



Florida High-Speed Rail System (Source: Texas A&M Transportation Institute)

The Florida high-speed rail system described in this summary is a proposed system of routes containing 669 miles in three segments wholly contained within the State of Florida. The proposed routes would connect major population centers in the state, including Tampa, Orlando, Miami, and Jacksonville. Development of high-speed intercity passenger rail in Florida had progressed to the point of receiving a \$2.392 billion grant from the Federal Railroad Administration in 2010 to implement 168 mph

rail service on the Tampa to Orlando segment; however, the project was canceled in 2011 and therefore is listed in the *Proposed* stage. A privately-led proposal for intercity passenger rail service between Orlando and Miami and proposed service between Jacksonville and Miami are currently in the *Planning/Environmental* phase. Two of the three segments of the summarized Florida high-speed rail system are part of the federally-designated Florida high-speed rail corridor.

SYSTEM DESCRIPTION AND HISTORY

System Description

The Florida high-speed rail system consists of three segments, as summarized below.

Florida High-Speed Rail System Segment Characteristics

Segment Description	Distance	Segment Status	Designated Corridor?	Segment Population
Tampa, FL, to Orlando, FL	84 Miles	Proposed	Yes	5,519,749
Orlando, FL, to Miami, FL	240 Miles	Planning/Environmental	Yes	8,666,529
Jacksonville, FL, to Miami, FL	345 Miles	Planning/Environmental	No	8,510,335

The Tampa to Orlando segment is 84 miles in length and includes the Polk County community of Lakeland along the route. The total population of communities being considered for proposed high-speed rail stations along this segment was 5,519,749 in 2010. Prior to the cancellation of the Florida high-speed rail project in 2011, high-speed intercity passenger rail on the Tampa to Orlando segment was based on constructing new dedicated high-speed rail right-of-way, with electric-powered trains reaching maximum projected speeds of 168 mph.

The Orlando to Miami segment is 240 miles in length and includes the major communities of West Palm Beach and Fort Lauderdale along the route. High-speed rail service on this segment was included within the scope of the Florida Department of Transportation high-speed rail project, although planning for high-speed rail along this segment had not progressed as far as planning along the Tampa to Orlando segment at the time of the project's cancellation in 2011. For the Florida high-speed rail project, incremental improvements to existing CSX or Florida East Coast Railway right-of-way as well as construction of new dedicated high-speed rail guideway were being studied with maximum train speeds up to 186 mph considered in feasibility studies. The total population of communities being considered for proposed high-speed rail stations along this segment as part of the Florida high-speed rail project was 8,666,529 in 2010. Since the cancellation of the official Florida high-speed rail project, a privately-led effort to establish intercity passenger rail service in the Orlando to Miami segment, known as *All Aboard Florida*, has been proposed. Implementation of intercity passenger rail service between Orlando and Miami as part of the *All Aboard Florida* proposal would be achieved primarily through incremental upgrades to the existing Florida East Coast Railway and the reestablishment of a second track between Miami and Cocoa. Approximately 30 miles of new track will be created between Cocoa and Orlando. Population estimates are not possible due to the limited available de-

tails, including proposed station locations, in the public *All Aboard Florida* proposal.

The Jacksonville to Miami segment is 340 miles in length and includes major communities on the east coast of Florida, including West Palm Beach and Fort Lauderdale. The total population of communities being considered for proposed high-speed rail stations along this segment was 8,510,335 in 2010. Intercity rail service in the Jacksonville to Miami segment is primarily based on incremental improvements to existing freight railroad right-of-way currently owned by Florida East Coast Railway between Jacksonville and West Palm Beach, with shared right-of-way with the South Florida Railway Corridor (used by Tri-Rail, the southeast Florida regional commuter rail transit service) between West Palm Beach and Miami. Maximum speeds for the proposed service are expected to reach 90 mph.

System History

Planning for high-speed rail in the Florida high-speed rail system dates back to the 1970s with the completion of a feasibility study for high-speed rail in the Tampa to Orlando segment in advance of the opening of Walt Disney World Resort near Orlando in 1971 and the *Florida Transit Corridor Study* in 1976. Since that time, the Florida Department of Transportation (FDOT) has coordinated a number of planning and feasibility studies for high-speed intercity passenger rail in the state, primarily focused on the major intercity corridors between Tampa, Orlando, Miami, and Jacksonville. Many proposals for high-speed intercity passenger rail in the state were based on public-private partnerships between the State of Florida and a private entity.

The designation of the Tampa–Orlando–Miami corridor as one of five initial Federally-designated corridors in 1991 generated new interest in high-speed rail within Florida. In the late 1990s, one such private entity, the Florida Overland eXpress (FOX) consortium, was awarded a franchise from



Orlando, Florida

the State of Florida to construct a high-speed rail system linking Tampa, Orlando, and Miami. The FOX proposal covered 320 miles between Tampa and Miami and included seven stations, with train speeds reaching up to 200 mph using French TGV technology. Ridership for the proposed FOX high-speed rail project was estimated at more than 8.2 million annual passengers by the year 2010 and the full project was estimated to cost between \$6 and \$8 billion (in 1997 dollars). The FOX project was cancelled by the state in 1999 due to environmental and financial concerns.

In November 2000, Florida voters adopted an amendment to the Florida Constitution mandating the construction of a high-speed ground transportation system in the State of Florida connecting the five largest urban areas in the state with technology capable of speeds in excess of 120 mph. In 2001, the Florida High-Speed Rail Authority (FHSRA) was created by the Florida Legislature to carry out the duties mandated by the constitutional amendment. The FHSRA coordinated a number of planning studies for high-speed rail in the state, with the most extensive planning and environmental studies examining the Tampa to Orlando seg-

ment. The constitutional amendment requiring construction of a high-speed rail system in Florida was repealed by Florida voters in November 2004, but the FHSRA remained in existence absent the constitutional directive.

In May 2005, the FHSRA submitted a *Final Environmental Impact Statement* to the Federal Railroad Administration (FRA) for proposed high-speed intercity passenger rail in the Tampa to Orlando segment. The Final EIS considered two technology alternatives for high-speed rail between Tampa and Orlando, a gas turbine train and an electric train. Technical specifications for the alternatives were informed by proposals submitted to the FHSRA by two consortiums in response to a request for proposals for a Design-Build-Operate-Maintain & Finance (DBOM&F) contract for the Tampa to Orlando high-speed rail project. While the FRA had approved the Final EIS in July 2005, the project was suspended before a Record of Decision (ROD) could be issued.

The availability of funding for high-speed rail projects within the *American Recovery and Reinvestment Act of 2009* (ARRA) revived interest in the Florida high-speed



The Silver Star, crossing Central Boulevard in downtown Orlando, Florida

rail project in 2009. In January 2010, the FRA awarded the State of Florida three grants from the ARRA high-speed rail funding worth \$2.392 billion to begin construction of new high-speed intercity passenger rail service on the Tampa to Orlando segment by 2011, with construction expected to be complete by 2014. The FHSRA was replaced with a new agency within FDOT named the Florida Rail Enterprise to

Florida State Senators on the basis that the Governor did not have the authority to reject the ARRA funding; however, the Florida State Supreme Court ruled in March 2011 that the Governor did have this authority, officially cancelling the Tampa to Orlando high-speed rail project. The FRA redistributed the funds rejected by Florida to high-speed rail projects other states in May 2011.

All Aboard Florida – a privately owned, operated, and maintained intercity passenger rail service between Orlando and Miami – is expected to be running in the next few years.

manage the high-speed rail program. The original 2005 EIS was reevaluated and the FRA issued a ROD for the Tampa to Orlando project in May 2010, allowing for construction to begin using the ARRA grant funds. In fall 2010, a new Governor of Florida, Rick Scott, was elected. In February 2011, Governor Scott announced that Florida would not move forward with the Tampa to Orlando high-speed rail project and requested that the ARRA funds be used instead for highway and port-related projects. Governor Scott's decision to cancel the project was challenged in court by two

While most efforts at developing high-speed intercity passenger rail in the Florida high-speed rail system have been focused on the Tampa to Orlando segment, a limited number of planning studies have been undertaken for the other two segments described in this summary. The FHSRA conducted a planning-level ridership study for the Orlando to Miami segment in 2003. In October 2010, the FRA awarded FDOT an \$8 million grant to fund environmental analysis and preliminary engineering for the Orlando - Miami segment, considered Phase II of the Florida HSR program. The work has also been cancelled. Since the cancellation of the state-led Florida high-speed rail project in 2011, a privately-led effort to establish intercity passenger rail service in the Orlando to Miami segment, known as All Aboard Florida, has been proposed. The All Aboard Florida proposal is being led by Florida East Coast Industries (FECI), an affiliate of the Florida East Coast Railway. The All Aboard Florida route would connect Orlando to Miami utilizing approximately 200 miles of existing Florida East Coast Railway



Logo of Proposed All Aboard Florida intercity passenger Rail Service between Orlando and Miami
(Source: All Aboard Florida)

between Miami and Cocoa and the creation of new track between Cocoa and Orlando. The All Aboard Florida website reports that the system will be operational in the next few years.

The Florida East Coast Railway was also involved with proposed intercity passenger rail on the Jacksonville to Miami segment. In August 2010, FDOT submitted an application to the FRA for \$250 million to fund the restoration of intercity passenger rail service between Jacksonville and Miami, utilizing the Florida East Coast Railway route for a majority of the corridor. FDOT worked with Florida East Coast Railway and Amtrak to create a *Service Development Plan* and an Environmental Assessment for the proposal. Construction activities were scheduled to commence in March 2012 with operations to be inaugurated by October 2013. However, the FRA did not select the proposal for funding.

Federally-Designated Corridors

Two of the segments of the Florida high-speed rail system described in this summary are a part of the federally-designated Florida High-Speed Rail Corridor. The Florida High-Speed Rail Corridor designation includes linking Miami with Orlando and Tampa. No specific route between Miami and Orlando was included in the designation. The Florida High-Speed Rail Corridor was one of five federally-designated corridors authorized by the *Intermodal Surface Transportation Efficiency Act of 1991* (ISTEA) in December 1991. The designation was made official on October 16, 1992.

Existing Intercity Passenger Rail Service

Amtrak intercity passenger rail service covering portions of the Florida high-speed rail system includes two Amtrak long-distance trains, the Silver Meteor and the Silver Star. These trains provide connections between Jacksonville, Orlando, Tampa, and Miami; however, the routes used and communities served by existing Amtrak trains do not necessarily overlap with the proposed routes for high-speed rail service between these cities.

Sources: 2010 U.S. Census, Florida High-Speed Rail: Tampa-Orlando EIS/ROD, GAO Report: Surface Infrastructure – High-Speed Rail Projects in the United States, FHSRA Tampa to Orlando Investment-Grade Ridership Study, FHSRA Orlando-Miami Planning Study, Supreme Court of Florida Case No. 11-396, All Aboard Florida Website, Florida East Coast Corridor Amtrak Service HSIPR Application, Federal Railroad Administration High-Speed Rail Corridors Chronology, Amtrak System Timetable Fall 2011/Winter 2012.

ESTIMATED SYSTEM COSTS AND FUNDING SOURCES

Estimated System Costs

Capital cost estimates for the Tampa to Orlando segment of the Florida high-speed rail system were documented in the scope of work accompanying the grant agreement between the Federal Railroad Administration and the Florida Department of Transportation to construct high-speed rail service between Tampa and Orlando. The grant agreement provided an award from the *American Recovery and*

Reinvestment Act of 2009 for \$2.392 billion to construct high-speed rail between Tampa and Orlando. Proposed high-speed rail service on the Tampa to Orlando segment was expected to achieve a maximum speed of 168 mph on dedicated high-speed rail right-of-way. Approximately two-thirds of the grant funds were to be spent on capital projects and equipment purchases specific to high-speed rail while the remaining one-third was designated for preliminary engineering, right-of-way acquisition, and initial construction projects.

Capital cost estimates developed as part of the March 2003 *FHSRA Orlando-Miami Planning Study* considered the capital costs for electrified and non-electrified technology over four separate route options ranging between 226 and 264 miles in length. Capital costs for the All Aboard Florida proposal were obtained from the All Aboard Florida website, which estimates that the capital requirements for the project are approximately \$1 billion. Finally, capital cost estimates for the Jacksonville to Miami segment were included as part of the *Service Development Plan* that was generated for the Florida East Coast Corridor Amtrak Service HSIPR Application in August 2010. The estimated capital costs on a per-mile basis from these studies are shown below.

Estimated operating costs per train-mile (2002 dollars) for the Orlando to Miami segment of the Florida high-speed rail system ranged from \$35.73 to \$40.23, depending upon the technology considered according to the *FHSRA Orlando-Miami Planning Study* (2003).

Projected Funding Sources

While almost all proposals for high-speed intercity passenger rail in the Florida high-speed rail system have been cancelled due to various reasons, several projects had advanced to the point where detailed funding sources had been evaluated. One such project was the FOX high-speed rail project, which was a public-private partnership that

proposed a high-speed rail line between Tampa, Orlando, and Miami. A January 1999 report from the U.S. General Accounting Office (GAO) outlined the sources of funds for the proposed FOX project. Approximately 81 percent of the project’s financing needs were expected to come from state infrastructure bonds, system infrastructure bonds, and a federal loan program known as the *Transportation Infrastructure Finance and Innovation Act* (TIFIA) program. The GAO anticipated that the FOX project would request a TIFIA loan of \$2 billion to finance the project, secured by net system revenues. The GAO report expressed concerns about the proposed financing plan, with specific concerns that ridership estimates were too optimistic thus causing risk to the system revenues that were securing the TIFIA loan. There were also concerns about dedicating \$2 billion of the TIFIA program’s funding authorization to a single project, limiting the ability of the program to fund multiple other worthwhile projects. The FOX project was ultimately cancelled in late 1999.

Recent Funding Awards

In January 2010, the Federal Railroad Administration awarded the State of Florida a grant worth a total of \$1.592 billion from the *American Recovery and Reinvestment Act of 2009* high-speed rail funding to begin construction of new high-speed intercity passenger rail service on the Tampa to Orlando segment of the Florida high-speed rail system. As previously discussed, this award was returned to the FRA upon the project’s cancellation in February 2011. No additional grants have been provided to the State of Florida.

Sources: Supreme Court of Florida Case No. 11-396, FHSRA: Orlando-Miami Planning Study, All Aboard Florida Website, Florida East Coast Corridor Amtrak Service HSIPR Application, GAO Report: Surface Infrastructure – High-Speed Rail Projects in the United States, Federal Railroad Administration.

Florida High-Speed Rail System Capital Cost Estimates

Segment Description/Study Name/Year	Maximum Speed/ Scenario	Estimated Capital Cost per Mile (\$ Millions)
Tampa to Orlando Segment		
• ARRA Funding Grant Agreement Work Scope	168 mph Electrified	\$28.5
Orlando to Miami Segment		
• FHSRA Orlando-Miami Planning Study (2003)	Electrified	\$22.0 – \$39.6
• FHSRA Orlando-Miami Planning Study (2003)	Non-Electrified	\$19.3 – \$36.5
• All Aboard Florida Proposal (2012)	125 mph Incremental	\$4.2
Jacksonville to Miami Segment		
• FEC/Amtrak HSIPR Application (2010)	90 mph Incremental	\$0.9

TRANSPORTATION SYSTEM IMPACTS

Ridership Estimates

Ridership estimates for the Tampa to Orlando segment of the Florida high-speed rail system were developed in November 2002 as part of an *Investment Grade Ridership Study* for the segment conducted on behalf of the Florida High-Speed Rail Authority. Ridership forecasts considered service frequencies between 14 and 22 round-trips per day with a travel time across the complete 84-mile route estimated at 64 minutes (approximately 79 mph). The November 2002 study estimated that the Tampa to Orlando high-speed rail line would attract annual ridership between 1.934 and 2.274 million passengers by year 2010 and between 2.887 and 3.441 million passengers by the year 2025. An updated ridership forecast was given in the FRA's Record of Decision (ROD) for the project, estimating year 2010 ridership to be between 1.9 and 2.4 million annual passengers.



Silver Star arriving at Winter Park Station, FL heading towards New York.

Planning-level ridership estimates for the Orlando to Miami segment of the Florida high-speed rail system were developed as part of a preliminary feasibility study for the route conducted on behalf of Florida High-Speed Rail Authority in March 2003. Ridership forecasts considered technology ranging from 120 mph to 180 mph with up to

16 daily round-trips along the proposed route. Based on 16 daily round-trips, annual ridership estimates for the year 2020 ranged from 4.862 million for the 120 mph technology to 6.447 million for the 180 mph technology. Annual ridership estimates for the year 2040 ranged from 8.090 million for the 120 mph technology to 10.728 million for the 180 mph technology. No further ridership studies have been conducted for the Orlando to Miami segment of the proposed Florida High-Speed Rail project since 2003. Ridership details for the proposed All Aboard Florida intercity passenger rail project covering the Orlando to Miami segment have not yet been released by FECCI.

The non-funded August 2010 *Service Development Plan* submitted by FDOT for high-speed intercity passenger rail service on the Jacksonville to Miami segment developed ridership estimates for the proposed route. Daily service frequencies up to five round-trips within the corridor with trains operating at 90 mph in some areas were considered, with the annual ridership forecast ranging between 86,800 and 190,300 passengers for a projected start-up in October 2013.

Mode Choice

Ridership projections for the Tampa to Orlando segment estimated that between 94 and 97 percent of ridership on the route would be attracted from other modes, while between 3 and 6 percent of passengers would be induced trips. The FRA Record of Decision for the Tampa to Orlando high-speed rail project estimated that the project would result in a net reduction of more than 21 million annual VMT across the full corridor. Ridership projections for the Orlando to Miami segment estimated that approximately 89 percent of ridership would be attracted from other modes, while approximately 6 percent of passengers would be induced trips and 5 percent generated from the natural growth in travel demand between the two cities. These estimates were for the year 2020 with assumed 150 mph technology.

Connectivity with Other High-Speed Rail Systems

The Jacksonville to Miami segment of the proposed Florida high-speed rail system connects to the Macon to Jacksonville and Raleigh to Jacksonville segments of the Southeast high-speed rail system.

Sources: FHSRA: Tampa to Orlando Investment-Grade Ridership Study, Florida High-Speed Rail: Tampa-Orlando EIS/ROD, FHSRA: Orlando-Miami Planning Study, All Aboard Florida Website, Florida East Coast Corridor Amtrak Service HSIPR Application.



GOVERNANCE

A number of different agencies have been charged with planning and implementation of high-speed intercity passenger rail service in Florida over the years, including the Florida High-Speed Rail Commission, the Florida High-Speed Rail Authority, the Florida Rail Enterprise, and the Florida Statewide Passenger Commission. The Florida High-Speed Rail Authority was created in 2001 by the Florida Legislature (*Florida High-Speed Rail Authority Act*) in response to a November 2000 Constitutional amendment mandating the construction of a high-speed ground transportation system in the state. The FHSRA was heavily involved with development of high-speed intercity passenger

rail along the Tampa–Orlando–Miami corridor, with most efforts focused on the Tampa to Orlando segment. Funding for the Florida High-Speed Rail Authority came from state or federal appropriations. In 2009, the *Florida Rail Enterprise Act* created the Florida Rail Enterprise within the Florida Department of Transportation, transferring the Florida High-Speed Rail Authority duties to the Florida Rail Enterprise. The current status and functions of the Florida Rail Enterprise is not known.

Source: *Florida High-Speed Rail: Tampa-Orlando EIS/ROD, Florida Rail Enterprise Act.*

BIBLIOGRAPHY

Florida High-Speed Rail Authority Archives Website

URL: <http://www.floridabullettrain.com/fhsra/>

Supreme Court of Florida Case No. 11-396 Briefs & Other Documents Website

Court case challenging Governor Rick Scott's authority to reject ARRA funding award for Tampa-Orlando high-speed rail.
URL: http://www.floridasupremecourt.org/pub_info/summaries/briefs/11/11-396/

All Aboard Florida Website

URL: <http://www.allaboardflorida.com/>

Florida East Coast Corridor Amtrak Service HSIPR Application Website

URL: <http://www.dot.state.fl.us/rail/HSIPR-FECAmtrakApplication.shtm>

Florida Rail Enterprise Act (2009)

URL: <http://laws.flrules.org/2009/271>

Florida High-Speed Rail Authority: Tampa-Orlando Investment Grade Ridership Study Summary Report

Prepared for the Florida High-Speed Rail Authority by AECOM Consulting and Wilbur Smith Associates, November 2002
URL: <http://www.floridabullettrain.com/fhsra/uploaddocuments/p25/Ridership%20Study%20-%20all%20reports.pdf>
Date Accessed: March 21, 2012

Florida High-Speed Rail: Tampa-Orlando Environmental Impact Statement/Record of Decision

U.S. DOT, Federal Railroad Administration, May 2010
URL: <http://www.fra.dot.gov/rpd/freight/1189.shtml>
Date Accessed: June 11, 2012

Florida High-Speed Rail Authority: Orlando-Miami Planning Study

Prepared for the Florida High-Speed Rail Authority by HNTB in association with Transportation Economics & Management Systems, Inc., March 2003
URL: <http://www.floridabullettrain.com/fhsra/uploaddocuments/p25/Orlando-Miami%20Final%20Planning%20Study.pdf>
Date Accessed: March 21, 2012

Surface Infrastructure: High-Speed Rail Projects in the United States

Prepared by the U.S. Government Accounting Office, Report GAO/RCED-99-44, January 1999
URL: <http://www.gao.gov/assets/230/226797.pdf>
Date Accessed: July 24, 2012