



Amtrak's Acela Express is the only high-speed rail service in the United States, linking Boston, New York, and Washington, D.C.

Optimism meets reality in the pursuit of high-speed passenger rail in the Southeast

BY CHARLES GERENA

Nov. 8, 2000: The ALLTEL Pavilion at the Siegel Center, a Richmond, Va., venue that usually hosts rock concerts and college basketball games, has a different crowd of fans today. Their attire is more formal — the suits and ties of business leaders and government officials — but their enthusiasm is just as high. They want to bring high-speed passenger rail to the Southeast.

“We no longer recruit on the strength of our work force and manufacturing base. The way to sustain our prosperity is related to the quality of life, of which intercity rail is a pivotal part of the equation,” declared David King, deputy secretary for transit with the North Carolina Department of Transportation (NCDOT). José Covington, a travel industry executive and chair of the committee that organized the conference, was equally enthused: “The cornerstones of success for rail transportation are economic development and quality of life.”

At the time, the country was flush with budget surpluses. There were no soldiers fighting in Iraq or workers rebuilding a hurricane-ravaged Gulf Coast. It was an opportune time to push for federal funding of 10 regional high-speed rail systems designated by the U.S. Department of Transportation since 1992.

One of the systems was the Southeast High-Speed Rail Corridor, which would link dozens of cities between Washington, D.C., and Jacksonville, Fla. Stops would include Richmond and Petersburg in Virginia; Raleigh and Charlotte in North Carolina; and Spartanburg and Columbia in South Carolina. With Washington as the connection point to Amtrak's popular Northeast service, the Southeast corridor was touted as the one that could generate the most revenue from passenger fares.

Six years later, however, there is no federal source of capital funding for any of the 10 proposed corridors. Rather

than wait for Congress to act, individual states slogged ahead. They spent billions of dollars to study the feasibility and environmental impact of high-speed rail and to improve existing rail infrastructure. The Federal Railroad Administration has provided oversight and some planning and preconstruction grants, including \$2 million to Virginia and North Carolina.

The two states, working under an interstate compact since 2004, are developing segments of the Southeast corridor between Washington and Charlotte. So far, their transportation departments have completed several preliminary studies and are in the midst of examining proposed routes for the Richmond-to-Raleigh segment. In addition, they have spent or committed more than \$300 million of their own money to modernize existing tracks in the Washington-to-Richmond and Raleigh-to-Charlotte segments. These improvements will benefit current passenger and freight service, but they will

also support faster train service in the future. South Carolina and Georgia have completed feasibility studies on their segments, but they aren't as far along in the process.

It will take time to create a better rail alternative to air and road travel in the Southeast. The earliest that high-speed passenger service could possibly be operational between Washington and Charlotte is 2012, then it would be extended southward. It will also take a lot of money — around \$5 billion by some estimates. Complicating matters is the lack of enthusiasm among freight railroads about sharing their tracks with high-speed trains or footing the bill for infrastructure upgrades.

Rail advocates believe the deciding factor will be getting Uncle Sam to pitch in. "The states are already committing significant sums to develop their rail systems," says David Foster, rail environmental programs director for NCDOT's rail division. "We are just asking for the same federal partnership we have with highways and airports." Federal cost-sharing on major transportation projects historically has been as high as 80 percent.

Yet it appears that the states are no closer to their goal. Several high-speed rail bills languish in legislative limbo despite the lobbying of groups like the States for Passenger Rail Coalition. The enthusiasm on display in Richmond six years ago has been tempered by political, logistical, and economic questions about high-speed rail.

To secure any federal assistance, rail planners will have to show that the Southeast corridor will yield public benefits and help pay for itself like toll roads and airports are expected to do. But it's unclear how much demand exists for passenger rail service. For the type of medium-length trips that would be the staple of the Southeast corridor, most people prefer to either drive or fly. And, for lower-income passengers, bus service remains relatively popular.

Will a significant share of those people make the switch to rail? Many economists and transportation experts are doubtful. Amtrak has been unable to gain much market share in this

region and operates habitually in the red. In addition, private companies have been reluctant to fund similar projects. High-speed rail in the Southeast may sound good to some policymakers, but it's not clear that it can pass the market test.

One Rail at a Time

Planners of the Southeast High-Speed Rail Corridor want to make infrastructure improvements that will gradually, yet meaningfully, reduce travel times for intercity passengers. They hope that if rail becomes competitive, some of the travelers who drive or catch a flight will board a train instead. This would contain the growth in congestion on interstates and at hub airports.

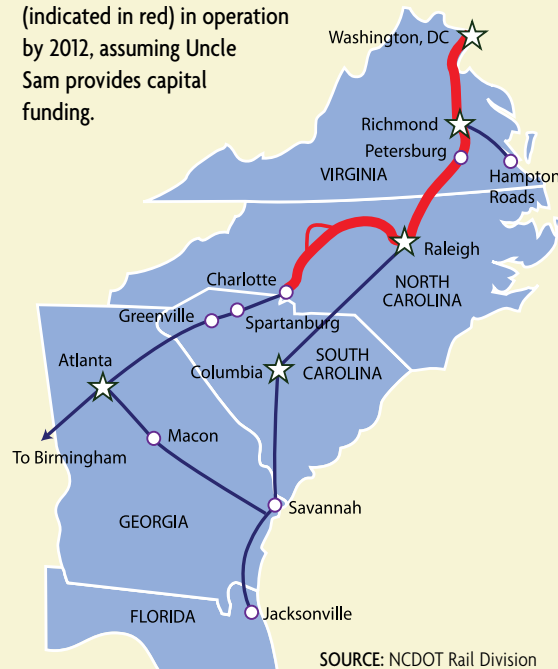
The goal is for passenger trains in the Southeast corridor to achieve an average speed of 85 mph to 87 mph and a maximum of 110 mph. The proposed trains wouldn't be comparable with "bullet trains" like those found in Japan, which go 186 mph. But they would be quicker than today's service in the corridor, which tops out at 79 mph.

According to state officials, faster trains could shave about 40 minutes off the current two-hour rail trip between Washington and Richmond. The same journey by car takes about two hours and the fastest direct flight between these cities is 49 minutes, which doesn't include getting to and from airports. The Southeastern Economic Alliance, a coalition of chambers of commerce that supports rail development, did its own research and also found that high-speed rail can be time competitive.

The key, they believe, is to create more frequent, more reliable service between densely populated areas that are no more than 300 miles apart. Other transportation experts have concluded that travelers going longer distances are more likely to fly, while

Linking the Southeast

The proposed high-speed rail corridor for the Southeast would stretch more than 850 miles. Planners hope to have the segments between Washington and Charlotte (indicated in red) in operation by 2012, assuming Uncle Sam provides capital funding.



those traveling less than 150 miles are more likely to stick with driving.

Rail advocates contend that automobile trips along congested intercity corridors like I-95 have become stressful and time-consuming. Short plane trips aren't any better: Travelers have to arrive an hour or more before their flights to leave time for security checks and boarding. In contrast, rail stations are located inside of cities, often near downtown business districts, and trains are easier to board.

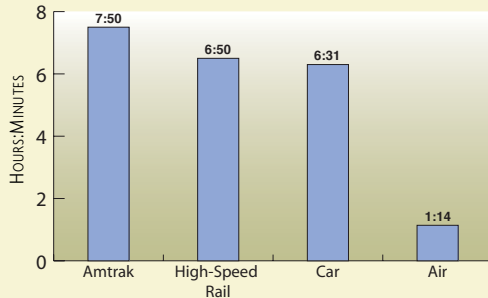
On the other hand, economic activity is more dispersed than it used to be. "People don't go downtown in great numbers," argues David Levinson, a civil engineering professor at the University of Minnesota who has studied transportation systems. Consequently, many business travelers arriving in a city by rail would have to reach their final destination using other public transportation.

Also, while some interstates are traffic-choked, Levinson contends that most road congestion occurs on local streets within major cities. By 2020, though, the Federal Highway

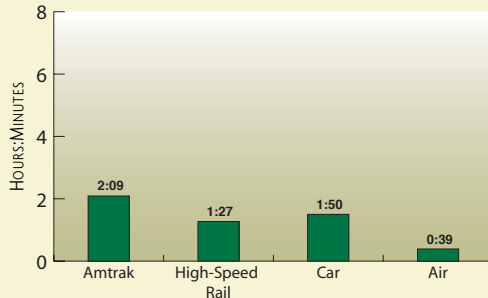
Which is Faster?

High-speed trains in the Southeast would make a big difference for Amtrak passengers heading to Charlotte. But their ability to compete with other transportation modes depends on the length of the trip.

Washington to Charlotte (399 miles)



Charlotte to Greenville, SC (103 miles)



NOTES: Mileages are driving distances between cities. Amtrak and air travel times based on the shortest direct service available as of 2/3/06. High-speed rail travel times are the longest estimated times as determined by planners.

SOURCES: Planning documentation for the Southeast High-Speed Rail Corridor from 2002 to 2004, Amtrak, Rand McNally, OAG Worldwide

Administration projects that traffic problems will spread to intercity corridors throughout the Eastern Seaboard. That's only 14 years away.

State and federal officials have made educated guesses of how well faster passenger rail could lure motorists and frequent flyers. A 1999 feasibility study prepared by NCDOT concluded that existing rail ridership and revenue would increase if faster service ran between Washington and Charlotte. For example, increasing train speeds to 100 mph and increasing the number of round-trip trains would induce an estimated 300 percent increase in trips and a 600 percent increase in revenue compared to what Amtrak achieves with its Carolinian and Piedmont services.

Of course, these are just estimates. The only real-life example of high-

speed train service in the United States is Amtrak's Acela Express. Reaching a maximum speed of 150 mph, this service between Boston and Washington attracted more than 2 million passengers annually for several years. (Ridership fell to 1.7 million in 2005 after technical problems suspended service for three months.) Acela has helped Amtrak capture about half of the passenger traffic going by air or rail carrier between New York and Washington and 14 percent of all intercity traffic.

Those numbers may not sound great, but rail advocates contend that they're pretty good considering the current quality of Amtrak service. According to the Federal Railroad Administration, approximately one-third of Carolinian and Piedmont trains are late. "The freight railroads control the dispatch system, so the passenger trains are often delayed because of freight needs," explains NCDOT's David Foster. "From a business standpoint, we have nowhere to go but up."

Making It Work

This brings up another issue that must be addressed in order to make the Southeast High-Speed Rail Corridor work — balancing faster passenger trains with existing freight service.

Arguably, business travelers place a higher premium on time than freight railroad customers do. After all, a lot of time-sensitive cargo already travels by truck or air instead of by rail. But faster passenger service may put scheduling demands on CSX and Norfolk Southern — the Southeast's biggest freight railroads — which they won't tolerate.

"Our customers are very demanding [and are] asking us to make our service more reliable," noted John Snow, former CSX chairman and CEO and current Treasury secretary, at the 2000 high-speed rail conference in Richmond. "We can't readily turn our rail lines over to passenger service while

growing the freight network." Four years later, Norfolk Southern's former chief executive, David Goode, echoed Snow's concerns about freight capacity in a speech he gave in Washington. But he expressed his willingness to work with rail planners to develop high-speed passenger service, as long as certain conditions were met.

For example, liability issues would have to be resolved. As part of its agreement with the railroads to use their tracks, Amtrak currently pays for any claims arising from derailments and other accidents, even if the tracks are to blame.

Foster is more optimistic. While the corridor will pose scheduling challenges, he says that its design will accommodate freight traffic. For example, passing sidings would be installed approximately every 10 miles along the single-track system. These five-mile-long stretches of parallel track would enable one train to divert its course while another train passes in the opposite direction. Neither train would have to substantially slow its speed.

Planned improvements for high-speed passenger service might benefit freight service. But the railroads haven't done the work themselves, which suggests that they don't value the "benefits" as highly as rail advocates would like to think. "While improving the track would benefit us in terms of freight handling and capacity, it would not be of significant benefit to warrant us paying for it entirely ourselves," says Norfolk Southern spokesman Robin Chapman.

Some rail experts suggest building a separate network for high-speed passenger service, which is what countries in Europe and Asia have done over the last 40 years. That wouldn't be easy to do in the United States. The environmental permits and land acquisitions necessary to build a new rail system from scratch would be difficult and expensive to obtain. While planners could use existing rights of way or defunct lines where rails have been replaced with weeds, not all of them connect destinations where people want to go.

Foster says that a separate rail network would be necessary only to attain speeds of up to 150 mph. But ridership revenue models show that faster trains wouldn't generate enough additional fares to offset the additional expense, which would be substantial. "We really get the most 'bang for the buck' by increasing the slow points in the system," he notes.

Assuming that states could gradually establish a competitive, high-speed passenger service in the Southeast using existing rail networks, that infrastructure will require a lot of retooling. Faster, lighter trains can't run on the same tracks used by slower Amtrak trains and even slower, heavier freight trains. Therefore, track upgrades will be required, such as installing more durable concrete ties and banking curves so that high-speed trains don't have to slow down. Other improvements will ensure public safety, such as new signals and separations at crossings where roads and tracks intersect at grade level.

In some instances, engineering changes aren't possible and high-speed trains would have to slow down, limiting the time savings. In other cases, modifications are possible, but they would be extensive. For example, about one-third of the 365 miles of track along the Southeast corridor's Charlotte-to-Macon segment would have to be relocated and straightened in order to accommodate a 110-mph maximum speed. And half of the crossings in South Carolina don't have any signaling system, contributing to accidents like the derailment in January 2005 that released chlorine gas near Aiken, S.C., and killed nine people.

The Economics

Even given the significant capital investments necessary to make it feasible, some officials and the Southern Economic Alliance still believe that high-speed passenger rail could be profitable on an operating basis. Capturing less than 2 percent of trips along the busy Southeast travel corridor would be enough to do the trick, according to Foster.

If that's the case, why haven't private companies done it? Projections of operating profits rely on rosy estimates of the number of travelers willing to embrace high-speed rail and capital costs. Research on major public projects, including rail systems, indicates that demand usually ends up lower than projections and capital investments end up higher.

Also, passengers may not want to bear the full cost of building and running high-speed rail service. This has been the case with light-rail transit. According to research by Molly Castelazo and economist Thomas Garrett at the Federal Reserve Bank of St. Louis, fares cover only 19.4 percent of the operating expenses for Baltimore's light rail system, 21 percent of costs for Buffalo's system, and 28 percent of costs for St. Louis' system.

Initial studies by the planners of the Southeast High-Speed Rail Corridor indicate that the service would cost 20-22 cents a mile. However, the Southeastern Economic Alliance thinks that high-speed rail would have to be priced at more than twice that rate in order to be feasible. (In contrast, air travel costs 22-75 cents per mile and auto travel costs 30-35 cents per mile.)

Even James RePass of the National Corridors Initiative, a strong supporter of passenger rail, admits that ticket

sales alone can't recoup capital costs, nor can they cover all operating expenses. "Rail systems can generate a lot of cash and, perhaps, cover the cost of the train crew, but they will never make the cost of depreciation of the equipment," he says. Indeed, only the Metroliner and Acela Express services in the Northeast make an operating profit from passenger revenues alone, according to Amtrak figures.

So advocates have pushed for federal subsidies of high-speed passenger rail, which would spread the cost over a broader population. In order to justify such subsidies, it helps if there are broad public benefits.

Yet the potential benefits of high-speed passenger rail are hard to substantiate, and those that are most widely cited tend to be local. For example, it has been touted as a way to revitalize downtowns and spur development near train stations in less urbanized areas.

Economists have varying opinions on the role of transportation in economic development. Building a new transportation system may influence the location of economic activity, or it may merely support activity that was already taking place in a community. Worse, excessive investments in transportation may divert resources from more productive pursuits.

In the end, though, the biggest obstacle facing high-speed rail projects may simply be that only a small segment of the population finds traveling by train desirable. "Rail had a chance to develop a following" but consumers had better transportation choices available, notes David Levinson of the University of Minnesota. "It would be very expensive to create a competitive system, and it's very risky." **RF**

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