Assessing Airport Programs for Travelers with Disabilities and Older Adults (2023)

DETAILS

126 pages | 8.5 x 11 | PAPERBACK

ISBN 978-0-309-68722-5 | DOI 10.17226/27012

CONTRIBUTORS

Patricia Ryan, Komal Sood, Katty Metreveli, Open Doors Organization, Joanne Paternoster; Airport Cooperative Research Program; Transportation Research Board; National Academies of Sciences, Engineering, and Medicine

SUGGESTED CITATION

National Academies of Sciences, Engineering, and Medicine. 2023. *Assessing Airport Programs for Travelers with Disabilities and Older Adults*. Washington, DC: The National Academies Press. https://doi.org/10.17226/27012.

CHAPTER 7

Facility Accessibility

7.1 Introduction

All travelers have a basic right to facility accessibility while journeying through airports. While the ADA mandates minimum requirements, airport facilities still lack many elements to accommodate travelers with disabilities and older adults. Many airport terminals were designed and retrofitted decades ago and did not consider as many traveler comforts and needs as architects and designers do today, further exacerbating the issue. Another key issue is that travelers do not know who is responsible for assisting them when arriving at facilities such as parking, rental cars, curbside, or the terminal.

Navigating the Chapter

This chapter is divided into main subject areas with notable practices, benchmarks, and assessment tools provided for each subject. A mini case study that illustrates a number of notable practices is included at the end of the chapter.

This chapter provides notable practices on improving facility accessibility, including

1. Access on arrival (curbside, parking, or other drop-off points);
2. Terminal layout and design (architecture, sounds, changes in gradient or texture of flooring); and
3. Equipment accessibility and accessible airport features.

7.2 Access on Arrival

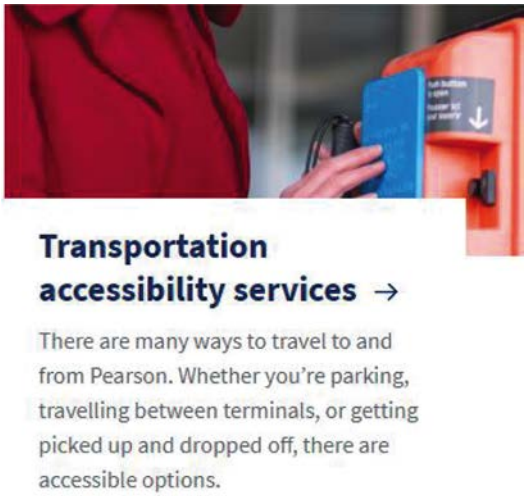
Even when there are multiple transportation options, the arrival points for travelers with disabilities and older adults may be limited due to several factors, as noted in *ACRP Research Report 210* (Van Horn et al. 2020), including

- Accessibility of the available modes of transportation;
- Location of airport arrival point (curbside or remote) and if remote, distance to walk and/or accessibility of shuttle or automated people mover;
- Availability of disability-related assistance and means to request it at the arrival point; and
- Availability of assistance with luggage.

7.2.1 Provide Accessible Ground Transportation

Although required under ADA, a lack of equitable access to ground transportation, such as taxis, TNCs, and hotel shuttles, is a fairly common problem. Travelers with reduced mobility, particularly those who use wheelchairs and scooters, are often faced with extensive wait times, and some are left without any transportation, because of a lack of accessible transportation options.

Section 2.7 of the FAA's *AC 150/5360-14A - Access to Airports by Individuals with Disabilities* outlines the airport's responsibilities related to ground transportation provided at the airport (e.g., fixed route and interterminal shuttles) as well as transit facilities, such as bus stops and light rail stations, on airport property.



Source: https://www.torontopearson.com/ en/accessibility.

Figure 22. Accessible transportation options at YYZ.

Airports are also responsible for monitoring compliance of private ground transportation providers operating with licensing or contractual agreements at the airport. Federal accessibility requirements vary depending on vehicle type, size, and the provider's operations, so many operators are not actually required to have an accessible vehicle in their fleet. This is a major cause of limited accessibility to commercial airport shuttles, hotel shuttles, taxis, and TNC services.

Some airports are working to close this gap with airport-owned accessible vehicles as well as establishing relationships with local transit providers:

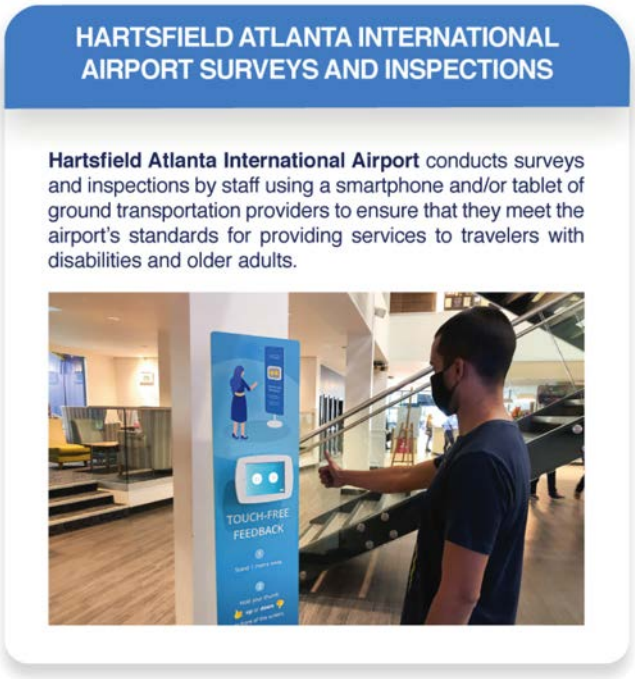
- MSP and LAX offer a free accessible shuttle between terminals on request.
- LAX works with destination shuttle services to connect the airport with 13 hotels in the area using multiple accessible vans.
- PHX worked with the City of Phoenix to require TNC companies like Uber and Lyft to provide lift-equipped service within half an hour of the request.
- Disney's Magical Express Bus is a bi-level, accessible motorcoach, designed with the National Council on Independent Living, that picks travelers up from MCO. This model was also trialed by Metropolitan Transportation Authority in New York City.
- A lift-equipped parking shuttle to and from the ValuPark lot provides CVG travelers with driver assistance and pickup/drop-off at their vehicles.

To ensure compliance with FAA regulations, airports are responsible for oversight that includes technical assistance, monitoring, and self-evaluations. Self-evaluations include initial and periodic reviews of facilities and structures, services, policies and practices, and development of plans to address any deficiencies or service gaps. More information about ground transportation regulations and airport oversight can be found in Chapter 4 of *ACRP Research Report 210*.

The following notable practices enhance accessibility of ground transportation.

Notable Practices

Accessibility Requirements for all Ground Transportation Operators. Require all ground transportation operators to provide accessible hotel, airport, taxi and/or TNC services upon request and within a reasonable wait time; change contract language to include this requirement, and negotiate an acceptable wait time.



Standards and Processes for Oversight and Monitoring Compliance. Establish compliance standards and processes for oversight and monitoring compliance of transportation providers, including penalties for noncompliance in all contracts to allow for repercussions.

Requirement to Provide Accessible Vehicles. Require ground transportation providers who do not have accessibility requirements under ADA to have at least one accessible vehicle or an alternative transportation option available at all times.

Direct Observations/Mystery Shopping. Direct observation by customer service agents or "mystery shoppers" provides effective assessment of ground transportation providers. For example, IAH has a "Secret Rider Program" that includes people with disabilities in testing the quality and accessibility of services provided by shared-ride vans, courtesy parking vans, and other ground transportation providers.

7.2.2 Designate Pickup/Drop-Off Areas for Travelers Needing Assistance and Provide a Means to Request Assistance

Finding assistance upon arrival on airport property was identified as the most common challenge for travelers arriving curbside, in a parking garage or lot, and at facilities that are remote from the main terminal. Airports who move pickup and drop-off locations to areas other than curbside and relocate intermodal connections to remote facilities create an even greater service gap, which may exclude some individuals from traveling and subject others to additional stress and fatigue (Ryan et al. 2021; Van Horn et al. 2020).

ACAA requires airlines to provide assistance to travelers with disabilities on arrival at the "terminal entrance." While some carriers offer curbside check-in or skycap service, many do not; nor do all air carriers provide a means to request assistance on arrival.

Effective January 2021, a new requirement under Canada's ATPDR mandates that airports provide and take reservations for curbside service (i.e., service into and out of the terminal from ground transportation arrival points) (Canada Transportation Act, SOR/2021-9).

The FAA National Civil Rights Training conducted in August 2020 states that if airlines do not have any means to enable people to contact them for assistance curbside, then this is an area where airports should, under ADA requirements, address the gap.

The following notable practices improve accessibility of assistance upon arrival at the airport.

Notable Practices

Designated Accessible Loading Zones. Designate accessible loading zones on arrivals and departures levels adjacent to curb cuts. Identify zones with clearly visible signage and roadway markings. At MSP, a large digital sign displays the universal symbol of accessibility (wheelchair symbol) and directs travelers needing assistance to two specific doors where service providers are stationed.

Europe is the leader with regard to accessible help points, as these are mandated by Regulation (EC) No 1107/2006 for all designated arrival points at their airports. European airports manage the assistance contract with one provider and are required to provide an accessible kiosk or other means to call for assistance at all arrival points, including designated curbside set down points as well as parking and public transit arrival points. LGW goes a step further with a curbside office and waiting room next to an accessible loading zone.

Information on Designated Areas. Communicate the designated area by signage as well as by location on the airport layout map on the website and airport app. PDX's website provides details on what travelers should tell the airline when making their request, including the number of bags they will have, and provides a phone number to call upon arrival.

Contact Number or Other Means of Communication to Request Assistance Upon Arrival. Provide a contact number on signage and online that can be called or texted, or provide a push button, kiosks, courtesy phone, or other means of requesting assistance at each major airport arrival point. Travelers at DEN can use a kiosk to call for assistance from service providers at the light rail station. SEA provides electric cart and wheelchair service on demand between the light rail, parking garage, and terminal and posts a phone number for their contracted service provider. See Section 5.2.2 of this report for guidelines on how airports can provide and monitor important assistive services between the point of arrival and the terminal entrance.

WHEELCHAIR ASSISTANCE

At **Portland International Airport,** customers can request wheelchair assistance from the parking garage by calling a number posted on the airport website.

At **San Francisco International Airport**, two reception areas are located at the first and last door of the international terminal with seating and a supply of wheelchairs at the ready.

Assessment Tools to Assess Access on Arrival	
	○ **Comment/feedback tracking**—customer feedback via website, social media, comment cards, observation.
	○ **Customer satisfaction surveys**—such as end-of-use surveys.
	○ **Mystery shopping**—to measure standard wait times.

7.3 Terminal Layout and Design

The ADA Accessibility Standards focus primarily on physical accessibility, particularly for people who use wheelchairs, and set minimum accessibility standards that do not fully meet the unique needs of people with disabilities of all types. Even with a primary focus on access for people with wheelchairs, the current standards do not accommodate the increasing footprint of wheelchairs and subsequent greater turning radius, unlike other countries such as Australia and the United Kingdom. Both have now increased their minimum standard to accommodate larger wheeled mobility devices (Steinfeld et al. 2010).

These standards have also been raised in the 2017 edition of International Building Code (IBC)/American National Standards Institute (ANSI) A117.1, but it will still take some time before the change is made to the ADA Accessibility Standards. The U.S. Access Board held a webinar titled "Harmonization Between the ADA Standards and IBC/ANSI A117.1" to alert users of the IBC to these critical changes (Mazz and Paarlberg 2017).

In addition to adopting these new criteria, airports are encouraged to adopt a more universal, inclusive approach to terminal and facility design.

7.3.1 Adopt a More Universal, Inclusive Approach to Terminal and Facility Design

Given the changing accessibility needs, and upcoming changes to design standards, airports are encouraged to adopt a more universal, inclusive approach to terminal and facility design. Universal Design (UD), as the name suggests, attempts to meet the needs of people of all ages, sizes, and abilities. According to the Universal Design Society, UD is "an approach to design that works to ensure products and buildings can be used by virtually everyone, regardless of their level of ability or disability" (The Center for an Accessible Society n.d.).

UD is gaining traction in the United States at airports such as SFO and MSP, which have their own architects specialized in its application. MSP's architects go a step further to review any changes to architecture and signage with the Travelers with Disabilities Advisory Committee before beginning construction.

In the United States, PANYNJ formulated its plan for improvements in accessibility in a document titled "Supplemental Accessibility Requirements." The plan, introduced in conjunction with the 30th anniversary of the ADA in July 2020, makes PANYNJ an "early adopter" of some of the increased accessibility standards from the ICC A117.1-2017 Standard for Accessible and Usable Buildings and Facilities. It also commits PANYNJ to adding new disability amenities not required by federal and state regulations. Highlights of these changes include

- Larger wheelchair turning space (increased from 60″ to 67″),
- Longer clear floor space for wheelchairs (increased from 48″ to 52″),
- Hearing loops at airline gates so that travelers wearing hearing aids can hear announcements,
- Adult changing stations located in family restrooms in transportation facilities, and
- Enhanced requirements for accessible tables in restaurants.

The supplemental accessibility requirements included in PANYNJ's design standards manual apply to all new facilities, not just airports; this includes concessionaires and vendors as well as contractors working on new construction in any facility owned by PANYNJ.

The following is an excerpt from the Executive Summary of PANYNJ's "Supplemental Accessibility Requirements":

> This document is the result of a collaboration between the Engineering Department, the Office of Diversity & Inclusion, the Port Authority Abilities Network and expert consultants from the United Spinal Association and Studio 5 Partnership, an architecture firm with extensive accessibility experience. The purpose of the collaboration was to identify ways the Port Authority could go above and beyond the minimum accessibility requirements in existing laws and codes, including the ADA, and implement best practices and new approaches to achieve cutting-edge accessibility in our facilities

(Port Authority of New York and New Jersey 2021b).

82 Assessing Airport Programs for Travelers with Disabilities and Older Adults

The following notable practices improve the accessibility of airport terminals and facilities.

Notable Practices

Intuitive Layout and Design. The airport layout and design are major factors affecting independence among travelers with disabilities, particularly those with reduced mobility or cognitive disabilities, and inexperienced travelers in general. In terms of layout and design, terminals should be intuitive so travelers can naturally find their way to check-in, through security, and to their gate. *ACRP Research Report 210* describes how this can be achieved by using design elements to support wayfinding strategies, including

- Architectural features that lead to intended paths of travel;
- Long sight lines;
- Landmarks that help orient travelers and can be used as reminders at major decision points;
- Tile patterns and textured flooring that lead travelers on a particular path;
- Use of high-contrast colors and adequate lighting;
- Maps;
- Signage; and
- Operational or directional communication (e.g., visual, audio, lighted, and tactile) in noisy or dimly lit areas such as drop-off lanes, corridors, and security checkpoints (Van Horn et al. 2020).

More information about accessible design features that support wayfinding can be found in *ACRP Research Report 177* and *ACRP Research Report 210*.

According to the ODO Market Study on Adult Travelers with Disabilities, the most common obstacle encountered at airports is the long distance to or between gates. This result has consistently taken the top spot in the list of common airport obstacles since the first study in 2005 and again in 2015 (Open Doors Organization 2020b).

Address Long Distances Between Strategic Points. Prior to the COVID-19 pandemic, the volume of requests by customers with disabilities and older travelers for assistance in airports was outstripping the ability of airlines and airports to respond efficiently or effectively. Many travelers who request wheelchair assistance don't use a wheelchair or other mobility device in their everyday life; however, airports need to take into consideration that increased walking distances and navigational complexity directly impact travelers' need for assistance.

British Airways Basic Assistance Pilot Program. As described in Section 6.2.3, the British Airways Basic Assistance pilot program attempted to better understand the specific types of help that travelers requesting wheelchair assistance actually need. The results present an opportunity for significant cost savings—while over 50% of travelers indicated they would still use the wheelchair assistance provided, others needing help with luggage, wayfinding, or language can be assisted in groups rather than one by one.

Safe and Strategic Placement of Escalators and Elevators. Elevators are another airport feature that is important for travelers with disabilities, especially for travelers who are unable to use an escalator due to safety reasons. This includes people who use mobility devices, have balance issues, or travel with service animals, as well as anyone unfamiliar or uncomfortable with escalators. Safety is a true concern for all travelers but especially older adults, who are at an increased risk of escalator-related injuries. A study by the Taipei Metro Rapid Transit station, discussed in *ACRP Synthesis 109: Escalator Falls*, found that a majority of falls occur with women over age 65 due to distraction, loss of balance, and not holding handrails while riding the escalator (Hunter-Zaworski 2020).

Airports can mitigate the risk for escalator-related incidents through terminal planning and design. Colocating escalators and elevators provides travelers with an easily accessible, safer alternative to using an escalator. In new construction or as renovations allow, high-volume, flow-through elevators that are adequate for demand should be installed to help with passenger flow and congestion. Elevators should be placed in easy view of escalators and stairs, with the location indicated clearly on nearby signage.

CUSTOMIZED ASSISSTANCE

The **Hermes Airports (PFO and LCA)** allocate gates closest to customs and border protection to shorten the walk for arriving travelers; secure bilingual escorts to help facilitate communication; and, arrange to have travelers' luggage delivered to their ground transportation, usually a motorcoach, once they clear customs. There are also designated meeting spots in case people are separated from their group. On the return trip, Hermes organizes remote check-in for passengers and luggage at the hotel. At the airport they just have to drop their bags and go straight to security.

The **Toronto Pearson International Airport (YYZ)** addresses this challenge by providing an in-terminal shuttle service with electric carts, along with a series of benches set at regular intervals airside, between security and the gates. This enhances independence while reducing demand for individual wheelchair assists.

One non-traveler-facing elevator improvement is installing more elevators that connect the apron and the terminal. Travelers with wheelchairs and other mobility devices typically check their device at the gate. Their device is then moved by a service provider or ground crew down to the aircraft to be stowed in the aircraft's cargo hold. On arrival at their destination, travelers wait for their device to be returned to the door of the aircraft, and they are often faced with long wait times because of limited means for the ground crew to get devices, especially heavy motorized wheelchairs, back up to the plane. Installing additional elevators to help this movement would not only lessen the wait time for the traveler, it would also lessen the distance the device needs to be moved and, in turn, reduce the chance of damage.

Review Lighting Throughout the Terminal. Proper lighting is critical for comfortable, easily navigable indoor environments. This is especially the case for people with vision loss or dementia, both of which are most commonly affected by surface finishes that produce glare, as well as people with autism, who may be affected by the flickering of fluorescent lighting. Natural and powered lighting both produce glare and low contrast, which can be hazardous even for people with excellent vision. According to *Design Guidelines for the Visual Environment* (DGVE), the following issues are common in modern buildings:

- Glare from windows and luminaires;
- Confusing reflections on polished walls, floor surfaces, and stairs;
- Optically misleading geometries in floor patterns and stair finishes;
- Inadequate lighting on vertical walking surfaces and stairs;
- Inadequate locations and quantity of task lighting and lack of lighting adjustability; and
- Improper use of light source spectral distribution.

The guidelines also note that focus should be on the following when planning for indoor lighting:

- Quality of the visual environment, such as balanced luminance and low glare;
- Quantity of light in areas where visual tasks are required;

84 Assessing Airport Programs for Travelers with Disabilities and Older Adults

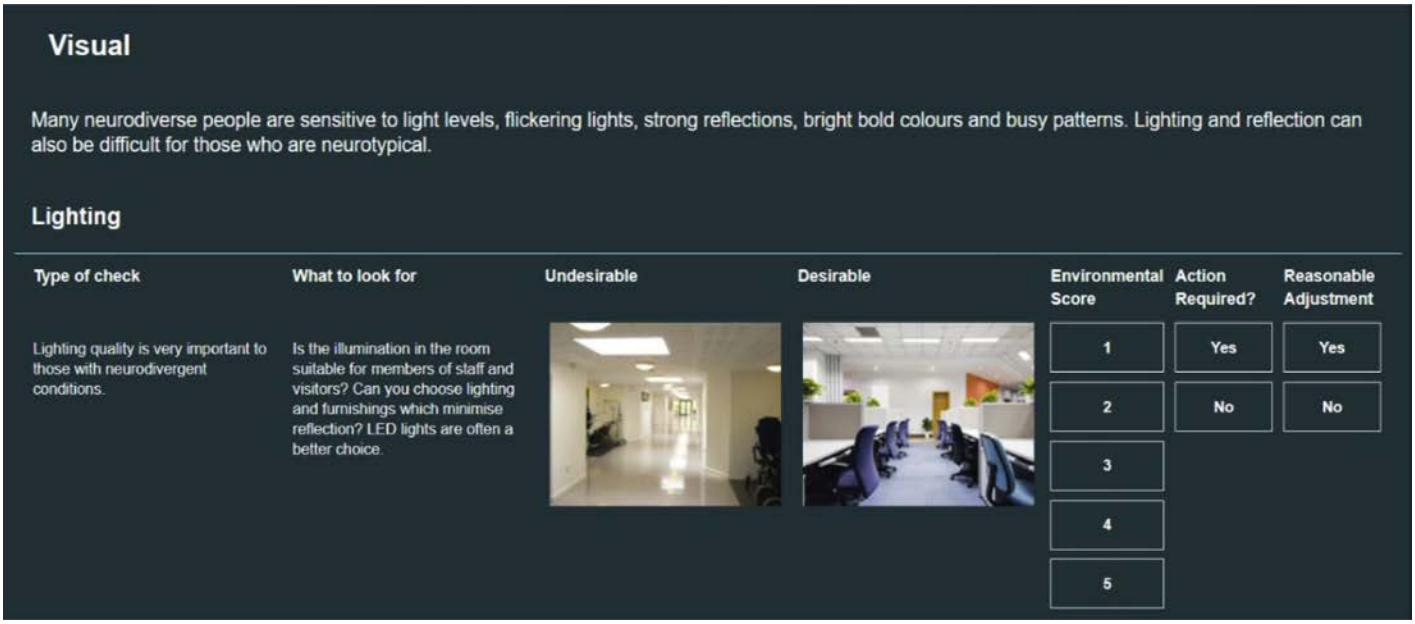
- The vision or view expected to be perceived by occupants; and
- The impact that light has on health and safety (National Institute of Building Sciences 2015).

Identify and Minimize Unpleasant Sensory Experiences. The Sensory Environment Checklist is a guide that helps users better understand the unique ways people with neurodivergent conditions, such as autism spectrum disorder, ADHD, dyslexia, and dyspraxia, experience environments. By understanding sensory sensitivities, the needs of neurodiverse communities are also incorporated into accessible spaces (Rodil 2020). The checklist, divided by visual, auditory, olfactory, and tactile sensitivities, can be found online at https://bbc.github.io/uxd-cognitive. A screenshot illustrating visual sensitivities is shown in Figure 23 (UX&D n.d.).

Dementia Friendly Community Environmental Assessment Tool. Another accessibility tool is the Dementia Friendly Community Environmental Assessment Tool (DFC-EAT). Developed in Brisbane, Australia, the tool is designed for companies to self-assess how welcoming their facilities are to persons with dementia based on eight principles of design. For each principle, an airport or another business can rate how well the facility meets the criteria (Fleming and Bennett 2017). A tool kit as well as videos and other training materials are available online from Dementia Training Australia.

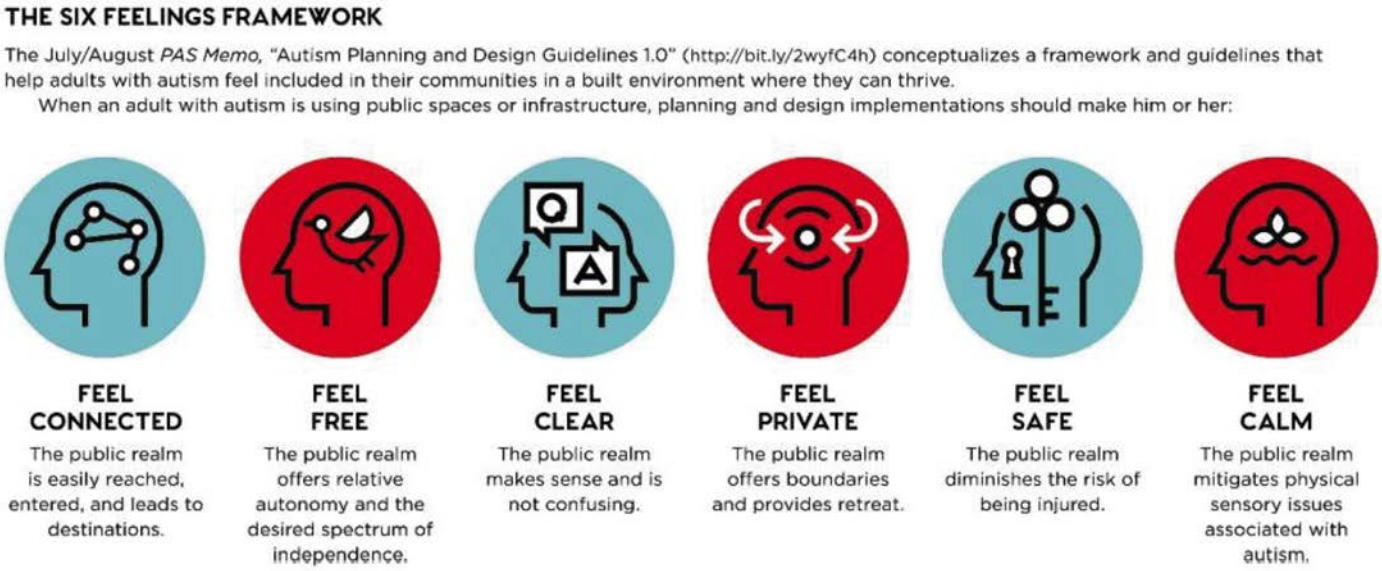
Create a Design Standards Manual in Collaboration with Internal Stakeholders and Travelers with Disabilities To Be Used by All Concessionaires, Vendors, and Contractors. *ACRP Research Report 210* identifies resources for best practices aimed at improving the built environment for a number of user groups whose needs are inadequately addressed by governmental accessibility standards. These resources can be used to develop a comprehensive design standards manual for accessibility and include the following:

- Designing for low vision, with reference to DGVE by the National Institute of Building Sciences;
- DeafSpace and designing for people with hearing loss;
- "Autism Planning and Design Guidelines 1.0" by the City and Regional Planning Program in the College of Engineering at Ohio State University, based on "The Six Feelings Framework



Source: UX&D (n.d.).

Figure 23. Sensory Environment Checklist.



Source: American Planning Association.

Figure 24. The Six Feelings Framework for Autism Planning and Design.

for Autism Planning and Design" from the American Planning Association (see Figure 24), where the goal is to create an environment where adults with autism can feel included and thrive; and

- Franz, O'Reilly, and Shepherd's 2017 presentation "Up and Away: Improving the Accessibility of Airports for Travelers With Dementia," which identifies key considerations for elements to include—such as seating, quiet spaces, staff training, and availability to assist—and avoid, such as excessive auditory warnings and messages (Van Horn 2020).

More detailed information can be found in *ACRP Research Report 210*.

Assessment Tools to Evaluate Terminal Layout and Design	
	○ **Comment/feedback tracking**—customer feedback via website, social media, comment cards, observation.
	○ **Internal audits**—such as a self-evaluation that includes individuals with disabilities, as recommended by the FAA's *AC 150/5360-14A - Access to Airports by Individuals with Disabilities*.
	○ **Customer satisfaction surveys**—such as end-of-use surveys.
	○ **Mystery shopping.**
	○ **Checklist**—Wayfinding Accessibility Audit Checklist in *ACRP Research Report 177*.

7.4 Equipment Accessibility and Accessible Airport Features

Equipment and amenities play an important role in facilitating accessibility for travelers with disabilities and older adults.

The following notable practices cover adequate access to power outlets.

86 Assessing Airport Programs for Travelers with Disabilities and Older Adults

Notable Practices

Power outlets are a hot commodity for travelers in general but especially for travelers who use powered mobility devices; travelers with hearing loss relying on their cell phone for communication; anyone with an electronic medical device; and children with autism relying on a cell phone or tablet for social stories, communication, or distractions from the noisy airport environment. Providing additional power outlets throughout the airport benefits everyone. Where possible, outlets should be installed lower to the ground to keep the power in reach of travelers looking to charge their powered mobility device.

WHEELCHAIR CHARGING STATIONS

The **Miami International Airport (MIA)** is the first U.S. airport to install wheelchair charging stations airport-wide. The 10 wheelchair charging stations, as shown in the figure, connect to the charging power on powered wheelchairs and scooters, giving travelers the ability to recharge while waiting for their flight. Stations are located on both landside and airside (MIA Website).

Source: MIA.

7.4.1 Provide Equipment to Facilitate the Movement of People Safely and Efficiently

Equipment that helps move passengers safely and efficiently from one point to the next can play a large role in a seamless travel experience.

The following notable practices facilitate the movement of people safely and efficiently.

Notable Practices

Ambulifts or "High-Lift Trucks." Ambulifts allow a person using a wheelchair to skip the boarding bridge altogether at many foreign airports. The truck rises to the level of the aircraft and allows the passenger to board or disembark via the airplane galley instead of boarding on the jet bridge with an audience for the lift and transfer. Ambulifts can also be used to move wheelchairs back and forth for stowage, replacing the need for more of the elevators that were discussed earlier. They can also be helpful for emergency evacuations of aircraft and even

terminals. Ambulifts are fairly common in European airports since hardstands are much more common there than in the United States, whereas U.S. airports have instead invested in jet bridges to accommodate larger aircraft.

Eagle Lift. A product from Australia, the Eagle Lift—along with a second model, Eagle 2—is an innovative device manufactured by Haycomp PTY Ltd., a company specializing in lifting solutions for wheelchair users who are unable to self-transfer. In boarding or deplaning, a transfer assistance team helps the traveler position the sling underneath their body. Once the sling is connected to the Eagle Lift, the transfer team operates the lift to raise the traveler and sling and maneuver them onto the aircraft and down the aisle to the seat, where the traveler is lowered and seated for takeoff. The Eagle Lift minimizes the amount of heavy lifting required and provides the traveler with a dignified transfer, free from close physical handling by strangers.

7.4.2 Common Use Self-Service Kiosks

Common use self-service (CUSS) kiosks installed on or after December 12, 2016, must meet the design specifications set by Part 382 and Section 504, with a minimum requirement of 25% accessible by December 12, 2022 (Legal Information Institute n.d.).

The following notable practices describe these kiosk design specifications in further detail.

Notable Practices

Identifiable Accessible Kiosks in Standardized Locations. Clearly identify accessible kiosks and standardize their location to provide a valuable service to people with disabilities and older adults.

ACCESSIBLE KIOSKS

Storm Interface has developed a number of technologies to make self-service kiosks accessible including the various touchpad models to accommodate people with vision loss. Storm Interface's latest innovation is the Far-field Microphone Array Module, which is an **accessible interface device** that delivers clear voice reception in exposed, unsupervised, public applications. With this device installed on self-service kiosks, any traveler can simply speak to the kiosk to operate it without ever touching the machine.

88 Assessing Airport Programs for Travelers with Disabilities and Older Adults

Priority Check-In/Dedicated Lines. Enable or direct customers who cannot use kiosks due to a disability to go to the head of the full-service line, as required by ACAA, or provide a dedicated line for customers with disabilities.

Staff Present to Assist. Staff members should be available to direct and assist customers, as required by ACAA. These staff members should be adequately trained to address the needs of various traveler segments, including travelers with disabilities and older adults.

Touchless Check-In. Implement accessible touchless check-in options.

Voice-Activated Kiosks. When legally permitted, kiosks should provide a voice activation feature for travelers who are blind or have low vision.

Regulatory Requirements. Review regulatory requirements under ACAA and Section 504.

Review Industry Notable Practices. An example is the SITA Smart Path Kiosk, a biometric add-on to self-service solution that has been designed to meet IATA's CUSS specifications. This kiosk serves several functions, including booking, changing a reservation, checking in, paying for upgrades or services, and border control. The kiosks streamline passenger processing, allowing for self-service check-in in less than a minute, with key features such as biometric enablement, barcode and passport scanners, and bag tag printers. Airlines are also installing touchless software for their check-in and bag drop kiosks as part of their effort to reassure travelers that it is once again safe to fly.

7.4.3 Seating

With many airports expanding their terminals, long walking distances in airports is becoming a more common obstacle. All functional areas of an airport should have accessible seating, including check-in, baggage claim, and frequent intervals along corridors and walkways.

The following notable practices improve seating accessibility.

Notable Practices

Seating in Ticket Counter Areas. Provide a row of higher seats in ticket counter areas, near the entry to security checkpoint, and at frequent intervals along long concourses.

Seating in Security Re-composure Areas. Provide a row of seats with armrests in each security re-composure area for older travelers and those with reduced mobility, not just low benches without backs or armrests.

Additional Seating Throughout. In any renovations or new terminal designs, plan for additional seating throughout the terminals.

Accessible Seating. Ensure that seating designs meet accessibility needs, such as higher seats with armrests that enable older travelers to more easily sit and stand, as well as seats with no exterior armrest to enable transfer by persons using their own wheelchairs.

Charging Stations. Provide charging stations for devices near or integrated with seating.

7.4.4 Amenities

As renovations and new terminals or concourses are designed, the viewpoint of travelers must be considered, including the need for sensory rooms or quiet areas; lighting and glare adjustments; additional wheelchair storage at locations throughout the airport; provision of electric carts that can transport multiple customers with reduced mobility; or new technologies, such as automated wheelchairs.

ACRP Research Report 226: Planning and Design of Airport Terminal Restrooms and Ancillary Spaces provides prototypes for not only accessible restrooms but also SARAs, companion care restrooms, changing table restrooms, and nursing mothers' rooms. It also discusses how these spaces can best be distributed throughout the terminal (Vange et al., 2021). Many airports are already accommodating travelers with newly developed sensory rooms for travelers with autism and dementia, as well as more adult changing rooms.

The following notable practices cover amenities for travelers with disabilities and older adults.

Notable Practices

Provide Fully Accessible Restroom Facilities, Including Adult Changing Tables. An adequate number of fully accessible restrooms with adult-sized, height-adjustable changing tables are required to meet the needs of adults who are non-ambulatory and require assistance. These should be clearly identified and located landside and airside in each terminal. As of this writing, there are 13 U.S. airports with adult changing rooms, including ATL, AUS, Nashville International Airport (BNA), Baltimore/Washington International Thurgood Marshall Airport (BWI), LAX, MCO, Louis Armstrong New Orleans International Airport (MSY), ORD, PHX, PIT, and SEA; Indianapolis International Airport (IND), MSP, and PHL are also adding this accommodation. Except for ORD, these U.S. facilities feature only an adult-sized changing table. Other than PHX and BWI, all other facilities listed have height-adjustable tables. Bills to mandate adult changing facilities in airports and other public buildings are now working their way through various state legislatures and will likely be required in the future at the federal level under the ADA and Section 504. As of 2015, the Maryland Aviation Administration made it a requirement for BWI per Design Standard 2015-03, New Section 11.8.4, Adult Change Rooms.

Provide SARAs in Each Concourse. In the United States, provision of SARAs post-security is mandatory at all but the smaller airports, unless local service animal organizations grant an exception. Airports are recognizing the need to provide additional service animal relief areas in each concourse. Alternatively, locate a small area in each concourse where a portable SARA can be installed, as at PHL and Charlotte Douglas International Airport (CLT), until a more permanent solution can be designed and built.

Provide a Sensory Room in Each Concourse. To provide an experience that meets varying sensory needs, sensory rooms are often designed with equipment that can provide stimulation and relaxation with "cause and effect" actions, such as a panel of buttons that control multiple lights in the room. Padded walls, floors, and climbing equipment can help overexcited children avoid injury and provide a soft surface when someone wants to relax (see Figure 26). In designing and implementing a sensory room, it is beneficial to meet with organizations that represent travelers with hidden disabilities, such as autism, to determine the need and use of sensory rooms and/or quiet areas and their effectiveness. If no sensory room is available, create an area identified as a "quiet" area.

Provide Portable Sensory Rooms. Among the biggest challenges for airports interested in developing a sensory room is finding space in the terminal to house it. One option from Fun and Function is the "Mobile Sensory Room," a portable sensory space on wheels that gives airports the flexibility to move the unit wherever it's needed (see Figure 27). Although smaller than a typical sensory room, the Mobile Sensory Room still features interactive equipment and lighting, padded vibroacoustic seating for a calming effect, and a timer and lighting system to prompt travelers once their time in the space is finished.

Provide a Zip-Up Tent or Semi-Portable Room. Other alternative portable solutions include the Zip-Up Tent and the Semi-Portable Room. The Tent is slightly larger than the mobile room, yet it is still compact and can be rolled up then wheeled out. It is large enough to

90 Assessing Airport Programs for Travelers with Disabilities and Older Adults

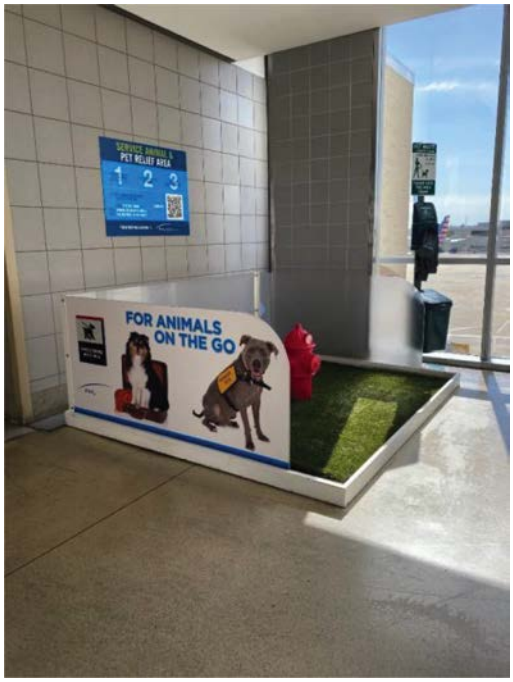
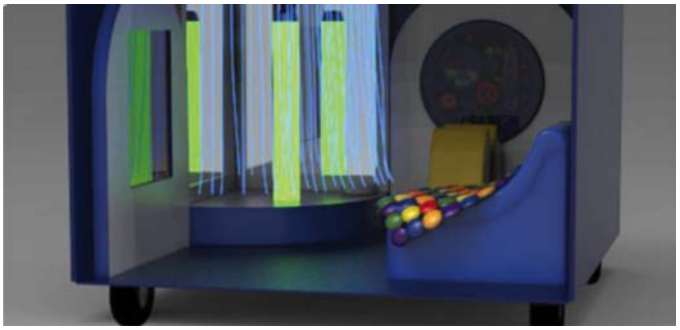


Figure 25. SARA at PHL.

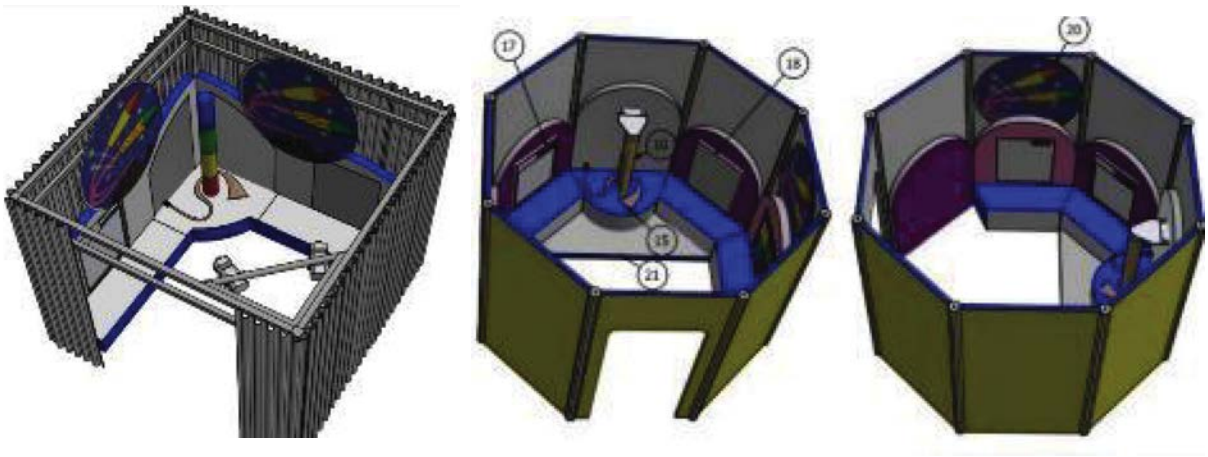
Source: Davis 2019.

Figure 26. Sensory room at PIT.



Source: Fun and Function n.d.

Figure 27. Fun and Function mobile sensory room.



Source: Fun and Function 2020.

Figure 28. Semi-portable room examples.

provide open floor space and padded mats for users, in addition to interactive sensory equipment. The Semi-Portable Room is a solid construction of wood and SensaSoft walls with fitted wheels, but it can be easily dismantled and moved. These spaces are even larger than the Tent, providing more opportunities to meet both the stimulation and relaxation needs of different travelers. Figure 28 provides several examples of these semi-portable rooms.

Provide a Quiet Area or Room in Each Concourse. A quiet area or room is more of a calming retreat for travelers needing a break from the airport environment. Quiet rooms are more beneficial to people with dementia, those with travel-related anxiety, and anyone in need of a break from the active airport environment. PHL welcomes travelers in need of a calming space to a Quiet Room designated for solitude and prayer (see Figure 29). According to a press release from PHL, the room is designed with a dandelion flower pattern because "the dandelion flower can thrive in difficult conditions" and because "some say it symbolizes healing from emotional and physical injury alike and the ability to rise above life's challenges" (Philadelphia International Airport 2018). The Quiet Room is also equipped with a foot bath for travelers who require cleansing before prayer (Sasko 2018).

Provide Wheelchairs for Loan/Self-Assistance. Provide wheelchairs for rent/loan, as described in Section 5.2.1.

Source: Phillymag.com.

Figure 29. PHL's Quiet Room.

92 Assessing Airport Programs for Travelers with Disabilities and Older Adults

Assessment Tools to Evaluate Equipment Accessibility and Accessible Airport Features	
	○ **Comment/feedback tracking**—customer feedback via website, social media, comment cards, observation.
	○ **Usage data**—of amenities and equipment.
	Other tools, such as ○ Self-assessment with people with disabilities and ○ Shadowing/"lived experience."
	○ **Internal audit**—such as wayfinding and accessibility audit.
	○ **Customer satisfaction surveys**—such as end-of-use surveys.

7.5 Mini Case Study

MINI CASE STUDY: VANCOUVER INTERNATIONAL AIRPORT ACCESSIBILITY

Example of commitment to facility accessibility through Universal Design

Region: Canada

Vancouver International Airport (YVR) has been a proponent of Universal Design (UD) for over 20 years, incorporating UD standards into new construction and improvements to existing facilities and services since the airport was built in 1995. YVR has historically exceeded code minimums for supporting passenger wayfinding with the intent to help passengers orient themselves intuitively with minimal reliance on signage. This is in addition to a terminal layout that minimizes walking distances along with a UD approach to lighting, millwork, flooring and other finishes. A detailed list of the accessibility and UD features at YVR can be found in Chapter 11 in *ACRP Research Report 210*.

Pedestrian and electric cart ramp at YVR

Recognizing the airport's commitment to accessibility, the Rick Hansen Foundation (RHF) in 2018 awarded YVR with the first Accessibility Certified Gold rating, the highest rating in the Rick Hansen Foundation Accessibility Certification Program (RHFAC). The RHFAC is the first program to measure the level of meaningful access beyond building code and is based upon the holistic user experience of people with varying disabilities affecting their mobility, vision and hearing. As of 2021, over 1,350 sites have been rated by the RHF (Hansen, 2021).

A number of accessibility features were identified as leading to YVR's Gold rating including:

- Universal food and service counters for people using wheeled mobility devices
- Low-resistance carpeting for easier movement and greater stability
- Textured terminal flooring to assist with wayfinding
- Curbside ramps and assistance
- Accessible parking in all lots with accessible bus service to long-term parking
- Universal seating throughout the terminal
- Universally accessible washrooms
- Pet relief areas for individuals traveling with assistance animals
- Adaptive speakers throughout the terminal building
- Clearly marked signage and wayfinding