

APPENDIX C

The guidelines in this appendix are based on the federal requirements for the compliance with the ADA of 1990 and suggestions from the USDA Forest Service for accessible outdoor recreation. Local codes may vary and should be reviewed before any new construction or remodeling is undertaken. They contain only a portion of the accessibility guidelines necessary to be in compliance with the ADA, and should not be used as the only source when analyzing accessibility needs. (Source: Accessible Design Handbook, Cash-Callahan & Company, 1991; and Design Guide for Accessible Outdoor Recreation, USDA Forest Service, 1991).

Space Allowances & Reach Ranges

- The minimum clear width for single wheelchair passage must be 36 inches continuously and 32 inches at any one point (e.g., doorways).
- The minimum width required for two wheelchairs to pass each other is 60 inches.
- Where the floor space allows only forward approach to an object, the maximum high forward reach allowed is 48 inches above the finished floor and the minimum low forward reach must be no less than 15 inches above the finished floor. There must be no obstructions.
- Where the clear floor space allows parallel approach by a person in a wheelchair, the maximum high side reach allowed is 54 inches above the finished floor and the low side reach must be no less than 9 inches above the finished floor. There must be no obstructions.
- Although people with walking aids (e.g., canes, crutches, walkers, guide dogs) can maneuver through a clear width opening of 32 inches, they require 36 inch wide passageways for comfortable gaits.
- Crutch tips extending down at a wide angle are a hazard in narrow passageways where they might not be seen by other pedestrians. A width of 36 inches provides a safety allowance for both the disabled person and for others.
- A person with a seeing eye dog or a semi-ambulatory person requires the same passing widths as a person in a wheelchair.

Accessible Routes

- Accessible routes within the boundary of the site must be provided from public transportation stops, accessible parking, accessible passenger loading zones, and public streets or sidewalks to the accessible building entrance they serve.
- Accessible route(s) must connect buildings, facilities, and spaces that are on the same site.
- The minimum clear width of an accessible route must be 36 inches except at doors where the minimum clear width must be at least 32 inches.
- Where an accessible route has less than 60 inches clear width, passing spaces of at least 60 by 60 inches must be located at reasonable intervals that do not exceed 200 feet. The intersection of two corridors or walks is considered a passing space.
- Accessible routes serving any accessible space or element must also serve as a means of egress for emergencies or connect to an accessible place of rescue. These areas of rescue must comply with the requirements established by the administrative authority having local

jurisdiction.

- Changes in levels along an accessible route which are greater than 1/2 inch must be ramped.
- Changes in levels along an accessible route which are between 1/4 and 1/2 inch must be sloped 1:2.
- Changes in levels along an accessible route 1/4 inch or less can remain.

Protruding Objects

- Protruding objects must not reduce the clear width required for an accessible route or maneuvering space.
- Objects protruding from walls (telephones, etc.) with their edges between 27 and 80 inches above the finished floor must protrude no more than 4 inches into walks, halls, corridors, passageways, or aisles.
- Objects protruding from walls with their leading edges at or below 27 inches above the finished floor may protrude any amount; provided the minimum requirements for accessible routes are met.
- Free standing objects mounted on posts between 27 and 80 inches above the finished floor may overhang a maximum of 12 inches.
- All walks, halls, corridors, passageways, aisles, or other circulation paths must have 80 inches clear headroom.
- Where vertical clearance of an area adjoining an accessible route is reduced to less than 80 inches, a guardrail or other barrier must be provided.

Parking

- Each parking lot provided for employees or visitors is required to have accessible parking spaces.
- Accessible parking spaces must be the closest spaces to the building's accessible entrance.
- Check with the municipal zoning department for the total number of parking spaces required in your lot. The rule of thumb is as follows:

<u>Total Parking in Lot</u>	<u>Minimum # of Accessible Spaces</u>
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1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 and above	2 percent of total spaces
1001 and above	20 plus 1 for each 100 over 1000

- Accessible parking spaces must be at least 96 inches wide with a clearly marked adjacent access aisle of 60 inches. Two spaces may share a common aisle.
- The access aisle must connect directly to the accessible route.
- Spaces and aisles must be level with no slope greater than 1:50.
- All accessible parking spaces must have an unobscured vertical sign that shows the universal symbol of accessibility.
- Provide one in every eight accessible spaces, but not less than one, for van parking. This space(s) must have a minimum of a 96 inch wide access aisle and a minimum of 98 inches vertical clearance. Signage designating the spaces as "van accessible" must be provided below the symbol of accessibility.

Passenger Loading Zones

- Where passenger loading zones are provided, at least one must be accessible.
- The accessible passenger loading zone should be the closest to the accessible entrance and have a minimum vertical clearance of 114 inches.
- The international symbol of accessibility must be displayed at the passenger loading zone.
- The pull up space must be level with a slope no greater than 1:50.
- A pedestrian aisle must be adjacent to the passenger loading zone and it must be at least 5 feet wide and 20 feet long.
- A curb ramp must be provided where a curb occurs at the passenger loading zone.
- The pedestrian aisle and parking surface must be firm and slip resistant.
- The slope of the accessible route adjoining the ramp must be no greater than 1:20.
- The width of the curb ramp, not including the flared sides, must be at least 36 inches.
- The slope of the flared sides of the curb ramp must be 1:10 or less.
- Curb ramps must have flared sides or must be protected by a hand rail.

- Provide detectable warning on curb ramps that contrast with the walkway. The material used must be an integral part of the surface and consist of raised domes with a nominal diameter of 0.9 inches, a nominal height of 0.2 inches and center to center nominal spacing of 2.36 inches.
- Where grate opening occur, openings must be 1/2 inch or less and openings must be placed perpendicular to the usual direction of travel.

Ramps

- Any part of an accessible route with a slope greater than 1:20 will be considered a ramp.
- The maximum slope of a ramp in new construction should be 1:12 or less.
- The maximum rise of any run should be 30 inches or less.
- The cross slope of the ramp should be no greater than 1:50.
- The ramp surface must be non-slip.
- All grating openings must be 1/2 inch or smaller and must be placed perpendicular to the usual direction of travel.
- The clear width of the ramp must be at least 36 inches.
- A level landing must be provided at the top and bottom of each run.
- The landing must be at least as wide as the ramp and at least 60 inches long.
- Where ramps change direction, the landing must be at least 60 by 60 inches.
- A handrail on either side must be provided if the ramp rises more than 6 inches or is longer than 72 inches.
- The handrails must be continuous and fixed so they do not rotate or rack.
- The top of the handrails must be between 34 and 38 inches above the ramp surface.
- At the end of the handrails there must be at least 12 inches of level handrail beyond the top and bottom of the ramp segment.
- All handrail ends must be rounded and returned smoothly to the floor, wall, or post.
- The diameter of the handrails must be between 1-1/4 and 1-1/2 inches.
- All wall-mounted handrails must be mounted with exactly 1-1/2 inches between handrail and wall.
- Where ramps or landings have drop-offs, provide a 2 inch curb, wall, railing or projecting surface to prevent people from falling off ramp.
- Design ramps with proper drainage so that water will not accumulate on surfaces.

Stairs

- All steps must have uniform height and tread width in any one flight.

- All risers in accessible routes must be closed.
- Treads should be a minimum of 11 inches measured from nosing to nosing.
- Nosings must not project more than 1-1/2 inches.
- Where nosings project, bevel undersides to prevent tripping.
- Stairways must have continuous handrails on both sides of all steps.
- Handrail should continue at the top and bottom of stairs. At the top, the handrail must continue on a level plain for a minimum of 12 inches; at the bottom, the handrail must slope for a distance of at least the tread width and then continue on a level plane for a minimum of 12 inches.
- All wall-mounted handrails must be mounted with exactly 1-1/2 inches between the handrail and the wall.
- Handrails must be secure and not rotate.
- The diameter of the handrail must be between 1-1/4 and 1-1/2 inches.
- Outdoor stairs must be designed so that water does not accumulate on walking surfaces.

Doors and Gates

- Where revolving doors occur along the accessible route, provide an accessible door or gate.
- A doorway with two independently operated door panels must have at least one active door panel with 32 inches clear opening maneuvering space.
- An accessible door must have a 32 inch clear opening measured between the face of the door and the door stop on the latch side.
- Provide 18 inches or more of clear space on the operable side of the door.
- Floor must be level at all doors in the accessible route.
- Where two doors occur in a series, provide a vestibule of at least 48 inches plus the width of the opened door swinging into the space.
- All thresholds should be level or have a bevel of not more than 1:2.
- All door handles, locks and latches must be operable with one hand and without twisting the wrist.
- Hardware should be mounted no higher than 48 inches above the finished floor.
- The door closer must take at least three seconds to move from 70 degrees open to a point 3 inches from the latch.
- Interior doors must have an opening force of 5 pounds or less.

- The opening force of exterior doors must be determined by the appropriate administrative authority.

Entrances

- The accessible entrance must not be a service entrance unless the service entrance is the only entrance.
- The accessible entrance must be connected to accessible parking, passenger loading zones, and public streets or sidewalks.
- Where vertical level changes between 1/4 and 1/2 inches occur along the route, the edge must be beveled with a slope of 1:2 or less.
- Where vertical level changes at the entrance are greater than 1/2 inch, provide a ramp, curb ramp, or platform lift.

Drinking Fountains

- Fountains that are free standing or built-in and do not have clear space underneath must have a clear floor space alongside the fountain for a parallel approach of at least 30 by 48 inches.
- Fountains that are wall or post mounted must have a clear knee space under the fountain apron of at least 27 inches high by 17 to 19 inches deep by 30 inches wide.
- The spout of the fountain must be no higher than 36 inches above the finished floor.
- The water stream must be at least 4 inches high to allow the insertion of a cup under the stream.
- Spout must be at the front of the unit with the water flow parallel or nearly parallel to the front edge of the fountain.
- Controls must be located at the front edge of the fountain.
- Controls must be operable with one hand and without twisting the wrist.

Restrooms

Toilet Stalls

- Accessible toilet stalls must be on an accessible route.
- The stall must be at least 60 inches wide.
- Where toilets are wall mounted, stall must be at least 56 inches deep.
- Where toilet stalls are floor mounted, stall must be at least 59 inches deep.
- A clear opening of 32 inches measured between the face of the door and the edge of the partition on the latch side must be provided when the stall door is open 90 degrees.
- Where the door swings into the stall, provide at least 36 additional inches in the depth of the stall.

- Where stall door opens out and at the end of an aisle, provide at least 18 inches of maneuvering space at the latch side of the stall door.
- Install grab bars 33 to 36 inches above the finished floor. Grab bars must be secure and not rotate in their fittings.
- Mount toilet paper dispenser no more than 36 inches from the back wall and at least 19 inches above the finished floor.
- Toilet paper dispenser must allow continuous paper delivery.
- The centerline of the toilet must be 18 inches from the wall or partition which has the grab bar location.
- The top of the toilet seat must be between 17 and 19 inches above the finished floor.
- Flush controls must be mounted no higher than 44 inches above the finished floor and on the wide side of the toilet area and be automatic or operable with one hand.

Urinals

- Urinals must have elongated rims mounted no more than 17 inches above the finished floor.
- Provide 30 by 48 inch clear space for forward approach to the urinal.
- Urinal shields which do not extend beyond the front of the urinal rim may be provided by 29 inches clearance between the two panels.
- Flush controls must be automatic or operable with one hand.
- Controls must not be mounted higher than 44 inches above the finished floor.

Lavatory

- The lavatory rim or counter surface must be no higher than 34 inches above the finished floor.
- A clearance of at least 29 inches from the finished floor to the bottom of the apron must be provided.
- Provide a clear floor space of at least 30 by 48 inches in front of the lavatory for a forward approach.
- Provide a clear floor space of a least 17 inches under the lavatory.
- Hot water and drain pipes must be insulated or covered.
- The faucet must be operable with one hand and without twisting the wrist; self closing type valves must remain open at least 10 seconds.
- Where valves are self closing, provide that the valve remain open for at least 10 seconds.

Mirrors

- Provide at least one mirror with the bottom edge of the reflecting surface no higher than 40 inches above the finished floor.

Dispensers

- Provide at least one of each dispenser type on an accessible route.
- Provide at least 30 by 48 inch clear space to allow either a forward or a parallel approach to the dispensers.
- Where a forward approach is provided, the highest operable part must be no higher than 48 inches above the finished floor.
- Where a side approach is provided, the highest operable part must be no higher than 54 inches above the finished floor.
- All dispensers must be operated with one hand and without twisting of the wrist.

Pathways

- There must be an accessible route linking accessible parking and passenger loading zones with the accessible building entrance.
- The accessible pathway must be free of steps and stairs.
- The accessible pathway must be at least 36 inches wide.
- If the pathway is less than 60 inches wide, provide passing spaces at least 60 inches wide and 60 inches long at intervals not exceeding 200 feet.
- Provide at least 80 inches of clear head room along pathway.
- Objects mounted to the wall between 27 inches and 80 inches must not protrude more than 4 inches into the space. The accessible pathway must be 36 inches wide alongside the protruding object.
- Accessible pathways must be firm and slip resistant.
- The slope of the accessible pathway must be no greater than 1:20.
- Where walkway levels change, the vertical difference between them must be less than 1/4 inch.
- Changes in level between 1/4 inch and 1/2 inch anywhere on the accessible route must be beveled with a slope of 1:2.
- Changes greater than 1/2 inch must be ramped.
- The transition from the curb ramp to the walkway, road, and gutter must be flush and free of abrupt changes.

Boating and Fishing Facilities

Piers Adjacent to Boat Ramps

- The pier should have nonslip materials on surface to aid in transfers.

- Access to pier site should be across a barrier-free path.
- The access ramp to a dock should have a slope no greater than 1:20.
- A 60 inch turn-around area should be provided on the pier.

Fishing Piers

- Railing should be provided along one side of the structure with sections at 32 inches high for sitting and 42 inch high for standing.
- A 2 inch high curb should be in place around the perimeter of the pier; 4 inch curb is recommended where no railing is provided.
- Access to pier site should be across a barrier-free path.
- The access ramp to a dock should have a slope no greater than 1:20.
- A 60 inch turn-around area should be provided on the pier.

Picnic Area

- At least one disabled accessible table and grill should be provided within the picnic area.
- Picnic tables should be placed on level hard surface.
- Grills and picnic tables should have a clearance of 36 inches.
- Grills should rotate and have a paving texture around them.

Playground Area

- Plenty of space between play apparatuses should be provided for proper maneuvering of wheelchairs.
- Playground areas should have play apparatuses that can be used by youngsters with poor coordination and slow muscular action and reaction.
- Surfaces under play equipment should provide adequate protection from injury but still allow for barrier free access to the equipment.