch offset from the centerline of the track.
- **15-inch ATR platforms for bi-level passenger cars:** 5-foot-and-4-inch offset from the centerline of the track.

TYPICAL PLATFORM HEIGHTS CURRENTLY IN USE FOR LEVEL-ENTRY BOARDING

- **Northeast Corridor: 48 inches ATR for level-entry boarding**
 - The Northeast Corridor has been operating single-level passenger cars with 51-inch ATR deck heights for decades.
- **Other than Northeast Corridor: 15 inches ATR for level-entry boarding**
 - Taller bi-level Superliner and Surfliner passenger cars are used for long-distance routes. These railcars have a deck height of 18 inches ATR.
 - 24- or 30-inch deck height Talgo railcars are used in the Pacific Northwest. Note that a 15-inch ATR platform does not provide level-entry boarding for 24 or 30-inch deck height equipment. However, 15-inch ATR platforms are frequently used in the Pacific Northwest because railcars with 18-inch floor heights are also used. Talgo's 24- and 30-inch deck height railcars are equipped with extendable wheelchair lifts and extendable steps so they still can meet accessibility performance requirements.
- **Other than Northeast Corridor: 48 inches ATR for level-entry boarding**
 - Siemens single-level railcars used by Brightline (now Virgin USA) trains and Illinois DOT and Caltrans have a deck height of 51 inches ATR. These cars have automatic gap fillers at some doors to be used in conjunction with 48-inch ATR level-entry boarding platforms.

⁶⁵ 49 C.F.R. § 37.42(d).

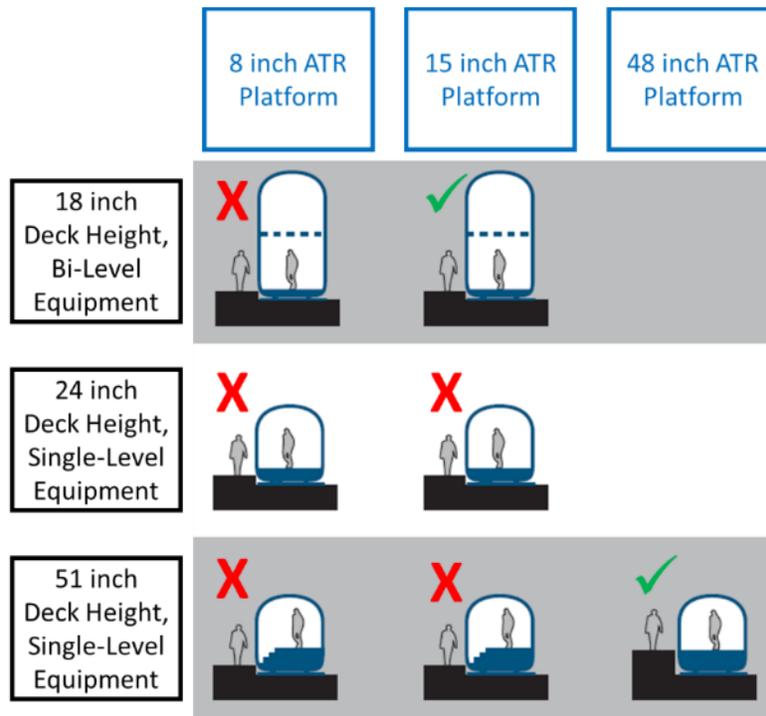


Figure 5-3. Platform Heights Required for Level-Entry Boarding based on Equipment Type.
 Source: Adapted from a Figure in the Amtrak Station Program and Planning Guidelines

5.2.1 Horizontal Gaps and Vertical Variances

The regulatory definition of “level-entry boarding” is a boarding-platform design in which the horizontal gap between a car at rest and the platform is no more than 10 inches on tangent track and 13 inches on curves. The vertical height of the car floor is no more than 5.5 inches above the boarding platform. Where the horizontal gap is more than 3 inches and/or the vertical gap is more than 5/8 of an inch, measured when the vehicle is at rest, the horizontal and vertical gaps between the car floor and the boarding platform must be mitigated by a bridge plate, ramp, or another appropriate device.⁶⁶

While the regulation gives maximum horizontal and vertical gaps, FRA does not intend that new or altered platforms be designed with these large gaps. Instead, FRA recommends that rail providers to minimize platform gaps to the greatest extent possible by building stations on tangent track and using gap-filling technologies, such as moveable platform edges, threshold plates, platform end boards, and flexible rubber fingers on the ends of platforms. FRA encourages the use of Gap Management Plans and consultation with FRA and/or FTA for guidance on gap safety issues

⁶⁶ 49 C.F.R. § 37.42(f).

Refer to the *FRA Approach to Managing Gap Safety*⁶⁷ for more guidance on how to increase accessibility and reduce safety risk on level-entry boarding platforms.

When designing platforms for level-entry boarding, FRA suggests that the rail provider consider the impact of multi-wear wheels on train height and the resulting vertical gap for level-entry boarding. Multi-wear wheels are thicker (outer thickness ranges from 2.5 to 3 inches) and can be machined for reuse when worn out. However, the car floor will drop a small distance when the wheels are lathed. For this reason, FRA has specified 15- or 48-inch platform heights to be compatible with common 18- and 51-inch car floor heights. If the platform started at the same height as the railcar or only slightly higher, eventually passengers would have to step down into trains. This can be a safety issue, because it is usually darker and harder to see when a passenger steps into a passenger car. Moreover, a rail provider cannot use a lift or ramp to get a passenger using a wheelchair or other mobility device down into a rail car because this is not a feasible given the space constraints in the vestibules of most railcars.

5.2.2 Curves

If the choice for a location exists, FRA recommends a platform that is straight (tangent) and parallel with the tracks. Locating a platform on a curve is highly discouraged because the sharper the curve, the larger the gap between the platform edge and passenger rail car.

FRA recommends that high-level platforms (i.e., 48 inches) not be constructed on track having curvature of greater than 1 degree 40 minutes or where speed requires elevation of the outer rail more than one inch. Some high-level platforms have been permitted on sharper curves where track is maintained above Class 4.

Figure 5-4 shows a platform that is located on a curve greater than 1 degree 40 minutes where level-entry boarding for passengers is infeasible without a setback platform. This platform is located on a track with an 8-degree curve.

⁶⁷ See the FRA Approach to Managing Gap Safety, <https://www.fra.dot.gov/eLib/Details/L03196>.



Figure 5-4. Platform with an 8-Degree Curve. Source: USDOT

5.3 Track Shared with Existing Freight Operations: Accessibility Performance Requirements

For new or altered stations serving commuter, intercity, or high-speed rail lines or systems, in which track passing through the station and adjacent to platforms is shared with existing freight rail operations (as described in Subsection 6.2.1 of this guidance), it may not be possible to have level-entry boarding. If FRA or FTA agrees that level-entry boarding is not required at a location, then the rail provider can meet the performance standard of 49 C.F.R. § 37.42(a) by providing another means of access, including:

- Level-entry boarding provided by using a setback platform, gauntlet track, or track on a separate siding for passenger rail.
- Car-borne lifts meeting 49 C.F.R. §§ 38.95(b) or 38.125(b),⁶⁸ such as those currently available on Talgo and Surfliner equipment.
 - It is good practice to back up car-borne lifts with station-based lifts.
 - If a rail provider procures vehicles with lifts or uses station-based lifts that have a design load of greater than 600 pounds, or the platform and vehicle will accommodate a wheelchair that exceeds the dimension of 30 inches by 48 inches, the rail provider must carry the wheelchair and its occupant.⁶⁹
- Bridge plate, ramps, or other appropriate devices.

⁶⁸ Note: The Next Generation Equipment Committee's specification for car-borne lifts on bi-level railcars includes a larger 30x54 inch lift platform and a weight capacity of 800lbs. These specifications are only recommendations unless required by specific grant conditions.

⁶⁹ See 49 C.F.R. § 37.165(b)(1) and Appendix D to 49 C.F.R. § 37.165.

- Mini-high platforms, with multiple mini-high platforms or multiple train stops, as needed, to permit access to all accessible cars available at that station.
 - Where used, mini-high platforms should be located on the end or ends of a platform when possible. Mini-high platforms placed in areas other than the ends of the platform can create obstructions, especially for the visually impaired, that may cause injury or inadvertently force the person to the platform edge.
 - Mini-high platforms, in general, are not a preferred method for boarding passengers as they can cause significant delays during alighting and boarding because of the need to re-spot the train to board passengers unable to move through the length of the train to find an open seat or wheelchair parking space.
 - Where used, one or more longer mini-high platforms should be provided for all passengers to board and alight the trains so that the need to re-spot the train is minimized.
 - If possible, mini-high platforms must be placed in the same area as the general circulation path, per DOT Standard 206.3.
- Station-based lifts
 - Lifts must have a minimum design load of 600 pounds, and the lift platform must accommodate a wheelchair measuring 30 inches by 48 inches.⁷⁰
 - FRA recommends busier stations have two or more lifts available to minimize delays.
 - If a station-based lift has a design load of greater than 600 pounds, or the platform and vehicle will accommodate a wheelchair that exceeds the dimension of 30 inches by 48 inches, the rail provider must carry the wheelchair and its occupant.⁷¹

LARGE BRIDGE PLATE AND MINI-HIGH PLATFORM FOR LEVEL-ENTRY BOARDING

A station owner with an 8-inch platform added a mini-high boarding platform. The platform has a setback of 7 feet and 3 inches from the track centerline. Therefore, all passengers must use a long bridge plate with side railings to board the train.

⁷⁰ 49 C.F.R. §§ 38.95(b) or 38.125(b).

⁷¹ 49 C.F.R. § 37.165(b) and Appendix D to 49 C.F.R. § 37.165.



Figure 5-5. Platform with a Mini-High Setback Platform. Source: Great American Stations Website

5.3.1 Clarification of “Existing Freight Operations”

The term “existing freight operations” on a track means that the track is currently being used by regular freight rail traffic (i.e., revenue freight trains carrying goods or returning from delivering goods on behalf of shippers).⁷² Use of one or more tracks passing through a station and adjacent to a platform for other purposes (including but not limited to use of maintenance equipment by a freight railroad, the rare or token passage of freight trains, storage of ballast cars, movement of private passenger cars, or use of tracks to park freight trains overnight) does not constitute “existing freight operations” because these activities do not meet any plausible definition of “freight rail traffic.” Moreover, where freight traffic bypasses the track adjacent to a new or altered passenger platform via a gauntlet or other available track, FRA considers the track near the platform not to be carrying existing freight traffic.

Even if freight trains could access a track adjacent to a passenger platform via a diverging track or other access point but do not have to do so because other tracks exist, the platform track does not carry freight rail traffic. The possibility that a freight railroad could use a track for freight rail

⁷² OST *ADA & Level Boarding Q&A - Existing Freight Operations* (Mar. 9, 2012) is available at the following URL: <https://www.fra.dot.gov/eLib/Details/L03695>.

traffic at some time in the future does not mean that there are “existing” freight operations.⁷³ In all situations where there is not existing freight rail traffic, level boarding would be required.

LEVEL-ENTRY BOARDING FOR PASSENGERS ON TRACKS WITH EXISTING FREIGHT OPERATIONS

A station consists of five tracks. Freight traffic running near this station only operates on two main tracks, while the other three tracks divert from the main line to access the station. When the station’s platforms were altered, the island platform for the two main tracks was constructed at 8 inches ATR (the minimum height for a low level platform), while the remaining three tracks platforms were constructed at 15 inches ATR (high level). The rail provider uses the level-entry boarding platforms whenever possible.

5.3.2 High and Wide (or Over-Dimensional) Loads

All standard Association of American Railroads (AAR) freight cars carrying normal loads can clear high-level platforms. However, there are rail lines where non-standard high or wide loads are carried so that high platforms are not a good option. Some examples of these situations include:

- The line currently serves civilian freight wide loads (e.g., active revenue generating freight operations).
- There is an identifiable opportunity that the line could serve wide loads and is approved by FRA.
- The line is designated by the Department of Defense (DoD) as a Strategic Rail Corridor Network (STRACNET) route, which requires appropriate clearance capability for oversize DoD cargo. STRACNET is an interconnected and continuous rail line network consisting of over 36,000 miles of track serving over 120 defense installations. High-level platforms on the mainline of STRACNET routes have an additional offset of 18 to 20 inches for a total offset of 7 feet and 1 inch to 7 feet and 3 inches off centerline of the track.

If wide loads need to be accommodated on a line with high-level platforms on the main line, the rail provider can build bypass or gauntlet tracks to provide sufficient clearance. An example of a gauntlet track is shown in Figure 5-6. There is also the possibility of using flip-up edges on the platform to provide consistent level-entry boarding on freight routes with rare dimensional loads. The edges can be lifted as necessary for over-dimensional loads.

Construction of high-level platforms that are affected by freight and wide load rail lines may require additional elements to meet ADA requirements, such as switchback ramps and lifts. The final long-term configuration of the tracks should be determined and confirmed prior to construction of a high-level platform. Relocation of the tracks in the future will be disruptive to service and expensive. In electrified territory, this may require relocating the catenary supports to

⁷³ Where freight trains have not used the track passing by a platform for a significant length of time (e.g., as noted in the Preamble to the rule, 10 years), the FRA considers this to be no “existing” freight operations. See *Transportation for Individuals with Disabilities at Intercity, Commuter and High-Speed Passenger Railroad Station Platforms, Miscellaneous Amendments*, 76 Fed. Reg. 181, 57924, 57927 (Sept. 19, 2011). However, the 10 years is an illustration only. There are occasions when FRA would consider fewer years to constitute no “existing” freight operations—e.g., where a freight customer no longer exists for a rail line.

a position outside of the platform envelope and constructing the platform to allow partial removal for a future track shift. Should the high-level platform be constructed around the catenary supports, as is commonly done, any future track shifts will be much more expensive and disruptive to service.



Figure 5-6. Gauntlet Track Used to Facilitate Level-Entry Boarding and Clearance for Over-Dimensional Loads. Source: nerail.org

5.4 Low-Level Platforms

As discussed in the previous section, there are situations when a high-level platform is not feasible, such as freight operations with excessive dimension (i.e., high and wide) cars using the track adjacent to the platform. In these cases, with prior FRA approval,⁷⁴ an 8-inch ATR platform could be constructed and station-based lifts, setback (mini-high) platforms, and/or other permitted means could be used to provide access to railcars. Use of low-level platforms is common in the following line ownership and lease situations:

- Privately-owned lines with the platform on a main freight line.

PRIVATELY-OWNED LINES WITH THE PLATFORM ON A MAIN LINE

A station is located on mainline track owned by a freight railroad. If the passenger rail provider alters or builds a new platform on this line, a low-level (8-inch ATR) platform would be allowed

⁷⁴ See 49 C.F.R. § 37.42(d).



Figure 5-7. Privately-Owned Lines with the Platform on a Main Line. Source: USDOT

- Publicly-owned lines with a long-term lease by a private entity with the platform on a main line.

PUBLICLY-OWNED LINES WITH A LONG-TERM LEASE BY A PRIVATE ENTITY

A State-owned rail line is leased to a freight railroad company under a 45-year agreement. Under the lease, the freight rail company controls the rail lines and platforms and uses the line for existing freight traffic. If the passenger rail provider alters or builds a new platform on this line, a low-level (8-inch ATR) platform would be allowed.

- Publicly-owned lines where it is infeasible to construct a high-level platform (e.g., excessive track curvature).

PUBLICLY-OWNED LINES WHERE IT IS INFEASIBLE TO CONSTRUCT A HIGH-LEVEL PLATFORM

A station is located on a bridge and is also a designated STRACNET route. Based on these characteristics, a low-level platform would be allowed. The rail provider proposed constructing a high-level platform by using a gantry track. However, because this proposed design meant there would only be one bridge girder (instead of two) supporting trains carrying dimensional loads, FRA deemed this infeasible and an 8-inch ATR platform was constructed.

Typical offsets for 8-inch ATR platforms are 5 feet and 1 inch, 5 feet 4 inches, or 5 feet 7 inches from the centerline of the track on tangent sections, although other offset dimensions determined by State statutes may be required. In some cases, offset dimensions determined and mandated by State statutes conflict with AAR Plate L freight cars and other wide or high dimensional loads.

When constructing a new or altering an existing low-level platform, the new or re-built altered platform must be a minimum of 8 inches ATR.⁷⁵ There may be rare situations in which meeting this requirement is impracticable (e.g., there is a highway grade crossing intersecting the platform). A rail provider proposing to build a platform at less than 8 inches ATR should include in the narrative boarding plan submitted to FRA and/or FTA a discussion of the site constraints affecting the project (see Subsection 5.5 below).

5.5 Narratives for Level-Entry Boarding Infeasibility

Before constructing or altering a platform at a station at which a rail provider proposes to use means other than level-entry boarding, the rail provider must submit a narrative to FRA and/or FTA.⁷⁶ The narrative must contain the following information:

- An analysis of why a level-entry platform is either: (1) not required because the track passing by platform has existing freight traffic and the rail line is owned by a private entity, or (2) required, but operationally or structurally infeasible. Examples of infeasibility include:
 - The platform is on too sharp of a curve.
 - Numerous at-grade crossings within the platform.
 - The structure supporting the platform cannot support the weight of a high-level platform.
- A description of the rail provider's proposed means to meet the performance standard of providing accessible service to passengers with disabilities. The plan must demonstrate how boarding equipment or platforms (e.g., mini-high platform or station-based lift) would be deployed, maintained, and operated; and how personnel would be trained and deployed to ensure that service to individuals with disabilities is provided in an integrated, safe, timely, and reliable manner.⁷⁷
- If the rail provider not using level-entry boarding chooses a means of meeting the performance standard other than using car-borne lifts, it must perform a comparison of the costs (capital, operating, and life-cycle costs) of car-borne lifts and the means chosen by the rail provider, as well as a comparison of the relative ability of each of these alternatives to provide service to individuals with disabilities in an integrated, safe, timely, and reliable manner.⁷⁸

Work cannot begin on constructing or altering a platform until the rail provider has received approval of the narrative from FRA and/or FTA, as applicable.⁷⁹

⁷⁵ DOT Standard 810.5.3.

⁷⁶ 49 C.F.R. § 37.42(d).

⁷⁷ 49 C.F.R. § 37.42(d)(2).

⁷⁸ 49 C.F.R. § 37.42(d)(1).

⁷⁹ 49 C.F.R. § 37.42(d)(3).

5.6 Temporary Platforms

The same height and width requirements apply to the construction of temporary platforms. Moreover, as with permanent platforms, a non-level-entry temporary platform cannot be constructed and/or put in service until the rail provider has received acceptance from FRA and/or FTA. The rail provider must submit a plan/narrative to the FRA Office of Civil Rights documenting how long the temporary platform will be in place, how access to every available car of the train will be provided, and if necessary, how people with disabilities will be given notice of the change (e.g., where the path of travel changes, proper signage should be included).⁸⁰ (49 C.F.R. § 37.42(d)).

TEMPORARY PLATFORMS

A station had been closed since the 1980s, but passenger service recently began after rehabilitation of the track. Since the previous train station had been repurposed for commercial use, the State built a temporary wooden high-level platform to facilitate level-entry boarding. A permanent concrete platform is planned to eventually replace the temporary wooden platform. The temporary platform was constructed to the same standards as the permanent platform and was sufficient to meet the level-entry boarding requirements.



Figure 5-8. Temporary Platform. Source: Great American Stations Website

⁸⁰ 49 C.F.R. § 37.42(d)(3).

6.0 PLATFORM WIDTH REQUIREMENTS AND RECOMMENDATIONS

Platforms must be wide enough to facilitate safe alighting and boarding of passenger trains. People with disabilities, particularly those in wheelchairs, need additional room on the platform to maneuver wheelchairs to approach a passenger doorway, bridge plate, or lift. Guidelines for necessary widths are explained for various types of side and island platforms in several DOT ADA Q&As.⁸¹ If space constraints prohibit a rail provider from meeting these guidelines, contact FRA or FTA for technical assistance.

6.1 General

In any situation using a combination of high and low platforms, a commuter or intercity rail provider shall not employ a solution that has the effect of channeling passengers into a narrow space between the face of the higher-level platform and the edge of the lower platform.⁸² In addition, any obstructions on a platform (e.g., mini-high platforms, stairwells, elevator shafts, seats) shall be set at least 6 feet back from the edge of a platform. If the 6-foot clearance is not feasible (e.g., where such a clearance would create an insurmountable gap on a mini-high platform or where the physical structure of an existing station does not allow such clearance), barriers should be used to prevent the flow of pedestrian traffic through these narrower areas.⁸³

In situations where a narrower than 6-foot clearance is the only option, FRA or FTA should be consulted for technical assistance. FRA has allowed a 4-foot clearance at an underground station where the structural support columns for the building above were immovable and necessary. Four feet is the absolute minimum clearance that must be provided on a platform because anything less is a safety hazard for passengers, especially those who use mobility assistance devices.

Where a 15-inch ATR platform designed to provide level-entry boarding to bi-level passenger cars is also used by single-level passenger cars (51-inch floor height), the 15-inch ATR platform is considered a non-level-entry boarding platform for the purposes of determining the required width.

Table 6-1 summarizes the platform width requirements and recommendations as outlined in 49 C.F.R. §§ 37.9, 37.41-37.43 and 38.95, 38.125, and DOT *ADA and Level Boarding Q&A - What is the Minimum Width for Non-level [and Level] Boarding?* (June 16, 2015).

Table 6-1. Platform Width Requirements and Recommendations

Platform Type	Minimum Width
Side with Passenger Service Only (level boarding)	8 feet
Side with Passenger Service Only (non-level boarding)	12 feet
End-Loading Center Island (level boarding)	10 feet
End-Loading Center Island (non-level boarding)	14 feet

⁸¹ DOT *ADA and Level Boarding Q&A - What is the Minimum Width for Non-level [and Level] Boarding?* (June 16, 2015).

⁸² 49 C.F.R. § 37.42(e).

⁸³ 49 C.F.R. § 37.42(e).

Platform Type	Minimum Width
Vertical Access Center Island (level boarding)	20-24 feet
Vertical Access Center Island (non-level boarding)	20-24 feet

PLATFORM NOT COMPLYING WITH OBSTRUCTION CLEARANCE REQUIREMENTS

A rail provider received a grant for station platform work, including for ADA compliance. The platform edge must be 6 feet from obstructions. FRA discovered that the platform only has approximately 3.5 feet of clearance from an immovable obstruction on the platform. As a result, the low-clearance area was blocked off and passengers were not allowed to board or alight from the portion of the non-compliant platform.

6.2 Side Platforms

6.2.1 Side Platforms with Level-Entry Boarding

FRA recommends that side platforms that can accommodate level-entry boarding have a minimum width of 8 feet. Use of a bridge plate, ramp, or another appropriate device is required where:

- The horizontal gap is more than 3 inches.
- The vertical gap is more than 5/8 of an inch, measured when the vehicle is at rest.

A bridge plate typically extends 3 feet onto the platform (i.e., 1 foot beyond the tactile warning strip).⁸⁴

A width of at least 5 feet is required on the platform for a passenger using a wheelchair to make a turn to enter the bridge plate and onto the passenger car.⁸⁵ This width will accommodate either a circular or T-shaped turning space.

The 5 feet needed for wheelchair turning combined with the 3 feet of the bridge plate equals a minimum platform width of 8 feet, excluding seating, and other obstructions.⁸⁶

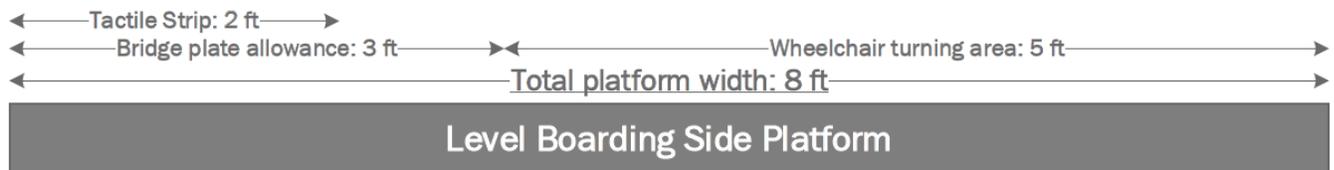


Figure 6-1. Level-Entry Boarding Side Platform Minimum Width. Source: USDOT

⁸⁴ Bridge plates can be any length but are typically around 3- to 4-feet long. The length necessary for a bridge plate (or ramp) is dictated by the maximum slopes allowed in 49 C.F.R. §§ 38.95(c)(5) and 38.125(c)(5).

⁸⁵ DOT Standard 304.3.

⁸⁶ DOT *ADA & Level Boarding Q&A - What is the Minimum Width for Non-Level [and Level] Boarding?* (Sept. 16, 2015) is available at the following URL: <https://www.fra.dot.gov/eLib/Details/L17053>.

Figure 6-2 shows an acceptable level-entry boarding side platform with appropriate platform width and tactile.

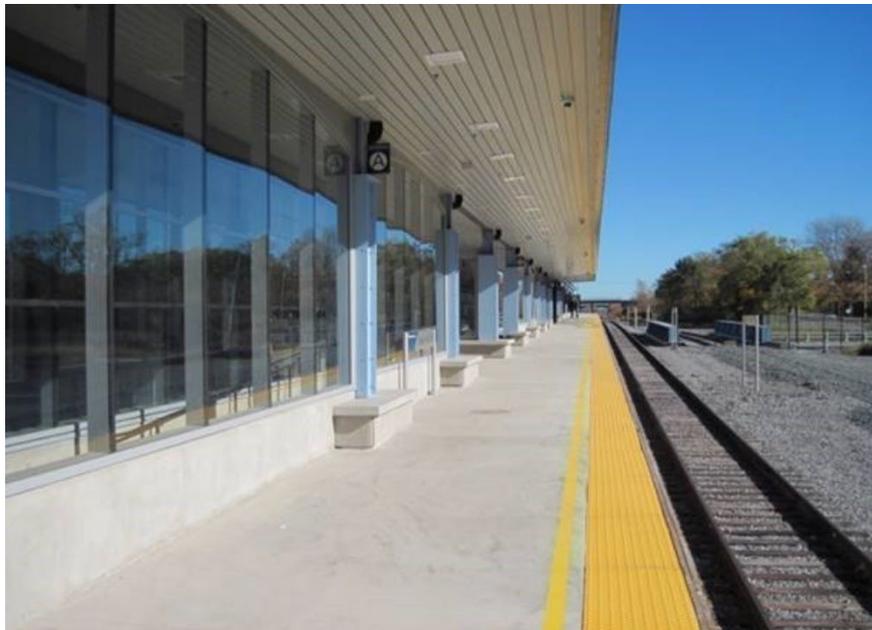


Figure 6-2. Level-Entry Boarding Side Platform. Source: USDOT

6.2.2 Side Platforms with Non-Level-Entry Boarding

FRA recommends a minimum 12-foot width at non-level-boarding side platforms where lifts are used to board passengers.⁸⁷ This 12-foot platform width is comprised of:

- 1-foot recommended allowance from the side of the passenger car to the edge of the wheelchair lift to accommodate various lifting mechanism designs.
- Minimum clear length of 48 inches for the wheelchair lift, measured from 2 inches above the surface of the platform to 30 inches above the surface, per 49 C.F.R. §§ 38.95(b)(6) and 38.125(b)(6).
- 24-inch maximum for the wheelchair lift ramp, based on a lifting platform not exceeding 3 inches above the platform in the down position with a connecting ramp slope not exceeding 1:8 (12.5 percent), per 49 C.F.R. §§ 38.95(b)(8) and 38.125(b)(8).
- 5-foot wheelchair turning area, per DOT Standard 304.3. Note that some wheelchair lifts load from the side, so the 5 feet of turning area will need to be to the side of the lift.

⁸⁷ DOT ADA & Level Boarding Q&A - *What is the Minimum Width for Non-Level [and Level] Boarding?* (Sept. 16, 2015) is available at the following URL: <https://www.fra.dot.gov/eLib/Details/L17053>.

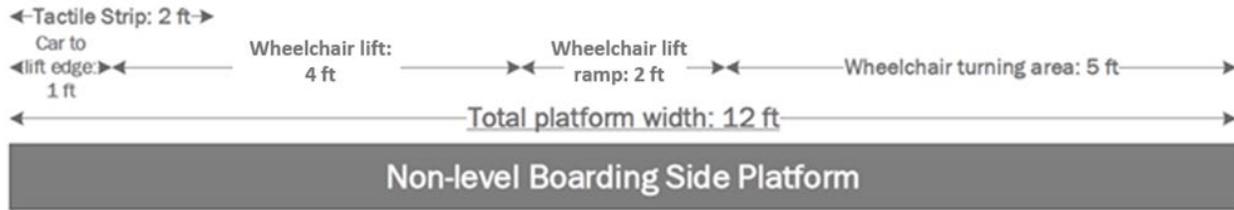


Figure 6-3. Non-Level-Entry Side Platform Minimum Width. Source: USDOT

Figure 6-4 shows a non-level-entry boarding side platform.



Figure 6-4. Non-Level-Entry Boarding Side Platform. Source: USDOT

6.3 Island Platforms

6.3.1 Level-Entry Boarding End-Loading Island Passenger Platforms

The minimum platform width recommended for island platforms is 10 feet.⁸⁸ The necessary minimum 10-foot island platform width is comprised of:

- Typical 3-foot bridge plate length.

⁸⁸ DOT ADA & Level Boarding Q&A - What is the Minimum Width for Non-Level [and Level] Boarding? (Sept. 16, 2015) is available at the following URL: <https://www.fra.dot.gov/eLib/Details/L17053>.

- 5-foot width wheelchair turning area.
- 2 feet for tactile strips along the opposite boarding edge, required by 49 C.F.R. § 37.9(a), applying DOT Standard 705.2 and 810.5.2.

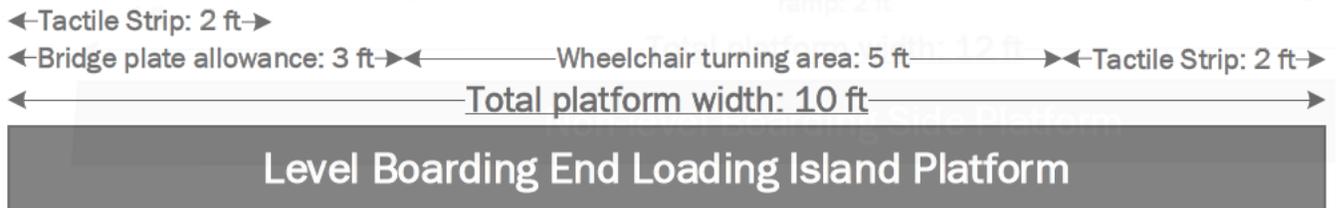


Figure 6-5. Level-Entry Boarding End-Loading Island Platform Minimum Width. Source: USDOT

Figure 6-6 shows a level-entry end-loading island passenger platform.

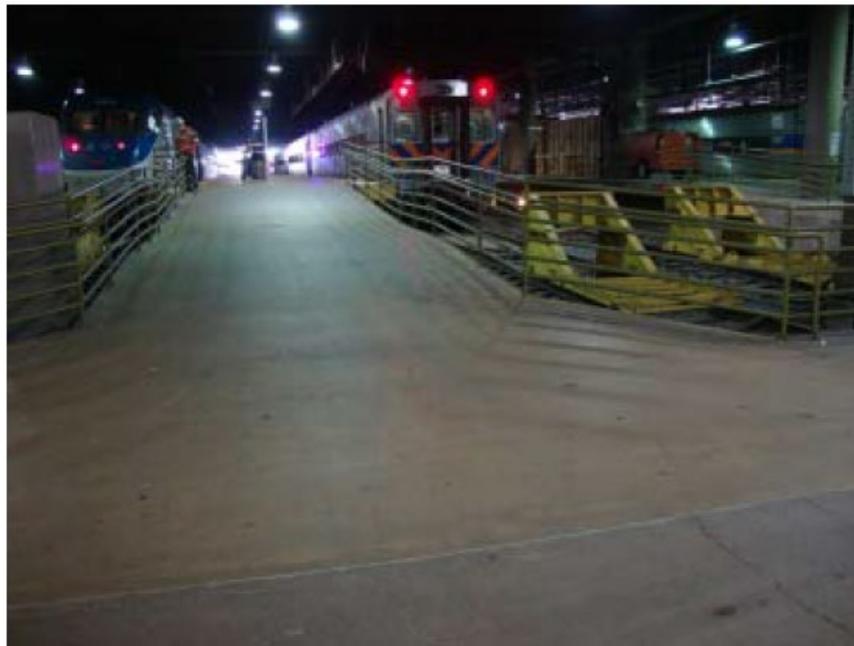


Figure 6-6. Level-Entry Boarding End-Loading Island Platform. Source: USDOT

6.3.2 Level-Entry Boarding Island Passenger Platform with Vertical Pedestrian Access

The minimum recommended width for level-entry boarding island platforms with vertical pedestrian access is 20-24 feet. A level-entry boarding island passenger platform with vertical pedestrian access offers platform access through elevators, stairs, ramps, and/or escalators. The 20-24 feet range is necessary because the minimum width is dependent on the width of the vertical access feature.⁸⁹

⁸⁹ DOT ADA & Level Boarding Q&A - What is the Minimum Width for Non-Level [and Level] Boarding? (Sept. 16, 2015) is available at the following URL: <https://www.fra.dot.gov/eLib/Details/L17053>.

The necessary 20-24 feet minimum width is comprised of:

- Width of the vertical access feature (typically in the range of 8 to 12 feet).
- Twice the 6 feet required by 49 C.F.R. § 37.42(e)(1) for clearances around the sides of the vertical access feature (clearances required on both sides of the vertical access, includes tactile warning strips).
- When track alignment curves extend onto island platforms, the platform may be tapered to 10 feet at the end(s) of the platform, if the gap between the car and the platform through the curved portion complies with the maximum allowable gap at level-boarding platforms (10 inches on tangent and 13 inches on curved tracks).⁹⁰

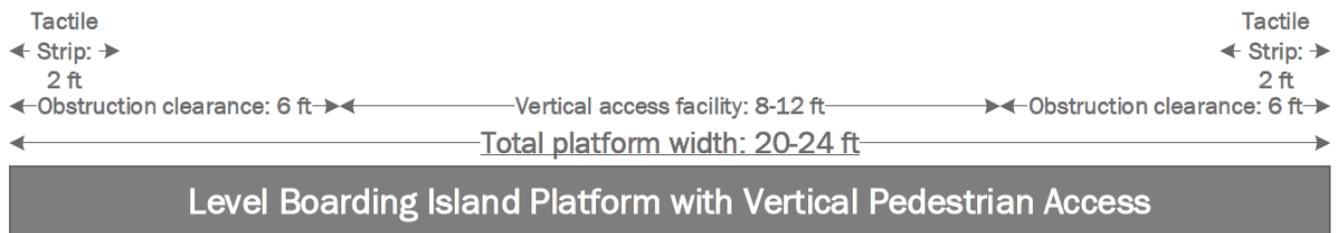


Figure 6-7. Level-Entry Boarding Island Platform with Vertical Pedestrian Access Minimum Width. Source: USDOT

Figure 6-8 shows a level-entry boarding island passenger platform with vertical pedestrian access.



Figure 6-8. Level-Entry Boarding Island Platform with Vertical Access. Source: USDOT

⁹⁰ 49 C.F.R. § 37.42(f).

6.3.3 Non-Level-Entry Boarding End-Loading Island Passenger Platform

The minimum recommended width of a non-level-entry boarding end-loading island passenger platform is 14 feet. A non-level-entry boarding end-loading island passenger platform allows passengers to enter or exit the platforms of a stub-end station located between two tracks, where a station-based wheelchair lift is utilized, and loading occurs from both sides of the platform.⁹¹ The 14 feet minimum width also applies to non-level-entry boarding island platforms accessed by at-grade crossings.

This 14-foot minimum platform width is comprised of:

- 1-foot recommended allowance from the side of the passenger car to the edge of the wheelchair lift to accommodate various lifting mechanism designs.
- Minimum clear length of 48 inches of wheelchair lift, measured from 2 inches above the surface of the platform to 30 inches above the surface, per 49 C.F.R. §§ 38.95(b)(6) and 38.125(b)(6).
- 24-inch maximum for the wheelchair lift ramp, based on a lifting platform not exceeding 3 inches above the platform in the down position with a connecting ramp slope not exceeding 1:8 (12.5 percent), per 49 C.F.R. §§ 38.95(b)(8) and 38.125(b)(8).
- 5-foot wheelchair turning area, per DOT Standard 304.3. Note that some wheelchair platform lifts load from the side, so the 5 feet of turning area will need to be to the side of the lift.
- 2-foot tactile strips along the opposite boarding edge required by 49 C.F.R. § 37.9(a), applying DOT Standard 705.2 and 810.5.2.



Figure 6-9. Non-Level-Entry Boarding End-Loading Island Platform Minimum Width. Source: USDOT

Figure 6-10 shows a non-level entry end-loading island passenger platform. Note: the photo is taken from the stub end looking on to the platform.

⁹¹ DOT ADA & Level Boarding Q&A - What is the Minimum Width for Non-Level [and Level] Boarding? (Sept. 16, 2015) is available at the following URL: <https://www.fra.dot.gov/eLib/Details/L17053>.

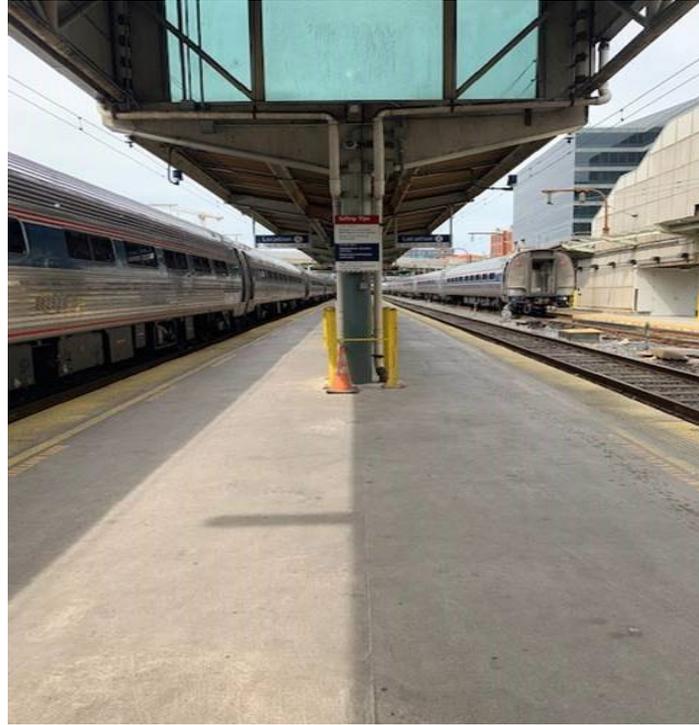


Figure 6-10. Non-Level-Entry Boarding End-Loading Island Platform. Source: USDOT

6.3.4 Non-Level-Entry Boarding Island Passenger Platform with Vertical Pedestrian Access – Minimum Width 20 to 24 Feet

A non-level-entry boarding island passenger platform with vertical pedestrian access offers platform access through elevators, stairs, ramps, and/or escalators. The minimum platform width ranges between 20 to 24 feet depending on the width of the vertical access feature.

The necessary 20-24 feet minimum platform width is comprised of:

- Width of the vertical-access feature (typically in the range of 8 to 12 feet).
- 6 feet per side (12 feet total) for clearances around the sides of the vertical-access facility (clearances required on both sides of the vertical access, includes tactile warning strips), per 49 C.F.R. § 37.42(e).
- When track alignment curves extend onto non-level island platforms, the platform may be tapered to 14 feet at the end(s).



Figure 6-11. Non-Level-Entry Boarding Island Platform with Vertical Pedestrian Access Minimum Width. Source: USDOT

Figure 6-12 shows a non-level-entry boarding island passenger platform with vertical pedestrian access (an at-grade crossing is also present).



Figure 6-12. Non-Level-Entry Boarding Island Platform with Vertical Pedestrian Access. Source: USDOT

7.0 PLATFORM LENGTH REQUIREMENTS AND RECOMMENDATIONS

The length of a platform determines the number of passenger rail cars that conductors can use for alighting and boarding passengers. Longer platforms generally allow for quicker alighting and boarding but also require additional staff to support passenger movement at railcar doors. There is not a minimum platform length requirement under the DOT ADA standards. Instead, “individuals with disabilities, including individuals who use wheelchairs, must have access to all accessible cars available to passengers without disabilities in each train using the station” (at stations that are approved for entry into final design or that begin construction or alteration of platforms on or after February 1, 2012).⁹² In other words, any accessible car’s doors along the platform length (whatever that length is) that are available to passengers without disabilities must also be available to those with disabilities.

When deciding on platform length, rail providers should consider not only the operational needs of the station, ridership, and physical constraints, but also train line type, train frequency, and train consist length (if a full-length platform is intended). Rail providers may contact FRA for technical assistance regarding the platform length guidance in this section.

EXTENDING A STATION’S PLATFORM WITHOUT A NEED

An FRA grantee serves a low-ridership station with a 300-foot platform and wishes to extend the length of the platform to 740 feet. While the station does have the space to do so, the need may not be justified. For FRA to fund the extension, FRA requested a justification for the cost and the longer platform (e.g., increased ridership). Ultimately, the grantee built a 500-foot platform because providing access to an additional two railcars justified cost.

7.1 General

At stations with shorter platforms, only select cars will be available to passengers for alighting and boarding. In some passenger rail systems, only two cars are open to be boarded by any passenger at a station. In such situations, only those cars that are made available to other passengers at the station must be made available to passengers with disabilities. However, if all wheelchair spaces are occupied by other wheelchair users in the cars where the doors open at a station and the rail car is not accessible through its end doors, the rail provider should double-stop or move a lift, where applicable, to provide a person in a wheelchair (or other mobility device) with access to an unoccupied wheelchair space.⁹³ Rail providers must keep wheelchair spaces free and are responsible for moving other passengers’ luggage and other items out of wheelchair spaces to permit their use by wheelchair users.⁹⁴

⁹² 49 C.F.R. § 37.42 (a).

⁹³ DOT ADA & Level Boarding Q&A - “Where the requirements of Section 37.42 apply, which cars of a train does a railroad operator have to make available to passengers with disabilities?” (May 24, 2012) is available at the following URL, at pg. 14: <https://www.fra.dot.gov/eLib/Details/L03698>.

⁹⁴ 49 C.F.R. § 37.167(e); *Id.*

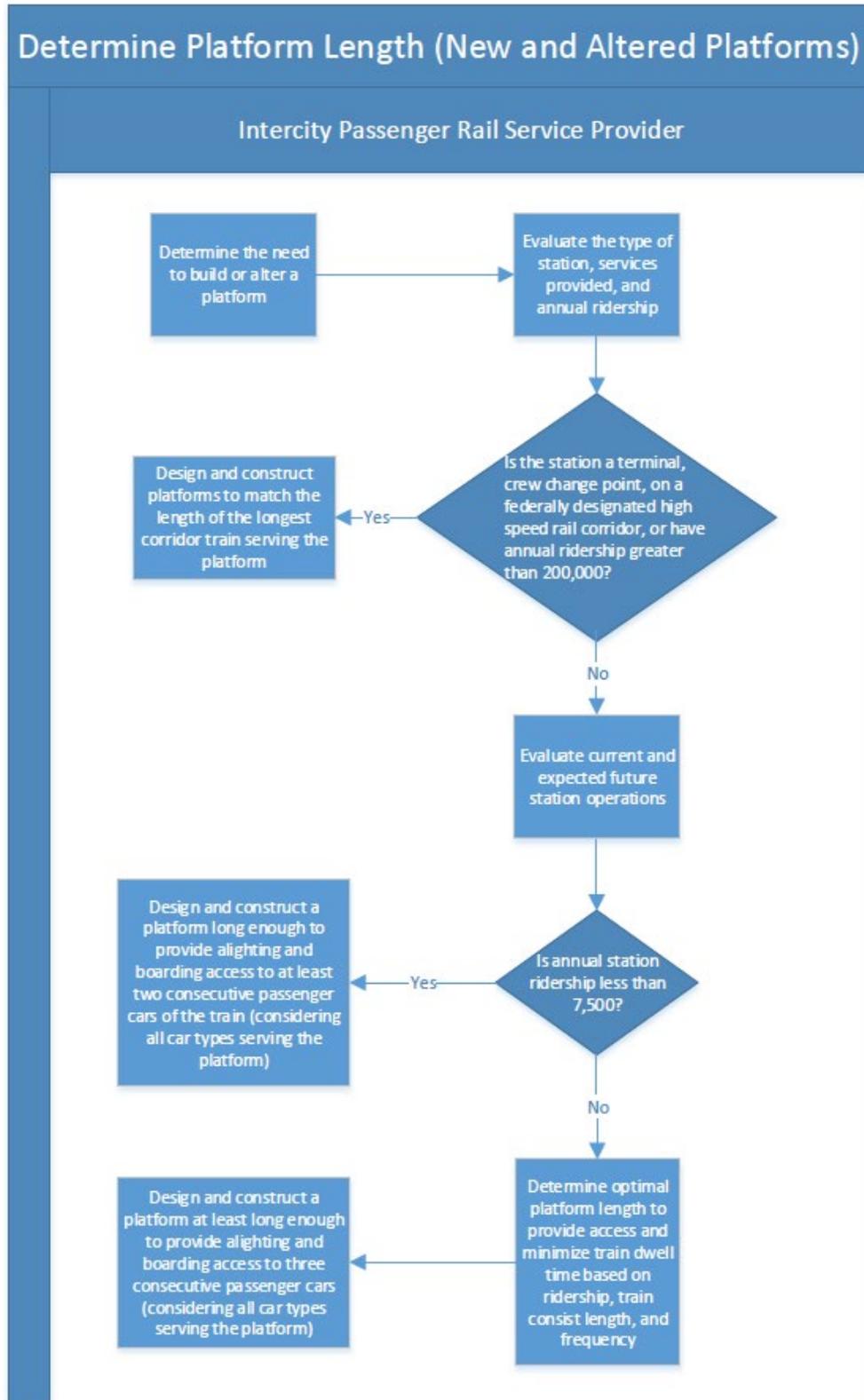


Figure 7-1. Determine Platform Length Process. Source: USDOT

7.2 Full-Length Platforms

Full-length platforms are long enough to make the first door of the first car and the last door of the last car available for regular boarding of passengers. At full-length platforms, FRA recommends an additional 20 feet beyond each end door to allow for proper alignment of the car doors.

A typical train consist length to use for the platform length determination is the consist that operates in year-round, regularly-scheduled service, either at the time of platform design and/or construction, or as expected given future ridership projections. Except in the case of stub-end platforms, rail providers need not consider locomotives, baggage cars, and private cars in their platform-length determinations. Special trains, excursion trains, seasonal trains, and other trains not operated by a public rail provider also need not be considered.

FRA recommends that the design of stations with the following characteristics should include full-length platforms:

- Terminal stations or points where trains originate or terminate runs (current examples include, but are not limited to, the main stations in Chicago, IL; Boston, MA; Miami, FL). When planning for and designing stub-end platforms, the rail provider or other entity should consider maximizing the length of the platform to accommodate expected future ridership, train consist lengths, private cars, and locomotives. The length of a stub-end platform will determine the allowable length of the train consist because, for the platform to be full-length, the train consist must fit between the barrier end of the track and the interlocking on the other end of the platform track. The length should allow trains to clear the home signal at the interlocking at the end of the track.
- Crew change points (current examples include, but are not limited to, Florence, SC; Kansas City, MO; and Fort Worth, TX) to allow for rapid crew changes to minimize train dwell time. The rail provider should consider conductor and engineer crew change points, as these changes do not always occur at the same station. Generally, walkways for rail crews do not have to be ADA compliant for passengers' use. However, other accessibility considerations for rail crews may be applicable, but these are outside of the scope of this guidance.
- Federally designated high-speed rail corridors (e.g., Chicago – St. Louis, Charlotte – Raleigh – Richmond – DC) for the high-speed corridor trains (and other routes where automatic door controls open all passenger car doors along the length of the train). Platform length should be consistent across the stations on the corridor to facilitate safe and rapid alighting and boarding.
- Stations with annual ridership greater than 200,000.

Figure 7-2 shows a full-length platform.



Figure 7-2. Full-Length Platform. Source: USDOT

7.3 Intermediate Length Platforms

Where it is not currently necessary for operations or feasible to have full-train-length platforms because of lower ridership, funding constraints, or physical constraints, the rail provider should consider current and future station operations and ridership to determine the optimal platform length to provide accessibility and adequate space for passengers to alight and board while minimizing train dwell time. FRA recommends that these platforms be long enough to, at a minimum, provide alighting and boarding access to three consecutive passenger cars. This suggested configuration provides access to an additional passenger car compared to the minimum recommendations made in Subsection 7.4 of this guidance.

Other than full-train-length platforms can be useful options at stations with the following characteristics:

- Long-distance train stops with diner/lounge separating sleepers from coaches (e.g., Crescent line: New York, NY – New Orleans, LA; Southwest Chief: Chicago, IL – Los Angeles, CA).
- High seasonal variations in rail ridership. For instance, Florida train lines have peak ridership from December to February, while the Coast Starlight train in California has peak ridership from June to August. Some long-distance trains add additional cars during peak ridership seasons.
- Stations with annual ridership between 7,500 and 200,000.

Intermediate-length platforms at stations along a rail line need not, from an operational standpoint, be longer than what can be accommodated at the major stations on the same line.

Figure 7-3 shows a less than full-train-length platform at a seasonal station that only operates in the summer months.

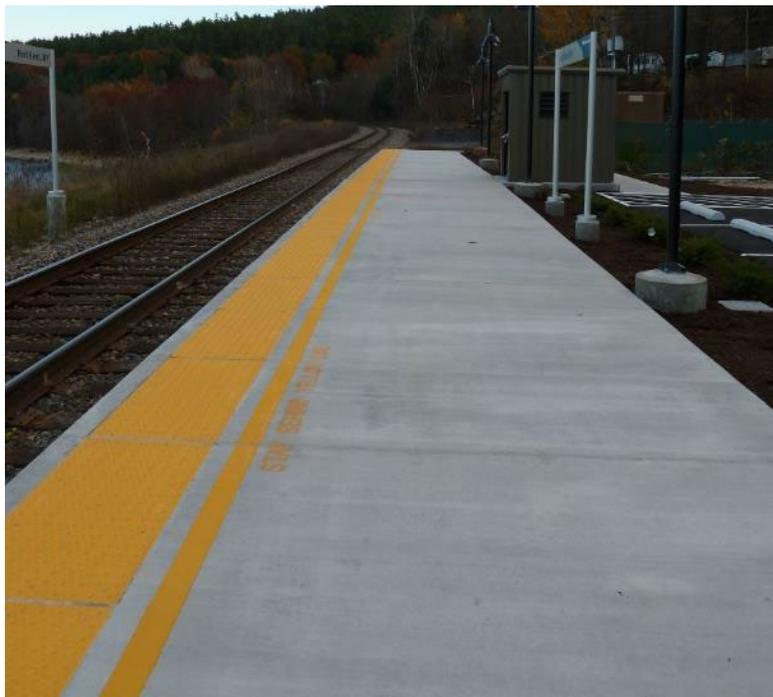


Figure 7-3. Seasonal Station with a Platform Less Than Full-Train-Length. Source: USDOT

7.4 Minimum-Length Platform

FRA recommends that, even if ridership is less than 7,500 per year or there are existing physical constraints, the platform should still be long enough to provide alighting and boarding access to at least two consecutive passenger cars (considering all car types serving the platform).

Passenger train car door locations differ based on the car type. For example, Amfleet cars have a door on each end, Amfleet II cars have a single door at one end, and Superliners have a single door in the middle of the car. It is possible to configure a train consist of Amfleet IIs where the distance between doors in two consecutive cars is 170 feet.

Platforms capable of spotting at least two car doors are recommended because with shorter platforms, it is harder for train engineers to stop at the desired locations, especially during inclement weather. Platforms that are too short can result in engineers having to back up trains to position them correctly for alighting and boarding. This situation should be avoided because backing up trains can be dangerous, especially if there is poor signal placement on the platform or directly off the end of the platform.



Figure 7-4. Minimum-Length Platform. Source: Great American Stations Website

8.0 POINT OF CONTACT FOR ADDITIONAL INFORMATION

For ADA compliance questions on a specific FRA or FTA project, contact the FRA or FTA grants manager or project manager. To ask general ADA compliance questions, please contact the FRA or FTA Office of Civil Rights.

8.1 FRA Office of Civil Rights

- Web address: <https://railroads.dot.gov/office-administrator/office-civil-rights/office-civil-rights>
- Email address: civil.rights@dot.gov
- Voice: 202-493-0669
- Fax: 202-493-6481

8.2 FTA Office of Civil Rights

- Web address: <https://www.transit.dot.gov/ADA>
- Toll-free FTA Hotline: 888-446-4511

APPENDICES

Appendix A. Acronyms

Table A-1. Acronyms

Acronym	Definition
AAR	Association of American Railroads
ADA	Americans with Disabilities Act of 1990
ADAAG	ADA Accessibility Guidelines
AREMA	American Railway Engineering and Maintenance-of-Way Association
ATR	Above Top of Rail
CE	Categorical Exclusion
C.F.R.	Code of Federal Regulations
DoD	Department of Defense
DOJ	Department of Justice
DOT Standards	U.S. Department of Transportation <i>ADA Standards for Transportation Facilities</i>
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
IBC	International Building Code
NFPA	National Fire Protection Association
DOT	United States Department of Transportation
STRACNET	Strategic Rail Corridor Network
USDOT	United States Department of Transportation

Appendix B. Relevant Laws, Policies, and Guidance

Table B-1. Relevant Laws, Policies, and Guidance

Policy/Guidance	Description
American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering	Provides engineering recommended practices for track, structures, infrastructure and passenger services, and systems management.
Americans with Disabilities Act (ADA) Standards for Transportation Facilities (DOT Standards) (2006)	The DOT ADA Standards that apply to alterations and construction of transportation facilities. These mirror United States Access Board’s ADA Accessibility Guidelines (ADAAG), except that the DOT Standard includes additional requirements for location of accessible routes (206.3), detectable warnings on curb ramps (406.8), bus boarding and alighting areas (810.2.2), and rail station platforms (810.5.3).
Federal Register Volume 76, Number 181. (Sep. 19, 2011)	Provides an overview of the Final Rule for level-entry boarding as well as preamble text to the new rule.
DOT ADA & Level Boarding- Consolidated ADA Questions and Answers (documents with various dates)	Question and answer guidance issued by DOT’s Office of the General Counsel interpreting aspects of 49 C.F.R. §§ 37.9, 37.41-37.43, and 38.125.
FRA Approach to Managing Gap Safety (Dec. 2007)	Provides FRA’s guidance for managing safety hazards related to the gap at high-level passenger platforms.
FRA Guidance on Pedestrian Crossing Safety at or Near Passenger Stations (Apr. 2012)	Provides guidance to railroads concerning pedestrian safety that addresses four specific pedestrian safety areas noted in the Pedestrian Crossing Safety within the Rail Safety Improvement Act of 2008, Section 210.
OST Questions and Answers: ADA & Level Boarding – Accessibility Standards Applying to Passenger Rail Cars (Dec. 2012)	Questions and answers guidance by DOT’s Office of the General Counsel discussing the accessibility standards that apply to passenger rail cars when specific design standards are not provided in 49 C.F.R. Part 38.
OST Questions and Answers: Concerning Wheelchairs and Bus and Rail Service	Questions and answers provided by DOT’s Office of the General Counsel pertaining to ADA requirements related to wheelchairs and rail service.

Policy/Guidance	Description
Guidance on the Federal Railroad Administration Categorical Exclusion (CE) Worksheet	The CE worksheet assists project proponents and FRA in identifying whether a proposed project fits a category of actions excluded from detailed environmental review.
International Building Code (IBC)	The IBC is a model building code developed by the International Code Council and addresses both health and safety concerns for buildings based on prescriptive and performance-related requirements.
The Americans with Disabilities Act (ADA) of 1990, Amendment Act of 2008	This law prohibits discrimination based on disability by public entities and in places of public accommodation.
Title 49 C.F.R. Part 37 – Transportation Services for Individuals with Disabilities	Implements the transportation and related provisions of Titles II and III of the ADA.
Title 49 C.F.R. Part 38 – Accessibility Specifications for Transportation Vehicles	Provides minimum requirements for accessibility standards for transportation vehicles required to be accessible by the ADA.
Title 49 C.F.R. Part 27 – Nondiscrimination on the Basis of Disability in Programs and Activities Receiving or Benefiting from Federal Financial Assistance	Implements regulations regarding Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794) as amended.
Transportation for Individuals with Disabilities; Adoption of New Accessibility Standards, 71 Fed. Reg. 63263, 63267 (Oct. 30, 2006) (codified at 49 C.F.R. Part 37).	The Federal Register notice for DOT’s adoption of the ADAAG, including an overview of the changes to the ADA regulations and adoption of the ADAAG, and a description of technical amendments and standards.
Transportation for Individuals with Disabilities at Intercity, Commuter, and High-Speed Passenger Railroad Station Platforms; Miscellaneous Amendments, 76 Fed. Reg. 57924, 57939 (Sep. 19, 2011) (codified in 49 C.F.R. Parts 37 and 38).	Includes the Final Rule for level-entry boarding as well as a summary of public comments and preamble text.

Appendix C. Basic Intercity Passenger Rail Car Data (First Step and Floor Height)

Table C-1. Intercity Passenger Rail Car Type Boarding Heights and Current Locations Used

Intercity Passenger Rail Car Type	Entrance Floor Height (ATR)	Current Location Used
Bi-Level Superliner and California/Surfliner	18 inches	Long-distance routes not out of New York and Boston, California
Amfleet	51 inches	East Coast
Horizon	51 inches	Michigan, Missouri, Wisconsin, Illinois
North Carolina Coach	51 inches	North Carolina
Viewliner Sleeper	51 inches	East Coast
Acela	51 inches	Northeast Corridor
Bombardier Commuter Cars	24 inches, door recessed 6 to 8 inches from side of car	Various locations
Chicago Style Gallery Cars	44 inches	Chicago area, METRA
Northeast Tri-Level Car (New Jersey Transit, Massachusetts Bay Transportation Authority, etc.)	48 inches	Northeast Corridor and adjacent commuter lines
Talgo Series 6	24 inches	Pacific Northwest
Talgo Series 8	30 inches	Pacific Northwest
Brightline	51 inches	Florida
Midwest & California Venture Cars	51 inches	Midwest and California

The actual first step and entrance floor heights will vary based on the condition and age of multi-wear wheels on the passenger car.