

Nothing Lite About It

If cities want to capitalize on bus rapid transit as an alternative to light rail, they can't go halfway.



Illustration from the Transit Lanes section of the National Association of City Transportation Officials' *Transit Street Design Guide*, published in 2016.

By Jake Blumgart

American cities need new mass transit options. But these days, new federal funds don't look likely. Capital-intensive rail projects are increasingly fantastical in this uncertain environment, and streetcar projects have disappointed in locales like Cincinnati and Washington, D.C. This might explain why more American jurisdictions are looking to bus rapid transit for inspiration.

But crafting a new corridor is no easy task. Transit planners have to contend with an entrenched culture of car supremacy, which means the most important features of BRT are often sidelined.

Some transit experts contend that America has no true BRT, and they fear that the definition of BRT employed by the Federal Transportation Administration and many local transit agencies could result in buses — disappointingly — that aren't much faster than conventional ones.

"What emerged in the U.S. is the notion that BRT is a way of creating nicer, distinctly branded bus services that a more diverse clientele will ride, but didn't include features that might inconvenience motorists," says Jarrett Walker, a transit consultant and author of the popular blog *Human Transit*.

Rapid worldwide adoption

BRT first gained popularity in Latin America as a cheaper alternative to rail projects. The original system emerged in 1980 in Curitiba, Brazil, after a 1970s plan for a light-rail system faltered in the face of staggering capital costs. The model caught on in many poorer, developing nations, thanks in large part to its low cost compared to other transit infrastructure.

Today, BRT is prevalent throughout Latin America, although it is exploding in China and many African nations. The number of BRT corridors worldwide has more than doubled since 2010, and now number more than 200. According to the website Global BRT Data, more than 34.6 million riders climb aboard a BRT vehicle every day.

BRT systems are designed to overcome any prejudice that a potential rider might have against buses. Normal bus routes often hue to meandering paths through neighborhood side streets, stopping every block, and confusing anyone but regular riders. By contrast, BRT systems have clearly defined lines, are color-coded and branded, and are usually placed on central thoroughfares.

The Bus Rapid Transit Standard, as defined by the New York-based Institute for Transportation and Development Policy, outlines the kind of corridor that could serve as a genuine alternative to rail. The buses have a dedicated right-of-way and run along a corridor where interactions with other vehicles are minimal. Automobiles turning across the bus lane should be prohibited, or the buses should at least enjoy signal prioritization at intersections.

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Routes that run along a median are popular, so buses don't have to deal with taxis and other obstructions that pop up at the curb. Customers pay at distinctive stations before they board, eliminating the cumbersome process of lining up to pay the driver and allowing riders to board at all doors. Platforms are level with the bus floor, so buses don't have to hydraulically lower themselves and customers don't have to climb stairs.

All of these features are designed with speed in mind, transforming much-maligned buses into a genuine rapid-transit alternative at a fraction of the cost of rail. A 2012 Government Accountability Office report found that the cost of BRT projects in the U.S. ranged from \$3.5 million to \$567 million, while light rail ranged from \$111 million to \$7 billion.

Global BRT Data reports that in the U.S., bus rapid transit operates in 36 corridors across 21 cities. Construction of new systems is under way in Richmond, Virginia, and in the San Francisco region's East Bay. Eugene, Oregon, is growing its successful BRT in 2017 as well, while serious funding and planning is going into routes in Pittsburgh and Montgomery County, Maryland. BRT is also being studied in Milwaukee, St. Petersburg, Indianapolis, Los Angeles, and Fayetteville, Arkansas. But in Tennessee and Lansing, Michigan, similar proposals have recently met defeat.

What Is BRT?

The Institute for Transportation & Development Policy offers a visual primer on BRT and what makes it work. Visit tinyurl.com/ya6terva.

What's in a name?

As bus rapid transit systems become more prevalent nationwide, there is increasing debate on whether or not these U.S. systems live up to the hype. A full-on commitment to BRT requires sacrifices of automobile infrastructure. For example, to make way for the hugely successful program in Bogotá, Columbia, the city had to remove between two and four traffic lanes from its major boulevards to install the necessary infrastructure. A third of the on-street parking spaces along the BRT corridor were eliminated as well. (For more, see "[Bogota's Central Focus](#)," December 2014.)

But in most U.S. cities, giving up a lane for cars, or a sizeable number of parking spaces, is a sacrifice few, if any, American cities are willing to make. As a result, the majority of the routes that claim BRT status in the U.S. are less robust versions of the world-class systems on offer elsewhere.

The Institute for Transportation & Development Policy's website features a scorecard and metrics to rank whether a system qualifies as BRT. Systems that do are given Bronze, Silver, or Gold status based on their service planning and infrastructure, among other categories. No American corridor enjoys the Gold appellation, a ranking that applies to systems like those in Curitiba, Brazil; Bogota; or Guadalajara, Mexico. The highest scoring U.S. corridor is the Health Line in Cleveland, which gets a Silver ranking.

"A lot of U.S. agencies find [ITDP] irritating because their definition of "Gold" doesn't exist in the U.S. and is rarely politically possible," says Walker. "But there are plenty of Gold BRTs in other countries, and [ITDP] are right to say so."

Sometimes American transit agencies will explain these distinctions away by calling their reforms "BRT-lite." But transit experts like Walker feel that often just means the buses will still be running in mixed traffic, which undermines the image of bus rapid transit as a functional alternative to rail (and robs the word "rapid" of its meaning).

Overpromised, underdelivered

The question is whether using the banner of bus rapid transit is a hindrance or a boon, especially if many systems lack the model's most important features — specifically the dedicated right-of-way and median alignment to minimize interaction with other traffic.

In an interview with *Planning*, Michael Kodransky, director of Global and U.S. Initiatives for ITDP, cites Boston's Silver Line as an example of this tendency to only go part way. The Massachusetts Bay Transportation Authority does not accept IDTP's analysis of their system, noting that the Silver Line proved extremely popular with riders because of its frequent and reliable service. Within one year of opening it became the busiest bus route in the system.

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— Justin Miller, AICP, Pittsburgh's Principal Transportation Planner

"The Silver Line meets the criteria for BRT service," says Joe Pesaturo, a spokesperson for MBTA. "High-capacity vehicles operate in bus-only lanes with traffic signal priority for most of the route along Washington Street. The high-capacity vehicles also operate in an exclusive one-mile tunnel beneath the busy streets of the South Boston waterfront."

But for ITDP, the Silver Line doesn't qualify as BRT because the tunnel Pesaturo refers to is less than 1.2 miles long (Kodransky's group insists that a corridor must have at least 1.9 miles of dedicated lanes). The Silver Line branch on Washington Avenue sports dedicated lanes, but they too are less than 1.9 miles. They are also aligned with the curb, have no physical separation from traffic, and lack intersection treatments, level boarding, and off-board fare collection.

The problem that Kodransky and ITDP are trying to confront is that of diminished expectations. It is hard enough to get Americans to ride the bus as it is. Outside of a few particularly dense urban areas or crowded downtowns, many people consider the bus as transportation of last resort.

One influential 1999 article in the *Berkeley Planning Journal* showed that over the latter half of the 20th century, bus ridership in the U.S. became comprised mostly of racial minorities — rising from 21 percent in 1977 to 69 percent in 1995 — and that the average income of a bus rider was \$20,000 compared to \$40,000 for a rail rider and \$45,000 for a driver. As income climbed, bus ridership declined.

If bus transit is to be seen as more than a social service for the poor, routes need to be reorganized to be more efficient and faster.

Infrastructure needs to be clearly marked, comfortable, and easy to use. Gold-standard BRT could help change the perception of bus travel. But it won't if the riders just see a flashily marketed bus stuck in traffic with everyone else.

Leading the pack

Walker and Kodransky can point to a few American cities that are seriously trying true bus rapid transit, or at least something very close to it.

Cleveland's Health Line looms large in the American BRT conversation. It goes from downtown through the university-medical hub and out to East Cleveland with 5.7 miles of the 6.8 mile-system on a dedicated right-of-way median busway. Opened in 2008, with total capital costs just under \$200 million, the system is ranked so highly by ITDP because of its dedicated right-of-way, level platforms, and a busway that doesn't align with the curb for over half the route. The 58 stations are branded, well lit, and shielded from the elements, offering riders a comfortable place to pay before they board. For all these reasons, The Health Line quickly proved popular: within a year ridership was 47 percent higher than ridership had been on the ordinary bus route it replaced.

According to ITDP's standards, Los Angeles is the only one of America's 10 largest cities with a transit network that has invested in true BRT. Its Orange Line's dedicated right-of-way threads

almost 15 miles through an old rail line. The ITDP rankings only seriously dock the Orange line for its lack of level platforms, which keeps it in the Bronze category.

In the Midwest and Northeast, Pittsburgh is the only other city that can contend with Cleveland as an adopter of something close to the BRT ideal. The existing system boasts three busways, starting with the South Busway that opened in the 1970s. The East Busway followed in the 1980s and then the West Busway opened in the 1990s. All of these lines have dedicated rights-of-way because they were built in old rail beds, minimizing their contact with traffic and intersections. The busways are all ranked as Bronze in the ITDP's scorecard because riders must pay as they board and platforms are not level with bus doorways.

Today, Pittsburgh is embarking on a new addition to this bus system, this time connecting downtown with the bustling hub of Oakland. Currently this dense corridor is choked with traffic.

Many of the ordinary bus lines that serve it are frequently delayed by congestion, resulting in vehicles getting bunched together and terrible on-time records.

Pittsburgh's hilly terrain makes a light-rail solution to this traffic mess more difficult. "Due to topographical challenges and the density in both downtown and Oakland, putting in light rail was going to be in the billions of dollars," says Amy Silbermann, AICP, senior analyst in the Planning & Evaluation Department at the Port Authority of Allegheny County, which runs the Pittsburgh area's transit system.

"We also needed something that would give us the complexity to evolve over time," she says, referring to the fact that BRT vehicles can, for example, serve as rapid transit within their own infrastructure and then transform into normal bus once they reach the end of the line. "With BRT, we have ideas about how to connect it to other services, which would have been much more difficult to do with light rail."

The new Pittsburgh system still isn't full-on BRT — there are two branches that will enter mixed traffic beyond the central corridor, but it will be very close.

Most importantly, it will do something that the extant Pittsburgh busways have not had to grapple with before: It will repurpose car lanes to give them over to the buses.



The world's longest aerial bike lane opened in Xiamen, China, in April. It winds for 7.6 kilometers underneath that city's elevated BRT line. The separated multimodal approach helps to keep cyclists sheltered from sun and rain as they ride safely above the automobile traffic below. Photo by Top Photo/Alamy Live News.

"We are pushing for dedicated lanes in some really tough sections that are congested now," says Justin Miller, AICP, Pittsburgh's principal transportation planner. "We are being pretty firm about getting the designated transit lanes where some other cities have conceded to mixed traffic. And right now, we have the political support to do those tough pieces."

Indeed, Pittsburgh is well situated to confront backlash from car advocates. Its mayor, Bill Peduto, enjoys a sterling reputation among urbanists and is still very popular going into his race for a second term. The debate around the new BRT line may be less fraught than it would be elsewhere because the city already enjoys several popular rapid bus lines, daily bus ridership of 180,000, and a diverse ridership in terms of income (a recent ridership survey showed over 40 percent of riders reported making over \$50,000 a year).

The question of funding still hangs over the project, even though the cost — estimated at between \$200 million and \$240 million — is comparatively modest for new transit infrastructure. They are aiming for a 50 percent federal share, with state and local funding making up the rest.

What's next?

Kodransky hopes BRT policies will become more popular as cities and states realize that federal largesse will not be forthcoming. Bus improvements and BRT routes are a solid alternative to jurisdictions seeking to target their scarce resources at more modestly priced innovations.

A November 2016 ballot measure in Indianapolis is seen by many transportation experts as evidence that the BRT concept is finally taking off. In that case, voters approved a 25-cent increase in income tax for every \$100 earned. The expected \$56 million in new revenue will be directed toward increasing service across the existing bus system and to the construction for a real BRT line, with its own dedicated lane and trainlike stations where fares will be paid.

Meanwhile, for cities that are building out or enhancing their bus infrastructure without going full BRT, Kodransky merely asks that they choose a different moniker.

"We don't think it sounds very good for a city to be promoting the idea that they are getting something less than the best," he says.

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