

# REMAPPING DEBATE

Asking "Why" and "Why Not"

## What ever happened to “I think I can”?

**Original Reporting** | By Heather Rogers | Alternative models, State government, Transportation

June 26, 2012 — Last month, New York Governor Andrew Cuomo’s office invited the media to see the remnants of former governor George Pataki’s failed high speed rail (HSR) program: carcasses of rusting trains abandoned in a storage yard in Glenville. The press release stated that “Governor Cuomo’s administration has taken a different approach to high speed rail development,” and that he was going to “put the state on track to the rail system of the future.”

Indeed, Cuomo has touted HSR ever since he won the 2010 election. In November of that year, the governor-elect penned a letter to transportation secretary Ray LaHood asking that American Recovery

and Reinvestment Act funds for HSR that had been rejected by other states be channeled to New York. “High speed rail could be the 21st century Erie Canal for New York State and help rebuild upstate New York’s economy,” Cuomo wrote. “Now is the moment to build.”

New York was successful in securing over \$560 million in Recovery Act funds and is in the early phases of installing high-tech signals and laying stretches of new track for conventional train service. The Cuomo administration wants to increase ridership and introduce express service.

The administration also wants trains to run more reliably and at greater speeds than their current average of 52 miles per hour. But, it turns out, what the Cuomo administration bills as a path to HSR isn’t going to create a system that goes very fast at all. Under the most likely scenario being examined, the trip between Albany and New York City — currently a two-hour-and-20-minute journey — would still take more than two hours to complete.

### NOT GETTING ON BOARD

According to a [June 1 article in The New York Times](#), four trains owned by New York State sit “on sagging tracks” in Glenville, New York, unused, monuments to what the article calls a “disasterous project” to “create a high-speed rail line between New York and Albany.” The article concluded that, “Even by Albany standards, the high-speed line offers a reminder of how a much-heralded government project can fall apart.”

The plan, sought to be carried out in the administration of former Governor George Pataki, involved refurbishing some Amtrak trains so that they could go as fast as 125 miles per hour, a pale imitation of a [true high-speed system that had earlier been proposed](#) under former Governor Mario Cuomo.

How did the article come to be? A “small group of reporters [was] invited by the Cuomo administration to travel via bus to the Glenville industrial park, about 20 miles northwest of Albany, where the governor’s office promised to ‘reveal the latest example of government waste.’”

Instead of writing a story choreographed by the governor’s office, we thought it was more interesting to take as our starting point the still woefully inadequate train service between New York City and Albany — that is, between its world city and its state capital — and look seriously at what is and isn’t being done to transform that service.

— Editor

What about trains that go as fast as 160 mph? Or 220 mph? Those options have already been rejected by the governor and his Department of Transportation (DOT) in a [study that the agency is currently conducting on HSR](#). Gone with these superfast options are what some experienced observers call the potentially substantial benefits of true HSR service.

## How fast is high speed?

By international standards, to be deemed “high speed,” trains should be able to attain a top velocity of at least 125 mph to 150 mph. Most go faster: those in Italy, Germany, Japan, and China can reach 186 mph; in France, the electric TGV can hit 199 mph; and the Shanghai magnetic levitation, or maglev, train can race at 268 mph. (See bottom box on different types of true HSR technologies.)

In the U.S., in what appears to be in part a triumph of labeling over substance, the Federal Railroad Administration (FRA), three years ago, created its own definitions for HSR. The agency defined high-speed service in the “regional” context — that is, service between major or medium cities up to 500 miles apart — as encompassing trains that can attain a maximum speed of just 90 miles per hour.

### How does true HSR work?

The two major technologies for true HSR are electric and magnetic levitation (or “maglev”) trains.

The most common type of HSR train runs on electricity. It can reach speeds of almost 200 miles per hour. Power is delivered to the vehicles from overhead electrical cables that stretch the full length of the route. Unlike conventional diesel-fed internal combustion locomotives, electric trains don’t have to carry fuel on board. That means they are lighter weight and can accelerate more quickly. European electric HSR systems include those in France (top speed of 199 mph), Spain (top speed of 193 mph), and in Germany and Italy (top speed of 186 mph).

Maglev is the fastest high-speed technology currently in use. Each maglev train has magnets running the length of its undercarriage that are “repelled” by magnetized coils embedded in the track. The resulting electromagnetic field levitates the train between 1 and 10 centimeters above the rail line. Since maglev trains float, they don’t need wheels, providing a frictionless ride.

Once levitated, a maglev train is propelled by electromagnetic force. The electricity that flows into the magnetized coils in the track causes the magnetic field to alternate continuously. The magnetic field moves the train forward in two ways: pulling from the front and pushing from the rear. The fastest model in operation is the Shanghai maglev, which can reach 268 mph. There are also maglev trains operating in Japan and South Korea.

And since trains can't maintain their top pace at all times, average speeds are even slower. After all, trains must decelerate, stop and then accelerate at intermediate stations. They must brake at bends, inclines, and at intersections with street traffic. And their speed can be further hindered if tracks are in poor repair or commuter or freight traffic is backed up on a shared route.

According to Cuomo administration estimates, trains with maximum speeds of 90 mph to 110 mph traveling along the state's existing Empire Corridor, which connects New York City with Albany, Buffalo, and Niagara Falls, would see an average speed of around 60 mph. Trains that could reach 125 mph along the corridor would average between 75 mph and 85 mph.

## Constraints baked in to the Cuomo approach

The Cuomo administration is still in the study phase of its "[High Speed Rail Empire Corridor Project](#)." The object of the study is to determine which faster, more reliable train system would best connect the state. The DOT is a lead author of the initial feasibility study, due out this summer. (The FRA will evaluate the state's plan once it's finished.)

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An [online briefing](#) issued by the administration earlier this year identified 10 possible scenarios. One requires no action beyond improvements that have already commenced; three others would not appreciably increase speeds or quality of service and so have been discarded. Other options the DOT and governor's office are considering involve two variations on trains that can reach 90 mph, another that would hit a maximum of 110 mph, and still another, the quickest, that would reach 125 mph. In real, day-to-day use, all will average well below those marks despite being classified as high-speed rail.

Two speedier options were mentioned in the online briefing — 160 mph and 220 mph — but were ruled out. The document said they are "cost prohibitive," but offered no further explanation of the downsides (or potential upsides). When asked to articulate the reasoning for the elimination of true HSR, Marie Corrado, project director for HSR at the DOT, said her agency, along with the FRA, made the decision based on a "very elaborate" analysis. "The FRA has told us and we agree that it's not a feasible thing to be looking at right now," she said.

Despite Remapping Debate's repeated requests, Corrado did not produce the analysis she said had been carried out by the DOT and the FRA. When Remapping Debate contacted the FRA about the document, Rob Kulat, a public affairs specialist at the FRA, said that no analysis specific to New York exists. The FRA did provide a two-page PowerPoint presentation, designed to be a general assessment for a national audience, the thrust of which was that the "cost of building for higher speeds... increases greatly as you go faster" and that, "generally speaking, there is a diminishing return on travel time as speed is increased." The document pointed out, though, that the appropriate solution will "differ from corridor to corridor."

Corrado acknowledged that the DOT's own cost estimates were based only on a single scenario: running high-speed trains on the *existing* railroad line. Rebuilding the track would be expensive along the current route, which in places curves around hills and outcroppings, skirts the water, and weaves through small, historic towns, including Sleepy Hollow and Croton-on-Hudson. The steep price can be explained in part by the need to position new track over the river at some points, and secure rights-of-way from private landowners to help achieve the “softening” of curves that true HSR requires. The latter would oblige the state to exercise its power of eminent domain, something Corrado did not believe would serve the public good.

## Would true HSR between Albany and New York offer substantial potential benefits?

Robert Paaswell, a professor of civil engineering at the City College of New York and director of the University Transportation Research Center, has been an advocate for high-speed rail along the Empire Corridor for 20 years. He sees a rich sharing of information and ideas resulting from stronger connections between New York and Albany.

“If you can go to Penn Station and know you can get a train every hour, or every hour and a half, and know you’ve got a 90-minute ride, it changes the total complexion of the New York-Albany relationship,” he explained. This would be the case not only for political reasons — because Albany is the state capital — but, Paaswell points out, Albany is a growing center for technology, as is New York City.

A closer link to the Big Apple would likely bring an influx of people to Albany. “If we were an hour outside of New York City, what would that do to our region in terms of growth and expansion?” asked F. Michael Tucker, president and chief executive officer of the Center for Economic Growth in Albany. “We would be able to be a bedroom community like Westchester and Long Island,” he explained. “It would result in us becoming an outer-ring extension of one of the world’s largest economic areas.”

A range of new jobs would result. Construction workers would be needed to build new housing and commercial properties. Stores and restaurants would open. More tourists would visit the city. People would spend more time and money in Albany, and the city would increase its tax base. “Once you started doing this you would get a virtuous circle of highly skilled jobs,” explained Mark Reutter, a former editor of *Railway History* magazine and a fellow at the Progressive Policy Institute specializing in rail transportation.

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The Conference of Mayors published a [report](#) in 2010 that analyzed the economic impact of a high-speed rail line between the state capital and New York City. The report, which did not include a cost-benefit analysis, found that train service running from NYC to Albany at 110 mph would create slightly more than 4,700 new, permanent jobs. By contrast, train service on the same route but traveling at 220 mph would generate exponentially more economic stimulus: over 21,000 new, permanent jobs.

In addition to the connections HSR would foster and the indirect jobs it would help generate, HSR would create direct jobs in the railway sector, according to John Egan, a former commissioner of the DOT. And those jobs could materialize in New York State, Egan said, because the production capacity already exists. As of 2010, the U.S. Census Bureau ranked New York State as the third largest manufacturer of trains in the country. There also would be new and ongoing high-skilled jobs operating and maintaining the HSR system.

## Technologically feasible?

In its rejection of true HSR, the DOT online briefing said that all this economic activity would come at too high a price. Corrado summarized her view of true HSR between New York and Albany as something that would be “spectacular” but not in keeping with Governor’s Cuomo’s focus on doing things that are “feasible.”

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But prior reports commissioned by previous state officials detail other possibilities for true HSR from New York to Albany. Two studies, one published in 2006 and the other in 1995, both consider using an alternate route and assess the technological feasibility of building superfast electric and maglev train lines.

The 2006 [report](#) was overseen by Egan, then executive director of the Senate High Speed Rail Task Force. Egan’s idea was to install a maglev line up the New York State Thruway, which directly links New York City to Albany. This route avoids the challenges presented by the terrain and denser population along the existing rail line across the Hudson. According to Egan’s study, carried out with the engineering firm Parsons Brinckerhoff, this new path would accommodate trains that top 200 mph.

Asked about the Thruway option, Corrado flatly rejected its viability. She said the Thruway route was inappropriate topographically. “You would have the same kind of problems with elevation and curves that you have anywhere in the world,” she said.



Those weren't the findings of the 1995 [study](#), a document produced by the New York State Thruway Authority itself. John Shafer, executive director of the Thruway Authority at the time, oversaw the study. Prior to joining the Thruway authority in 1987, Shafer had worked at the DOT for almost 30 years, the last five of which as its chief engineer. He considered studying the feasibility of the Thruway as a route for HSR valuable because he thought the state should expand its transportation options.

"I'd ridden both the TGV" — the French high-speed electric train — "and the [German] maglev" that existed at the time, Shafer explained to Remapping Debate. "And I thought if ever we're going to have a modern and up-to-date rail system in this country, it ought to be one of the two." He had support for his vision from then-governor Mario Cuomo. "The governor and his staff were very forward thinking at the time," he recalled.

The maglev train in Shafer's study would have run on an elevated railway constructed with steel-reinforced concrete. Its pillars would have raised it, depending on local conditions, to between about 15 to 60 feet above the automobile traffic. The track, or guideway, would have been installed along the median and could travel either over or under highway overpasses. To achieve as straight a path as possible, at sharper bends the elevated track could crisscross the Thruway, creating a smoother line.

The study, conducted with the engineering firm Berger, Lehman Associates, considered a variety of maglev train models. The fastest would have had a maximum speed of 220 mph with an average speed of 170 mph. At that pace the maglev would deliver a rider from Albany to New York's Grand Central Station in less than an hour.

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"We were quite enthusiastic with the results of the study," recalled Shafer, who now runs his own engineering firm. He explained that since much of the Thruway is relatively flat and straight it represents a good site. In addition, Shafer said, the state already owns the land, which is a significant advantage because acquiring property is often one of the most expensive facets of a rail project.

## Too expensive?

Whether electric or maglev, there is no doubt that a true HSR system, even one built along the Thruway, would be significantly more expensive than an upgrade that yielded top speeds between 90 and 125 mph.

The DOT's online briefing stated that the price of running the 220 mph HSR from New York City to Buffalo (using the existing tracks) was almost \$40 billion. The briefing estimated the cost of the 160 mph option as only \$4 billion less. (Corrado at the DOT said that it had neither a breakdown of the elements of these costs, nor a subtotal for the New York-to-Albany leg.)

"Engineers can do anything, you've just got to give them time and you've got to give them a giant pot of money," Corrado said about building a true HSR system along the Thruway. "Mountains of money, seas full of money." But doing so, she said, would be imprudent: consequently, the Thruway "was as near to the impossible mark as you can get."

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Bruce Becker, president of the Empire State Passenger Association, which is on the advisory committee of the ongoing DOT study, said activists have to scale back their demands in these tough economic times: "Our organization doesn't feel it's realistic to think there's enough investment possible to make the leap from what we have today to a TGV-style system."

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Other estimates involving the use of the Thruway are lower, in part because this option reduces the need to acquire property for the right-of-way. John Egan's 2006 study put the upper-end cost of a maglev line from New York to Buffalo at \$10 billion (\$11.4 billion in 2012 dollars). Robert Paaswell, of the City College of New York, offered Remapping Debate a very rough guess of \$10 billion for an Albany-to-NYC line. The 1995 study conducted by Shafer and the Thruway Authority set the price per mile at \$26.8 million (\$44.2 million in 2012 dollars), not including vehicles. Translated into 2012 dollars, Shafer's findings would mean approximately \$6.2 billion for an elevated maglev track from Albany to New York City.

At any of the projected cost levels, some HSR advocates wary of the utility of true high-speed service between New York and Albany. Petra Todorovich director of [America 2050](#), a pro-HSR project of the Regional Plan Association, said focusing on the NYC-Albany route wasn't warranted. Instead, she said, the money should be used for the Northeast Corridor, which connects Boston with NYC and Washington, D.C. "I'm not sure the Empire Corridor needs true HSR," she explained.

"I'm not sure you'd get enough return on investment."

Tucker of Albany's Center for Economic Growth concurred. Spending far less fixing up the existing capital-to-New York commuter service, which is often late and slow, would be good enough, he said. "Do you really need the super-duper bullet train?" he asked. "Or do you have a more efficient train that makes all those [commuter] stops but you can rely on it?"

Bruce Becker, a longtime HSR booster and president of the Empire State Passenger Association, in

our interview said an Albany-NYC HSR route would be too expensive. He said activists have to scale back their demands in these tough economic times. “Our organization doesn’t feel it’s realistic to think there’s enough investment possible to make the leap from what we have today to a TGV-style system,” he explained. (Becker’s association is on the advisory committee of the ongoing DOT study.)

But Elliot Sclar, a professor of urban planning at Columbia University, was critical of this timidity. He questioned those who are prepared to accept the sacrifice of true HSR for New York State in favor of superfast trains on the Northeast Corridor between Boston and Washington. Similarly, he disagreed that Albany-to-New York HSR would necessarily preclude other improvements in service. People are suffering from a lack of imagination, he asserted. “When those kinds of choices are put out there — do we improve and maintain, or do we build HSR? — why is that the choice?” he asked. “Yes, we should be spending on bus and rapid transit, on helping people get from their homes to work, but not to the exclusion of other possibilities.”

Steve Fitzroy, senior vice president of the Economic Development Research Group, which produced the Conference of Mayors’ report that looked at HSR in Albany, took a more complex view. He agreed with those who said that a stand-alone 142-mile HSR wasn’t worth the cost because of its short distance. On the other hand, he thought an HSR link from Manhattan to the capital would make sense if it were connected to a statewide HSR network: “If you went to that expense [of building an Albany-New York leg], certainly you would want to put the rest of the system in place.”

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Paaswell agreed with Fitzroy that HSR along the entire New York City-to-Buffalo corridor would bring great benefits: “You [could] link up SUNY Buffalo, SUNY Albany, and the schools in New York City. You would form a sort of science nexus,” he said. “It would be very important for the state.”

Unlike Fitzroy, however, Paaswell was unwilling to reject an Albany-to-New York line that, at least initially, would stand alone. “You want to do it,” he said. First, Paaswell argued, there is already demand on the Albany-New York line — and he was convinced that with true HSR, that demand would only grow. “With access to the universities in New York City and the high-tech people there and the new generation of internet people there. You’ll see ridership expand even more.” Secondly, he said, “It will be a great illustration for what else should be put in place. You need to start one piece at a time.”

The DOT was unwilling to identify the criteria it is using for its cost-benefit analysis prior to the release of its draft environmental impact statement this summer.



## Potential sources of revenue

Indeed, New York to Albany is a bustling route with over one million riders a year. The capital's Rensselaer Station is the fifth busiest in the country, according to the DOT. As the DOT online briefing acknowledged, a 125-mph train that runs the full corridor from New York City to Niagara Falls would attract 4.5 million riders a year by 2035. In its study, The Conference of Mayors estimated that annual ridership on a 220-mph train operating strictly between New York and the capital would jump to 2.25 million passengers in the same period of time.

All these people would be buying tickets, which would provide some revenue. But since ticket sales would not meaningfully defray the initial capital investment, many HSR proponents, including Egan and Shafer, say the government must provide financial support.

Shafer thought the money for a new HSR railway along the Thruway should come from a combination of sources: train fares, Thruway tolls, and direct government spending. He said he imagines that, at some point, people will come to see high-speed rail as a public utility, "like electricity and water." He drew a comparison between intercity HSR and New York City's subway system. The subway is run by the Metropolitan Transportation Authority, which needs money from the state government to supplement its farebox revenue.

Other transit advocates are trying to reconceptualize what our public infrastructure can do. Mark Reutter, the Progressive Policy Institute fellow, said politicians and transportation administrators "could be creative about how to finance high-speed rail" by considering ways to leverage the "huge infrastructure system" created by HSR. In his policy recommendations, Reutter has proposed giving state transportation departments the authority to leverage their rights-of-way by, for example, allowing them to be used as routes for energy distribution lines.

## Lowering our horizons

"If we were to start all over again and do a long-term analysis of the interstate highway system in the 1950s, you couldn't have done it," explained Fitzroy. "You couldn't have done an analysis that would have justified the massive expenditures. But the interstate highways made the U.S. economy."

Rep. Jerry Nadler (D-N.Y.) thinks investment in HSR is long overdue. "There's in effect a negative interest rate [right now] — we're essentially being paid to borrow money," he said. "We should be building high-speed rail" in New York State. "These investments will make our economy more productive," Nadler explained. "There's only good that will come of it."

Nevertheless, Sclar said, New Yorkers won't be getting HSR any time soon. "The State of New York is worried about making ends meet; the economy is not doing so great. That's the reason in the short

term,” he said. “But why we’re not getting HSR is reflective of the longer-term pessimism,” he added. “If we did believe we could do it, we would come up with some much more interesting answers.”

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