VEHICLE ACQUISITION

Federal Transit Administration

Americans with Disabilities Act
Circular C 4710.1

Draft Chapter for Public Comment

October 2012

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APPENDICES

1 INTRODUCTION

This Circular chapter on vehicle acquisition serves as a reference document for public transportation providers acquiring vehicles to ensure that these vehicles meet the requirements of the U.S. Department of Transportation (DOT) Americans with Disabilities Act (ADA) regulations. It is the goal of the Federal Transit Administration (FTA) to help transportation providers meet their obligations under the ADA by outlining the regulations, describing effective practices, and presenting the information in an easy-to-use format. Please note that this Circular does not alter, amend, or otherwise affect the DOT ADA regulations themselves; transportation providers are advised to use this Circular in addition to (not in lieu of) the DOT ADA regulations.

The DOT ADA regulations, which became effective September 6, 1991, laid out a strategy for achieving accessibility over time. Transportation providers were expected to achieve accessibility primarily by purchasing new or replacement vehicles. According to the data provided by FTA grantees to the National Transit Database, nearly 100 percent of transit buses and rapid rail cars and more than 85 percent of commuter rail and light rail cars were reported to be accessible as of 2010.

While most people are aware that an accessible bus, for example, has either a lift or ramp and one or more securement areas for riders who use wheelchairs, some are not aware of other equipment and design elements that are important for making vehicles usable by persons with disabilities. For example, accessible design requires well-placed handrails and stanchions, clear circulation paths, properly located priority seating, adequate levels of lighting, markings at step edges and other transitions, public address systems (on certain vehicles), and many other features. This Circular is intended to provide a comprehensive understanding of accessible vehicle design.

1.1 THE DOT ADA REGULATIONS

The DOT ADA regulations set forth the accessibility requirements for vehicles used for passenger service. 49 CFR Part 38 of the regulations includes the specifications that must be met to make a vehicle accessible. 49 CFR Part 37 defines the conditions under which vehicles must be purchased as accessible or made accessible.

The requirements vary depending on whether a transportation provider is a public entity (or an entity providing service on behalf of the public entity) or a private entity. Public entities include, for example, state or local governments, special purpose districts, commuter authorities, and public transit agencies.

The requirements also vary depending on the mode of transportation an agency provides and whether an agency is acquiring new, used, or remanufactured vehicles for this service. The regulations apply to transportation providers (public or private) that provide any of the following services: fixed route bus, demand responsive, rapid rail, light rail, or commuter rail.

Within 49 CFR Part 37, the requirements for public entities and contractors to public entities are contained in Subpart D. The requirements for private entities are contained in Subpart E, which is not covered in this Circular.

1.2 PROVIDING SERVICE ON BEHALF OF ANOTHER ENTITY: "STAND IN THE SHOES"

A public entity may use a contractor to provide service. The contractor can be another public entity or a private organization, but an entity using a contractor may not "contract away" its ADA responsibility. Under § 37.23 of the DOT ADA regulations, a contractor "stands in the shoes" of a public entity. This

means that the vehicles a contractor acquires or remanufactures for use in a public entity contract must be accessible to the same extent as if the public entity were acquiring or remanufacturing its own vehicles.

Furthermore, the regulations extend the requirement for an entity acquiring or remanufacturing vehicles "in contemplation of use" for a contract or other arrangement with a public entity. This means that if a contractor is about to enter into a contract with a public entity, the contractor cannot acquire inaccessible vehicles immediately prior to the start of the contract and then use these vehicles for the contracted service. According to Appendix D to Part 37 of the regulations, "this language is included to ensure good faith compliance with accessibility requirements for vehicles acquired before the execution of a contract. Whether a particular acquisition is in contemplation of use on a contract will be determined on a case-by-case basis."

In addition, when contracting with a public entity, the vehicles provided by the contractor may not cause the percentage of accessibility in the combined vehicle fleet for this service to decrease. For example, if the public entity's fleet is 90 percent accessible, then at least 90 percent of the contractor's vehicles used for the contract must also be accessible. This rule applies whether the contractor is acquiring or remanufacturing vehicles for the contract.

2 ACQUISITION REQUIREMENTS FOR PUBLIC ENTITIES

The acquisition requirements for public entities depend on the following factors:

- Vehicle type – These are defined as rail and non-rail. Non-rail vehicles include buses and vans.
- Service type – This includes fixed route bus, light or rapid rail, commuter rail, and demand responsive.
- Vehicle condition – This includes new, used, or remanufactured vehicles.

Table 2.1 summarizes the vehicle acquisition requirements for public entities.

Table 2.1 Vehicle Acquisition Requirements for Public Entities

Service	Vehicle	New/Used/ Remanufactured	Section	Exceptions to Acquiring an Accessible Vehicle
Fixed route	Non-rail	New	37.71	None
Fixed route	Non-rail	Used	37.73	(1) Unable to acquire after good faith effort, or (2) Received as a donation
Fixed route	Non-rail	Remanufactured	37.75	(1) Vehicle modifications would have a significant adverse effect on structural integrity (as demonstrated by engineering analysis), or (2) Vehicle modifications would alter historic character*
Rapid rail or light rail	Rail car	New	37.79	None
Rapid rail or light rail	Rail car	Used	37.81	Unable to acquire after good faith effort
Rapid rail or light rail	Rail car	Remanufactured	37.83	(1) Vehicle modifications would have a significant adverse effect on structural integrity (as demonstrated by engineering analysis), or (2) Vehicle modifications would alter historic character*
Commuter rail	Rail car	New	37.85	None
Commuter rail	Rail car	Used	37.87	Unable to acquire after good faith effort
Commuter rail	Rail car	Remanufactured	37.89	Vehicle modifications would have a significant adverse effect on structural integrity (as demonstrated by engineering analysis)
Demand responsive	Non-rail	New	37.77	Demonstrate equivalent service for individuals with a disability

* Applicable only if a vehicle of historic character is operated solely on a segment of a fixed route that is included on the National Register of Historic Places

As shown in the table, for each type of service and type of vehicle listed, public entities must acquire vehicles that are accessible unless one of the exceptions applies. Each requirement is explained in detail below with the relevant ADA section referenced in the section heading. Note that some language is deliberately repeated for completeness. Remember that these requirements also apply to contractors that may be "standing in the shoes" to provide service for a public entity.

2.1 BUSES AND VANS

NEW FIXED ROUTE BUS PURCHASES – § 37.71

Any solicitation for a new fixed route bus must "ensure that the vehicle is readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs." In other words, the bus must be designed and built to meet the applicable specifications in Part 38 of the regulations.

EXCEPTIONS

None

USED FIXED ROUTE BUS PURCHASES – § 37.73

Any solicitation for a used fixed route bus must "ensure that the vehicle is readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs." In other words, the bus must already meet the applicable specifications in Part 38 of the regulations.

EXCEPTIONS

There are two exceptions to this requirement. The first exception applies when a public entity can demonstrate and document having made a "good faith effort" to acquire an accessible vehicle but was not able to do so. Given that most buses and rail cars manufactured since 1990 are now accessible, finding accessible vehicles should now be possible with a good faith effort.

To demonstrate good faith efforts, a public entity must first specify "accessible vehicles" in its solicitation for used vehicles. The entity must also undertake a nationwide search for accessible vehicles and may not limit the search to a particular region. It is not enough to contact only a known manufacturer to see if it has accessible used buses. A public entity must also advertise in a trade magazine such as *Passenger Transport* and other national outlets to determine whether accessible used vehicles are available. Public entities are also required to contact trade groups such as the American Public Transportation Association (APTA) or the Community Transportation Association of America (CTAA).

A good faith effort is required for *each* procurement. An entity that acquires an inaccessible vehicle without meeting all of these requirements has not undertaken a good faith effort under DOT ADA regulations.

Finally, public entities are required to document their efforts to acquire accessible vehicles. This documentation has to be retained for three years and must be available to FTA and the public.

The second exception applies when a public entity receives a donated vehicle that is inaccessible. This is a rare situation but, in such a case, the entity must document the transaction to verify that the vehicle was donated. Public entities are not permitted to solicit donations of inaccessible vehicles.

REMANUFACTURED FIXED ROUTE BUS ACQUISITION – § 37.75

For public entities that have remanufactured a bus or purchased or leased a remanufactured bus whose useful life has been extended by five years or more, this bus must "to the maximum extent feasible, be readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs." In other words, the bus must be remanufactured to meet the applicable specifications in Part 38 of the regulations.

The phrase "to the maximum extent feasible" means that vehicles must be accessible unless an engineering analysis shows that including a particular accessibility feature would have a significant adverse effect on the structural integrity of the vehicle; in such a case, only those features that would not have such an effect must be made accessible.

Under DOT ADA regulations, "remanufacturing" involves structural work done to the vehicle. Regular maintenance does not constitute remanufacturing. A typical mid-life overhaul that does not extend the vehicle's normal life does not constitute remanufacturing. Neither does replacement of components, even major items such as the transmission or engine.

Some public entities have the capacity to perform major repairs with their own mechanics in their own maintenance facilities such as rebuilding a bus from the chassis up after an accident. As a result, they have complete control over the remanufacturing process and can ensure that the remanufactured bus is accessible to the maximum extent feasible.

EXCEPTIONS

When a public entity's fixed route service operates a vehicle of "historic character" exclusively on a segment of a fixed route system that is listed on the National Register of Historic Places, then the entity is required to incorporate only the accessibility modifications that do not alter the historic character of the remanufactured vehicle.

Public entities still have to make accessibility modifications that do not alter the historic character of the vehicle. For example, non-slip flooring or audio speakers can be installed and still maintain the vehicle's historic character. Public entities that wish to qualify for this exception must write to the FTA Administrator. FTA will consult with the National Register of Historic Places on the request and rely on its advice before allowing an exception.

2.2 RAPID RAIL AND LIGHT RAIL

NEW RAPID RAIL OR LIGHT RAIL CAR PURCHASES – § 37.79

Any solicitation for a new rapid rail or light rail car must "ensure that the vehicle is readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs." In other words, the rail car must be designed and built to meet the applicable specifications in Part 38 of the regulations.

EXCEPTIONS

None

USED RAPID RAIL OR LIGHT RAIL CAR PURCHASES – § 37.81

Any solicitation for a used rapid rail or light rail car must "ensure that the vehicle is readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs." In other words, the rail car must be designed and built to meet the applicable specifications in Part 38 of the regulations.

EXCEPTIONS

If a public entity can demonstrate and document having made a "good faith effort" to acquire an accessible used light rail or rapid rail car but was not able to do so, an inaccessible rail car may be acquired. To demonstrate good faith efforts, a public entity must first specify accessible light or rapid rail cars in its initial solicitation. The entity must also undertake a nationwide search for accessible rail cars and may not limit the search to a particular region. It is not enough to contact only a known manufacturer to see if it has accessible used rail cars. A public entity must also advertise in a trade magazine such as *Passenger Transport* and other national outlets to determine whether accessible used rail cars are available. Public entities are also required to contact trade groups such as APTA.

Finally, public entities are required to document their efforts to acquire accessible rail cars. This information has to be retained for three years and must be available to FTA and the public.

REMANUFACTURED RAPID RAIL OR LIGHT RAIL CAR ACQUISITION – § 37.83

Public entities that have remanufactured a light rail or rapid rail vehicle or purchased or leased a remanufactured light rail or rapid rail vehicle whose useful life has been extended by five years or more are required, "to the maximum extent feasible, to make the vehicle readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs." In other words, the rail car must be designed and built to meet the applicable specifications in Part 38 of the regulations.

The phrase "to the maximum extent feasible" means that vehicles must be accessible unless an engineering analysis shows that a particular accessibility feature would have a significant adverse effect on the structural integrity of the vehicle; in such a case, only those features that would not have such an effect must be made accessible.

Under DOT ADA regulations, "remanufacturing" involves structural work done to the vehicle. Regular maintenance does not constitute remanufacturing. A typical mid-life overhaul that does not extend a vehicle's normal life does not constitute remanufacturing. Neither does replacement of components, even major items such as wheels and axles.

Some public entities have the capacity to perform major repairs with their own mechanics in their own maintenance facilities such as rebuilding a rapid rail or light rail car from the chassis up after an accident. As a result, they have complete control over the remanufacturing process and can ensure that the remanufactured rail car is accessible to the maximum extent feasible.

EXCEPTIONS

If part of a public entity's light or rapid rail system is listed on the National Register of Historic Places, and a vehicle of "historic character" is used only on that particular section, the entity is required to include only accessibility modifications that do not alter the historic character of the rail car. For example, non-slip flooring or audio speakers can be installed and still maintain the rail car's historic character.

Public entities that wish to qualify for this exception must write to the FTA Administrator. FTA will consult with the National Register of Historic Places on the request and rely on its advice before allowing an exception.

2.3 COMMUTER RAIL

NEW COMMUTER RAIL CAR PURCHASES – § 37.85

Any solicitation for a new commuter rail car must "ensure that the vehicle is readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs." In other words, the rail car must be designed and built to meet the applicable specifications in Part 38 of the regulations.

EXCEPTIONS

None

USED COMMUTER RAIL CAR PURCHASES – § 37.87

Any solicitation for a used commuter rail car must "ensure that the car is readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs." In other words, the rail car must be designed and built to meet the applicable specifications in Part 38 of the regulations.

EXCEPTIONS

When a public entity can demonstrate and document having made a "good faith effort" to acquire an accessible rail car but was not able to do so, an inaccessible rail car may be acquired.

To demonstrate a good faith effort, a public entity must undertake a nationwide search for accessible rail cars and may not limit the search to a particular region. It is not enough to contact only a known manufacturer to see if it has accessible used rail cars. A public entity must advertise in a trade magazine such as *Passenger Transport* and other national outlets to determine whether accessible used vehicles are available. Public entities are also required to contact trade groups such as APTA.

When leasing a commuter rail car for seven days or fewer, good faith efforts must include:

- Having an agreement that an intercity railroad or commuter authority leasing vehicles will supply all available accessible rail cars before providing any inaccessible rail cars.
- When more than one source of rail cars is available, documentation showing that the entity obtained all available accessible commuter rail cars from all sources before obtaining inaccessible commuter rail cars from any source.

Finally, public entities are required to document their efforts to acquire accessible rail cars. This information has to be retained for three years and be available to FTA, the Federal Railroad Administration (FRA), and the public.

REMANUFACTURED COMMUTER RAIL CAR ACQUISITION – § 37.89

For public entities that have remanufactured a commuter rail car or purchased or leased a remanufactured commuter rail car whose useful life has been extended by 10 years or more, this rail car must "to the maximum extent feasible, be readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs." In other words, the rail car must be remanufactured to meet the applicable specifications in Part 38 of the regulations.

The phrase "to the maximum extent feasible" means that vehicles must be accessible unless an engineering analysis shows that including a particular accessibility feature would have a significant adverse effect on the structural integrity of the vehicle; in such cases, only those features that would not have such an effect must be made accessible.

Under DOT ADA regulations, "remanufacturing" involves structural work done to the vehicle. Regular maintenance does not constitute remanufacturing. A typical mid-life overhaul that does not extend a vehicle's normal life does not constitute remanufacturing. Neither does replacement of components, even major items such as the wheels and axles.

Some public entities have the capacity to perform major repairs with their own mechanics in their own maintenance facilities such as rebuilding a commuter rail car from the chassis up after an accident. As a result, they have complete control over the remanufacturing process and can ensure that the remanufactured commuter rail car is accessible to the maximum extent feasible.

EXCEPTIONS

None

2.4 OTHER CONSIDERATIONS

ONE-CAR-PER-TRAIN ACCESSIBILITY – § 37.93

The DOT ADA regulations anticipated that the replacement of vehicles over time would achieve full fleet accessibility. Because rail cars have a long service life, the regulations included a special requirement to provide a minimum level of accessibility in the interim. The DOT ADA regulations required existing passenger rail system operators to provide at least one accessible car per train by July 26, 1995. This was to be accomplished by purchasing new rail cars, by retrofitting existing rail cars in the fleet, or by some

combination of the two. Public entities were expected to allocate their accessible rail cars so that individuals with disabilities would be able to use all trains.

The one-car-per-train rule does not mean that *only* one car per train is all that is required to meet ADA requirements; it applies in addition to the requirement that all new, used, or remanufactured rail cars must be accessible to and usable by persons with disabilities, including wheelchair users. However, this rule continues to be relevant not only to existing rail systems that pre-dated the ADA but also to new systems and/or expansions of existing service that are served by trains composed of used or remanufactured rail cars. While the DOT ADA regulations permit the acquisition of inaccessible used or remanufactured vehicles subject to the conditions described earlier, it is still necessary for public entities to ensure that they have a sufficient number of accessible rail cars in order to achieve at least one accessible car per train.

2.5 DEMAND RESPONSIVE SERVICE

PURCHASES OF NEW VEHICLES FOR DEMAND RESPONSIVE SERVICE – § 37.77

Any solicitation for new vehicles for demand responsive service must "ensure that the vehicle is readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs."

It is important to note that "demand responsive service" in this context means service provided to the general public. This includes demand responsive service provided by public entities that receive Section 5311 funding. It also includes demand responsive transportation provided by public entities to seniors or other members of the public. It does not refer to ADA complementary paratransit service, which is separate and distinct from demand responsive service and subject to paratransit-specific requirements.

EXCEPTIONS

A public entity is not required to ensure that all new acquired vehicles are accessible if it can demonstrate that the demand responsive service provided to individuals with a disability is equivalent "when viewed in its entirety" to the demand responsive service provided to individuals without a disability, as defined below.

EQUIVALENT SERVICE

The regulation sets forth the criteria for equivalent service in a demand responsive system. First, the service should be "provided in the most integrated setting appropriate to the needs of the individual." This means that, while a public entity must provide accessible service to users of the demand responsive service that need accessible service, having separate service for individuals with a disability (e.g., reservation lines or vehicles dedicated for individuals who need accessible service) is not an integrated setting. Second, equivalent service means the same standards and/or rules for the following service elements:

- Response time
- Fares
- Geographic area of service
- Hours and days of service
- Restrictions or priorities based on trip purpose
- Availability of information and reservations capability
- Any constraints on capacity or service availability

The regulations do not set any absolute performance standards for demand responsive service. However, a public entity's standards for service must be the same for all passengers, with and without disabilities, including wheelchair users.

3 THE MAIN ELEMENTS OF ACCESSIBLE VEHICLES

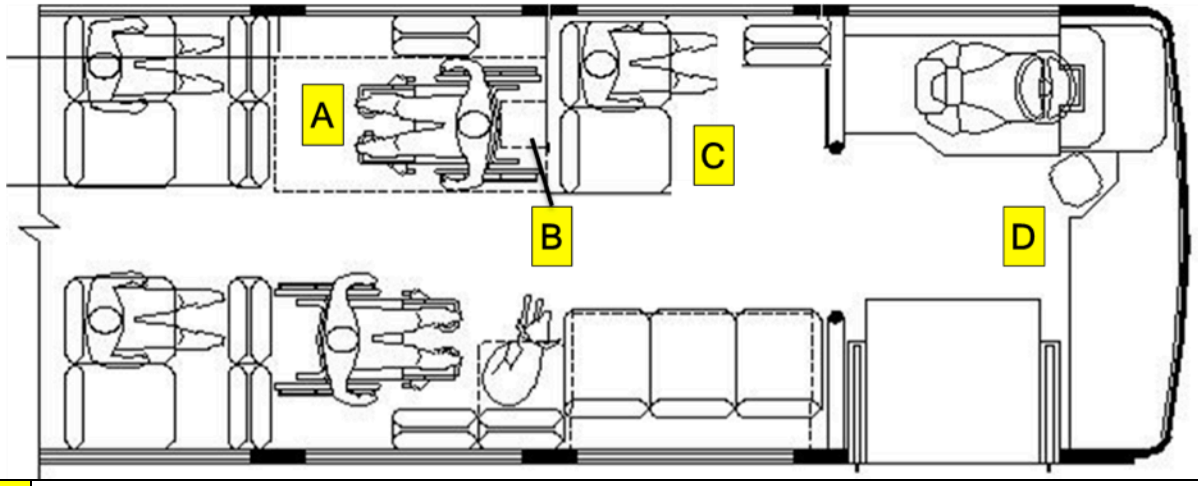
This section summarizes the requirements for buses and vans, light rail vehicles, rapid rail vehicles, and commuter rail cars. The detailed specifications for accessible vehicles are set forth in the DOT regulations at 49 CFR Part 38 and its subparts.

- Subpart B (§ 38.21–38.39) covers buses and vans
- Subpart C (§ 38.51–38.63) covers rapid rail vehicles
- Subpart D (§ 38.71–38.87) covers light rail vehicles
- Subpart E (§ 38.91–38.109) covers commuter rail vehicles
- Subpart H (§ 38.171–38.179) covers other vehicles and systems

Accessibility for a transit vehicle or rail car is commonly thought of in terms of enabling an individual using a wheelchair or mobility aid to board or alight the vehicle or rail car, but this is a far-from-complete perception of accessibility. A fully accessible vehicle or rail car includes a number of additional important elements. For example, as shown in Figures 3-1 and 3-2 for the respective interior and exterior elements of a bus, accessibility requirements include public address systems (on vehicles 22 feet or longer), proper handrails, and stanchions. In addition, minimum overhead clearances, slip-resistant flooring, and sufficient lighting are part of vehicle accessibility. Accordingly, this section summarizes the main requirements for each type of vehicle.

Subpart H addresses other types of vehicles and systems and provides a process by which the Secretary of Transportation and the U.S. Access Board (Access Board) will determine appropriate accessibility standards for new types of vehicles and systems that are not otherwise covered by Part 38. Entities may not determine for themselves which requirements to apply.

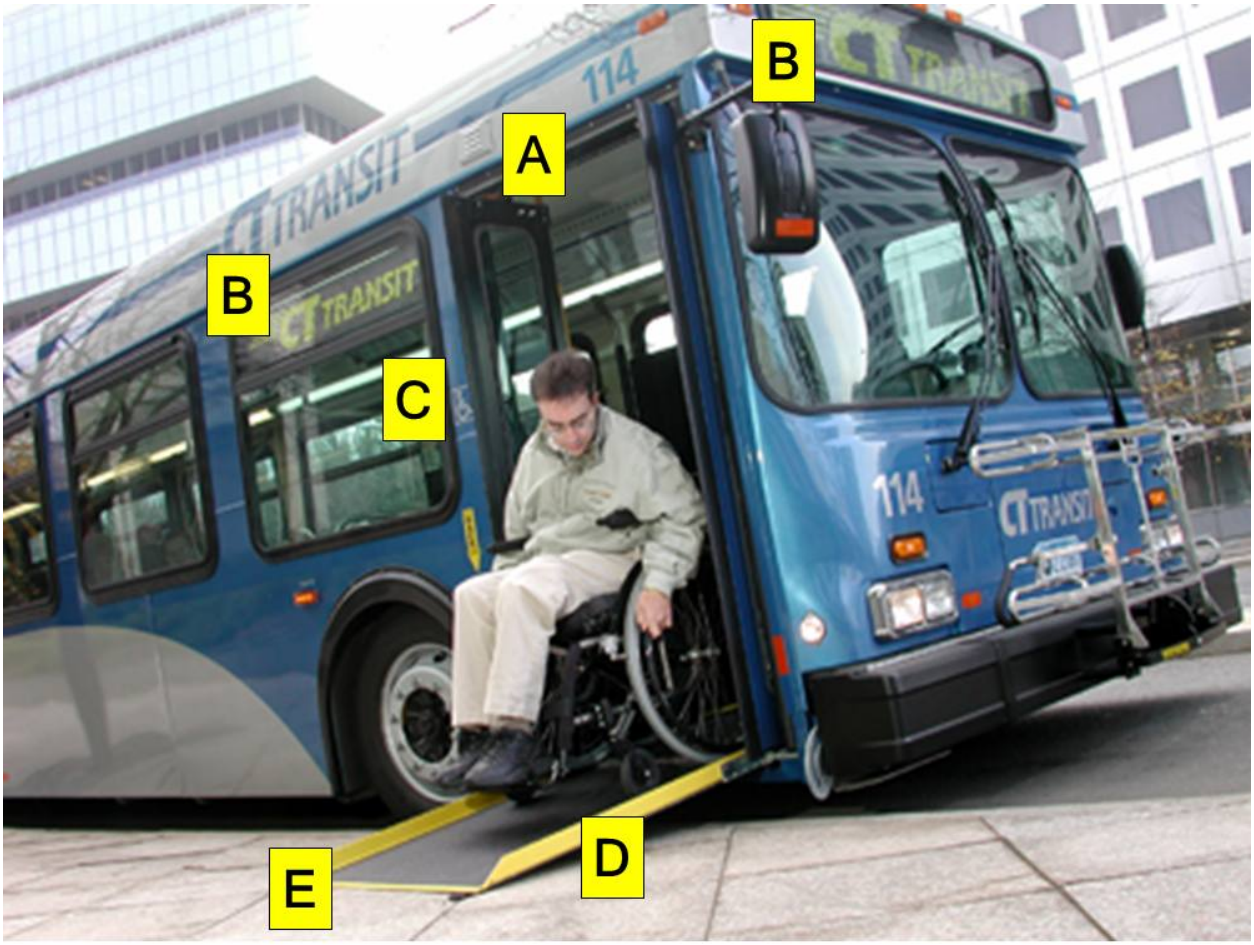
General Specification Elements (Interior) (See §§ 38.23–38.37)



A	Securement areas and storage (including the number of areas, location of areas, size of securement areas, and orientation of mobility device)
B	Padded barrier (if rear-facing securement)
C	Designated priority seating and signage
*	Flooring (slip resistant)
*	Seat edge markings
*	Handrail and stanchions
D	Farebox location and horizontal assist
*	Clear path to/from securement areas
*	Stop request system (vehicles 22 feet or longer) Public address system (vehicles 22 feet or longer)
* Not labeled on figure	

FIGURE 3-1 COMPONENTS OF A BUS INTERIOR THAT HAVE ACCESSIBILITY REQUIREMENTS

General Specification Elements (Exterior)
(See §§ 38.25, 38.31, and 38.39)



A	Accessible door height
B	Destination/route information
C	International Symbol of Accessibility (ISA) at accessible entrance
*	Lighting at accessible entrance
Ramp Specification Elements (See § 38.23(c))	
*	Design load
*	Surface
*	Width
*	Slope
*	Attachment to vehicle
*	Transition to vehicle floor
D	Side barriers
E	Transition from ground to ramp
* Not labeled on figure	

FIGURE 3-2 COMPONENTS OF A BUS EXTERIOR THAT HAVE ACCESSIBILITY REQUIREMENTS

3.1 BUSES AND VANS

The requirements for bus and van lifts, bus and van ramps, and wheelchair securements follow. Please refer to Part 38 for the complete set of accessibility specifications for these vehicles.

Public entities should make sure that vehicles not only accommodate individuals who use wheelchairs, but meet the accessibility needs of passengers with other mobility, visual, hearing, and cognitive disabilities as well.

It is important to stress that public entities cannot make any departures from the specific technical and scoping requirements for vehicles without a signed *determination of equivalent facilitation* from the FTA Administrator. Equivalent facilitation (§ 38.2 and § 37.7(b)) means using an alternative design and/or technology that provides equivalent or greater access to and usability of the vehicle.

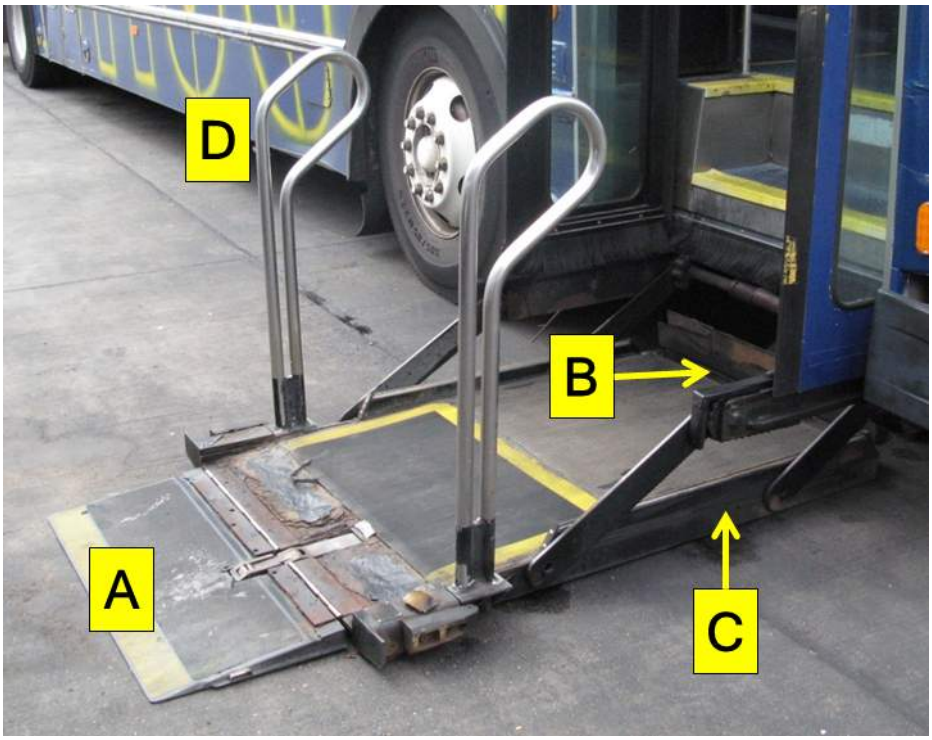
LIFTS FOR BUSES AND VANS – § 38.23(b)

Public entities that currently own or have plans to acquire buses or vans with lifts should review the DOT specifications to understand the pertinent requirements. See Figure 3-3 for an illustration of the lift components.

Checklists can be developed from these specifications to use in the acquisition process. An example of a checklist used in FTA ADA compliance reviews is included in Appendix 1 and can be used to review a vendor's design or to conduct a bus inspection.

It is helpful to understand the rationale for lift specifications as well as to know the exact design or performance dimensions of a lift. For example, there is a minimum design load for a lift (600 pounds) as well as a minimum safety factor based on the ultimate strength of the material (six times the design load for working parts such as belts, pulleys, and shafts, and three times the design load for nonworking parts like the platform and frame). This means that buses' lifts must be able to accommodate an individual using a wheelchair (or a standee plus mobility aid) weighing up to 600 pounds, with a safety factor of 1,800 pounds for nonworking parts and 3,600 pounds for working parts. Public entities are permitted to develop a policy that states that their buses or vans may not necessarily accommodate a passenger and mobility aid whose combined weight exceeds the design load.

Lift Specification Elements (See § 38.23(b))



A	Outer barrier
B	Inner barrier
C	Side rails
D	Hand rails
*	Design load and safety factors
*	Controls and interlocks
*	Emergency backup system
*	Raise and lower speeds (and control in the event of a power failure
*	Platform dimensions
*	Transition to vehicle floor
*	Maximum platform deflection
*	Transition from ground to platform
*	Boarding direction
*	Boarding edge markings
* Not labeled on figure	

FIGURE 3-3 LIFT SPECIFICATION ELEMENTS

Section 38.23(b) includes specifications for the following aspects of a bus or van lift:

1. Design load – minimum weight to carry and minimum strength of key components
2. Controls – design for safety
3. Emergency operation – manual control if primary power fails
4. Power or equipment failure – limited descent rate if primary power fails
5. Platform barriers – front, rear, and side platform barriers to keep the wheelchair from rolling off of lift
6. Platform surface – minimal protrusions and required slip resistance
7. Platform gaps – maximum gaps between lift platform and barriers, and between lift platform and vehicle floor

8. Platform entrance ramp – maximum slope of lift platform entrance ramp when deployed on ground
9. Platform deflection – maximum tilt of lift platform while loaded
10. Platform movement – maximum speed of lift while carrying passenger and while deploying and stowing
11. Boarding direction – available to board in either direction
12. Use by standees – lifts must accommodate standees, with or without a mobility aid
13. Handrails – minimum and maximum height, strength, size

RAMPS FOR BUSES AND VANS – § 38.23(c)

More and more transit systems are choosing to buy or lease low-floor buses that use ramps to board individuals using a wheelchair. These ramps also easily accommodate people who use other mobility aids as well as passengers who have difficulty climbing or descending steps and people pushing strollers. An advantage of ramps over lifts is their simpler design, simpler maintenance, and ease of manual operation by the driver if the primary power fails. However, seating configurations for vehicles with ramps differ from those for lifts, and this should be considered.

Because of their simpler design and operation, there are fewer specifications for ramps than for lifts. Nevertheless, it is just as important to be familiar with these requirements.

Section 38.23(c) includes specifications for the following elements of a bus or van ramp:

1. Design load – minimum weight to carry and minimum strength of key components
2. Ramp surface – minimal protrusions and required slip resistance
3. Ramp threshold – maximum vertical gap between ramp and street, ramp and vehicle floor
4. Ramp barriers – side barriers to prevent mobility aid from rolling off
5. Ramp slope – maximum ramp slope when deployed
6. Attachment – maximum horizontal gap between ramp and vehicle floor
7. Stowage – safe and non-obstructing location of ramp when stowed
8. Handrails – minimum and maximum height, strength, size

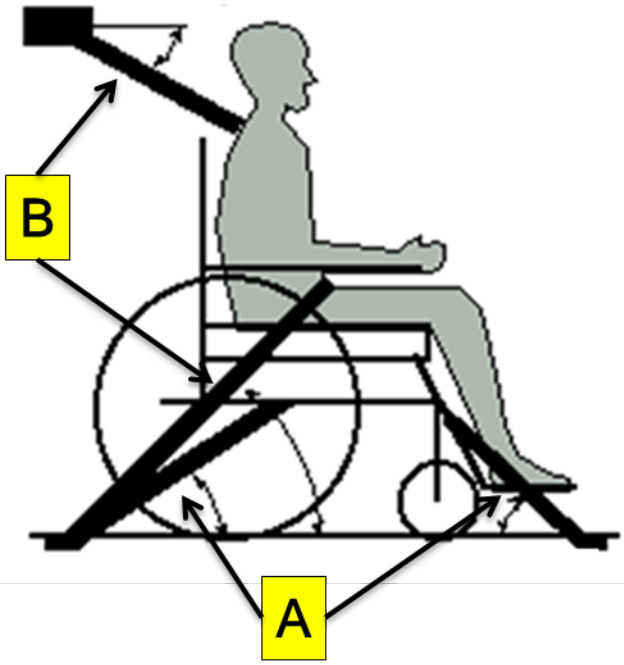
Some public entities have created a 600-pound test pallet to verify that their lifts and ramps meet the design load specification, particularly for those that they have rebuilt.

Although it is not required, a kneeling feature on the bus reduces the slope of the ramp for individuals using wheelchairs and makes it easier for other riders to enter and exit the bus. This can be an important factor that may determine whether an individual passenger can use the fixed route system. In some cases, the use of the kneeling system may be necessary to achieve a compliant ramp slope, however.

SECUREMENT DEVICES FOR BUSES AND VANS – § 38.23(d)

Securement systems for wheelchairs can vary considerably among different vendor offerings, even while meeting the DOT requirements. See Figure 3-4 for an illustration of the specification elements of securement and passenger restraint systems.

Securement and Passenger Restraint System
Specification Elements (See § 38.23(d))



A	Wheelchair securement system - Design loads - Placement and protection of systems - Accommodation of mobility devices - Effectiveness of securement (maximum movement of mobility device when secured
B	Passenger restraint system - Seat belt and shoulder harness at each securement area - Seat belt and shoulder harness separate from wheelchair securement system

FIGURE 3-4 SECUREMENT AND PASSENGER RESTRAINT SYSTEM SPECIFICATION ELEMENTS

Public entities should obtain design specifications for any securement system being considered, including independent laboratory test results. Public entities should also be aware of the variety of wheelchairs in use and make sure that the securement system can properly secure the greatest possible variety of wheelchairs.

Section 38.23(d) includes specifications for the following aspects of bus or van wheelchair securement systems:

1. Design load – minimum force for securement system to restrain
2. Location and size – location of securement areas and minimum floor space for each
3. Mobility aids – ease of use and versatility of securement system to accommodate variety of mobility aids

4. Orientation – at least one forward-facing securement area, with additional backward-facing areas allowed if a rear-padded barrier is provided
5. Movement – maximum allowable movement of wheelchair when secured
6. Stowage – safe and non-obstructing securement system when not in use
7. Seat belt and shoulder harness – requirements for seat belt and harness for each securement device

In order to ensure that the specified securement system is capable of securing the largest variety of wheelchairs possible, it may be necessary to conduct tests of various types and configurations to determine appropriate specifications. For example, a four-point belt-type securement system that relies on short straps and "S" hooks may be easier to use with some types of wheelchairs, but it may not be capable of reaching or attaching to appropriate attachment points on others.

Some transit systems provide the option to regular riders who use wheelchairs to have connecting loops installed on their wheelchairs at no charge. This provides convenient and easily identifiable attachment points for securing the wheelchair to the bus.

3.2 RAPID RAIL VEHICLES

For rapid rail vehicles, the ADA requirements cover doorway width, signage, door-closing signals, interior circulation, floor surfaces, public address systems, doorway-platform gaps, priority seating areas, and between-car barriers. Part 38 provides the complete set of accessibility specifications for these vehicles. This Circular highlights the three areas that have been of the most interest to transit systems and members of the public: the platform gap, priority seating, and between-car barriers.

It is important to stress that public entities cannot make any departures from the specific technical and scoping requirements for rapid rail vehicles without a signed *determination of equivalent facilitation* from the FTA Administrator. Equivalent facilitation (§ 38.2) means using an alternative design and/or technology that provides equivalent or greater access to and usability of the vehicle.

DOORWAY-PLATFORM GAPS FOR RAPID RAIL VEHICLES – § 38.53(d)

Public entities that operate rapid rail service must minimize the horizontal and vertical gaps between the rail cars and the station platforms. The maximum allowable gap depends on whether the rail car is new or retrofitted and whether the platform is part of a station that is designated as existing, "key," or new. The designation of a station as a key station was a requirement of the DOT ADA regulations (§ 37.47). Public entities that were operating rapid rail service before January 25, 1992, were required to identify and designate key stations within the rapid rail system. Key stations had one or more of the following characteristics: high ridership, a transfer point with other lines or other transit modes, an end station of a rail line, or service to major trip generators for individuals with disabilities. Public entities were required to make these key stations readily accessible and usable to individuals with disabilities by July 26, 1993, unless granted an extension by FTA.

Table 3.1 presents the maximum allowable horizontal and vertical gaps.

Table 3.1 – Allowable Gap between Station Platform and Rapid Rail Vehicle

Vehicle	Station Designation	Horizontal Gap	Vertical Gap
New	New	3 inches (max.)	+/- 5/8 inch
New	Key or existing	3 inches (max.)	+/- 1 1/2 inches
Retrofitted	New or key	4 inches (max.)	+/- 2 inches

PRIORITY SEATING AREAS FOR RAPID RAIL VEHICLES – § 38.55

Public entities that operate rapid rail service must provide priority seats for persons with disabilities in each vehicle. Each rail car must have signs that both identify priority seats and ask other passengers to make these seats available for those who need them.

The regulations do not require that rapid rail vehicles designate specific seating locations for individuals who use wheelchairs or have securement systems. However, sufficient interior clearances are required to permit at least two wheelchairs or mobility aids to reach a location measuring 30 inches by 48 inches.

BETWEEN-CAR BARRIERS FOR RAPID RAIL VEHICLES – § 38.63

Rapid rail trains must include devices or systems that "prevent, deter or warn" passengers from accidentally falling off the platform into the gaps between rail cars. Between-car barriers are not required if the platforms have screens that close off the platform edge and open only in correct alignment with the rail car doors. While the regulations do not prescribe a particular type of between-car barrier, suggested systems include pantograph gates, chains, and motion detectors. See Figure 3-5 for an example of a between-car barrier on a rapid rail car.

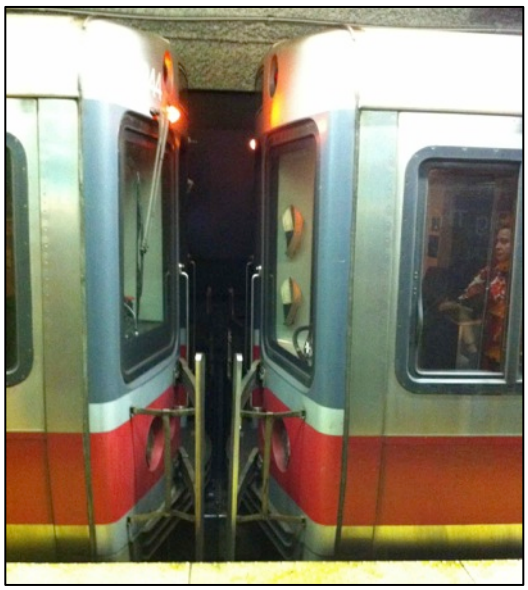


FIGURE 3-5 BETWEEN-CAR BARRIER

3.3 LIGHT RAIL VEHICLES

For light-rail vehicles, the requirements cover items including doorway width, interior lighting, public address systems, floor and step surfaces, doorway-platform gaps, priority seating signs, mobility aid accessibility, and between-car barriers. Part 38 provides the complete set of accessibility specifications for these vehicles. This Circular highlights the three areas that have been of particular interest in light rail systems: the platform gap, priority seating, and between-car barriers.

It is important to stress that public entities cannot make any departures from the specific technical and scoping requirements for light rail vehicles without a signed *determination of equivalent facilitation* from the FTA Administrator. Equivalent facilitation (§ 38.2, §37.7(b)) means using an alternative design and/or technology that provides equivalent or greater access to and usability of the vehicle.

DOORWAY-PLATFORM GAPS FOR LIGHT RAIL VEHICLES – § 38.73(d)

Light rail vehicles intended to be operated solely on systems confined to a dedicated right-of-way are required to provide level boarding. The maximum allowable gap between the platform and the vehicle doorway depends on whether the vehicle is new or retrofitted and whether the platform is part of a station that is designated as existing, "key," or new. The designation of a station as a key station was a requirement of the DOT ADA regulations (§ 37.47). Public entities that were operating light rail service before January 25, 1992, were required to identify and designate key stations within the light rail system. Key stations had one or more of the following characteristics: high ridership, a transfer point with other lines or other transit modes, an end station of a rail line, or service to major trip generators for individuals with disabilities. Public entities were required to make these key stations readily accessible and usable to individuals with disabilities by July 26, 1993, unless FTA granted an extension.

Table 3.2 presents the maximum allowable horizontal and vertical gaps.

Table 3.2 – Allowable Gap between Platform and Light Rail Vehicle

Vehicle	Station Designation	Horizontal Gap	Vertical Gap
New	New	3 inches (max.)	+/- 5/8 inch
New	Existing	3 inches (max.)	+/- 1 1/2 inches
New	Key	3 inches (max.) for at least one door	+/- 1 1/2 inches
Retrofitted	New or key	4 inches (max.)	+/- 2 inches

The regulations allow a public entity to use a lift, ramp, or bridgeplate if "it is not operationally or structurally practicable to meet the horizontal or vertical requirements." The specifications of the lift, ramp, or bridgeplate can be found in § 38.83.

MOBILITY AID ACCESSIBILITY FOR LIGHT RAIL VEHICLES – § 38.83

Light rail vehicles designed for and operated on pedestrian malls, city streets, or other areas where level boarding is not practicable must provide wayside or car-borne lifts, ramps, or bridgeplates. Where light rail vehicles operate in a system that is partially on dedicated right-of-way and partially on city streets, it must be capable of providing level boarding at those station platforms on the dedicated right-of-way and by way of a car-borne or wayside device at those stations that are located on city streets.

LIGHT RAIL VEHICLE LIFTS

The regulations for light rail vehicle lifts include specifications for the following features, similar to the specifications for bus and van lifts:

1. Design load – minimum weight to carry and minimum strength of key components
2. Controls – design for safety
3. Emergency operation – manual control if primary power fails
4. Power or equipment failure – limited descent rate if primary power fails
5. Platform barriers – front, rear, and side platform barriers to keep the wheelchair from rolling off of the lift
6. Platform surface – minimal protrusions and required slip resistance
7. Platform gaps – maximum gaps between lift platform and barriers, and between lift platform and vehicle floor
8. Platform entrance ramp – maximum slope of lift platform entrance ramp when deployed on ground
9. Platform deflection – maximum tilt of lift platform while loaded
10. Platform movement – maximum speed of lift while carrying passenger and while deploying and stowing

11. Boarding direction – available to board in either direction
12. Use by standees – lifts must accommodate standees, with or without a mobility aid
13. Handrails – minimum and maximum height, strength, size

LIGHT RAIL VEHICLE RAMPS AND BRIDGEPLATES

The regulations for light rail vehicle ramps and bridgeplates include specifications for the following features, similar to the specifications for bus and van lifts:

1. Design load – minimum weight to carry and minimum strength of key components
2. Surface – minimal protrusions and required slip resistance
3. Threshold – maximum vertical gap between ramp and street, ramp and vehicle floor
4. Side barriers – side barriers to prevent mobility aid from rolling off
5. Slope – maximum ramp slope when deployed
6. Attachment – maximum horizontal gap between ramp and vehicle floor
7. Stowage – safe and non-obstructing location of ramp when stowed
8. Handrails – minimum and maximum height, strength, size

PRIORITY SEATING AREAS FOR LIGHT RAIL VEHICLES – § 38.75 AND § 38.83(a)(1)

Public entities that operate light rail service must provide priority seats for persons with disabilities in each vehicle. These seats must have signs that identify them as priority seats and include a request for other passengers to make the seats available for those who need them.

Light rail vehicles must also include at least two areas that can accommodate an individual using a wheelchair or other mobility aid. The areas must include a clear space measuring at least 48 inches by 30 inches and be located in areas that do not unduly restrict passenger flow (see Figure 3.6). The regulations do not specify the location of the clear space areas. These areas may coincide with places where other passengers stand.

When light rail vehicles have a designated wheelchair or mobility aid location, signs are required that both identify the location and ask other passengers to make these locations available for those who need to occupy them. A securement system is not required.

FIGURE 3-6 CLEAR AREA DESIGNATED FOR WHEELCHAIRS AND MOBILITY AIDS

BETWEEN-CAR BARRIERS FOR LIGHT RAIL VEHICLES – § 38.85

When a light rail station provides high-platform level boarding, the vehicles must have devices or systems that "prevent, deter or warn" passengers from accidentally falling from the platform into the gaps between cars. Between-car barriers are not required if the platforms have screens that close off the platform edge and open only in correct alignment with the doors of the rail cars.

While the regulations do not prescribe any particular type of between-car barrier, the suggested systems are pantograph gates, chains, and motion detectors.

3.4 COMMUTER RAIL CARS

For commuter rail cars, the requirements cover car doorway-platform gaps, mobility aid accessibility, priority seating signs, and between-car barriers. Part 38 contains the complete set of accessibility specifications for commuter rail cars.

Commuter rail operators should be aware that new requirements for accessible boarding at all cars of a train apply to rail platforms constructed or altered after February 1, 2012. These requirements may affect the specifications for commuter rail vehicles that provide service to these new platforms. For example, if level-entry boarding is not possible, car-borne lifts are the preferred alternative to bridgeplates, mini-high platforms, or platform-based lifts (§ 37.42).

It is important to stress that public entities cannot make any departures from the specific technical and scoping requirements for commuter rail cars without a signed *determination of equivalent facilitation* from the FTA Administrator. Equivalent facilitation (§ 38.2 and § 37.7(b)) means using an alternative design and/or technology that provides equivalent or greater access to and usability of the vehicle.

DOORWAY-PLATFORM GAPS FOR COMMUTER RAIL CARS – § 38.93(d)

Public entities that operate commuter rail service must minimize the horizontal and vertical gaps between the rail cars and the station platform or mini-high platform. The maximum allowable gaps depend on whether the rail car is new or retrofitted and whether the platform is part of a station that is existing, "key," or new. The designation of a station as a key station was a requirement of the DOT ADA regulations (§ 37.47). Public entities that were operating commuter rail service before January 25, 1992, were required to identify and designate key stations within the commuter rail system. Key stations had one or more of the following characteristics: high ridership, a transfer point with other lines or other transit modes, an end station of a rail line, or service to major trip generators for individuals with disabilities. Public entities were required to make these key stations readily accessible and usable to individuals with disabilities by July 26, 1993, unless FTA granted an extension.

Table 3.3 presents the maximum allowable horizontal and vertical gaps.

Table 3.3 – Allowable Gaps between Platform and Commuter Rail Cars

Rail Car	Station Designation	Horizontal Gap	Vertical Gap
New	New	3 inches (max.)	+/- 5/8 inch
New	Existing	3 inches (max.)	+/- 1 1/2 inches
New	Key	3 inches (max.) for at least one door	+/- 1 1/2 inches
Retrofitted	New or key	4 inches (max.)	+/- 2 inches

The regulations allow a public entity to use a lift, ramp, or bridgeplate if "it is not operationally or structurally practicable to meet the horizontal or vertical requirements."

MOBILITY AID ACCESSIBILITY FOR COMMUTER RAIL CARS – § 38.95

All new commuter rail cars that cannot meet the gap requirements in § 38.93(d) must have a lift, ramp, or bridgeplate that meets the specifications listed below.

If a station's platforms are equipped with a lift, ramp, or bridgeplate, a commuter rail car does not need to have such a device. Please note that for stations that were approved for entry into final design or that began platform construction or alteration on or after February 1, 2012, platform-based lifts, ramps, and bridgeplates must comply with the following requirements (§ 37.42):

- A passenger with a disability must have access to all accessible commuter rail cars.
- If the commuter rail service does not share track with existing freight rail service, access to all accessible commuter rail cars must be provided via level-entry boarding. Level-entry boarding is defined as a maximum of 5 1/2 inches vertical gap and 10 inches horizontal gap (13 inches for a curved track).
- If the commuter rail service shares the tracks with existing freight rail service, the public entity may use a platform-based device to achieve level-entry boarding, such as a lift, ramp, bridgeplate, or mini-high platform.

If the public entity does not provide level-entry boarding, it must obtain permission from FTA. The entity must submit an analysis to FTA that compares the capital, operating, and life-cycle costs of the platform-based device with the costs of car-borne lifts. The analysis must also compare the entity's relative ability to provide service to individuals with disabilities in an integrated, safe, timely, and reliable manner. The entity must also submit a plan to FTA with the following information: (1) how it plans to deploy, maintain, and operate the chosen platform device, and (2) how it will train employees to use the device. FTA will review the submission and will either approve the plan or request modifications.

COMMUTER RAIL CAR LIFTS

The regulations for commuter rail car lifts include specifications for the following features, similar to the specifications for bus and van lifts:

1. Design load – minimum weight to carry and minimum strength of key components
2. Controls – design for safety
3. Emergency operation – manual control if primary power fails
4. Power or equipment failure – limited descent rate if primary power fails
5. Platform barriers – front, rear, and side platform barriers to keep the wheelchair from rolling off of the lift
6. Platform surface – minimal protrusions and required slip resistance
7. Platform gaps – maximum gaps between lift platform and barriers, and between lift platform and vehicle floor
8. Platform entrance ramp – maximum slope of lift entrance ramp when deployed on ground
9. Platform deflection – maximum tilt of lift platform while loaded
10. Platform movement – maximum speed of lift while carrying passenger and while deploying and stowing
11. Boarding direction – available to board in either direction
12. Use by standees – lifts must accommodate standees, with or without a mobility aid
13. Handrails – minimum and maximum height, strength, size

COMMUTER RAIL CAR RAMPS AND BRIDGEPLATES

The regulations for commuter rail car ramps include specifications for the following features, similar to the specifications for bus and van ramps:

1. Design load – minimum weight to carry and minimum strength of key components
2. Surface – minimal protrusions and required slip resistance
3. Threshold – maximum vertical gap between ramp and street, ramp and vehicle floor
4. Barriers – side barriers to prevent mobility aid from rolling off

5. Slope – maximum ramp slope when deployed
6. Attachment – maximum horizontal gap between ramp and vehicle floor
7. Stowage – safe and non-obstructing location of ramp when stowed
8. Handrails – minimum and maximum height, strength, size

PRIORITY SEATING AREAS FOR COMMUTER RAIL CARS – § 38.95(d) AND § 38.105

Public entities that operate commuter rail service must have priority seats for persons with disabilities in each rail car. The rail cars must have signs that identify these seats and request that other passengers make these seats available for those who need them.

Commuter rail cars must also include at least two areas that can accommodate an individual using a wheelchair or other mobility aid. The areas must include a clear space measuring at least 48 inches by 30 inches. The two areas must adjoin an accessible path, and they are permitted to overlap an accessible path. Up to 6 inches of the 48 inches may be under another seat as long as there is a minimum of nine inches between the floor and the overhanging seat. A securement system is not required.

BETWEEN-CAR BARRIERS FOR COMMUTER RAIL CARS – § 38.109

When a commuter rail station provides high-platform level boarding, the commuter rail cars that do not have between-car bellows must have devices or systems that "prevent, deter or warn" passengers from accidentally falling off the platform into the gaps between rail cars.

Between-car barriers are not required if the platforms have screens that close off the platform edge and open only in correct alignment with the doors of the rail cars.

While the regulations do not prescribe any particular type of between-car barrier, the suggested systems are pantograph gates, chains, and motion detectors.

3.5 OTHER CONSIDERATIONS

UPDATES TO SPECIFICATIONS

From time to time, the accessibility standards for vehicles and systems may be revised or updated to reflect technological changes and evolution. The Access Board develops the specifications, which then form the basis for standards adopted by implementing agencies like DOT. The Access Board would develop any revisions to accessibility standards through a public participation process. Once the revisions are issued as a Final Rule, DOT must then amend its own regulations to incorporate the Board's standards as regulatory requirements. All notices for public review and comment and all final rules making regulatory amendments are published in the *Federal Register*.

MAINTENANCE AND TRAINING

While vehicles must be accessible, the accessibility components must also be maintained in working order to ensure that they continue to be "usable by" persons with disabilities, including wheelchair users. Public entities are required to train drivers and other employees (and ensure that contractors' employees receive training) to operate vehicles and equipment safely and properly and, when assisting individuals with disabilities who use the service, do so in a respectful and courteous way. In other words, employees must know how to operate accessible vehicles and treat their passengers respectfully.

4 ENSURING THAT VEHICLES ARE COMPLIANT

When acquiring additional vehicles, it is beneficial to become familiar with the specific accessibility requirements for each vehicle type used in the transit system. This applies to vans, buses, and all types of rail cars. It is important to stress that public entities cannot make any departures from the specific technical and scoping requirements for vehicles without a signed determination of "equivalent facilitation" from the FTA Administrator. Equivalent facilitation (§ 38.2) means using an alternative design and/or technology that provides equivalent or greater access to and usability of the vehicle.

4.1 UNDERSTANDING THE SPECIFICATIONS

The specifications prepared for bid packages should spell out the specific accessibility requirements in detail. Public entities should not generalize by simply stating that the vehicle "shall meet all ADA requirements in Part 38." Such a general statement presumes that all potential bidders understand each specific requirement for each vehicle type. Spelling out the specific requirements ensures that other specifications do not conflict with ADA requirements. For example, if a bid package specifies a particular seating arrangement but does not specify the dimensions of the minimum required wheelchair securement area, potential bidders may overlook that requirement as they attempt to maximize the number of seats. Finally, by incorporating the detailed specifications into bid packages, individuals preparing the packages will gain a working understanding of the requirements necessary to ensure that the purchased vehicles comply with ADA.

In order to improve the accessibility of the fixed route system and make service easier for all passengers to use, a public entity may wish to develop specifications that exceed the minimum requirements under DOT ADA regulations. For example, public entities may discover that a vehicle meeting the minimum requirement for ramp slope is nonetheless too steep for some wheelchair users. By specifying a longer ramp that minimizes slope, more individuals using wheelchairs might be able to use the fixed route bus service in place of a paratransit vehicle.

4.2 OBTAINING PUBLIC INPUT

Seeking public input is also beneficial to ensure that the solicited vehicles can be used by as many persons with disabilities as possible. Some public entities have had vendors develop full-size sample buses and rail cars that riders can test by entering and exiting the prototype vehicle, using the lifts or ramps, maneuvering in the vehicle aisles, using the securement system, and observing the signage. Rider comments based on this testing can help improve the ultimate design of the vehicle.

While it may not be possible to respond to all of the obtained feedback from such an approach, performing this step can offer insights into potential design enhancements and minimize complaints and problems after the vehicles are in service. Having a more usable and workable design can also permit services to operate more efficiently. For example, boarding and alighting times will be reduced if passengers can easily get to and from securement areas and drivers can secure mobility devices faster.

4.3 ADDITIONAL SPECIFICATIONS

The bid package should require documentation for all specifications that could not be easily confirmed via observation or simple measurement. This includes product and material specifications, strength of components, and performance of systems. This documentation might consist of test results from independent laboratories or product specifications from the original manufacturer. See example below.

The securement straps/clamps have required minimum load tolerances. The vehicle vendor should document that the straps/clamps meet these load tolerances. The front doorway must have at least 2 foot-candles of lighting and the outside of the doorway must have at least 1 foot-candle of lighting. The vendor should document that the vehicle meets these requirements.

SAMPLE DOCUMENTATION OF TEST RESULTS

4.4 INSPECTIONS

Once a vehicle vendor is selected, it is a good practice to confirm that that the vendor understands the complete bid package. At the appropriate time in the procurement cycle, entities using FTA funds are required to conduct a factory inspection of the vehicles (49 CFR 663.21). Even when not using FTA funds, this is a recommended practice. Public entities may use their own employees and/or a contractor with expertise in the type of vehicle that being inspected. Any identified problems can be more easily remedied at this stage of production.

Based on the developed specification, a checklist will facilitate a pre-delivery inspection. This checklist should include the elements related to accessibility. The checklist discussed earlier (Appendix 1) is an example of what could be used in the factory inspection; the sample should be modified to address any specifications that are more stringent than those in Part 38.

When the vehicles are delivered, a final inspection should be performed prior to acceptance (also using a checklist). This will ensure that the vendor is providing the vehicle as specified. If there are any discrepancies, the vendor may be able to make minor changes locally. For larger issues, the vendor may need to return the vehicle(s) to the plant.

5 DEFINITIONS

Accessible means, with respect to vehicles and facilities, complying with the accessibility requirements of parts 37 and 38 of title 49 of the U.S. Code.

The Act or ADA means the Americans with Disabilities Act of 1990 (Pub. L. 101-336, 104 Stat. 327, 42 U.S.C. 12101-12213 and 47 U.S.C. 225 and 611), as it may be amended from time to time.

Administrator means Administrator of the Federal Transit Administration, or his or her designee.

Bus means any of several types of self-propelled vehicles, generally rubber-tired, intended for use on city streets, highways, and busways, including but not limited to minibuses, forty- and thirty-foot buses, articulated buses, double-deck buses, and electrically powered trolley buses, used by public entities to provide designated public transportation service and by private entities to provide transportation service including, but not limited to, specified public transportation services. Self-propelled, rubber-tired vehicles designed to look like antique or vintage trolleys are considered buses.

Commuter rail car means a rail passenger car obtained by a commuter authority for use in commuter rail transportation.

Commuter rail transportation means short-haul rail passenger service operating in metropolitan and suburban areas, whether within or across the geographical boundaries of a state, usually characterized by reduced fare, multiple ride, and commutation tickets and by morning and evening peak period operations. This term does not include light or rapid rail transportation.

Demand responsive service – see demand responsive system.

Demand responsive system means any system of transporting individuals, including the provision of designated public transportation service by public entities and the provision of transportation service by private entities, including but not limited to specified public transportation service, which is not a fixed route system.

Designated public transportation means transportation provided by a public entity (other than public school transportation) by bus, rail, or other conveyance (other than transportation by aircraft or intercity or commuter rail transportation) that provides the general public with general or special service, including charter service, on a regular and continuing basis.

Fixed route service – see fixed route system.

Fixed route system means a system of transporting individuals (other than by aircraft), including the provision of designated public transportation service by public entities and the provision of transportation service by private entities, including, but not limited to, specified public transportation service, on which a vehicle is operated along a prescribed route according to a fixed schedule.

Heavy rail – see rapid rail.

Light rail means a streetcar-type vehicle operated on city streets, semi-exclusive rights of way, or exclusive rights of way. Service may be provided by step-entry vehicles or by level boarding.

New vehicle means a vehicle which is offered for sale or lease after manufacture without any prior use.

Operates includes, with respect to a fixed route or demand responsive system, the provision of transportation service by a public or private entity itself or by a person under a contractual or other arrangement or relationship with the entity.

Paratransit means comparable transportation service required by the ADA for individuals with disabilities who are unable to use fixed route transportation systems.

Private entity means any entity other than a public entity.

Public entity means:

(1) Any state or local government;

(2) Any department, agency, special purpose district, or other instrumentality of one or more state or local governments; and

(3) The National Railroad Passenger Corporation (Amtrak) and any commuter authority.

Purchase or lease, with respect to vehicles, means the time at which an entity is legally obligated to obtain the vehicles, such as the time of contract execution.

Rapid rail means a subway-type transit vehicle railway operated on exclusive private rights of way with high-level platform stations. Rapid rail also may operate on elevated or at grade level track separated from other traffic.

Remanufactured vehicle means a vehicle which has been structurally restored and has had new or rebuilt major components installed to extend its service life. The DOT meaning of "remanufactured" involves structural work done to the vehicle. Regular maintenance does not constitute remanufacturing. A typical mid-life overhaul that does not extend a vehicle's normal life does not constitute remanufacturing. Neither does replacement of components, even major items such as the transmission or engine.

Solicitation means the closing date for the submission of bids or offers in a procurement.

Specified public transportation means transportation by bus, rail, or any other conveyance (other than aircraft) provided by a private entity to the general public, with general or special service (including charter service) on a regular and continuing basis.

Street car – see light rail.

Wheelchair means a mobility aid belonging to any class of three or more-wheeled devices, usable indoors, designed or modified for and used by individuals with mobility impairments, whether operated manually or powered.

6 AUTHORITIES

This Circular draws from several key documents.

AMERICANS WITH DISABILITIES ACT OF 1990 (ADA): TITLE 42, CHAPTER 126 AND TITLE 47, CHAPTER 5 OF U.S. CODE

This is a civil rights law that prohibits discrimination based on disability. It greatly extends the rights set forth in Section 504 (described below) by going beyond programs and activities receiving Federal funding. The applicable portions of the ADA for transportation include: Title II – Public Entities (and Public Transportation); Title III Public Accommodations (and Commercial Facilities); and Title IV – Telecommunications.

SECTION 504 OF THE REHABILITATION ACT OF 1973 (29 USC SECTION 701)

This is the first comprehensive national legislation that guaranteed rights to individuals with a disability. It prohibits discrimination against individuals with a disability in any program or activity receiving Federal financial assistance.

U.S. DOT REGULATIONS: 49 CFR PARTS 27, 37, 38, AND 39

These are parts of U.S. DOT regulations relevant to accessibility. Part 27, "Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance," carries out the intent of Section 504 of the Rehabilitation Act of 1973.

Part 37, "Transportation Services for Individuals with Disabilities (ADA)," implements the transportation provisions of Title II and Title III of the ADA.

Part 38, "Americans with Disabilities Act Accessibility Specifications for Transportation Vehicles," includes the specifications for buses, vans, and rail vehicles.

Part 39, "Transportation for Individuals with Disabilities: Passenger Vessels," covers requirements for nondiscriminatory service aboard ferries and other vessels.

U.S. DOT ADA STANDARDS FOR TRANSPORTATION FACILITIES, EFFECTIVE NOVEMBER 29, 2006

This document contains scoping and technical requirements for accessibility by individuals with disabilities to sites, facilities, and their respective elements. The requirements are meant to be applied to the design and construction of new sites and facilities, additions, and alterations to existing facilities.

7 REFERENCES

The Americans with Disabilities Act of 1990

Preamble – Transportation for Individuals with Disabilities, September 6, 1991

Part 27 – Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance

Part 37 – Transportation Services for Individuals with Disabilities

Final Rule Adopting New Accessibility Standards – Effective November 29, 2006

Americans with Disabilities Act Accessibility Guidelines (ADAAG)

Part 38 – Accessibility Specifications for Transportation Vehicles

Americans with Disabilities Act – Transportation Regulatory History

APPENDIX 1
SAMPLE BUS AND VAN SPECIFICATION CHECKLIST

This checklist is based on the provisions of Subpart B of 49 CFR Part 38, the Americans with Disabilities Act (ADA) Accessibility Specifications for Transportation Vehicles.

All dimensions listed are subject to conventional engineering tolerances, including anticipated normal wear not exceeding accepted industry-wide standards and practices.

For each required specification included below, indicate in the left-hand margin if the vehicle meets the specification, does not meet the specification, or the specification is not applicable to the vehicle being inspected. If the vehicle does not meet the specification, note actual measurements in the space provided to the right. Indicate actual measurements clearly.

For some specifications (such as lift design load, securement strength, etc.), it may be appropriate to refer back to the manufacturer's information that was provided with the vehicle

GENERAL INFORMATION

Name of Public Entity	
Fleet Number Assigned by Public Entity/Contractor (if applicable):	
Type of Vehicle: (check one)	
• Van	
• Bus (22 feet in length or under)	
• Bus (greater than 22 feet in length)	
Make/Model	
Year	
Name of Person Conducting Review	
Signature	
Date	

LIFT SPECIFICATIONS (IF APPLICABLE)

Meets/Does Not Meet/NA	Specification [Regulation]	Note Actual Measurement
	The design load of a lift must be at least 600 pounds. Working parts must have a safety factor of at least six. Non-working parts shall have a safety factor of at least three. [§ 38.23(b)(1)]	
	Controls must be interlocked with the brakes, transmission, or door so that the vehicle cannot move unless the interlock is engaged. [§ 38.23(b)(2)(i)]	
	Controls must be "momentary contact type" (meaning they require constant pressure) and must allow the up/down cycle to be reversed without causing the platform to "stow" while occupied. [§ 38.23(b)(2)(i)]	
	Lifts must be equipped with an emergency backup system. The emergency backup system shall be capable of being operated both up and down without the platforms "stowing" while occupied. [§ 38.23(b)(3)]	
	Must be designed so that in the event of a power failure, the platform cannot fall faster than 12 inches per second. [§ 38.23(b)(4)]	

Meets/Does Not Meet/NA	Specification [Regulation]	Note Actual Measurement
	Must have an inner barrier or inherent design feature to prevent the mobility aid from rolling off the side closest to the vehicle until the platform is in its fully raised position. [§ 38.23(b)(5)]	
	Side barriers must be at least 1 1/2 inches high. [§ 38.23(b)(5)]	
	The "loading-edge" (or outer) barrier shall be sufficient to prevent a power wheelchair from riding over or otherwise defeating it. If this barrier is automatic, it must close when the platform is no more than 3 inches off the ground. If the outer barrier is to be driver operated, it must have an interlock or inherent design that prevents the platform from being raised until the barrier is closed or other system is engaged. [§ 38.23(b)(5)]	
	The platform surface must be slip resistant with no protrusions over 1/4 inch. [§ 38.23(b)(6)]	
	The platform must be at least 28 1/2-inches wide measured at the platform surface and at least 30 inches wide measured from 2 inches above the platform surface to 30 inches above the surface. It must also be at least 48 inches long measured from 2 inches above the surface to 30 inches above the surface. [§ 38.23(b)(6)]	
	Gaps between the platform surface and any barrier can be no more than 5/8 inch. Semi-automatic lifts can have a handhold in the platform that measures no more than 1 1/2 inches by 4 1/2 inches. [§ 38.23(b)(7)]	
	When in the fully raised position, the platform surface must be vertically within 5/8 inch of the finished floor and horizontally within 1/2 inch of the finished floor. [§ 38.23(b)(7)]	
	The ramp from ground to platform (often the lowered outer barrier) must have a slope of no more than 1:8 for a maximum rise of 3 inches (i.e., if platform is 1 inch off the ground, ramp must be at least 8 inches long). If the threshold from ground to ramp (i.e., the thickness of the ramp material) is more than 1/4 inch, it must be beveled with a slope no greater than 1:2. [§ 38.23(b)(8)]	
	The platform must not deflect more than 3 degrees in any direction when a 600-pound load is placed on the center of the platform. [§ 38.23(b)(9)]	
	The platform must raise or lower in no more than 6 inches per second. The platform must be stowed or deployed in no more than 12 inches per second. Horizontal acceleration can be no more than 0.3 g. [§ 38.23(b)(10)]	
	Components of a lift must be designed to allow boarding in either direction. [§ 38.23(b)(11)]	

Meets/Does Not Meet/NA	Specification [Regulation]	Note Actual Measurement
	Must be equipped with two handrails that move in tandem with the lift platform. Handrails must be 30-38 inches above the platform surface and must have a useable grasping area of at least 8 inches. Handrails must be capable of supporting 100 pounds, must have a cross-sectional diameter of 1 1/4 to 1 1/2 inches, and must have at least 1 1/2 inches of "knuckle clearance." [§ 38.23(b)(13)]	
	Lifts may be marked to identify the preferred standing position. [§ 38.23(b)(12)]	

RAMP SPECIFICATIONS (IF APPLICABLE)

Meets/Does Not Meet/NA	Specification [Regulation]	Note Actual Measurement
	Ramps 30 inches or greater in length must have a design load of 600 pounds. Ramps under 30 inches in length must have a design load of 300 pounds. [§ 38.23(c)(1)]	
	Ramp surface must be continuous and slip resistant. Protrusions can be no more than 1/4 inch. [§ 38.23(c)(2)]	
	Ramps must be at least 30 inches wide. [§ 38.23(c)(2)]	
	Ramps must accommodate both three-wheeled and four-wheeled mobility aids. [§ 38.23(c)(2)]	
	If the threshold from the ground to the ramp surface exceeds 1/4 inch, it must be beveled with a maximum slope of 1:2. [§ 38.23(c)(3)]	
	Side barriers, at least 2 inches high, must be provided. [§ 38.23(c)(4)]	
	Ramps must have the least slope practicable. When the ramp is deployed to ground, the slope cannot exceed 1:4 (i.e., for a vehicle with a finished floor 12 inches above the ground, a 48-inch ramp would be needed). When deployed to a 6-inch curb the following maximum slopes would apply: Finished floor height above 6-inch curb • 3 inches or less – maximum slope of 1:4 • 6 inches or less, but more than 3 inches – maximum slope of 1:6 • 9 inches or less, but more than 6 inches – maximum slope of 1:8 • Greater than 9 inches – maximum slope of 1:12 [§ 38.23(c)(5)]	
	The ramp must be firmly attached to the vehicle. [§ 38.23(c)(6)]	
	Gaps between the ramp and vehicle finish floor can be no more than 5/8 inch. [§ 38.23(c)(6)]	
	A compartment or securement system must be provided for the ramp to keep it from impinging on the space set aside for mobility aid users and to keep it from becoming a hazard in the event of a sudden stop. [§ 38.23(c)(7)]	

Meets/Does Not Meet/NA	Specification [Regulation]	Note Actual Measurement
	Handrails are not required. If they are provided, however, they must support 100 pounds, be 30 to 38 inches above the ramp surface, have a cross-sectional diameter of 1 1/4 to 1 1/2 inches, and be continuous for the full length of the ramp. [§ 38.23(c)(8)]	

SECUREMENT AREA

Meets/Does Not Meet/NA	Specification [Regulation]	Note Actual Measurement
	Vehicles over 22 feet in length must have two (2) securement locations. Vehicles 22 feet and under must have one (1) securement location. Vehicles are to be measured from the front-most part to the rear-most item (including the bumpers). [§ 38.23(a)]	
	Wheelchairs and mobility aids must be oriented as follows: • For vehicles greater than 22 feet in length, at least one securement position must be forward facing. Other securement areas can be either forward or rear facing. • For vehicles 22 feet in length or less, the one required position can be either forward or rear facing. [§ 38.23(d)(4)]	
	If wheelchair and mobility-aid users are secured in a rear-facing orientation, a padded barrier must be provided. The barrier must be 18 inches wide and extend from 38 inches to 56 inches above the floor. [§ 38.23(d)(4)]	
	Securement systems must have the following design loads: • For vehicle with a GVWR of 30,000 pounds or more: 2,000 pounds for each strap/clamp and 4,000 pounds per mobility aid. • For vehicles with a GVWR of less than 30,000 pounds: 2,500 pounds per clamp/strap and 5,000 pounds per mobility aid. [§ 38.23(d)(1)]	
	Securement area must be located as close to the accessible entrance as possible. [§ 38.23(d)(2)]	
	A clear floor area of 30 inches wide by 48 inches long must be provided for each securement area. This can include an area up to 6 inches under a seat as long as there is a vertical clearance of at least 9 inches. If flip-seats are utilized, they cannot obstruct the required floor area. The required floor area can overlap the access path (the path of travel from the accessible entrance to the securement area). [§ 38.23(d)(2)]	
	The securement system must accommodate all common wheelchairs and mobility aids (any mobility aid not exceeding 30 inches in width and 48 inches in length and weighing no more than 600 pounds when occupied) and be operable by someone with average dexterity that is familiar with the system. [§ 38.23(d)(3)]	
	Securement systems must keep mobility aids from	

Meets/Does Not Meet/NA	Specification [Regulation]	Note Actual Measurement
	moving no more than 2 inches in any direction. [§ 38.23(d)(5)]	
	The securement system must be located to be readily accessed when needed but must not interfere with passenger movement or be a hazard to passengers. It should also be reasonably protected from vandalism. [§ 38.23(d)(6)]	
	A seat belt and shoulder harness must be provided for each securement position. The seat belt and shoulder harness must be separate from the securement system for the mobility aid. [§ 38.23(d)(7)]	
	A sign must be provided which indicates that the securement area is to be used by persons who use wheelchairs and mobility aids. Characters on these signs shall have a width to height ratio between 3:5 and 1:1 and a stroke width to height ratio between 1:5 and 1:10. Minimum character height (using a capital X) shall be 5/8 inch. Wide spacing shall be used (generally the space between letters shall be 1/16 the height of upper case letters). Letters must contrast with the sign's background color. [§ 38.27(b), § 38.27(c)]	

GENERAL VEHICLE SPECIFICATIONS

Meets/Does Not Meet/NA	Specification [Regulation]	Note Actual Measurement
	Aisles, steps, and floor areas must be slip resistant. [§ 38.25(a)]	
	Step edges, thresholds, and the boarding edge of ramps or lift platforms must have a band of color that contrasts with the step/floor surface. Typically, white or bright yellow is used to contrast against dark floors. [§ 38.25(b)]	
	The height of doors at accessible entrances and the interior height along the path of travel between accessible entrances and securement areas shall be as follows: • For vehicles 22 feet or longer, the clearance from the raised lift platform or the ramp surface to the top of the door must be at least 68 inches. • For vehicles less than 22 feet, the overhead clearance must be at least 56 inches. [§ 38.25(c)]	
	At least one set of forward-facing seats must be designated as priority seats for persons with disabilities. Signs identifying these as priority seats must be provided. Characters on these signs shall have a width to height ratio between 3:5 and 1:1 and a stroke width to height ratio between 1:5 and 1:10. Minimum character height (using a capital X) shall be 5/8 inch. Wide spacing shall be used (generally the space between letters shall be 1/16 the height of upper case letters). Letters must contrast with the sign's background color. [§ 38.27(a), § 38.27(c)]	
	Interior handrails and stanchions should not interfere with the path of travel of a common wheelchair from the accessible entrance to the securement areas. [§ 38.29(a)]	
	Handrails and stanchions shall be provided in the entrance area and through the fare collection area to assist persons with disabilities as they enter and pay a fare. Some portion of this handrail/stanchion system must be able to be grasped from outside the vehicle to assist persons as they start to board. Handrails shall have a cross-sectional diameter of 1 1/4 to 1 1/2 inches, shall provide a minimum of 1 1/2 inches of "knuckle clearance," and shall have eased edges with corner radii of not less than 1/8 inch. On vehicles 22 feet in length or longer which have fare collection systems, a horizontal assist shall be provided across the front of the vehicle to allow a person to lean against the assist while paying a fare. [§ 38.29(b)]	

Meets/Does Not Meet/NA	Specification [Regulation]	Note Actual Measurement
	Handrails and stanchions shall also be provided to assist with on-board circulation, sitting and standing, and exiting the vehicle. [§ 38.29(b)]	
	For vehicles longer than 22 feet, an overhead handrail or handrails shall be provided which are continuous from front to back except for a gap at the rear doorway. [§ 38.29(c)]	
	For vehicles longer than 22 feet that have front door lifts or ramps, vertical stanchions immediately behind the driver shall either terminate at the lower edge of the aisle-facing seats or be "dog-legged" so that the floor attachment does not impede or interfere with wheelchair footrests. [§ 38.29(e)]	
	If the driver's seat must be passed by a wheelchair user, the pedestal shall not extend into the aisle or vestibule beyond the wheel housing, to the maximum extent practicable. [§ 38.29(e)]	
	Lighting of at least 2 foot-candles, measured on the step treads or lift platform, shall be provided in the step well or doorway immediately adjacent to the driver. Lighting shall activate when the door is opened. [§ 38.31(a)]	
	Other step well and doorways shall have similar lighting at all times. [§ 38.31(b)]	
	Lighting of at least 1 foot-candle shall be provided outside all doorways to illuminate the street surface for an area up to 3 feet perpendicular to the bottom step tread outer edge. Lighting shall be located below window level and shall be shielded to protect the eyes of entering and exiting passengers. [§ 38.31(c)]	
	Fareboxes are to be located as far forward as possible and must not obstruct traffic in the vestibule area, particularly wheelchairs and mobility aids. [§ 38.33]	
	Vehicles in excess of 22 feet used in multiple-stop, fixed route service must be equipped with a public address system. [§ 38.35(a)]	
	For vehicles in excess of 22 feet where passengers are permitted to exit at multiple stops at their option, a "stop request" control must be provided adjacent to the securement locations. The system shall provide both auditory and visual indications that the stop has been requested. Controls shall be located from 15 to 48 inches above the floor, shall be operable with one hand, shall not require tight grasping, pinching, or twisting of the wrist, and shall be activated by a force no greater than 5 lbf. [§ 38.37]	
	If destination or route information is displayed on the exterior of a vehicle, illuminated signs shall be	

Meets/Does Not Meet/NA	Specification [Regulation]	Note Actual Measurement
	provided at the front and boarding side of the vehicle. Characters on these signs shall have a width to height ratio between 3:5 and 1:1 and a stroke width to height ratio between 1:5 and 1:10. Minimum character height (using a capital X) shall be 1 inch for signs on the boarding side and 2 inches for front "head signs." Wide spacing shall be used (generally the space between letters shall be 1/16 the height of upper case letters). Letters must contrast with background color. [§ 38.39]	