



DRAFT REPORT

TRACK

TRACK RELOCATION FEASIBILITY STUDY HAVELOCK TO MOREHEAD CITY

NCRR HAVELOCK TO MOREHEAD CITY RAILROAD RELOCATION STUDY DRAFT REPORT OUTLINE

Purpose of the Project

- I. Background
 - A. The Rail Line
 - B. The Study Area
 - C. Railroad-Community Issues
- II. Public Involvement
 - A. Stakeholder Outreach
 - B. Citizen Involvement
- III. Economic and Community Impacts
 - A. Economic Development Opportunities
 - B. Grade Crossing Considerations
- IV. Corridor Alignment Alternatives
 - A. Corridor Alternatives
 - B. Rail Service Requirements
 - C. Highway Planning Coordination
 - D. Environmental Screening (including CAT application)
 - E. Public Input
 - F. Economic Development Opportunities
 - G. Cost Estimates
- V. Alternative Selection/Ranking
- VI. Funding/Finance
- VII. Conclusions and Recommendations

П

TRACK RELOCATION FEASIBILITY STUDY HAVELOCK TO MOREHEAD CITY

PURPOSE OF THE PROJECT

The portion of the NCRR single main track runs from Havelock in Craven County through the central business district of Morehead City in Carteret County extending to the Morehead City Port Terminal, a distance of approximately 17 miles. There are parallel roads and streets along the railroad and approximately 25 highway at-grade crossings in the immediate Morehead City area. Only six of these crossings have automatic warning devices and the remainder have no automatic protection. The operating train speed through Morehead City is 15 mph.

The purpose of the proposed study is to determine the feasibility of relocating the railroad while continuing to serve the Port Terminal including its Radio Island property. The ultimate goals are to identify the best route, assess environmental issues, build public support, establish strategic plans for economic development, and identify potential funding sources.

I. BACKGROUND

A. The Rail Line

The rail line under evaluation runs from Havelock through Newport to Morehead City, 17.5 miles. Approximately 3.5 miles of the line lie in Craven County, and the remaining 14 miles lie in Carteret County.

History – The line segment is the eastern end of a railroad chartered in 1854 and completed in 1858. When completed, the Atlantic and North Carolina Railroad (A&NC) ran 96 miles from Goldsboro and connections with the North Carolina Railroad and the Wilmington and Weldon to its terminus on Beaufort Harbor on the opposite shore from the town of Beaufort. A new town was developed at the railroad terminal, Morehead City, named after John Motley Morehead former state governor, President of the North Carolina Railroad and leading proponent of the new rail line, and principal developer of the town. It was one of three railroads that were promoted to form a state-controlled mountains-to-the-sea system to transport the state's commerce which at that time was moving to ports in neighboring states. The A&NC was merged into the North Carolina Railroad in 1989.

Physical Characteristics – The rail line is comprised of a single track main line operated without train control signals with a maximum permissible speed of 35 miles per hour. The segment under study begins at Havelock near Mile Post (M.P.) EC 76 at the junction of the main track with a spur serving the Marine Corps Cherry Point Air Station and the Camp Lejeune Railroad running some 30 miles southwest to Jacksonville and the Marine Corps Camp Lejeune. The main track segment terminates just past M.P. EC 94 and the junction with terminal trackage of the Port of Morehead





City. Trackage owned by the port and NCDOT extend east another 1.9 miles across Radio Island to the west bank of Gallant Channel.

Rail Traffic – On-line rail traffic is concentrated at Havelock and Morehead City principally destined to or from the military bases mentioned earlier and the Port of Morehead City. Only a couple of other occasional rail users exist on the route.

Operations – One train which operates between New Bern and Morehead City runs in both directions over the line segment five days a week, Sunday - Thursday. The line is leased by Norfolk Southern Railway and operated by the Railway's East Carolina Business Unit. Switching at the port and Radio Island is performed by a terminal carrier that is part of the Gulf and Ohio family of short line railroads.

Study Purpose – The purpose of the study is to determine the feasibility of relocating the rail line while continuing to serve the Port of Morehead City including the port's property and proposed terminal on Radio Island. The best alternate route is to be identified and potential funding sources identified.

B. The Study Area

The project study area lies within two counties, Craven and Carteret, and contains four municipalities, Havelock, in Craven County, and Beaufort, Morehead City, and Newport in Carteret County. In addition, two unincorporated communities, Mill Creek and Harlowe, lie within the project study area. Mill Creek is situated on the north shore of the Newport River, while Harlowe lies along NC 101 east of Havelock. See Study Area in Figure 1 on next page.





Craven County

The majority of Craven County's total land area of 502,300 acres is forested. Much of the forestland is unsuited for either development or crop production. The Croatan National Forest is located within the county, comprising approximately 157,000 acres, or about one-third of the county's land area.

Craven County is becoming more urbanized, with over 58% of its population living in an incorporated municipality. The majority of the urban population resides in the communities of New Bern, Havelock, River Bend, Trent Woods, Havelock and the Cherry Point Marine Air Corps Station. Interestingly, the unincorporated U.S. 70 corridor between New Bern and Havelock is the County's third most urbanized area.

In 2005, the total population of Craven County was 86,369 according to the US Census estimate. The County is experiencing rapid growth typical of North Carolina's coastal region, and grew by 11.9 percent between 1990 and 2000. Approximately 48 percent of the population was male and 52 percent female. The median age of Craven County residents is 36.1 years; which is comparable to the state's median age of 36.2 years. Seventy-two (72) percent of Craven County's population is over the age of 18, while 14.8 percent of the population is over the age of 65 years, and 8.6 percent were under the age of five.

The majority of Craven County is white, comprising 70.7 percent of the population, while 23.4 percent is black, and 3.4 percent is Hispanic. The average household size is 2.32 persons, and the average family size is 2.75 persons. Eighty-six (86) percent of the population has graduated from high school, and 21 percent have a bachelor's degree or higher. Approximately 20 percent are veterans. Craven County's economy is strongly tied to the military air base, with about 20 percent of its population employed by the military. The second largest sector of the economy is retail trade and service, employing about 21 percent age 16 and above. Manufacturing accounts for the third largest sector with about 17 percent.

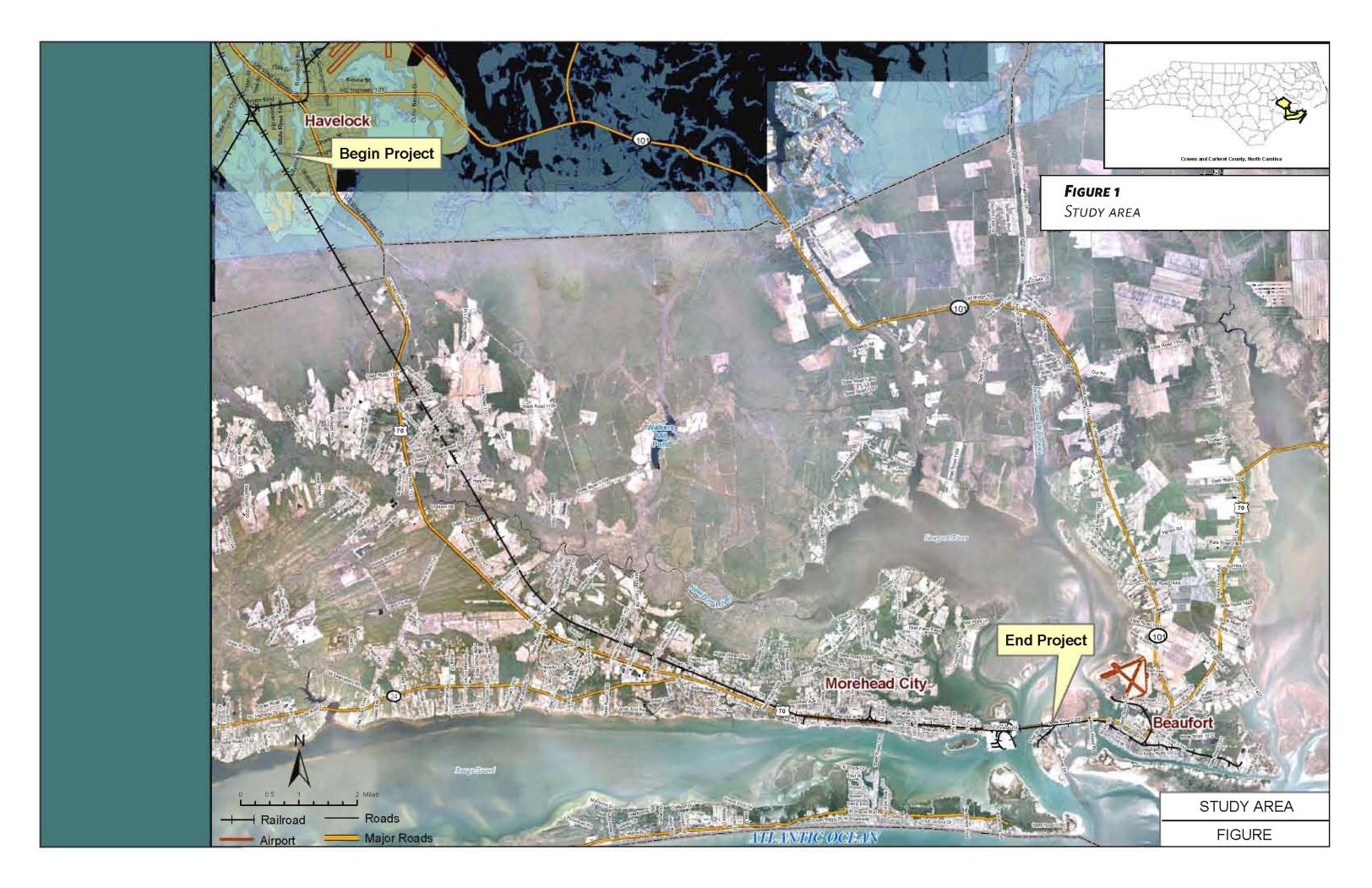
The median household income in Craven County in 2005 was \$41,428. The median family income for the County in 2005 was \$48,316, slightly lower than \$49,339 for the state as a whole. The unemployment rate for the county in 2005 was 5.9 percent, which was lower than the state's unemployment rate of 7.1 percent during the same period.

Land Use Planning

Craven County's 1998 Coastal Area Management Act Land Use Plan provides policy guidance for land use decisions within the County. The Plan contains elements addressing demographics and housing, the economy, and land use. Land







use plans provide guidance for both individual projects and a broad range of policy issues, such as the development of regulatory ordinances and public investment programs. The County's land use policies encourage existing land use patterns of low density rural residential development communities scattered throughout the county, with higher-density urban development located where adequate sewer and water facilities are available. Land use policies require development that is compatible with the mission of the Cherry Point MCAS to avoid future encroachment issues. The land use plan policies related to industrial development support and encourage industrial development that meets applicable state and federal regulations. The County also has a policy of extending utility lines and systems to induce industry to locate in Craven County, along with tax incentives. Craven County's policies support all transportation improvements proposed in the NCDOT County Thoroughfare Plan, improvements to the Craven County Regional Airport and construction of the North Carolina Global Transpark and implementation of a regional economic zone. The proposed NCRR alternative corridors are consistent with Craven County's land use plan policies, including industrial development, natural resource protection, transportation and land use.

Craven County does not have a county-wide zoning ordinance to regulate land uses. However, the County did recently enact airport height controls for its Regional Airport. There is a zoning ordinance affecting an area east of the Cherry Point Marine Corps Air Station that addresses aircraft noise and is designed for sound attenuation of the development in this area. The lack of land use and zoning controls poses a high potential for conflicting land uses, particularly between residential areas and non-residential land uses.

Carteret County

Carteret County's 2005 population estimate, according to the US Census is 62,525 individuals. Between 1990 and 2000 the population of Carteret County grew by 13.3 percent. Population growth projections for the County anticipated an annual growth rate of 0.82% for the 2000-2005 period. Reasons for a slower growth rate than experience in the previous decade are attributed to Carteret beach communities being largely developed by 2000, a lack of adequate jobs to attract and retain younger residents, and transportation deficiencies which may make Carteret County less accessible than other coastal areas.

Approximately 25 percent of Carteret's population is under the age of eighteen, and nearly 18 percent is over the age of 65. Nearly 90 percent of the population is white, with only 7 percent black and 2 percent Hispanic. Nearly 83 percent are high school





graduates, and nearly 20 percent have a bachelor's degree or higher. These demographics reflect a growing, affluent retiree population.

The median household income, according to 2003 US Census data was \$38,344; significantly lower than \$49,339 for the state. For the population 16 years and older, approximately 40 percent are not in the labor force, and the percent of the civilian labor force unemployed is nearly 3 percent. Nearly 30 percent are employed in management and professional occupations, 15 percent in the service sector, and 25 percent in sales and office occupations.

Land Use Planning

Carteret County contains 1,049 square miles, of which only half, or 534 square miles, are land. A large percentage of the County is federal land, including the Croatan National Forest, the Cedar Island Wildlife Refuge, Cherry Point Marine Corps Air Station, the Marine Corps Outlying Airfield Atlantic, Marine Corps Auxiliary Landing Field Bogue Field, and Cape Lookout National Seashore. There are also numerous state, local and non-profit properties and conservation easements within the County.

Carteret County updated its CAMA Land Use Plan in 2005. The *CAMA Land Use Plan* establishes policies that help guide local governments in land use and zoning decisions. The land use plan addresses growth issues such as the protection of coastal resources (i.e., coastal water quality, wetlands, and fisheries), desired types of economic development, and the reduction of storm hazards, as well as local issues of concern. Land use plans provide guidance for both individual projects and a broad range of policy issues, such as the development of regulatory ordinances and public investment programs

Carteret County is divided into three general areas for planning land use, "Down East," east of the Intracoastal Waterway; the area west of US 70 and north of the Towns of Beaufort, Morehead City, and Newport; and western Carteret, west of Morehead City along the NC 24 and NC 58 corridors and Bogue Banks. The Down East area continues to be predominantly rural with large areas of wetlands and agriculture.

Development is concentrated in municipalities and along the waterfront areas, including Newport, Morehead City and Beaufort. Each of these municipalities has land use plans and zoning ordinances that guide development. Recent residential developments are influenced by the availability of central water and waste water





treatment service. Beaufort is directing development to the north, between NC 101 and US 70.

The majority of development in western Carteret is concentrated in Morehead City along NC Hwy 24 and Bogue Banks, while land use trends indicate new subdivisions are planned near the White Oak River and in areas along NC Hwy 58. This area is the only zoned land in the County and is where most new growth is planned. New subdivisions created approximately 1,700 lots from 1997 to 2003, the majority in White Oak Township.

Land use trends in the county indicate that the NC 58 corridor north of Cape Carteret is expected to continue to experience high growth, as well as areas north of the Town of Beaufort when water service is extended along US 70 and NC 101.

Carteret County land use policies supports protection and long-term management of its natural resources and fragile areas. As such, the County supports the Coastal Resources Commission's development regulations for Areas of Environmental Concern (AECs) and other state and federal regulations. In addition, the County has in some cases adopted policies that exceed or are more restrictive than the State's minimum use standards where state standards are viewed as insufficient to protect natural resources.

Carteret County policies supports the growth and expansion of the North Carolina State Port Terminal, provided plans are prepared that address the impact of associated rail and road traffic increases in Morehead City and Carteret County. The County relies on the State Port Authority to prepare these plans prior to any material expansion. The proposed NCRR alternative corridors are consistent with Carteret County's land use plan policies, including industrial development, natural resource protection, transportation, and land use.

C. Railroad-Community Issues

Three communities are most directly affected by the proposal to relocate the railroad, Morehead City, Beaufort, and Mill Creek. Other communities within the project area would also be affected, but to a lesser extent. These include Newport and Harlowe. The Town of Havelock, at the project's northern terminus, would see no significant changes.

Town of Morehead City

The NCRR and the Town of Morehead City have an entwined past. In fact, the town was named for Governor John Motley Morehead, who began the railroad in the mid-





19th century. Consequently, citizens in Morehead City generally accept the railroad and its accompanying delays as a part of their community. Nevertheless, downtown businesses also recognize the opportunity that may be presented for redeveloping Arendell Street should the railroad no longer run through Morehead City's main street.

Town of Beaufort

Many representing the interests of the Town of Beaufort are wary of alternatives which would relocate the railroad to the east of the Port of Morehead City. The prevailing sentiment was summarily stated by one individual who said, "Beaufort will never be Morehead City's back door." Related to this is a point of view that the Port of Morehead City does not benefit Beaufort, and therefore, Beaufort should not have to carry the burden of its supporting infrastructure, such as the railroad. Some are dubious to the idea that the Port will grow at all.

As Beaufort itself grows, its focus is on land between NC 101 and US 70, north of downtown, where the only large tracts remain available to a community nearly surrounded by water. Corridors affecting this area between the two arterials were not well received. Likewise, corridors potentially affecting the future expansion site of the Maritime Museum on Gallants Channel were also strongly opposed. Most Beaufort citizens expressing a preference for an alternative corridor preferred Alternative 6.

Mill Creek Community

Mill Creek is an unincorporated traditional fishing village on the north side of the Newport River, west of Harlowe Canal. Mill Creek Road (SR 1154) runs east-to-west through the community. Comments from its citizens focused on concerns about the affects the relocated railroad could have on its emergency response service and the impact of the bridge over the Newport River to water quality, the fishing industry, and noise. Alternatives 6 and 7 were strongly opposed by commenting individuals from the community. One community representative asked that consideration be given to an alternative that crosses the Newport River to the west of Mill Creek, within the Croatan National Forest, so that the community would be unaffected.

Town of Newport

The railroad currently runs through the heart of Newport, a small, fairly dispersed town located east of US 70. The town has few businesses and currently functions as a bedroom community for Cherry Point Marine Air Station. No businesses in the town currently use the railroad, though a veneer plant had in the past. Little interest was exhibited in the proposal from town citizens or their representatives.





Harlowe Community

Harlowe is an unincorporated community on NC 101 east of Havelock, near the Carteret / Craven County line. No interest in the study was expressed from its residents. Some of the alternatives, particularly Alternatives 5 and 8 could potentially impact community residents or property owners. These potential impacts are noted because Harlowe is a predominately minority, low-income community. If the project proceeds to an Environmental Impact Statement, effects related to environmental justice will be taken into account. Additional efforts to reach out to the residents of the Harlowe community will be required.





II. PUBLIC INVOLVEMENT

The public involvement and outreach program was developed around two primary goals: 1) to identify and contact key stakeholders that could *i*) influence the project outcome or *ii*) assist in obtaining funding supporting; and 2) gauge public opinion about the proposal to relocate the rail line. The stakeholder outreach program was the initial step of the outreach process, and continued throughout the study.

A. Stakeholder Outreach

Stakeholder outreach focused on several loosely defined core groups:

- Local officials and community leaders;
- State and federal government professionals and elected officials;
- Community interest groups;
- Economic development organizations and developers; and
- Representatives from groups with direct interests, such as the Port of Morehead City and Norfolk Southern Railway.

Local government officials are typically on the "front line" regarding major infrastructure investments, even when the plan is initiated by a third party. Additionally, they have first-hand knowledge of local concerns and public opinion. Therefore, the first priority in beginning the stakeholder work was meeting with the planning directors or town managers of each affected jurisdiction within the project study area. During these meetings, the project concept was introduced, initial reactions were sought, and request for data regarding land use planning, development proposals, parks and recreation, and names of community leaders were made.

Subsequent meetings were held with a diverse group of community leaders, including the directors of the Chambers of Commerce within the study area, the directors of the economic development organizations, the manager and chairman of the area's municipal airport, military base representatives, staff with the Croatan National Forest, and others.

An important meeting was held with Senator Elizabeth Dole's staff in Washington D.C. The outcome of that meeting was an indication of support for the project and a promise to introduce the NCRR and the relocation project to the appropriate personnel at the Pentagon. As a follow-up the Senator staffer requested that a "white paper" to summarize the project and its status. That paper was prepared and transmitted to the Pentagon.





Table 1 provided in the Appendix identifies the stakeholders contacted during the study. Other stakeholders interviewed ranged from developers to environmental activists. Still others with less direct interests in the area were contacted via telephone calls and emails. These individuals are also identified in the referenced table. All stakeholders listed were sent newsletters informing them of the study and inviting them attend the public meetings held for the study, discussed below.

The stakeholder meetings revealed a range of opinions regarding the concept of relocating the railroad. Many of these ideas centered on the individual's opinion on the future of the Port of Morehead City. Those who supported the Port, or believed it would grow, generally supported the concept of relocating the railroad. Conversely, those who felt the Port, or at least Radio Island, should be used in other ways, typically felt the relocation would not be worth the investment.

General knowledge about the project study area gained from interviews with local community leaders is reflected, in large part, throughout this report. Information about the status of Morehead City-Beaufort Municipal Airport expansion plans is one example of the useful information obtained during the interview process.

Public Officials Meetings

On the afternoon of November 29, 2006, prior to the first of two public information meetings, a public officials meeting was held at the Morehead City Train Depot to brief elected officials and local government managers and planners on the status of the study. Representatives from the Morehead City Downtown Revitalization Committee and Carteret County economic development organizations were also included. The briefing provided officials and community leaders with an opportunity to ask questions and become better informed so that they could response to inquiries for their constituents. Approximately 20 community leaders attended the 1.5 hour meeting. The community leaders were invited to the meeting by letter.

Small Group Meetings

Three small group meetings were held for the project. One was held on September 13, 2006 with the Carteret Wildlife Club, a local environmental organization that also maintains the 21-mile Neusiok Trail through the Croatan National Forest. Approximately 30 members of the organization attended the meeting. An NCRR consultant made an informal presentation about the feasibility study and requested information about environmental sensitive features of which the NCRR should be aware. Afterward, a lengthy question and answer session was held.





A presentation was made to the Carteret County Commissioners on October 16, 2006 to brief them on the purposes of the feasibility study and its status. The Commissioners asked a few questions about the project, including questions about its relationship with the US 70 corridor.

A meeting was held with several members of the Carteret Crossroads organization, an environmental advocacy group at Pivers Island on September 20, 2006. At this meeting, held early in the study process, the purpose of the study was explained, and input was requested, specifically regarding environmentally sensitive features or issues of which the members were aware.

B. Citizen Involvement

Three public meetings were held for project to inform interested citizens of the proposal to relocate the railroad and gauge public opinion to the concept. Two basic questions were asked of the public: "what is your opinion of the idea to relocate the railroad?" and, "which of the alternatives presented do you prefer?"

Two public meetings were held after development of the first set of six alternative corridors. The first meeting was held on November 29, 2006 at Havelock Middle School. The second meeting was held on November 30, 2006 at Morehead City Middle School. Both meetings ran from 4:00 to 7:00 pm. The format of the meetings was an informal, "drop-in" style, to allow conversation between NCRR staff and the public. No presentations were made.

A third public meeting was held on February 28, 2007 at The 1905 Train Depot on Arendell Street in Morehead City. The meeting ran from 3:00 to 7:00 pm, with the same "drop-in" style format used at the previous meetings.

Meeting Notification

The public was invited to attend the meetings through publication of display advertisements in four local newspapers, listed below.

- The Carteret County News-Times (twice)
- The Jacksonville Daily Journal (twice)
- The Gam
- The Havelock Record

In addition, newsletters were mailed to approximately 120 stakeholders, informing them of the upcoming meetings. Representatives from the consultant team were featured in a local, live radio talk program on November 27, 2006 and February 26,





2007. The discussion focused on the purpose of the study and the NCRR's role in the region's transportation network. The dates, times, and purpose of the public meetings were announced on the program. The display ads also prompted several articles in the local newspapers prior to the meetings, which assisted in generating interest in the study.

Attendance

Attendance was light at the November 29, 2006 Havelock meeting, with 17 citizens signing in. Because a few did not sign-in, the total attendance at that meeting is estimated between 20 and 25 individuals.

The public meeting at Morehead City Middle School on November 30, 2006 was better attended. Sixty-four (64) citizens, including some local government officials, signed in at the meeting. Again, because some citizens did not sign in, the total estimated attendance in Morehead City is approximately 75 citizens.

On February 28, 2007, approximately 68 citizens signed in at the meeting at the Morehead City Train Depot. Again, several citizens did not sign in, so the total estimated attendance is between 75 and 80.





III. ECONOMIC AND COMMUNITY IMPACTS

A. Economic Development Opportunities

In the last few years, the dramatic growth of international trade and a trend toward offshore manufacturing has had a major affect on the US economy. Without question globalization and new technologies have transformed the way many American businesses operate, created new markets, and changed the way goods are transported around the world. Many experts agree that freight volumes will triple in the next 20 years and as more and more goods are made outside the U.S. and transported to consumers here, new opportunities exist to capitalize on port and rail networks to create new economic opportunities that might never have been considered previously.

In his book, <u>The World is Flat</u>, Thomas Friedman refers to a "triple convergence" that is transforming economies and businesses around the world. In many respects there is the opportunity for a similar scenario to emerge in eastern North Carolina. This transformational opportunity results from:

- Significant increases in cargo volumes arriving at east coast ports
- Major improvements being made in North Carolina Port facilities
- Access to larger tracts of land for a business/industry park that could be served by a new rail corridor with reasonable proximity to the Port.
- An opportunity to relocate the North Carolina Railroad corridor between the Port of Morehead City and Havelock to allow for greater safety, increased speeds, and enhanced flexibility for expanding product lines that may not be available on the current corridor that bisects Morehead City

With the increasing importance of imports in our economy having a major impact on the supply chain and the way we move goods around the globe, businesses in the distribution sector are changing in reaction to the shift in those goods movements throughout the country. According to Michael Williams, Senior Research Analyst with Cushman & Wakefield Global Solutions, these changes include:

- 1) More transloading and crossdock facilities near ports
- 2) The return of rail as an increasingly important transportation medium
- 3) A push into ex-urban or rural locations in search of less expensive land, labor, and a less bureaucratic regulatory environment

Within the real estate industry these changes are creating an expanded warehouse, distribution, and manufacturing market where the benefits from increased international trade can enhance and build new business opportunities. The regions that are expected





to benefit the most from these changes include coastal gateways or regions around major deepwater ports; inland hubs or regions with proximity to major markets and excellent highway and rail networks (Chicago, Memphis, Atlanta, etc.), and according to NAIOP and Cushman & Wakefield, "some second tier gateways and hubs".

East Coast Ports

Traffic into east coast ports has increased significantly and that growth is expected to continue into the future. In 2014, the \$5.3 billion expansion of the Panama Canal will be completed allowing larger ships to haul cargo from Asia to the east coast. According to one expert, the lack of room for expansion at many west coast ports, coupled with the rising fuel prices and cost of U.S. trans-continental rail service, and the fact that almost 70% of America's population lives east of the Mississippi River will persuade more and more businesses to move more Asian imports to the east coast.

Today, east coast ports are receiving more and more products from Asian markets as well as shipments from South America. While transit times to east coast ports from Asia may require longer transit times according to several sources, they are also cheaper and provide quicker access to major east coast consumers. As a result some of the nation's largest and most competitive companies including Wal-Mart and Target are developing east coast facilities near these ports. As more and more businesses shift product and materials to the east coast the opportunities for capturing new business and enhancing the Port of Morehead City – NCRR rail link expands as well.

North Carolina Port Improvements

In order to capture more of this new business and the economic development that it can generate for the state, the North Carolina Port Authority is investing significantly in its existing ports and planning a new port facility in Southport. On January 30, 2007, the Authority Board approved contracts for several new projects at the Port of Morehead City. Development of a new port terminal on Radio Island is proceeding to the next phase that will include solicitation of prospective private partners and additional civil and structural engineering design and terminal layout planning. The Board approved funding for the design of a paved, open cargo-storage area adjacent to a new warehouse that is currently under construction. This will give the Port of Morehead City a paved open storage area on the port of just under 20 acres adjacent to their new 177,000 square foot warehouse.

These improvements at the Port of Morehead City along with other improvements planned for the future will enhance the ports ability to compete for new business, expand existing business services, and capture additional market opportunities in the future. The port authority is aggressive pursuing new market opportunities focusing on





bulk cargo as well as break bulk for the Morehead City Port. The Port of Morehead City is the second largest importer of crude rubber in the U.S. and with the recent announcement of the Bridgestone/Firestone airplane tire facility in North Carolina, shipments of that commodity may increase.

Additional commodity growth markets identified by the port authority experts include paper, rolls, pulp, and fine paper; steel, metal, and metals slabs; food products; forest products; and cement. Other commodities could be accommodated if demand warranted, particularly demand created by new industrial customers that might locate in the area to take advantage of the port and rail facilities. The port recently received its first shipment from South America (forest products) and as the Port of Wilmington is expanded more of the bulk and break-bulk cargo from that port will likely be diverted to the Port of Morehead City.

The development of an industrial park in reasonable proximity of the Port of Morehead City was of interest to port officials. With the limited availability of land at the port, they recognize the opportunities that an in-land facility could provide. With their current commitment to the new international port they probably could not participate in the development of such a facility financially but could provide leadership and marketing support. Glenn Carlson, Vice President for Business and Economic Development for the North Carolina Port Authority indicated that there were some future business opportunities that would make sense to do off of Radio Island in the future as additional business was moved to the Port of Morehead City.

With the development of the new international port facility and additional improvements to the Wilmington and Morehead City Port facilities, more of the bulk and break-bulk cargo will likely be shifted to Morehead City in the future. The demand for many of the bulk commodities such as steel, iron ore, and other minerals are expected to continue in the foreseeable future. Additional bulk market strategies may increase cargo from South America and other markets as port congestion becomes a more significant issue along the east coast. This could drive additional and new business into the Port of Morehead City in the longer term.

Land Availability

The third link in this "triple convergence" is the limited availability of developable land at or near existing port facilities. That land resource is important for port expansion, to capture industrial development opportunities in the future, leverage logistics and distribution facilities, and provide other opportunities to enhance economic development within the broader region linked to the port-rail connections. A recent study by Cushman and Wakefield Global Real Estate Solutions identified the importance of both available land and lower land costs as crucial elements in the supply





chain for businesses in the future. Our review of a number of east coast ports indicates a limited availability of sites near these ports to provide locations for future economic development opportunities.

The Ports of New York and New Jersey are redeveloping several brownfield sites near the port to provide future sites for businesses that need access to port related facilities. In Virginia the State developed an in-land port facility located 220 miles from the ocean port and near Portsmouth a 568 acre tract with deepwater access is being jointly developed by the State of Virginia and Moller-Maersk as a primary east coast shipping hub. The Tampa Port Authority has six parcels available ranging from 3.56 acres with water access and no rail access to one 175 acre tract with water and rail access. At the Port of Brunswick some acreage remains in the Colonel's Island Industrial Park where one of the largest import/export centers for automobiles and other vehicles on the entire Atlantic seaboard is located.

There are several larger acreage sites available within reasonable proximity of the Port of Morehead City and some of these sites could be served by several of the alternatives identified in the NCRR Relocation Study. As additional improvements are made to highway 70 under the Super 70 Corridor Plan, as more and more shippers and businesses utilize east coast ports, as the improvements to the Port of Morehead City are completed and other improvements are planned, and as the opportunity to relocate a segment of the NCRR rail corridor is considered, a new and potentially transforming economic development strategy for eastern North Carolina begins to emerge.

The opportunity exists to attract new businesses to this region that would not have previously considered for this area of North Carolina, to enhance existing manufacturing clusters, and to provide strategic businesses segments with access to a dynamic multi-modal transportation network that could significantly enhance their profitability in the global marketplace in the years to come. It is important to realize however, that while the potential for a new economic development strategy exists as it never has before, without a commitment to understand the implications of these changes and the leadership to aggressively capitalize on these opportunities, the eastern region will not benefit from these transformational market activities.

According to the rail short-line operator serving the Port of Morehead City the demand for warehousing and the importance of time and service are the primary comments they hear from customers. The ability to load and unload ships quickly is often crucial and some businesses in the region may be using other transportation options outside of the region because they perceive service and timing as an issue. Competitively priced





warehousing in proximity to the port that could be served by the railroad is of interest to some of the port existing customers.

The Existing Economic Development Vision for North Carolina's Eastern Region

The North Carolina Eastern Region Commission (NCER) is a regional economic development organization, one of seven regional economic development partnerships created by the North Carolina General Assembly in the early 1990's. In 2005, NCER began a process to develop a Strategic Plan for economic development and in May, 2006 "A Vision Plan for North Carolina's Eastern Region" was released to provide guidance to both NCER and economic development organizations within the region identifying the best strategies for investing economic development resources in the future.

According to this report the economy of the eastern region of North Carolina is changing from its concentration in agriculture and textiles and transitioning to other business sectors. The coast counties have experienced an increase in tourism related business and also have seen some expansion in military-related operations. The study conducted a cluster analysis of the region's industrial base and identified growth industries for economic development targeting within the region. The most important clusters identified in this region of North Carolina were:

Existing Business Clusters

Textiles & Apparel **Appliances Grain Milling Wood Processing** Marine Trade Military (goods & services) Feed Products **Packaged Food Products Tobacco Products** Agriculture

Hospitality and Transportation

Services (Tourism)

Emerging Business Clusters

Pharmaceuticals Construction Machinery & Concrete & Brick Bldg. Products Distribution **Engine Equipment Wood Building Products**

Potential Business Clusters

Metalworking & Fab Metal Products **Precision Instruments** Nonresidential Building Products **Rubber Products** Wiring Devices & Switches Cable Manufacture





NCER has identified 7 "Targeted Clusters" for the Eastern Region: marine trades, pharmaceutical and medicine manufacturing, building products, tourism, advanced manufacturing, food manufacturing and wholesaling, and military and military procurement. NCER acknowledged the importance of key infrastructure assets within the region if these clusters are to be successfully pursued. The Strategic Planning Committee for this study recognized the Port of Morehead City as one of the region's unique assets but indicated that the rail and highway access from the port "hinders the region's competitiveness". Unfortunately this study did not recognize the significant role that the port and NCRR currently play in the state's economic vitality and the role that they *could* play in this region's future economic development, the study also did not consider the potential impact of any of the improvement plans being considered at that time by NCRR or the port.

There are opportunities within almost every one of the 7 targeted business clusters to enhance the eastern region's competitive advantages by assessing all of the multi-modal transportation requirements of these business sectors and determining how the port – rail linkage could be used to the region's best advantage. This may require considering niche market sectors within some of these business clusters and opportunities to exploit cost and timing factors that have not been evaluated before. Consider the recent experience of the short-line rail operator serving the Port of Morehead City. At another location they serve outside of the state, they are now shipping frozen chickens from Troy, Alabama ultimately to the west coast for transport to Viet Nam. A strategic business opportunity never considered before that was made possible because of global conditions (in this case bird flu fears and an excess availability of dark meat chicken parts in the US) and a collaborative effort between a local poultry producer, the local economic development organization, and the short line operator.

The Eastern Region is known globally for agricultural production. The largest farm east of the Mississippi River is located in Carteret County, the Open Grounds Farm. There are a number of food processors in this region many of whom are nationally and internationally recognized including Mt. Olive Pickles, Carolina Turkeys, The Cheesecake Factory Bakery, and Sara Lee Bakeries. Whether or not there are opportunities to export some of this production using the NCRR – Port of Morehead City remains to be seen, but it is being successfully in other markets and is certainly worth some evaluation by local and regional economic development organizations.

As competition becomes more intense globally, more companies are using their distribution and transportation strategies to obtain competitive advantage and access to multiple transportation modes is becoming even more important. Many U.S. companies





are continuing to realign their distribution networks to deal with rising transportation costs and meet the time-sensitive demands of their customers. The North Carolina Railroad and the Port of Morehead City should play an increasingly significant role in the economic development of this region of North Carolina, however for that to occur other economic development partners within this region will need to learn much more about the "triple convergence" and the roles that the railroad and the port can play in the economic future of the region.

Helping the economic development professionals in this region understand the transformational changes that are occurring at the port and the railroad and how those change could affect their economic development opportunities in the future will be critical in order for them to leverage these transportation assets to the regions best advantage in the future. This is not to suggest any shortcomings on their part, but to recognize an opportunity to help them understanding elements of the railroad and multi-modal transportation business that they are not as knowledgeable about as the NCRR staff.

At a recent Southern Economic Development Council forum, several national site location consultants discussed a number of trends influencing companies' decision in locating new facilities. Cost reduction strategies pervade every aspect of these decisions and transportation availability and transportation costs are a major determiner. The traditional location factors such as proximity to interstates, population centers, and intermodal facilities are important for some projects but the availability of sites that meet those parameters are becoming more difficult to find and certainly more expensive. Congestion and other factors are taking their toll in many major market locations and as a result some companies are looking at secondary markets, reconsidering more rural sites, and looking for niche opportunities that will create longrange cost reduction strategies for their businesses. The central question for any business considering any location is, "Am I going to be able to make money here?" In the final analysis nothing else matters.

It is important to recognize the important role that manufacturing stills plays in the North Carolina economy. While fewer people are employed in manufacturing across the country today, due not only to out-sourcing but to significant increases in productivity from new technologies, manufacturing is still an important part of our economy. In North Carolina, 20% of the state's Gross State Product (GSP) comes from manufacturing and the average annual manufacturing wage in the state exceed the annual average wage by almost \$7000 per year (source – U.S. Bureau of Labor Statistics, U. S. Bureau of Economic Analysis). North Carolina manufacturers in 2006 exported over \$18.6 billion of the \$19.5 billion in total goods or 95% of exports from





the state. The top export sectors for the state included chemicals & pharmaceuticals, computers & electronics, machinery, fabric mill products, and plastic & rubber. Manufacturing will continue to play a role in the economic development future of the state and transportation will continue to be a crucial element of their success.

U. S. Department of Defense Military Implications

The three military installations in eastern North Carolina, Camp Lejeune Marine Base, Cherry Point Marine Corps Air Station, and the Seymour Johnson Air Force Base all utilize the NCRR railroad to move equipment, materials, and troops. According to Lt. Col. Frederick Hyden, Traffic Management Officer at Camp Lejeune, the Second Marine Expeditionary Force must have the ability to rapidly deploy from the Port of Morehead City, requiring a two day "in and out" to meet national security requirements. Although Camp Lejeune utilizes port facilities at Lambert Point and Wilmington, they load amphibious vehicles and other equipment out of Morehead City.

The military develops deployment plans for each installation and current plans have been developed using the existing NCRR rail structure. Their ability to meet the current time line for deployment is crucial to their operations. If there were opportunities to develop a staging area closer to the port and create more effective off-loading capabilities this would enhance their mobility capacity. The military representatives that we spoke with expressed an interest in a staging area that could be developed in conjunction with a new industrial park along the rail line or at some other suitable location.

At the present time, the military must have at least 12'6" of clearance for their military equipment and as new equipment platforms are developed in the future additional clearance would be preferable. Further discussion with the military would be necessary to clarify any new clearances that would be needed to meet their longer term needs. Lt. Col. Hyden outlined several issues or opportunities or concern that could enhance their deployment:

- 1) A location to stage deployments near the port that would allow them to more efficiently load their ships and make best use of available space at the port. This could be accomplished at an industrial park facility or other acreage within reasonable distance of the port.
- Port capability is CRITICAL and any improvements to the rail that allow them to deploy more quickly and efficiently through the port would be positive to their operations.





Economic Development in Carteret County

Carteret County is served by a very professional Economic Development Council focused on generating new job opportunities and expanding the county's tax base through planned, quality growth. Carteret County and the City of Morehead have established "Economic Development" as an important goal for their respective communities. According to the county's 2005 Financial Report, "although the tourism industry continues to perform well with an average annual economic impact of approximately \$236 million, much of the improvement in the economy is attributable to the diversification of the economy into manufacturing, distribution, marine sciences, and the construction trades". In 2006, tourism contributed an estimated \$250 million to the county's economy.

There are several industrial parks in Carteret County but there are no rail served businesses in the county. The Jarrett Bay Marine industrial Park is approximately 170 acres and is north of Beaufort on the intracoastal waterway. Most of the businesses in this park are focused on the marine trades and boat building industry. The Carteret County Economic Development Council has been very successful in attracting the marine industry and there are now over 30 boat building businesses in Carteret County and few parcels remain in the Jarrett Marine Industrial Park. The Crystal Coast business Park is located off US 70 in Morehead City. This park is 58 acres and only a few parcels remain available for sale.

The largest manufacturing employers in Carteret County are: Atlantic Veneer, Bally Refrigerated Boxes, SPX Air Treatment, Parker Marine Enterprises, Jarrett Bay Boatworks, Creative Outlet, and Veneer Technologies. The largest non-manufacturing employers include: Carteret County public Schools, Carteret General Hospital, Wal-Mart, Carteret Community College, Carteret County, Food Lion, Henry's Tackle & Sporting Goods, and the U.S. Coast Guard. Although the Port of Morehead City has a significant number of employees they are not identified in the EDC report as a major employer in the county.

In several interviews with local stakeholders, the question was raised "What is the railroad and the port doing for Carteret County?" Because there are no rail served businesses in Carteret County and only very few in Craven County, opportunities that might be leveraged from the rail and the rail – port linkage have not been fully explored and the rail and port infrastructure may in fact be seen more as a nuisance than an asset. There seem to be several near term opportunities that might help to change that perception and other should be explored. The State of North Carolina developed the Wanchese Seafood Industrial Park (WSIP) in 1981 and this park now generates over \$113 million in total economic output annually for the state's economy. The park is





now at capacity and the state recently completed two studies to assess the feasibility and benefits that could result from creating a new park.

An economic analysis and a feasibility study for both the seafood industry and the marine trades industry have been completed in the past year. The "Economic Analysis of the Wanchese Seafood Industrial Park" conducted by Miley, Gallo & Associates, LLC shows an annual direct and indirect economic impact in Dare County where the existing Wanchese Seafood Industrial Park is located of over \$98 million of direct, indirect, and induced economic impacts and almost 200 indirect jobs created outside of the park. Based on both of these studies, it has been recommended that a new site be identified and appropriate due diligence conducted in order to construct a new site for the expansion of the Wanchese Seafood Park and additional capacity for the marine industry.

Although both of these market sectors are projected to grow and the eastern region of North Carolina offers an excellent location to capture this growth, there are only a few sites with can provide water access which is critical along with the other infrastructure needed to attract businesses in these sectors to eastern North Carolina. According to the WSIP Feasibility Plan, Carteret County and its transportation assets could provide a very strategic location for a new Wanchese Seafood Industrial Park and a new Marine Trades Industrial Park. Some of the larger sites mentioned earlier in this report that could be served by several of the rail line relocation alternatives would meet the demands needed for this industrial park development.

According to information from the State of North Carolina, the marine industry sector contains a number of business operations including boat building, engines, and equipment; commercial fishing and fish processing; boat accessories; fishing and water sport equipment; and marine services. Within these market sectors there are a number of NAICS codes including: plastic products manufacturing, structural metals manufacturing, motor vehicle parks manufacturing, power transmission equipment manufacturing, navigation equipment manufacturing, animal aquaculture, seafood product preparation and packaging, electrical component manufacturing, and travel trailer manufacturing. This report can not assess the opportunity for production of some of these components in a new Carteret County Industrial Park and opportunities for multi-modal transportation services to play a role in recruiting those kinds of businesses, but given the information in the WSIP feasibility study, further evaluation seems reasonable.





B. Grade Crossing Considerations

Grade Crossings – Between the beginning of the rail line study segment in Havelock and the end of NS leased trackage at the Port of Morehead City, there are 50 at-grade roadway-rail crossings and one at-grade pedestrian crossing. Thirty (60 percent) of the crossings are located in the last three miles of the line in Morehead City. There are also two public at-grade crossings located on the port-owned trackage on Radio Island.

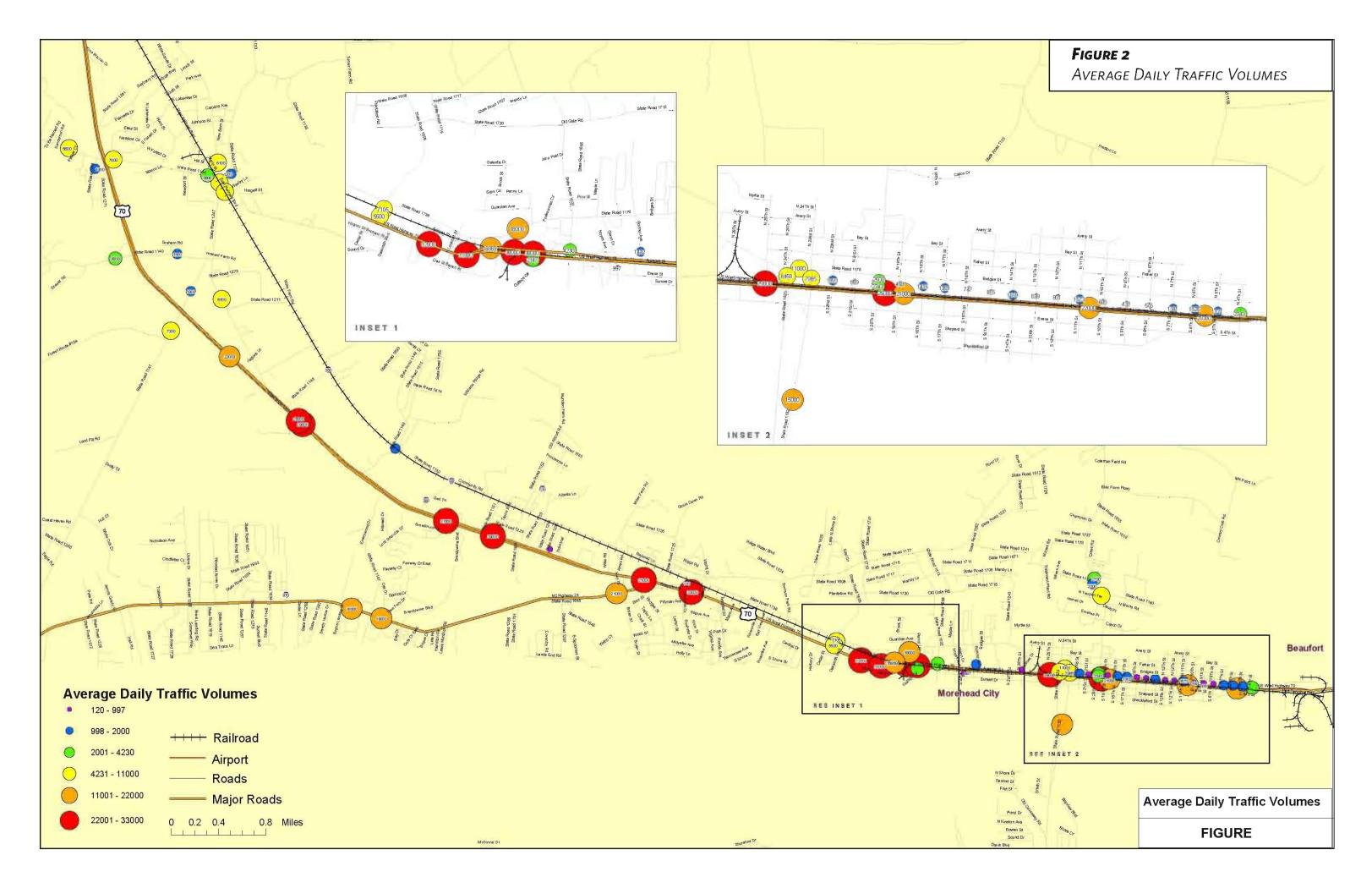
Warning Devices – Fifteen of the 50 roadway crossings have some form of active protection (signals). Therefore, the vast majority of the crossings have only passive warning devices, i.e., crossbucks and/or STOP signs. Based on evaluations by NCDOT, 16 of the crossings without active warning devices have insufficient room for the location of signals / control house due to the close proximity of the roadway edge to the track. These crossings lie within the last three-mile segment in Morehead City.

Vehicular Traffic – The highest traffic volumes in the existing rail corridor are on U.S. 70 which becomes Arendell Street in Morehead City. U.S. 70 crosses the railroad in three locations, two of which are in Morehead City and the other just after the line enters Carteret County just past Havelock. Traffic volumes along U.S. 70 range from 31,000 vehicles per day (vpd) just west of Morehead City to 21,000 vpd in the City just prior to the high level bridge over Morehead City Channel to Radio Island.

With a few exceptions, namely those associated with through and beach traffic, vehicle volumes are typically low over the crossings. Figure 2, on the next page, displays vehicular traffic along the rail corridor including the crossings.







Issues – Public issues with the crossings result principally from crossing blockages resulting from long trains operating at slow speeds in downtown Morehead City and when trains are being made up at the Port. The latter occurs when train lengths exceed yard track lengths and crossings are blocked as the main track has to be used to assemble the entire train.

Neither the NS nor the Rail Safety unit of the NCDOT have received complaints of blockages or increased numbers of accidents/incidents due to the situation recently. The general tone of comments at the public meetings suggested that the local population has learned to live with the presence of the railroad and have adopted alternative vehicular routes when trains are present. The location of the community hospital and one of the fire stations along the rail route can impede emergency vehicle access when long trains are present.

Solutions – The NCDOT Rail Division has examined the crossing in the area as part of its ongoing program to improve highway-rail at-grade crossing safety in the state and as a result was instrumental in closing several crossings and improving warning devices at others. This action resulted from a crossing consolidation program to reduce the number of crossings while improving the safety of the ones remaining. Other closures were suggested but were not implemented for one reason or another, although agreement has been reached for two more to be effected in the future. The NCDOT feels a through traffic separation study should be conducted once all parties, the community and the railroads, reach an agreement to progress such an effort.

A number of other suggestions were made by the public and interested parties during the course of the study to reduce rail-vehicle conflicts. One is to run the trains during the night which was past practice. It could be implemented again, but noise conflicts given the number of crossing involved might override those with vehicles. Additional grade separations, including one involving the full length of the track in the City, comprised other solutions advanced. The potential to place the railroad in a cut or trench through the town is one of the alternatives evaluated.

Two long side tracks are located on the rail line just outside of the City proper at Edgewater just west of the Bridges Street Extension crossing five miles from the port, The use of these tracks, or a small yard in another location removed from town, as a facility to break and make up NS trains was another suggestion. In this fashion, rail cars would be shuttled to and from the port in shorter trains than would be operated by NS. This alternative would decrease the time crossing are blocked at one particular time, but would increase the frequency of conflicts as well as rail operating costs.





IV. CORRIDOR ALIGNMENT ALTERNATIVES

A. Corridor Alternatives

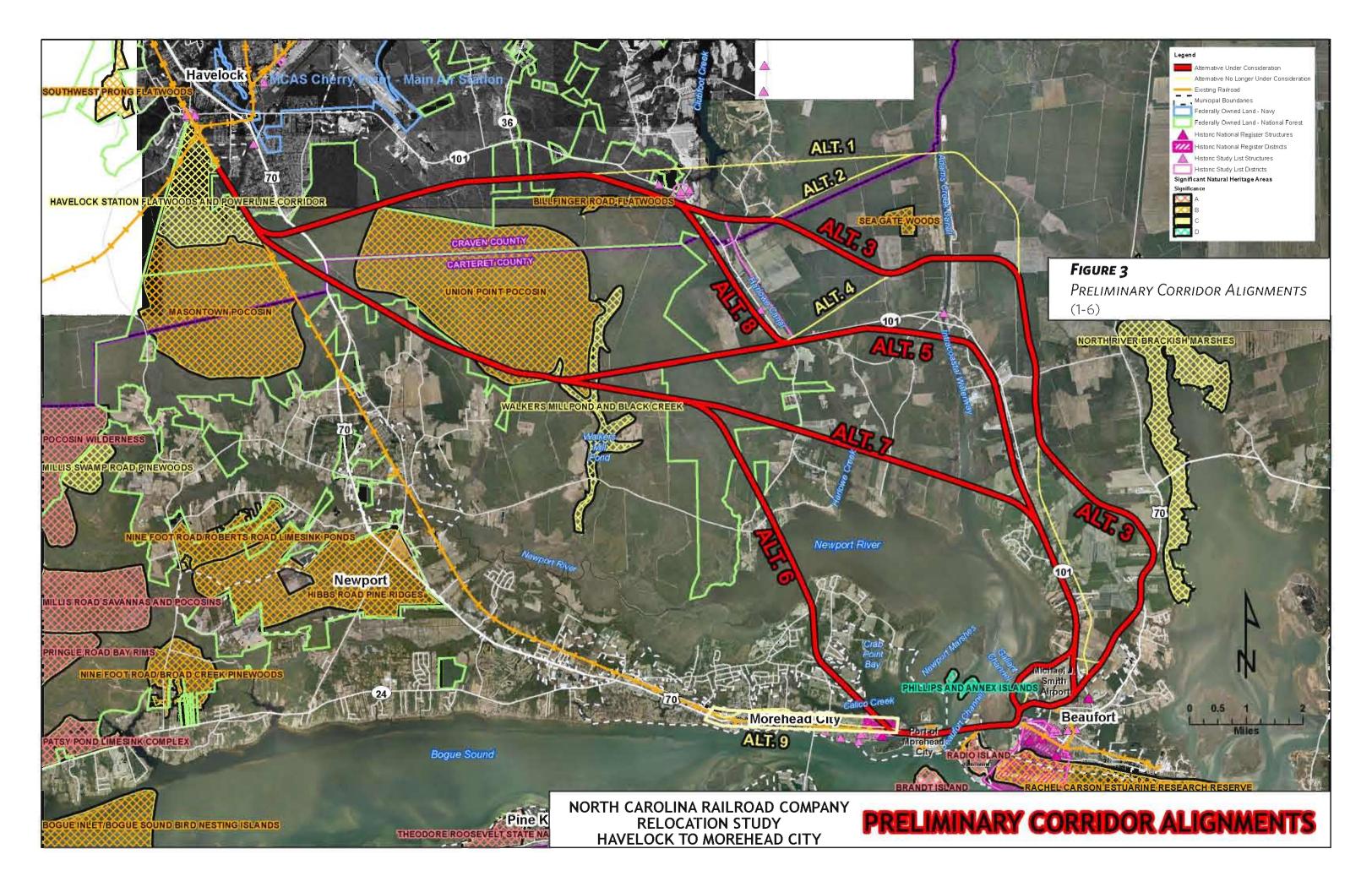
The advantages of relocating the rail line between Havelock and Morehead City lie in being able to dramatically reduce the number of at-grade rail-highway crossings, increase operating speeds, and improve clearances, principally in Morehead City, in addition to enhancing industrial development potential. In evaluating the feasibility of relocating the rail line engineering design criteria, environmental and human impact minimization, and economic opportunity play a critical role. With these criteria, a variety of corridor alternative alignments were established and investigated.

From an engineering standpoint the objective was to establish corridor alignments capable of operating speeds at the maximum allowable for freight trains on routes without train control signals (49 mph) and minimize the distance, number of waterway crossings, dissection of land parcels, and other factors influencing construction and operating costs. Given the terrain to be traversed, principally open and level, there were not any apparent obstacles relating to gradient or curvature, rather constraints were most likely to be present due to environmental considerations. For that reason, the determination and evaluation of alternative feasibility is primarily based on an environmental approach. Six alternative corridor alignments were established and presented to various stakeholders and the public for comment. Comments from each of the groups were considered and various corridor alignment shifts were made to the alternatives including the addition of new alternatives and elimination of others. See Figure 3.

In addition to a relocated corridor alignment various improvements to the existing rail alignment were considered. These included; Depressing the existing tracks through Morehead City in a "tunnel" section, elevating the existing track on structure through Morehead City, moving the tracks along Bridges Street through Morehead City, and the construction of an off-site rail yard to facilitate the building and breaking down of trains. All of these, with the exception of the off-site yard, have significant cost implications and result in major impacts to existing development and the Town of Morehead City.







1

TRACK RELOCATION FEASIBILITY STUDY HAVELOCK TO MOREHEAD CITY

B. Rail Service Requirements

Terminal Rail Operations – Rail operations associated with the Port of Morehead City General and Radio Island Terminals encompass approximately two route miles of railroad. The rail segment runs from the US 70 eastbound grade crossing just east of the entrance to the General Terminal to the end of track at Gallant Channel just east of Beaufort. The track is owned by the NCSPA while NCDOT owns the almost one-half-mile-long railroad trestle over Morehead City Channel between the General Terminal and Radio Island.

Yard trackage exists at the General Terminal and on Radio Island (and the associated causeway). NS operations are currently restricted to the General Terminal due to weight restrictions on the bascule span in the trestle which prohibits use by NS locomotives. The yard trackage on the Radio Island Causeway is being rehabilitated in preparation for terminal development on the island. Causeway yard tracks on average are longer than the ones at the General Terminal. A schematic sketch of terminal trackage is the subject of Figure 4 on the next page.

Alternative Impacts – As currently proposed, all relocation alternatives connect at one end or the other of the two-mile port terminal rail segment. Assuming the bascule span is upgraded to permit the use of NS locomotives, the principal difference in the impact on terminal operation lies in the direction of the approach to Radio Island.

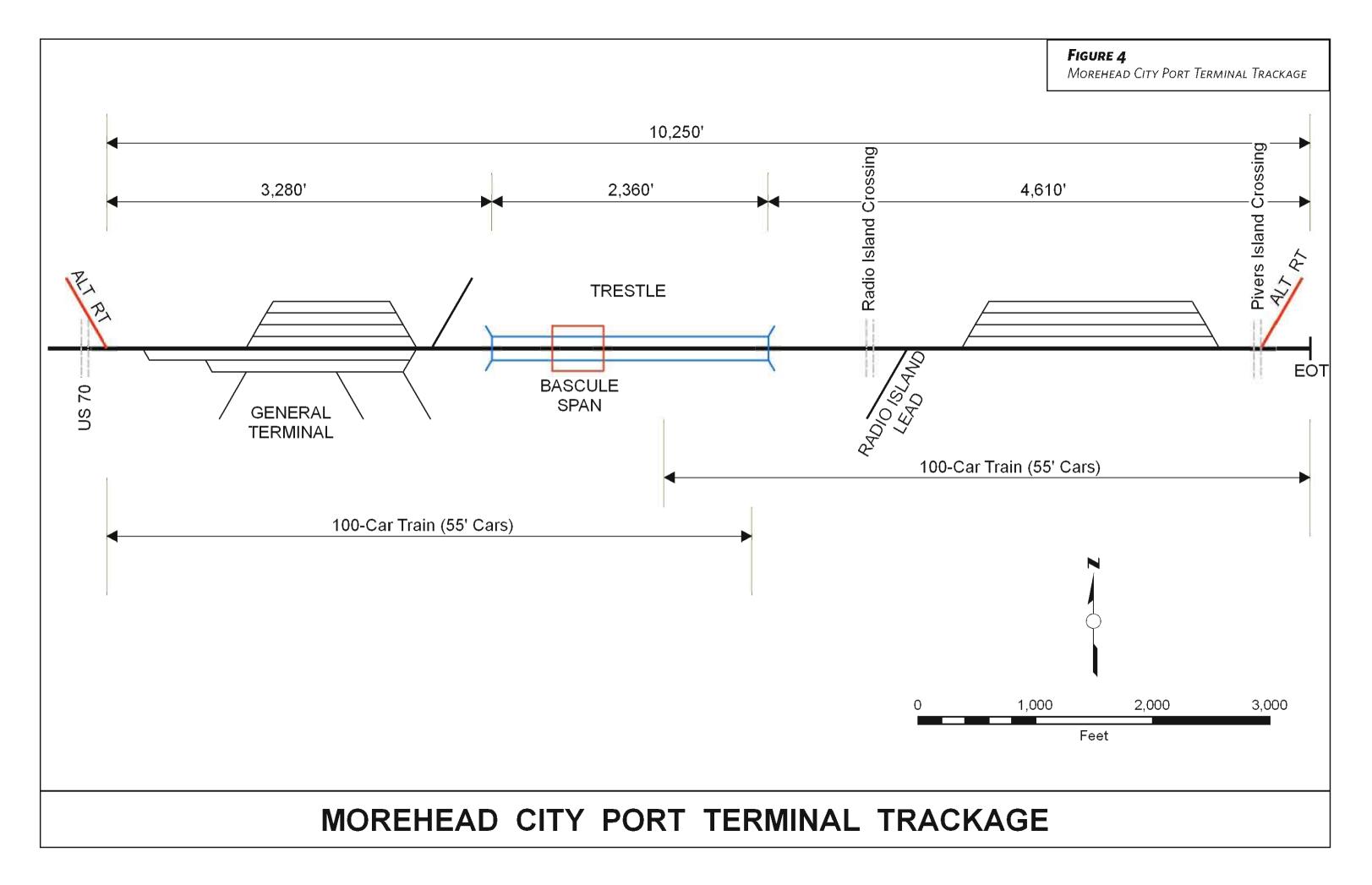
The existing NCSPA Radio Island Terminal development plan calls for the terminal turnout for lead track to serve the terminal opening to the east as it does now. The yard on the causeway is located to the east of the lead track so cars can be easily moved between the two.

The current terminal development plan includes a loop at the end of the lead track and a 5-6 track yard with track lengths averaging some 3,000 feet. It would appear that the yard and loop track design is predicated on the need to handle long unit trains presumably transporting bulk commodities. Development of terminal space for breakbulk cargo should not create enough demand for that magnitude of yard capacity nor the loop given the capacity of the existing causeway yard.

Long unit trains (100 cars+/-) would be able to move more easily in and out of the terminal if the approach is from the east as the lead track (with loop) could be entered without breaking up the train first. Approaching the causeway yard from the west will require breaking a100-car train into 3 cuts (based on the space between the lead track turnout and the end of track) and then pulling or shoving the cuts into the terminal.







Traffic Growth Impacts – Rail traffic from the military bases (Cherry Point and Lejeune) is dependent on future missions and number of deployments. These conditions make future traffic levels hard to project. The two bases together have generated some 1,500 to 2,000 originating and terminating carloads annually over recent years.

Current rail traffic levels at the Port of Morehead City are less than they have been historically based on changing commodity markets and business contracts. The port generated approximately 4,200 carloads in 2005 which increased to 4,900 in 2006. Bulk commodities, principally ore and phosphate products, accounted for about two-thirds of total carloads. Various commodities, led by metal products, rubber and forest products, comprised the remainder.

Forecasts prepared by NCSPA for Morehead City cargo over the next decade provide a basis for future port-associated rail traffic. Base on a same-commodity expansion, existing rail commodity traffic should increase 22 percent to 6,000 carloads by 2015. This level of increase can easily be accommodated with existing rail facilities considering the availability of the trackage on Radio Island. NCSPA also sees the possibility to attract both additional breakbulk and bulk traffic with the development of the Radio Island Terminal although the potentials are not yet identified.

C. Highway Planning Coordination

During development of the corridor alternatives discussions were held with the local municipalities and the North Carolina Department of Transportation to gather information on planned infrastructure projects within the study area. Two potential projects were identified including the Gallants Channel Bridge and the North Carteret US 70 Bypass. Both of these projects have been taken into account in the development of alternative corridor alignments.

D. Environmental Screening (including CAT application)

Environmental Screening

An environmental screening was conducted to 1) identify known sensitive environmental resources within the project study area; 2) use the locations of these known resources to assist in developing alternative corridor alignments; 3) determine the feasibility of project permit approval and construction, given the area's environmental complexity; and 4) conduct a comparative analysis among the alternatives to identify those least likely to have significant environmental impacts, based on information currently available.





Methodology

Data Collection

Data collected and used in the analysis of environmental and community impacts for this feasibility study were obtained from primary and secondary sources. Land use planning information was obtained from town and county planning offices. Information on Natural Heritage elements was obtained from the North Carolina Natural Heritage Program. This data, which includes recorded observations of rare, as well as state and federal protected species, among other features, was supplemented by information provided by the Croatan National Forest. The locations of cultural resource sites, including archaeological sites and historic architectural properties were collected from the State Historic Preservation Office. Windshield surveys of the project area also were conducted to verify locations of resources and identify community facilities, new developments, and residential areas.

The over-arching secondary data source used was BasinPro8, a Geographic Information System (GIS) database created by the North Carolina Center for Geographic Information and Analysis (CGIA). This database provides in one collection, information on environmental and cultural resources collected and maintained by various North Carolina state agencies. Key components of the database are its collection of information on surface waters, water quality, and wetlands. Wetlands data for the project were derived from an inventory and model prepared by the NC Division of Coastal Management. More information on this wetlands inventory source is provided in the wetlands discussion later in the section.

The locations of community facilities such as schools, parks, hospitals, and emergency response centers are also identified in the BasinPro8 database. Their locations were verified using parcel data, in a GIS format, from Carteret and Craven Counties. Churches and cemeteries, while typically not publicly-owned, are nevertheless important community facilities. The locations of the resources were identified through a combination of field surveys and parcel data searches.

There are limitations on the data used for this analysis. As noted, field surveys were typically limited to windshield surveys only. No jurisdictional delineations of surface waters or wetlands were conducted. Likewise, no archaeological investigations of the new location corridors or surveys for historic properties were performed. Identification of habitat for protected species was based on a review of aerial photography and plant community descriptions, where available. This is





typical of a screening-level analysis, in which the use of known, recorded information is appropriate. Detailed field studies will be conducted if the project proceeds to the next development stage and an Environmental Impact Statement is prepared under the auspices of the National Environmental Policy Act.

Development and Analysis of Alternatives

The Corridor Analysis Tool (CAT) developed by Wilbur Smith Associates was used to identify potential new railroad corridors within the overall project study area. The CAT is a series of GIS-based functions designed to route conceptual corridor "footprints" among the identified community and environmental resources available from both public and project-derived databases. These corridors are developed through a simple "opportunities and constraints" approach. In this approach, relative values are assigned to site-specific resources. The computer model routes preferred paths between user-selected endpoints through an artificial "terrain" created by weighting inputs such as natural resources, community facilities, cultural resources, infrastructure and other values that are identified within the study area. The system uses a grid or cell-based format for improved model efficiency. The CAT finds the least-impact path between endpoints and allows calculation of the impacts of each corridor. The CAT is organized in several modules designed to help store, organize, analyze and report critical information.

Summary of Environmental Impacts

Eight new location alternatives were developed and considered as part of this feasibility study. Their potential environmental impacts were evaluated using the CAT. Environmental impacts include possible adverse affects or losses of natural resources, as well as impacts to the "human environment." This includes community facilities such as parks, churches, and cemeteries, as well as potential effects to services such as emergency response. No effort was made to calculate possible residential or business displacements that may result from any of the alternatives considered.

The following table summarizes the impacts of all eight of the alternatives considered. The environmental impacts were estimated based on a 200-foot wide corridor, and therefore generally represent a conservative or "worst-case" estimate. It should be noted that no effort was made to calculate possible residential or business displacements that could result from project construction. Detailed explanations on the environmental resources listed in the table follow in the section titled "Environmental Features."





Table 1. Morehead City to Havelock Track Relocation Study Environmental Impacts by Alternate

	Alternatives							
Resources	1	2	3	4	5	6	7	8
Total Length (miles)	26.9	24.9	25.2	27.7	24	18.7	22.1	24.7
Wetlands (acre)	159.9	170.7	165.8	193.7	159	132.3	136.6	148.1
Stream Crossings	26	41	43	23	17	8	17	20
Federally Protected Species (habitat)	0	0	0	0	0	0	0	0
Federal Species of Concern (habitat) (within 90 meters)	2	0	1	2	3	1	2	3
Natural Heritage Areas (acres)	4.2	0.5	0.5	26.6	26.6	26.6	26.6	4.2
Primary Aquatic Nursery Areas (acres)	0.17	2.4	0.32	0.014	0.15	1.6	0.17	0.15
Historic Properties and Districts	0	1	1	1	1	0	1	1
Archaeological Sites (within 90 meters)	1	0	0	0	0	1	0	1
Intracoastal Waterway Crossings	0	2	2	0	1	0	1	1
Federal Lands (acres)	73.5	60.9	60.9	74.6	74.6	85	87	82.2
Public Recreational Areas	0	0	0	0	0	0	0	0
Golf Courses	1	0	1	0	0	0	0	0
Schools	0	0	0	0	0	0	0	0
Churches	1	0	3	2	2	2	1	2
Municipal / County Facilities	1	1	1	0	0	0	0	
Municipal Airport (impacted - yes or no)	Y	Y	Y	Y	Y	N	Y	Y
Maritime Museum (impacted - yes or no)	N	Y	Y	N	N	N	N	N
Estimated Total Right-of-Way (acres)	575.9	591.1	598.9	659.4	569.4	424.2	517	586.7





*Including the Newport River

E. Public Input

A total of 33 written comments and one business card with a map request were received at the three public meetings. Several citizens indicated that they would mail their comments. Some others requested extra copies of the comment sheets to provide to others unable to attend. Sixty-three (63) additional comments were in the mail or by fax after the meetings. The majority of those, nearly fifty, came after the February, 2007 meeting. Eight people emailed requesting copies of maps and/or fact sheets.

Table 1 below provides a breakdown of the support per alternatives presented at the meetings. Table 2 summarizes the opposition. In addition, several people indicated support for on-site changes, such as running the trains at night, building an off-port rail yard, and a couple individuals even elevating the railroad through Morehead City. Of those indicating some support for the project, but with reservations, most preferred Alternative 6. Alternative 5 was also specifically supported by a minority of individuals. Conversely, citizens in the Mill Creek community vehemently opposed Alternatives 6 and 7, due to the impact to the Newport River and the potentially divisive effect they could have on the community as a whole. While no alternative emerged as a clear "favorite," it became apparent that Alternative 6 was adamantly opposed by the majority of commenters.

Table 3 found in the Appendix provides a list summarizing the comments. The actual comment sheets are on file at the NCRR offices.

Individuals who requested a map of the alignments or other information received a .pdf via email. One individual responded back indicating his confidence that the NCRR would work to select a corridor that minimized environmental impacts.

Table 4. Summary of Support Per Alternative

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7	Alt 8	Any
0	0	0	0	4	14	0	0	5

Table 5. Summary of Opposition Per Alternative

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7	Alt 8	All
0	0	3	0	9	33	23	1	18





A geographic distribution of those commenting is provided below. Some writers did not provide their address; therefore, the numbers below do not match the total number of written comments received.

Town/Community	Number of Comments
Morehead City	15
Beaufort	26
Havelock	2
Newport	7
New Bern	1
Gloucester	1
Mill Creek	39

No over-arching consensus emerged for the public meetings regarding the need to relocate the railroad or a preference for any one of the alternative corridors. However, citizens from Mill Creek and Morehead City were united in their opposition to Alternative 6. Mill Creekers were also opposed to Alternative 7. Conversely, most Beaufort citizens who expressed a preference indicated Alternative 6 as their preferred route. This reflected an apparent lack of community cohesiveness between residents of Morehead City and Beaufort. Many Beaufort residents felt that the railroad was "Morehead City's problem" and they should not have to accommodate it. Likewise, it became clear that many, though certainly not all, citizens did not value the Port of Morehead City and the economic benefits it provides to the region. Morehead City residents did not speak with a unified voice. While some supported the railroad relocation, others stated that the town was built around the railroad, and it should remain in place.

F. Economic Development Opportunities

As tourism and second home construction continues to play a growing role in Carteret County's economy, the conflict between this non-traded sector of the economy and the "traded sector" businesses will become more pronounced and likely be played out in land use conflicts and other related arenas. While it is not possible to grow the overall regional economy by selling more of those inherently local services like health care, retailing, and consumer services the taxes that tourism and more expensive second homes generate is certainly important to local elected officials and the community. This potential "conflict" is particularly significant for regional economic development organizations that must rely on local governments for a substantial amount of their operating budgets. While their leadership is needed to identify new economic development opportunities resulting from the "triple convergence", they may face





increasing pressures to focus only on a very narrow range of new business opportunities and tourism related businesses.

An important educational opportunity exists, to provide the economic development community with current information about these global market changes and the significant improvements being made or planned by NCRR and the Port that could create new opportunities in this region of the state that have never been possible before. The economic development community and ultimately the elected leadership need to recognize the potential competitive advantages that NCRR and the Port provide and how they can capitalize on that infrastructure to create new economic development opportunities for Carteret County.

NCRR might consider playing a leadership role in facilitating a better understanding of the role that the rail and the port could play in the eastern region and most specifically in Carteret County. Other counties throughout the eastern region could benefit from this discussion as well. An in-depth analysis of the strategic business opportunities that could be realized from the increased east coast port utilization, the improvements to the Port of Morehead City, the enhancements that could result from the relocation of a portion of the NCRR line, coupled with the availability of significant acreage that could be developed for a new industrial park should be considered. There are grant funds that might be secured to support such a study.

There is no question that a region's competitive position in the future will depend upon access to an efficient, multi-modal transportation system that enables businesses to achieve the best possible transportation service at the most cost-effective price. This "triple convergence" presents businesses and the economic development community in eastern North Carolina with new opportunities to attract new businesses that add jobs and vitality to the local economy. Because of the complex nature of rail transportation and the limited understanding of the changing role that the rail – port linkage could play in the regions future economic development, NCRR can play a crucial role in guiding the region toward a better understanding of this important opportunity and help to build a better economic foundation for the future.

G. Cost Estimates

Table 6. Summary of Support Per Alternative

Corridor Alternative	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7	Alt 8
Cost in Millions (excludes Right of Way Cost)	\$173	\$175	\$161	\$159	\$141	\$207	\$148	\$146





V. ALTERNATIVE SELECTION/RANKING

Based on review of safety considerations, environmental impacts, operational features, public input, and economic development opportunities, three corridor alternative alignments, corridor alternatives 3, 5 and 6, appear suitable for further consideration. See Figure 5. Following is a discussion of each.

With a shared corridor with US 70 Freeway:

- Alternative 3 would be the less feasible than Alternative 5. The 500-foot wide shared corridor may preclude movement between RCW clans in the vicinity of Billfinger Flatwoods. The RCWs do not fly across large open expanses. Also, the cleared area would remove a substantial amount of foraging, and potentially nesting habitat for the RCW. This alternative may provide difficult to process through US Fish and Wildlife Service and US Army Corps of Engineers.
- Alternative 5 can share a corridor with a new US 70 freeway up to near NC 101. By realigning the corridor slightly to the south in the vicinity of Union Point Pocosin, environmental impacts could be minimized. Furthermore, much of this land is privately owned, allowing for the possibility for economic development opportunities.
- Alternative 6 is not feasible as a shared corridor with a freeway due to its downtown Morehead City location.

Environmental benefits of the three feasible Corridors:

Alternative 3:

- Would not significantly impact the Maritime Museum expansion site on Gallants Channel. Although some land may be taken from the property, it is unlikely to interfere with the planned waterfront activities.
- Minimizes residential impacts in the NC 101 corridor.
- Avoids impacts to Union Point Pocosin, Walkers Mill Pond, Billfinger Flatwoods, and Seagate Woods.
- Impacts relatively little land within the Croatan National Forest, compared to other alternatives. Because its impacts to the Forest are at its northern limits, fragmentation is minimized.

Alternative 5:

- Avoids use of land within Beaufort's designated residential growth area between NC 101 and US 70.
- Avoids impacts to the Mill Creek community.
- Crosses the AIWW at a relatively narrow location, with a perpendicular crossing.
- Received some, albeit limited, public support.





• With a slight shift to the south, it would avoid impacts to Union Point Pocosin.

Alternative 6:

- Least overall wetland and stream impacts.
- Avoids impacts to known RCW habitat.
- With a slight shift to the south in the vicinity of Union Point Pocosin, the alternative could avoid impacts to this large significant natural area.
- Supported by citizens from Beaufort.

Adverse environmental impacts of the three feasible corridors:

Alternative 3:

- Traverses red-cockaded woodpecker habitat and separates active colonies from one another. This could significantly delay the project and/or increase mitigation costs.
- Opposed by citizens from Beaufort.
- Potential environmental justice impacts with railroad running parallel to NC 101 in Harlowe.
- Could impact the North River Club golf course, now under construction.
- Could be a difficult corridor to share with the US 70 relocation, due to RCW habitat issues.

Alternative 5:

- Possible affect to the Carteret County Home, a property on the National Register of Historic Places.
- Changes to the travel patterns and access to land between the Newport River and NC 101.
- Impacts the Walkers Mill Pond / Black Creek Significant Natural Area. Conservation easements held on land around the creek may prove problematic.
- Impacts the Union Point Pocosin, although a shift to the south could avoid this Significant Natural Area.
- Possible concerns from the Croatan National Forest about fragmentation as efforts are made to acquire land south of Union Point Pocosin.

Alternative 6:

- Divisive affect to the Mill Creek community and residential areas in the northern portion of Morehead City.
- A grade-separation would be required to minimize impacts to the emergency response service while a train was traveling through the community.
- Impacts primary aquatic nursery area in the Newport River.
- Strongly opposed by Mill Creek citizens and some in Morehead City.

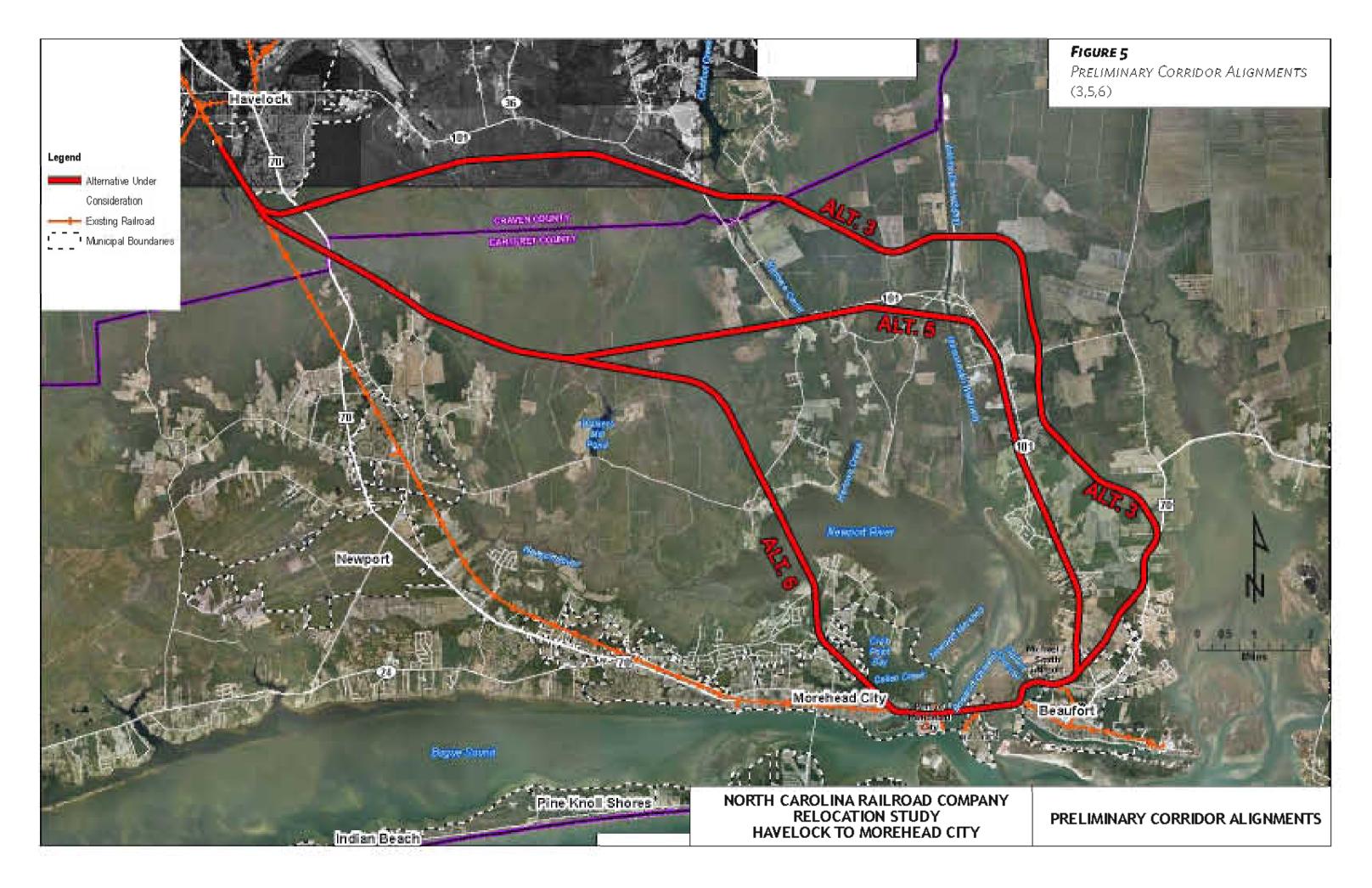




- Impacts Morehead City Historic District.
- Impacts Walkers Mill Pond / Black Creek and Union Point Pocosin, two Significant Natural Heritage Areas, although a shift to the south could avoid impacts to the pocosin.
- Possible concerns from the Croatan National Forest about fragmentation as efforts are made to acquire land south of Union Point Pocosin.







V. FUNDING/FINANCE

North Carolina Railroad Company Project Funding Options:

Funding available to assist railroad infrastructure projects is extremely limited. As a result, it will be important to look at a number of federal and state programs as well as credit enhancement opportunities, bond pools, and other sources of capital to weave together a financing package that could assist in providing some portion of the funding for the relocation of this segment of NCRR rail line.

Some rail-oriented projects have received funding under the new Projects of National Significance Programs initiated in SAFETEA-LU. Because of the role that this NCRR rail corridor plays in defense deployment from both Cherry Point and Camp Lejeune the option to secure some funding from this source should be carefully evaluated. There are no clear funding resources available to support rail infrastructure in the DOD grant program; however, further discussion with Lt. Col. Hayden at Camp Lejeune and transportation and real estate representatives from Cherry Point Air Base should be pursued. There may be opportunities in this rail relocation to enhance their operations (example: providing a staging area for advance deployment activities and possibly widening the corridor to provide for future military equipment) and some DOD discretionary funding might be made available to support rail improvements.

There is a mix of programs available at the federal level that could provide some funding for this rail project, most of these programs do not provide grant funds. There are several federal programs that could provide some grant resources for this project however; the opportunity to secure any grant funds is significant expanded if this project can in some way be tied to economic development in the region. There have been discussions about linking this rail line relocation to a new industrial park, it may be possible to count new jobs at the port to leverage some of these funds, and there is always the opportunity for the community to attract a rail served business to the area.

Department of Transportation:

One program of particular interest to this project is the Rail Line Relocation and Improvement Program created by SAFETEA-LU. This program was authorized by Section 9002 of SAFETEA-LU in 2005 and although Congress authorized \$350 million per year from FY 2006 through FY 2009, subsequent appropriation measures and the President's 2007 Budget Proposal have not included funding for this program. If funds are made available for this program, it would provide financial assistance including grants for local rail line relocation and improvement projects. This program would support projects that: mitigate the adverse effects of rail traffic on safety, motor





vehicle flow, community quality of life, including noise mitigation, or economic development; or involve a lateral or vertical relocation of any portion of the rail line.

SAFETEA-LU provided funding for several freight programs; unfortunately all of the funds provided for these programs were earmarked for specific projects. Freight programs under SAFETEA-LU include:

- Section 1305 Freight Intermodal Distribution Pilot Grants providing funds to address infrastructure and freight distribution needs at inland ports and intermodal freight facilities, provided \$30 million over 5 years for 6 designated projects
- National Corridor Infrastructure Improvement Program (there is evidence that several rail projects were partially funded using these funds that focus on international and interregional trade). This program provided \$1.948 billion over a 5 year period for 33 designated projects.
- Projects of National and Regional Significance provided grants to states for both passenger and freight projects to improve economic productivity, enhance international trade, and provide congestion relief. This program provide \$1.779 billion over a 5 year period for 25 designated projects.

While the funds provided under each of these initiatives are currently earmarked, these programs could be used for future earmarks that might benefit the NCRR project.

SAFETEA-LU also included provisions to enhance innovative financing and provide some additional resources to fund important infrastructure projects. These three programs are:

Section 11-1143: Tax-exempt Financing of Highway Projects and Rail Truck Transfer Facilities (Private Activity Bonds) – SAFETEA-LU expands bonding authority by amending the IRS statues to add Tax-exempt financing of privately owned or operated highway projects and rail-truck transfer facilities. This program also added a new qualifying entity "qualified highway or surface freight transfer facility" to eligible private activity bond financing. To qualify project must already be receiving federal assistance and the bonds are not subject to the annual volume cap for private activity bonds for state agencies and other issuers

Section 1601: Transportation Infrastructure Finance and Innovation Act (TIFIA) created a federal credit program for larger scale transportation projects that can be used to secure direct loans, provide loan guarantees, and support lines of credit for eligible project. Eligible projects must cost in excess of \$50 million or an amount equal to fifty percent of the federal-aid highway funds that are appropriated to the specific state for





the fiscal year. Project eligibility includes public freight rail facilities or private freight rail facilities providing public benefit to highway users; intermodal freight transfer facilities; and access to any of the facilities mentioned. Surface transportation project are eligible for credit assistance. The total amount of TIFIA credit assistance may not exceed 33% of eligible project costs. The budget authority for this program is \$610 million over 5 years.

Section 1602: State Infrastructure Banks (SIB) – created a new program to create infrastructure revolving funds that can be capitalized with federal transportation funds. This program allows states the ability to increase the efficiency of their transportation investments and can leverage federal resources by attracting other public and private investments in support of a project. The SIB can lower of the cost of interest, reduce issuance costs, reduce ongoing annual costs for certain bond issues, and enhance the credit rating which effectively reduces the interest rate. State Infrastructure Bank funds can be used for capital projects, credit enhancement, debt instrument financing, interest rate subsidization, credit insurance, and purchase and lease agreements.

Section 9002: Capital Grants for Rail Line Relocation Projects – Subject to appropriation this program would provide \$1.4 billion over 4 years (2006 – 2009) for local rail line relocation and improvement projects. Final regulations were established to implement this program on 10/1/06.

Section 9003: Rehabilitation and Improvement Financing - This program provides loans or loan guarantees for projects to enhance rail service and capacity and provide \$35 billion of loan authority. Substantive criteria and guidance on the application process was prepared 9/10/05 by FHWA.

Federal Rail Administration:

The Railroad Rehabilitation and Improvement Financing Program (RRIF) provides direct loans and loan guarantees to a variety of eligible entities including state and local governments, government-sponsored authorities, railroads, and joint ventures involving at least one railroad. Some of these funds are set aside for projects that benefit non-Class 1 carriers. These funds can be used to acquire, improve, or rehabilitate rail equipment and facilities including track components of track, bridges, yards, and buildings. The funds can also be used to refinance outstanding debt incurred for the purposes mentioned previously or to develop new intermodal or railroad facilities. These funds can not be used for operating expenses.

RRIF loans or loan guarantees that are used to enhance public safety, enhance the environment, promote economic development, or preserve or enhance rail or





intermodal services to small communities or total areas will be given priority. Loan agreements under RRIF have been executed with a number of railroads. Loans have ranged from \$2.3 million to \$233 million. Loan requests are made to the Federal Railroad Administration.

Although Surface Transportation Program (STP) funds are not routinely used to freight rail projects, there are instances where STP funds and STP Enhancement funds have been used to finance railroad connections to port facilities particularly. In the case of the Port of Hueneme in Ventura County, CA over \$4 million in STP funds and \$3.5 million in STP Enhancement funds were used in part to build a freight rail connection to the port. In this project there were passenger and bike trail projects as well as the rail freight project. Generally STP enhancement funds are primarily used for projects where rail lines are being converted for passenger use.

Congestion Mitigation and Air Quality Improvement Programs funds are not an option for this project as both of the county's that this rail line bisects are not classified as non-attainment for air quality.

Economic Development Administration:

The Economic Development Administration (EDA) promotes competitiveness and innovation by helping communities around the country to pursue strategies that enhance their economic development and enable them to compete more effectively in the global marketplace. EDA has a number of programs particularly focusing on regions that are experiencing high unemployment, low per capita income, so that these areas can create a stronger economic base.

The EDA Public Works and Economic Development Investment Program are available to support the construction or rehabilitation of important public infrastructure and facilities that are needed to create or retain private sector jobs and investment, attract private capital, and promote regional competitiveness. Funding for this program for FY 2006 is \$250 million. Projects recently approved for funding under this program include:

- \$2.7 million for infrastructure to a regional industrial park in Illinois
- \$2.5 million to expand a city's wastewater treatment plant to help retain several manufacturing companies in a city owned industrial park in CA
- \$2 million to expand a small business incubator in Washington





\$1.5 million to build a rail spur and crossing bridge for a pulp wood mill in GA

\$3 million to construct upgrades to water and sewer systems to develop a new industrial park

Eligible applicants for these EDA grants include a district organization such as the North Carolina Eastern Region Commission (NCER), one of seven regional economic development partnerships created by the state; the State of North Carolina; a city or other political subdivision of the state; *a special purpose unit of a state engaged in economic or infrastructure development activities*, or a public or private non-profit organization working with the state or a political subdivision of the state. Generally an EDA grant may not exceed fifty percent of the total cost of a project.

To be considered to EDA funds projects must be "market-based and results-driven"; exhibit strong organizational leadership; and look beyond the immediate economic horizon to anticipate economic changes and diversification in the local and regional economy. Local support for these projects is important and cooperation between the business community, regional partners, local, state, and federal governments is very effective when pursuing these funds.

Should NCRR elect to consider EDA funds as a source of funding, they should develop a general project approach that best meets the EDA criteria and then meet with regional EDA representatives to discuss the concept. Applications for EDA funds can only be submitted by request after a review of the initial project outline.

Department of Housing and Urban Development, Community Development Block Grant Program, States Entitlement Program:

The State of North Carolina receives an annual entitlement from the deferral Department of Housing and Urban Development Community Development Block Grant program. In 2006 the state received ~\$45 million in CDBG funds. Most of the projects funded under this program are focused toward two goals: 1) building stronger communities, and 2) creating jobs through sustainable economic development. Carteret and Craven Counties as well as the cities within these counties are eligible to participate in the CDBG program.

In previous years the state has investment 20% of these funds for economic development, 30% for scattered site housing, 12% for infrastructure, and the remaining funds were awarded to community revitalization project. Economic development activities funded under this program focus on job creation projects and follow the





policies outlined in the state's William S. Lee Quality Jobs and Business Expansion Act as amended.

CDBG funds can be applied for by local governments and can be used for public facilities needed to promote the creation or expansion of jobs. This funding resource could come into play if the rail line relocation could be linked to the development of a new industrial park facility or a rail served business.

State of North Carolina Funding Options:

Highway Fund and the Highway Trust Fund:

The State of North Carolina provides annual appropriations from the Highway Fund and the highway Trust Fund that can be used in support of "economic alternatives to highway construction". Approximately \$15 million annual is available from these sources for infrastructure improvements; additional funds from these sources have been used for passenger train operations, environmental studies, grade crossing improvements, and the rail industrial access program.

North Carolina Rail Industrial Access Program:

This program provide funds to help companies construction or refurbish tracks needed by new or expanding industry to encourage economic development. A match is required from private or local sources. The approval of a request for these funds is based on the economic benefit of the specific project including the potential new jobs that could be created, the total capital investment, rail use, and the area's economic condition. Generally these funds are used for a rail spur to a specific industry however these funds have been used for an industrial park development in the past.

Other Potential Resources:

There are a wide range of tools that local and regional jurisdictions can use to fund infrastructure projects. The strategies that follow have been used to finance a variety of infrastructure projects.

Revenue Bonds:

Revenue bonds are limited-liability obligations; the security for the bonds is a pledge of a specific stream of revenue generally associated with the project being funded or the enterprise system that the project is a part of. Revenue bonds are not subject to the same limitation generally as a GO bond and normally do not require voter of legislative approval. Revenue bonds can bear a higher rate of interest than GO bonds but those rates can be reduced through credit enhancements.





General Obligation Bonds:

A traditional form of debt issuance by state and local governments. Use of these bonds requires a full-faith-and-credit pledge of the issuer and thus is essentially a loan taken out by a local government against the value of the taxable property in their jurisdiction. There are instances where GO bonds have been used to finance rail and rail-port projects, however these bonds sometimes require legislative or voter approval, a major obstacles to their use.





VI. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

- 1. The future of the rail line between Havelock and Morehead City is directly related to and dependent on the future of the Port of Morehead City.
- 2. Alternative 6 received the most public comments, both pro and con depending on the place of residence of the commenter. Overall, the majority of commenters opposed Alternative 6.
- 3. Alternative 5 is the best choice from an environmental and engineering standpoint. In addition, it is a feasible alignment for a shared corridor with a new location US 70 Bypass under study by the NCDOT.
- 4. A rail approach to Radio Island from the east, i.e., Beaufort, afforded by Alts 3 and 5 is best from a railroad operating standpoint as it relates to the proposed Radio Island Terminal.
- 5. In addition, an approach from the east would run under the proposed Gallant Channel highway bridge and eliminate any at-grade rail crossings of US 70.
- 6. Suggestions for improvements to the existing alignment through Morehead City from the public were plentiful, with an off-site rail yard for building trains being the most common.
- 7. Alternatives 3 and 5 provide the greatest opportunity for the creation of industrial sites, in short supply on the existing line, including "near-port" operations and other port-rail linked development opportunities.
 - **a.** Alternative 3 could be constrained by active red-cockaded woodpecker clusters in its vicinity. Their presence could also limit the feasibility of a shared corridor with the US 70 Bypass.

B. Recommendations

After consideration of all the factors, Alternative 5 is the recommended choice of all the alternative alignments evaluated. If the project proceeds, transportation planning at the local level should take into account a roadway network between the AIWW and NC 101 that minimizes crossing of the relocated railroad in Beaufort. In addition, a minor shift in the alignment of Alternative 5 should be evaluated to avoid impacting the Union Point Pocosin. According to Croatan National Forest officials, peaty soils are up to 12 feet deep within this pocosin. By avoiding the area, structure costs can be reduced.







APPENDIX

Table 1: Contacts

Table 3: Public Comments

Table 4: Federal Species of Concern in Carteret and Craven Counties

Figures

6: Community Features

7: Federal Land

8: Historic Properties

9: SNHA FNA

10: Water Features

Table 1: Contacts
NCRR Relocation Study Stakeholder Contact Records

Stakeholder	Agency / Organization	Contact Method / Strategy	Contact Timetable			Comments
Stakeriolder	Agency / Organization	Contact Method / Strategy	kick-off	mid-study	final	Comments
CARTERET COUNTY						
Douglas Harris, Chair	Board of Commissioners	stakeholder mtg, newsletters		X	Χ	
William Faircloth	County Commissioner	meeting	Х	X	Χ	
Pat McElraft	County Commissioner	meeting; newsletter	Χ	X	Χ	
John Langdon	Carteret Co. Manager	stakeholder mtg, newsletters	Χ	X	Χ	
Katrina Marshall	Carteret Co. Planning Director	stakeholder mtg, newsletters	Х		Χ	
Tom Steepy	Carteret Co. Commissioner	stakeholder mtg, newsletters	X	X	Χ	Transportation Committee Chair
Jerry Jones	Morehead City Mayor	stakeholder mtg, newsletters		X	Χ	
Randy Martin	Morehead City Manager	stakeholder mtg, newsletters				
Linda Staab	Morehead City Planning Director	meeting, newsletter, phone call	Х	X	Х	
Ronald Mason /Ed Wyatt	Newport Town Manager	stakeholder mtg, newsletters	X	X	Χ	retired mid-study
Derryl Garner	Newport Mayor & MC Port Board	stakeholder mtg, newsletters	Х	Х	Х	on numerous local committees
Penny Weiss	Newport Town Clerk	stakeholder mtg, newsletters			Χ	
Mike Wagoner	Carteret Chamber Commerce	stakeholder mtg, newsletters		Х	Х	
David Inscoe	Carteret EDC	stakeholder mtg, newsletters	X	X	Χ	
Connie Asero	MHC Downtown Development	stakeholder mtg, newsletters		Х	Х	
Rob Will	Beaufort Town Planner	meeting, newsletters, phone call	X	X	Χ	
Terri Parker-Eakes	Beaufort Town Manager	stakeholder mtg, newsletters		Х	Χ	left two messages, did not return calls
Ann Carter	Beaufort Mayor	stakeholder mtg, newsletters		X	Χ	
Lockwood Phillips	Carteret County News-Times	editorial board briefings, newsletters		Х	Х	Beth Blake, Managing Editor
Doug Brady	Pres, MC Downtown Revitalization	meeting		X	Χ	Morehead & Beaufort waterfront developer
Carol Lohr	Crystal Coast Tourism Authority	meeting	Х			·
Linda Dark	Beaufort Historic District Comm.	stakeholder mtg.; newsletter		X	Χ	chairperson
CRAVEN COUNTY			•			
Jim Davis	Craven County EDC	stakeholder mtg, newsletters	Х			
Don Baumgardner	Craven County Planning Director	stakeholder mtg, newsletters	X			
Robin Maxbauer	Havelock Zoning Inspections	stakeholder mtg, newsletters	Х		Χ	
Jimmy Sanders	Havelock Mayor	stakeholder mtg, newsletters		X		Pres, Allies for Cherry Point's Tomorrow
Jim Freeman	Havelock City Manager	stakeholder mtg, newsletters		X		,
Johnnie Sampson	Board of Commissioners, Chair	stakeholder mtg, newsletters				
Harold Blizzard	Craven County Manager	stakeholder mtg, newsletters		Х		
Joy Mason	Havelock Chamber of Commerce	stakeholder mtg, newsletters		X		
Danny Walsh	County Commissioner	meeting		Х		transportation issues
Scott Chase	Havelock Planning & Inspections Director	meeting		X		

STATE AND FEDERAL	GOVERNMENT OFFICIALS					
Pete Bland	State Senator	stakeholder mtg, newsletters	Х			Craven, Carteret, Pamlico
Alice Graham Underhill	State House Representative	newsletters		X	Х	Craven, Pamlico Cos.
William Wainwright	State House Representative	newsletters		Х	Х	Craven, Lenior Cos.
John Kerr	State Senator	newsletters		Χ	Х	ONE NC, Finance, Budget Committees
Jean Preston	State House Representative	phone call, newsletters	Х	Х		Carteret, Jones Cos.
Clark Jenkins	State Senator	stakeholder mtg, newsletters		X	Х	transportation appropriations committee
Larry Goode	Clark Jenkins' aid	meeting		Х		called to arrange on 11/3
Mike Easley	Governor	newsletters		Χ	Х	eastern office - Annette Hargett 252.514.4825
Beverly Purdue	Lt. Governor	newsletters		X	X	Zach Ambrose - chief of staff
Elizabeth Dole	US Senate	meeting			X	met with Robbie Boone, Washington Staff
Richard Burr	US Senate	newsletters; email		Х	X	Staff - John Kane (Winston-Salem office)
	US House of Representatives	phone call, newsletters; email	X			Downs is Jones' AA
	T BOARD OF DIRECTORS	process com, reconstruction, comment				
Carl Stewart	Chairman	stakeholder mtg., newsletters		Х		Gastonia, NC
Jeff Etheridge	Board Member	newsletters		X	X	Whiteville
Robert Wicker	Board Member	newsletters		X	X	Raleigh (Helms, Mullis, & Wicker)
Laura Wilson	Board Member	newsletters		X	X	Wilmington, NC
Gregory Plemmon	Board Member	newsletters		X	X	Thomasville, NC, Old Dominion Freight Line
John Curry	Board Member	newsletters		X	X	Charlotte. NC
Derryl Garner	Board Member	newsletters, meeting	Х	X	X	Newport, NC
Jesse Capel	Board Member	newsletters	,	X	X	Troy, NC
Brynn Thomas	Vice-Chairman	newsletters		X	X	New Bern. NC
James Fain	Secretary, Dept. of Commerce	newsletters		X	X	Raleigh, NC
Alex McFadyen	Board Member	newsletters		X	X	Raleigh, NC
Tom Eagar	NCSPA CEO	stakeholder mtg., newsletters		X	X	NC Port Authority, Wilmington
Glen Carlson	Director, Bus. Development	stakeholder mtg., newsletters	X	X	X	NC Port Authority, Wilmington
Steve Havnes	NCSPA Business Dev. & Commodities	meeting	X	X	X	TVO F OT Additionty, William Iglori
Bill Bennett	NCSPA Engineering and Planning	phone call		Α		
Rex Edwards	Morehead City Port Director	meeting	X	Χ	Х	
	PARTMENT OF TRANSPORTATION	meeting	,			
Cam McCrae	BOT - State Ports	stakeholder mtg., newsletters	X	Х	X	
Charles Cox	PDEA - Gallants Channel Bridge	meeting		X	X	
Marvin Blount	BOT - Carteret & Craven Cos	stakeholder mtg., newsletters	Х			now deceased
Louis Sewell	BOT - Rural Trans, Issues	stakeholder mtg., newsletters	^	X	Х	Jacksonville
Derrick Lewis	Feasibility Studies Unit	meetings, on-going coordination	X	X	X	North Carteret Bypass
Neil Lassiter	Division 2 Engineer	stakeholder mtg., newsletters	X	X	X	Notifi Cartelet Dypass
Dan DeVane	Asst. to the Chief Deputy Secretary	phone call	X			
Pat Simmons	Rail Division	phone call	X			
Allan Paul	Rail Division - Asst. Dir, Operations	phone call				
Bob Deaton	PDEA - Office of Human Environment	phone call; follow-up meetings	X			contact made by DOT, wants to participate
Paul Worley	Rail Division	meeting	X			Contact made by DOT, wants to participate
Marc Hamel	Rail Division	phone call	^	X		
Lynnise Haves	Feasibility Studies Unit	meetings; on-going coordination	X	X	Х	North Carteret Bypass
Lyrinise Haves	reasibility Studies Utilit	meetings, on-going coordination	^	^	_ ^	плотит Сапетет Бураза

OTHER ORGANIZATION	VS					
Nancy Stallings	Global Transpark Foundation	newsletters; meeting		Х		
Bruce Parsons	Global Transpark	meeting	X			economic developer
Darlene Waddell	Global Transpark	phone call			Х	executive director
Jay Traywick	Norfolk Southern (NC Bus. Unit)	stakeholder mtg., newsletters		X	X	Has been marketing Camp Lejeune
Jimmy Bownan	Norfolk Southern (Ind. Dev.)	stakeholder mtg., newsletters		X		
Larry Etherton	Norfolk Southern Engineer	meeting	X	X	Х	
Ron Taylor	Norfolk Southern, ECBU	meeting; newsletters	Х	Х		Director of Sales and Marketing
Dick Ellis	Ellis and Winters, LLP					
Joe Reilly	Cherry Point MCAS	stakeholder mtg, newsletters		Х	Х	attended Havelock Public meeting too
Todd Miller	Coastal Federation	stakeholder mtg, newsletters	X	X	X	
Billy Ray Hall	NC Rural Development Center	newsletters	X			
Bill Kloepfer	Sierra Club, Cypress Chapter	newsletters		X	X	
Tyler Harris	Cherry Point MCAS	phone call; meeting	Х		Х	Base's community liaison
Dennis Foster	Croatan Nat'l Forest, Asst. Dist. Ranger	stakeholder meeting	X	X	X	Assistant District Ranger
Joel Sickert	Weyerhauser Corp.	_		X		Land Adjustment Program Mgr.
David Nateman	Maritime Museum	meeting, newsletters		X	X	Director
Bart Kicklighter	Croatan Nat'l Forest, Biologist	meeting, email; phone call	Х	Х		providing data on protected species
Tim Reid	Moffat & Nichols	phone call	X			Working on Radio Island site plan
John Betts	Beaufort-Morehead City Airport	meeting; newsletters	Х	Х	Х	Airport Manager & Beaufort native
Sam Dark	Beaufort-Morehead City Airport	meeting		X		Airport Director and owner of The Cedars
Steve Otto	Camp Lejeune - Traffic Management	meeting; newsletters		Х	Х	Traffic Manager
Lt. Col Frederick Hyden	Camp Lejeune - Traffic Management	meeting; newsletters		X	Х	Traffic Management Officer
Bill Brasier	US Coast Guard	phone call; email		Х		bridge & safe harbor (Bill.H.Brazier@uscg.mil)
Rob Rosseau	Norfolk Southern Historical Society	email			X	
Susan Suggs	NC DENR Community Assistance	meeting; newsletters		X	Х	working with MHC Downtown Revitalization
Lauren Hillman	Croatan National Forest	meeting, newsletters, phone calls	X	X	X	District Ranger
COMMUNITY LEADERS	/INTERESTED CITIZENS					
Leonard Safrit	Safrit Building Supply	meeting		X		
Steve Tellevich	Town Creek Marina Owner	meeting		X		Discussed access concerns with him & brother
Don Hoss	Carteret Crossroads	meeting, newsletter		X		small local environmental group
Sue Huntsman	Carteret Co. Wildlife Club	meeting, newsletter		X		spoke at club meeting, approx. 30 in attendance
John Fussell	naturalist / biologist	meeting, newsletter; email		Х	Х	naturalist; has done work in CNF
Jim Bailey	Atlantic Realty	meeting			X	Atlantic Realty; Radio Island
Joe Teague	interested, former NCDOT employee	phone calls & email			Х	

TABLE 3: PUBLIC COMMENTS: WRITTEN COMMENTS RECEIVED AT THE PUBLIC MEETING

- 1. Concern was expressed by several commenters about impacts to the Intracoastal Waterway and boat traffic.
- 2. Consider a new "depot" or rail-yard up the line, where trains could be pulled from the Port and made up before leaving.
- 3. Consider an alternative that moves the track along the back side of the industrial park, between West Carteret High School and Wal-Mart. This would serve the area and protect the Croatan National Forest.
- 4. Consider "status quo, with improvements." Moving railroad will not be worth the environmental impacts. Do not increase the number of bridges over AIWW and other waters. Stay away from airport and Maritime Museum.
- 5. Supports Alternative 6, but thinks it would have adverse impacts on Morehead City. Would prefer efforts to reducing the number of crossings and restrict trains to running at night.
- 6. Alternatives 1-5 would impact Painted Bunting Preserve and Heron Rookery.
- 7. Alternatives 1-5 would endanger children participating in the Junior Sailing Program, create noise and visual pollution at the Olde Beaufort Seaport (museum), affecting their planned exhibits, gardens, and nature trails.
- 8. It would negatively impact shipping in Gallants Channel.
- 9. Three ports in North Carolina are not needed.
- 10. Prove income generated by Port.
- 11. Supports only Alternative 6, has the least impact on residents.
- 12. The project is too expensive; heard that it will cost between \$180-250 million.
- 13. Cumulative impact of NCRR bridge and Gallants Channel bridge on Beaufort's development patterns and views of the channel should be considered.
- 14. Morehead City was built for the port and the railroad, keep it there.
- 15. What is the cost of the no-build alternative? What is the cost of building?
- 16. If a new route were built, a public transportation system on the old tracks would benefit Morehead City.
- 17. Pleased that the routes presented do not "slice the Croatan Forest into pieces."
- 18. The four concerns, economic development, traffic, safety, and defense, are all valid.
- 19. Beaufort should not have to bear the burden of the railroad to relieve its neighbors in Morehead City.
- 20. Would like to see an analysis showing measurable economic benefits to the Radio Island expansion, as opposed to redeveloping the entire Port to a "higher and better use (i.e. residential, commercial, and recreational)."
- 21. "Thank you for sharing your insights in such a professional, open manner."
- 22. What effect will the project have on security at the State Port?
- 23. Impressed that the NCRR is looking far ahead and appreciates that the company is asking for public comment before binding decisions are made.
- 24. Consider extending the project and moving the railroad in Havelock west of the town, sharing the Havelock Bypass corridor. The railroad in Havelock divides the

- community. This will be more pronounced as development increases. Several overpasses of US 70 over the RR are needed.
- 25. It is a fantastic idea.
- 26. Beaufort gains nothing from the Morehead City Port. It did not get a water system upgrade or new sewer treatment plant. "Beaufort is not, nor will it ever be a back door into Morehead City."
- 27 The development planned for Beaufort will result in less safety, more crossings.
- 28. Jarretts Bay Marine Industrial Park will be adversely impacted by the constraints of a bridge over the AIWW.
- 29. Residents of the existing NCRR corridor support its relocation and stated that they knew others of like mind.
- 30. A new route will create additional crossing problems as Carteret County develops.
- 31. Railroads don't belong in town in today's world.
- 32. "Grow up & forget the politicians."
- 33. More cost information would be appreciated.
- 34. Alternatives 6 and 7 would adversely affect the nursery in the Newport River and the fisheries there, including oyster beds and shrimp habitat.
- 35. Alternatives 6 and 7 would divide the Mill Creek community and take the homes of life-long residents.
- 36. The most realistic and cost effective alternative is Alt. 5. Under no circumstances should a route west of Alt. 6 be considered.
- 37. Alternatives 6 and 7 would create more accidents because the train would be going at higher speeds through a community not used to having trains.
- 38. Run the long trains between 9:00 pm and 3:00 am.

SUMMARY OF VERBAL COMMENTS NOT INCLUDED IN THE WRITTEN COMMENTS:

- 1. Close the Port.
- 2. Questions were received about the impact of the proposed Southport port on the Morehead City port.
- 3. Build a tunnel instead of having the railroad at-grade.
- 5. Add grade-separations in Morehead City.
- 6. One person suggested elevating the railroad throughout the corridor.
- 7. Extend the study limits and relocate the railroad through New Bern, as well.
- 8. Concerns were expressed about rail cars with hazardous materials falling into surface waters. No more water crossings were wanted.
- 9. Representatives from an area military installation expressed concern about the number of bridges, indicating that they could be terrorist targets, particularly during a rapid deployment scenario.
- 10. Has building a rail yard west of Morehead City been considered?
- 11. There are very few places left in Carteret County where one can get away from traffic noise. Alternatives that do not cross unroaded areas would be preferable.

SUMMARY OF WRITTEN COMMENTS RECEIVED AFTER THE PUBLIC MEETINGS:

Fifty–seven (57) written comments on the study were received by mail or fax within two weeks of the public meetings. The following summarized the writers' concerns.

- 1. The proposed routes would destroy National Forest land, impede traffic on the AIWW, and impact residential areas north of Morehead City.
- 2. Building a rail-yard west of Morehead City, so that trains can be built there, makes more sense.
- 3. Concerns expressed about Newport River shrimpers and impacts to the Maritime Museum, particularly its Junior Sailing Program.
- 4. Morehead City was founded on the railroad. It should stay where it is.
- 5. Prefers Alternative 6, as the others adversely affect the Town of Beaufort's development plans, the airport, and the Maritime Museum.
- 6. A safe exit route from the Beaufort-MHC area is needed in the event of a hazardous waste spill. The northern routes preclude this, due to the southwesterly prevailing winds.
- 7. The possibility of passenger service to eastern NC is exciting.
- 8. "How dare you!!!" The project "victimizes Beaufort.
- 9. The proposed route would destroy the national forest, impede AIWW traffic, and impact residential areas north of Morehead City.
- 10. Build a rail yard west of Morehead City.
- 11. All the proposed routes have impacts to residential areas of Morehead City and Beaufort, including noise, property values, and boat access and traffic.
- 12. Alternative 6 would adversely affect Newport River shrimpers and boaters.
- 13. Strong support for the Port was expressed by one public official, but she did not support the relocation of the railroad through Beaufort.
- 14. There is no proof that economic development will be sustained or increased by the proposed relocation.
- 15. Reschedule trains so that they enter and leave the Port between 1:00 and 5:00 a.m.
- 16. Route traffic down Bridges Street when a train arrives or leaves.
- 17. A railroad bridge over Gallants Channel in the vicinity of the Maritime Museum will adversely affect the site, its viewshed, and generate noise.
- 18. The Port only benefits Morehead City, not Beaufort.
- The lifestyle of commercial fishing villages like Mill Creek are under attack. The railroad makes it worse with its pollution.
- 20. Emergency response services would be difficult in Mill Creek with Alternative 6, because it divides the service area in half.
- 21. Morehead City needs to take care of its own problem.
- 22. Alternative 6 would disrupt eagles that nest along Newport River.
- 23. Trains running through Mill Creek at 50 mph will be unsafe for the children.
- 24. Mill Creek is a community of hard working people. Morehead City and Beaufort are being taken over by "money-hungry developers who think that getting rid of the existing railroad and placing it in a community like ours is a good thing to do. They are wrong and it's unfair."

- 25. "Alternatives 5 and 7 are unacceptable! They will cut me off from Route 101, disturb the peaceful enjoyment of our 63 homesite development & lower the property values of our high priced homes!"
- 26. "Mill Creek does not want your train."
- 27. There is no assurance that products will not fall off the train into the Newport River.
- 28. The residents of Mill Creek should not have to suffer for your profit margin.
- 29. Several of the routes would place tracks on the east side of Graystone Landing, negatively affecting access, increasing noise, lowering property values, and harming wildlife habitat.
- 30. Concerned about the loss of seafood business and the families involved in the railroad is relocated across the Newport River.
- 31. Move the Port if it's such a problem for Morehead City. They moved the port in Charleston.
- 32. The route through Mill Creek would be "disastrous" for the waterman who make their living on commercial fisheries and shell fishing.
- 33. "Thanks to Morehead City and the self serving business and tourist interest for shoving their problems on the small communities of the surrounding areas."
- 34. Generations of families have grown up and still live in Mill Creek. Displacing them from their homes would be unfair.
- 35. Opposed to Alternatives 6 & 7 due to impacts to the Newport River, limited access to emergency services, and blocked access to the old intracoastal waterway harbor.
- 36. "The alternative of building a rail yard at Edgewater near the Bridges Street extension seems to be the most feasible and to bear the least impact on people and the environment."
- 37. "How can anyone justify a train route thru Mill Creek."
- 38. Newport River is used by a lot of commercial boats, sportsman, pleasure boats, water skiers, and others for water sports.
- 39. The Newport River feeds a lot of families.
- 40. "I worked at the Port for 40 years, and I seen nothing wrong with where the tracks are."
- 41. "No relocation."
- 42. "A railroad through Mill Creek, NC is stupid. Don't do it!"
- 43. Specifically opposed to Alternatives 5 and 7.
- 44. Traffic on NC 101 is increasing. Adding a railroad along the corridor will make it worse.
- 45. Opposed to Alternative 6 because it would block emergency access to the main entrances to two large subdivisions at the Crab Point area. In storms, flooding closes 20th Street, leaving only Country Club Road open.
- 46. "Why are you considering spoiling Beaufort for a Morehead project? Passenger service would be a positive aspect of this project."
- 47. "The port isn't going to grow measurably because it's too distant from any major urban area & too far EAST on the continent. Your project looks like a boondoggle like the Global Transpark!"

- 48. I worry about the Mill Creek Volunteer Fire Department's ability to handle a derailment. Neighboring haz mat equipment is 20-30 minutes away.
- 49. The Newport River ecology is fragile and has been harmed over time. We hope it will improve, not get worse. A railroad bridge will not improve it. (Photos sent)
- 50. A lot of elderly people live in Mill Creek, making timely emergency services very important.
- 51. The peace and serenity of the Newport River should not be destroyed by the railroad.
- 52. "When I look out over the water, I want to see boats, not trains!" The railroad would be an obstruction to boat moorage and traffic, especially commercial fisherman.

Common Name	Scientific Name	Hahitat	Common Name Scientific Name Habitat NC Counties of								
Common Name	Scientific Maine	Potential	Rank	Occurrence							
Vertebrates											
American eel	Anguilla rostrata	Yes	W1	Carteret, Craven							
Bachman's sparrow	Aimophila aestivalis	Yes	SC	Carteret, Craven							
Black rail	Laterallus jamaicensis	Yes	SR	Carteret, Craven							
Black-throated green warbler	Dendroica virens waynei	Yes	SR	Carteret, Craven							
Bridle shiner	Notropis bifrenatus	Unk	SC	Craven							
Carolina crawfish frog	Rana capito capito	Yes	T	Carteret							
Carolina madtom	Noturus furiosus	Yes	SC	Craven							
Eastern Henslow's sparrow	Ammodramus henslowii susurrans	Yes	SR	Carteret							
Eastern painted bunting	Passerina ciris ciris	Yes	SR	Carteret							
Mimic glass lizard	Ophisaurus mimicus	Yes	SC	Carteret							
Northern diamondback terrapin	Malaclemys terrapin terrapin	Yes	SC	Carteret							
Southern hognose snake	Heterodon simus	Yes	SC	Carteret+, Craven+							
Invertebrates											
Annointed sallow noctuid moth	Pyreferra ceromatica	Yes	SR	Craven+							
Buchholz's dart moth	Agrotis buchholzi	Yes	SR	Carteret, Craven+							
Carter's noctuid moth	Spartiniphaga carterae	Yes	SR	Carteret*							
Eastern beard grass skipper	Atrytone arogos arogos	Yes	SR	Carteret							
Venus flytrap cutworm	Hemipachnobia subporphyrea	Yes	SR	Carteret+							
A skipper	Atrytonopis sp. 1	Yes	SR	Carteret							
Vascular Plants											
Coastal beaksedge	Rhynchospora pleiantha	Unk	T	Carteret							
Dune blue curls	Trichostema sp. 1	Yes	SR-L	Carteret							
Godfrey's sandwort	Minuartia godfreyi	Unk	E	Craven							
Grassleaf arrowhead	Sagittaria weatherbiana	Yes	SR-T	Craven							
Loose watermilfoil	Myriophyllum laxum	Unk	T	Carteret, Craven							
Pickerings dawnflower	Stylisma pickeringii var. pickeringii	Yes	Е	Carteret							
Pondspice	Litsea aestivalis	Unk	SR-T	Carteret, Craven							
Raven's boxseed	Ludwigia ravenii	Yes	SR-T	Carteret, Craven							
Spring flowering goldenrod	Solidago verna	Yes	T	Carteret, Craven							
Venus' fly-trap	Dionaea muscipula	Yes	SR- L,SC	Carteret, Craven							
Wagner's spleenwort	Asplenium heterreosiliens	Unk	E	Craven							
Nonvascular plant	1										
Savanna campylopus	Campylopus carolinae	Yes	SR-T	Carteret							
Notes + Obscure-the da * Historic-the sp E Endangered T Threatened SC Special Concer SR Significantly R L Range of the sp	te and/or location of observation is un ecies was last observed in the county	certain more than 50 y adjacent states	rears ago.	or near endemic)							

