

Appendix A: Airport Case Study Highlights

PROCESS

- The airports selected as case studies in Task 3 are known innovators and represent different regions, sizes, and governance structures.
- The 1- to 2-day visits included a tour of the airport to observe and photograph landside and terminal facilities and services.
- Interviews were conducted with key airport executives/managers (Access Coordinator, IT, Planning, Architecture, Operations, Diversity, Community Relations, etc.) and in some cases airline, service company, and TSA representatives, as well.
- The research team also attended accessibility advisory board meetings in Los Angeles (LAX) and Minneapolis–St. Paul (MSP) (where the lead investigator subsequently became a regularly attending member) and conducted several focus groups with the disability community for Seattle–Tacoma (SEA).
- Topics addressed during interviews were wide ranging and included
 - current innovations for people with disabilities and older adults;
 - future innovations in the planning stage;
 - issues that might benefit from innovation;
 - stakeholder partnerships;
 - airport management structures including location of the CIO and Access Coordinator in the hierarchy;
 - IROPS and emergency planning—resources and communication;
 - access committee, if any—who attends, how often does it meet, etc.;
 - contractual issues—ground transport, concessions, airlines, airline service companies;
 - main impediments to implementation encountered—legal, regulatory, safety, cost, public attitude, etc.;
 - how customer satisfaction is measured and whether it specifically addresses persons with disabilities and older adults;
 - physical issues—campus layout, building layout, physical impediments, etc.; and
 - IT issues - GIS, data bases, asset management, emergency notification, etc.
- The research team also conducted reviews of websites and apps, where available, for accessibility, usability and content.
- Details on the following airports are included in this Appendix:

Domestic Airports

- Baltimore-Washington - BWI
- Cincinnati/Northern KY - CVG
- Fort Myers - Southwest Florida - RSW
- Grand Rapids- GRR
- Los Angeles- LAX
- Miami - MIA
- Minneapolis-St. Paul - MSP
- Orlando - MCO
- Phoenix - PHX
- Rochester, NY - ROC
- Rochester, MN - RST
- San Francisco, CA - SFO
- Seattle-Tacoma - SEA

International Airports

- Schiphol - AMS
- Vancouver - YVR

Baltimore-Washington International Airport (BWI)

Terminal Location and Configuration

Located nine miles south of downtown Baltimore, multiple transit options exist to connect passengers to BWI such as rail, bus, rental cars, taxis, and Transportation Network Companies (TNCs), also known as rideshares, such as Uber and Lyft. The MTA light rail station is located outside of the lower level of the terminal adjacent to Concourse E. Shuttle services are available to transfer passengers to hotels, off-airport parking, the consolidated rental car facility (CONRAC), and the MARC/Amtrak station. A multi-level daily parking garage is located between the horseshoe or “U” shaped terminal building.

BWI consists of five concourses—A, B, C, D, & E (International/swing)—connected to the single terminal building. Concourses A & B were connected post-security through renovations completed in 2005 and consist of 26 gates and two passenger security screening checkpoints (SSCP). Concourse C, also connected to Concourses A & B via a secure connector, serves 14 gates and 1 SSCP. Concourse D with 24 gates and Concourse E with 5 gates is also linked via a secure connector; one SSCP opened in the fall of 2016. An expansion project to add six additional international gates to Concourse E is expected to be complete in 2019.

Ticketing and air carrier gates are located on the upper level with baggage claim and international arrivals processing (CBP) on the lower level.

Highlights

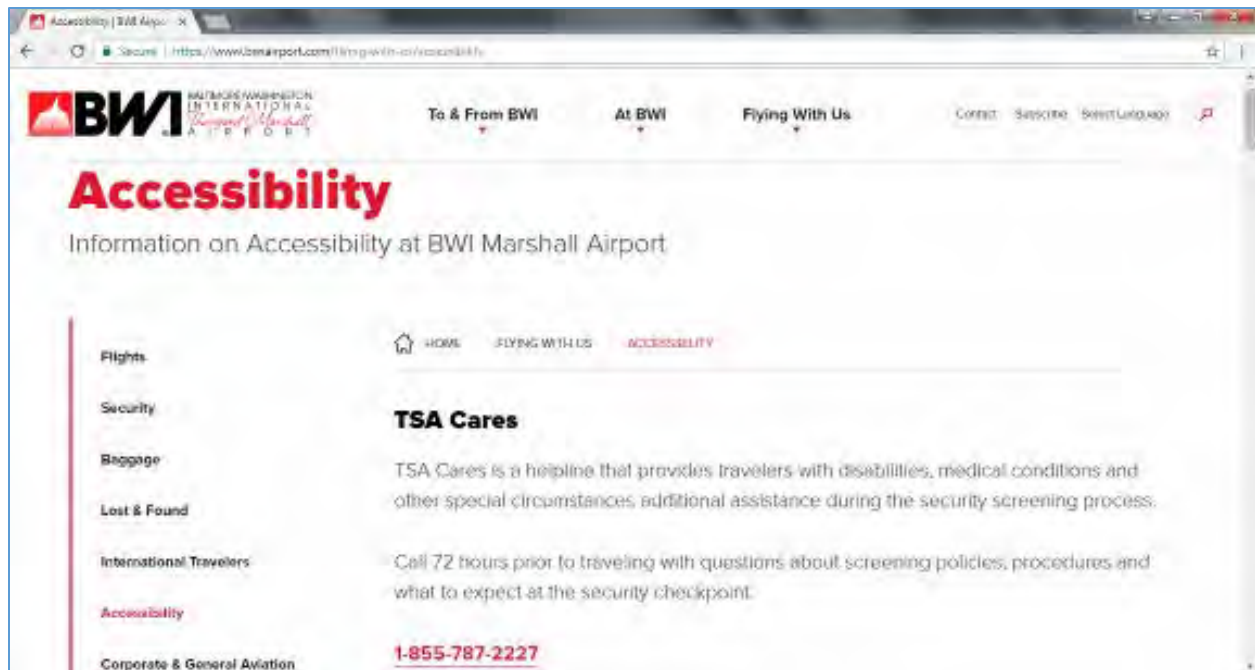
- The accessible BWI website has a new user-friendly section devoted to accessibility information at the airport. This information is one-click from the main page. Sections include:
 - TSA Information
 - Lift-Equipped Busses
 - Parking
 - Pet Relief Areas
 - Services for the Visually Impaired
 - Telecommunications Devices for the Deaf (TDD)
 - Free Video Calls for the Deaf and Hard of Hearing
 - Unisex Bathrooms
 - Family Restrooms, and
 - Wheelchair Service.
- Parking – An online video shows the route to the daily parking garage and how the parking system functions. Vacant spaces on each floor are indicated by green lights.
- Flight Information Display System (FIDS) – New LED backlit FIDS are highly legible with no refresh. The airport can use informational screens as well as JC Decaux digital signs for emergency messaging.
- Restrooms – Accessible family restrooms with adult changing tables are located pre and post security with locations indicated on the airport’s website maps. There is also an accessible transfer shower located in ROAM Fitness within the Concourse D/E connector near Gate D1.
- Service Animal Relief Area (SARA) – A new wheelchair accessible SARA is located airside with tactile and Braille informational signs.

- Signage – The BWI signage system by Mijksenaar is color-coded with good directions for SARA locations.
- Wheelchair Lifts – A lift connects the food court and gate level in Concourse A while a second lift nearby goes down to ground level; both can be used in emergencies.
- Moving walkways – BWI's secure airside connector between Concourse B/C includes moving walkways, and another set is planned for the future Concourse C/D connector.
- Public Access Video Phone – A phone from Purple is newly installed pre-security in the terminal building.
- Accessible Check-in Kiosks – Spirit kiosks are already 100% accessible at BWI.
- New Internal ADA Committee – Following the meeting with the ACRP research team, it was decided that those in attendance would continue to meet as members of a new internal ADA committee. Attendees included the Dir. and Asst. Dir. of the Office of Fair Practices Dept., Angela Martin and Bill Villanueva; new ADA Coordinator, Leon Patterson; former ADA Coordinator, Neal Heaton, Technology; Peter Charles, Architect, Mgr. Capital Projects; Kelvin Jenkins, Mgr. Customer Service; Dan Faoro, Marketing Exec.; and five airline representatives from Alaska, JetBlue, Spirit, Southwest and British Airways.

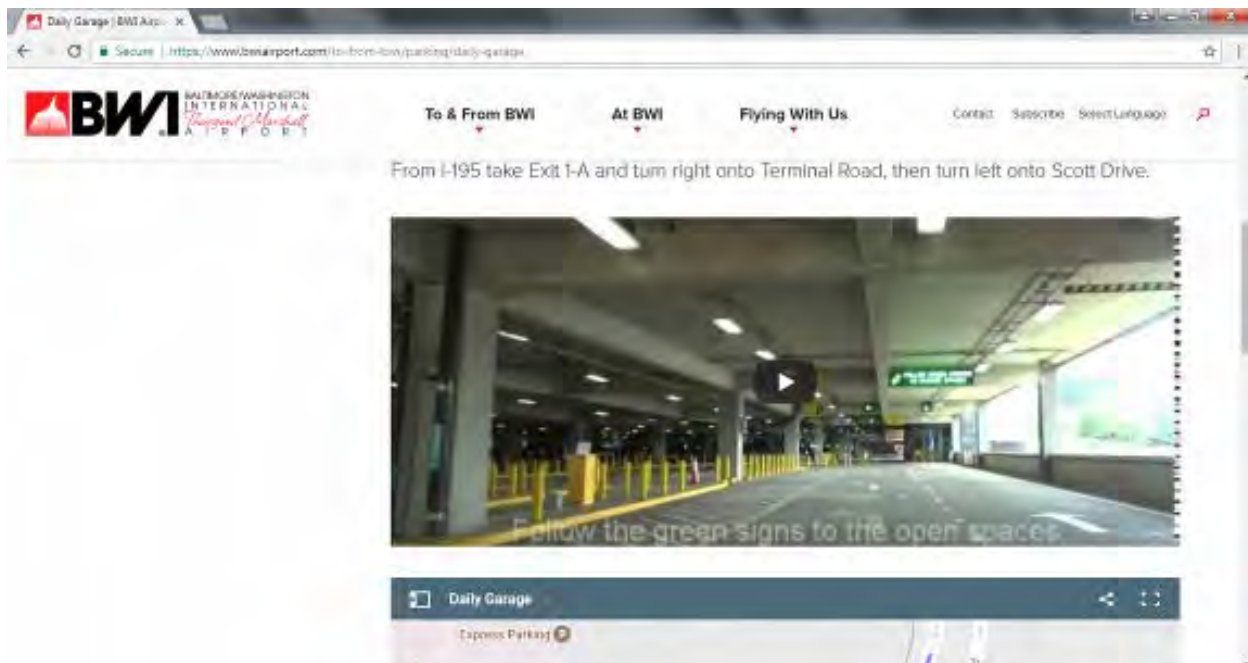


Source: ACRP Project 01-31 Research Team

Figure A-1. BWI Meeting with ACRP Research Team



Source: Baltimore-Washington International Airport
Figure A-2. Screenshot of BWI Accessibility Page



Source: Baltimore-Washington International Airport
Figure A-3. Screenshot of BWI captioned video showing parking garage digital signage



Figure A-4. New backlit FIDS at BWI



Figure A-5. Accessible family restroom with adult changing table



Source: ACRP Project 01-31 Research Team

Figure A-6. New wheelchair accessible SARA at BWI with tactile and Braille signage (sink area not shown)



Source: ACRP Project 01-31 Research Team

Figure A-7. Concourse A escalator and adjacent lift, operable in emergencies



Source: ACRP Project 01-31 Research Team

Figure A-8. New Spirit Airlines kiosks, 100% accessible with Audio-Nav keypad

Cincinnati/Northern Kentucky International Airport (CVG)

Terminal Location and Configuration

CVG is located approximately 13 miles southwest of downtown Cincinnati in Northern Kentucky. Transportation options include van & car services, taxicabs, TANK public transit, and TNC/rideshares. Shuttles located on Level 1 transport passengers to/from the rental car lots and long-term parking located north of the terminal. Short-term parking is located in the multi-level parking garage situated in front of the terminal. By 2021, a new consolidated rental car facility (CONRAC) will operate adjacent to Terminal 3 in the location vacated by Terminals 1 and 2 that were demolished in 2016.

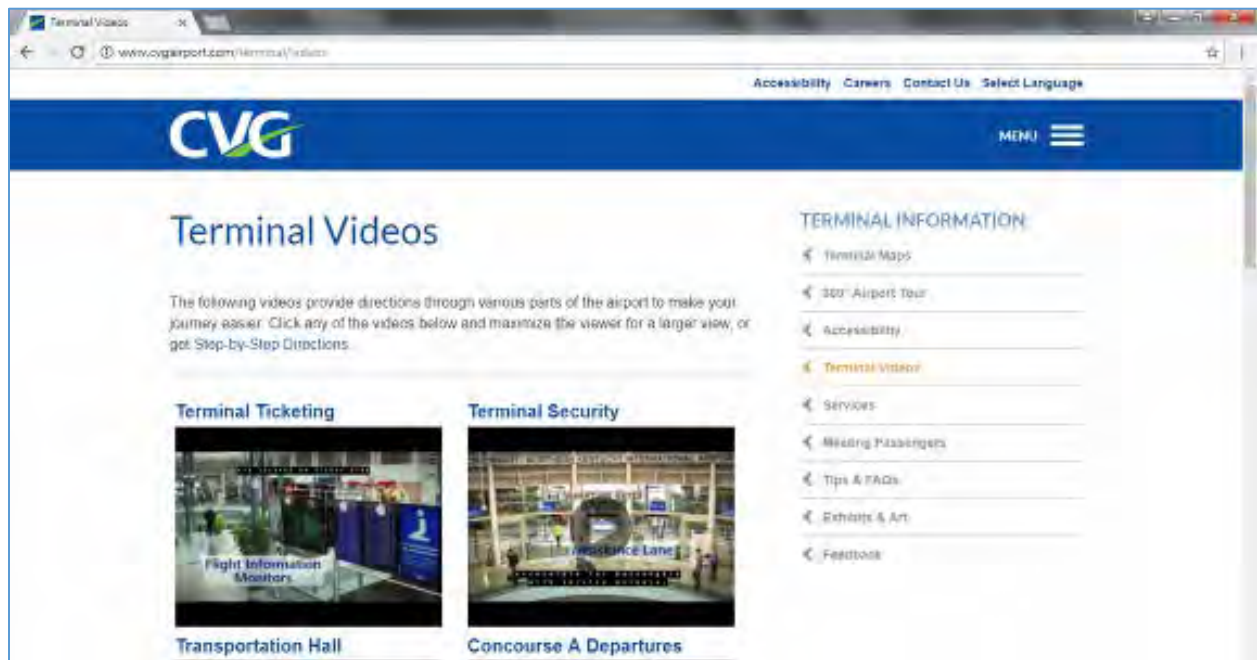
CVG consists of a single terminal and two remote satellite concourses A & B connected by an underground automated people mover system (APM) located on Level 1. Ticketing and the consolidated Security Screening Checkpoint (SSCP) are located on Level 3. After processing through security, passengers access the APM located on Level 1 via a vertical circulation core. Baggage claim and Ground Transportation services are located on Level 2 of the Terminal. Concourse A consists of 23 gates while Concourse B provides 28 gates and an international arrivals processing facility (CBP) with direct access back to the concourse or the Level 1 APM.

Currently CVG is undergoing renovations under a terminal modernization project that will include updates to the terminal baggage claim area and curb front, garage lobbies, and Concourses A & B.

Highlights

- Accessibility website – Information is one click from the airport’s homepage. Captioned videos introduce travelers to the airport before arrival. Visitors who are blind can access the captions separately as a text map. Sections include the following:
 - Distance with step-by-step directions to and from the gate
 - Wheelchairs
 - Elevator
 - Luggage Carts
 - Restrooms
 - Security
 - Service Animals
 - Paging
 - Emergency Info
 - Parking, and
 - ADA Coordinator Contact Info
- Flight Information Display System (FIDS) – CVG uses FID screens in the front lobby to educate guests and passengers about airport services and its facilities.
- Seating – In the terminal check-in area, CVG has offers comfortable seating designated for passengers who have requested wheelchair assistance. Additional non-traditional, comfortable seating that conforms to Gallaudet’s deaf design criteria is provided in the meet/greet areas on Level 1.
- Information Booths – Staffed by volunteers, booths are located in the terminal’s front lobby as well as each concourse. Service includes Video Remote Interpretation customers with are deaf.
- Wheelchairs for Customer Use – Staxi wheelchairs are staged inside the front doors.

- Wayfinding – Clear sight lines from the terminal front door to security are provided for visual orientation.
- Vertical Circulation – Elevators are in close proximity to escalator banks and have directional signage.
- Nursing Rooms – CVG has an accessible Mamava freestanding lactation suite.
- Therapy Animals – CVG provides a miniature therapy horse program in the terminal twice a month.



Source: Cincinnati-Northern KY International Airport (CVG)

Figure A-9. Screenshot of Terminal Videos with link to Step-by-Step Directions for customers who are blind to use as a text map.



Source: ACRP 01-31 Research Team

Figure A-10. FIDS in lobby advertising CVG app and accessibility services.



Source: ACRP 01-31 Research Team

Figure A-11. Comfortable seating reserved for passengers awaiting wheelchair assistance.



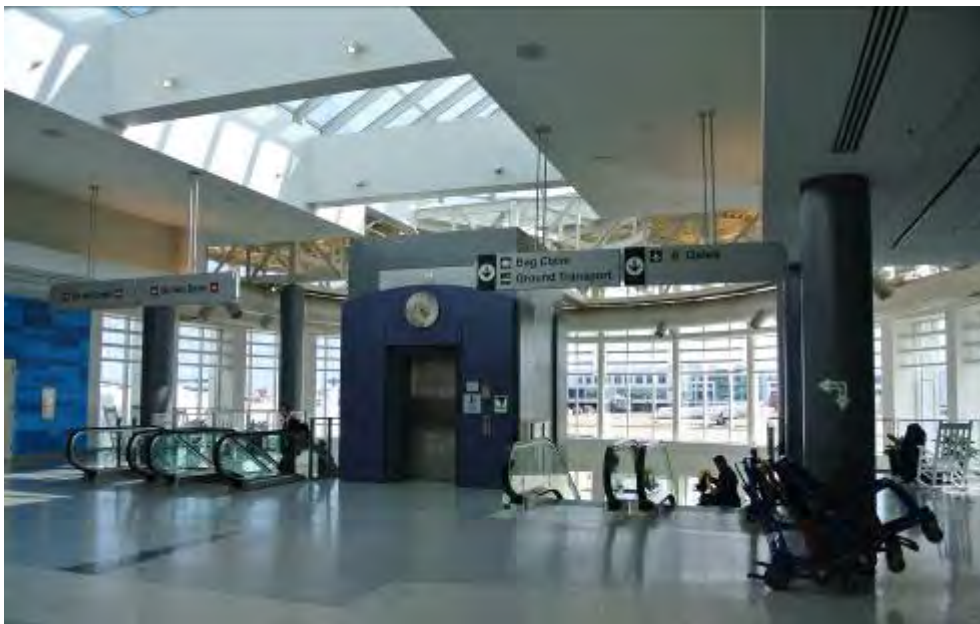
Source: ACRP 01-31 Research Team

Figure A-12. Staxi wheelchairs staged in airport lobby for customer use.



Source: ACRP 01-31 Research Team

Figure A-13. Clear sight lines from front door to security/departure gates.



Source: ACRP 01-31 Research Team

Figure A-11. Elevators in close proximity to escalators.



Source: ACRP 01-31 Research Team

Figure A-15. Comfortable, non-traditional seating pre-security



Source: ACRP 01-31 Research Team

Figure A-16. Creating a KY sense of place: therapy horse and accessible Mamava decorated as a log cabin.

Gerald R. Ford International Airport (GRR)

Terminal Location and Configuration

GRR is located approximately 13 miles southeast of downtown Grand Rapids, Michigan. Ground Transportation options include car rental, taxi through Metro Cab, public transportation via The Rapid bus system, multiple hotel/motel shuttle services, limousine service, and TNC/rideshares. Long-Term parking is available at three locations within the airport campus: Economy Lot, North Lot, and Parking Garage. The Economy Lot is located along the airport entrance roadway just west of the terminal with shuttle service to/from the terminal. The North Lot is a surface lot located just north of the parking garage and is accessed via pedestrian walkways through the parking garage. Additional covered parking is available in the four-level parking garage on Levels 2-4 with direct access to the terminal via two skybridges located on Level 2. Short-term parking and Rental Car facilities are accommodated on Level 1.

GRR is a single level facility with two Concourses A (7 gates), and B (8 gates). The terminal consists of an East and West ticket lobby separated by a central baggage claim area. In 2017 the Airport completed Phase 1 of its Gateway Transformation project. This included consolidating both security screening checkpoints into a single centrally located SSCP area which connects both Concourses A & B via a secure post-security marketplace. Both concourses underwent renovations as part of a concourse and concessions expansion project completed in 2015, which added additional gates, hold rooms, restrooms, and concessions.

Highlights

- Hearing Loop system – The airport paging system in the main terminal Grand Hall and Concourse A and B is wired to be compatible with hearing devices equipped with t-coils. GRR was the first airport in the U.S. to install hearing loops. Information about their availability is listed on the website and on signage throughout the airport. Also on the website is a link to a video that explains more about the system.
- Therapy dog program – The airport works with a local therapy dog organization to reduce stress and anxiety among travelers, calm children who may be having a hard time waiting in lines, and help ease frustration if flights are delayed.
- Ground Transportation Waiting Area – Travelers waiting for hotel shuttles are protected from weather by the large iconic roof, in addition to the enclosed waiting area.
- Service Provision - The airport itself manages wheelchair assistance, having taken over the service in an effort to remedy poor service. Travelers can just push a button to request service from the parking garage and elevator lobbies in the pedestrian sky bridges. Security staff curbside will also page for assistance.
- Bathroom Facilities – New restrooms by Allliance feature a vertical grab bar, commonly used in Europe to assist persons are who semi-ambulatory to stand, and a fold-down footstool for children and little people.



Source: ACRP 01-31 Research Team

Figure A-17. Protective roof and waiting room for hotel shuttles at GRR



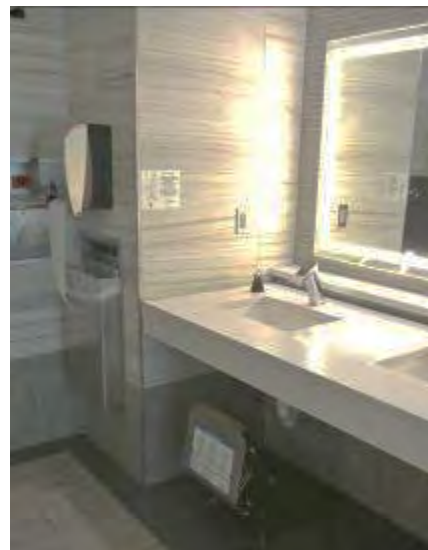
Source: ACRP 01-31 Research Team

Figure A-18. Assistance help points in parking garage and skyway elevator vestibule



Source: ACRP 01-31 Research Team

Figure A-19. Hearing loop signage at GRR.



Source: ACRP 01-31 Research Team

Figure A-20. New restrooms at GRR feature a vertical grab bar (l.) and a fold-down footstool (r.)

Los Angeles International Airport (LAX)

Terminal Location and Configuration

LAX is located approximately 18 miles southwest of downtown Los Angeles, California. There is an array of transportation options to connect passengers to/from LAX and the greater Los Angeles Area. These include the LAX Shuttle & Airline Connection service (which transports passengers between terminals, Metro Rail Green Line, and the Public Economy Parking Lot C), LAX FlyAway bus service connecting LAX and specific surrounding communities, hotel & parking lot Shuttles, long distance van service, rental cars, scheduled buses, shared van rides, taxis, and TNC/rideshares. Private parking shuttles operate on the Upper/Departures Level only while all other ground transportation options are accommodated on the Lower/Arrivals Level. Public parking is located within seven multi-level parking garages adjacent to the terminals. The Public Economy surface lot is located in Lot C at the northeast corner of the airport campus. Additional off airport parking options are also available. Rental car services are located off airport and accessed via courtesy shuttles located on the Lower/Arrivals Level islands outside each terminal's baggage claim area.

The LAX central terminal area consists of nine terminals arranged in a horseshoe or "U" shaped layout with the Tom Bradley International Terminal (TBIT) at the base. The Terminal 4 connector, an airside connection between TBIT and Terminal 4, opened in February 2016 providing complete airside connections between TBIT and Terminals 4 through 8. An airside underground tunnel provides connection between Terminals 4, 5, and 6 with above grade airside walking corridors between Terminals 6, 7, and 8. Airside shuttle service offers connections between Terminals 2, 3, and TBIT. All other connections occur landside via walkways or inter-terminal shuttle bus service.

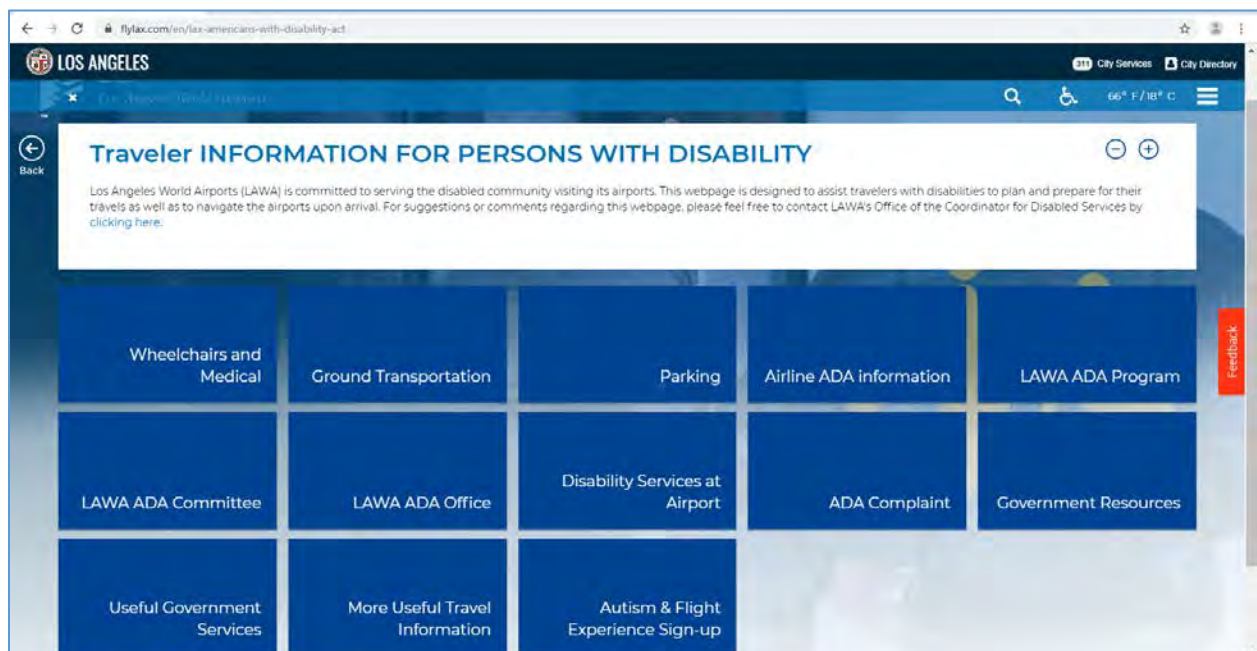
Terminal 1 is a three-level facility with 11 gates located on Level 3, ticketing and security screening on Level 2, and baggage claim on Level 1. Terminals 2 and 3 include 4 levels with 12 gates each. Level 4 accommodates airline lounges and restaurants, departure gates and security screening on Level 3, ticketing on Level 2 and baggage claim on Level 1. Terminal 4 consists of five levels and 14 gates. Level 5 includes the connector to TBIT, Level 4 accommodates airline lounges, departure gates and security screening on Level 3, ticketing on Level 2, and baggage claim on Level 1. Terminals 5 (15 gates) and 6 (14 gates) both consist of three levels with departure gates and security screening on Level 3, ticketing on Level 2, and baggage claim on Level 1. Terminals 7 and 8 consist of three levels with 15 gates, 7 gates respectively. Level 3 includes the passenger gates with ticketing on Level 2 and baggage claim on Level 1. Both terminals share a single security checkpoint located on Level 2 of Terminal 7 leading to the airside connector to Terminal 8 on Level 3.

Tom Bradley International Terminal (TBIT), renovated in 2013, has six levels, 28 gates, and an international arrival processing (CBP) facility. Level 6 includes airline lounges with additional lounges and restaurants on Level 5 as well as the international arrivals sterile corridor. Departure gates and security screening occur on Level 4, CBP Primary Processing on Level 3, Ticketing on Level 2, and baggage claim on Level 1. CBP baggage claim and secondary are also located on Level 1.

All of LAX's Terminals have either completed or are currently undergoing upgrades to enhance the customer experience including new terminal designs, expanding security screening checkpoints, modernizing the concourses with redesigned waiting areas, larger restrooms, new retail and dining options, charging stations, animal relief areas, nursing rooms, passenger loading bridges, as well as some with upgraded or new baggage screening systems. Future plans include the LAX Landside Access Modernization Program which includes an APM, CONRAC, Intermodal Transportation Facilities (ITF), and roadway improvements all helping to reduce vehicular congestion within the central terminal area.

Highlights

- **LAX Website** – An International Symbol of Accessibility (ISA) on the website header puts “Traveler Information for Persons with Disabilities” one click away from every page on the site. Included is not only detailed information on the airport’s accessible facilities and services but also national and local resources beneficial to both visitors and residents.
- **ADA Committee** – Larry Rolon, ADA Coordinator, leads the committee which meets the third Wednesday of every month. Details on the committee’s activities and an application form to become a member are available online.
- **Signage** – Ride and walk times to each terminal are posted to help travelers determine how they should proceed through the airport.
- **Emergency Preparedness** – Each bank of FIDS has a screen dedicated to emergency messages. Signs showing evacuation routes are also posted throughout the terminals. Unique to LAX is a brochure on emergency evacuation for persons with disabilities.
- **Seating** – Accessible Arconas seating, available throughout the airport, features seats with one armrest removed for easier transfers and power points at the end of rows for easy access by customers using wheelchairs or electric scooters.
- **Innovative Assistance Software** – LAX International Terminal uses the Antikythera Indoor Access software discussed in Chapter 12, which uses beacons for indoor geolocation.



Source: ACRP 01-31 Research Team

Figure A-21. Screenshot showing ISA on LAX website header and numerous categories of disability-related information and resources



Source: ACRP 01-31 Research Team

Figure A-22. Monthly meeting of the LAWA ADA Committee.



Source: ACRP 01-31 Research Team

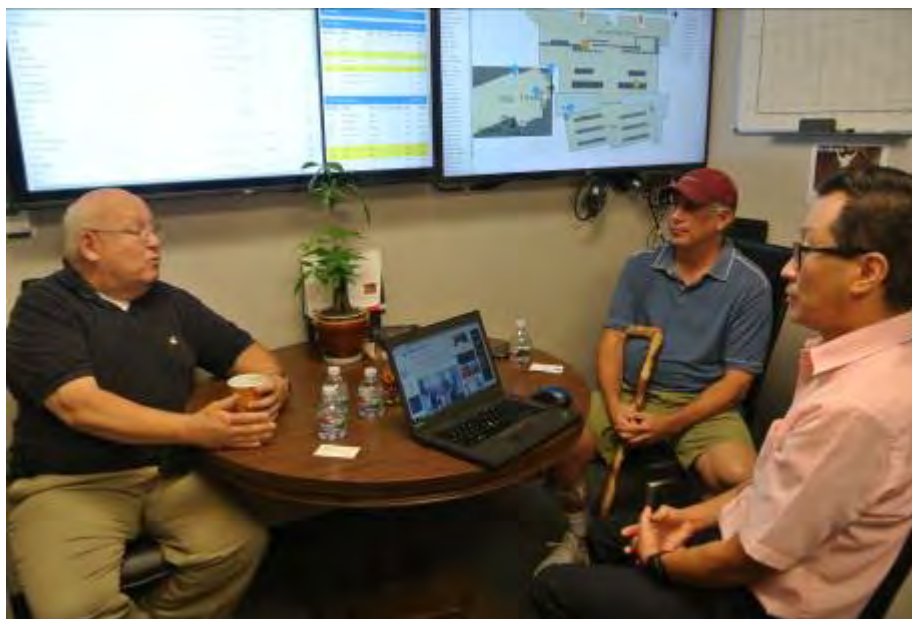
Figure A-23. Ride/Walk Signage with walking times (l.); Designated accessible stop for paratransit and accessible inter-terminal shuttle for customers with disabilities (r.).





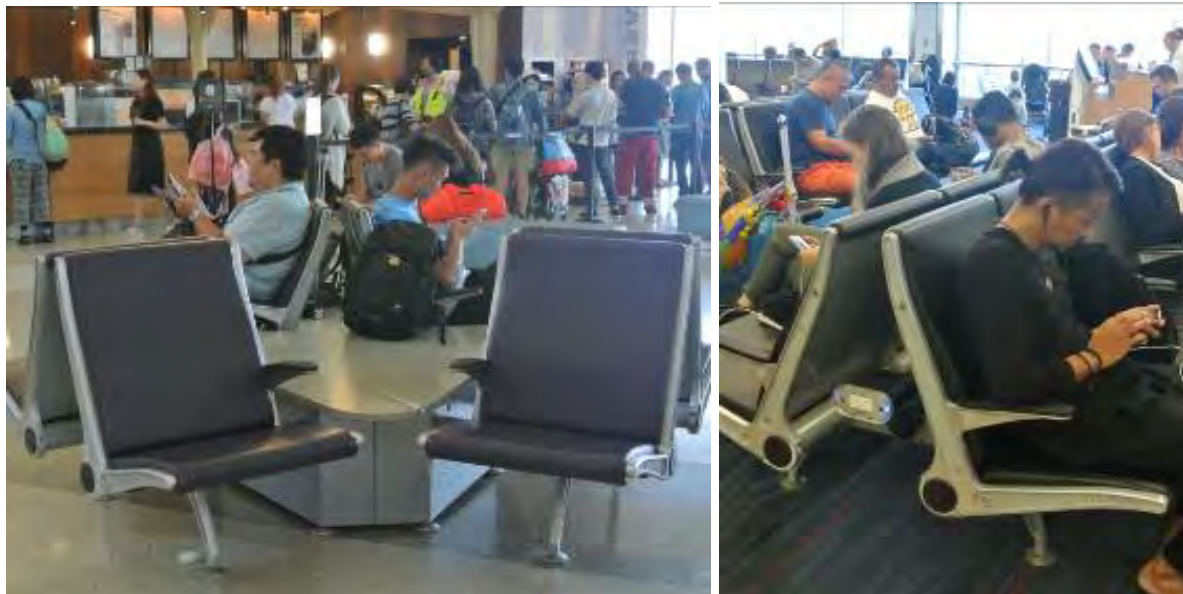
Source: ACRP 01-31 Research Team

Figure A-24. Evacuation Plan Signage (l.); FID screen dedicated to emergency messaging (r.)



Source: ACRP 01-31 Research Team

Figure A-25. Meeting at TBIT with service provider APS. Shown (l. to r.) are Larry Rolon, ADA Coordinator; Eric Lipp, Exec. Dir., ODO; and Andy Myong, Mgr., APS. Wall-mounted screens show assignments and map locations of service agents.



Source: ACRP 01-31 Research Team

Figure A-26. Accessible Arconas seats with armrest removed to enable self-transfer (l.) and power point location at end of row ease of access (r.)

Orlando International Airport (MCO)

Terminal Location and Configuration

MCO is approximately ten miles southeast of downtown Orlando, Florida, and 16 miles east of Walt Disney World Resort. Multiple ground transportation options including hotel shuttles, Lynx local bus service, TNC/rideshares, taxi, shuttle vans, rental cars, and SunRail train service via the Lynx bus service. Hotel shuttles, local bus, shuttle vans, and rental cars are all located on the Ground Transportation Level (Level 1) of the terminal. TNC service drops passengers at the Departures curb (Level 3) with pickup on the Arrivals curb (Level 2). Taxi service is accessed via the Arrivals Level. Various short and long-term parking options are provided throughout the airport campus including two multi-level parking garages located on either side of the terminal, one located on top of the terminal, and a remote garage located south of the terminal and accessed via the airport APM. Two surface lots, one north and one south of the terminal, offer economy rate parking with free shuttle service.

The layout of MCO is configured with a central main terminal and four satellite concourses consisting of 129 total gates. The main terminal includes a central atrium which divides the building into two separate terminals, A on the north and B on the south. Each includes three levels and associated vehicular curb access. A hotel is located within the main terminal structure. Ticketing and access to east and west security screening checkpoints are on Level 3, baggage claim on Level 2, and ground transportation and additional baggage claim on Level 1. The east and west atriums, post security, provide airside access to satellite concourses 2, 4 and 1, 3, respectively, via the airports APM system. Concourses 1 and 4 provide international arrivals (CBP) processing with direct access back to the airports APM.

Recent and current terminal enhancements and modifications include those associated with the ticket lobbies, airside gate conversions to international “swing” gates, APM shuttle replacements, CBP expansion, and baggage handling system improvements. Additionally, an Intermodal Terminal Facility which includes a South Airport APM Complex which will connect passengers to the Main Terminal is currently under construction. Adjacent to the South Airport APM complex will be the new South Terminal C currently under construction. Phase 1, which is scheduled to open in fall 2020 will include a three-level 16-21 gate facility offering both domestic and international flights.

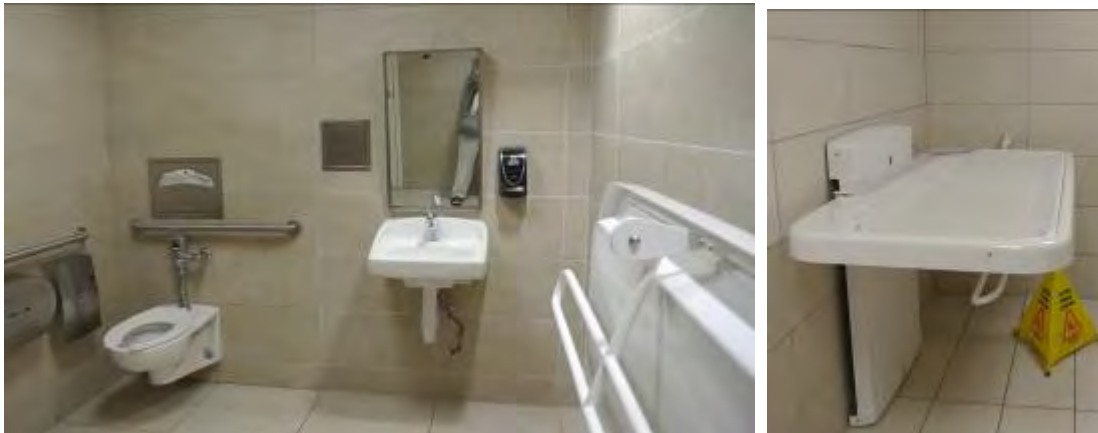
Highlights

- Accessible Check-In Facilities – Common-use check-in counters designed to accommodate travelers with wheelchairs feature a curved counter with knee clearance for close approach. To enhance communication, agent computer screens are adjustable in height and offer ergonomic benefits for the agents themselves. The counters also have an adjacent low profile baggage scale to minimize the physical effort needed to check bags.
- Adult Changing Rooms – A number of companion restrooms serve as adult changing facilities with the addition of a hydraulic, fold-up changing table.
- Remote Baggage Drop – Travelers can use the early bag check, operated by Bags, Inc., located in the parking garage. This service eliminates the need for travelers to manage their luggage from the parking garage to the terminal, a common challenge among older adults and travelers with physical challenges.



Source: ACRP 01-31 Research Team

Figure A-27. New CUSS check-in counters have improved accessibility and low profile baggage scale to minimize passenger effort.



Source: ACRP 01-31 Research Team

Figure A-28. Adult changing room at MCO with hydraulic, fold up table.



Source: ACRP 01-31 Research Team

Figure A-29. Early bag check in MCO parking garage run by Bags.

Miami International Airport (MIA)

Terminal Location and Configuration

MIA is located approximately seven miles northwest of downtown Miami, Florida. Various ground transportation options exist to transport passengers to/from the airport including taxis, shuttles, limos, public transportation and car rental. Taxicabs and SuperShuttle services (shared van, private sedan, and SUV) are located on arrival/ground Level 1 outside the baggage claim areas. Hotel and parking shuttles can be accessed on the upper/departures Level 2 of the airport. Public transportation includes MIA Mover, Metrorail, Miami Beach Bus, Tri-Trail, and Metrobus. MIA Mover is located on the third level between the Dolphin and Flamingo parking garages offering direct access to the Rental Car Center, Metrorail, Metrobus, Tri-Rail, and Miami Beach Bus stations. Public parking is located in two multi-level parking garages: Dolphin serving the North Terminal and Flamingo serving the Central and South Terminals. In addition, a South Surface Lot is adjacent to the Flamingo garage.

MIA consist of three main terminals, North (D), Central (E, F, & G), and South (H & J) arranged in a horseshoe or “U” shaped layout. Connections between the terminals are available via the moving walkways located on Level 3. The Skytrain, located on Level 3 of the North Terminal, runs the entire length of the terminal with four stations.

The North Terminal includes three levels and a 51-gate Concourse D. Gate D60 includes access to 16 ground-loaded regional gates. Level 3 includes access to the Skytrain and moving walkways to the Central and South Terminals. Ticketing and four security screening checkpoints are located on Level 2 with baggage claim on Level 1. A new three-level International Arrivals Facility (CBP), which opened in 2012 with final phase completed in 2014, serves Concourse D, E, and F. International baggage claim is located on Level 2 with CBP Secondary (Customs) and the greeter lobby located on Level 1.

The three-level Central Terminal consists of Concourses E, F, and G with a total of 52 gates. Ticketing, three security screening checkpoints, and departure gates are located on Level 2 with baggage claim on Level 1. A train on Level 4 connects passengers to Concourse E’s satellite gates.

The South Terminal, completed in 2007, includes 28 gates between Concourses H (13 gates) and J (15 gates). Level 3 includes an International Arrivals Facility (CBP), ticketing, three security screening checkpoints, and departure gates on Level 2, with baggage claim on Level 1.

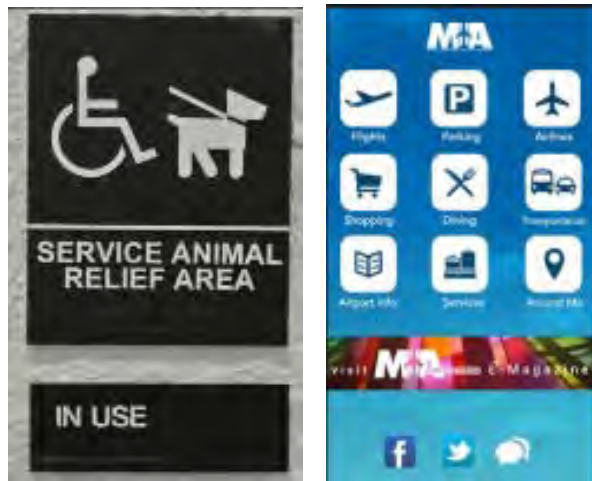
Highlights

- **Baggage Claim** – Luggage carousels have a flat belt that requires less effort to remove bags, particularly helpful for older adults.
- **Service Animal Relief Areas** – Signage outside SARAs feature a pictogram, Braille, raised print and a sliding “In Use/Vacant indicator.”
- **Mobile Application** – The MIA mobile app includes airport maps, developed by LocusLabs, that provide wayfinding assistance to users. Using the compass in a smartphone, the app gives turn-by-turn wayfinding assistance.
- **Automated People Mover (APM)** – An APM is available to transport travelers to the Consolidated Rental Car and Intermodal Transportation Center.



Source: ACRP 01-31 Research Team

Figure A-30. Flat baggage carousel provides low effort access to checked bags.



Sources: ACRP 01-31 Research Team; Miami International Airport

Figure A-31. SARA sign with pictogram, Braille and tactile print and sliding “In Use/Vacant” indicator (l.); Screenshot of MIA App from Locus Labs (r.).



Source: ACRP 01-31 Research Team

Figure A-32. Reserved seats in MIA gate area and new power point stanchion with digital messaging.



Source: ACRP 01-31 Research Team

Figure A-33. MCI APM to CONRAC and Intermodal Transportation Center.

Minneapolis-St. Paul International Airport (MSP)

Terminal Location and Configuration

MSP is located approximately 12 miles south of downtown Minneapolis, Minnesota, and eight miles southwest of downtown St. Paul and consists of two terminals, Terminal 1-Lindbergh (T1) and Terminal 2-Humphrey (T2). Ground transportation options include taxi, TNCs, van and shuttle services, car rental, Metro Blue Line light rail transit (LRT), and public bus service. Taxi service is accessed via Level T (Tram Level T1) and the Ground Transport Center (GTC) located on the ground level of the purple garage of T2. TNC/rideshares pick up passengers on Level 2 of the Green Parking Ramp (T1) and the GTC (T2). Shared Ride Services such as SuperShuttle are located in the GTC of both terminals and accessed via the tram level for T1. Upon arrival to the airport, shuttles will drop passengers across from the terminal near the Green and Gold parking ramps of T1.

Rental car services are located on the second and third levels between the Blue and Red parking ramps accessed via the underground tram at T1 and in the GTC at T2. The T1 Metro Blue Line light rail station is located below the Transit Center and accessed via the tram, while the T2 station is located on the north side of the Orange parking ramp. Metro Transit provides city bus service located on the Upper East Roadway, two levels above Level T at T1. Hourly and daily parking options are provided in four multi-level parking garages adjacent to T1. Two multi-level short-term parking garages are available at T2. Additional on-site parking is located at the Quick Ride Ramp surface lot one mile south of the terminal and accessed via free accessible shuttle service. Connections between the terminals are made via LRT.

T1 consists of a single three-level terminal and seven concourses, A through G, arranged in a horseshoe layout with a combined approximately 112 gates. Concessions, club access, and additional amenities are located on the Mezzanine Level. Ticketing, three security screening checkpoints, and departure gates are located on Level 2 with baggage claim on Level 1. Airside connections, post security, are offered between all concourses. A skybridge connects Concourse G to Concourses A, B, and C while an underground tunnel with moving walkways connect Concourse A to B. Multiple moving walkways are found throughout airport along with an APM which shuttles passengers along the length of Concourse C. International arrivals (CBP) at T1 occur on Level 2 and exit out into the domestic claim area on Level 1.

T2, primarily utilized by low-cost carriers, is a two-level terminal that has a single Concourse H with 14 gates. Two security screening checkpoints and departure gates are located on Level 2 with ticketing and baggage claim on Level 1. Both parking garages include a skyway located on Level 2 connecting passengers to the terminal.

Multiple renovations have and are currently occurring throughout the airport which include improvements from parking and gates to ticketing, baggage claim, concessions, restrooms, service animal relief areas (SARA) and other passenger amenities. An onsite airport hotel with connecting skyway and new security screening checkpoint opened in 2018.

Highlights

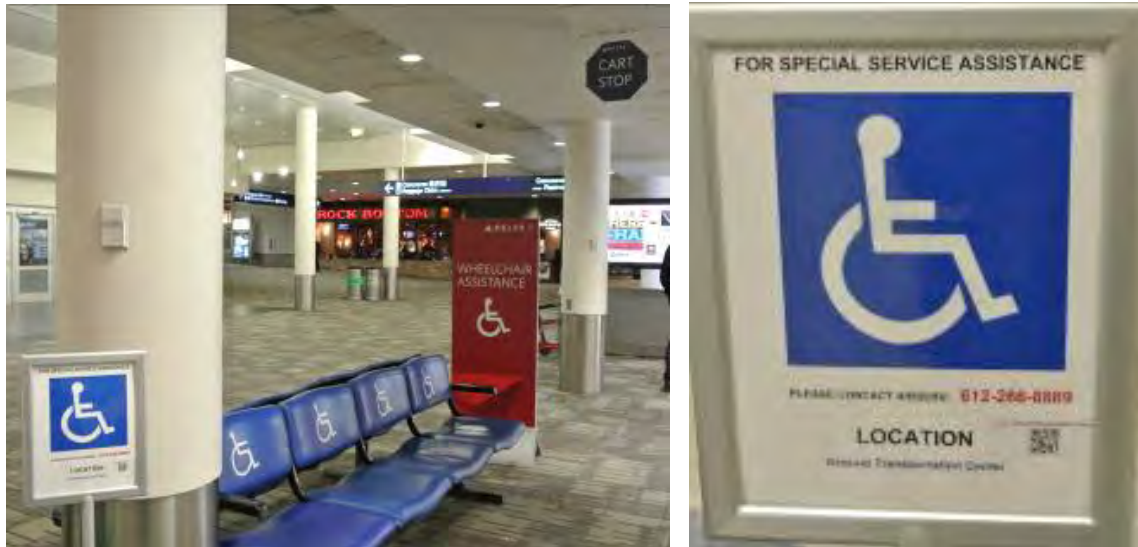
- MSP is committed to becoming the most accessible airport in the U.S., if not worldwide, and sees equitable access as a key part of sustainability. Critical to achieving this goal is the MSP Travelers with Disabilities Advisory Committee that meets quarterly and provides input on airport planning and design, services, etc. Committee members also help with community outreach and participate in emergency exercises.

- **Wheelchair Assistance** – MSP addresses the common problem of access to assistance on arrival curbside by making the service readily available at two drop-off points at T1, located at Doors 2 and 4. A digital roadway sign with a large wheelchair symbol directs travelers to these locations which are also described online.
- **Electric Cart Service** – This service in T1 is designed as a “transit system” where travelers can wait at designated seating areas for the next cart or call to request the service. Signage is posted with the location name, QR code, and phone number for the service provider serving that concourse.
- **Inter-Terminal Shuttle** – Travelers with disabilities can take an accessible shuttle (operated by SuperShuttle under an airport contract) between Terminal 1 and Terminal 2 instead of the longer route that includes a tram, light rail and moving walkways.
- **Visual Paging** – Visual paging messages are posted at Help Desks on screens that have controls to scroll up and down. The pages are also listed on the airport website.
- **Video Relay Interpreting** – MSP provides VRI service on tablets at Help Desks to facilitate conversation between Travelers Assistance Volunteers and customers using American Sign Language. The same system also provides foreign language translation.
- **Navigating MSP** – This familiarization program, initially designed just for families affected by autism, now welcomes people with all types of disabilities and is held on a monthly basis to meet increases in demand. The airport also has a Navigating MSP app described in Chapter 3. Service animals in training are also welcomed each month in a separate program.



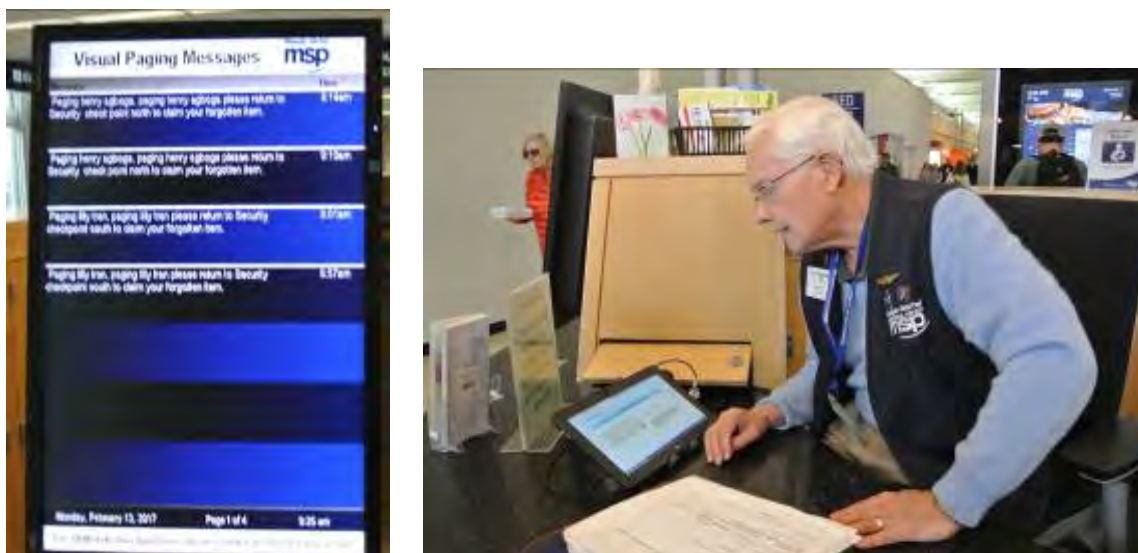
Source: ACRP 01-31 Research Team

Figure A-34. T1 drop-off location for Air France and Delta wheelchair assistance.



Source: ACRP 01-31 Research Team

Figure A-35. Electric cart transit stop in T1 (l.) and sign with QR code and phone number (r.)



Source: ACRP 01-31 Research Team

Figure A-36. Visual paging screen at Help Desk (l.). MSP Travelers Assistance Volunteer setting up a VRI call on digital tablet (r.).

Phoenix Sky Harbor International Airport (PHX)

Terminal Location and Configuration

PHX is located approximately four miles southeast of downtown Phoenix, Arizona. Ground transportation options include taxis, TNC/rideshares, shared van ride service, hotel and off-airport parking shuttles, Valley Metro bus service, as well as shuttle service to the remote CONRAC located west of the airport. Access to these services is located outside all baggage claim areas. Parking options include garages located at each of the three terminals, the East Economy Surface Lot and multi-level parking garage, and a West Economy Park & Walk surface lot.

The airport consists of three terminals: 2, 3, and 4. Terminal 2, the oldest of the three, consists of a single 10-gate concourse with an additional two gates to the east providing ground boarding to four aircraft positions. Ticketing, security screening, and baggage claim are all contained on a single level. Passengers escalate up one level post security to access the gate level of the concourse. The three level Terminal 3 contains a single 10-gate concourse. Ticketing and baggage claim are located on Level 1, security screening on Level 3, and gates on Level 4. The dual curb Terminal 4 includes seven concourses, four to the north and three to south, totaling 86 gates. Baggage claim is on Level 1, ticketing on Level 2, and four security screening checkpoints, two each for the north and south concourses, with access to all gates and International arrivals (CBP) processing on Level 3. All levels provide access to each of the parking garage zones A, B, C, and D. Post-security airside connections to each of the concourses is available via corridors with multiple moving walkways. Terminal connections are available via the PHX Sky Train located in Terminals 3 and 4. Access from Terminal 2 to 3 is provided via a ground-level covered walkway with electric service cart service available.

The Terminal 3 Modernization Program, expected to be complete by 2020, includes three components: Terminal Processor, South Concourse, and Concessions and Passenger Flow Reconfiguration. In December 2016 the Terminal Processor opened to the public, and in early 2019 the South Concourse was also inaugurated, providing 15 gates and allowing the closure and relocation of all Terminal 2 gates. Terminal 4 has also completed upgrades to its retail offerings. An additional project is the PHX Sky Train extension to the CONRAC.

Highlights

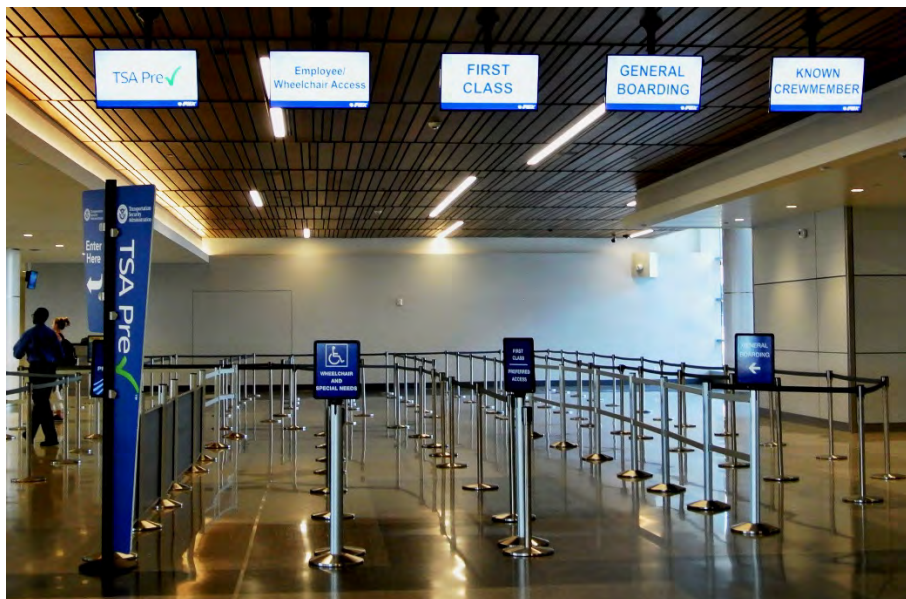
- Accessible Kiosks – All PHX Common Use (CUSS) self-service kiosks are accessible, far exceeding beyond the DOT's requirement of 25% accessibility by December 2022.
- Adult Changing Rooms – PHX was the first U.S. airport to provide adult changing tables. There are currently three companion restrooms with an adult-sized, padded changing table. One also has a roll-in shower.
- Paging Assistance Locations (PAL) – Also unique to PHX, the PALs are accessible and feature a Trace EZ-Access keypad, headphone jack, TTY and telephone, enabling passengers of all abilities to both make and receive pages.
- Security Checkpoint Signage– Signs for dedicated security lanes for travelers with disabilities are suspended from the ceiling as well as post-mounted, making them clearly visible from a distance. The suspended signs ensure travelers can see the information even if crowds are blocking the lower signs.

- Transportation Networking Companies (TNC) – Uber, Lyft and other shared ride providers are required to provide an accessible vehicle within 30 minutes of request thanks to a city ordinance initiated by the airport authority, described in Chapter 4.
- Disability Advisory Board – PHX and its ADA Coordinator, Mary Beth Thompson, work closely with the city’s disability advisory board to make improvements at the airport.
- Hearing Loops – PHX in 2019 looped 15 gates on the South Concourse in Terminal 3 and plans to install in-floor loops in an additional 10 gates on the North Concourse in 2020.



Source: ACRP 01-31 Research Team

Figure A-37. Accessible CUSS Kiosk at PHX.



Source: ACRP 01-31 Research Team

Figure A-38. Dedicated security lane for Wheelchair Access with overhead and post-mounted signs



Source: ACRP 01-31 Research Team

Figure A-39. Accessible Paging Assistance Location (PAL). Shown at left is Mary Beth Thompson, PHX ADA Coordinator), and at right Eric Lipp, ODO Exec. Dir.



Source: ACRP 01-31 Research Team

Figure A-40. Companion restroom at PHX with padded adult changing table and roll-in shower.

Greater Rochester International Airport (ROC)

Terminal Location and Configuration

ROC is located four miles southwest of Rochester, New York. Ground transportation options include shuttles for hotels and parking, car rentals, local RTS bus service, taxis, and limousine services. These services are accessed via the lower level curb. Long-term parking and rental car pickup are accommodated in a three-level parking garage directly across from the terminal with access via a skybridge. Additional surface parking is available in the short-term, weekly, and on-airport shuttle lots adjacent to the garage along with two economy lots north of the airport.

The two-level terminal consists of 21 gates located on two concourses A (11) and B (10). Ticketing, two security screening checkpoints, and gates are located on the departures level (Level 2) with baggage claim and ground transportation services on the arrivals level (Level 1). Passengers have access to all gates in both concourses post-security via the food court.

ROC recently underwent renovations that include improved wayfinding signage, landscaping, an airport curbside entrance canopy, various 'smart' technology accessible needs improvements, building redesign, updated concessions and retail, security screening improvements, ticketing enhancements, and boarding gate updates with more lounge style seating, charging stations, and children's play areas. The airport also undertook research on whether to business/technology incubator with focus on technologies for people with disabilities.

Highlights

- Access to Assistance – Curbside call buttons alert the service provider to a traveler needing assistance. The sole service provider has a centrally located booth on the departures level.
- University Partnership – ROC works closely with the National Technical Institute for the Deaf at the Rochester Institute of Technology to create new wayfinding and communication technologies.
- Wayfinding Assistance – Overhead wayfinding “ribbons” that were in the planning stage during the ROC site visit have since been installed. The colored ribbons help to direct travelers to and from Concourse A (green ribbons) and Concourse B (blue ribbons). In addition lighted banners along the concourses indicate which gates are active (green), active but not yet boarding (white), or inactive (blue).
- Communication for Travelers with Hearing Loss – Interpretype sets enable face-to-face communication with deaf and non-verbal travelers. These devices are located at airline and rental car counters, security, and communication and administration offices. ROC has four dozen counter loops spread throughout the terminal as well in-floor loops installed in its security area, concourse, and departure gates. RocView, a service available via airport Wi-Fi, allows travelers to view the activity at their boarding gate from any location within the airport. Still in development is an app to translate sign language to text and vice versa that will be located on tablets at Help Desks.



Source: ACRP 01-31 Research Team

Figure A-41. Curbside buttons to request assistance at ROC.



Source: ACRP 01-31 Research Team

Figure A-42. Unique ROC wayfinding system using overhead ribbons of light (l.) and colored banners along the concourses to indicate which gates are boarding, active, and inactive.

Rochester International Airport (RST)

Terminal Location and Configuration

RST is located approximately eight miles south of Rochester, Minnesota. Ground transportation options include rental cars, taxi, shared shuttle services, and TNC/rideshares which are located along the terminal curb. Parking is offered in the surface lot across from the terminal along with rental car pickup/return.

The terminal is a single level facility with six numbered frontal gates. The main terminal level is separated by a public access area with ticketing on the east end and baggage claim on the west. A central security screening checkpoint leads passengers to a secure two-gate ground-boarded waiting area with access to the upper level concourses on either end. The East and West Concourses are split by the Airport Administration area located on the Second Floor.

Recently completed renovations at RST include the consolidation of all ticket counters to the east end of the terminal and all baggage claim to the west. In January 2018, a dedicated TSA PreCheck lane was completed. Other projects include the expansion of the International Arrivals (CBP) area located near the airport's Fixed Base Operator (FBO).

Highlights

- RST belongs to the City of Rochester but is still run by a Mayo Clinic subsidiary. Mayo has its own airport help desk as many passengers, including international travelers on private planes, are patients. The airport also has three “quiet” rooms featuring a hospital bed or recliner and private restroom.
- Service Provision – As at the Mayo Clinic, wheelchairs at RST are equipped with Bullhorn Handles, an ergonomic innovation designed to improve functionality for wheelchair pushers of all sizes. For curbside service, the RST website posts a phone number for skycaps who can assist with luggage or wheelchairs as well as for the three air carriers operating at RST. A sign is also posted curbside.
- Travel Services at Mayo Clinic – One department at Mayo Clinic deals just with travel arrangements and lodging for family members and individuals receiving outpatient healthcare including accessible hotel rooms and apartments. As many visitors are foreign, they offer print materials in the most common languages and use translation services.



Source: ACRP 01-31 Research Team

Figure A-43. Sign posting phone numbers to call for curbside assistance (l.); Sign directing passengers to Mayo Clinic Information (ctr.); Quiet room with hospital bed at RST (r.).



Source: ACRP 01-31 Research Team

Figure A-44. Wheelchairs with Bullhorn Handles staged at Mayo Clinic entrance (l) and motorized bariatric chair with rear platform for assistant (r.).

San Francisco International Airport (SFO)

Terminal Location and Configuration

SFO is located approximately 13 miles south of downtown San Francisco, California. The airport offers multiple ground and rail transportation options to the surrounding bay area communities. Ground transportation offerings include taxis, shared van services, limousines, charter operations, hotel shuttles, TNC/rideshares, rental cars, and public transit such as BART Rapid Rail, Caltrain Commuter Rail, and SanTrans Public Bus Service. Ground transportation options are located on the Arrival curb levels of each of the terminals while TNC and hotel shuttle services are located on the Departure curb levels. The BART Station is located on the Departures Level of the International Terminal with connection to the Caltrain Millbrae Station. The CONRAC facility is located north of the terminals and accessed via the airport's AirTrain APM system. Multiple parking options are available. Domestic/hourly locations are provided in the five-level parking garage located in the center of the airport. International/hourly locations are located in two multi-level garages located in front of the International Terminal. Long-term parking is located north of the CONRAC in both a multi-level garage and overflow surface lot accessed via the Airport's Long-Term Parking Shuttles.

SFO is configured as a ring of three domestic terminals (1, 2, and 3) and the International Terminal that spans the main access roadway network to the airport. All terminals are configured with ticketing, security screening (one for each boarding area), and boarding gates on the Departures Level with baggage claim on the Arrivals Level. Terminal 1 contains two Boarding Areas B and C containing 34 total gates. Terminal 2 has Boarding Area D with a total of 14 gates. Terminal 3 includes boarding areas E and F with a total of 39 aircraft positions. The International Terminal includes Boarding Area A with 13 gates to the south and G with 15 gates to the north.

SFO has undergone many renovations throughout the years, the most recent being Boarding Area E at Terminal 3 which was completed in November 2015. Terminal 1 started renovations in June of 2016 and is expected to be completed in phases by 2024. Once complete the terminal will include a centralized security screening checkpoint, consolidated baggage handling system, post-security airside connecting walkway between boarding areas, and new concession offerings.

Highlights

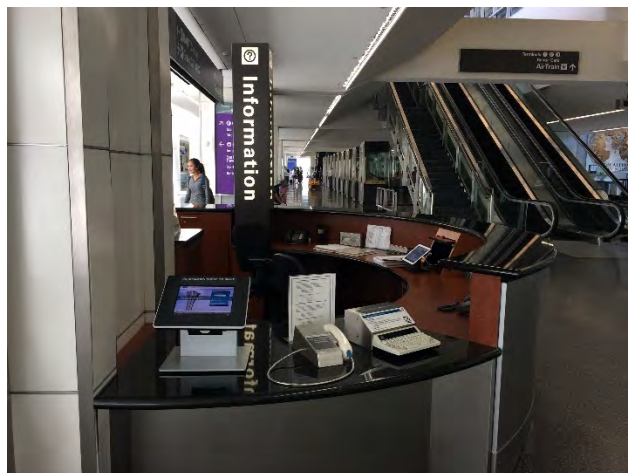
- Accessible Kiosks – The 100% accessible common-use self-service (CUSS) kiosks include an EZ Trace Keypad and scanner and are built into a table for passenger convenience. Installed initially in the International Terminal, they will eventually be available in all terminal check-in lobbies.
- Service Company Installations – These new areas, staged inside the first and last doors of the International Terminal for quick, efficient service, include a podium, wheelchair corral, and bench of seats for those awaiting assistance. A telephone outside each door enables passengers to call for assistance curbside.
- Assistance to/from CONRAC – SFO covers the cost of wheelchair assistance between terminals and the Consolidated Rental Car Center as this help by airlines is not required under the Air Carrier Access Act.
- Communication – TTYs are located at information desks along with a courtesy phone and tablet for web access and remote American Sign Language and foreign language interpreting.

- Therapy Animals – The “Wag Brigade” visits the airport with therapy animals to relieve traveler anxiety.
- Amenities – A Reflexion Room pre-security offers a quiet zone as do yoga rooms post-security. Another feature of note is privacy curtains in companion restrooms.
- Accommodations for Vision Loss – Double-tape stanchions along the perimeter of security and check-in lines are guide dog and cane detectable. Indoors SARAs at SFO have tactile/Braille maps posted outside to orient travelers who are blind to the area’s features.
- Universal Design Committee – This SFO committee has input into all construction and renovation projects with much design work done in-house including the accessible kiosks and service company installations in the International Terminal.



Source: ACRP 01-31 Research Team

Figure A-45. Accessible CUSS Kiosk (l.) and Service Provider Installation in SFO International Terminal.



Source: ACRP 01-31 Research Team

Figure A-46. TTY, courtesy phone, and tablet for web access and remote interpreting of ASL and foreign languages at SFO Information Desk



Source: ACRP 01-31 Research Team

Figure A-47. Reflexion Room pre-security at International Terminal SFO



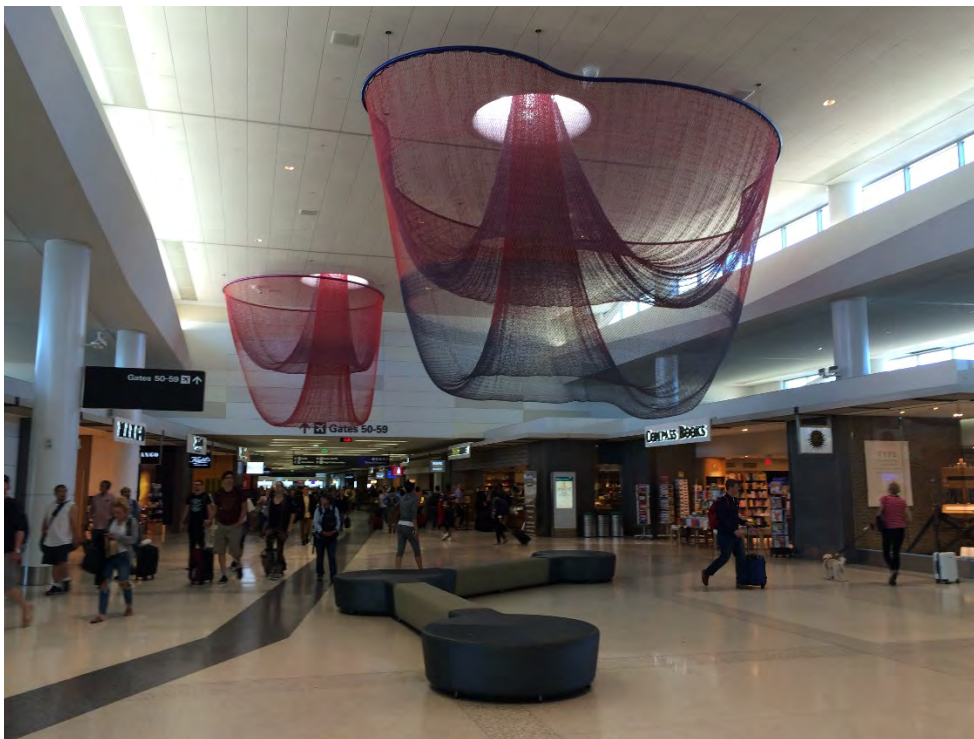
Source: ACRP 01-31 Research Team

Figure A-48. ADA-compliant double-tape stanchions (l.); Tactile/Braille map outside SFO SARA



Source: ACRP 01-31 Research Team

Figure A-49. Privacy curtain in companion restroom



Source: ACRP 01-31 Research Team

Figure A-50. Floor pattern in T3 helps to guide passengers between security and gates.

Seattle Tacoma International Airport – SEA

Terminal Location and Configuration

SEA, also commonly referred to as Sea-Tac, is located approximately 13 miles south of downtown Seattle, Washington, and provides an array of ground transportation options from the Airport to the surrounding community. Services include courtesy hotel and parking shuttles, shared van rides, taxi, limousine, TNC/rideshare, rental cars, and public transit such as Link Light Rail, Sound Transit and King County Metro Transit bus services as well as Charter and Cruise Bus services. Courtesy shuttles, taxi, limousine, and TNC services are accessed at the Ground Transportation Plaza located on the third floor of the parking garage. The Link Light Rail station platform is accessed via the fourth floor of the parking garage. Dedicated rental car shuttle busses accessed outside baggage claim at the north and south ends of the main terminal take passengers to the remote CONRAC facility. Multiple on-site parking options are provided in the eight-level garage located directly across from the main terminal including direct terminal access parking (fourth floor), general parking including short and long-term, extended stay, and electric vehicle parking.

The Main Terminal consists of baggage claim on the Lower Level, ticketing and five security screening checkpoints on the Upper Level, and a Mezzanine Level. The Central Terminal which includes the Pacific Marketplace, a large public retail and concessions civic plaza, connects passengers to Concourses A, B, C, and D as well as the North and South satellites. Concourse A consists of 14 gates, B 13 gates, C with 21 parking spots, and Concourse D with 11 gates. The North and South satellites include 14 and 15 parking spots respectively. All concourses are accessible post security and connected via the Airport's three-line underground APM called the Satellite Transit System (STS).

The North Train Loop connects the North Satellite gates to Concourse C and the Main Terminal North Station. The South Train Loop connects the South Satellite gates to Concourse B and the Main Terminal South Station. An additional APM links the Main Terminal's North and South stations as well. International arriving passengers are processed in the South Satellite with primary processing on the Passport Control Level and bag claim and secondary processing on the Baggage Claim and Transfer Level. Upon existing CBP passengers have direct access to the STS for transfers or connection back to the Main Terminal.

Sea-Tac is currently undergoing multiple upgrades to the airport some of which include the North and South Satellite Modernizations, expanding the International Arrivals Facility, new centralized baggage screening system, new D Gates Hardstand Terminal, and expanded and new concession offerings.

Highlights

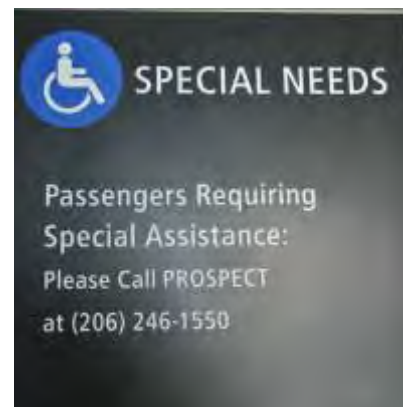
- “Most Accessible Airport” Initiative – As part of a Sea-Tac initiative to become the “most accessible” airport in the country, Open Doors Organization (ODO) conducted 13 meetings with nearly 50 Port and airport employees, vendors and stakeholder including airlines and their service companies. In addition to several site evaluations, ODO staff also conducted feedback sessions and an airport walkthrough with members of the disability community.
- Service Provision – The airport has a separate contract with Prospect Airport Services to provide cart and wheelchair service to/from the light rail station and parking. Contact information for Prospect is available to travelers on signs in those locations and on the airport website.

- Emergency Preparedness – The airport has an Area of Rescue Assistance with nearby emergency supplies and a trauma kit.
- Communication – At the time of the site visit, SEA was starting a trial for counter hearing loops.
- New Accessible Website – The SEA-TAC website meets WCAG 2.0 accessibility standards and provides detailed information organized by disability type.



Source: ACRP 01-31 Research Team

Figure A-51. Meeting led by Open Doors Organization for Sea-Tac “Most Accessible Airport” initiative



Source: ACRP 01-31 Research Team

Figure A-52. Sea-Tac light rail station (l.) and sign with contact information for those needing assistance from light rail or parking (r.).



Source: ACRP 01-31 Research Team

Figure A-53. Emergency supplies and trauma kit near Area of Rescue Assistance (l.) and Counter Loop for use in Sea-Tac trial (r.)

Amsterdam Airport Schiphol (AMS)

Terminal Location and Configuration

AMS, commonly referred to as Schiphol international airport is located approximately nine miles southwest of Amsterdam in the Netherlands. Ground transportation options include hotel shuttles, the Amsterdam Airport Express public bus service, taxi, the Schiphol Airport Train, and rental cars. Hotel shuttles are accessed via the Arrivals Level; public buses and taxi service are located in front of Schiphol Plaza on the Arrivals Level. The train platform is located one level below the plaza while rental cars are located in the parking garage. Parking options include both short and long-term parking. Short-term parking is located in the multi-level garage located in front of the terminal with covered walkway access to both the Departures and Arrivals levels of the terminal. Long-term parking offers both surface and covered parking in the multi-level garage located five minutes from the terminal via a free express bus.

The terminal includes four levels—G-Plaza & Arrivals, 1-Departures, 2-Security & Concessions, and 3-Panorama Terrace—and is separated into three halls. Hall 1 includes Piers B, C, and D. Hall 2 also includes Pier D and E, while Hall 3 consists of Piers F, G, and H-M. There are approximately 165 boarding gates in total between all six piers. Dedicated Schengen boarding areas, i.e., for destinations within the European zone requiring no border or passport control, are located in Piers, B, C, the upper level of D, and M. All other piers are dedicated non-Schengen areas. The Terrace level includes pre-security concessions and airline lounges. Levels 1 and 2 include Transfers/Security screening, concessions, and gate lounges while Level 1 also includes ticketing. Level G includes baggage claim and the Plaza.

Schiphol is currently constructing a new pier and associated terminal expected to open in 2019 and 2023 respectively. Piers D-G are currently being upgraded as well as Level 1 Departures and Lounges.

Highlights

- AMS has an in-house innovation lab and is recognized worldwide for its trials of robots like Spencer and eCare luggage robot and other new technologies such as Faceport, described in Chapter 12.
- Security Checkpoint – Self-service checkpoints equipped with boarding pass scanners also have a manned entry gate for passengers with reduced mobility (PRM) and crew.
- Service Provision – At the time of the site visit, Axxicom, the airport's service provider, reported levels of service requests as high as 100 or more per plane on international arrivals. The airport has a variety of wheelchair types because no one supplier is able to meet the growing demand. Low-floor electric carts in use throughout the airport have already reached the maximum number that can be accommodated on the concourses. While there are separate airside hold rooms for travelers waiting for assistance to the gate, they may request to be taken instead to a bar, restaurant, shop or lounge.
- Rental Wheelchairs – For those who prefer to have a companion provide assistance, wheelchairs can be rented for a nominal fee at various locations including the centrally located train station.



Source: ACRP 01-31 Research Team

Figure A-54. Self-service checkpoint with manned gate for passengers with disabilities and crew.



Source: ACRP 01-31 Research Team

Figure A-55. Axxicom service staff at AMS (l.) and the wide variety of wheelchairs used (r.)



Source: ACRP 01-31 Research Team

Figure A-56. Low-floor electric cart (l.) and sign at Axxicom waiting area

Vancouver International Airport (YVR)

Terminal Location and Configuration

Vancouver International Airport (IATA: YVR, ICAO: CYVR) is located on Sea Island in Richmond, British Columbia, Canada, about 7.5 miles southwest of Vancouver. Accessible ground transportation options include the Canada Line, with rail service to downtown Vancouver in less than 30 minutes, long distance bus service to Victoria and Whistler, taxis, hotel shuttles, and rental cars. The latter are located either onsite in the parking garage or reached by accessible courtesy shuttles. YVR's Canada Line Airport Station is centrally located between International and Domestic Terminals, accessible by elevator from arrivals and departures levels.

YVR is the second busiest airport in Canada behind Toronto International Airport and serves as a trans-Pacific hub to numerous Asian destinations. It has a main terminal and a south terminal used just by regional carriers serving British Columbia and by floatplanes. The main terminal is divided into a domestic terminal (Concourses A, B, C) and an international terminal (Concourses D, E). YVR is one of eight Canadian airports to have a U.S. Customs and Border Patrol (CBP) Clearance Facility. A photo of the accessible CBP kiosks is shown below.

Highlights

- YVR is a leader in its use of Universal Design. The International Terminal was designed in large part by Vancouver-based Architectura, now Stantec, which specializes in UD, and this focus on design for all sizes and abilities remains an important planning priority at YVR. Notable UD features include the ramps between levels enabling easy access by both pedestrians and electric carts, invaluable in emergency egress, and the unique tile patterning designed to improve depth perception and intuitive wayfinding. Many of the features listed below also benefit travelers with other types of disabilities as well as the general traveling public.
- Vancouver may also have been the first airport in North America to consult with the disability community on the accessibility of its amenities and services. YVR has collaborated with the Rick Hansen Foundation since his Man in Motion tour in 1986. In 2018, YVR received their "Accessibility Gold Certification," the first airport to reach this status.
- Features of note for people with reduced mobility include:
 - Chairs with and without arms in restaurants and lounges
 - FIDs and GIDs hung at lower levels for easy viewing
 - 15-minute curbside parking for vehicles with a valid SPARC permit (or equivalent)
 - Aircraft gates with dedicated wheelchair lifts
 - Adult changing tables in a number of companion restrooms
 - Service animal relief areas landside as well as airside in the international terminal
 - Online videos on the travel process for persons using wheelchairs created by Spinal Cord Injury BC
- Features of note people with hearing loss include:
 - Terminal PA system designed to work at lower volume to improve clarity of sound
 - Visual paging service at information counters
 - Check-in counters equipped with amplified handsets with hearing loops
 - Terminal flooring outfitted with low resistance carpeting to reduce overall noise levels
 - Welcome messaging in sign language (ASL) on YVR monitors
 - Monitors showing the steps in the screening process prior to security checkpoints

- Features of note for people with vision loss include:
 - Terminal maps and flight information displays that follow “Clear Print” guidelines
 - High contrast, glare-free directional signage
 - Airport flooring that incorporates a variety of textures to assist with wayfinding:
 - Tile or terrazzo to indicate an exit is nearby
 - Carpet to indicate a gate is nearby
 - Laminate flooring to indicate a retail area
 - High contrast tiles to help with directional orientation
- Features of notes for people with cognitive disabilities and autism include:
 - Signage and wayfinding features using plain language
 - Customer Care staff trained in the use of plain language
 - Wayfinding support through common floor colors, texture, and contrast
 - Quiet area
 - Fragrance-free route through duty-free area
 - Sticker for self-identification to place on boarding pass
 - Autism program that includes online social stories and videos and a resource kit created in partnership with Canucks Autism Network.



Source: ACRP 01-31 Research Team

Figure A-57. No lift bag drop at YVR



Source: ACRP 01-31 Research Team

Figure A-58. Accessible dual ramp (pedestrian and electric cart) between terminal levels



Source: ACRP 01-31 Research Team

Figure A-59. Information desk with lowered counter.



Source: ACRP 01-31 Research Team

Figure A-60. Adult changing table in companion restroom.



Source: ACRP 01-31 Research Team

Figure A-61. UD tiles with pattern to aid in wayfinding and depth perception (l.) and Fragrance Free Route through Duty-Free (r.)



Source: ACRP 01-31 Research Team

Figure A-62. Quiet area with a variety of seating types