



## Board Report

File #: 2018-0286, File Type: Informational Report

Agenda Number: 57.

### AD HOC CUSTOMER EXPERIENCE COMMITTEE JUNE 21, 2018

**SUBJECT: ACCESSIBILITY ENHANCEMENTS**

**ACTION: RECEIVE AND FILE**

#### **RECOMMENDATION**

RECEIVE AND FILE status report on Accessibility Enhancements.

#### **ISSUE**

The right of persons with a disability to ride Metro is a civil right enshrined in the Americans with Disabilities Act (ADA) of 1990. Established in 2011, Metro's Office of Civil Rights department is responsible for ADA compliance and reports directly to the Chief Executive Officer. Since the Office of Civil Rights was created there have been major advancements in accessibility on Metro. The Metro system is ADA compliant and in many areas, Metro goes above and beyond the minimum accessibility levels mandated by the ADA or the California Building Code (CBC). The goal of the Office of Civil Rights is to significantly improve the customer experience for persons with disabilities and make Metro the most accessible transit system in the world.

#### **DISCUSSION**

The changes that have been made in the last seven years include enhancements to the design of our buses, trains and stations, improved training of bus operators on issues related to the ADA, and more accessible information. Metro has also increased outreach to organizations and individuals with disabilities and is continuously developing innovative approaches to removing barriers, or adopting innovative technologies from other sources. Each of the innovations listed below goes above and beyond the requirements of the Federal ADA and more stringent CBC.

##### **1. Recent Improvements at Rail Stations**

Metro has more than 100 rail and BRT stations and all were built or expanded while the ADA has been in effect. This means that all stations must meet ADA requirements. A complete inventory of all stations conducted by Metro in 2014 did find some areas that need improvement or repair in order to be fully compliant. Those changes or repairs will be undertaken as part of the State of Good Repair program in the coming years. New lines built since 2011 have incorporated many new accessibility enhancements and these will be implemented at existing stations when they are renovated or

rehabilitated.

### **Directional Bars**

The CBC requires that directional bars be placed to mark the boarding entrance of buses and trains at bus stops and train stations. Prior to 2014 this requirement was met at only 5 stations on the Red and Blue lines. Since 2014 the Office of Civil Rights has ensured that this feature has been incorporated at all new rail stations and a project has begun to retrofit the directional bars at existing bus and rail stations. The directional bars help the visually impaired find a safe place to wait on the platform, and know where to board a train regardless of the length of the consist. Directional bars have been installed at Silver and Orange Line Stations and the El Monte Bus Terminal.

### **Redundant Elevators**

When an elevator at a station is out of service for any reason an alternative transit service must be provided. This is inconvenient for passengers with disabilities and can be expensive to provide. Metro has changed the design standards to require a second, redundant elevator at any station requiring an elevator. This additional elevator may not completely eliminate all elevator outages, but it will make transit more reliable for persons with disabilities and reduce the need to add special transit service. New elevated stations on the Expo Line all are equipped with redundant elevators and the requirement has been included in the lines now under construction.

### **Maximum Vertical Change with Ramps**

Several existing stations on Metro rail lines including Union Station have wheelchair ramps that are very difficult to negotiate in manual wheelchairs due to the vertical distance that must be climbed. The ADA does not have a maximum vertical rise standard for ramps, although it does specify a maximum slope. The issue at Union Station will be eliminated when the rail yard is rebuilt for the Link US project; however other existing stations will continue to be a problem. In 2017 the Office of Civil Rights requested that the design standards for rail stations be changed to limit the vertical rise that can be served with a ramp. This means that all new stations any vertical rise over about 10 feet or one story will have elevators.

### **Lighting Design Criteria**

In 2013 the Office of Civil Rights retained a consultant to develop lighting design criteria for rail stations following customer complaints about lighting on the Expo Line. A survey of several stations revealed significant lighting deficiencies and lighting system design problems. The lighting design criteria were developed to enhance the ability of users with limited vision, and particularly seniors to safely and confidently use the stations at any time of day or night. The guidelines were necessary because the ADA and CBC standards do not specifically address the kinds of lighting challenges such as glare, shadows and transitions between light/dark areas that can occur at transit stations.

### **Braille Signage**

The ADA requires Metro to provide tactile and Braille signage in specific locations in rail stations.

Until recently the Metro standard was to blind emboss the signage and over print in visual characters. This signage was taken to the Braille Institute for testing and it was found that visually impaired individuals could not readily identify that there were any embossed characters. In addition people with good eyesight saw visual characters that are mildly misshapen by the underlying blind embossed characters.

In 2017 the Metro standard was changed to unify the visual and tactile characters. This improved the visibility of the signs for those that have some form of visual impairment and improved the legibility of the visual characters. As signs are replaced due to vandalism or other damage the replacement signs will meet the new standard. Signage materials/manufacturing standards were also updated to require integrated Braille rather than surface applied dots to improve durability and reduce maintenance.

### **Between Car Barriers**

The ADA includes a requirement for between car barriers to be installed between rail vehicles to prevent pedestrians from falling between cars. Metro developed a unique approach to this requirement and became the first agency in the nation to install the platform mounted yellow delineator tubes now found at all Metro stations. The system has also been adopted by several other rail systems in the U.S. This has proven more effective than barriers mounted on railcars as required by the regulations. This unique approach was approved by the FTA.

## **2. Future Enhancements and Technologies**

The Office of Civil Rights is continuing to bring new accessibility features and technology to Metro rail stations. These new features and technologies are all designed to improve the customer experience and continue to advance the goal of making L.A. Metro the most accessible transit system in the world.

### **Tactile Pathways**

Rail stations in almost every country outside of North America have tactile pathways to guide the visually impaired safely from the street to the platform. A few stations in San Francisco have experimented with tactile pathways and the newest extensions of light rail in Seattle have incorporated this valuable feature. Metro has now adopted tactile pathways as part of the rail station design standards and a project to retrofit the pathways in the recently opened Foothill and Expo Line extensions is scheduled to be completed by the end of FY 2019. Tactile pathways will also be installed in the Willowbrook/Rosa Parks station as it is rehabilitated and all new rail stations including Crenshaw, the next phase of the Foothill extension, Regional Connector and the Purple Line extension.

### **Beacon Navigation System - Wayfindr**

Union Station is the most complex transit and rail station in the Metro network and it presents

significant challenges for the visually impaired. It is not possible to install tactile pathways due to the historic designation of the building. An alternative beacon based way finding system has been found that will significantly improve the customer experience for the visually impaired, as well as the general population.

Beacon based navigation systems are slowly being introduced into the built environment. Union Station will be the first major transit hub in the U.S. to have this system installed. Demonstrations of the technology have been tested in major rail stations in London and Sydney. It is expected that more than 700 beacons will need to be placed to provide complete coverage to all areas and modes at this station.

Metro has chosen Wayfindr technology for this application. Wayfindr is a United Kingdom based non-profit that developed this technology in co-operation with the Royal Society for the Blind and a grant from Google. The system is based on open source software that can be adopted by other public facilities such as airports or malls.

Once the beacons are installed they would be available for other uses beyond way finding including allowing Union Station tenants to advertise their location or special offers, and providing transit and train schedule information. It is expected the demonstration system will be operational before the end of the calendar year.

### **Hands-free Intercoms**

The same hands-free technology that was adopted for the G-Tels is now being applied to all new installations of Passenger Information (P-Tel) and Emergency Intercoms (E-Tel) at rail stations. The new intercoms offer hands free access that allow passengers with disabilities to access these important intercoms, without depending on the intervention of others. Metro is the first rail system in the North America, if not the world to adopt this technology.

### **Hands-free Elevators**

Metro developed the Gate Telephone (G-Tel), hands-free intercom to facilitate entry to rail stations for persons who do not have full use of their arms or hands and are unable to tap on the turnstiles. Persons who do not have full use of their arms or hands and use a wheelchair also face a challenge in stations where it is necessary to use an elevator. If travelling independently they must still depend on other passengers to press the elevator buttons in order to access or leave the station.

The proposed solution will be to provide large accessible kick-plates as secondary elevator call buttons, and floor select buttons. A similar solution has been implemented in elevators at an orthopedic hospital in Vancouver, Canada. At our stations the elevators travel only between two floors which makes the solution easier to implement than in Vancouver

### **Redesign of Pedestrian Gates at Rail Crossings**

The California Public Utilities Commission (CPUC) requires manually activated swing gates at

pedestrian crossings of light rail tracks at stations. The CPUC requires these gates to open away from the tracks, requiring a pull motion. When exiting the track crossing the gates are equipped with a kick panel that allows a passenger in a wheelchair to push open the gate. However for anyone without use of their arms or hands it is impossible to pull open the gate to access the crossing.

In the planning of the next Foothill LRT extension the Office of Civil Rights worked with the CPUC representative and the Foothill Construction Authority to devise a gate configuration that would allow individuals with disabilities to open the gates without creating an unsafe situation. This same design will be incorporated into the design standards for future rail lines. An alternative solution with an automatic gate was developed for the Rosa Parks station rehabilitation to solve the same issue.

The combination of hands free access at rail crossings, PTEs, ETEs, GTEs and elevators will make Metro the first truly hands free accessible system in the world.

### **New Safety Edges for Pedestrian Crossing of Railway at Stations**

The design of the next phase of the Foothill rail line includes several pedestrian crossings of the rail tracks which are skewed. This presents a hazardous situation for the visually impaired who would expect the crossing to continue in a straight line from the sidewalk. In order to enhance the safety of the crossing, a system of edge markers were developed to enable someone using a cane to sense the edge of the crosswalk and not wander away from the crosswalk and onto the tracks. This enhancement was also reviewed and accepted by the CPUC.

### **3. Improvements to Vehicles**

The ADA requires that priority seating be identified on buses and rail cars. Metro has marked these seats as “reserved” to strengthen the message and on all new vehicles since 2014 the seats have been covered in a special fabric with an integral logo to further identify the special designation of the seats. The reserved area is also identified by blue flooring to further strengthen the messaging. The special fabric is being installed on older buses and rail cars as they are being rehabilitated, if they are expected to have more than eight years of life remaining.

The reserved seats were also moved from being the same seats that flip-up to accommodate persons in wheelchairs. This was done because some seniors and persons with disabilities were unwilling to give up their priority seats to allow wheelchairs to board. This has increased the availability of space for persons in wheelchairs.

On all new buses delivered since 2014 a special location has been created to accommodate walkers. This space has a single flip up seat and it means that a walker can be carried on the bus without taking up spaced identified for persons in wheelchairs. This walker space is also being retrofit on about 500 buses scheduled for rehabilitation.

All buses delivered since 2014 have been equipped with dual position wheelchair positions. The

wheelchair positions feature Qpods for rear facing securement and a padded barrier for rear facing wheelchairs. The Qpods use only 3 securement points and are faster and easier for the operator to use. The rear facing barrier provides customers with an alternative that does not require the operator to attach any type of securement hooks to the wheelchair or lap and shoulder belts on the passenger in the wheelchair.

Metro intends to change the current voluntary policy for wheelchair securement to a mandatory requirement for wheelchair securement within the next 18 months. Metro is one of very few transit systems in California that does not have mandatory wheelchair securement policy. The change in policy will be tied to system wide implementation of the Qpod system which offers fast, easy securement, resulting in minimal service delays. Mandatory forward facing wheelchair securement, or use of the rear facing position will significantly improve the safety of all passengers on our buses.

### **Reducing Pass Ups**

Metro recently ordered new articulated buses. The specifications included provision to have some buses configured with three wheelchair securement positions. Although other transit systems have had similar configurations for some time this marks the first time Metro has equipped any bus with more than the two required wheelchair positions. Installing three positions should reduce the number occasions when passengers in wheelchairs are passed up. It also maintains the same ratio between seats for ambulatory users and users in wheelchairs as exists on 40' standard buses.

Prior to the delivery of the new P-3010 railcars all light rail vehicles in the Metro fleet met the minimum requirement of two wheelchair positions per car. The new P-3010 cars became the first cars in the Metro Fleet to incorporate four wheelchair positions per car. In addition the four positions are separate from additional space dedicated to bicycles and strollers. This is an important improvement as the wheelchair positions on the older cars are shared with bikes or strollers, creating competition among passengers for use of the space.

The next order of heavy rail vehicles will also increase the space for wheelchairs from one position to four, including a tandem position that will allow two passengers in wheelchairs to sit adjacent to each other. The wheelchair space on the current vehicles is shared with bicycles and in the new cars the two modes will each have separate areas to reduce the potential for conflicts among passengers.

A pass-up occurs when a bus or train is too full to board additional passengers and it must skip a stop. A pass-up is very undesirable for anyone, particularly on routes with headways of more than 10 minutes. Passengers in wheelchairs face pass-ups much more often than ambulatory passengers as there are only two positions on a bus that can accommodate wheelchairs. A pass-up may occur if a passenger refuses to move out of a flip up seat when requested, if the bus has too many standees or there are already two wheelchairs onboard the bus. Some transit systems in the U.S. and California use the threat of a fine to encourage passengers who refuse to give up their seat for the passenger in

a wheelchair.

One of the routes with the most frequent rate of pass ups was the service that links to Rancho Los Amigos Rehabilitation Hospital in Downey with Rosa Parks rail station. In response to the heavy demand for wheelchair accommodation Metro contracted with Access Service to operate a fixed shuttle with a cutaway style vehicle capable of carry five wheelchairs. The service operates five days a week and has provided another option for wheelchair passengers travelling between the Blue and Green Lines and Rancho Los Amigos and reduced the occurrence of pass ups.

### **3. Other Improvements**

#### **Operator Training**

In 2014 Metro introduced a new training course for bus operators dealing with ADA service requirements and wheelchair securement. All current operators were required to take the course, and it is now part of new operator basic training. The course takes nine hours and includes extensive hands on training for wheelchair securement. Operators are also required to board a bus while operating a power wheelchair. Since the training of existing operators was completed the number of ADA related complaints from passengers has been reduced significantly.

#### **Outreach**

The Office of Civil Rights has a very active outreach program for riders with disabilities. Metro participates in the annual Abilities Expo where contact is made with several thousand individuals with disabilities. On a regular basis Metro sends a bus to Rancho Los Amigos Rehabilitation Hospital to provide an orientation course to potential riders who have recently become disabled. The bus and operators familiarize the individuals with how to board a bus while using a wheelchair and show them how our securement systems work. Other outreach events include similar familiarization visits to the Braille Institute and events with Guide Dogs of America.

#### **STAR Program**

The Safely Transporting All Riders (STAR) program was begun in 2017 as means of reaching out to passengers using wheelchairs. This program involves a mobile team that can attach securement straps onto wheelchairs and provide training on how to board buses in wheelchairs. Prior to the creation of this team, any individuals who wished to have the straps installed on their wheelchair were required to travel to the Access Services certification center in downtown Los Angeles. The team travels to events or locations where large numbers of wheelchair users may be found and also participates in programs such as the Accessibility Fairs at Metro Divisions.

#### **Accessibility Fairs**

Accessibility Fairs were conceived by the Office of Civil Rights as a means of making ADA training more fun and interesting for bus operators. Each bus division is visited by the civil rights team once per year and at each event up to seven tables are set up offering different games and activities related to learning about accessibility. Tickets are given to participants and they can turn them in for food or prize drawings.

The main event at each fair is the wheelchair securement competition. Operators are challenged to test their skills securing a wheelchair. They are scored and timed and the winner receives a personalized trophy. The winner is also eligible to compete in an agency wide competition at Gateway Headquarters. The winner of the agency wide competition is recognized at the annual Metro awards ceremony and their home Division receives a large trophy and bragging rights for one year.

### **TPIS Screen Redesign**

Every Metro Rail station has digital displays known as the Transit Passenger Information System or TPIS to convey schedule, and service update information to our customers. When the system was installed it was not ADA compliant. The size of the text used was too small, and many of the messages were presented in colors that did not provide sufficient contrast.

The system was updated and brought into compliance with the standards required by the ADA. The larger font size is more readable for everyone, and the correct use of colors now means that the messages are easier to see in all conditions.

### **First On; First Off**

Until 2013 the policy of Metro was that persons in wheelchairs board buses first, and alight last. This often created problems as someone in a wheelchair could not board as the existing two securement positions were both occupied. The person in the wheelchair would have to wait until one of the persons in a wheelchair on board was able to exit after everyone else boarded. By that time the bus could be too full to allow the person in a wheelchair to board, and he or she would be advised to wait for the next bus.

Early in 2013 the policy was revised to allow wheelchairs to alight first and board first. Passengers on the bus who wish to exit immediately are advised by the operator to use the center or rear doors. The operator can then assist the passenger(s) in a wheelchair to exit first, and allow any waiting wheelchair passengers to board before ambulatory passengers. Ambulatory passengers can board after the wheelchair passengers are settled on board. In addition to better serve our passengers using wheelchairs, the 'first on, first off' paradigm is easier for bus operators to remember and places the proper emphasis on service to riders with disabilities.



## **Braille Bus Stops & Fleet Numbers**

Federal ADA regulations and the CBC do not require any tactile or braille information at bus stops; however Metro has placed panels with information in tactile lettering and Braille at the 500 busiest bus stops in our system.

In addition all of our buses and rail cars are equipped decals that provide the fleet number in tactile letter and Braille. This is not required by regulation however it allows persons with visual impairments to identify the vehicle they are using in the event they wish to file a complaint, compliment or retrieve a lost object.

## **Nextrip**

Many Metro bus stops are now being fitted with Nextrip information signs that provide updated information on the estimated time until the next bus. The ADA does not require this information to be provided in an audio format for visually impaired; however Metro is providing a push to hear feature at each location. This will allow visually impaired persons to receive the same information as those with sight. This will improve the customer experience for the visually impaired as they wait for the next bus.

## **Gaddy Settlement Continuation**

In 2011 the Metro Board settled a major lawsuit that claimed persons using wheelchairs were being systematically discriminated against by Metro. The lawsuit included 26 items of injunctive relief that required Metro to fully comply with the ADA and go above and beyond those requirements in many areas. The injunctive relief requirements in the settlement agreement were written to sunset after five years.

In March, 2015, prior to their sunset, the Metro Board unanimously voted to extend the requirements indefinitely. This was done to ensure that Metro continues to be highly responsive to the needs of the disabled community.

## **Mystery Ride Program**

In order to verify that bus operators are correctly following the ADA requirements and Metro policies and procedures a mystery ride program is managed by the Office of Civil Rights. The mystery riders conduct more than 600 undercover rides on Metro buses each quarter to obtain a statistically valid sample of bus operator compliance with accessibility requirements. The observers use wheelchairs, walkers or other mobility aids and record the operator's proficiency in securing devices or offering assistance. Operators who provide exceptional service receive commendations, while operators who are found to have not followed the correct procedure are counseled or disciplined accordingly. The system wide results are published on the Metro website every quarter. The results show that in the critical aspects of wheelchair securement Metro operators are meeting the requirements of the ADA more than 96 percent of the time. Later this year the program will receive a major overhaul that will expand the range of observations and provide more detailed information on our ADA compliance.

## **ALTERNATIVES CONSIDERED**

In general terms most of the actions described in this report are above and beyond the existing minimum state and federal regulations for providing access for persons with disabilities. Making transportation facilities and services accessible to persons with disabilities is a civil rights issue and failure to act to maintain and enhance the accessibility of Metro would make the agency potentially liable even if we meet the minimum requirements of the law. The aging population of baby boomers will mean that Metro will need to safely and effectively accommodate more and more people with disabilities in the future.

The alternative of not acting to improve accessibility was considered, but rejected due to the risk of increased claims and potential financial penalties for not making a best effort to accommodate persons with disabilities. A motion passed by the Board of Directors in 2015 requires Metro to continue with the accessibility enhancements that were implemented as part of a 2011 settlement agreement.

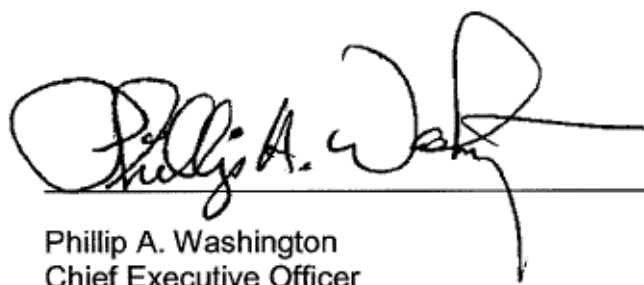
### **NEXT STEPS**

Several initiatives are planned for the remainder of FY 18 and FY 19. These include:

- Identifying ADA capital improvement projects as part of the State of Good Repair effort for the next 10 year capital plan
- Installation and commission of a beacon based way finding system in Union Station
- Installation of the first tactile pathways on the Crenshaw Line and portions of the Expo, Gold, and Blue Lines.

Prepared by: Daniel Levy, Chief, Civil Rights Programs (213) 418-3169

Reviewed by: Daniel Levy, Chief, Civil Rights Programs (213) 418-3169



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Phillip A. Washington  
Chief Executive Officer

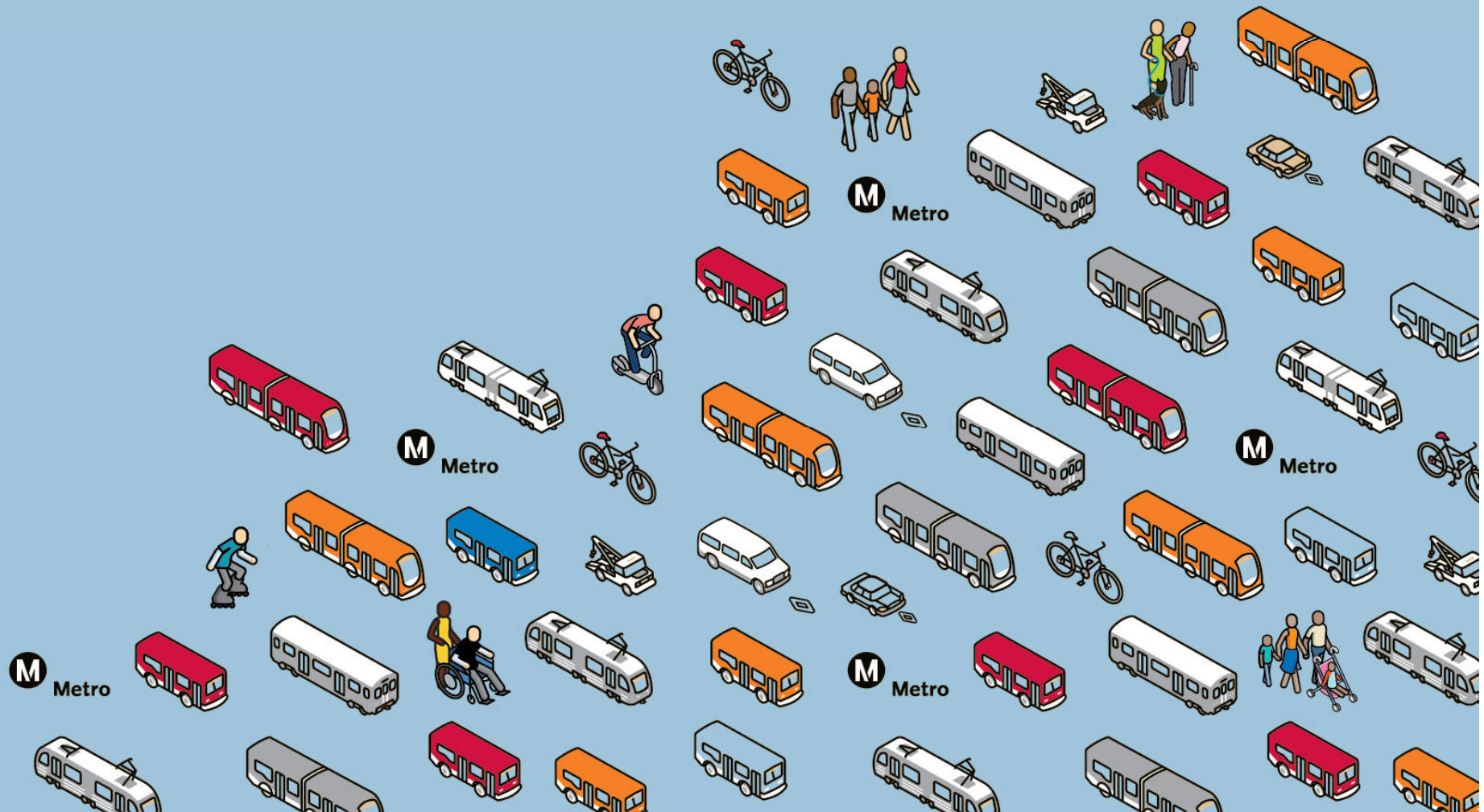
# Accessibility Enhancements



Office of Civil Rights

## Ad Hoc Committee on Customer Experience

Dan Levy, Chief, Office of Civil Rights

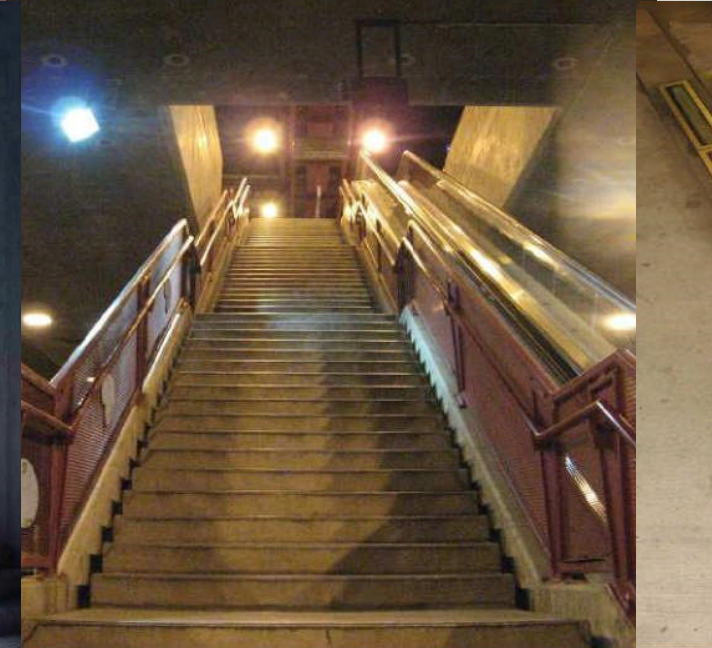
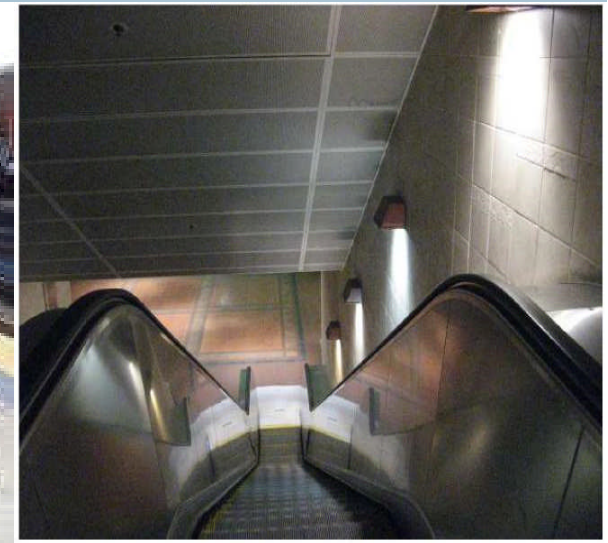




# Recent Improvements at Rail Stations



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# Braille Signage



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# Tactile Pathways



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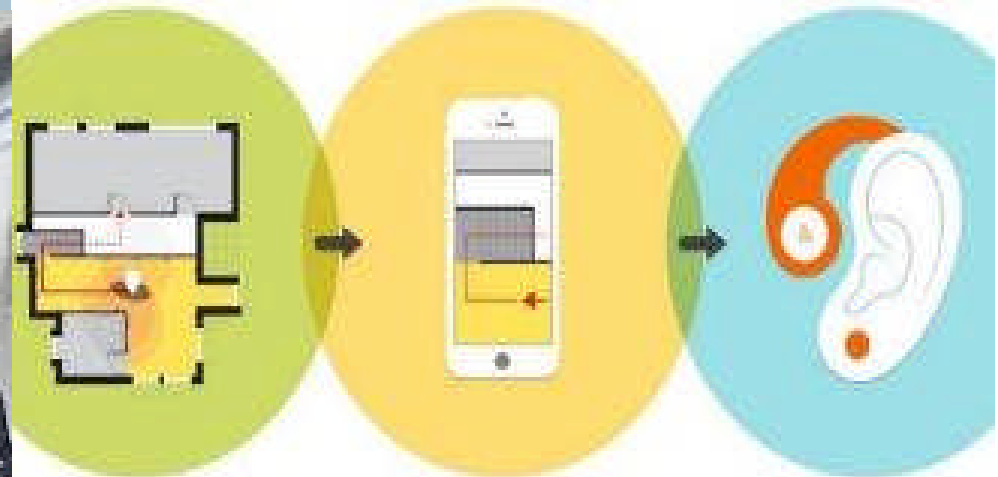
**M** Metro



# Beacon Based Way Finding - Wayfindr



Office of Civil Rights



USER IS LOCATED BY THE NEAREST BEACONS (TRILATERATION)

USER'S LOCATION IS MAPPED ON THEIR MOBILE DEVICE

NAVIGATION DIRECTIONS ARE TRANSMITTED TO THE USER

<https://youtu.be/smAyNAn7ETc>





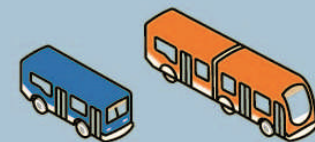
# Hands Free Intercoms



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## Design Intents





# Hands Free Elevators - *Future*



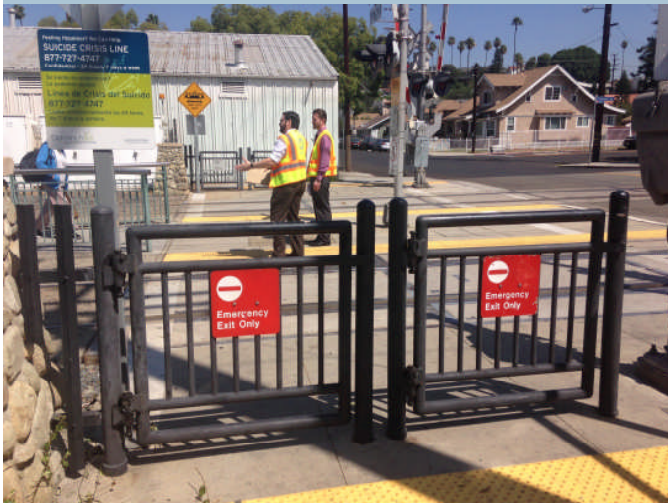
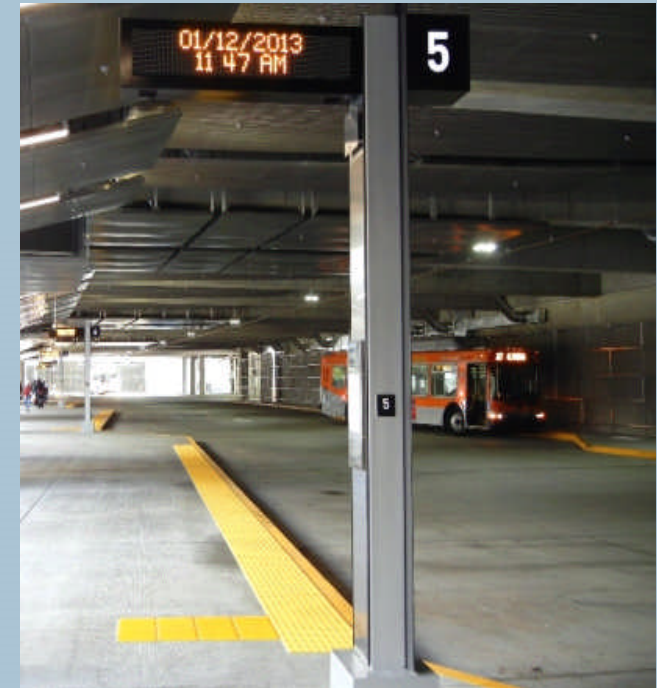
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# Access and Safety at Stations



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Metro



# Accessibility Fairs & Securement Competition



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# Improved Passenger Information



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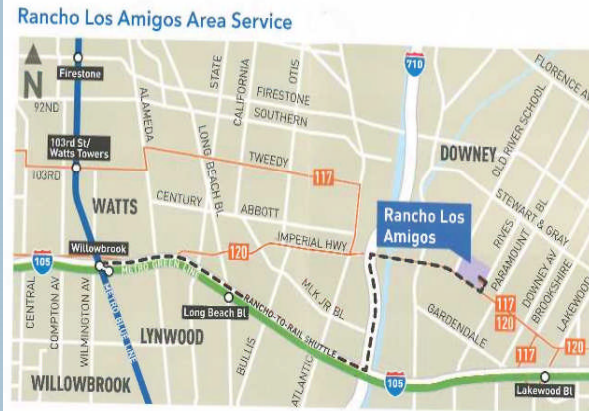




# Rancho Los Amigos Shuttle



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**Rancho-to-Rail  
can get you  
there.** 

Take our free shuttle  
between the Metro Rail  
Willowbrook Station and  
Rancho Los Amigos National  
Rehabilitation Center.

**access**

ho-to-Rail  
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# Outreach Activities



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# Enhanced Operator Accessibility Training



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# First Off - First On



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## Make it a safe trip for everyone.



metro.net

- > Let riders in wheelchairs board first and **exit first**.
- > Please move from reserved and wheelchair seating areas if requested.
- > Bus operators will assist with wheelchair securement; it only takes a moment. Thank you for your patience.



Metro

If you have questions or concerns, call 213.922.6235.

EFFECTIVE 3/2013



Metro





# Next Trip Information Audio



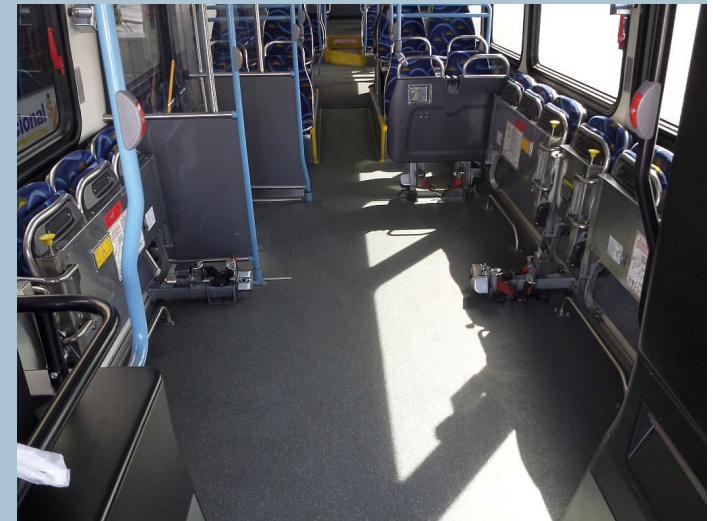
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# Three Wheelchair Positions per Bus



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# Improved Bus Accommodations

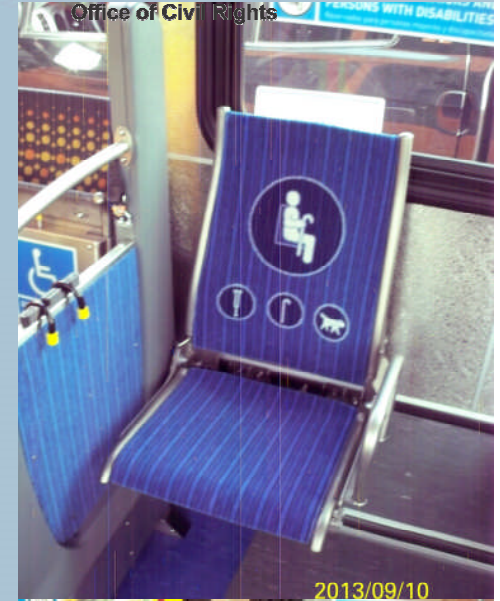
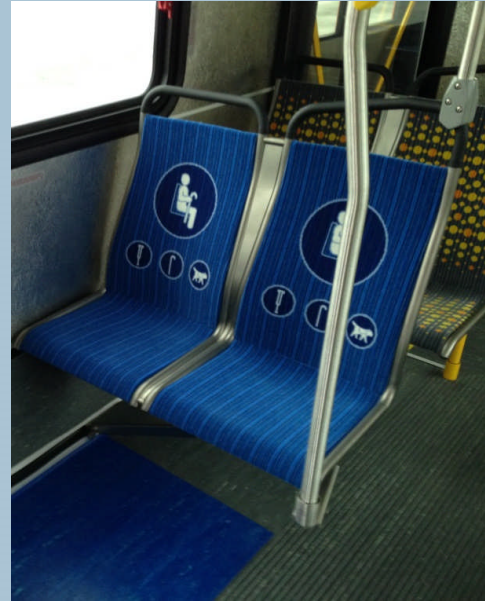


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**RESERVED FOR SENIORS AND PERSONS WITH DISABILITIES**

Reservados para personas mayores y discapacitadas



2013/09/10



2013/09/10



**RESERVED FOR MOBILITY DEVICES**

Reservados para dispositivos de movilidad



**PLACE WALKER HERE**

Coloque el andador aquí



2013/09/10

# Headline



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