



Planning — May/June 2011

Now Boarding, the 5:15 Express

Bus rapid transit could be the economical answer to light rail.

By Darrin Youker

It's the evening rush hour in downtown Cleveland, and the HealthLine bus pulls up to a sleek, modern station on bustling Euclid Avenue. The stop is brief — subway stop brief. In less than 30 seconds, passengers have gotten on and off and the bus has pulled away. Unlike a typical city bus, there is no line for the fare box. Passengers pay their fare and board from a slightly elevated loading platform something like the platforms made famous by the express buses in Curitiba, Brazil. In seconds, the 100-passenger bus revs up and heads east on Euclid. It occupies a lane that is reserved for express buses.

To many observers, this is the future of public transit.

Dubbed bus rapid transit, or BRT, this urban transportation mode is designed to look and feel much like a light-rail system, but without the heavy start-up costs. Rush hour headway (the time between buses) on the HealthLine, operated by the Greater Cleveland Regional Transit Authority, is less than five minutes, and the line runs around the clock. Industry experts call Cleveland's system the "gold standard" of BRT services. The HealthLine, named by the medical institutions that helped pay for the system, runs for almost seven miles through the heart of the city: through downtown, University Circle, Uptown, and finally the suburb of East Cleveland. A point-to-point trip takes about half an hour.

While BRT is a relatively new idea in the U.S., the service is a good fit for many American cities, says Robert Cervero, a professor of city and regional planning at the University of California, Berkeley, who has studied BRT in Brazil and elsewhere. Because American cities have grown with automobile travel in mind, BRT service can be more easily incorporated than light-rail lines, he says. "I think it is the right technology. It's not the flavor of the day," he adds, referring to the buzz surrounding other new transit trends. "It's a meaningful response to emerging transit needs."



Leading the pack

Cleveland's RTA took what was a crowded urban bus line and gave it a \$200 million upgrade, eliminating 40 stops, putting fare payment boxes in each station, and giving the bus its own traffic lane and signals. Joseph A. Calabrese, chief executive officer of the RTA, says building a comparable light-rail system would have cost \$800 million. "We tried to design the vehicle to look more like a rail vehicle," he adds, "and the result has been beyond our expectations." HealthLine uses 24 RTVs (rapid transit vehicles), manufactured by the Canadian company, New Flyer.

For the better part of 20 years, Cleveland faced a conundrum on Euclid Avenue. The city's two major employment centers and destinations — downtown to the west and University Circle to the east — are located eight miles apart on either end of Euclid.

In the 1980s, voters approved a bond issue to pay for a subway system that would run below Euclid. And soon after, the RTA began running light-rail service along an existing freight corridor that brushed by, but never touched, Cleveland's downtown. According to Calabrese, the subway plans never got past the idea stage and the city was left with heavy congestion along the corridor. The existing buses carried more passengers than any in the system, but service was slow, with 100 stops along the way.

In the late 1990s, city officials began to talk about BRT as a possible solution, based on the articles that were then coming out about successful efforts in several South American cities, including Curitiba and Santiago, Chile. At the time, says Calabrese, the U.S. Federal Transit Administration was looking for cities to take part in transit demonstration projects. Cleveland applied for funding for a BRT line and was accepted.

Then it came time to work out the logistics. The RTA's plans called for a major reconstruction of Euclid Avenue, including relocating utility lines and carving out dedicated bus lanes in each direction, says Robert Brown, AICP, director of Cleveland's planning department. The agency took what was a four-lane road and limited auto and truck traffic to one lane in each direction to make way for the bus lanes. "We had to leave room for a center loading platform and for bike lanes. To get those things we had to narrow the median and the sidewalks," he says.

During the design phase, the RTA worked with countless businesses, churches, and residents along an eight-mile stretch of Euclid, says the agency's planning director, Maribeth Feke, AICP. Many businesses expressed concern about the possible loss of parking spaces and of loading zones. To allay their fears, she says, "we had to do traffic model after traffic model after traffic model." In some cases, proposed stops were moved and new driveways were added.

In the end, the RTA, with the assistance of the city planning office, designed a bus lane that followed a ribbon-flow traffic pattern, which means that the bus lane can be on either the right or left side of the median, depending on the location of the stops. It was a move that many did not think possible, Feke says. Cars are prohibited from traveling in the bus lanes. Throughout most of the corridor, the BRT stations are in the center of the median, with the bus lanes on both sides. Every station was built with a fare vending machine, and riders are expected to purchase bus tickets before boarding, which saves valuable time, says Calabrese.

Since the line opened in 2008, there has been \$4 billion in new development along the Euclid Corridor, Calabrese says. Not all of that activity can be attributed to the BRT line, Brown notes, but the city's infrastructure investment showed the development community that Cleveland had its welfare at heart.

Now let's take a look at some other cities that have put their faith in buses.

From Albany to Schenectady

For decades, public transit in New York's capital region has revolved around the bus system, which links Albany and Schenectady along a 17-mile stretch of state highway. But officials at the Capital District Transit Authority knew they needed something better to serve workers heading to government jobs in Albany and a General Electric plant in Schenectady, and customers of several regional shopping centers in between. For the past eight years, the CDTA has been considering various alternatives, including both a light-rail line and express buses, says executive director Carm Basile. Eventually, light rail was ruled out because of the cost of construction and the uncertainty of funding. BRT made the most sense, he says. "It's right for our community."

In April, CDTA opened the region's first bus rapid transit line. The first step was to cut the bus stops from 90 to 18. As in Cleveland, riders pay their fares before they board on the right-hand side of the street. The system will eventually have its own signals, says Basile, but not its own bus lane. The corridor's configuration is too tight for that.

With the system up and running, the CDTA is now involved in a marketing push to attract riders, particularly weekend shoppers, Basile says. "What we are trying to do is provide a good quality service and give residents more choices. We want to talk to people who might not ever ride the bus" about how good it can be.

Making the BRT line a reality took the coordination of two counties and three communities, says Douglas Melnick, AICP, director of planning for the city of Albany. "It was very complicated, just the

sheer logistics of dealing with so many stakeholders," he says. "It was a large, regional planning process."

Albany has also paved the way for transit-oriented development along the BRT line. Last year, says Melnick, the city added an overlay district to its zoning amendment that allows mixed use development along the city's central corridors. That made the area more attractive to potential developers. "We are still an auto-oriented city and region, and many of the problems in our area revolve around transportation issues," he says. "But this is a step in the right direction."



Through the heart of Pittsburgh

Downtown Pittsburgh and the thriving Oakland neighborhood are only three miles apart. But those three miles are filled with housing, employment centers, universities, and civic organizations. In short, they are the heart of the city.

More than 110,000 people work downtown, and half of them commute by bus or commuter train, says Wendy Stern, assistant general manager of planning for the Port Authority of Allegheny County, which operates the region's transit system. Nearly 35 percent of the bus commuters come from the Oakland neighborhood.

As part of a comprehensive study of the entire transit system, planners identified the downtown-to-Oakland link as being in dire need of an upgrade. As in Albany, light rail was deemed too expensive and too time-consuming. So the port authority decided to move ahead with a BRT line in the corridor, which is now in the design phase. Pittsburgh already has tunnels that are used by both buses and light rail for congestion mitigation.

Last year, Sustainable Pittsburgh, a nonprofit group that encourages smart growth in Southwestern Pennsylvania, hosted a BRT forum that drew stakeholders from 25 different organizations. They asked numerous questions about how the project would operate, what it would do to alleviate traffic congestion, and how it would create more sustainable communities, says Court Gould, the organization's executive director. The port authority is now interviewing contractors to perform the alternatives analysis and environmental studies needed to satisfy Federal Transportation Administration requirements. The studies, expected to take 18 months, will help the authority define the corridor and determine the best level of BRT service.

The authority is also planning to buy new buses and to build new stations. "We want to show people that this is a comfortable way to travel," says Stern. "We want it to look and feel different."

Looking ahead

Cities across the country are looking to bus rapid transit to solve the problems of attracting new riders to public transit and reducing congestion in urban centers. The idea is being promoted by the Federal Transit Administration through its New Starts Program, which provides funding for transit projects such as BRT and light rail.

What makes BRT service attractive is its relatively low cost and flexibility, says Dennis Hinebaugh, director of the National Bus Rapid Transit Institute, part of the Center for Urban Transportation Research at the University of South Florida in Tampa. "In general it is a much cheaper alternative

with similar benefits. It is quicker to implement. You don't have to rip up the streets, and you can build incrementally." Moreover, transit agencies can choose a less expensive option, or they can go first class, with more high-end features. "I think people are looking to get the best bang for the buck," he says.

Still, BRT must face the issue of image. Light rail continues to be more popular than the traditional city bus, so BRT lines need to look and feel different, Hinebaugh says. And that is where much of the research is focused — how to make the ride mimic the feeling of being on a train.

"We recognize that we are competing with the automobile," says Cheryl Thole, a senior research associate with the National BRT Institute. "And BRT has the ability to attract people who are not used to using transit."

Slow Down for High Speed

The future of high-speed rail in America is very much up in the air. While the Obama administration has proposed spending \$53 billion over a six-year period to upgrade the nation's rail infrastructure, several states have rejected federal dollars to fund track upgrades.

Three governors, all Republican, have already turned down the funds. The latest is Florida Gov. Rick Scott, who returned \$2.4 billion in federal funding to connect Orlando and Tampa by high-speed rail. He was concerned, he said, that Florida taxpayers would be on the hook if private investors did not come forward. "I don't want our taxpayers to fund that," Scott told Bloomberg News. The news service also reported that Scott, during his election bid last fall, dismissed the project as "ObamaRail."

Wisconsin Gov. Scott Walker gave back \$810 million in high-speed rail funding, saying taxpayers in the state would have been on the hook for \$7.5 million in operating subsidies. And in Ohio, the federal government took back \$400 million that would have connected four major cities in the state by high-speed rail.

Some advocates believe, however, that Florida and the other states are shortsighted in rejecting the federal share. "Building high-speed rail in Florida will deliver inexpensive mobility, encouraging more travel and tourism, a major real estate recovery, and tens of thousands of new jobs," the U.S. High Speed Rail Association contends on its website.



Florida's high-speed line would have connected Orlando and Tampa, with a train capable of reaching 168 mph. The line would have run along Interstate 4, on land largely owned by the state, according to the New York Times. Florida Gov. Scott said he was concerned about the state being responsible for some \$300 million in operating subsidies over the the next decade.

Advocates counter these concerns by noting that an electrically powered rail system could help the nation become more energy-independent. "Given the upheaval in the Mideast and the cost of gas, these lines could be worthwhile investments," says Robert Cervero, a professor of city and regional planning at the University of California, Berkeley. In his view, high-speed rail would do a better job of connecting urban centers than air service. A connected high-speed rail infrastructure would create vital urban centers, and as a result, jobs, he says.

The problem, he adds, is that high speed's economic benefits are not immediately apparent to the public. "You may not get those downstream benefits for 10 to 15 years. And our political system doesn't allow for such long-term industrial policy and planning."

Image: "Not now, too costly," say some U.S. governors. This Automotrice à grande Vitesse (AGV) high speed train is being tested at the Velim railway test circuit in the Czech Republic. Photo Miroslav.broz;CC.org/by-sa/3.0/deed.en.

Darrin Youker is a reporter in Reading, Pennsylvania.

Resources

Images: Top — Cleveland's bus rapid transit, or BRT, is designed to look and feel much like a light-rail system, but without the heavy start-up costs. Photo Greater Cleveland Regional Transit Authority. Bottom — New York's brand-new BusPlus makes few stops on its 17-mile run between downtown Albany and downtown Schenectady. Comfortable stations are located at the 18 busiest stops. Photo Capitol District Transportation Authority.