

17. TRANSIT CENTERS DESIGN CRITERIA

Omnitrans' routes converge at several major transfer points, hubs where multiple routes converge to allow riders to transfer in a reliable and timely manner from one route to another. As transfers are a critical part of the experience of riding transit, Omnitrans must provide secure, comfortable facilities for passengers to make transfers.

Omnitrans' major transfer points are divided into two different types.

Transit centers are typically off-street facilities that provide timed transfers between many bus routes, multiple providers, and/or bus-to-rail connections. Pomona, Montclair, Fontana, and the planned San Bernardino Transit Center are examples of transit centers that provide connections between multiple bus routes and Metrolink rail service. Chino, Chaffey College, and Yucaipa are examples of transit centers in the Omnitrans system that provide off-street connections between multiple bus routes but not rail.

Transfer centers are generally on-street locations where buses share the road with vehicular traffic, and where transfers are provided between multiple bus routes, usually not timed. Transfer centers are typically located at shopping centers, malls, hospitals, universities, and other major activity centers. Many provide connectivity between Omnitrans routes and other transit services, such as Mountain Transit, Foothill Transit, Riverside Transit Agency, LA Metro, and Metrolink rail service.

Transfer centers include the temporary Fourth Street Transfer Center in downtown San Bernardino, Rialto Metrolink Station, Rancho Cucamonga Metrolink Station, Redlands Mall, South Fontana Transfer Center, and Ontario Civic Center Transfer Center. A transfer center is currently being planned for expansion at Ontario Mills Mall.



Figure 17-1: Examples of Fontana, Montclair and the 4th Street Mall Transit Centers

17.1 Transit Center Location

The ideal location and design for each transit center will depend on its intended purpose. For example, a transit center within a park and ride lot is better situated away from congestion choke points and congested areas but closer to highways and major roads. Transit centers that are intended primarily to provide transfers between different bus lines are better situated close to high activity locations with good accessibility to residential or commercial areas and other bus lines. In general, transit centers are better situated at a central location with a high transfer rate and corresponding high number of boardings, near accessible land uses that support high activity centers and communities.

Placement of transit centers should also consider the following factors:

- Proximity to Central Business District (CBD)
- Urban design issues
- Crossroads of major transportation arteries
- Available infrastructure
- Compatible land uses
- Private development plans

17.2 Sense of Place

Transit centers are intertwined with the adjacent area they serve and are reflective of the local communities. As important assets to the local communities, transit centers should contribute to a sense of place in the communities and can serve as a catalyst for increasing activity and corresponding investment in communities.

Context sensitive design can help create a sense of place, and principles of Crime Prevention through Environmental Design (CPTED), should drive the design of the stations, by providing unique, memorable locations, that provide a sense of comfort and safety to passengers. Omnitrans will work with the local jurisdictions through the design process of transit centers to help achieve these goals.

17.3 Accessibility

A common problem faced in public transportation planning is the “first mile / last mile problem” – when passengers getting off of a bus or a train do not have efficient transportation to get to their final destination, which may be a couple of miles away. Many of Omnitrans’ riders solve the last mile problem by transferring from Metrolink service to Omnitrans service (with a free transfer). Omnitrans is continually improving mobility options and reducing travel times with the development of the sbX bus

rapid transit system, consisting of ten rapid transit corridors that will connect to local routes at major transit centers and transfer centers.

Multi-modal trips are becoming more common in major metropolitan areas, with the prevalence of “car-train-car,” “bike-train-bike,” and “bike-bus-bike” trips. Several emerging trends include locating car share stations or bike share stations at transit centers, as well as bike centers where transit riders can rent bikes short-term, store their bikes in a 24-hour secure facility, or use a shower before going to work.

One of Omnitrans’ goals for its transit centers is to make them more multi-modal, including facilities for pedestrians and bicyclists. 93 percent of Omnitrans’ riders access the bus stop by walking, typically ½ mile each way, and 4 percent of riders access the stop by bicycling (*Omnitrans 2011 Onboard, Access, and Omnmlink Riders Study*). Bicycling is a growing mode of transportation to access Omnitrans’ system. Omnitrans has had two-bike racks on the front of every fixed route bus since 1996, and is currently installing three-bike racks on all buses (by 2013) due to the need for more bicycle capacity on board. The sbX bus rapid transit vehicles (beginning operations in 2014) will hold eight bicycles on board.

Part of the solution to integrate bicycles with transit is to provide a mix of secure and basic bicycle parking at transit centers, transfer centers, and bus stops. At the Chino Transit Center, the City installed bicycle parking racks upon customer request. Some cities, including Montclair, Rancho Cucamonga, Upland, and San Bernardino have provided secure bicycle lockers at Metrolink rail stations. E Street sbX bus rapid transit stations will include bicycle parking racks. The San Bernardino Transit Center (projected to open by 2015) will include a bicycle center with paid staff offering bicycle repair services, short-term rentals, secure

parking, and showers, which is projected to increase the mode share of bicycling to access transit at that location.

OmniTrans and its partner agencies are continuing to search for an optimal combination of bicycle and pedestrian solutions that will improve access to transit. SANBAG, with a grant from SCAG, is currently developing a Transit Access Study with recommendations for solutions at and around Metrolink rail stations and BRT stations that will help to solve the “first mile/last mile” problem of access to transit. The recommendations being developed in that study are incorporated into this document.

In accordance with 2011 guidance from the Federal Transit Administration, FTA capital funds can now be used to fund many different kinds of pedestrian facilities within a ½-mile radius of a transit stop or station, and for bicycle facilities within a 3-mile radius of a transit stop or station. This provides future opportunities for making OmniTrans’ existing and planned transit infrastructure more multi-modal.

17.4 Site Development

Development of selected Transit Center sites includes the following considerations:

- Physical constraints
- Relocation of infrastructure
- Environmental issues
- Intermodal connectivity
- Passenger circulation
- Economic development opportunities
- Safety and security issues

OmniTrans and other local bus providers serve a variety of routes and vehicles. Bus bay and site design should take into consideration:

- The number of routes serving the transit centers, and the number planned to serve in the short and long term.
- The frequency of routes and the potential for increased frequency on the routes
- The type and size of vehicles currently in service, and the potential for sbX services at transit centers
- Storm water retention requirements

At a minimum, design of transit centers includes the following:

- Bus bays for 40’ and 60’ vehicles, depending on future demand;
- Utilities including electricity and water;
- Hose bibs for washing down bus bays;
- Restrooms for drivers;
- Layout that is conducive to slow speeds and pedestrian safety;
- Pedestrian and bicycle connections to the surrounding area;
- Landscaping and trees for shade;
- Shelters for protection from sun, wind, and rain; and
- Security infrastructure, such as cameras, emergency phones, and lighting.

17.5 Amenities

The environment at a transit center is critical to the traveler’s experience. Transit centers must be safe and accessible, as well as provide shelter from the weather, passenger information, restrooms, and other needed amenities.

The following is a full list of amenities that can be provided at transit centers. Future transit centers or improvements to existing transit centers will include some or all of these components.

- **Transit waiting environments** – In close proximity to the bus stop, passengers are in need of shelters to protect them from the sun, wind, and rain. Benches and trash cans are provided. Shelters have lights, sometimes solar-powered and sometimes connected to the grid. The transit waiting environment must be designed with safety and security in mind (high visibility), and must be ADA-accessible, with a wide sidewalk and sufficient space for waiting passengers.
- **Wayfinding signage** – Clear, logical signage using universal symbols is important for directing passengers or the public to various amenities at the transit center site. Wayfinding signage should indicate where parking and drop-offs should occur, where to walk to transfer from one transit route or service to another, where restrooms are located, etc.
- **Real-time arrival information** – By December 2013, information about what time Omnitrans buses will arrive at any stop will be available online, by mobile application, and by phone. Digital signs at transit centers will allow passengers to see what time their connecting bus or train will depart. This enhances the reliability of the system and allows passengers to reduce dead time spent waiting; they can instead use their time to quickly browse a local shop or grocery store, for example, knowing what time they can catch their bus.
- **Transit station building** – The station building provides core functions such as customer service and pass sales, information, waiting areas, and public restrooms.

- **Bike center** – The core function of a bike center is for secure storage for bicyclists who do not want to take their bicycle to their final destination. Typically, 65% of bike center users are also transit users (Source: survey of users of existing bikestations™, Mobis Transportation Alternatives Inc.). Bike centers typically provide parts and equipment for making repairs. Some have staff members who sell bikes, rent bikes, provide valet bike parking, and do repairs. Some bike centers also have restrooms, lockers for personal belongings, and showers.



Figure 17-2: Bike center inside transit center in Downtown Las Vegas.

- **Bicycle and pedestrian facilities** – For passengers who may choose to leave their bicycle near the bus stop, it is important to provide free outdoor bicycle parking at transit facilities and bus stops. Even where a bike center is available, passengers who may not be members of the

bike center may still want to lock their bike to an outdoor rack near the bus stop if the bike rack on the bus is full. Safe pedestrian facilities are also a necessity, including well-marked crossings spaced at a reasonable distance, HAWK signals (demand-response traffic signals) for crossing the street or busway, and wide sidewalks.

- **Kiss and Ride area for drop-offs** – This allows easy access for transit riders to be dropped off by a taxi or in a private car, and allows for van, shuttle, and paratransit services to connect their riders to other modes of transportation.
- **Drought-tolerant trees and landscaping** – Shade trees are essential for providing a livable environment at transit facilities, both for protection from the weather and as a buffer from traffic. The placement of shade trees should be coordinated with security and law enforcement officials to ensure they will not block sightlines; they should also not be located so close to the roadway or busway as to obstruct bus travel.

By using drought-tolerant plantings, transit centers can provide an example for the community of sustainability through low resource use. Informational signage can also inform the public about how some of the sustainability measures used at the transit center can be duplicated at home to reduce one's carbon footprint.

- **Electric vehicle charging stations** – In the future, Omnitrans will use electric-powered buses with 15-minute overhead charging stations at the bus bays. Sufficient space must be provided for electric conversion and storage capacity within 200' of the charging stations.



Figure 17-3: Electric bus charging station at the Pomona Transit Center for Foothill Transit

- **Retail** – Joint development of private retail, dining, or services at transit centers is mutually beneficial for transit agencies and for communities. Transit riders have access to food and services within a few steps of their transit stop; and tax revenues or rent from businesses can help to supplement the cost of building and maintaining transit infrastructure.
- **Solar panels** – Solar panels can serve a multitude of functions at transit centers, from providing overhead shelter for passengers, to powering lights and electronic signage.
- **Public art** – Transit centers are a civic space for the public. Engaging local artists or volunteers to create public art or displays at the transit center can contribute to a sense of place and community ownership of the public space.



Figure 17-4: Omnitrans' vision for solar canopies at San Bernardino Transit Center (Phase II) with mixed-used private development on site (produced by Cooper Carry consulting team)

- **Gateway signage and branding** – For passengers arriving in a city via public transportation, a transit center is a gateway providing an introduction to the city. For this reason, transit centers should provide welcome signage, visitor information, maps, and wayfinding signage to direct passengers to nearby destinations. An electronic or changeable information kiosk is also a useful tool for providing information to visitors, including nearby points of interest within walking distance, information alerts related to the transit center, etc.
- **Security** – Security at transit centers is vital to the experience of the passenger. Transit centers with high levels of ridership typically have one or two security staff people, who also serve as transit ambassadors to provide passengers with directions and assistance. Security cameras are also used throughout the site. Design of the site uses the principles of Crime Prevention Through Environmental Design (CPTED), such as providing clear sight lines for visibility.



Figure 17-5: Gateway signage and public art at Omnitrans bus stop adjacent to Rialto Metrolink station (funded with FTA discretionary funds through Omnitrans in partnership with City of Rialto)

- **Sustainable Transit Centers** – One of Omnitrans' goals for transit centers is to build them Leadership in Energy and Environmental Design (LEED) certified and environmentally sustainable.

17.6 Increasing revenue-generating opportunities at transit centers

Omnitrans' transit centers are major hubs of activity; the busiest hub in downtown San Bernardino currently has over 6,000 daily boardings, and the planned San Bernardino Transit Center will have projected 9,000 daily boardings in 2015 (including Metrolink, sbX, and 13 local bus routes).

With the addition of rail ridership, future bus rapid transit ridership, and foot traffic attracted by other potential uses at the transit centers, these locations provide an untapped market for retail, dining, entertainment, and other uses that could serve

transit riders and other community residents. In turn, uses that attract people to the transit centers and surrounding areas will increase ridership, and provide increased demand for mixed uses in the surrounding areas.

According to Federal Transit Administration guidance, two ways to generate revenues at transit centers include incidental uses and joint development. An **incidental use** is a commercial activity that can take place at a transit facility without interrupting the provision of public transportation services. Common examples are coffee or snack shops and newsstands.

A **joint development** is a major commercial use on or near a transit facility, typically transit-oriented development such as residences, offices, or major commercial buildings, which are partly subsidized by transit funds. The Federal Transit Administration (FTA) must approve a joint development agreement between the transit agency and its private partner that certifies: 1) that the public transit use for the facility is not disrupted; and 2) that the transit agency is getting a fair return on their investment. The FTA has to ensure that facilities subsidized with federal transit funds are indeed being used for public transportation purposes, and that transit funds are not being used to outfit commercial revenue-generating operations.

Another example of a public-private partnership could be the sale of naming rights for a transit center. Omnitrans' current policy is not to name transit centers after local officials so as not to engage in political positioning; the sale of naming rights (such as to a corporate sponsor), however, could help pay for capital or operating costs for the transit center.

17.7 Maintenance of Transit Centers

Transit centers need regular upkeep to reflect a positive image to passengers and provide them with a safe and comfortable

environment. Most transit centers are owned and maintained by the cities they are in.

The following maintenance tasks should be performed at the following frequency, or more often if needed:

- Janitorial – daily
- Power washing of the property - weekly
- Preventive maintenance – weekly, monthly, quarterly, and annually
- Exterior light maintenance – monthly or as needed
- Fire life safety – quarterly and annually
- Clarifier clean-out – semi-annually
- Changing light bulbs – as needed
- Resurfacing – every 3 to 5 years, depending on wear
- Repainting – every 5 to 7 years, or as needed from wear
- Replacing signage – as needed

17.8 Traffic Calming

Definitions of traffic calming vary, but they all share the goal of reducing vehicle speeds, improving safety, and enhancing quality of life. At transit centers, traffic calming measures can be employed to slow down bus vehicle speeds to ensure a safe pedestrian environment. Education and signage controls are one way of achieving this goal, as well as the following design considerations:

- **Speed humps** - rounded, raised areas placed across the roadway. They are generally 10 to 14 feet long (in the direction of travel), making them distinct from the shorter “speed bumps” found in many parking lots, and are 3 to 4 inches high. The profile of a speed hump can be circular, parabolic, or sinusoidal. They are often tapered as they reach the curb on each end to allow unimpeded drainage.

- **Speed tables** - long flat-topped speed humps that slow cars more gradually than humps
- **Raised pedestrian crossings** - Raised crosswalks are Speed Tables outfitted with crosswalk markings and signage to channelize pedestrian crossings, providing pedestrians with a level street crossing. Also, by raising the level of the crossing, pedestrians are more visible to approaching motorists.
- **Chicanes** - Chicanes are curb extensions that alternate from one side of the street to the other, forming S-shaped curves. Chicanes can also be created by alternating on-street parking, either diagonal or parallel, between one side of the street and the other. Each parking bay can be created either by restriping the roadway or by installing raised, landscaping islands at the ends of each parking bay.
- **Raised intersections** - Raised intersections are flat raised areas covering an entire intersection, with ramps on all approaches and often with brick or other textured materials on the flat section. They usually raise to the level of the sidewalk, or slightly below to provide a “lip” that is detectable by the visually impaired. By modifying

the level of the intersection, the crosswalks are more readily perceived by motorists to be “pedestrian territory”.

- **Neckdowns** - As shown in Figure 17-6, Neckdowns are curb extensions at intersections that reduce the roadway width from curb to curb. They “pedestrianize” intersections by shortening crossing distances for pedestrians and drawing attention to pedestrians via raised peninsulas. They also tighten the curb radii at the corners, reducing the speeds of turning vehicles
- **Safe Crosses** - Safe Crosses are similar to neckdowns, except they are located at midblock locations with a crosswalk. They leave the street cross section with two lanes that are narrower than the normal cross section. They are good for areas with substantial speed problems and no on-street parking shortage.
- **Textured Pavement** - Textured and colored pavement includes the use of stamped pavement or alternate paving materials to create an uneven surface for vehicles to traverse. They may be used to emphasize either an entire intersection or a pedestrian crossing, and are sometimes used along entire street blocks.



Figure 17-6: Traffic Calming Neckdown in Yucaipa



Figure 17-7: Potential Safety and Security improvements at existing transit centers includes the use of rumble strips and increased signage

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