# ADA Transition Plan

01.18.2022 FINAL

*Prepared by* Tindale Oliver is now benesch

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# 1.0 Executive Summary

## Introduction

The Town of Apex is creating their first Americans with Disabilities Act (ADA) Transition Plan to ensure that town-owned facilities are compliant with the 2010 ADA Standards for Accessible Design and the International Building Code (IBC). The Transition Plan evaluates the existing conditions of each facility, and it identifies violations as well as improvements necessary to ensure accessibility and usability by persons with disabilities. The ADA of 1990 is a civil rights law that prohibits discrimination against people with disabilities. The ADA states that by designing and constructing facilities for public use that are not accessible to people with disabilities could constitute a discrimination. The ADA applies to all facilities, including those built before and after 1990, and local governments are required to perform a self-evaluation of their infrastructure and identify all barriers to accessibility. An ADA Transition Plan shall then be developed to address all accessibility related deficiencies. This Plan is a living document that will be utilized by the Town of Apex as a guide and can change, based on available resources and priorities.

The ADA Transition Plan is intended to achieve the following:

- Identify physical barriers that limit the accessibility of the facility or access to services for individuals with disabilities,
- Describe the methods to be used to make the facility accessible,
- Provide a schedule for removing the barriers to accessibility, and
- Identify the name of the official responsible for the plan's implementation.

To improve access, safety, and accessibility of all Apex citizens, the Town is conducting an ADA Assessment and developing an ADA Transition Plan for twenty-seven (27) Town-owned facilities. To ensure that the Town's facilities are accessible for persons with disabilities, Tindale Oliver's review covers facility entrances and exits, accessible routes, curb ramps, handrails, existing indoor and outdoor facilities, doors, restrooms, signage, as well as other building amenities as provided by the Town.

This assessment includes a comprehensive inventory of the conditions of the Town of Apex facilities and identifies and prioritizes improvements to address deficiencies. Information relating to the accessibility of each facility has been collected. The purpose of these data is to improve Apex staff understanding of accessibility issues pertaining to the ADA, North Carolina Building Code requirements, ANSI A117.1, and the International Building Code (IBC)—specifically, how the ADA and the North Carolina Building Code relate to individual facilities and how to identify elements and facilities that are in compliance with the ADA and those that are not. This document outlines the development of the facility inventory, database of the barriers to accessibility and the prioritization/phasing plan of the improvements. A separate appendix document has been prepared that includes a detailed summary of each building's violations and recommendations.

## Development of the ADA Transition Plan

The ADA Transition Plan establishes a list of improvements necessary to achieve full compliance to and within the Town's buildings. The Plan is to be implemented over time based on available resources, as established by the Town of Apex. It is the responsibility of the Town to ensure the implementation of the ADA Transition Plan is carried out. Its adherence will protect the Town from future litigation pertaining to accessibility issues. Conversely, deviance or lack of progress from the plan without justification may leave the Town vulnerable. Therefore, it is important to update and maintain the ADA Transition Plan until it is either fully implemented or replaced with a newer plan.

The Code of Federal Regulations (CFR), 28 CFR 35.150(d) outlines the legal requirements for an ADA Transition Plan. At a minimum, the law requires four components of the plan:

1. **Physical Assessment:** obstacles that limit the public accessibility of programs or services must be identified.
2. **Recommendations:** methods that will make these items accessible must be described in detail.
3. **Remediation schedule:** the schedule required to implement the necessary steps to make these items compliant must be specified.
4. **ADA Coordinator:** The official responsible for implementation of the items must be indicated.

As described below, as well as in each of the building's individual ADA Transition Plans, assessments of the physical obstacles that present barriers to accessibility were identified, proposed steps for mitigation were recommended and prioritized, and a schedule for their implementation was prepared. Lastly, Shawn Purvis, the Town of Apex's Assistant Town Manager, will be responsible for the plan's overall implementation.

## ADA Assessment

The data collection process for infrastructure assessments is the most involved portion of this project. Every facility, as shown in Tables 1 and 2, included in this report was inspected by assessors who are certified by the International Code Council (ICC) as Accessibility Inspector/Plans Examiner (AI/PE) and a Professional Engineer (P.E.). A walk-thru and assessment of building elements for compliance with applicable accessibility standards was conducted starting on September 16, 2020, through October 1, 2020. The assessments included a comprehensive inventory of the conditions of the Town-owned buildings and identified and prioritized improvements to address the barriers to accessibility. The facility survey addressed each accessible element and space within and external to the facilities and included applicable elements such as facility entrances/exits, parking, sidewalks, accessible routes, curb ramps, handrails, signage, existing indoor and outdoor facilities, doors, restrooms, and all other elements covered by the ADAAG and the IBC.

The survey included physical measurements and counts for components or systems. Survey findings were collected and recorded on Tindale Oliver's custom Android-based ADA compliance checklist application. This application populates and organizes the photos and information in a secure geo-

coded database that the Accessibility Inspectors then use to generate a report for each building. Photos were taken with the tablet of each area of the facility for familiarization and were later referenced to illustrate deficiency findings. Measurements were taken using a tape measure for clearances, distances, and heights; a smart level for slopes; and a door pressure gauge for opening resistance of doors.

The digital data and photos were then uploaded to a database on Tindale Oliver's secure servers for backup. Where appropriate, photos are included in the Accessibility Assessment Report (AAR), as shown in Appendix A, to illustrate issues or deficiencies. The facility survey consisted of non-intrusive visual observations, which allowed for a readily accessible and easily visible components and systems assessment of the facility, which included measurements of space and clearance dimensions, slope, walkway widths, reach ranges, maneuverability measurements, etc. The purpose of this data is to improve Town staff's understanding of accessibility issues pertaining to the ADA and the IBC requirements—specifically, how the ADA and IBC relate to buildings and how to identify elements and facilities that are compliant with the ADA and those that are not.

| Facility | Address | Sq. Ft |
|---|---|---|
| Apex Fire Admin. | 315 West Williams Street | 6,450 |
| Apex Community Center | 53 Hunter Street | 44,147 |
| Apex Depot | 220 North Salem Street | 2,486 |
| Apex Town Hall | 73 Hunter Street | 43,880 |
| Fire Station # 1 | 210 North Salem Street | 8,170 |
| Fire Station # 2 | 3045 New Hill Holleman Road | 4,114 |
| Fire Station # 3 | 736 Hunter Street | 9,243 |
| Halle Cultural Arts Center | 237 North Salem Street | 10,354 |
| Police Station | 205 Saunders Street | 34,645 |
| Public Safety Station # 4 | 1615 East Williams Street | 11,320 |
| Public Safety Station # 5 | 2050 Kelly Road | 16,500 |
| Public Works Facility- Admin. | 105-B Upchurch Street | 10,529 |
| Public Works Facility- Operations | 105-A Upchurch Street | 21,973 |
| Public Works Facility- Purchasing & Inventory | 105-C Upchurch Street | 15,794 |
| Public Works Storage Shed & Wash Bay | 105-A Upchurch Street | 3,977 |
| Wastewater Treatment Plant | 300 Pristine Waters Drive | 3,511 |
| Public Parking | | |

*Table 1: List of Assessed Facilities*

| Parks | Address | Acreage |
|---|---|---|
| Apex Community Park – Lake Entrance | 1808 Lake Pine Drive | 160.00 |
| Park Entrance | 2200 Laura Duncan Road | |
| Jaycee Park | 451 West Williams Street | 23.00 |
| Hunter Street Park | 1250 Ambergate Station | 12.00 |
| Kelly Road Park | 1609 Kelly Road | 25.00 |
| Nature Park & Seymour Athletic Fields | 2500 Evans Road | 160.00 |
| Nature Park Entrance | 2600 Evans Road | |
| Salem Pond Park | 6112 Old Jenks Road | 12.00 |
| Clairmont Neighborhood Park | 801 E. Chatham Street | 1.50 |
| Kelly Glen Neighborhood Park | 1701 Kelly Glen Lane | 2.00 |
| Seagroves Farm Neighborhood Park | 201 Parkfield Drive | 11.00 |
| Sue Helton Neighborhood Park | 201 Matney Lane | 0.25 |
| West Street Neighborhood Park | 108 West Street | 1.30 |

*Table 2: List of Assessed Parks*

| Public Rights-of-Way and Greenways | Surface Type | Distance (Miles) |
|---|---|---|
| North Beaver Creek (Sutton Place) | Asphalt | 0.21 |
| North Beaver Creek (Charleston Village) | Asphalt | 0.37 |
| North Beaver Creek (Beckett Crossing) | Asphalt, Concrete, Boardwalk | 0.03 |
| Beaver Creek | Asphalt, Concrete, Boardwalk | 2.16 |
| Community Park Lake Trail | Asphalt | 2.17 |
| Community Park Nature Trails | Natural | 2.00 |
| Town Sidewalks | Asphalt, Concrete | 183+ |
| Town Curb Ramps | Concrete | 451[1] |

*Table 3: List of Assessed Public Rights-of-Way and Greenways*

## Departmental Policy, Procedure, and Documentation Review

As required under Task II, the department policy, procedure, and documentation review was completed on April 16, 2020. Tindale Oliver has reviewed the requirements for programs and policies necessary for the Town to be compliant with the requirements of the ADA. The memo outlines the Town's policies and procedures including policy and process suggestions for adoption and consideration. The report can be found in Appendix B. The departments assessed include:

- Administration/Communications
- Building Inspections and Permitting
- Finance
- Human Resources

[1] The total number of curb ramps is unknown at this time and will be assessed at a future date.

- Information Technology
- Parks, Recreation, and Cultural Resources
- Public Safety (Fire, Police, and 911 Communications)
- Public Works (Facilities, Streets, Transportation, and Engineering)
- Public Utilities (Electric and Water Sewer)
- Water Resources (Stormwater)

Additionally, a website review of the Town's website and online information services including the Town's GIS Viewer, Assessor's information, and online permitting system was assessed for compliance. The standards used for this review include Section 508 of the Rehabilitation Act of 1973 and the Web Content Accessibility Guidelines 2.0 and 2.1. These standards should be followed at each destination provided on the Town of Apex website. To determine the overall accessibility of the website, a web accessibility evaluation tool called Wave was used to support our efforts. The report provides recommendations and determinations concerning all web pages, online documents, and web-based applications that are currently employed by the Town. The suggested actions have been determined to meet the minimum ADA requirements and to achieve full compliance with the law. The review was completed on April 20, 2020, and can be found in Appendix C.

## Sidewalks and Greenways Assessment

A field survey of more than 183 miles of sidewalks and over 8 miles of greenways were conducted via electric bike the week of June 6, 2021. A list of the assessed greenways can be found in Table 3. This survey included GPS locations, slopes, general conditions and hazards, and gaps in sidewalk inventory throughout the Town. Photos were taken at regular intervals along the sidewalks to document the condition that warrants incompliance. The date that the various sidewalks and curb ramps were constructed will dictate which, if any standard, they should have been built to. However, since these dates are generally unknown, and to provide the greatest level of accessibility, all assessed sidewalks and curb ramps were assessed against the most stringent and most recent accessibility codes, including ADAAG, NCDOT, and PROWAG.

During the same period, a field survey of Town crosswalks and curb ramps was conducted. A total of 451 curb ramps were assessed, and recommendations were developed. This survey included GPS location, dimensions, slopes, and the presence of landings and detectable warnings. Curb ramps are a vital part of the Town's pedestrian infrastructure and were evaluated against the Accessibility Guidelines of NCDOT and recommendations will be provided with adherence to PROWAG.

The sidewalks, greenways, curb ramps, and crosswalks data will be included in a supplemental document.

## Implementation and Financial Plan

The final step in the Transition Plan process is the development of an Implementation and Financial Plan. This was accomplished through the following efforts:

- Preparing cost estimates for the required improvements.

- Identifying the funding that is estimated to be available in the coming years; and
- Reviewing the specific improvements in more detail and categorizing them into two separate groups:
    - Short-term (quick fix) improvements
    - Long-term improvements that require more time, effort, and/or funding

The individual facility reports outline specific improvements that are required to make each facility fully accessible. Each recommendation is categorized by the perceived severity of the associated barrier to accessibility, which was then used to develop a draft timeline of improvements along with a schedule of associated costs.

### Development of Cost Estimates for Improvements

To develop the Implementation and Financial Plan, unit costs for each type of improvement were developed. These unit costs were based on local and state data, recent experiences with other agencies and, when available, standard industry costs when local data were not available. **It is important to note that the unit costs include across-the-board assumptions that will need to be reviewed prior to the actual improvement being completed**. A planning-level approach was taken on how to correct the situation. Since no engineering was performed on the proposed solution, the quantities and unit costs may be derived from broad assumptions. These larger items will need to be reviewed by an architect, engineer, or facility manager prior to the actual implementation, to ensure the assumptions are accurate and appropriate and to potentially make changes to cost or products used as these items move through the project development process.

| FACILITY NAME | ESTIMATED COST | | | | |
|---|---|---|---|---|---|
| | HIGH (1-4) | MEDIUM (5-7) | LOW (8-10) | TOTAL | QUICK FIX |
| Apex Fire Admin. | $3,300 | $8,000 | $0 | $11,300 | $300 |
| Apex Community Center | $8,100 | $13,700 | $3,500 | $25,300 | $2,300 |
| Apex Depot | $23,600 | $2,200 | $0 | $25,800 | $800 |
| Apex Town Hall | $46,000 | $19,000 | $2,000 | $67,000 | $7,500 |
| Fire Station # 1 | $2,000 | $2,000 | $0 | $4,000 | $0 |
| Fire Station # 2 | $2,100 | $6,700 | $1,000 | $9,800 | $800 |
| Fire Station # 3 | $13,400 | $3,700 | $0 | $17,100 | $3,100 |
| Halle Cultural Arts Center | $12,600 | $17,900 | $2,100 | $32,600 | $2,600 |
| Police Station | $3,000 | $3,500 | $6,000 | $12,500 | $3,500 |
| Public Safety Station # 4 | $1,200 | $500 | $0 | $1,700 | $700 |
| Public Safety Station # 5 | $2,200 | $4,600 | $3,500 | $10,300 | $1,300 |
| Public Works Facility- Admin. | $4,000 | $11,000 | $6,000 | $21,000 | $1,000 |
| Public Works Facility- Operations | $3,700 | $9,700 | $5,100 | $18,500 | $4,500 |

| | | | | | |
|---|---|---|---|---|---|
| Public Works Facility- Purchasing & Inventory | $6,200 | $0 | $1,000 | $7,200 | $100 |
| Public Works Storage Shed & Wash Bay | $0 | $0 | $0 | $0 | $0 |
| Wastewater Treatment Plant | $11,500 | $26,000 | $0 | $37,500 | $500 |
| Apex Community Park | $201,800 | $19,700 | $27,300 | $248,800 | $6,300 |
| Jaycee Park | $42,000 | $7,600 | $2,600 | $52,200 | $2,200 |
| Hunter Street Park | $48,500 | $24,500 | $5,700 | $78,700 | $2,700 |
| Kelly Road Park | $56,700 | $18,900 | $3,200 | $78,800 | $3,300 |
| Nature Park & Seymour Athletic Fields | $136,200 | $48,000 | $11,200 | $195,400 | $6,900 |
| Salem Pond Park | $37,000 | $19,000 | $2,700 | $58,700 | $1,200 |
| Clairmont Neighborhood Park | $35,000 | $11,300 | $0 | $46,300 | $300 |
| Kelly Glen Neighborhood Park | $26,000 | $0 | $0 | $26,000 | $0 |
| Seagroves Farm Neighborhood Park | $23,500 | $13,700 | $0 | $37,200 | $2,200 |
| Sue Helton Neighborhood Park | $0 | $10,000 | $500 | $10,500 | $500 |
| West Street Neighborhood Park | $35,000 | $4,000 | $0 | $39,000 | $0 |
| Public Parking | $11,000 | $7,500 | $0 | $18,500 | $0 |
| Town Curb Ramps | $790,500 | $908,500 | $486,500 | $2,185,500 | $6,000 |
| Town Sidewalks and Greenways | $2,559,192 | $1,091,853 | $2,300,929 | $5,991,974 | $4,900 |
| **TOTAL** | **$4,145,292** | **$2,313,053** | **$2,870,829** | **$9,369,174** | **$65,500** |

*Table 4: Cost Summary*

4 provides a summary of the total improvement costs, based on their associated priority, as well as the total estimate of probable cost by improvement type. Also, as the Town may not have the funding available to make all these improvements at once, which would offer the most economies of scale, cost estimates are reflective of multiple smaller phases that will be more conducive to the funding available.

It should be noted that the estimates are intended to reflect the order-of-magnitude costs for the Town of Apex's overall facility improvement needs over the timeframe of the plan; for specific projects nearing implementation, it may be necessary for the Town to conduct a more detailed cost assessment.

| FACILITY NAME | ESTIMATED COST | | | | |
|---|---|---|---|---|---|
| | HIGH (1-4) | MEDIUM (5-7) | LOW (8-10) | TOTAL | QUICK FIX |
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| Apex Depot | $23,600 | $2,200 | $0 | $25,800 | $800 |
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| Fire Station # 2 | $2,100 | $6,700 | $1,000 | $9,800 | $800 |
| Fire Station # 3 | $13,400 | $3,700 | $0 | $17,100 | $3,100 |
| Halle Cultural Arts Center | $12,600 | $17,900 | $2,100 | $32,600 | $2,600 |
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| Public Safety Station # 5 | $2,200 | $4,600 | $3,500 | $10,300 | $1,300 |
| Public Works Facility- Admin. | $4,000 | $11,000 | $6,000 | $21,000 | $1,000 |
| Public Works Facility- Operations | $3,700 | $9,700 | $5,100 | $18,500 | $4,500 |
| Public Works Facility- Purchasing & Inventory | $6,200 | $0 | $1,000 | $7,200 | $100 |
| Public Works Storage Shed & Wash Bay | $0 | $0 | $0 | $0 | $0 |
| Wastewater Treatment Plant | $11,500 | $26,000 | $0 | $37,500 | $500 |
| Apex Community Park | $201,800 | $19,700 | $27,300 | $248,800 | $6,300 |
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| Kelly Glen Neighborhood Park | $26,000 | $0 | $0 | $26,000 | $0 |
| Seagroves Farm Neighborhood Park | $23,500 | $13,700 | $0 | $37,200 | $2,200 |
| Sue Helton Neighborhood Park | $0 | $10,000 | $500 | $10,500 | $500 |
| West Street Neighborhood Park | $35,000 | $4,000 | $0 | $39,000 | $0 |
| Public Parking | $11,000 | $7,500 | $0 | $18,500 | $0 |
| Town Curb Ramps | $790,500 | $908,500 | $486,500 | $2,185,500 | $6,000 |
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| **TOTAL** | **$4,145,292** | **$2,313,053** | **$2,870,829** | **$9,369,174** | **$65,500** |

*Table 4: Cost Summary*

## Implementation Plan

The Implementation and Financial Plan was developed to identify when the improvements should occur based on the relative priority of the improvements and anticipated level of funding that will be available to address them.

It would be ideal if the Town of Apex could take advantage of "piggybacking" needed improvements with other planned facility improvement and renovation projects. This would permit the Town to benefit either because the project directly addresses some or all the needed improvements or the project allows the Town to reduce its improvement costs due to concurrent construction activities. The amount of implementation costs that could potentially be saved by completing the improvements concurrent with planned projects is not known at this time. Therefore, potential cost savings through fund leveraging are not included in the Implementation and Financial Plan at this time. In the future, should the Town desire to estimate the amount of costs that could be reduced through fund leveraging, the cost of the improvements for those impacted improvements may be adjusted.

To develop the initial plan, as listed in Appendix A, each building's list of improvements was sorted by priority. Quick-fix items were assumed to be completed within a year. High priority items were generally planned to be completed the following year, followed by Medium and Low priority items.

It should be stressed that the Implementation and Financial Plan serves as a general guide for the planning of improvements and that several factors will influence the timing for implementation of specific improvements and the overall cost of the program, including:

- Opportunities for partnering with other agencies or organizations on implementing improvements.
- Specific site conditions at individual locations, including landscaping, utilities, drainage, which can have a significant impact on the type of improvements required and the associated cost.
- Contracting opportunities, including awarding a unit price contract for the implementation of improvements at multiple locations.
- Additional opportunities to relocate or consolidate individual amenities.

On an annual basis, the Town's ADA Coordinator will supervise the revisions to, and the updating of the ADA Transition Plan and the list of needed improvements will be reviewed against the funding that is available that year to develop a specific work program. As previously mentioned, this will involve development of more detailed cost estimates based on a review of site conditions at individual locations.

Appendix A presents an example of the phased implementation plan by listing the improvements and their proposed priority and associated probable costs. It should be stressed that the costs are good faith estimates of probable cost, with the ultimate costs dependent upon how the work is undertaken, site conditions at individual locations, and material and labor prices in future years. The number of

items that are consolidated, modified, relocated, or removed will also be an important variable, as will be the amount of work that will be the responsibility of other entities.

Due to the unknown level of funding currently available for accessibility improvements, current renovation schedule, and the completion of the quick-fix improvement list, the items recommended for improvement for each year of the program are not necessarily the highest-ranking items on the priority list. However, as the improvement program progresses, high-ranking items that were not initially improved should be included in future years.

It should be noted that the prioritization rankings/implementation plan is just a guide. The number of items improved each year and the specific locations chosen for improvement may vary due to factors such as actual costs of the improvement. As such, the improvements will need to be reviewed and a work program developed specifying the improvements that will be undertaken on an annual basis. The improvements would be undertaken through task orders. It is envisioned that the effort could focus on implementation of improvements within specific sections of the building or would occur with groups of similar improvements throughout the Town, both of which could enable improvements to be implemented more quickly.

It should be stressed that this plan is presented as an overall guide to the implementation of improvements. Town staff will need to review the needed improvements and the available funding on an annual basis to develop the annual improvement program.

### Prioritization

The barriers to accessibility were prioritized on a 10-point scale, as defined in Table 5. This prioritization methodology has been developed by Tindale Oliver to assist the Town of Apex in determining how the barriers to accessibility can be prioritized based on the severity of the non-compliant item, the existing level of accessibility, and the basic level of accessibility each remediated item will provide.

| Priority | | Criteria |
|---|---|---|
| High | 1 | • Major safety issues (dangerously steep slopes, large protruding objects, etc.) |
| | 2 | • New construction built out of compliance<br>• Older construction severely out of compliance (accessible routes, ramps, etc.)<br>• Alterations that did not bring required elements into compliance |
| | 3 | • Non-compliant accessible route from parking to building entrances (bad slopes, gravel surface, etc.)<br>• No accessible route to adjacent sidewalk system, when provided<br>• No accessible restroom stalls<br>• No accessible parking, insufficient number of spaces, or severely non-compliant parking (bad slopes, gravel surface, extremely narrow, etc.)<br>• Severely non-compliant accessible route (structural solution)<br>• No tactile signage identifying exits and permanent rooms |
| | 4 | • Non-compliant parking (structural solution)<br>• Non-compliant counter heights (break room, multipurpose rooms)<br>• No directional signage provided to accessible amenity (interior and exterior)<br>• No detectable warnings present at curb ramps |
| Medium | 5 | • Non-compliant exterior or interior door clearances (width issues, protruding objects)<br>• Protruding objects obstructing clear pathway (fire extinguishers, AED units)<br>• Non-compliant restroom amenities (sink, water closet, urinal, mirror)<br>• Non-compliant public access spaces (conference rooms, classrooms) |
| | 6 | • No accessible drinking fountains (missing a high or low fountain)<br>• Non-compliant door hardware (doorknob that requires twisting or pinching)<br>• Non-compliant showers/changing areas (locker rooms) |
| | | • Non-compliant amenities (picnic tables, benches, vending machines, etc.) |
| | 7 | • Accessible route with moderate access issues (level changes that can be ground down) |
| | | • Non-compliant detectable warnings at curb ramps (high contrast, inadequate length) |
| Low | 8 | • Non-compliant reach ranges (vending machines, garbage cans, AED units)<br>• Non-compliant tactile signage at doorways or elevators (height, placement)<br>• Accessible seating is not integrated, on a minor sloped area, or inaccessible |
| | 9 | • Non-compliant parking (faded striping, signage) |
| | 10 | • Minor level changes, gaps, or cracks in accessible route<br>• Non-compliant drinking fountains |

*Table 5: Prioritization Designations*

# 2.0 Deficiencies and Solutions

## General

The use and occupancy of the Wastewater Treatment Plant dictates egress and accessible route requirements consistent with ADAAG regulations. Because the general public regularly accesses the facility, and in the interest of establishing an accessibility compliance baseline condition report of the facility, a full accessibility assessment was conducted. Where deficiencies in compliance with ADAAG, descriptions of the deficiency, regulatory requirement(s) pertinent to the deficiency, a photo showing the deficient element, and recommendations for remediation of the deficiency are shown in Appendix A.

The following sections generally describe and illustrate common barriers to accessibility found throughout the building.

| ACCESSIBILITY VIOLATION Category | 2010 ADA Standards for Accessible Design |
|---|---|
| Signage | §216.2 and §703 |
| Restrooms | §307, §308, §604, §605, and §609 |
| Protruding Objects | §211.2, §307, and §602.7 |
| Amenities (vending machines, shelves, hooks, benches, pedestrian push button, etc.) | §307, §308, §405, §707, and §903 |
| Parking (slopes, access aisle, parking signs) | §206.2, §208.2, and §502 |
| Accessible Path | §303, §305, §307, §403, and §404 |
| Counters | §306, §902, and §904 |
| Showers | §213.3.6, §404, §607, §609, and §610 |
| Drinking Fountains | §211.2 and §602.7 |
| Doorways | §309.4 and §404.2.4 |
| Handrails | §505.2 and §505.10 |
| Ramps/curb ramps | §405 |

*Table 6: Accessibility Violation Summary*

## Parking

Accessible parking is vital in allowing visitors access to the facility. Parking spaces are not required by the ADA. Nonetheless, if parking is provided, accessible parking also must be provided and must meet the following requirements and guidelines as outlined in the ADA.

**Standards:**

- Accessible car parking spaces shall be at least 96” wide.
- Accessible van parking spaces shall be at least 132” wide.
    - Van parking spaces can be 96” wide where the access aisle 96” wide.
- Accessible parking spaces shall have an adjacent access aisle that is 60” wide minimum.
- The access aisle shall connect to an accessible route.
- Accessible parking spaces and access aisles shall have a running slope and a cross slope no greater than 2%.
- The accessible parking and access aisle shall be made from a surface that is firm, stable, and slip resistant (wet or dry).
- Accessible parking spaces shall have signs identifying them.
    - Signs identifying van parking spaces must include the phrase “van-accessible.”
    - Signs must be at least 60” above the ground.
    - To be enforceable under state law, the sign must state “Maximum Penalty $250”.
    - The signage shall include the International Symbol of Accessibility.
- At least one space for every 6 or fraction of 6 accessible spaces must be van accessible.

- Accessible parking spaces, aisles, and routes should be maintained in good repair and marked clearly. Spaces must not be used for snow, ice, or fallen leaf removal.
- Vertical clearance of 98" must be provided to parking spaces.
- The minimum number of accessible parking spaces are based upon the total number of parking spaces, as summarized in Table 8.

| Total Parking Spaces | Minimum Accessible Parking |
|---|---|
| **1–25** | 1 |
| **26–50** | 2 |
| **51–75** | 3 |
| **76–100** | 4 |

*Table 7: Minimum Accessible Parking Requirements*

Figure 2.1 illustrates the standards mentioned above.

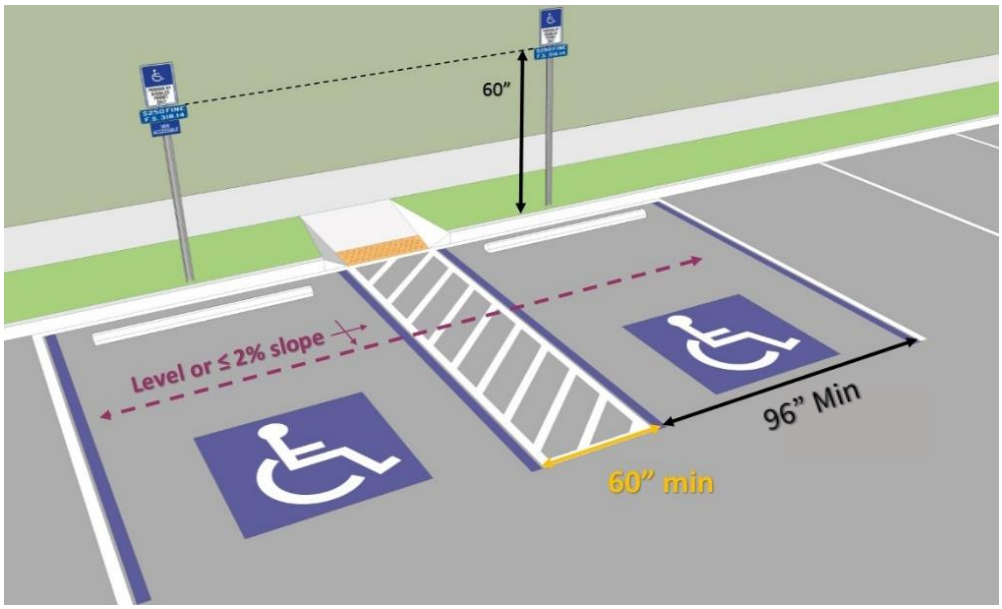


*Figure 2.1 Accessible Parking Spaces*

## Accessible Routes

### 1.1.1 Interior and Exterior Accessible Routes

Sidewalks and routes that connect to the pedestrian arrival points must be accessible. In addition, the requirements listed below also apply to all internal accessible routes used by the public as they navigate the internal corridors of the building, as described in §301 and §401 of the 2010 ADA Standards for Accessible Design.

***Standards:***

- The surface must be firm, stable, and slip resistant (wet or dry).
- Shall be a 36” minimum wide continuous unobstructed path.
  - The accessible route is allowed to decrease to a width of 32” for a maximum distance of 24”, as shown in Figure 2.2.
- Shall have 60”x60” passing spaces at 200’ intervals minimum.
- The running slope (parallel to direction of travel) must be equal to or less than 5% (>5% = ramp) for an accessible route. However, a sidewalk is permitted to have a running slope greater than 5% if it follows the slope of the adjacent roadway.
- The cross slope (perpendicular to direction of travel) must be less than or equal to 2%.
- Changes in level between 1/4” and 1/2” must be beveled at 1:2 slope.
- Changes in level greater than 1/2” are not allowed or must be ramped (beveled at a 45-degree slope).
- Gaps in gratings must be no greater than 1/2” wide and openings must be aligned perpendicular to travel.
- Objects with edges between 27” and 80” above the floor are considered protruding objects, as shown in Figure 2.3, if their edges protrude more than 4” horizontally into the circulation path.

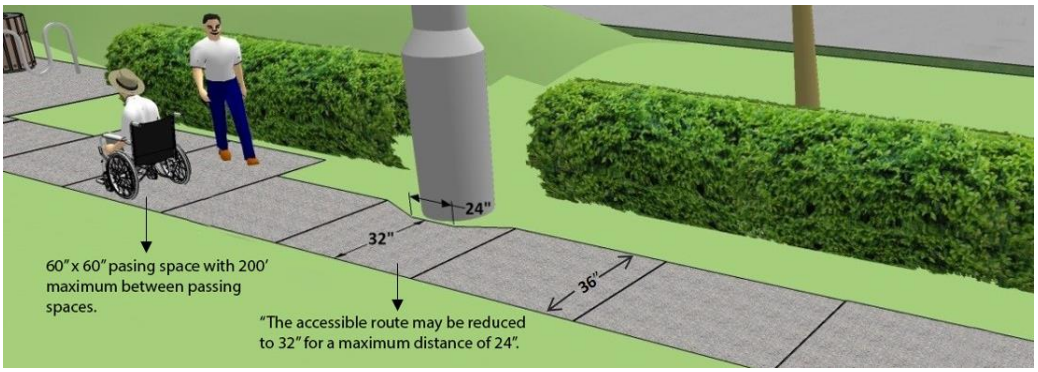


*Figure 2.2 Accessible Route Standards Diagram*

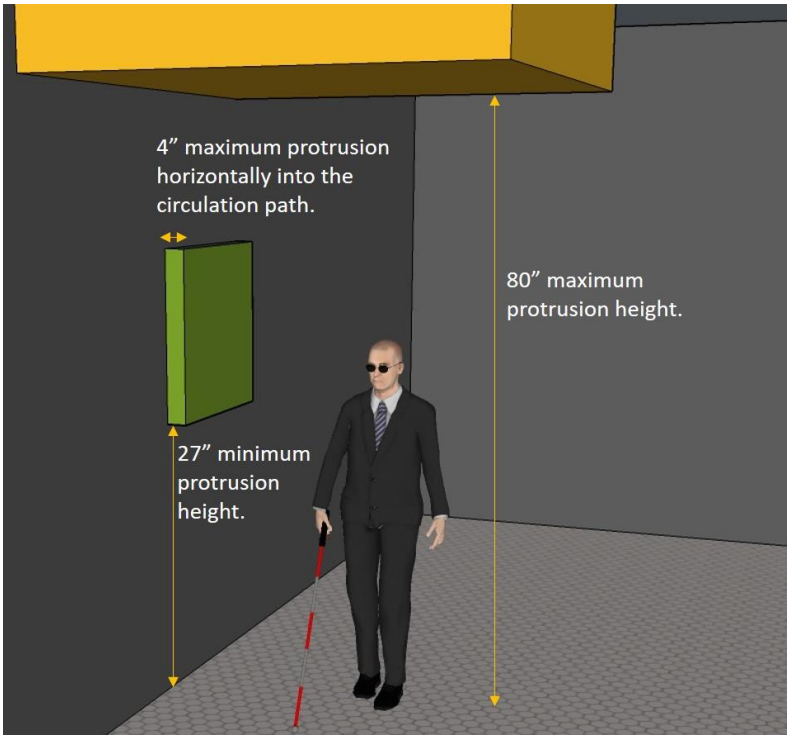


*Figure 2.3 Protruding Objects*

Care should always be taken when designing or improving an accessible route to keep the path free of obstructions. Elements such as benches, garbage cans, pedestrian push button, and drinking fountains must be placed to not interfere with the accessible path but, at the same time, must be located on an accessible route, within reach range, and not act as a protruding object. Not only can these obstructions prevent visitors from accessing and using the amenities, but they can also present a potential safety concern.

It should be stressed that elements that are located off the accessible path are considered inaccessible. For items to be accessible, they must be located on, adjacent to, or within reach of a level, firm, stable, and slip-resistant surface, as shown in **Error! Reference source not found.**.

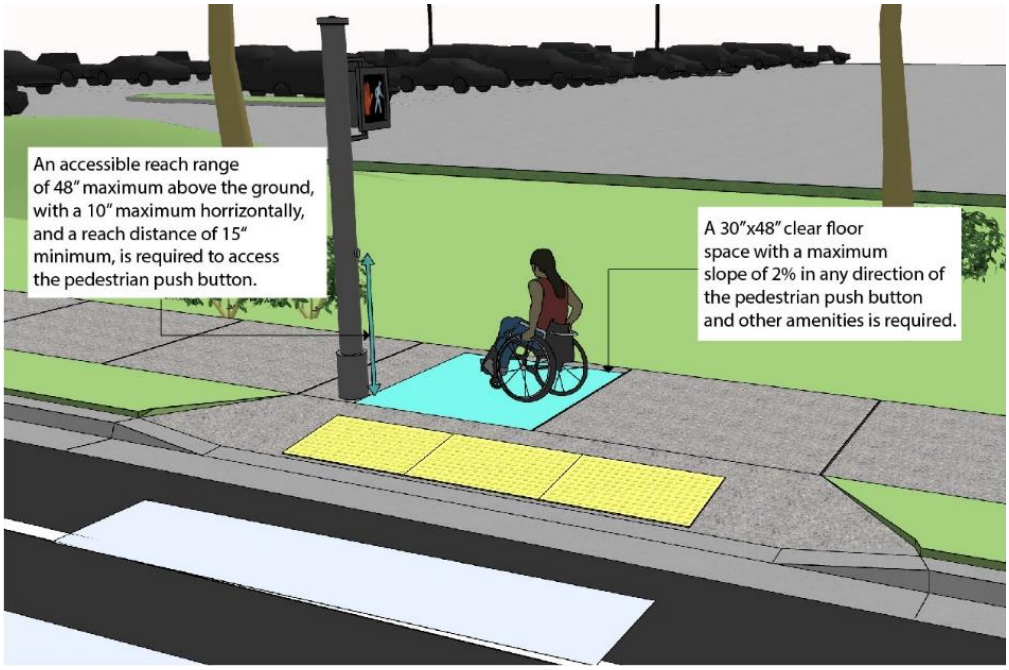


*Figure 2.4 Clear Floor Space at Pedestrian Push Button*

To help clear existing accessible paths from obstructions and to identify those features that are currently inaccessible, data on infrastructure were also collected in the field to determine if they present an obstruction or are inaccessible. Based on the data collected, the difficulty level of remediating a barrier to accessibility could range from moving a bench to an accessible location to designing and installing a new accessible route to an element.

### 1.1.2 Curb Ramps

According to sections §405 and §705 of the 2010 ADA Standards for Accessible Design, curb ramps are required to meet the criteria listed below and shown in Figure 2-1.

***Standards:***

- Shall have a minimum of a 36” wide continuous unobstructed path.
- The running slope (parallel to direction of travel) must not be steeper than 8.3%.
- Curb ramp flares shall have a running slope not steeper than 10%.
- The cross slope (perpendicular to direction of travel) must be 2% or less.
- The rise shall be 30” maximum.
- Curb ramps must have detectable warnings 24” wide and shall extend the full length of the curb ramp.
- Detectable warning surfaces shall contrast visually with adjacent walking surfaces either light-on-dark, or dark-on-light.
- Detectable warnings shall consist of raised truncated domes with a height of 0.2”.

- A base diameter of 0.9” minimum and 1.4” maximum, and a top diameter of 50% minimum to 65% maximum of the base diameter.

- Landings must be located at the top of all curb ramps and must be a minimum of 36” long and at least the width of the ramp.
  - Curb ramps that do not have level landings at changes in direction can create a compound slope. Curvilinear ramps continually change direction and cannot, by their nature, meet the requirements for accessible routes.

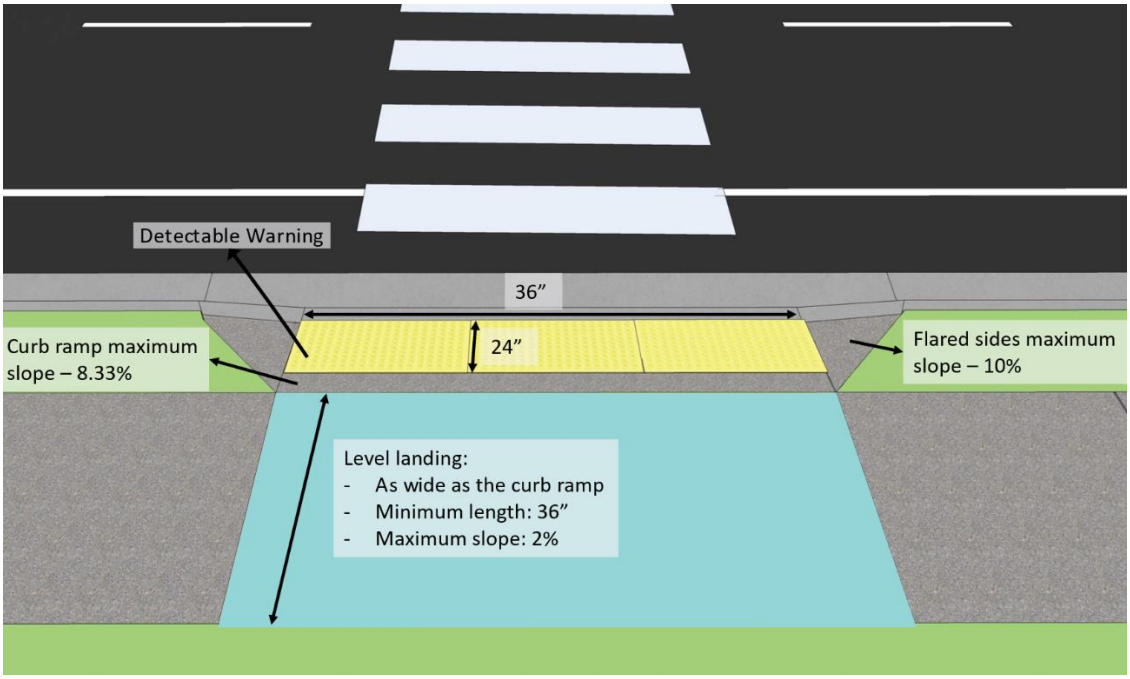


*Figure 2.5 Curb Ramp Landing*

### 1.1.3 Crosswalks

A crosswalk extends the sidewalk network across a street at an intersection or midblock location. Crosswalk markings are important because they provide guidance for pedestrians who are crossing roadways by defining paths on approaches to and within signalized and unsignalized intersections. At non-intersection locations, crosswalk markings legally establish the crosswalk (MUTCD Section 3B.18).

***Standards:***

- Be clearly marked through appropriate pavement markings to inform the pedestrian where to cross and to alert motorists of where crossing pedestrians should be expected.

- Crosswalk pavement markings should be smooth and slip-resistant and are detailed in the MUTCD (Section 3B.18).
    - Crosswalk lines shall consist of solid white lines and shall not be less than 6” or greater than 24” in width.
    - Crosswalk lines shall extend across the full width of pavement or to the edge of the intersecting crosswalk to discourage diagonal parking between crosswalks.
    - The curb ramp shall be within the extension of the crosswalk markings.
- Perpendicular to the roadway to create the shortest exposure time and distance for the crossing pedestrian.

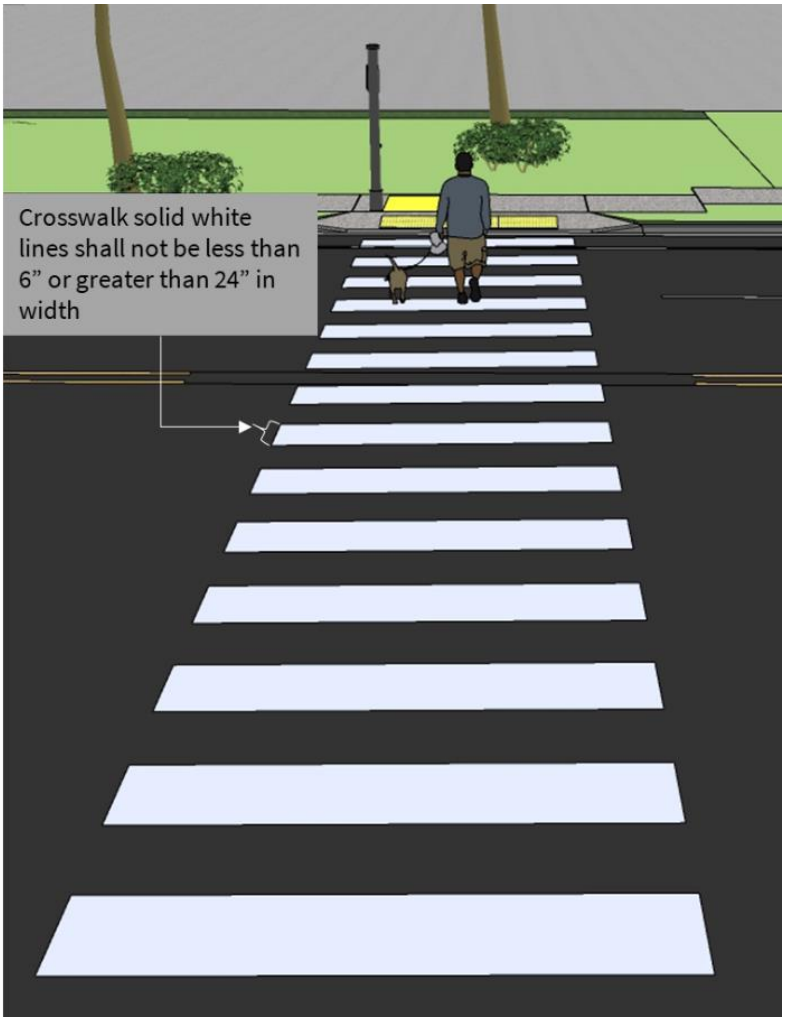


*Figure 2.6 Accessible Crosswalk*

### 1.1.4 Ramps

The requirements for a ramp are more stringent than those of an accessible route, as listed in §405 of the 2010 ADA Standards for Accessible Design and described below.

***Standards:***

- Shall have a minimum of a 36” wide continuous unobstructed path.
- The running slope (parallel to direction of travel) must not be steeper than 8.3%.
- The cross slope (perpendicular to direction of travel) must be 2% or less.
- The rise shall be 30” maximum per ramp run.
- Landings must be located at the top and bottom of all ramp runs and must be a minimum of 60” long and at least the width of the ramp.

- Ramps that do not have level landings at changes in direction can create a compound slope. Curvilinear ramps continually change direction and cannot, by their nature, meet the requirements for accessible routes.
- Ramp runs with a rise greater than 6” shall have handrails and edge protection.

### 1.1.5 Handrails

Handrails along ramps and stairs shall comply with §405.8 and §505 of the 2010 ADA Standards for Accessible Design.

***Standards:***

- Handrails must be provided along ramps and stairs. Where handrails are required, they must be installed on both sides of the ramp or stairs.
- Handrail gripping surfaces shall be installed at a height of 34” minimum and 38” maximum above the walking surface, stair nosing, and ramp surface.
- The clearance between handrail and adjacent surface shall be 1 ½” minimum.
- Ramp handrails shall extend 12” minimum beyond the top and bottom of ramp runs. Extensions shall be continuous and return to a wall or be continuous to the handrail of an adjacent ramp run.
- At the top of the stairs, handrails shall extend horizontally 12” minimum directly above the stair riser and shall return to the wall or guard, as shown in Figure 2.7.
- At the bottom of the stairs, handrails shall extend a distance at least equal to one tread depth beyond the last riser and return to the wall or guard, as shown in Figure 2.7.

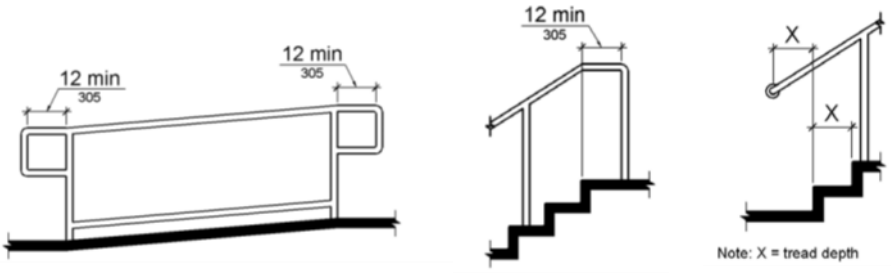


*Figure 2.7 Handrails*

### 1.1.6 Doors and Doorways

Doors and doorways that are part of accessible routes and shall comply with §404 of the 2010 ADA Standards for Accessible Design.

***Standards:***

- Sixty percent (60%) of all public entrances shall be accessible. At non-accessible entrances, directional signs shall be provided to guide users to the nearest accessible entrance.
- Accessible doors shall have a clear width of 32” minimum measured between the face of the door and the stop.
- If thresholds are provided, they shall be ½” high maximum.
- The distance between two doors in series shall be 48” minimum plus the width of the door swinging into the space.
- The maneuvering clearance requirements vary depending on the type of door and direction of approach. The most used door with a front approach, requiring the user to pull to it to open, shall have a 60” maneuvering clearance perpendicular to doorway and 18” parallel to doorway, as shown in Figure 2.8.
- Operable parts such as door handles, pulls, latches and locks shall be located 34” minimum and 48” maximum above the floor.
- The door closing speed from a 90-degree open position to 12 degrees shall be 5 seconds minimum.

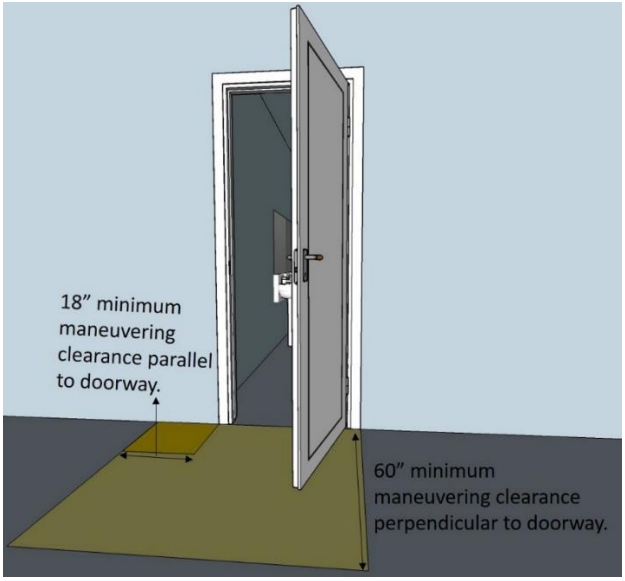


*Figure 2.8 Accessible Maneuvering Clearance at Doorway*

## Amenities

### 1.1.7 Reach Range

Care should always be taken when designing or improving an accessible route within a building to keep the path free of obstructions. Amenities such as benches, garbage cans, and drinking fountains must be placed to not interfere with the accessible path but, at the same time, must be located on an accessible route, within reach range, and not act as a protruding object. Not only can these

obstructions prevent visitors from accessing and using the amenities, but they can also present a potential safety concern.

It should be stressed that amenities that are located off the accessible path are considered inaccessible. For items to be accessible, they must be located on, adjacent to, or within reach of a firm, stable, and slip-resistant surface, as shown in Figure 2.9.

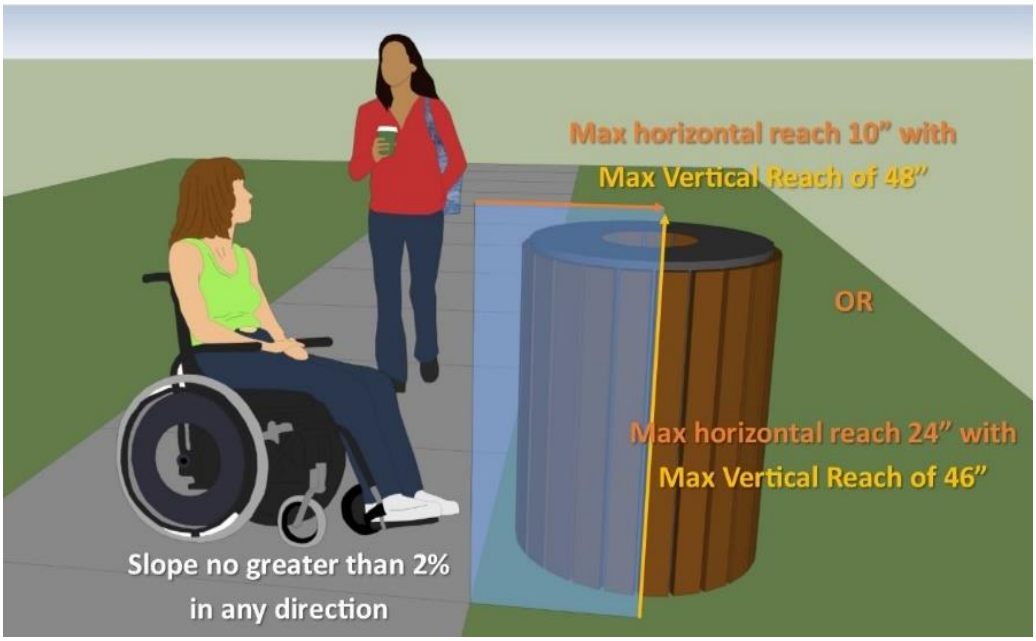


*Figure 2.9 Accessible Garbage Can Located Adjacent to Paved Trail*

To help clear existing accessible paths from obstructions and to identify those features that are currently inaccessible, data on infrastructure were collected in the field to determine if they present an obstruction or are inaccessible. Based on the data collected, the difficulty level of remediating a barrier to accessibility could range from moving a bench to an accessible location to designing and installing a new accessible route to an amenity.

Reach range standards, as described below and shown in §308 of the 2010 ADA Standards for Accessible Design, were used to determine if an amenity can be accessed by a person in a wheelchair.

***Standards:***

- A level, 30"x48", firm, stable, and slip-resistant clear floor space must be present adjacent to the amenity.
- Forward Approach:
    - The unobstructed minimum vertical reach range is 15" and maximum is 48" above the floor, as shown in **Error! Reference source not found.**7.

- The obstructed reach range is 48” maximum above the floor if the horizontal obstruction depth is 20” maximum, and 44” maximum if the horizontal depth is between 20"–25”, as shown in Figure 2.8.

- Side Approach:
  - The unobstructed side reach range is 15” minimum and 48” maximum above the floor. These same dimensions are permitted where an obstruction depth is 10” maximum, as shown in Figure 2.9.
  - Where the side reach is over an obstruction, the height of the obstruction is 34” maximum and the depth of the obstruction shall be 24” maximum. The high side reach shall be 48” maximum for a reach depth of 10” maximum. Where the reach depth exceeds 10”, the high side reach shall be 46” maximum for a reach depth of 24” maximum.

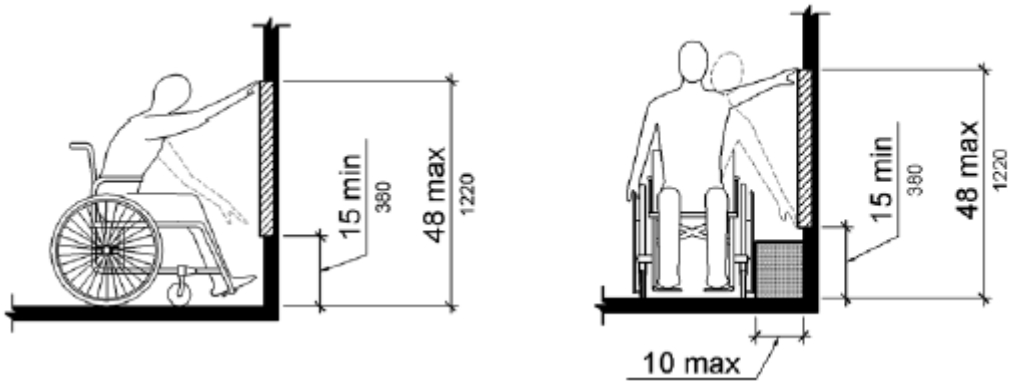


*Figure 2.10 Unobstructed Reach Range*

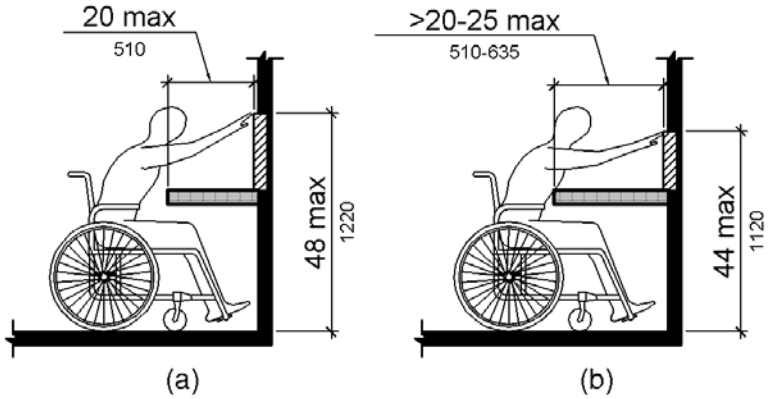


*Figure 2.11 Obstructed Reach Range*

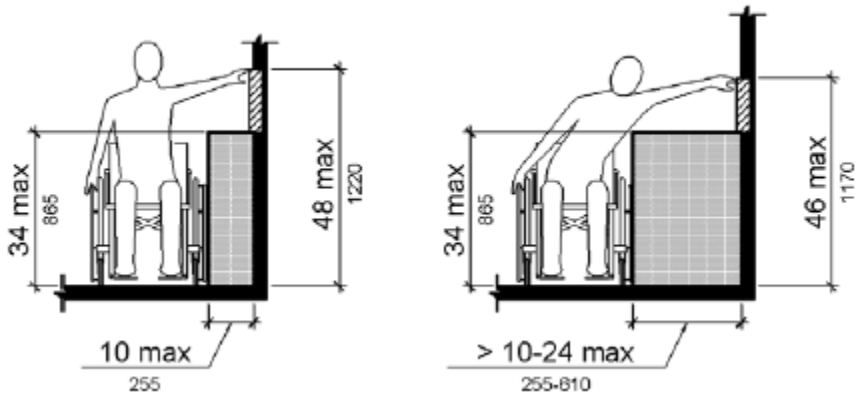


*Figure 2.12 Side Obstructed Reach Range*

### 1.1.8 Drinking Fountains

Drinking fountains, like all amenities, must be accessible, as described in §602 of the 2010 ADA Standards for Accessible Design.

***Standards:***

- Drinking fountains shall be connected to an accessible route.
- The clear floor space, positioned for a forward approach, adjacent to the drinking fountain shall:
  - Be a minimum of 30”x48” in size.
  - Not have any slope greater than 2%.
  - Have a firm, stable, and slip resistant surface.
- Where drinking fountains are provided, there shall be at least two.
  - For a low fountain, the water spout height shall be 36” maximum above the floor.
  - For standing persons, the water spout height shall be 38” minimum and 43” maximum above the floor.
- The spout shall provide a flow of water 4” high minimum and shall be located 5” maximum from the front of the unit.

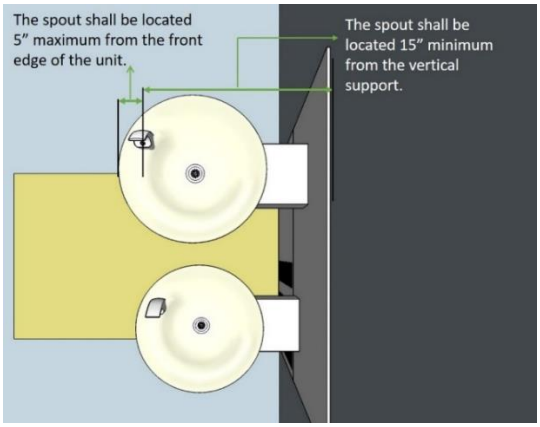


*Figure 2.13 Drinking Fountain Location*

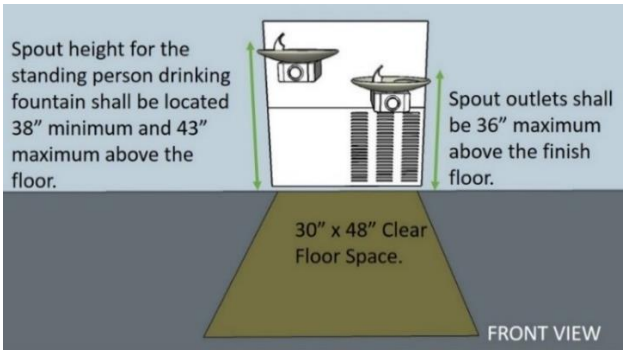


*Figure 2.14 Drinking Fountain Height*

## Service Counters

Service and sales counters, like all amenities, must be accessible, as described in §904.4 of the 2010 ADA Standards for Accessible Design.

***Standards:***

- The accessible portion of the countertop shall extend the same depth as the sales or service countertop.
- For a parallel approach, a portion of the counter surface that is 36" long minimum and 36" high maximum above the finish floor shall be provided.
    - A clear floor or ground space complying with §305 shall be positioned for a parallel approach adjacent to the 36" minimum length of counter.
- For a forward approach, a portion of the counter surface that is 30" long minimum and 36" high maximum shall be provided.
    - Knee and toe clearance shall be provided under the counter.
        - Toe clearance shall extend a minimum of 17" to a maximum of 25" under the counter.
            - The clearance under the element shall be 9".

- Knee clearance shall extend a minimum of 11” to a maximum of 25” under an element at 9” above the floor.

- A clear floor or ground space complying with §305 shall be positioned for a forward approach to the counter.

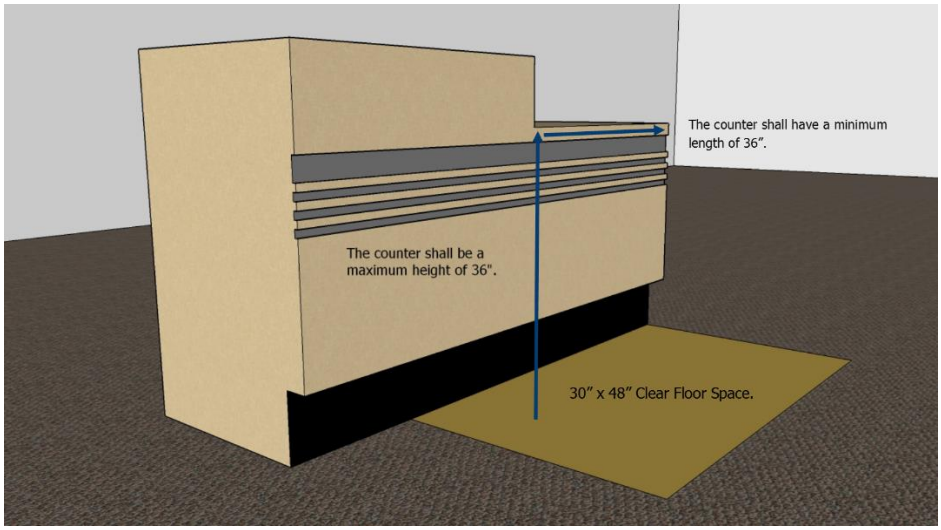


*Figure 2.15 Parallel Approach Service Counter*

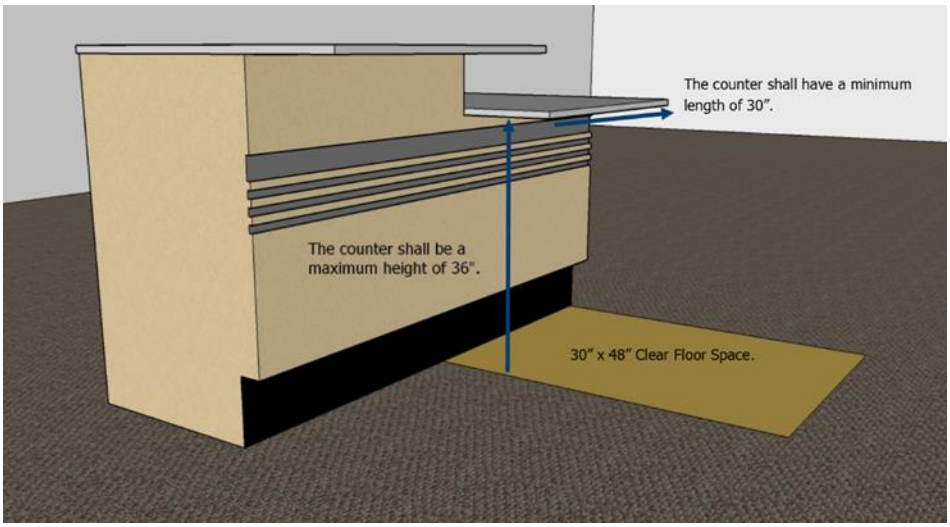


*Figure 2.16 Forward Approach Service Counter*

## Dining and Work Surfaces

Dining and work surfaces must be accessible as described in §902 of the 2010 ADA Standards for Accessible Design.

***Standards:***

- Clear floor space complying with §305 positioned for a forward approach shall be provided.

- The tops of dining surfaces and work surfaces shall be 28” minimum and 34” maximum above the finish floor or ground.
- Accessible dining surfaces and work surfaces for children’s use shall comply with §902.4.


*Figure 2.17 Accessible Dining and Work Surface*

## Restrooms

### 1.1.9 Toilet Compartments

Restrooms are not required by the ADA. However, if provided, then accessible restrooms must also be available per §604 of the 2010 ADA Standards for Accessible Design.

***Standards:***

- Toilet compartment:
  - The toilet compartment shall be 56” minimum measured from the back wall and 60” minimum measured from the side wall for wall hung water closets.
  - The toilet shall be located 16” minimum to 18” maximum from the sidewall for wheelchair accessible stalls, as shown in Figure 2.18.
  - Seat heights shall be 17” minimum to 19” maximum above the floor.
  - A 60” wide turning space shall be provided within the room. Turning space, clear floor space, and clearance at fixtures shall be permitted to overlap. Doors shall be permitted to swing into the turning space but shall not swing into the clear floor space or clearance at fixtures.
  - Flush controls shall be hand-operated or automatic. Flush controls shall be located on the open side of the toilet.

- Urinals shall be installed at a maximum height of 17” above the floor and a minimum depth of 13 ½” measured from the outer surface of the urinal to the back wall.

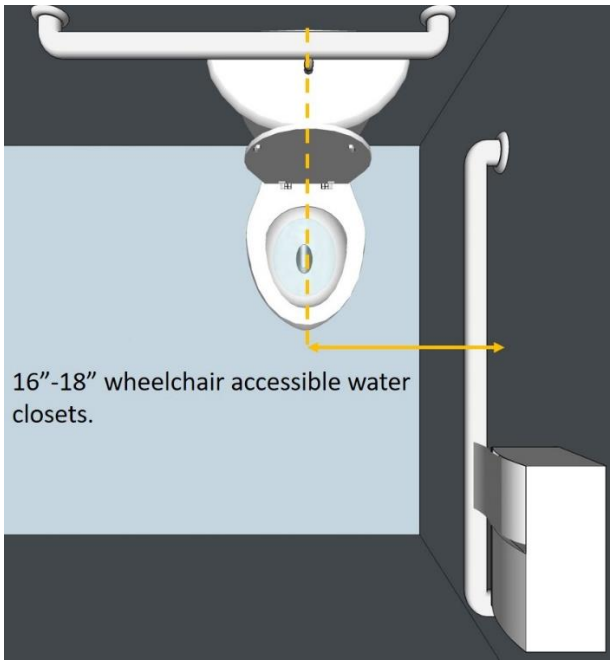


*Figure 2.18 Toilet Location*

### 1.1.10 Toilet Paper Dispenser

Issues with the placement of the toilet paper dispensers, not in compliance with §604.7 of the 2010 ADA Standards for Accessible Design.

***Standards:***

- Dispensers shall be installed at a height of 7” minimum to 9” maximum in front of the toilet measured to the centerline of the dispenser.
- The outlet shall be within the reach range of 15” minimum and 48” maximum above the floor.
- The toilet paper dispenser shall not be located behind grab bars.
- There shall be a 1 ½” minimum clearance below the grab bar. Dispensers shall not be the type that controls delivery or that does not allow continuous paper flow.

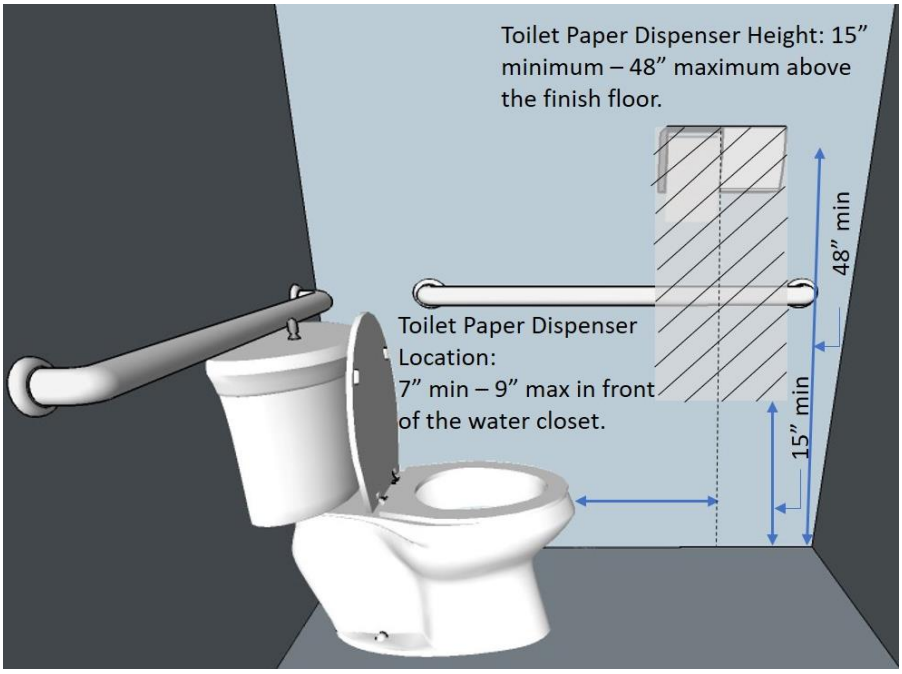


*Figure 2.19 Toilet Paper Dispenser*

### 1.1.11 Grab Bars

Grab bars in restrooms must comply with §604.5 of the 2010 ADA Standards for Accessible Design.

***Standards:***

- Toilet compartment:
  - The sidewall grab bar shall be 42” long minimum, installed at 12” maximum from the back wall.
  - The back-wall grab bar shall be 36” long minimum and extend 12” minimum from the centerline of the toilet on one side and 24” minimum on the other side.
  - The top gripping surface of the grab bars must be 33” minimum and 36” maximum above the floor.

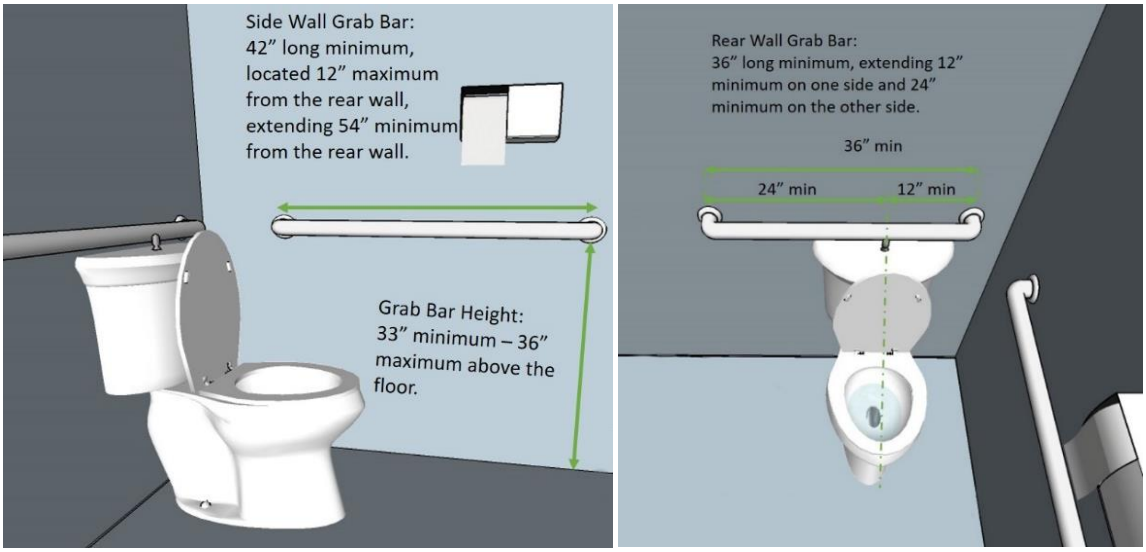


*Figure 2.20 Grab Bars*

### 1.1.12 Sink, Mirror, and Shelf

***Standards:***

- Sinks shall be installed at a maximum height of 34" above the floor.
    - Pipes shall be insulated and configured to prevent contact.
- Mirrors located above sinks shall be installed at a maximum height of 40" above the floor, measured at the bottom of the reflecting surface.
- Coat hooks and shelves shall be located at a minimum reach range of 15" and maximum 48" above the floor.
    - Shelves shall be located 40" minimum and 48" maximum above the floor.

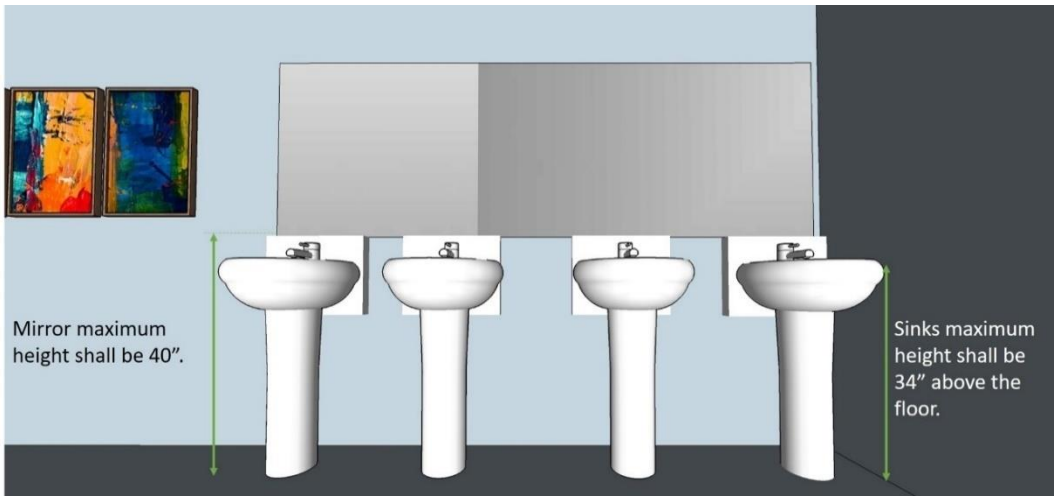


*Figure 2.21 Bathroom Sinks and Mirror*

### 1.1.13 Locker Room Showers

Showers in locker room must comply with §608 of the 2010 ADA Standards for Accessible Design.

***Standards:***

- Shower compartments shall have sizes and clearances complying with §608.2.
    - Transfer type shower compartments shall be 36” by 36” clear inside dimensions measured at the center points of opposing sides and shall have a 36” wide minimum entry on the face of the shower compartment.
    - Standard roll-in type shower compartments shall be 30” wide minimum by 60” deep minimum clear inside dimensions measured at center points of opposing sides and shall have a 60” wide minimum entry.
    - Alternate roll-in type shower compartments shall be 36” wide and 60” deep minimum clear inside dimensions measured at center points of opposing sides.
- Shower seats shall be provided in transfer type shower compartments and shall comply with §610.
- Controls, faucets, and shower spray units shall comply with §608.5 and §309.4.

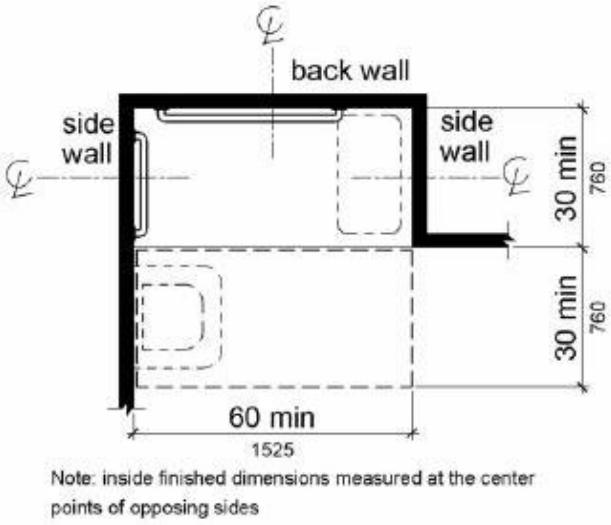


*Figure 2.22 Locker Room Showers*

## Room Signage

Signs are required to designate permanent rooms and places, per §701 of the 2010 ADA Standards for Accessible Design. In addition, exit doors must be identified by tactile (raised characters and Braille) signs.

***Standards:***

- Where a tactile sign is provided at a door, the sign shall be located alongside the door at the latch side.

- Signs containing tactile characters shall be located so that a clear floor space of 18” by 18” minimum, centered on the tactile characters, is provided beyond the arc of any door swing.
- Signs shall be installed 48” minimum above the floor, measured from the lowest character, and 60” maximum above the floor measured from the highest character.
- Signage characters and their background shall have a non-glare finish. The characters shall be high contrast compared to their background.

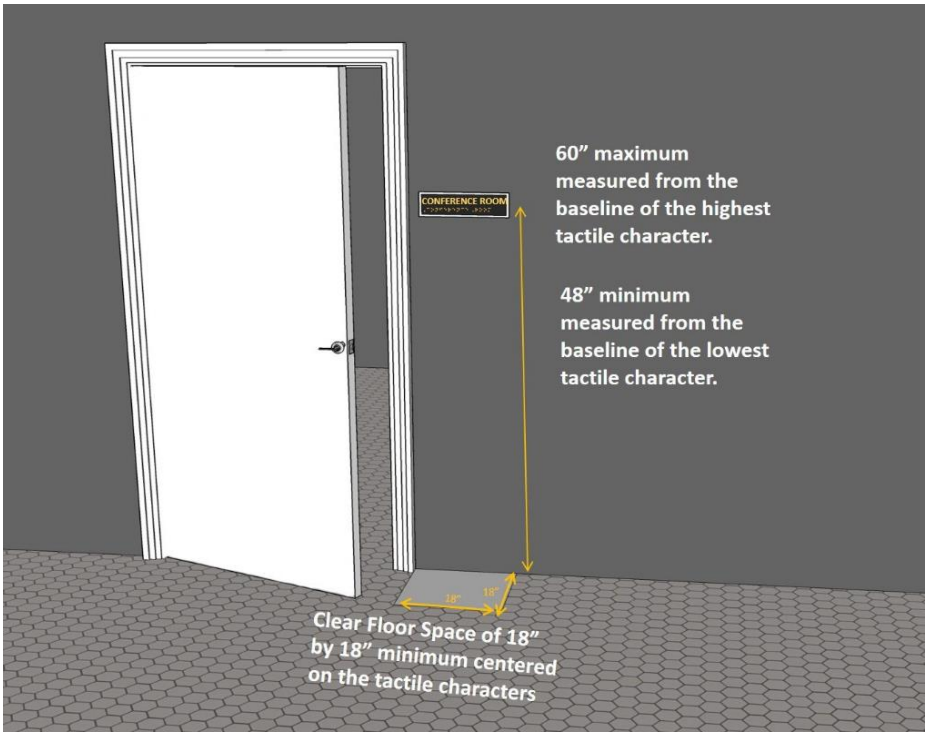


*Figure 2.23 Room Signage*

## 2.0 Next Steps

As previously discussed, the Town of Apex must take action to remediate all the barriers to accessibility at each of its 27 buildings. Although a schedule has been developed, it must be stressed that it should only be used as a guide. As projects near construction, costs for the recommended mitigation can be further refined by the Town. As the Town’s accessibility mitigation budget and its mitigation priorities change over time, the items chosen for mitigation may also change – so long as improvements are made each year until which time when all the town-owned buildings are fully ADA compliant.

Lastly, it is important that the ADA Transition Plan be kept up to date. As barriers to accessibility are removed, they must be kept track of. This will ensure that the Town is always aware of the amenities within each facility that are currently not accessible and has a plan as to when they will be mitigated and can be utilized safely and accessibly by all of Apex’s citizens and visitors.