GREAT PLACES SW Corridor

What is bus rapid transit?

Bus rapid transit service uses high capacity buses in their own guideway or mixed in with traffic, with limited stops and a range of transit priority treatments to provide speed, frequency and comfort to users. Most stations have significant and easily identifiable passenger infrastructure, including waiting areas that are weather protected. Additional station amenities may include real-time schedule information, trip planning kiosks, ticket machines, special lighting, benches and bicycle parking.

Building a Better Bus

How some cities are tricking out their rapid-transit systems

Most rapid-transit bus systems, especially those that allow riders to pay at the bus stop, outfit their buses with **three or four doors** for quicker loading and unloading of passengers.

Electric-diesel hybrid systems cut emissions and noise.

Some buses include rows of **seats that face** the aisle rather than the front, providing more leg room and wider aisles.

Ned Ahrens/King County

Seattle unveiled its rapid-transit bus lines in 2010 and 2011. Their bright colors are designed to stand out from regular, local buses.

Rapid-transit buses such as those in Los Angeles include **bike racks** on the front of most buses, while buses in Las Vegas include racks inside to stow bikes on board.

Some buses offer free **Wi-Fi** for riders.

Express buses in San Jose, Calif., offer overhead **reading lights.**

Bus systems such as those in San Jose, Calif., and the Kansas City area offer seats with **high backs** for comfort.

Stops on rapid-transit bus systems are farther apart than regular local-service bus routes, cutting commute times by half or more.

MAX rapid-transit buses in Kansas City have **larger windows** than its regular local-service buses. The MAX passenger seats are set higher to give riders a better view.

Kansas City's rapid-transit buses offer **13 inches of leg room** as opposed to 11 inches on regular buses. Buses in San Jose, Calif., include footrests.

Off-board ticketing allows customers to pay at machines at each bus stop. Without needing to pay the driver, riders can board the bus more quickly through any of several doors.

Some systems use **signal priority transmitters** to hold a green light long enough for the bus to get through the intersection. The transmitters can change a red light to green more quickly as a bus approaches.

Systems include **estimated arrival signs** at covered bus stops that estimate the number of minutes until the next rapid-transit bus arrives.

Curb-level boarding ensures the height of the curb at the bus stop matches the bus floor so that riders don't need to scale stairs.

Most bus rapid-transit systems feature a slightly **aerodynamic sleek exterior design** to mimic a train, with a sloped front end.

Dedicated lanes are set aside specifically for fast-service buses on portions of their routes, freeing the vehicles from traffic.

Sources: Transportation districts, Wall Street Journal research

The Wall Street Journal

The Wall Street Journal, "The Commute of the Future," Sept. 27, 2012.

Vehicles

Bus rapid transit vehicles often have a larger passenger capacity than conventional buses and utilize modern designs and special branding to differentiate bus rapid transit from standard local bus service. They often have level-platform boarding and multiple doors to make entering and exiting the vehicles easier and faster. Many bus rapid transit systems use vehicles with alternative fuels and pollutant emissions controls.

Cleveland vehicle (Matt Johnson, GGW)

Vehicle interior

Eugene vehicle

Stops and stations

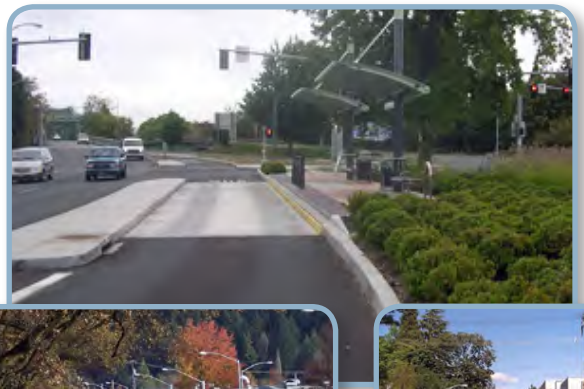
Bus rapid transit stations are generally spaced further apart than standard service stops in order to improve travel time for riders. Stations are typically designed similarly to light rail stations, with features that enhance the passenger experience. These may include enhanced shelters, improved accessibility, improved security elements, and real-time arrival information. Stations contribute to the branding of bus rapid transit systems that distinguish them from standard bus service.

Eugene station and crosswalk

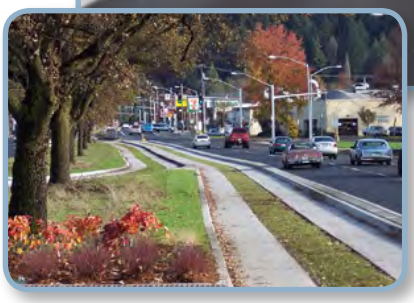
Cleveland's HealthLine (Institute for Transportation and Development Policy; Urban Indy)

Dedicated lanes

Bus rapid transit can operate in mixed traffic, in transit priority lanes or in dedicated transitways. Dedicated transitways operate much like light rail tracks, providing the bus rapid transit with exclusive use of a transit guideway that greatly improves speed and reliability. Transitways could be constructed over long distances or over shorter distances in targeted areas, and could operate in one or both directions.



Eugene dedicated lane and station



Eugene double track median guideway with landscaping

Eugene single track median guideway and station

Off-board ticketing

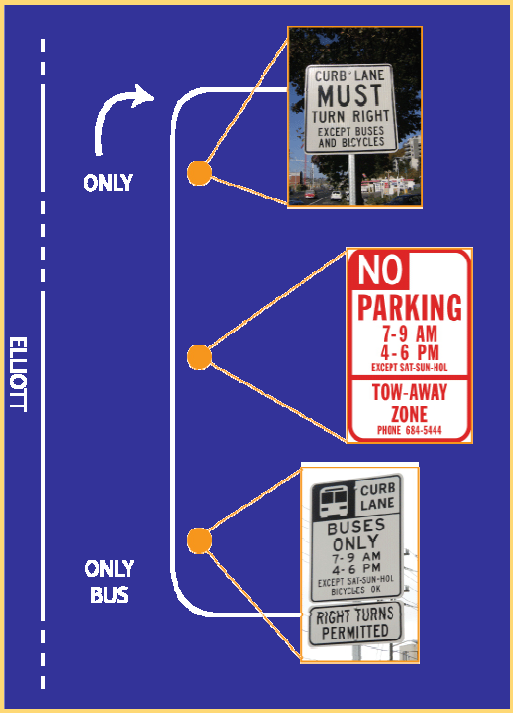
Some bus rapid transit systems include off-board ticketing similar to light rail. Off-board ticketing allows passengers to board through either door, expediting boardings, minimizing vehicle time at stations and contributing to improved travel times and reliability.

Eugene fare machine with emergency call button

Cleveland fare machine (Marvin Fong, The Plain Dealer)

Business access and transit lanes

Transit priority lanes might include business access and transit (BAT) lanes, where buses share the lane with autos turning right at the next intersection or into a business. BAT lanes can operate all-day or only in peak periods. BAT lanes provide auto access to businesses along the route while allowing bus rapid transit vehicles to bypass congestion on the main roadway.



Seattle Department of Transportation

Bus rapid transit in other cities

Boston, Mass.

The Massachusetts Bay Transit Authority's (MBTA) Silver Line in Boston is an example of bus rapid transit in an urban corridor. The Silver Line operates using dedicated transit lines as well as in mixed traffic. In addition, the Silver Line has a 1.5 mile underground segment which includes three underground stations.

Eugene, Ore.

The Eugene Emerald Express (EmX) operates using both separate running ways and in dedicated lanes alongside mixed traffic. The separate running ways account for about 60 percent of the route and consist of exclusive single and dual bus lanes. The remaining 40 percent of the route is dedicated bus lanes, which are at a grade and separated from general traffic by yellow bus lane marking. When operating alongside traffic, the EmX utilizes traffic signal prioritization and queue jump lanes.

Cleveland, Ohio

The HealthLine operates in Cleveland in dedicated bus lanes and uses traffic signal prioritization. In downtown Cleveland, buses run along exclusive lanes in the center of the street.

Las Vegas, Nev.

The Metro Area Express (MAX) in Las Vegas has 4.5 miles of dedicated lanes out of a total route of 7.5 miles. These dedicated lanes are aligned at the curb and shared with right turning traffic. The Strip Downtown Express (SDX) includes the same elements as the MAX plus a central median and dedicated right of way for 2.25 miles.

Los Angeles, Calif.

The Orange Line operated by the Los Angeles County Metropolitan Transit Authority (Metro) is a two lane, fourteen mile dedicated busway. The Orange Line operates using signal prioritization, dedicated bus lanes and uses an existing railroad right of way.

Kansas City, Mo.

The Metro Area Express (MAX) runs on a 6-mile linear route in Kansas City. The MAX operates using bus-only curb lanes during peak hours and full time bus-only lanes in downtown Kansas City. The MAX is also given signal priority during peak hours.