

New development hugs the tracks along the LYNX light rail line in Charlotte, N.C.

DIRECTING == TRAFFIC ==

Development patterns and other factors have shaped transportation options in the Fifth District.
Where does rail transit fit in?

BY CHARLES GERENA

It's the middle of the morning rush in Charlotte, N.C. Within earshot of the roar of traffic from Interstate 485, an electric train quietly pulls into the last stop on the LYNX, the Queen City's light rail line.

The silver and blue train fills up quickly. Some passengers are dressed in business attire, making their way to jobs less than half an hour away in Uptown Charlotte. Others are heading to the courthouse or one of the other government offices near the central business district.

People have their reasons for riding the LYNX — or any other train — instead of joining the masses on the interstate. For policymakers who envision the economic and environmental benefits of rail transit, the challenge is in expanding ridership beyond this customer base. They believe it is worth the investment of taxpayer money to expand transit service over the long term and attract more of the so-called “choice riders” who can be enticed into leaving their cars at home.

In recent decades, that has usually meant building light rail systems with streetcars or two-car trains. These systems typically carry fewer passengers than a subway and travel at grade level over a semi-exclusive right of way. They usually run on electricity, so trains whir by like a spaceship.

Baltimore built a 30-mile light rail line in the 1990s to connect the city's downtown to the surrounding suburbs. It took more than a decade for the Fifth District to develop additional light rail options: the LYNX in 2007 and the Tide in Norfolk, Va., in 2011. While it's too early to judge the success of either effort — especially since each is much smaller and younger than Baltimore's system — both have managed to attract a growing number of passengers.

Thus far, however, the LYNX's ridership growth has been outpaced by the growth in population in the surrounding city and metropolitan area (see adjacent chart). This record highlights the challenges of introducing a rail system into a metro area with a widely dispersed population that

PHOTOGRAPHY: JAMES P. KARNER

has been traditionally served by automobiles and buses.

“The one thing about the South that is especially challenging is that we don’t have dense development,” says Stephen Billings, assistant professor of economics at the University of North Carolina at Charlotte. Billings has studied the impact of the LYNX on surrounding property values. “Density is a huge component of the success of transit. If you look at the transit investments throughout the South, they have more limited impacts because they just can’t serve as many people for a given route.”

Critics of mass transit believe federal funding encourages policymakers to improve a regional transportation system using the most expensive rail options, even when they aren’t the most appropriate given the region’s development patterns. Instead, more time and money should be spent on improving bus service and modernizing roads.

Many Modes, Many Reasons

The choice of transportation mode partly depends on how one values time. For example, rather than drive 10 minutes to a downtown campus, a college student may take 30 minutes to walk to a bus stop, wait for a bus, and travel to school to avoid paying hefty parking fees. A banking executive may not mind being stuck in traffic for 45 minutes because the evening commute provides an opportunity to unwind.

Unforeseen circumstances can also dictate one’s choice of transportation. David Hartgen, a transportation consultant and senior fellow at the libertarian Reason Foundation, believes that mass transit primarily offers mobility to those who find themselves with no other means of getting around. This captive market changes over time.

“Most transit systems have 30 to 40 percent turnover in ridership every year,” says Hartgen. “Fixed systems don’t work nearly as well in that kind of churning market environment. Bus systems are much more flexible.”

Finally, and most important, transportation preferences depend on how real estate development has occurred in a metropolitan area. Generally, the more people who choose to live and work along corridors, the better high-capacity transit options like trains perform and the worse automobiles and interstates perform. If residential and commercial development is spread out and not in clusters that can be linked together, then rail transit has a harder time getting people out of their BMWs and Darts.

Development patterns have shaped the transportation options available in the Fifth District, says Adie Tomer, a senior research associate and associate fellow at the Brookings Institution. Tomer studies transportation infrastructure in metropolitan areas. “For centuries, the Southeast had a more rurally driven economy and more land-intensive industry than its northern neighbors,” he says. The region became more industrialized at the same time that the automobile started influencing the development of its metro areas. Also, land was plentiful, making it “very easy to institute sprawling development” that favors automobile travel.

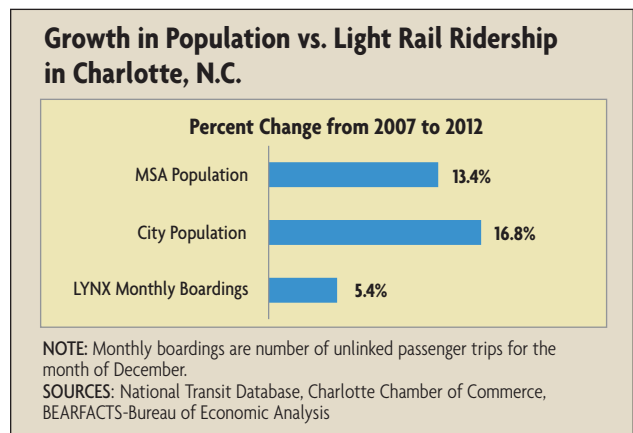
As a result, buses blanket the sprawling metro areas south of the Mason-Dixon Line. Bus routes are not fixed, which enables transit operators to respond to shifting population patterns. In contrast, higher capacity, fixed-route subways like the Metro in Washington, D.C., and commuter rail systems like the MARC in Baltimore link together the more densely populated metros north of the Mason-Dixon.

At one time, it wasn’t government transit agencies that responded to changes in transportation needs. Most urban transit systems were privately owned and operated, from the days of horse-drawn railcars in the mid-1800s to the advent of electric streetcars in places like Richmond in the late 1880s to the bus systems that replaced streetcars after World War II. Government involvement primarily came in the form of awarding exclusive franchises to private operators in exchange for some oversight.

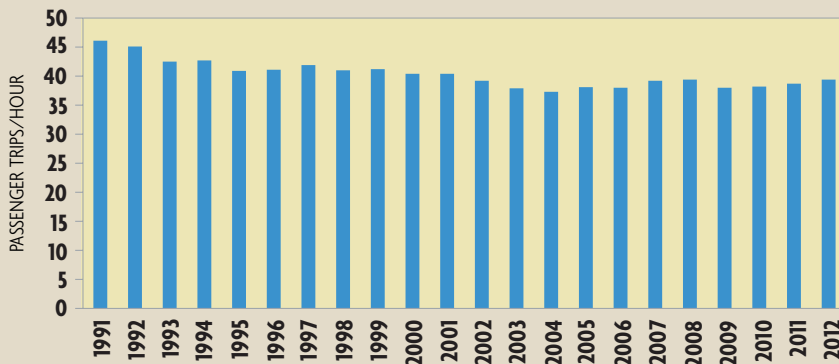
Over the years, private operators went bankrupt or sold out to state and local governments as the interstate highway system and the population flight to the outer suburbs eroded ridership on buses and trains in inner cities. When Congress passed the Urban Mass Transportation Act of 1964 and a similar funding bill in 1970, billions of dollars became available to help cover the cost of mass transit systems, primarily capital expenses. This supported state and local governments as they took over private operators.

The influx of federal money had another unintended consequence: It encouraged governments to favor transit projects with higher capital costs, namely rail lines. In contrast, bus lines have lower capital costs.

Light rail has been favored over buses for another reason, according to Randall O’Toole, who has studied transportation issues at the free-market-oriented Cato Institute. O’Toole says policymakers have expanded transit services beyond urban neighborhoods where people have traditionally used them in order to justify taxing suburbanites for transit. But ridership has not increased as quickly as service has expanded, pushing down the number of passengers transported per vehicle hour (see chart on next page). Rail advocates have argued that in order to attract choice riders who don’t ride the bus, governments need to build fixed route systems like bus rapid transit and light rail that are grade-separated from traffic, have covered stations, and are



U.S. Mass Transit Usage



NOTE: Passenger trips/hour refers to unlinked passenger trips per vehicle revenue hour, a count of the number of people who boarded a mass transit system for every hour that the system was in service.
SOURCE: National Transit Database

served by shiny new vehicles.

UNC Charlotte's Stephen Billings agrees that while buses are more flexible and cost-effective, there is a cultural bias against them. "Buses are considered an inferior type of transportation. They have a perception of being dirty or dangerous," he notes.

Also, bus service isn't as efficient in metropolitan areas that are less dense, since longer and more frequent trips through neighborhoods are required to provide adequate service. "If it's more than a 15-minute wait between buses or stops are more than half a mile away," says Billings, "that is a big deterrent to taking a bus."

The flexibility of a bus system also means that stops — and paying customers — can be moved out of a neighborhood. As a result, businesses may be less willing to invest in new development along a bus route. In contrast, "if you have a light rail line, they know it's not going to change," says Billings.

Transit as Economic Driver

The promise of rail transit as an economic driver is one of the reasons Charlotte and Norfolk developed their light rail systems, even though both cities are significantly less dense than Baltimore or Washington, D.C. (see adjacent chart). Policymakers hoped that trains would spur new residential and commercial development.

Recent research has indicated a positive relationship between a stop on a transit line and surrounding land values in some cases. Billings points to the potential of agglomeration economies, whereby a certain level of density results in real increases in economic activity. For example, a young couple may view the combination of restaurants, apartments, and a light rail stop within walking distance as an attractive option. "The question is does [rail transit] investment spur enough concentrated development that leads to substantially more?"

Indeed, the effects of mass transit on development have been found to be relatively modest and limited by distance. Furthermore, land-use regulation usually has to be changed

first to support transit-oriented development.

Norfolk was in a unique position to encourage economic development along the 7.4 miles of its Tide light rail line. Urban renewal efforts of the 1950s and 1960s left a blank slate from which to redevelop most of its downtown, including empty lots around the Tide's stations. Officials have rezoned that land to support denser, pedestrian-friendly development.

In Charlotte, city planners worked with officials in Mecklenburg County and six town councils to create special zoning districts around the stations on the first leg of the LYNX light rail system, the Blue Line. Each new development in a district must meet a minimum level of density and be walkable and attractive. At the same time, the city upgraded sidewalks, installed new light fixtures, and improved

roadways in the districts.

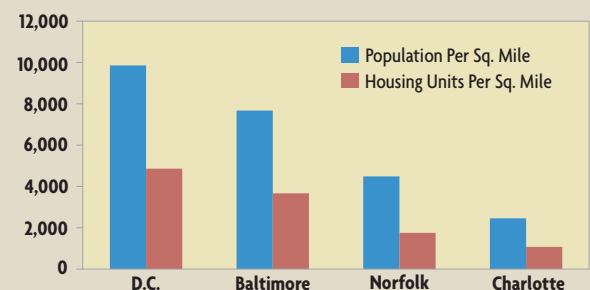
So far, investors have ponied up \$288 million to build residential, retail, and office space around the Blue Line's stations from 2005 to 2013, while another \$522 million of development is under construction. Just a quick glance out the window of the LYNX confirms this rush of activity.

The view changes quite a bit as you travel the 9.6-mile length of the Blue Line, however. Most of the development has occurred around the seven northernmost stations in Charlotte's central business district and South End, a revitalized industrial section of the city flanked by stately 19th and 20th century homes. Modern condos and upscale restaurants hug the train tracks, separated only by a black fence and a paved walking path. In contrast, not much new development has occurred on the south end of the Blue Line. The LYNX shares the tracks with freight trains and is surrounded primarily by residential neighborhoods and clusters of industrial and low-density commercial development.

Billings published a paper in November 2011 that compared residential and commercial development along the Blue Line with development activity along alternative alignments that weren't selected. He found that while the presence of the light rail line had a small impact, "it's definitely not as big an impact as it first looks."

The LYNX may look good when you compare property

Densities of 5E Cities with Rail Transit



SOURCE: U.S. Census Bureau

values and the amount of new development along the Blue Line with the rest of the city. But its route “was picked for a reason — it was an area that had potential,” says Billings. “Maybe all we’re seeing is people investing in a place that was doing well anyway, and if you hadn’t invested in light rail, it would have been the same story.”

The Institute for Transportation and Development Policy, a nonprofit that works with cities to develop transit systems, recently released a report that examined the development potential of streetcar, light rail, and bus rapid transit systems in 13 cities, including Charlotte. The report found that the marketability of the land along transit corridors and government support were the most important determinants of development.

“Some transit corridors were able to stimulate really high levels of development and other corridors stimulated almost none,” says Annie Weinstock, a co-author of the report. “It’s not like you build mass transit and then you have development. There are a lot of things that have to come into play.”

Directing growth along corridors and clustered around stops on a light rail line requires a lot of work, especially in the short term. And not every lever that steers economic development is under the control of government planners. For example, banks have to be willing to fund transit-oriented development projects. So, expectations should be set accordingly.

“Too often people expect a mass transit investment to do a lot more than it is designed to do,” explains Weinstock. “It can have other benefits in terms of linking communities, changing the character of a street, and helping to stimulate transit-oriented development. But the main thing that mass transit does is provide a better and shorter trip for the most people possible.”

If rail transit provides a viable alternative for the millions of people who can’t drive to work, it could be an economic driver in another way. It can help reduce labor market frictions by connecting workers in or near a metro area’s urban core with the employers in the suburbs who need their skills.

A 2012 study by Adie Tomer at Brookings found that 72 of the nation’s 100 largest metropolitan areas have more jobs in the suburbs than in their central cities. Yet only 64 percent of suburban jobs — and only 52 percent of jobs in southern suburbs — are accessible to mass transit.

Transit as Traffic Decongestant

Finally, by offering alternatives to driving, rail transit promises to help relieve traffic congestion in a metropolitan area. In turn, this can have environmental benefits and reduce parking and travel delays.

The key is to draw a sufficient number of drivers off of roads. Buses and trains consume their share of fossil fuels — even electric ones do so indirectly — so they have to carry enough people to generate a lower amount of pollution per commuter than individuals traveling by themselves on interstates.

Some transportation researchers aren’t convinced that transit projects can reduce congestion. Erick Guerra, an assistant professor of city and regional planning at the University of Pennsylvania, points to the same problem that arises when roads are expanded to serve densely populated areas. As you improve travel conditions, the freed up capacity fills up quickly. “Someone leaves for their commute at 7 a.m. instead of 6:30 a.m. because the road is less congested,” says Guerra. “It winds up getting as congested as it was before.”

Congestion on the interstates that parallel Charlotte’s and Norfolk’s light rail lines continues to be a problem. Upon first glance at traffic counts at various points, one wouldn’t see much change. Of course, there is no telling whether those counts would have gone much higher in the absence of light rail.

Guerra believes a better alternative to mass transit is better management of traffic via congestion pricing of roads. “Even though drivers are spending a lot on their cars, they are not spending anywhere near the cost of the land that they are traveling on,” he notes. Current user fees barely cover road maintenance, so a lot of the money comes from general taxes that everyone pays. The problem with that approach is “if you drive on local roads 100 miles a day, you’re paying the same amount for those roads as someone who doesn’t drive at all.”

It may sound like Guerra and other researchers are against rail transit in general. In fact, recent research has indicated that transit is neither the cure-all nor the debacle it is often portrayed to be. Rather, transit is an option that can make a difference, if it is developed in the right place and part of a comprehensive effort to improve the accessibility and efficiency of a region’s transportation infrastructure. **EF**

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