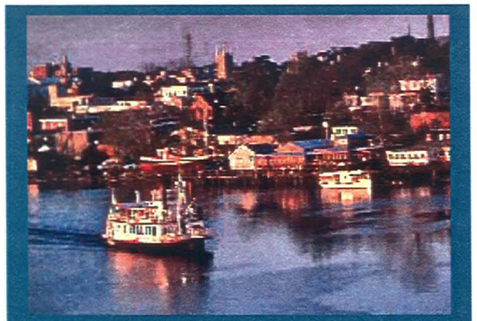

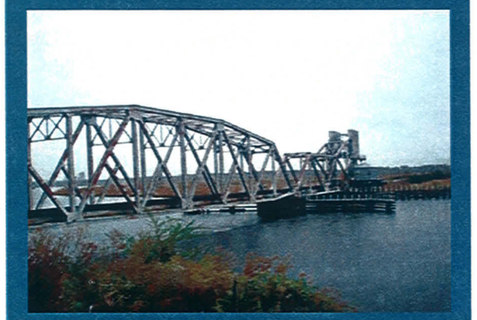

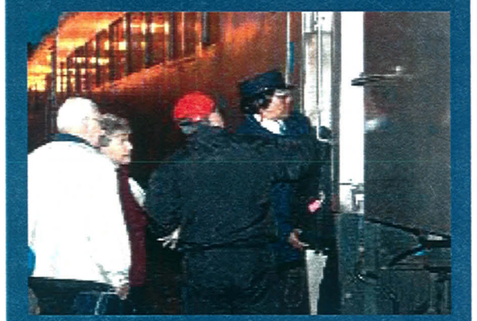

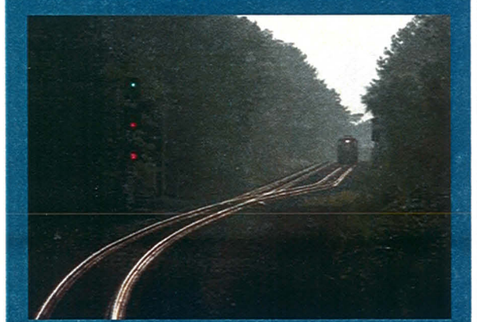

Southeastern North Carolina Passenger Rail Study

July 2005

North Carolina Department of Transportation
Lyndo Tippett, Secretary
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An electronic copy of this report can be found on **www.bytrain.org**.

Introduction

The North Carolina Department of Transportation (NCDOT) has long recognized the need for alternative transportation as part of a comprehensive transportation system. The state's rail policy has emphasized: enhancing and growing passenger rail services, preserving existing rail lines for future use, improving infrastructure to support and enhance passenger and freight service, and extending passenger rail service in the state. The NCDOT has strived to develop a rail corridor of national significance between Raleigh and Charlotte via Greensboro where the majority of North Carolina's population lives and works. Through the department's initiative, two passenger train services were added to provide alternate transportation – the daily New York–Charlotte *Carolinian* and the Raleigh–Charlotte *Piedmont.* North Carolina also is the lead state in developing high-speed passenger rail service in the federally designated Southeast High Speed Rail corridor.

The emphasis on alternative transportation led to the appointment of the Transit 2001 Commission nearly a decade ago. The commission was charged with making recommendations on how to improve public transportation in the state during the 21st century. Among other goals, the group recommended studying the potential and feasibility of expanding passenger rail services to the southeastern and western parts of North Carolina.

In May 2001, the NCDOT announced the results of the *Southeastern North Carolina Passenger Rail Feasibility Study*. The study examined three potential passenger route options from Charlotte and Raleigh to Wilmington to determine the level of interest in a coastal passenger rail service. The results indicated there was strong interest in passenger rail service from Wilmington to the Northeast and Raleigh. The department was tasked with conducting more detailed studies to define capital costs and needed infrastructure improvements associated with such a service.

Results of the initial feasibility study helped generate broad public support and interest in re-establishing passenger train service to Wilmington. City and county leaders, university and chambers of commerce officials, legislators and business leaders have expressed their support for such a service in the form of resolutions, letters and presentations that identified the benefits their area would receive if passenger rail service returned to southeastern North Carolina. They see the service as a way to spark economic development, reduce air pollution and provide an alternative means of transportation for business persons, college students, tourists and other travelers. Further, track improvements needed to reintroduce passenger train service also would benefit freight rail service by adding capacity and reliability, thus aiding existing shippers, economic developers, the military and the state port in Wilmington. These improvements also could provide a freight transportation alternative that currently does not exist and could enhance opportunities to reduce transportation cost and attract new industry.

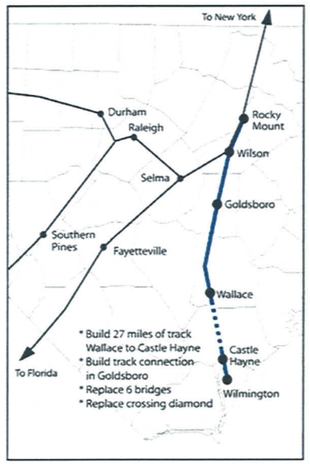
Since the release of the passenger rail feasibility study in spring 2001, our state and the country have seen a number of changes. The threat of terrorism and the attacks in September 2001 heighten the awareness of security issues and underscore the need for alternate transportation options. The economic downturn of the past several years has caused many people to look for jobs further away from home and make the decision to commute or move. Growing traffic, highway congestion, rising fuel costs, and air pollution are increasingly critical issues for North Carolina and many parts of the country. All these factors strengthen the need to provide alternate transportation for the traveling and working public.

This study compares several route options and provides more detailed analysis of projected ridership, revenue and costs associated with re-establishing passenger rail service to Wilmington. The study examined former stations along the routes to evaluate their condition, conducted environmental screenings to determine impacts of reconstructing needed track, compared travel times, reviewed track conditions and current capacity limitations, projected capital costs needed to implement service and identified potential economic benefits of re-establishing freight rail service.

Wilmington - ROCKY MOUNT - Northeast

Route Miles: 124.3

Scenarios	1 Basic	2 Moderate	3 Major
Travel time to Rocky Mount	2:47	2:36	2:11
Average speed	45	48	57
Travel time to New York	12:08	11:57	11:32
CAPITAL COST (millions)			
Passenger :			
Wilmington to Castle Hayne	$15.2	$15.5	$19.8
Castle Hayne to Wallace	$50.0	$50.0	$66.8
Wallace to Goldsboro	$37.4	$38.1	$70.4
Goldsboro to Rocky Mount	$14.2	$14.6	$30.8
Total Passenger	$116.8	$118.2	$187.8
Freight improvements	$5.1	$5.1	$5.1
Total Passenger & Freight	$121.9	$123.3	$192.9
Ridership	25,400	27,000	32,000
Revenue (millions)	$1.4	$1.5	$1.7
Operating Loss	($ 2.3 mil.)	($ 2.2 mil.)	($ 2.0 mil.)
Crossings: 144	$18.7		



Appendix - Comparison of Three Operating Scenarios for Each Route

Wilmington - GOLDSBORO - Raleigh

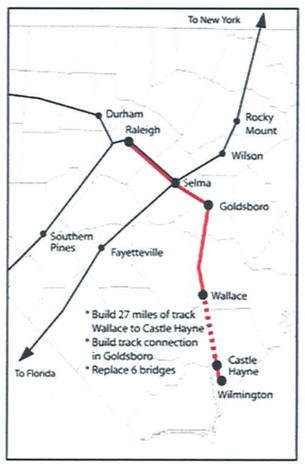
Route Miles: 131.8 8

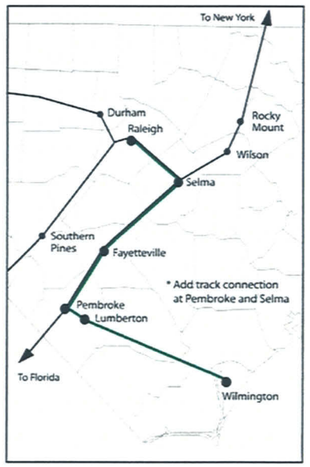
Scenarios	1 Basic	2 Moderate	3 Major
Travel time to Raleigh	3:12	2:51	2:30
Average speed	41	46	53
Travel time to New York	14:02	13:41	13:20
CAPITAL COST (millions)			
Passenger:			
Wilmington to Castle Hayne	$15.2	$15.4	$19.8
Castle Hayne to Wallace	$50.0	$50.0	$66.8
Wallace to Goldsboro	$37.5	$38.1	$71.4
Goldsboro to Selma	$5.9	$13.0	$13.1
Selma to Raleigh	$5.7	$12.7	$12.7
Total Passenger	$114.3	$129.3	$183.8
Freight improvements	$5.1	$5.1	$5.1
Total Passenger & Freight	$119.4	$134.4	$188.9
Ridership	50,100	60,800	74,100
Revenue (millions)	$1.9	$2.3	$2.7
Operating Loss	($ 2.0 mil.)	($ 1.6 mil.)	($ 1.2 mil.)
Crossings: 158	$17.9		

Wilmington - FAYETTEVILLE - Raleigh

Route Miles: 187.3

Scenarios	1 Basic	2 Moderate	3 Major
Travel time to Raleigh	3:51	3:44	3:22
Average speed	49	50	56
Travel time to New York	14:41	14:34	14:12
CAPITAL COST (millions)			
Passenger:			
Wilmington to Pembroke	$41.8	$41.9	$95.0
Pembroke to Selma	$17.6	$17.6	$17.6
Selma to Raleigh	$5.7	$12.7	$12.7
Total Passenger	$65.1	$72.2	$125.3
Freight improvements	$4.6	$4.6	$4.6
Total Passenger & Freight	$69.7	$76.8	$129.9
Ridership	46,700	49,300	58,900
Revenue (millions)	$1.7	$1.8	$2.1
Operating Loss	($ 2.6 mil.)	($ 2.5 mil.)	($ 2.2 mil.)
Crossings: 141	$15.3		



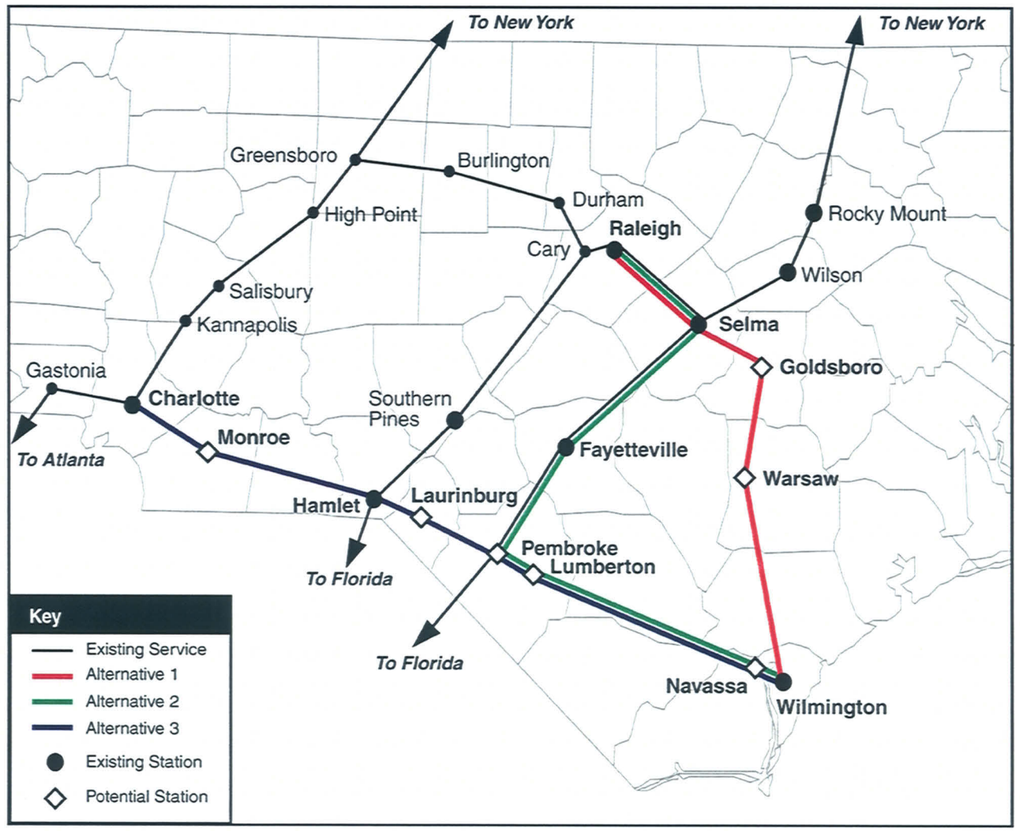


Review of the Initial Feasibility Study

Between 1999 and 2001, the NCDOT evaluated the feasibility and desirability of restoring passenger rail service to Wilmington through a series of studies. Three rail service scenarios were evaluated for ridership, revenue and potential operating costs:

Alternative 1: Wilmington – Goldsboro – Raleigh (and beyond to New York)
Alternative 2: Wilmington – Fayetteville – Raleigh (and beyond to New York)
Alternative 3: Wilmington – Pembroke – Charlotte

Southeastern Passenger Routes Studied in 2001 and Existing North Carolina Passenger Routes



Several surveys were administered to establish preferred destinations and travel patterns of potential rail users. Traffic intercept surveys were conducted on Interstate 40 near Warsaw and on U.S. 74 near Lumberton, business travel was assessed through the Greater Wilmington Chamber of Commerce, and residents of Wilmington and visitors to the area were surveyed separately at the 1999 Old Wilmington Riverfest, and the 2000 Azalea Festival. The foremost assumption was a perceived need to provide a rail service that would carry recreational visitors from the Charlotte area to seaside resorts and second homes along the Cape Fear coast.

Early survey results and interviews with Wilmington officials, local business owners and visitors caused a change in focus for the study. Surveys revealed that Charlotte residents preferred Myrtle Beach as their primary coastal destination, whereas Triangle area residents, easily connected by I-40, preferred the Cape Fear area for a beach getaway. Survey respondents also indicated they needed local transportation once they reached the coast, thereby limiting the appeal of using rail passenger service to access the Cape Fear area and signaling the need for enhanced local transit service. The objective of the initial studies was significantly altered when Wilmington officials, businesses and local residents indicated a strong preference to reconnect Wilmington and southeast North Carolina by rail service to Raleigh and to the Northeast Corridor cities of Washington, D.C., Philadelphia and New York.

Of the routes studied, the Wilmington to Raleigh routes – via Fayetteville or Goldsboro – with potential connections to Northeast cities, performed best in terms of revenue, number of riders and operating losses. On the other hand, the Wilmington to Charlotte route posted the lowest ridership and revenue. The low interest, ridership and revenue projections resulted in the Wilmington to Charlotte alternative being removed from further consideration.

Either Wilmington – Raleigh route (with connections to New York) was projected to require an operating subsidy. The feasibility study recommended conducting further studies to determine estimated capital costs. The *Southeastern North Carolina Passenger Rail Feasibility Study* recommended the department take the following steps:

1. Conduct an inventory of stations along the designated alternate routes;
2. Begin securing property for a multi-modal station in Wilmington that would serve rail and bus passengers;
3. Conduct further studies to determine what track capacity and safety improvements would be needed to restore passenger train service;
4. Begin discussions with CSX Transportation (CSXT) and Norfolk Southern (NS) railroads about operating passenger rail service over their property to and from Wilmington;
5. Work with the State Ports Authority to assess economic impacts of the alternate routes; and
6. Conduct additional attitudinal and travel surveys centered on Fayetteville.

- The commuter rail service would develop and demonstrate the state, regional and local government's ability to work together and with the railroads in implementing, operating, and planning alternative transportation.

- Work with state and local governments, host railroads and other business interests to help secure a federal funding partner to obtain the necessary money to develop passenger service. Freight partnerships can be identified for joint funding of track and crossing improvements where there are clear benefits to each party.
- Work with the Department of Commerce, State Ports Authority and Global Transpark to further define benefits and investments needed to reestablish freight rail service between Goldsboro and Wilmington to provide more direct freight access to markets north and west.
- Partner with the State Ports Authority and freight railroads to develop dual rail carrier access to both Wilmington and Morehead City. Multiple rail transportation options are critical to retaining current customers and attracting new ones to seaports and are vital to being competitive in the world market. Single rail carrier service to Wilmington and Morehead City limits the market for our state ports.
- Conduct the necessary environmental and preliminary engineering analyses to clearly identify and preserve right-of-way needed along the Fayetteville and Goldsboro routes to implement future passenger rail service to Wilmington and acquire such property as it becomes available. This includes properties needed for connecting tracks in Goldsboro, Pembroke and Selma.
- Recommend local governments, metropolitan planning organizations (MPOs) and rural planning organizations (RPOs) coordinate land use and transportation planning to enable transit friendly development, facilitate industrial growth and reduce/restrict the number of at-grade crossings along the routes.
- Work with local governments along the routes to refurbish historic stations and partner with the city of Wilmington to acquire property and develop a multi-modal station.

Recommendations

This study reinforced earlier findings indicating there is significant interest in and a basis for reinstating intercity passenger train service to and from southeastern North Carolina.

- First, there is considerable public support for expanding passenger rail service to the eastern and western areas of the state. Expansion of passenger rail service to Wilmington not only would serve the intrastate market, but also would serve the interstate market via connections with national system long distance passenger trains.
- Second, infrastructure investments made to support passenger rail service also benefit freight trains and shippers served by the same tracks. There also is a positive economic benefit to restoring the tracks between Wallace and Castle Hayne since the reintroduction of freight rail service would enhance the potential for economic development along that corridor.

Before passenger rail service could begin on any of the study routes, significant investments would be required to improve the rail infrastructure and acquire equipment to implement intercity service. Such capital investments require a partnership among the local, state and federal governments and private entities. Currently, state funds are not available to support the level of investment required to implement the new passenger service. However, the department should take measures to preserve the option to initiate the service when funds are available to develop the routes.

Based on the ridership and projected capital costs, the Raleigh to Wilmington routes via Goldsboro and Fayetteville should be included in the State Rail Plan and pursued in the future. The route to the Northeast from Wilmington to Rocky Mount should be eliminated from further consideration due to the low ridership projection. While both Raleigh to Wilmington routes that were analyzed held promise, the availability of public funding will determine when and what service is implemented.

During the course of study, additional issues were identified that address passenger and freight transportation needs and the economic impacts of improved rail service. Among those issues were freight rail service to shippers as well as our state ports and the Global Transpark, increasing highway congestion, and the need to develop transportation alternatives. In addition to intercity passenger rail service to Wilmington, commuter service from Raleigh to Selma, continuing to Goldsboro and/or Fayetteville is receiving increased interest and support. Service from Raleigh to Goldsboro was found to be feasible and recommended for further study in the *Eastrans Commuter Corridor Feasibility Study* completed by Wilbur Smith Associates in April 2004. The study evaluated the feasibility of instituting commuter rail service in corridors east and south of Raleigh with endpoints of Goldsboro and Zebulon.

Next Steps:

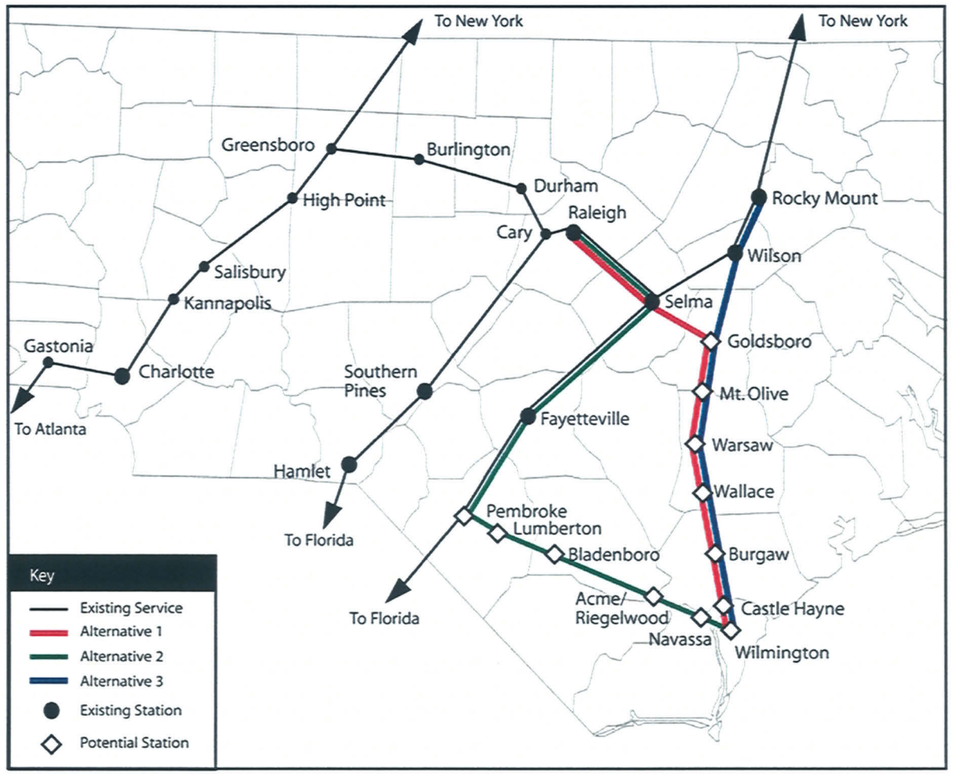
- ➢ Implement intercity passenger rail services from Wilmington to Raleigh via Goldsboro and Fayetteville in phases as funds become available.
- ➢ Work with local governments and the railroads to evaluate initiating commuter service between Selma and Raleigh as a first step. This service would be common to both the Goldsboro and Fayetteville routes and provide significant benefits due to the following:
  - Robust population growth in Johnston County is projected to continue;
  - Commuter traffic is increasing and the US 70 Bypass is expected to be at capacity when completed;
  - There is increased interest in developing alternative modes of transportation;
  - Commuter rail service would provide an alternative to congested highways and the associated air pollution. Extensions of commuter service to Goldsboro and/or Fayetteville would be considered as money becomes available and as the market for such service warrants;

Passenger Routes Studied

The 2001 feasibility study determined northeast cities were a major business and recreational attraction for residents of southeast North Carolina and Wilmington. To evaluate the size of this potential rail market, a route alternative that bypassed Raleigh and went directly north through Rocky Mount was included as part of this study. This study evaluated the following routes:

Alternative 1: Wilmington – Goldsboro – Raleigh – Northeast
Alternative 2: Wilmington – Fayetteville – Raleigh – Northeast
Alternative 3: Wilmington – Rocky Mount – Northeast

Southeastern Passenger Routes Studied in 2005 and Existing North Carolina Passenger Routes



Station Inventory

In following the recommendations of the 2001 Southeastern North Carolina Passenger Rail Feasibility Study, the NCDOT inspected nine former passenger rail stations along the Wilmington – Raleigh routes to determine possible needs associated with construction or renovation of potential stations. Along the route via Fayetteville, the old Bladenboro, Clarkton, Lumberton and Pembroke stations were evaluated. The former Burgaw, Goldsboro, Mt. Olive, Wallace and Warsaw stations were examined along the route via Goldsboro. The department examined those stations based on their proximity to either route. It should be noted that these preliminary inspections do not necessarily indicate a definitive stop. Station stops will be revisited before service is implemented to best accommodate the passenger train market at that time.

Clarkton — built in 1915, the former train station is currently being used as the city hall.

The station site visits included discussions with local officials. Stations were inventoried to determine suitability for future use, current structure and property ownership, physical condition of the building and boarding platforms, as well as, the presence of any lead, asbestos and other contaminants. Each of the stations inspected will require moderate investment to render them suitable for passenger service. Work may include renovating the building, relocating the station and constructing segments of track, platforms and parking near the station.

Burgaw – this 1850 station has been used as a community center.

Early in the process, the NCDOT also began discussions with the city of Wilmington and other stakeholders concerning possible train station locations in the port city's downtown riverfront area. By 2004, six possible downtown sites had been identified and the North Carolina Board of Transportation appropriated funds to the city to conduct a multi-modal station study and select the most appropriate location. The city's report, adopted in February 2005, indicated their preferred location as the block between Third, Fourth, Red Cross and Campbell streets.

Bladenboro – the 1930 station now serves as a magistrate's office.

Mt. Olive – the former depot is now in use as a community center. The station was constructed about 1910.

The estimated cost to restore freight service alone is $81 million. This includes rail improvements at the Port of Wilmington and connections in Goldsboro. If the passenger and freight rail services were implemented at the same time, an additional $5 million would be added to the total capital costs for each passenger rail route (see Appendix).

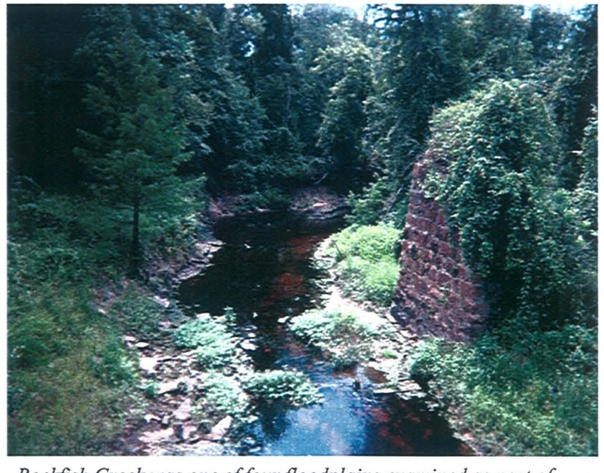
Rail improvements along the route via Goldsboro also could benefit the Global TransPark (GTP) through improved rail access to/from the ports and terminal facilities. The availability of reliable and efficient freight rail service is a vital part of business development and retention. A recent preliminary analysis of costs to provide rail service to the GTP site from the NCRR/NS yielded an estimate of $10-12 million. More detailed analysis will be required to clearly identify the costs and benefits of a rail link to GTP.

It should be noted that this economic feasibility study examined only the potential impacts of restoring freight rail service where there is none currently. Other routes were not examined because the addition of passenger train service on existing lines is assumed to have equal benefits regardless of the route selected.

Environmental Screening

To understand the environmental impacts of restoring rail service between Wallace and Castle Hayne the department conducted an environmental screening. This analysis is part of a federally mandated process to evaluate a property or right-of-way for the potential environmental impacts of a proposed construction project; it is required of all potential transportation projects. Reconstruction of the rail line could have potential environmental impacts in New Hanover, Pender and Duplin counties, thus requiring an environmental screening.

Resource information was obtained using existing inventories, files and databases of appropriate and relevant environmental agencies. Among the potential impacts investigated were natural systems resources, flood zones, hazardous material sites, and historic and archaeological resources. Eighteen streams and six wetland communities were identified and evaluated. In addition, 12 federally protected species were evaluated including the red-cockaded woodpecker, the American Chaffseed and the golden sedge. An archeological site and several historic sites also were evaluated for potential impact.



Rockfish Creek was one of four floodplains examined as part of the environmental screening completed for the Wallace to Castle Havne corridor.

The environmental screening determined that there would be minor negative impacts, but none were so acute as to prevent the 27-mile corridor from being restored.

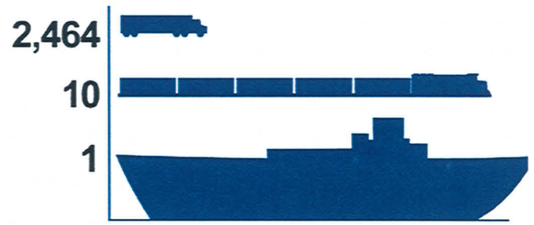
A separate environmental assessment will be required for constructing connecting tracks at Pembroke, Goldsboro and Selma to determine the impact of any proposed construction on the natural and human environment. Such analysis would require approximately 12-24 months to complete and would provide opportunity for public review and comment.

Economic Benefits of Track Restoration

Since freight service is not currently available between Wallace and Castle Hayne, a separate analysis was needed to assess the benefits associated with reintroducing freight service and offering alternate rail routes to/from the port of Wilmington (see *Economic Feasibility Study for the Restoration of the Wallace to Castle Hayne Rail Corridor and Associated Port/Rail Improvements*). In the 1980's 27 miles of railroad that connected Wallace and Castle Hayne were taken out of service and the tracks removed by the owning railroad, CSXT. To preserve the right-of-way for future railroad use, the NCDOT acquired the rail line from CSXT.

Currently the only rail link from Wilmington is the CSXT line which goes west to Pembroke and beyond to Hamlet. Nearly all rail traffic bound for the port of Wilmington and the U.S. Army Military Ocean Terminal at Sunny Point (MOTSU) must be routed through Hamlet Yard, 111 miles west of Wilmington, which substantially limits the attractiveness of using rail to or from the ports and adds considerably to the transit time.

Freight traffic connecting to the Port of Wilmington could play a role in justifying the reopening of the Wallace to Castle Hayne route since the line would provide the port direct rail access to markets north and west of Wilmington. Imported grain, for example, bound for feed mills in the Warsaw and Goldsboro areas is transported by truck from the port, a very expensive way to move a bulk commodity like grain. Freight unit trains generally are much more efficient for transport. For instance, 10 unit trains carry an equivalent amount of goods as 2,464 tractor-trailers.



The Economic Feasibility Study for the Restoration of the Wallace to Castle Hayne Rail Corridor and Associated Port/Rail Improvements reported that reopening the 27-mile line segment between Wallace and Castle Hayne would have several immediate benefits:

- Unit feed grain trains could replace some of the fleet of trucks that now run from the port to Warsaw;
- Rail freight from the north could move directly to the port, avoiding Hamlet Yard and saving 128 miles;
- Unit coal trains could run directly to Progress Energy's Sutton plant saving 76 miles; and
- Improved rail service could benefit the U.S. Army Military Ocean Terminal at Sunny Point, the major munitions port of the East Coast as well as other military shipments.

Considerable challenges lie ahead for Wilmington to attract new ocean traffic. The port must compete with significantly larger East Coast ports with established trade routes, substantial cargo handling facilities, well-established freight forwarders and direct access to the mainlines of more than one freight railroad. Wilmington is largely a niche cargo-handling port compared to major ports such as Baltimore, Norfolk, Charleston and Savannah.

In considering potential port traffic flow, a reopened rail line to Goldsboro could attract manufacturing facilities that require rail access. Such plants could potentially use the port to import materials for their manufacturing activities or to export finished products to other areas of the world. Examples of such facilities include chemical manufacturing and metal recycling. Manufacture of industrial chemicals, for instance, has expanded in recent years, particularly in North Carolina. Large-scale manufacturers often require rail access and employ 200 - 300 workers. A reopened rail line could help attract such facilities.

Restoration of rail service directly from Wilmington to Goldsboro also could create significant opportunities for manufacturing, construction, residential housing and commercial activity in nearby counties. It is estimated that 320 jobs could be created in the area, producing an annual income benefit of $14.6 million. Taken over 20 years, regional economic benefits could reach $195 million in the adjacent counties in southeast North Carolina, more than offsetting the expense of reopening the Wallace to Castle Hayne rail line.

Historic station renovation is part of the department's statewide program to improve passenger rail service. Already, stations in Selma, Wilson and Rocky Mount have been renovated. In addition, construction of a new boarding platform, canopy and other building improvements is slated for the Fayetteville station in 2005.

Other historic stations across the state, such as Wallace, also are being upgraded using federal Transportation Enhancement funds. These former depots are being renovated to serve local citizens in a variety of ways by providing community meeting space, housing chambers of commerce, economic development offices or fulfilling other public needs.

Wallace – in a separate project, federal Transportation Enhancement funds have been designated to help renovate the 1916 station. Initial plans call for the old station to be used as a farmer's market, artists guild, transportation museum and visitor's center.

Fayetteville – four daily trains currently stop at the 1911 station. Construction of a new canopy and boarding platform is slated for 2005.

Rocky Mount – renovations on the 1893 station were complete in 2000. The station now serves as a transportation hub for the community with eight daily trains and a local transit and intercity bus center nearby.

Selma – the 1924 Union station was renovated in 2002 and now provides service for the daily Carolinian *and* Palmetto *trains.*

Travel Habits, Attitudes and Ridership Estimates

The 2001 *Southeastern North Carolina Passenger Rail Feasibility Study* demonstrated that re-establishing rail passenger service to the southeastern part of the state was feasible and determined that the most robust market was from Wilmington to Raleigh and cities in the Northeast. The report recommended further studies be conducted to survey the attitudes towards passenger rail of travelers in the potential corridors and assess travel habits. These new survey results would be used along with existing data, travel times and estimated ticket prices to again project the potential ridership and revenue for each route. The ridership and revenue projections provide an indication of the public's interest in traveling the alternative route under study. Ridership includes only new or incremental riders not currently using existing passenger trains. Projected population growth and commuter travel patterns also needed to be examined as they play a part in determining other types of travel needs along the corridors.

The department conducted additional travel intercept surveys near Fayetteville and Goldsboro to determine the business and leisure travel habits of residents and visitors along the designated routes. The Goldsboro survey results were applied to the Rocky Mount analysis as well since the Rocky Mount route includes the Wilmington to Goldsboro segment. Respondents were asked about their most popular travel destinations, frequency of travel to various destinations, and the average number of companions on a given trip.

In both surveys, 90 percent or more of the respondents were residents of the counties in which the surveys were conducted (Wayne and Cumberland). Residents and visitors from both areas cited Raleigh as the most popular business travel destination, while the capitol city and Wilmington were listed as the most popular recreational destinations. About 70 percent indicated they had not ridden Amtrak recently, however nearly three-fourths of all respondents supported establishing passenger rail service from their area to Raleigh and the Northeast.

The department also surveyed the membership of the Fayetteville and Goldsboro Chambers of Commerce to assess travel habits of the business community and company attitudes towards passenger rail service. In Fayetteville, the surveys found that 10 percent of employees regularly travel outside of the area while roughly 42 percent of employees in the Goldsboro area travel for business. Raleigh-Durham was listed as the most frequently visited destination followed by Wilmington, Greensboro and Charlotte. While most employers favored establishing passenger rail service to Wilmington, less than half indicated they would directly benefit from such a service. The general consensus among the business community was that rail service to Wilmington was a greater benefit to the community as a whole than to their individual business.

The current ridership and revenue studies incorporate the new travel survey data along with newly projected travel times. Since faster travel times attract more riders and four daily passenger trains already provide service to the Fayetteville area, the Goldsboro route is projected to attract more new (or incremental) riders than the Fayetteville alternative and thus collect higher revenues. The route via Rocky Mount, while providing a faster travel time to the Northeast, does not provide service to Raleigh and therefore attracts approximately half as many riders as the other alternatives. Results of the latest ridership and revenue studies outperformed the results of the *2001 Southeastern North Carolina Passenger Rail Feasibility Study* significantly. The new studies estimate an 87 percent increase in ridership and more than twice the revenue from the earlier studies for the Goldsboro alternative. Similarly, the Fayetteville route showed a 35 percent increase in ridership and more than twice the revenue. Ridership and revenue projections are affected by travel times so the number of riders could vary notably based on the level of infrastructure improvements made.

Since population along the route and the type of travel services that the population needs can affect ridership projections, it also is important to look at current and forecasted population and information that might indicate the type of transportation services needed. North Carolina's population is projected to increase by more than 54 percent in the next 25-30 years. According to the *2000 US Census* and the *NC State Demographer*, of those counties on the potential southeastern North Carolina passenger rail routes, the largest growth is expected in Wake County with a population increase of more than 700,000 or 117 percent. Johnston and New Hanover counties each project population increases of more than 100,000 or 122 percent and 64 percent respectively.

Additional Cost Considerations

Because the service would operate over privately-owned rail lines, the host railroads were invited to participate in developing the capital cost for this study, but deferred to a later stage of project development to provide specific track improvement information. While capital costs for this study were developed with the best information available, it should be noted that actual costs could differ significantly as more detailed track information becomes available and as freight service responds to market conditions. This would include addressing existing capacity constraints on the already busy CSXT main line between Pembroke and Selma and other issues such as the intersection of CSXT and NS at Selma.

Also, each of the alternatives would likely require some infrastructure on new right-of-way at Goldsboro, Selma and Pembroke. For the purposes of this study no costs for property or right-of-way necessary for this project are included.

Operational Considerations

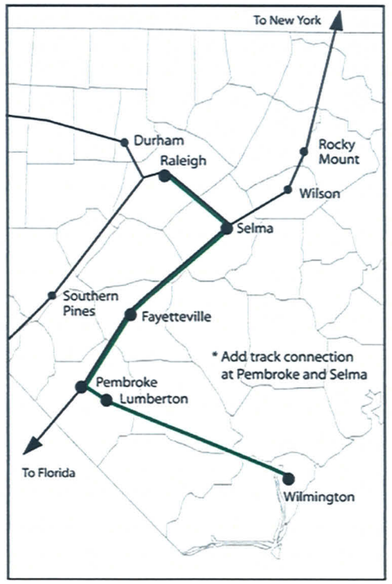
More than 75 percent of all tracks in North Carolina are owned or operated by CSXT or Norfolk Southern railroads. Each of the scenarios considered for passenger rail service to and from Wilmington uses a combination of tracks owned and/or operated by CSXT, NS and the North Carolina Railroad (currently leased by NS). As the economy grows, freight movements to and from the state are expected to increase. Operating passenger trains on these privately-owned freight rail corridors will require long-term partnering, support and cooperation to assure safe and efficient coordination of passenger and freight rail transit. At the same time, track and signal improvements will provide benefits to both passenger and freight rail movements while maintaining a high level of safety for the highway and rail traffic. The introduction of passenger train service will not have a negative impact on freight service. Instead, the improvements will enhance freight rail service.

In fact, Norfolk Southern already has expressed interest in operating passenger trains on their lines to the eastern and western parts of the state. This interest marks a significant change in the company's corporate philosophy of recent decades that moved away from passenger service, concentrating solely on freight train operations. Having one company dispatch and operate both freight and passenger trains on the same lines could increase the operating efficiency, and potentially reduce dispatching delays and improving travel times.

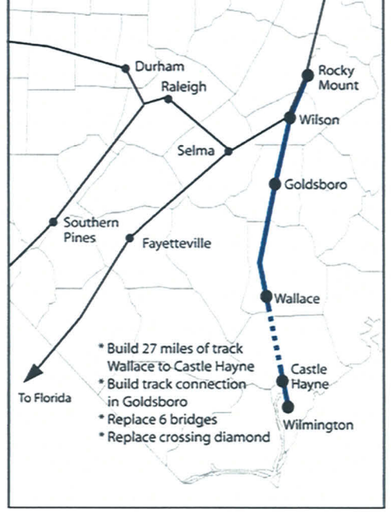
Improved railroad-highway crossings will be critical to the addition of any new passenger train service. North Carolina has emerged as a national leader in railroad-highway crossing safety by developing a comprehensive program to improve safety at all grade crossings throughout the state. To safely and efficiently operate passenger and freight trains in the same corridor, all railroad-highway grade crossings should be evaluated for possible consolidation or closure. If closure is not possible, appropriate protective devices should be installed. Such improvements may include, but are not limited to, the addition of standard flashing lights and crossing gates, installation of longer gate arms, or four-quadrant gates.

Alternative 2 – Wilmington-Fayetteville-Raleigh-Northeast
The tracks that comprise the route via Fayetteville are all in service and are actively used for freight, but the line between Wilmington and Pembroke currently has a maximum speed of 40 mph due to track and signal conditions. Some of the improvements needed along this route include a track connection at Pembroke to allow trains to move from the east-west line onto the main north-south CSXT line that runs through Fayetteville, Selma and Rocky Mount into the Northeast. A second track connection would be needed at Selma to permit trains to leave the main CSXT line and proceed west over the NCRR to Raleigh. The 51 crossings between Wilmington and Pembroke, which are now protected mainly with cross bucks, would need to be upgraded to include flashing lights, crossing gates and modern warning devices. Another 90 crossings along the route also would need to be upgraded.

An estimated $125 million in capital costs would be needed for the major track and signal improvements to bring this alternative up to a 79 mph computerized dispatched railroad.



Alternative 3 – Wilmington-Rocky Mount-Northeast
The route via Rocky Mount bypasses Raleigh and goes directly from Wilmington to Rocky Mount, where passengers would transfer to other Amtrak services for travel on to Washington, D.C. and the Northeast. Between Wilmington and Goldsboro this alternative uses the same tracks as the route via Goldsboro. Between these locations, it would incur the same capital costs to restore the track and signals from Castle Hayne to Wallace, install new warning systems at approximately 30 public railroad-highway crossings along the 27-mile line, and upgrade to flashing lights and crossing gates at those existing railroad-highway crossings along the route. This alternative also requires rebuilding or replacing six railroad bridges between Wallace and Castle Hayne. At Goldsboro, this alternative continues about 16 miles north to Wilson/Contentnea (the railroad junction) where it would join the main north-south CSXT line for travel on to Rocky Mount.



Some of the improvements needed for the Wilmington-Rocky Mount route include two new 10,000-foot sidings to allow passenger trains to pass lengthy freight trains in this area without incurring delays. Additionally, the crossing diamond (intersection where tracks cross) in Goldsboro would need to be replaced. The capital costs to restore and upgrade this route via Rocky Mount to the 79 mph passenger standards with computerized dispatch and signaling, are estimated at $188 million.

Much of this population growth is concentrated near employment centers and the adjoining counties. More North Carolinians are commuting to work in another county with increasing frequency. The 2000 census shows an 80 percent increase (from 1990) in North Carolina workers commuting into Wake County from other areas. These commuters largely hail from Johnston and Harnett counties, with a much smaller percentage traveling from Wayne and Cumberland counties.

Track Capacity and Safety Improvements

While the initial passenger rail feasibility study revealed significant interest in passenger train service to/from Wilmington, reintroducing such service will require track and infrastructure improvements in order to safely and efficiently accommodate both freight and passenger trains along any of the potential routes. Further analysis was required to determine the capital costs needed to make the necessary rail connections, reconstruct tracks that had been removed, and upgrade the lines to passenger train standards. Analysis also was needed to determine optimum running times for each of the route alternatives given capacity constraints on the existing rail lines and different levels of infrastructure improvements that could be made. Already, some improvements are planned to support existing passenger rail service. For example, centralized train traffic controls (CTC) will be installed between Raleigh and Garner to automate train dispatching, improve rail capacity and allow for increased train speeds.

A basic assumption of the analysis was that any future passenger service would operate primarily within existing rail rights-of-way. However, each of the alternatives considered contained one or more locations where additional right-of-way would be needed. Acquiring additional right-of-way would require more detailed environmental and engineering analysis and likely would take a minimum of 36 months to complete both the analyses and purchase.

A range of operating scenarios, using various signaling systems and different train speeds, was used to establish the costs of upgrading the three potential routes. Three levels of improvements were studied to determine the capital cost, train speeds and resulting travel times. The addition of CTC between Garner and Raleigh was assumed for all three levels of operating scenarios.

Scenario 1 – Includes ***basic*** track and signal improvements. On the Goldsboro route, passenger train speeds between Castle Hayne and Raleigh would increase from the current range of 25-59 mph maximum speeds to a maximum of 59 mph along the entire segment. Similarly, along the route via Rocky Mount, maximum passenger train speeds from Castle Hayne to Wilson also would increase from 40 to 59 mph. Along the Fayetteville route, passenger train speeds between the outskirts of Wilmington and Pembroke would increase from a maximum of 40 to 59 mph.

Scenario 2 – Includes ***moderate*** track and crossing signal improvements. This scenario also includes installation of CTC between Goldsboro and Garner (for the route via Goldsboro) or just Garner to Selma (for the route via Fayetteville) increasing speeds from 59 to 79 mph. Under this scenario, moderate improvements would be made to the route via Rocky Mount.

Scenario 3 – Includes ***major*** track and signal improvements and installation of computerized CTC along all unsignalized portions of the route. Having centralized traffic controls in place enables passenger trains to travel at maximum speeds (79 mph) along the entire Goldsboro and Rocky Mount routes and all of the route via Fayetteville once leaving the Wilmington Davis Rail Yard.

The improvements under scenario 3 are based on the standard used by most passenger rail operations – 79 mph maximum speeds with computerized dispatch. This level of improvement would result in the shortest travel time and allow a comparison of the highest expected performance and the associated ridership and costs (see table on next page). While this level of improvements achieves the shortest travel time for each route, the two other scenarios address lower cost options and their associated travel times, which provides options for incrementally implementing service. See Appendix for additional scenarios for each alternative. (For more information, see the *Southeastern North Carolina Passenger Rail Feasibility Study: Phase I Track and Signal Improvements* by HDR Engineering and the appendix to *Ridership and Revenue Forecasts for Rail Service to Wilmington* by AECOM Consulting.)

Comparison of the Three Routes - Major Improvements

Route from Wilmington to the Northeast connection	GOLDSBORO 79 mph - Major Imp.	FAYETTEVILLE 79 mph - Major Imp.	ROCKY MOUNT 79 mph - Major Imp.
Route Length	132 miles	188 miles	124 miles
Travel Time by train	2:30	3:22	2:11
Travel Time by car*	2:30	2:30	3:00
Average Speed	53 mph	56 mph	57 mph
Capital Costs	$184 M	$125 M	$188 M
Incremental Ridership+	74,100	58,900	32,000
Revenue	$2.7 M	$2.1 M	$1.65 M
Operating Cost++	$3.9 M	$4.3 M	$3.7 M
Operating Loss	$1.2 M	$2.2 M	$2.0 M
Crossing improvements	158	141	144
Crossing upgrade costs	$18 M	$15 M	$19 M

* *Automobile travel time based on direct travel from downtown Wilmington to downtown Raleigh or Rocky Mount*
\+ *Incremental ridership does not include those passengers already using existing passenger trains*
++ *Operating cost was calculated using a representative travel time and associated ridership for each route*

Capital Costs

Alternative 1 – Wilmington-Goldsboro-Raleigh-Northeast
In addition to creating a modern 79 mph railroad, the route via Goldsboro includes the costs to replace 27 miles of track between Castle Hayne and Wallace, as well as costs to upgrade track segments between Wilmington and Castle Hayne and between Wallace, Goldsboro and Selma. New crossing gates and flashing lights with constant warning times would need to be installed at up to 30 public railroad-highway crossings between Castle Hayne and Wallace. About 128 additional crossings along the route also will need to be upgraded. Some of the other needed improvements include a new track connection between the North Carolina Railroad (NCRR) and CSXT in Goldsboro to allow the passenger trains to switch tracks. In addition, six bridges (including a moveable bridge over the Northeast Cape Fear River) would need to be replaced or substantially rebuilt.

With contingencies and other necessary construction elements, it is estimated that the costs to restore and upgrade this route via Goldsboro to optimal conventional passenger train standards of 79 mph with CTC could approach $184 million, largely because portions of the line have been out of service for about 20 years.