

SYSTEM DESCRIPTION AND HISTORY

System Description

The Empire Corridor high-speed rail system consists of two segments, as summarized below.

Empire Corridor High-Speed Rail System Segment Characteristics

Segment Description	Distance	Segment Status	Designated Corridor?	Segment Population
New York City, NY, to Albany, NY	141 Miles	Operational	Yes	13,362,857
Albany, NY, to Niagara Falls, NY	322 Miles	Planning/Environmental	Yes	4,072,741

The New York City, NY, to Albany, NY, segment is 141 miles in length and includes major communities such as Poughkeepsie and Rhinecliff-Kingston along the route. The total population of the communities served by the Amtrak *Empire Service* along the New York to Albany segment was 13,362,857 in 2010. The Albany, NY, to Niagara Falls, NY, segment is 322 miles in length and includes major communities such as Syracuse, Rochester, and Buffalo. The total population of communities along the Albany to Niagara Falls segment that are currently served by Amtrak was 4,072,741 in 2010.

The Amtrak Empire Service currently operates high-speed intercity passenger rail service in both segments, with maximum train speeds of 110 mph across 17 miles in the New York to Albany segment and 10 miles in the Albany to Niagara Falls segment. Both 110 mph sections are in the Albany region and are controlled by Amtrak via a lease from CSX Transportation. Expansion of high-speed rail service to the remaining areas of the Empire Corridor high-speed rail system is primarily based on incremental improvements to existing railroad right-of-way. Ownership throughout the full 463-mile corridor includes New York City-area commuter rail operator Metro-North Railroad, Amtrak, and CSX Transportation. Past and on-going planning activities for high-speed rail in the Empire Corridor have also examined the feasibility of constructing high-speed intercity passenger rail in new dedicated rights-of-way in the corridor.

System History

Planning for high-speed intercity passenger rail in the Empire Corridor high-speed rail system dates back to 1970 when the New York State Department of Transportation (NYSDOT) completed a concept study for high-speed rail service in New York State. Between 1970 and early 2000s, various concepts for improved intercity passenger rail service in the state were proposed but were not advanced past the feasibility study stage. Prominent studies from this era included the 1994 *New York State High Speed Surface*

Transportation Study, which determined that new technology over a new dedicated right-of-way would be necessary for 125 mph service between New York and Albany, and the 2000 *New York State Intercity Passenger Rail Plan*, which presented a program of improvements for the Empire Corridor jointly developed by NYSDOT and Amtrak.

In July 2005, the New York State Senate convened a task force to examine the issues related to the development of an adequate high speed rail system for New York State. The final report of this task force, entitled the *New York State Senate High Speed Rail Task Force Action Program*, was released in January 2006. The *Task Force Action Program* provided a comprehensive plan for implementing a high-speed train network in the Empire Corridor with maximum speeds up to 110 mph. The plan included potential routes and stations, economic analysis, ridership and revenue forecasts, and capital cost estimates. The *Task Force Action Program* proposed a five-phase incremental effort which would complete the network within 10 years (by 2015). A longer-term plan for very high-speed rail or MAGLEV development between 2015 and 2025 was also proposed as next steps.

In November 2005, the *Hudson Line Railroad Corridor Transportation Plan* was completed, which outlined the capital improvements that would be necessary to increase train speed and capacity on the New York City to Albany segment. Many of the capital projects identified in this *Plan* were funded and completed as a result of grant awards provided to the State of New York under recent Federal funding programs for high-speed rail. In fall 2011, Amtrak partnered with the NYSDOT and CSX Transportation to implement several of these improvements in the New York City to Albany segment. Included in this partnership was an agreement between Amtrak and CSX Transportation for Amtrak to lease approximately 100 miles of CSX right-of-way between Poughkeepsie and Schenectady, allowing for construction to begin in 2012.



Amtrak Train at Station in Albany-Rensselaer, New York

In fall 2010, the NYSDOT initiated a two-year process to develop a Tier 1 Environmental Impact Statement (EIS) for the 463-mile Empire Corridor high-speed rail system. The goals for the Tier 1 EIS process are to improve rail travel times, train frequency, and service reliability along the full Empire Corridor route. The on-going Tier 1 EIS process has identified five alternatives for more detailed evaluation: the existing alternative with 79 mph service, two alternatives for 90 mph service, and one each for 110 and 125 mph service. The train frequencies for each alternative vary between 13 and 24 trains per day for the New York to Albany segment and between 4 and 19 trains per day for the Albany to Niagara Falls segment. The Tier 1 EIS is currently under review by FRA and is expected to be completed by late 2012.

Federally-Designated Corridors

The entire Empire Corridor high-speed rail system described in this summary is part of the federally-designated Empire Corridor High-Speed Rail Corridor. The Empire Corridor High-Speed Rail Corridor from New York City

to Albany to Buffalo was one of six additional federally-designated corridors authorized by the *Transportation Equity Act for the 21st Century* (TEA-21) in December 1998 beyond the original five designated previously.

Existing Intercity Passenger Rail Service

Existing intercity passenger rail service in the Empire Corridor high-speed rail system includes the Amtrak Empire Service, which provides frequent service between New York City and Albany, with less frequent service west to Buffalo and Niagara Falls. Other Amtrak trains that operate over portions of the Empire Corridor high-speed rail system include the Adirondack, Ethan Allen Express, Lake Shore Limited, and Maple Leaf.

Source: 2010 U.S. Census, New York State Senate High Speed Rail Task Force Action Program, Hudson Line Railroad Corridor Transportation Plan, Amtrak Fact Sheet Fiscal Year 2011: State of New York, Empire Corridor High Speed Rail Tier 1 EIS Project Website, Federal Railroad Administration, Amtrak System Timetable Fall 2011/Winter 2012

Empire Corridor High-Speed Rail System Capital Cost Estimates

Segment Description/Study Name/Year	Maximum Speed/ Scenario	Estimated Capital Cost per Mile (\$ Millions)
New York City, NY, to Albany, NY		
• Hudson Line Railroad Corridor Plan (2005)	Upgrade existing service to 110 mph	\$2.8
• Northeast Corridor Infrastructure Master Plan (2010)	Upgrade existing service to 110 mph	\$7.2
New York City, NY, to Niagara Falls, NY (Full Empire Corridor)		
• NY Senate HSR Task Force Action Program (2006)	110 mph	\$3.9
• Empire Corridor Tier 1 EIS Draft Capital Costs (2012)	90 mph Existing ROW	\$3.7
• Empire Corridor Tier 1 EIS Draft Capital Costs (2012)	90 mph Dedicated Track	\$12.5
• Empire Corridor Tier 1 EIS Draft Capital Costs (2012)	110 mph Dedicated Track	\$13.4
• Empire Corridor Tier 1 EIS Draft Capital Costs (2012)	125 mph New Alignment	\$33.7

ESTIMATED SYSTEM COSTS AND FUNDING SOURCES

Estimated System Costs

Capital costs for the Empire Corridor high-speed rail system were estimated in various transportation planning reports for the corridor as well as a preliminary draft of the on-going Empire Corridor Tier 1 EIS. The estimated capital costs on a per-mile basis are shown above.

In fall 2010, the NYSDOT initiated a two-year process to develop a Tier 1 Environmental Impact Statement (EIS) for the 463-mile Empire Corridor high-speed rail system.

Projected Funding Sources

No specific funding sources have been evaluated for the Empire Corridor high-speed rail system.

Recent Funding Awards

The State of New York received more than \$243 million from the Federal Railroad Administration for high-speed intercity passenger rail improvements in the Empire Corridor high-speed rail system. These awards included seven grants totaling \$213,586,059 from the *American Recovery and Reinvestment Act of 2009* funds and three grants totaling \$28,460,289 from FY 2010 high-speed rail appropriations for various improvement projects to increase speed, rail capacity, and service reliability along the Empire Corridor route. New York also received a grant in the amount of \$1,000,000 from the FY 2009 high-speed rail appropriations to develop a service development plan and Tier 1 En-

vironmental Impact Statement for high-speed rail service across the entire Empire Corridor, including 110 mph service between Schenectady and Buffalo.

Source: Hudson Line Railroad Corridor Transportation Plan, Northeast Corridor Infrastructure Master Plan, New York State Senate High Speed Rail Task Force Action Program, Empire Corridor High Speed Rail Tier 1 EIS Project Website, Federal Railroad Administration

TRANSPORTATION SYSTEM IMPACTS

Ridership Estimates

The January 2006 *New York State Senate High Speed Rail Task Force Action Program* provided ridership forecasts for its proposed high-speed rail system. The proposed network in that plan would have been executed in five phases over a 10-year period between 2006 and 2015. The proposal, if fully-executed, was projected to decrease travel times by 30 minutes on the New York to Albany segment and 25 minutes on the Albany to Niagara Falls segment. Daily train frequencies would have been expanded from 13 per day New York to Albany and 4 per day Albany to Niagara Falls to 23 and 6 trains per day, respectively, by 2015. Total annual ridership on the statewide high-speed rail system was estimated at 3,946,000 by the year 2025-- more than double the 2004 corridor ridership of 1,140,000. Of this total, approximately 70 percent would be in the New York to Albany segment, 20 percent would be in the Albany to Niagara Falls segment, and 10 percent would be through the entire 463-mile route. The May 2010 *Northeast Corridor Infrastructure Master Plan* estimated that the number of daily round-trips in the New York to Albany segment would increase from the current 13 to 22 by the year 2030, with ridership estimated to increase from the current 1.195 million to 2.009 million, also by the year 2030.



Buffalo, New York

Mode Choice

The January 2006 *New York State Senate High Speed Rail Task Force Action Program* estimated that approximately 83 percent of new passengers would shift from other modes while the remaining 17 percent would be induced trips. Induced travel was estimated to be higher on the New York to Albany segment than the Albany to Niagara Falls segment because that corridor is shorter and thus the travel time improvements expected on that corridor were greater relative to the overall travel time. The increase in passenger rail ridership in the two segments of the Empire Corridor high-speed rail system resulting from the proposed *Action Program* was estimated to generate annual VMT savings of more than 36 million miles and fuel savings in excess of 1.2 million gallons by 2017, with corresponding annual reductions in emissions as follows: VOC, 13.9 tons; NOx, 22.6 tons; and CO, 545.4 tons.

Connectivity with Other High-Speed Rail Systems

The two segments of the Empire Corridor high-speed rail system connect to three other U.S. high-speed rail systems in three locations as follows: the Northeast high-speed rail system in New York City, NY; the Northern New England

high-speed rail system in Albany, NY; and the Ohio Hub high-speed rail system in Buffalo, NY.

Source: New York State Senate High Speed Rail Task Force Action Program, Northeast Corridor Infrastructure Master Plan, Empire Corridor High Speed Rail Tier 1 EIS Project Website

GOVERNANCE

Intercity passenger rail planning and implementation activities in the Empire Corridor high-speed rail system are coordinated by the New York State Department of Transportation, which has worked with Amtrak, freight railroads, and local commuter railroads to improve intercity passenger rail service in the state. In its January 2006 *Action Program* report, the New York State Senate High Speed Rail Task Force recommended the creation of the New York State Rail Authority to coordinate planning and implementation of rail programs in the state.

Source: New York State Senate High Speed Rail Task Force Action Program



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