

# Mobility for all

## Accessible Transportation Around the World

**A guide to making transportation accessible  
for persons with disabilities and elders  
in countries around the world**



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People with disabilities and frail elders need transportation to get to work, school, recreation, medical services, and all the other activities of daily living. Public transportation needs to become accessible for blind persons, those who are partially sighted, people with mobility and cognitive impairments, and persons who are deaf, deafened, or hard-of-hearing. Disabled persons and seniors need the mobility provided by buses trains vans, taxis, and other means of transportation

The first section of this publication discusses advocacy for access to transport around the world while the second section introduces some aspects of access to streets and pathways, shelters and waiting areas, and bus stops. The third section deals with access to transit vehicles. The guide continues with brief discussions of access to public buildings and houses of worship and ideas about the role of laws and regulations. The guide concludes with a section on resources about accessible transportation. Readers are referred to this section for sources of further information about the many topics introduced in this guide.

This manual is being sent to people in countries around the world. It will help introduce persons with disabilities and their friends to different types of accessible transportation. It will help transportation professionals, social service workers and government officials to review different approaches to transit system accessibility. And it will assist clergy, religious workers, members of communities of faith, and others to be advocates for accessible transportation in their communities. We hope this publication will be especially helpful to persons in less wealthy countries where first

steps must be taken on the long path to mobility for all.

This guide is published by the Health and Welfare Ministries of the General Board of Global Ministries of The United Methodist Church. Other publications on accessibility concerns may be found in the section on "Resources" on page 24 of this guide.

This publication was prepared by Tom Rickert, Executive Director of Access Exchange International (AEI), a non-profit agency in San Francisco, California, USA. Prior to founding AEI, the author was Manager of Accessible Services for the San Francisco Municipal Railway, which is San Francisco's public transportation agency. Photos not credited are by the author.

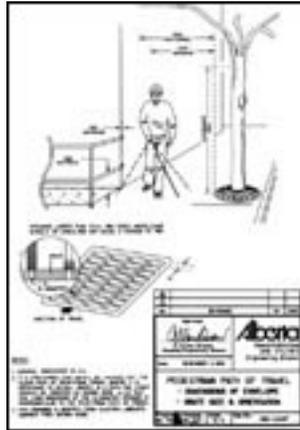


Mobility for all means advantages for all. Most of the improvements which help disabled persons also help everyone else. If disabled persons can get to a bus stop and easily get on a bus, that usually means that other passengers also have an easier time using public transportation.

For example, everyone benefits from pedestrian paths and streets without potholes, from bus stop waiting areas which are safely removed from traffic, from easy-to-read destination signs on buses, from proper hand grips on bus doors, and from drivers who call out key stops. But while non-disabled passengers may find it harder to ride a bus without these improvements, disabled passengers may be prevented from using a bus. And without mobility, disabled persons cannot get to work or school or to any other activity.

So persons with disabilities and their friends need to organize themselves to advocate for access to public transportation. And, since their goals help the rest of society, they need to work with other people and organizations that will also benefit from greater access to public transportation. Advocates can include parents and friends of disabled persons, transportation officials, social service workers, medical agencies, public works officials, city planners, bus drivers, and newspapers as well as TV and radio stations. Persons with mobility difficulties should work with those who are blind or partially sighted and those with other types of disabilities in order for their advocacy to be most effective.

Advocacy need not mean being an "adversary." Some of the best advocacy is done in friendly meetings with public officials and through helpful letters and phone calls which point out the advantages of access by all to public transportation. Successful advocacy should ideally result in "first steps" toward access, including curb ramps at street corners, ramps to public buildings, low cost improvements such as larger letters on bus destination signs, or the initiation of door-to-door service to a major destination such as a school or rehabilitation center. These "first steps" can result in good publicity for everyone, including transportation officials. "First steps" can then form the basis for additional improvements as part of the process of creating accessible transit systems. In turn, transit agencies need public support as they seek more funds for their services. As part of their advocacy, disability agencies need to support better public transportation for everyone.



## Streets and pathways

Access to transportation is not just a matter of being able to ride on buses and trains. Transportation access also benefits from changes in the attitudes other people have toward persons with disabilities. Prejudice against disabled persons will hinder the success of even the best efforts to improve access. Also, those who have mobility difficulties may need practical, low cost and easily repaired mobility aids, including wheelchairs, canes, walkers and crutches.

But even with good attitudes, good mobility aids, and access to transit vehicles, disabled people also need pedestrian pathways, which are free of barriers in order to get to a bus stop or a train station. Barriers can include curbs, potholes, muddy pathways, drainage ditches, piles of refuse, broken pavement or sidewalks, or grates with openings so large that they catch wheelchair wheels or canes. In cold climates, piles of snow can also be a barrier.

The photo at the upper left shows a "curb ramp" (curb cut) in the United States, with a slope between the sidewalk and street which easily permits a person riding a wheelchair to cross the street. The diagram below left, from Canada, shows ideal sidewalk widths to enable wheelchair users to travel freely, with specifications for curb ramps.

The diagram at the upper right, also from Canada, shows how a blind pedestrian benefits from having a flat smooth surface to walk on, with tree limbs out of the way, grates with small openings (or better still, no grates at all), and without objects such as news stands blocking the pathway.

The diagram below at right notes the proper construction of unpaved pedestrian pathways, which are designed for proper drainage. Pathway soil should be stabilized if possible. Governments unable to afford paved side walks should have a program to maintain pedestrian pathways in as good condition as possible.

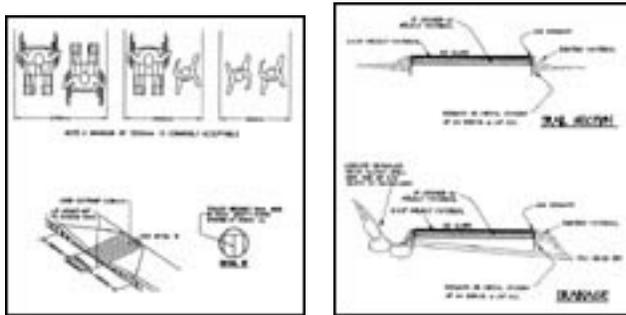
In every country and at all levels of government, programs are needed to prevent pedestrians from having to walk in traffic lanes used by vehicles. Around the world, tens of thousands of pedestrians

are killed or become disabled every year due to a lack of pedestrian pathways.

Transportation managers need to work with the city departments in charge of streets and pedestrian pathways to make sure that all their passengers can get to their bus stops or railroad stations.

Such coordination will assure that pedestrian pathways provide an unbroken path of travel to transit stops. Sidewalks and waiting areas should be well illuminated. Bus stop markers, benches and shelters should contrast with their surroundings to assist all passengers, including those who are partially sighted. When possible, seats should be provided at transit stops to assist frail elders and others that find it difficult to stand and wait for their vehicle.

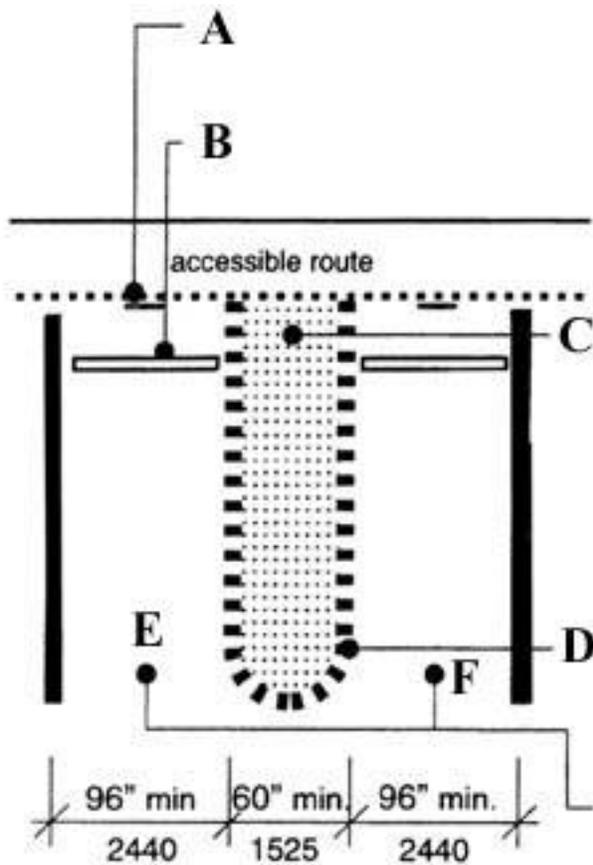
(In actual use in any given city or country, local conditions and regulations will determine building materials and safety standards. Photographs and diagrams in this publication do not necessarily represent the standards currently in use in the USA, where this publication is written.)



### **Access to parking space**

Accessible parking is needed for drivers using wheelchairs or with other mobility difficulties. Such parking is especially needed near major transit stops, for use by those who wish to transfer from a car to a bus or train. The diagrams below illustrate specifications for accessible parking space in the USA.

### **Features of accessible parking spaces for cars**



**A:**

Sign with the international symbol of accessibility mounted high enough so it can be seen while a vehicle is parked.

**B:**

If the accessible route is located in front of the space, install wheelstops to keep vehicles from reducing width below 915 mm.

**C:**

Access aisle of at least 1525 mm width must be level (1 /50 maximum slope in all directions), must be the same length as the adjacent parking space(s) it serves and must connect to an accessible route to the building. Ramps must not extend into the access aisle.

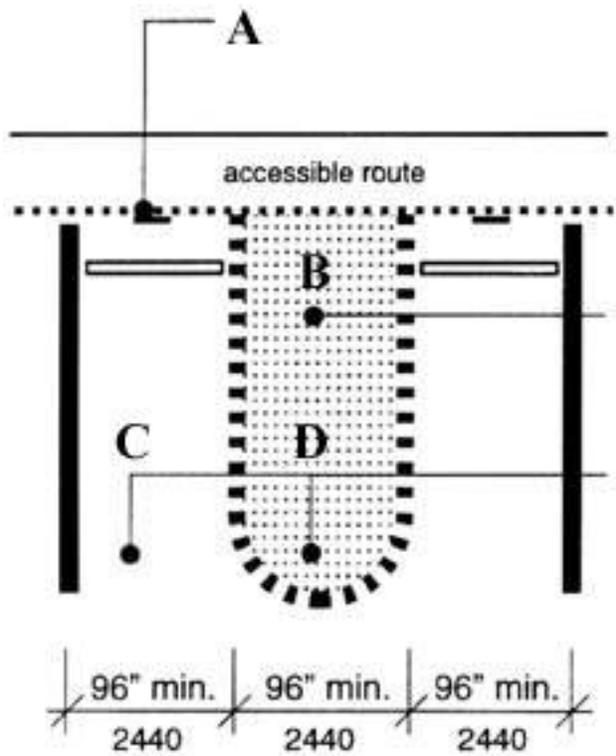
**D:**

Boundary of the access aisle must be marked. The end may be squared or curved shape.

**E: and F:**

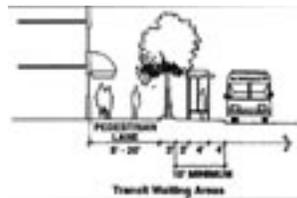
Two parking spaces may share an access aisle.

**Three additional features for van-accessible parking**



- A:**  
Sign with "van-accessible" and the international symbol of accessibility mounted high enough so the sign can be seen when a vehicle is parked in the space.
- B:**  
2440 mm minimum-width access aisle, level (maximum slope 1:50 in all directions), located beside the van parking space.
- C: and D:**  
Minimum 2500 mm high clearance at van parking space, access aisle, and on vehicular route to and from van space.

Adapted from ADA Design Guide of the U.S. Department of Justice, Civil Rights Division, Disability Rights Section.

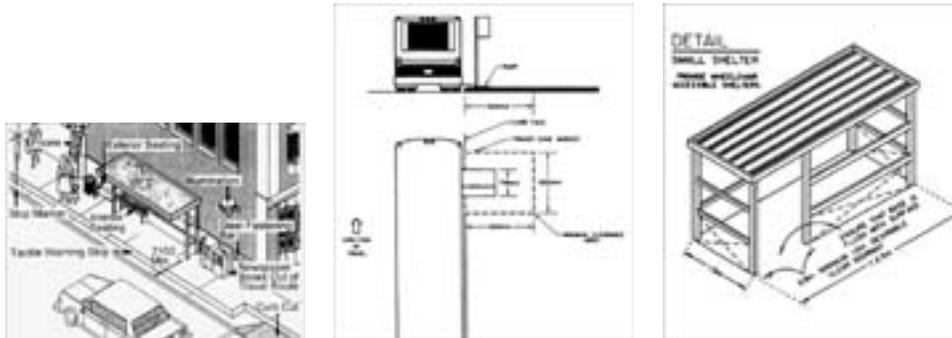


### Access to bus stops

All passengers benefit from transit stops and transit terminals, which are safe and accessible. Approaches to transit stops should be on wellpaved or level surfaces. Curbs should be ramped for easy access and platforms for trams or trains should also be ramped. The photo above left illustrates a tram stop in San Francisco.

The Canadian diagram above middle illustrates access to transit stops in rural areas or areas where roads may be unpaved. Where possible, the transit stop itself should be paved, with curb ramps for those with mobility difficulties. If this cannot be done, at a minimum transit stops should be entirely off the road so those passengers can wait safely. Even if a paved sidewalk is not available, a 2-meter or longer raised curb between the road and the passenger waiting area can provide greater safety, assist mobility-impaired persons to reach the first step of a bus, and provide orientation to blind persons or those who are partially sighted.

Transit stops should be marked with largeprint signs to assist those passengers who are partially sighted. Route and schedule information should be displayed to assist all passengers. Ideally, transit stops should provide separate waiting areas for passengers that do not conflict with nearby pedestrians, as shown in the diagram at above right.



### **Shelters and waiting areas**

Accessible transit shelters and waiting areas also benefit all passengers. Persons with mobility aids can easily enter the shelter.

The Canadian diagram above left incorporates several features, which assist disabled persons. These features include seating for waiting passengers, a tactile warning strip to assist the blind person shown waiting with her guide dog, a curb cut to assist persons crossing the street to the bus stop, and measures to prevent newspaper boxes and other obstacles from blocking access to the stop. Route and schedule information is also displayed.

A small low-cost shelter, accessible to wheelchair users, is shown in the diagram at above right. The diagram in the middle shows recommended clearance so those wheelchair users can board a bus, which has a wheelchair lift or special ramp.

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### **Curitiba, Brazil: A city committed to accessible transit**

Persons with disabilities can enter Curitiba's "bus tube" waiting areas along with other passengers, using a flat surface or a small lift as shown in the two photos to the left. Bus tubes improve access, protect all passengers, and permit fast boarding because passengers have already paid their fares upon entering the bus tube to await their bus.

Articulated buses on Curitiba's main routes stop alongside the bus tube stations. Bus drivers lower special bridges over platform projections in order to provide a smooth entrance for wheelchair users and all others between the floor of the bus tube and the floor of the bus as shown in the two photos to the right. In addition, four lift-equipped bus lines connect with main routes, and lift-equipped taxis serve points of special interest to disabled persons.



## Access to buses

Buses provide most of the public transit trips taken around the world. Access for wheelchair users are often provided using lifts or ramps. For example, Mexico City recently introduced locally made lift-equipped buses and trolley buses on major routes (see above left, noting also the retractable low first step in the front entrance). Some manufacturers specialize in making high-quality lifts, which are available for use on locally made buses around the world. Buses can also have a kneeler feature, which allows the driver to lower the front (or other) entrance to reduce the height of the first step above the surface of the bus stop.

Buses should be equipped with easily reached grab bars for boarding and alighting, and with as many vertical stanchions (poles) as possible for standing passengers. This especially helps passengers with back pain or mobility concerns. The photo in the middle left shows the "forest of stanchions" adapted for use in San Francisco.

The photo in the middle right shows reserved seating signs for elders and those with disabilities, used on buses in many countries.

It is helpful to paint handgrips and steps a bright color (yellow in many countries). Bus destination signs should be large with high-contrast letters to assist all passengers and especially those who are partially sighted. The vehicle number can be posted inside the bus using raised letters as well as braille dots, to assist those partially sighted or blind passengers who read braille to commend or criticize their bus service. (Photo at right).

Especially when initiating accessible bus service, transit agencies should consider making a single bus route totally accessible to wheelchair users rather than having every second or third bus be accessible. This is because it is important that service be reliable. Disabled persons may take a few months to become accustomed to accessible public transit and, as with all passengers, reliability is needed in order for passengers to gain confidence in the service and for usage to grow.

In many cases, orientation, often called "travel training", can be offered to assist new passengers who have never ridden a bus before. When possible, transit information should be available in alternative formats such as large print material for partially sighted passengers and braille or cassette tape for the blind. Travel information should be available for deaf, deafened, and hard-of-hearing passengers via tele-typewriter, fax, and electronic media, depending on local conditions.

In addition, transit agencies should enforce a policy that vehicles remain stopped while passengers board and alight and those disabled persons are seated before the vehicle is in motion. Drivers should call out key stops in order to assist all passengers and especially those who are blind or partially sighted.

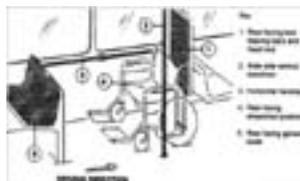




### **Low-floor buses: Easy access for everybody**

Low-floor buses are becoming a common sight in Europe and North America. Many low-floor buses can board wheelchair users directly from a raised sidewalk. Others use a foldout ramp, such as the Canadian bus in the photo shown at left. And other low-floor buses use a sliding ramp under the floor, as with the bus in London shown at right.

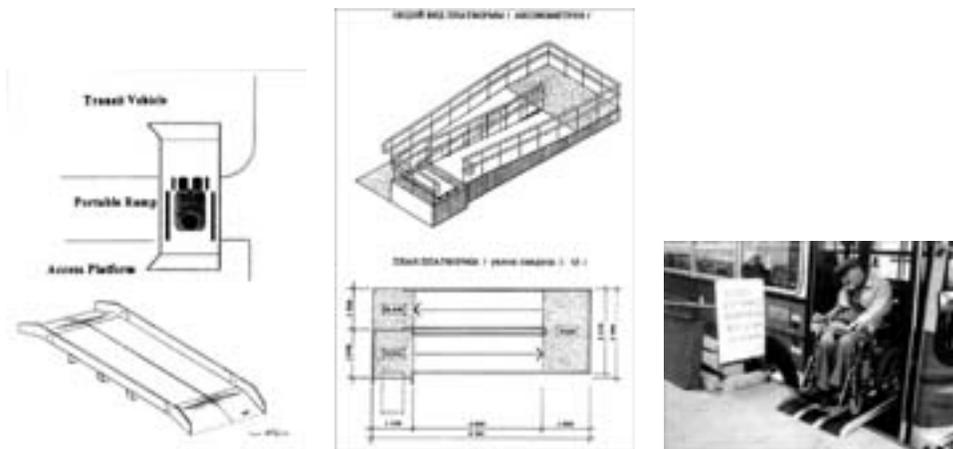
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### **Wheelchair securement: U.S. & European methods**

In the United States, passengers using wheelchairs usually face forward, the wheelchair is secured using a wheel clamp or belt, and the passenger is secured with a seat belt (photo at left). In Europe, wheelchair users travel unrestrained, seated facing backward, with the wheelchair backed against a soft bulkhead.

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### Bus access to key sites

In countries, which lack accessible buses, access for passengers who cannot climb steps may be possible using platforms at key sites. As proposed by AEI, a portable bridge piece, fixed to the platform or stored behind the driver inside the bus, can span the gap between a raised platform and the floor of the bus. A bridge design prepared by Kevin Ball and Trent Inglesby at Oregon State University (USA) is shown in the diagrams above at left, while a prototype platform designed by Angela Archangelskaya in Moscow is shown in the middle. The photo at right show testing of ramped platforms with buses in the USA. If properly located, a network of such platforms could provide significant access at low cost, depending on local conditions.



### Access to trains and subways

Access by persons with disabilities to trains and subways are another important part of creating accessible public transportation.

Advocates should stress the importance of building new railway cars with doors wide enough to accommodate those using wheel-chairs, walkers, and other mobility devices. Once inside, design

features should allow room for those riding wheelchairs either to remain in their wheelchairs or to transfer to a regular seat. In general, the various features noted in the discussion on access to buses also apply to access to trains. However, access to trains is simplified by two differences:

- 1) There are fewer train stations because they are usually farther apart than bus stops.
- 2) It is usually necessary to provide wheelchair access on only one car per train.

There are two general methods of providing access to trains from platforms, although each method has several variants. Both methods are used extensively in North America and Europe:

- 1) Through the use of portable hand-operated lifts, illustrated in the Canadian photo, upper left.
- 2) Through the use of high platforms, which permit all passengers to board on a level surface, as shown in the American photo in the left middle.

The diagram at right middle illustrates the use of a warning strip to assist all passengers near the edge of the platform. In many countries, this strip is approximately 24 inches (approx. 600 mm) wide. The warning strip should provide a difference in color (typically a bright yellow), texture and "feel" (the warning strip should feel different under foot, or at the touch of a cane used by a blind person). The diagram also illustrates how flat level crossings should be provided if tracks must be crossed to get to the proper platform.

Access to railroad platforms can vary between stations or between different cities and countries. The upper right photo illustrates the use of a ramp to provide access for wheelchair users and other passengers to a subway platform in San Francisco. However, many subway stations are far below ground and require the construction of elevators to the platform level in order to provide access for persons with disabilities. In such cases, key stations should be identified in cooperation with advisors with disabilities, in order to phase in such improvements. In all events, new subway and railway stations around the world should always be built to permit access by passengers with disabilities. Such construction almost always costs far less than retrofitting older stations. In fact, there is often little or no additional cost when new facilities are built with full access for frail elders and persons with disabilities.



### **Surface platforms at key sites:**

Small mini-platforms at key sites can provide access to trains and trams, as shown in the above left photo from San Francisco. The diagram and photo at right illustrate access to a rail line in San Francisco using this type of platform. A portable bridge is carried in the car and is put in place by the driver. This bridge is kept in a compartment behind the driver.

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### **Smaller vehicles for door-to-door service and service routes**

Often one of the first steps in the creation of accessible public transportation is to start an accessible system using vans, small buses, or taxis. In many countries, such systems are operated by social service agencies to serve their clients. In the 1970s, these systems began to serve all qualifying disabled persons in Sweden, the United Kingdom, and elsewhere in much of Europe. Soon these systems spread to North America, and they are now found in some cities on all continents.

These smaller vehicles are usually operated in door-to-door service, called "paratransit" service in North America. Such service is mandated in the United States by the federal Americans with Disabilities Act. Paratransit services are usually operated door-to-door, in order to transport persons with disabilities, including frail elders, between their homes and trip destinations. Fares are usually subsidized by funds from city or state governments.

A second major approach is the use of "service routes," which were first initiated in Sweden. Service routes usually follow a fixed route designed to pass near the homes of seniors and persons with disabilities as well as major trip destinations such as shopping areas, schools, and rehabilitation centers. In some cases, service routes permit their drivers to deviate a short distance from a fixed route in order to pick up a person who has telephoned for service from home. In countries with few telephones, such service works best for recurrent trips, for example, trips taken at the same time on the same day each week.

Both door-to-door service and service routes can provide feeder service to any accessible bus routes or railroad stations.

Because small vehicles are often operated by social service or disability agencies without a great deal of experience in transportation, care should be taken to make sure that vehicles receive scheduled preventive maintenance and that they are scheduled to pick up passengers efficiently. Often it may increase revenues to offer such transportation services to everyone, not just to those with disabilities. This is especially true of service routes.

Increasingly, however, accessible paratransit services and service routes are being operated by public transportation agencies, either using their own drivers or by contracting with social service agencies or private businesses to operate these services.

Whoever operates these services, drivers should be trained to competency in all of their tasks. It is especially important that drivers receive training to assure that they are sensitive to the needs of passengers with disabilities. Such training needs to include the mechanics of how to board and secure persons using wheelchairs. Driver training should always emphasize safe driving.

Other matters to consider when developing a door-to-door system or service routes include:

- Development of policies for determining the eligibility of passengers, trip reservation policies, and collection of any passenger fares.
- Development of personnel policies for both paid and volunteer drivers and other personnel.
- Service design and scheduling to assure those passengers are picked up in an efficient manner. More passengers will be carried, at a lower cost per trip, if pickups are "clustered" in the same neighborhood or along a corridor.
- Emergency plans to assure that all personnel know what to do in case of an accident or other emergency. Planning should also include actions to take in the event of disaster such as fire, flood, or earthquake.
- Performance evaluation, including setting goals and collecting and interpreting data in order to determine how to improve service.



### **Ramped taxis**

In many countries, it is preferable to have transportation which serves all passengers instead of separate systems for passengers with and without disabilities. One example is the use of ramped taxis. Such vehicles serve all passengers, but can be regulated to give priority to people with

disabilities.

The photo at upper left shows a ramped taxi in operation in San Francisco, USA, while the photo in the middle shows one of 10,000 ramped taxis in use in London, UK. Ramped taxis are probably the chief method of transportation for persons with disabilities in London. Such vehicles are gradually coming into use in Europe, Asia, and Central and South America. The photo at upper right shows an artist's conception of a three-wheeled paratransit vehicle connecting with an accessible "key site" bus stop.

Ramped taxis can provide quick service when telephones are available. Where possible, governments can subsidize fares for disabled persons.

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### **Accessible motorcycles**

The photo above shows a three-wheeled motorcycle that have been modified for use by persons with mobility difficulties. The vehicles are produced by Kepha Motorbikes, founded by Wycliffe Kepha in Nairobi, Kenya. It is planned to modify these vehicles further so that a person using a wheelchair can ride in a compartment behind the driver without needing to transfer to a regular seat. Such vehicles could provide low-cost door-to-door service.

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### **Access to horses**

In some cases, modifications to saddles can make it easier for those with mobility difficulties to ride horses. The photo is by Joyce Blatherwick, a wheelchair user in rural Montana, USA. The photo above shows some of the special features of her saddle.

Note that the saddle is deeply curved to provide space for a cushion under the rider. Velcro straps

on the stirrups and under the rider's shoe help keep legs in place. A handle is added on the back of the saddle to assist in mounting the horse. (See Resources section for information about how to contact Ms. Blatherwick for more information.)

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## **Laws and guidelines**

Countries around the world are beginning to provide guidelines and regulations in response to the advocacy of people with disabilities. All countries should consider laws requiring new public facilities to be accessible. This will be a start on the road toward a comprehensive legal framework requiring that the built environment and transit vehicles present no obstacles to persons with disabilities.

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## **Access to other modes of travel**

Buses, rail cars and smaller vehicles account for most of the trips by public transportation in many countries. This guide can only mention some of the other areas in which people are researching how to make transportation more accessible.

- Non-motorized vehicles include bicycles, pedicabs, and rickshaws, all of which can be made more accessible to persons with disabilities. This may include modifications to the vehicles themselves, or the development of trailer units for use with bicycles or pedicabs.
- Airports are becoming more accessible in many countries around the world, including a rapid increase in methods for assisting persons with disabilities to board airplanes. The photo above illustrates the use of a portable lift to assist a passenger using a wheelchair to board an airplane.
- Ferry boats and other passenger ships also need to become more accessible. There is

especially a need to redesign ferry boat entrances to eliminate barriers and to design gangways so that they do not become too steep due to changes in water levels as tides ebb and flow.



Trip destinations need to be accessible in order for frail elders and other persons with disabilities to have the mobility they need to lead independent lives. This means that there should be accessible pathways from transit stops to buildings and other facilities used by the public.

Such buildings include government offices, commercial buildings, railroad and bus terminals, schools, medical and recreational facilities, and houses of worship. Once the building is reached, the accessible pathway should continue through the door to destinations within the building, including auditoriums, sanctuaries of houses of worship, offices, bathrooms, public telephones, water fountains, and other public conveniences.

In general, the rules that apply for pedestrian paths to transit stops also apply for access to and within public buildings. The photo at upper left shows access from the street to the entrance of a public building in San Francisco, USA, while the diagram at upper right illustrates a ramp inside a church. In all cases, such ramps should not exceed one unit of rise for every twelve units of length.

The following standards are selected from the very detailed regulations of the Americans with Disabilities Act, which are used in the USA. They generally reflect current usage in North America and much of Europe:

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### **Regarding paths of travel for wheelchair users and others with mobility impairments:**

815 mm: minimum clear width for passages of a single wheelchair at a point (such as a doorway), with the passage itself 915 mm wide. 1525 mm: minimum width for two wheelchairs to pass each other. 1525 mm: diameter of a clear space for a wheelchair user to make a 180-degree turn. 2030 mm: vertical clearance between a path of travel and an overhead obstruction (of special importance for blind persons or those who are partially sighted).

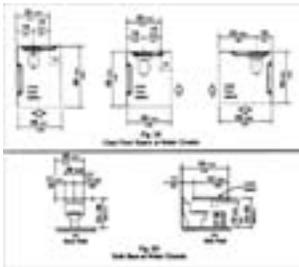
Ramps should be at an angle of not more than a 1:12 slope, that is, not more than 1 cm of rise for every 12 cm of length.

Landings at the top and bottom of a ramp should be level. A flat rest area should be provided on longer ramps after each rise of not more than 750 mm. The inclined surface of a ramp should have a contrasting color and a detectable non-slip surface. Ramps should be protected with handrails.

Ramps and corridors leading to buildings or inside of buildings should be free of protruding objects that can be a barrier to people who are blind or partially sighted or to those with mobility impairments.

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### **Regarding bathrooms:**



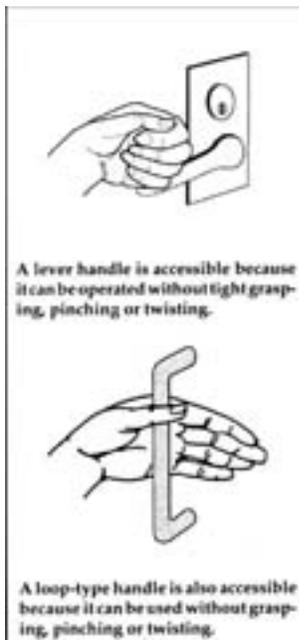
The diagram above is from Accessibility Guidelines for Buildings and Facilities in the Americans with Disabilities Act (1991). Large numbers are in inches and small numbers are in millimeters. In general, towel and soap dispensers should be mounted at less than 1000 mm above floor level. Bathroom doors should open easily.

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### **Regarding signs and information:**

It is very important to provide signs with large letters, which contrast with the background and are easily read by people who are partially sighted. Signs should be placed at a consistent height between 1370 mm and 1675 mm above floor level. Attention should be given to audible announcements to assist those who are blind or partially sighted. Information should also be available in alternative formats, including sign language; teletypewriters for those who are deaf, deafened, or hard-of-hearing; and braille or raised letters on signs to assist those who are blind or partially sighted.

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### **Regarding doors and entryways:**

Doors should open easily so that they can be used by wheelchair riders and other persons with disabilities. Door handle hardware should be large and easy to grasp. The diagrams above illustrate two types of accessible door handles: lever handles and looptype handles. An entryway with a narrow revolving turnstile may exclude people with disabilities unless accessible gates or passages are provided.

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### **Regarding sanctuaries and auditoriums:**

Sanctuaries and other areas for public worship, as well as auditoriums of every kind, should always have an accessible entrance, with aisles, which are at least 915 mm wide. Wheelchair accessible viewing positions should be scattered through the area. If chairs are used, rows in various locations can be easily shortened to accommodate wheelchairs, as shown in the illustration above. At least some of the seats should be provided with cushions for those with back problems and arthritis. There should be a well-ventilated fragrance-free area for use by people who are chemically sensitive.

This section has provided a brief introduction to access to public buildings and houses of worship, which are usually major trip destinations in countries around the world. As with other sections of this guide, these pages just introduce the subject. The reader is referred to the Resources section

which follows for sources of more detailed information.



Readers may contact these selected resources to obtain more information about accessible transportation and access to the built environment. The list focuses on English-language resources and follows the order of the text and illustrations in this guide. Country and city fax codes are in parentheses.

### **Getting organized**

There are many excellent disability agencies working at international, national, and more local levels in most countries. Three well-known international agencies by and for persons with disabilities are:

**Disabled Peoples' International** (local chapters, international local advocacy)  
101-7 Evergreen Place  
Winnipeg, Manitoba R3L 2T3, Canada  
Fax: (204) 453-1367  
E-mail: [dpi@dpi.org](mailto:dpi@dpi.org)

**Mobility International USA** (international exchanges, leadership training)  
P.O. Box 10767 Eugene, Oregon 97440, USA  
Fax: (541) 343-6812  
E-mail: [info@miusa.org](mailto:info@miusa.org) Web: [www.miusa.org](http://www.miusa.org)

**World Institute on Disability** (training in advocacy, leadership economic development)  
510 - 16th Street, Suite 100 Oakland, California 94612, USA  
Fax (510) 763-4109  
E-mail: [wid@wid.org](mailto:wid@wid.org) Web: [www.wid.org](http://www.wid.org)

### **Access to sidewalks and pedestrian pathways (pages 4-6)**

Several illustrations are from Design Guidelines for Pedestrian Accessibility. For a copy, contact:

Mike Clulow  
**Alberta Transportation and Utilities**  
Twin Atria Building, 2nd floor  
4999 - 98th Avenue Edmonton, Alberta T6B 2X3, Canada

Fax: (403) 427-0783  
E-mail: mclulow@tu.gov.ab.ca

For more information on non-paved pedestrian pathways, contact:

**Whole Access**

517 A Lincoln Avenue  
Redwood City, California 94061, USA  
Fax: (650) 369-5242  
E-mail: Waccess@aol.com or Waccess@usa.net

For information on stabilizing soils, contact:

**Julie Stasinowski**

P.O. Box 641 Pleasant Grove, California 95668, USA  
Fax: (916) 383-6014  
E-mail: jstasino@hnh.com

For international activities and conferences on road and highway construction, contact:

**World Road Association, PIARC**

Le grande Arche - Paroi Nord, niveau 8  
92055 La Defense cedex, France  
Fax (33-1) 49 00 02 02  
E-mail: piarc@pratique.fr

**Access to transit stops and transits vehicles (pages 7-20)**

Readers may obtain a copy of C.G.B. Mitchell's summary of work on accessible transportation, with a focus on North America and Europe, titled Access to Transport Systems and Services: An International Review. Another publication, by Tom Geehan, titled Improving Transportation Information: Design Guidelines for Making Travel Accessible, discusses visual and audible transit information systems which can assist persons with disabilities. Both publications may be requested from:

Barbara A. Smith  
**Transportation Development Centre**  
800 René-Lévesque Blvd. West, 6th floor Montreal, Quebec H3B 1X9, Canada  
Fax: (514) 283-7158  
E-mail: smithb@itc.gc.ca

Transportation providers and their friends may contact two major national associations for information on organizing at state, provincial, or national levels. The CTAA can be contacted for free literature about planning accessible fixed route and paratransit services, including transit service design and scheduling, system safety, training of personnel, development of policies for drivers and other personnel, performance evaluation, vehicle procurement, and vehicle fleet management. They also publish a Buyers Guide of U.S. and Canadian vendors of accessible vehicles, equipment, and services:

**Community Transportation Association of America (CTAA)**

1341 G Street, NW, Suite 600 Washington, DC 20005, USA  
Fax: (202) 737-9197

E-mail: [ctaa @ ctaa.org](mailto:ctaa@ctaa.org) Web: [www.ctaa.org](http://www.ctaa.org)

**Community Transport Association UK**

Highbank, Halton Street, Hyde Cheshire SK14 2NY, United Kingdom

Fax: (44-161) 366-6685

E-Mail: [cta.man@dial.pipex.com](mailto:cta.man@dial.pipex.com)

For referral to research at institutions in various countries, dedicated to improving accessibility to transportation, as well as a list of vendors of accessible vehicles and equipment in the UK and western Europe, contact:

**C G B (Kit) Mitchell**

17 Tavistock Road Fleet,

Hampshire GU13 SEH, United Kingdom

Fax: (44-1252) 815-920

E-mail: [101326.2263@compuserve.com](mailto:101326.2263@compuserve.com)

For information on Canadian resources for accessible transportation, contact:

**Ling Suen ICSA Inc.**

8 Riverside Drive, Suite 1004 St. Lambert,

Quebec J4S 1Y5, Canada

Fax: (450) 466-4305

E-mail: [suenlicsa@aol.com](mailto:suenlicsa@aol.com)

For referrals to information about Mexico (photo on page 10), contact:

**Maria Eugenia Antunez**

Cerrada de Cortes #86-1 Colonia Tlacopac San Angel 01040 Mexico,  
D.F., Mexico

Fax: (52-5) 661-49-09

E-mail: [maruantu@mail.internet.com.mx](mailto:maruantu@mail.internet.com.mx)

The page 11 lift-illustration is from:

**Ricon Corporation**(manufactures lifts and ramped vehicles)

12450 Montague Street Pacoima, California 91331, USA

Fax: (818) 890-3354

Web: [www.riconcorp.com](http://www.riconcorp.com)

For information concerning low-floor buses (page 11) contact:

Ann Frye

**Mobility Unit Department of Environment, Transport and the Regions**

Great Minster House 76 Marsham Street,

London SW1P 4DR, United Kingdom

Fax: (44-171) 890-6102

E-mail: [frye.mu.detr@gtnet.gov.uk](mailto:frye.mu.detr@gtnet.gov.uk)

**or**

Maryvonne Dejeammes

**INRETS**

25 avenue Francois Mitterand, Case 24 69675 Bron Cedex, France

Fax: (33-4) 7214 2360

E-mail: maryvonne.dejeammes@inrets.fr

For information concerning use of platforms for key site access (page 13), contact **Access Exchange International** (see page 26) or, in Russia:

**Valeria Sviatkina**

Konakovskii proezd 6-1-58 125493 Moscow, Russia

Fax: (7-095) 452-30-92

For information on portable lifts for trains and aircraft (photos on pages 14 &20), contact:

Chari Smith

**Adaptive Engineering Ltd.**

3604 Burnsland Road, S.E. Calgary, Alberta T2G 3Z2, Canada

Fax: (403) 243-9455

E-mail: lifts@adaptive.ab.ca

For general information on access to rail systems (pages 14-15), contact:

Paul Fichera

**San Francisco Municipal Railway**

949 Presidio Avenue, San Francisco, CA 94115, USA

Fax (415) 923-6307

E-mail: mvillena@puc.sf.ca.us

Free publications on accessible transportation, with special emphasis on door-to-door "paratransit" services (pages 16-17) are available from:

**Project ACTION**

700 - 13th Street, NW, Suite 200 Washington, DC 20005, USA

Fax: (202) 347-4157

Web site: projectaction.org

For information on service routes (page 16), contact **Access Exchange International** (see next page for contact information).

For more information on accessible transportation in Hong Kong (photo on page 17), contact:

Joseph Kwan

Environmental Advisory Service

**ReHabAid Centre, G/F, Core S**

Hong Kong Polytechnic University

Hunghom, Kowloon, Hong Kong, PRC

Fax: (852) 2364-3327

E-mail: rcha@hklink.net

For information concerning London's ramped taxis (photo on page 18), contact:

Barry Widdowson

**London Taxis International**

Holyhead Road

Coventry, W. Midlands CV5 8JJ, United Kingdom

Fax: (44-1203) 572-001

For information on access to three-wheeled vehicles (page 18), contact:

**Kepha Motorbikes**  
P.O. Box 7627  
Nairobi, Kenya  
Fax: (254-2) 44-60-65

For information on accessible saddles (page 19) contact:

**Joyce Blatherwick**  
16485 Roman Creek Road Frenchtown, Montana 59834, USA  
Fax: (406) 523-4731

For information on access to water transportation, contact:

Katherine McGuinness  
**KMA/TAMS Inc.**  
38 Chauncy Street Boston, Massachusetts 02111, USA  
Fax: (617) 482-0642  
E-mail: [kmcguinness@tamconsultants.com](mailto:kmcguinness@tamconsultants.com)

Contact Access Exchange International (see below) for information on volunteer consultants specializing in various aspects of accessible transportation. As time and funds permit, these consultants may be able to work without charge if air travel and other local costs are paid. They may also be free to provide tours of accessible transportation to visitors to their countries.

### **Access to trip destinations (pages 21-23)**

For information on access to buildings and facilities, readers may request a copy of the ADA Accessibility Guidelines, at:

**US Architectural and Transportation Barriers Compliance Board**  
1331 "F" Street, NW, Suite 1000 Washington, DC 20004, USA  
Fax: (202) 272-5447

The entire document is also on their web site at: [www.access-board.gov](http://www.access-board.gov)

Many faith traditions and religious denominations have special programs to promote access to their facilities. Readers may contact these programs for specific information.

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