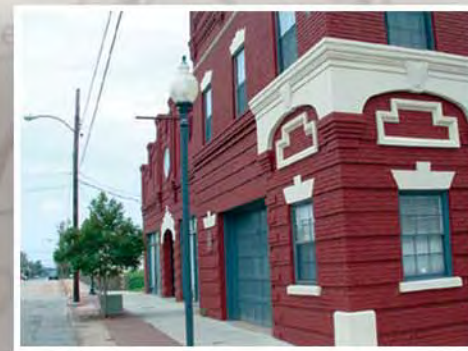


Wilmington Multi-Modal Transportation Center Site Evaluation Report



Prepared by:



THE Louis Berger Group, INC.
1513 Walnut Street, Suite 250
Cary, North Carolina 27511

December 2004

Table of Contents

Executive Summary _____ *ii*

1 Purpose and Need _____ **1**

2 Project History _____ **2**

 2.1 Background: History of Wilmington’s Railroad Experience _____ **2**

 2.2 History of Wilmington Multi-Modal Transportation Center Project _____ **3**

 2.3 Comprehensive Planning Documents _____ **3**

 2.4 The Multi-Modal Transportation Center Feasibility Study (2000) _____ **6**

 2.5 Southeastern North Carolina Passenger Rail Feasibility Study (2001) _____ **7**

3 Existing Transportation Facilities _____ **9**

 3.1 Parking _____ **9**

 3.2 Bus Transit _____ **11**

 3.3 Other Transportation _____ **16**

4 Evaluation Methodology and Steps _____ **19**

5 Area Evaluation _____ **20**

 5.1 Downtown Wilmington _____ **21**

 5.2 Carroll Carolina Corp. (Page Oil) Site _____ **21**

 5.3 Navassa Site _____ **21**

 5.4 Airport Site _____ **21**

6. Site Evaluation _____ **22**

 6.1 Determination of Physical Requirements _____ **22**

 6.2 Criteria for Comparison of Sites _____ **29**

 6.3 Rating of Sites _____ **31**

 6.4 Summary of Sites _____ **32**

7. Public Involvement _____ **43**

8. Implementation _____ **44**

 8.1 Environmental Issues _____ **44**

 8.2 Funding and Implementation Issues _____ **46**

 8.3 Site Approval and Design Issues _____ **55**

 8.4 Potential for Complimentary Development _____ **57**

- Appendix A. Resources and References
- Appendix B. Stakeholder Interviews
- Appendix C. City of Wilmington Code: Central Business District

List of Figures

Figure 1 Wilmington Multi-Modal Transportation Center Site Alternatives 1

Figure 2 Wilmington Railroad History, 1800,1986 2

Figure 3 Park Wilmington Downtown Parking Facilities 9

Figure 4 Cape Fear Community College Campus Map 10

Figure 5 Wave Transit Fixed Route Bus Map 11

Figure 6 Route Map on the Front Street Free Trolley 13

Figure 7 Pedestrian and Traffic Volumes in CBD Vicinity 18

Figure 8 Historic Wilmington Firestation 44

Figure 9 Sample Charette Schedule and Process 56

Figure 10 Wilmington Zoning Categories 57

List of Tables

Table 1 Cape Fear Community College Parking 10

Table 2 Intercity Bus Routes Serving Wilmington, NC 15

Table 3 Wilmington Multi-Modal Transportation Center Space Building Requirements 28

Table 4 Car Parking Requirements 28

Table 5 Number of Vehicles (by type) to be Accommodated On-Site 28

Table 6 Second Round Comparison Matrix of Downtown Sites 39

Table 7 Potential Environmental Issues and Remediation 45

Table 8 Timeframe for Bus Facilities Project 55

Table 9 Transit Center Developments and Property Values: A Summary of the Literature 58

Site Summary Sheets 33-38

Executive Summary: Wilmington Multi-Modal Transportation Center Site Evaluation Report

The process of selecting a suitable location for the Wilmington Multi-Modal Transportation Center (WMMTC throughout much of this report) has spanned across more than five years and two formal studies sponsored by the North Carolina Department of Transportation (NCDOT). The history of the City of Wilmington with respect to passenger rail service is much longer, mirroring the rise and fall of passenger and freight rail services provided by the Atlantic Coast Line and its railroad company predecessors. Interest in reestablishing passenger rail service was particularly rekindled by the conclusions of a 1999 NCDOT study that suggested that a Raleigh to Wilmington service that allowed convenient connections to the northeast Amtrak service could generate over 43,000 passengers per year, a figure believed to make the concept a viable one. A later study selected the current Wilmington Police Headquarters site in downtown Wilmington as a preferred choice for the location of a multi-modal transportation center that in its first phase of development would house taxi, airport shuttle, local bus, and intercity bus services. A second phase would see the station accommodate passenger rail service, which also depends on the purchase of equipment, track rehabilitation or replacement, and other operational improvements necessary to resume service to Raleigh. The study of a preferred site was reopened in 2003 in part due to the dissatisfaction of some constituents with the preferred site and its selection process. **This study was launched in September of 2004 with the purposes of (1) validating information about the sites that have been studied in the past; (2) collecting new information about the sites from key stakeholders; and (3) developing recommendations for suitable sites to carry into the second phase of the study, the design of the WMMTC.** This study recognized that the actual design of the WMMTC would be relegated to a second phase of work, thereby limiting to a degree the level of specificity that could be achieved with respect to operational specifics.

The perceptions of stakeholders about the benefits of the WMMTC include the need for a downtown bus transfer point in the wake of moving the main local bus terminal to a location east of the downtown, economic redevelopment potentials, and providing mobility alternatives for the local and non-local tourist and business travelers. Doubts were expressed by various parties about, among others, the continued viability of any downtown location due to constrained site parameters, potential disruptions to sensitive noise receptors, low ridership on passenger rail service, and pedestrian safety. Overall, these stakeholder comments were very useful, and recognized some of the change elements that this study was designed to uncover: significant property ownership changes for some of the proposed sites; new urban development and planning initiatives in Wilmington that were not as fully developed even two years ago; and assumptions about some operational needs for the various components of the WMMTC. The selection process invoked by this study and report strives to incorporate these comments and changes; the design process must also engage and satisfy a number of stakeholders in the area in which the WMMTC is constructed.

The selection process was two-fold: first, an assessment of the potential for achieving the goals of the WMMTC was considered for four areas: Navassa/Brunswick County, Wilmington International Airport, Carroll Carolina/Page Oil, and downtown Wilmington. Based principally on the needs of intercity bus services, local bus services, traditionally successful rail stations in similar urban environments, appropriateness of the terminus related to passenger destinations, and a goal of complimenting development to the surrounding urban area, the downtown core was selected as a preferred general location. The subsequent site selection process utilized 13 criteria to determine a preferred site. Based upon a scoring system used during these rankings, it was determined that a city block bounded by the rail bed, Second Street, Third Street, and Red Cross Street was the preferred site due to accessibility to a major arterial (Third Street and Martin Luther King, Jr. Expressway) for ease of access; proximity to core retail and institutional functions; site configuration; and ease of pedestrian and bicyclist access. Enhancing the safety for and appearance to pedestrians and bicyclists using Red Cross Street will also be crucial to establishing this street as a pedestrian corridor and vital linkage to the Wilmington Railroad Museum, Front Street retail agglomeration, Cape Fear Community College, and convention center. This site is not without challenges that will have to be addressed in the design phase, including routing of traffic, coordinating with adjacent land uses, and fragmented property ownership. A combination of other sites consisting of adjacent parcels to the north, west, and east are also feasible, but all would be required to

Definition of Terms and Acronyms Used in this Report

ACL (Atlantic Coast Line)

CFCC (Cape Fear Community College)

Complimentary Development – Private and public investments in transportation facilities and commercial/residential developments that mutually enhance the commercial viability of both. Also known as *Joint Development* or *Transit Joint Development*.

NCDOT (North Carolina Department of Transportation)

(TOD) Transit Oriented Development – Public and private investments resulting in a pattern of land use that is conducive to increasing ridership of a transit system serving the area within a walking radius around one or more transit stops.

WMMTC (Wilmington Multi-Modal Transportation Center)

overcome equal or greater difficulties in order for the WMMTC to meet its goals. The importance of integrating a circulator shuttle or “trolley” vehicle into the site was almost universally cited as an important feature by the stakeholders that were interviewed.

A critical commentary to the site selection process is that the subsequent design procedure and product are absolutely essential to resolving many of the concerns expressed by stakeholders in the downtown core. The goal of this study was to consolidate earlier findings, update information, and provide a professional opinion on the viability of the candidate sites that were presented: the actual design of the station was not an element of the current scope of work. Setting a high standard for the WMMTC design, construction materials, and degree of architectural integration with the surrounding campus and commercial uses can partially or wholly mitigate many concerns about the WMMTC, some of which are based on inaccurate assumptions about modern passenger rail operating characteristics. Designing a signature structure that can help to anchor and continue the revitalization of this area, one that recognizes the importance of the Third Street gateway into Wilmington, is essential to the perceived success of the WMMTC. Since there are other sites examined in this study that are very nearly as feasible as the preferred option, some flexibility is provided that can make the design process the final arbiter of the site location that would allow consideration of the appearance and function of the WMMTC within the adjacent community.

The report contains summary notes of all stakeholder interviews conducted for the purposes of this study; reviews of known, relevant project studies that may have a bearing on the selection of a preferred site; recommendations on how to proceed with the design phase of the study and implementation/funding issues; and assessments of each of the six downtown sites that were considered.

The authors would like to acknowledge the City of Wilmington and Wilmington MPO; NCDOT Public Transit and Rail Divisions; and citizens of Wilmington for their assistance and support. You are encouraged to obtain additional information concerning this report from the following sources:

Client

City of Wilmington
Wilmington Urban Area MPO
Municipal Annex - 4th Floor
305 Chestnut Street
Wilmington, NC 28402
910.341.5800

Sponsors

North Carolina Department of Transportation
Public Transportation Division
1550 Mail Service Center
Raleigh, NC 27699-1550
919.733.4713

North Carolina Department of Transportation

Rail Division
1553 Mail Service Center
Raleigh, NC 27699-1553
919.733.7245

Consultant

The Louis Berger Group, Inc.
1513 Walnut Street, Suite 250
Cary, North Carolina 27511
919.467.3885

1 Purpose and Need

The Louis Berger Group was hired by the City of Wilmington to conduct an updated study of the potential construction of a multi-modal transportation center in the Wilmington region. The study utilized data available from previous studies, updated information, and refined the analysis to account for changing conditions in the area.

The Multi-Modal Transportation Center is envisioned as a single facility that would facilitate the interaction between several modes of travel in the Wilmington area, thereby encouraging increased use of alternative travel modes as well as allowing for more efficient allocation of transportation funds by allowing for the shared usage of certain infrastructure facilities. Some of the modes that would be served include local transit buses, intra-city buses (Greyhound/Trailways), taxis, bicycles, and pedestrians. A critical element is also the potential for future passenger rail service to Wilmington. As identified in previous studies, some of the potential benefits of providing a multi-modal transportation center in Wilmington include:

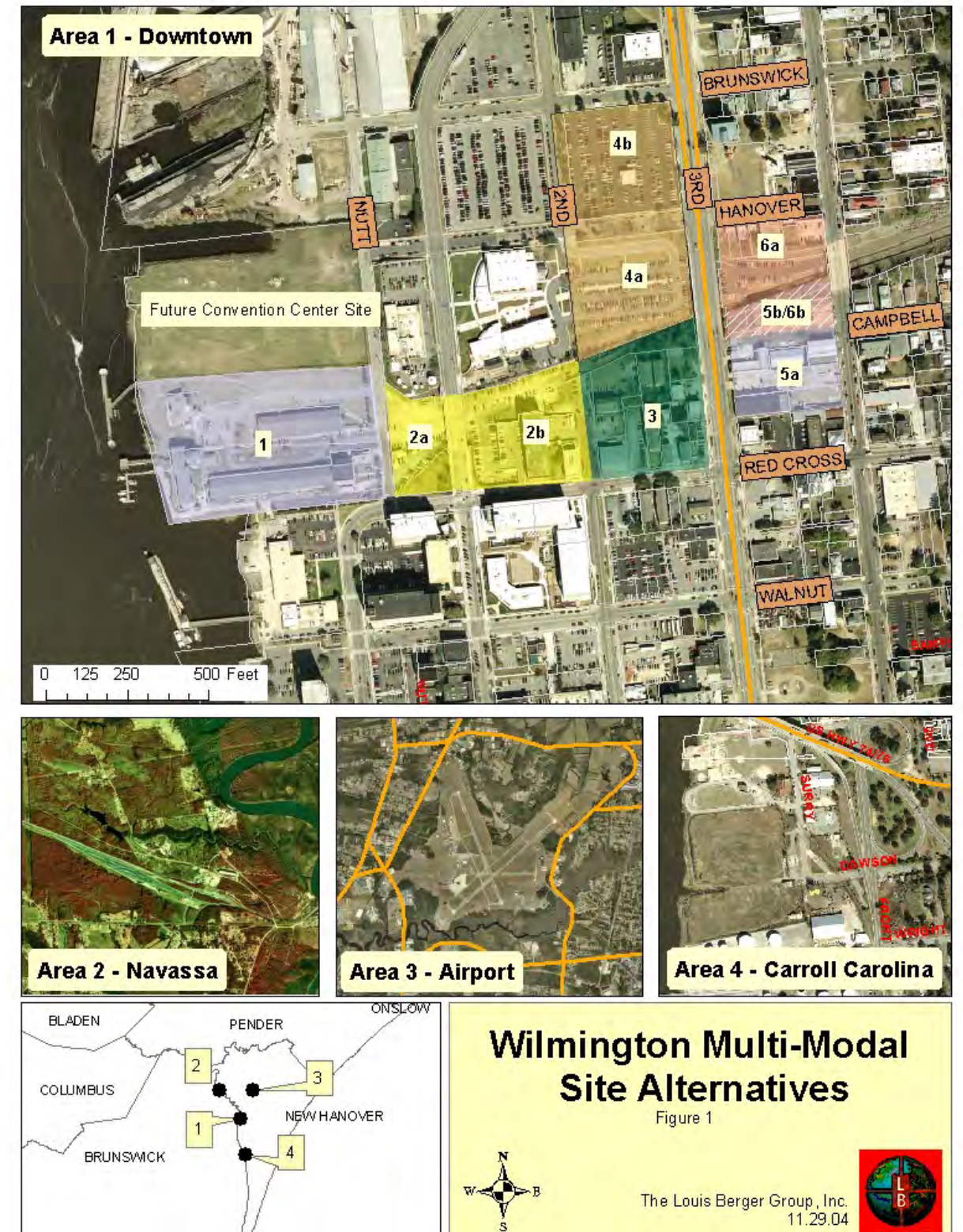
- Increased convenience for passengers transferring between modes;
- Ability to transfer to or utilize modes that would not be feasible without the terminal
- Improved passenger comfort;
- Elimination or reduction of problems associated with on-street bus operations;
- Improved amenities for all modes and their users as a result of shared use and expense;
- Provides a focal point for downtown and improved image for public transportation;
- Potential for joint development with other activities; and
- Can influence local land use decisions as part of a land use planning strategy.

The current study was intended to document the analysis process conducted as part of previous studies, verify whether the findings are still applicable, and to examine additional alternatives that were not previously considered. The analysis of potential sites was divided into three steps. First, previous reports were reviewed, and it was verified whether the preferred area for the transportation center is in the downtown area of Wilmington. If the preferred location is downtown, the second step would involve evaluating and comparing six sites in the downtown area as shown in Figure 1 (note that this Figure will be referenced frequently throughout the text of this report). Note that previous studies examined only two downtown sites, although other locations have been discussed, and that it was considered possible that a combination of sites might offer the best site solution.

The comparison of alternative sites will rely upon both qualitative and quantitative techniques utilizing a comparative matrix. Specific items that were considered include the following:

- | | |
|---|---|
| ■ Site Accommodation, Flexibility, and Availability; | ■ Compatibility with Existing and Planned Uses; |
| ■ Local Bus Service, Taxi, and Paratransit Service Impacts; | ■ Potential for Complementary Development and Job Creation; |
| ■ Intercity Bus Ridership and Operations; | ■ User Security; |
| ■ Rail Ridership and Operations; | ■ Implementation and Financing Issues; and |
| ■ Vehicular Circulation and Traffic Impacts; | ■ Constructability Issues. |
| ■ Pedestrian and Bicyclist Safety and Accessibility; | |

Figure 1. Wilmington Multi-Modal Transportation Center Site Alternatives



2 Project History

2.1 Background: History of Wilmington's Railroad Experience

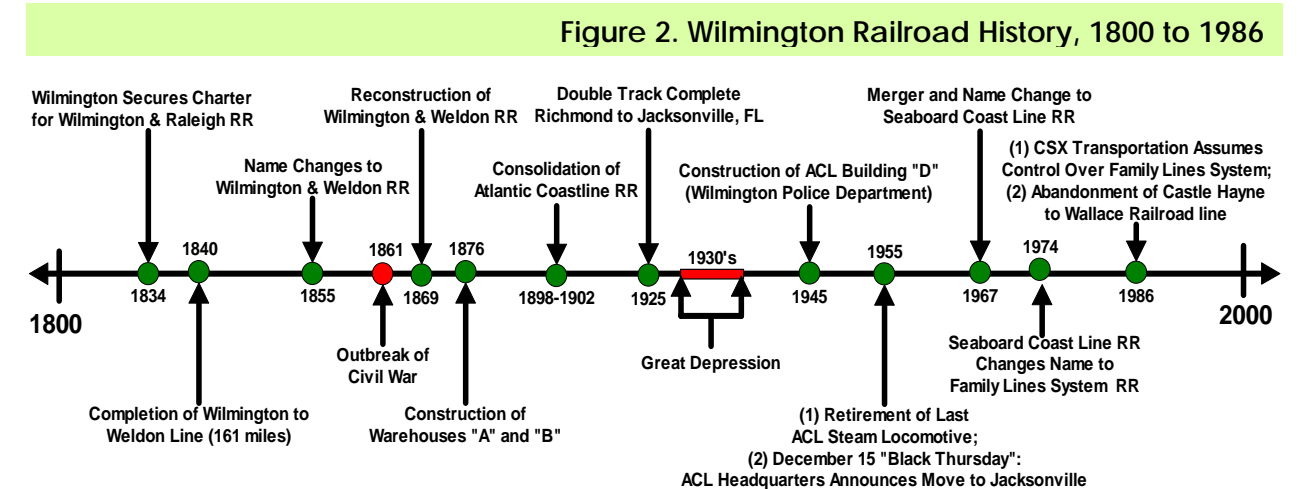
Wilmington can claim as strong a heritage with railroads as any city in North Carolina, as demonstrated in Figure 2. At one point, no fewer than five rail lines connected the City to various destinations in the Mid-Atlantic Region. In large part this history of railroading is bound to the Atlantic Coast Line Railroad, which made its headquarters (albeit not always under the same name) in Wilmington for 121 years. The ports of Wilmington, Norfolk, Savannah, and Charleston served as entrepôts for transporting freight shipments from the agricultural lands of the southeastern United States to the high-density populations of the north. Passengers on the Wilmington and Raleigh (renamed the Wilmington and Weldon in 1855) provided the largest generator of revenue from the company's earliest days. At first these passengers were mostly local travelers traveling between the small towns of North Carolina and Virginia, but they were later overtaken in numbers by through travelers going between Charleston, South Carolina and the northeast. By 1860, the numbers of these through travelers were dominant in proportion to local travel. Later, the route ran all the way to Florida, a trip that was greatly facilitated by replacing the five-foot-wide tracks south of Wilmington with standard gauge tracking.

Over the next 100 years (1860-1960), the Atlantic Coast Line (ACL) Railroad Company, which had absorbed the Wilmington & Weldon Company at the turn of the century, made hundreds of millions of dollars' worth of improvements tracks, stations, maintenance facilities, and rolling stock. During this same time period, over 100 short-line railroads were consolidated into the ACL Company, in spite of the upheavals presented by the Civil War and Great Depression of the 1930's. Most important to this study are the buildings that ACL constructed in downtown Wilmington, its headquarters of operations for over 120 years.

- Warehouses "A" and "B" and the Freight Office (now Wilmington Railroad Museum) were constructed in 1876 and 1900, respectively, are still standing and are in use at the Coastline Convention Center.
- The Wilmington & Weldon RR offices were once located at the corner of Front and Red Cross Streets in a two-story brick structure with arched first-floor windows. Building "C", the former multi-story headquarters of ACL, was constructed in 1913. Tragically, this beautiful, curving brick structure was demolished in 1970.
- Building "D", now used as the Wilmington Police Department Headquarters, was constructed in 1945.

The direction of the Wilmington economy and the specific roles of freight and passenger rail services were changing dramatically by the late 1950's. Truck hauling had begun to encroach heavily on the railroad's primary business of moving goods across state lines. Although bulk freight and containerized shipping continued to allow freight services to survive in Wilmington, the main rail line had moved 100 miles to the west, effectively isolating Wilmington's ACL headquarters. By October of 1960, the City of Wilmington would lose 1,500 jobs as the new headquarters relocated to Jacksonville, Florida, a location much closer to the center of gravity for the company's rail activities. As this move was occurring, Wilmington had already started to change its emphasis away from the role of port city and began to focus on diversifying its economic base. The last passenger train left Wilmington in 1968.

Afterwards, the Atlantic Coast Line went through a number of mergers and name changes, resulting in the current CSX name, a holding company which still has its headquarters in Jacksonville, Florida. Although the days of intensive passenger rail, steamship connections, and freight rail were left behind with Wilmington's status as North Carolina's largest city, there are still ample signs of the city's heritage and former reliance on rail services. The city is crossed by several rail corridors, most abandoned but some still in place,



including the Wilmington & Weldon "cut" through the north end of downtown. Several buildings, including the former ticketing office, warehouses "A" and "B", and Wilmington Police Department (Building "D") survived the widespread policies of urban renewal that claimed the more architecturally significant Building "C", ACL headquarters in Wilmington for more than 50 years.

2.2 History of Wilmington Multi-Modal Transportation Center Project

The North Carolina Department of Transportation (NCDOT) began exploring the possibility of re-instituting passenger rail service to Wilmington in the early and mid-1990s. A pair of studies completed in 2000 and 2001 suggested that (1) there was a viable and stable market for inter-city passenger rail service to Wilmington from Raleigh if connections were provided to the Northeast corridor; and (2) that the best site for an intermodal hub was in downtown Wilmington that included the existing Wilmington Police Headquarters site. During this same time period, some local planning documents began citing this location as the future setting for the Wilmington Multi-Modal Transportation Center. There was, however, considerable disagreement about the impacts that bus and rail operations from this site would have on the Cape Fear Community College (CFCC) as expressed by representatives of the community college faculty and board. In large part, this prompted the re-examination of past studies that would (1) incorporate past efforts at selecting a site; (2) validate design information; and (3) determine which of six downtown sites and three additional geographic areas in the Wilmington vicinity would be the optimum location for a multi-modal transportation center. The selection process was completed in April, 2003 and commenced in September, 2004 with this report as its outcome.

2.3 Comprehensive Planning Documents

The importance of reviewing locally sponsored land use and transportation plans is to gather information pertinent to the current study, particularly those policies that may affect placement or operations of the Multi-Modal Transportation Center. Development of these plans often requires significant public outreach and technical study that are valuable to ancillary efforts like the site selection process discussed in this report. Land use and regional transportation plans in the Wilmington Urban Area have occasionally recommended the development of intermodal transportation programs with some plans providing for a multi-modal transportation center. A comprehensive review of the adopted plans for the Wilmington Urban Area revealed that there has been historical support for a multi-modal transportation center in the Wilmington Region, although the specific site of such a center is seldom mentioned. The following is a brief summary of each of the documents that have been produced by local governments that may affect or otherwise address the siting of a multi-modal transportation center.

- *CAMA Comprehensive Land Use Plan, Land Use Map (November, 1998) and Update (Wilmington-New Hanover Comprehensive Planning Program)*. This is a detailed plan and map indicating the land uses in New Hanover County by individual parcel, providing a good overview of the general pattern of development in this area. This map indicates that (1) land uses north of Market Street and east of Third Street transition to a primarily commercial and institutional use from residential uses further to the east; and (2) several parcels adjacent to the CSX railroad bed are labeled "undeveloped" or designated for transportation/utility use. The former includes Sites 4A and the adjacent site of the CFCC Schwartz Center. Parcels designated for transportation/utility use include portions of Sites 2A and 2B/3A as shown in [Figure 1](#). This plan encourages non-motorized forms of transportation and non-highway facilities.
- *Wilmington Downtown Plan: Vision 2020 (October 1997) and Wilmington Vision 2020: A Waterfront Downtown (September, 2004)*. The 2004 update of this plan is still underway at the time of this writing, so the draft September version of this report is reviewed here. The goal of this plan is to make Wilmington recognizable as "...One of the eastern seaboard's most livable waterfront cities..."

Three public workshops and a public meeting in 2004 helped to refine the plan's goals and recommendations. The historical perspective (page 6) cites the departure of the Atlantic Coast Line Railroad headquarters, along with suburbanization and highway development, as principal causes of a "devastating impact" on the downtown. Although transportation issues are mentioned prominently, there is only a summary discussion of railroad's role in future development or in the existing conditions sections. The exception to this statement is on page 29 contained within the discussion of the Preferred Plan, where one of the recommendations is to, "Convert rails-to-trails open space along the former railroad corridor without precluding a multi-modal facility." A second recommendation (pages 29 and 39) is to "re-invent the existing Railroad Museum" in such a way that would help activate the new convention center. The CFCC parking lots, two of which are Sites 4A and 4B, are noted as not being of the highest and best use for the properties and that consolidating campus parking into a structure would make more economic sense. The Coastline Convention Center site (Site 1) is also mentioned as a prime "redevelopment site" (page 47). Current building heights north of Red Cross Street do not have a maximum value for non-residential uses, but the recommended heights vary from 100' to 120'. Residential uses are recommended to have a maximum density of 36 dwelling units/acre, well above the typical threshold required to support local and regional transit services. The report frequently mentions the importance of maintaining a strong architectural standard for existing and new structures in the downtown, with implications for the design of the WMMTC. In this plan, there are a number of benchmarks that are used to demonstrate that the plan is being successful towards meeting its goals, including 3,000 new residents; 10,000 new jobs; 250,000 visitors annually; and 90% parcel utilization (page 30). Other potentially relevant recommendations include preserving the waterfront for recreational and "green space" uses; improving pedestrian access to the Riverwalk along key pedestrian routes; streetscaping improvements; redevelopment of historic properties and parking areas; and improving architectural design in part through a design review process.

- *Wilmington Urban Area Transportation Plan (1999)*. This is a version of the fairly standard Transportation Plan (formerly Thoroughfare Plan) document that has been prepared by the Transportation Planning Branch staff of NCDOT, in cooperation with local staff and officials, for many municipalities and counties throughout the State. Apart from recommending improvements to over 120 miles of roads in New Hanover and Brunswick Counties, the Plan also encourages travel demand management practices such as carpooling, as well as merging the city and county transit services into a single entity. The plan included fiscal projections that were identified as potential impacts to the implementation of the recommendations in the Plan. This estimate is based on past financial trends, and may not reflect changes in future funding streams due to changes in fuel usage, funding formulas, or other unknowns. It is also based on the assumption of a continued influx of people (and funds) to southern states, including North Carolina. The Plan also notes that the Multi-Modal Transportation Center Feasibility Study (see Section 2.4) will be incorporated into the Urban Area Transportation Plan under separate cover (page 1). Public forums and a Steering Committee generated a number of relevant recommendations, including a commitment to work with NCDOT to provide regional rail service; streetscaping; improved pedestrian and bicycling facilities; sensitivity to noise; and purchase, protection, and preservation of thoroughfare and rail corridors (pages 4-5). The Plan also recommends more mobility options for people and freight, and cites rail service between Wilmington and Charlotte as a component of that recommendation (page 19). Downtown shuttle service is also recommended (page 37). Notably, Red Cross Street was recommended to be upgraded from a local street to a Minor Thoroughfare classification. After a series of seven forums and special presentations, the Plan was adopted by the seven municipal and county governments addressed by the Plan.
- *Downtown Parking Study Update (2002)*. The downtown parking study that was reported in this document was a short-range assessment of near-term parking needs. Building and parking space occupancy counts and occupancies were collected in the original, 1999 study, the report for which either was not available or never completed. Comparisons to several other cities' parking management structures were also used to form the basis for recommendations. There is little or no mention of coordination with major parking generators such as CFCC or local government, nor any mention of the relationship between adding more parking and the effects to the viability of local transit services or the effects on a walk-oriented waterfront. In this sense, the parking plan does fully agree with the draft *Vision 2020 Plan* now being developed, which suggests that there is already an "overabundance" of

parking in the downtown (36% of available off-street space is devoted to parking, p16, *Draft Vision 2020 Plan*). Conversely, the Parking Facilities Plan noted that there were near-100% occupancies of on-street parking in some residential blocks, and recommends additional parking in decks and surface lots. Historically, Wilmington has had demand issues for short-term parking, particularly in residential areas near the CBD and at high-turnover retail locations, such as the businesses on Front Street and extending into the CFCC sphere of influence. This report does not fully recognize the distinction between these issues and the surfeit of off-street, longer-term parking over-supply which is probably the source of the disagreement between the two reports.

At least two other issues identified in this plan may directly impact the need for and design of the WMMTC. First, additional parking is recommended in the north end of downtown, although the location was left open until after some development proposals were implemented (pages 5 and 7). Since the Downtown Parking Study report was completed prior to the final plans being completed for the new convention center, it is likely that the need for parking would only increase with these new developments. Shuttle service was deemed an ingredient in the solution for parking on the north end of the CBD as well. Interim space at the Scarafoni site (now PPD Convention Center, north of Site #1) was recommended, although how long the space could be used for interim parking was uncertain. Second, local tour bus parking was also deemed an issue, with the recommendation that on-street accommodations be made for tour buses (page 6). It seems possible that, if space permitted, the WMMTC might be able to accommodate tour buses as well, providing an off-street solution to the problem.

- *City of Wilmington Brownfields Assessment Demonstration Pilot Project, 2000-2002 (May, 2002)*. This project consisted of a risk assessment of four properties in the downtown vicinity of Wilmington, two of which are in the vicinity of the former CSX rail line: the former Independent Icehouse property at 8th and Dawson and the former city incinerator at 11th and Post/Fanning Streets. For the former, a Phase II Environmental Site Assessment revealed that 17 chemicals were above established levels of concern due to ice-making and metalworks activities conducted on the site in the past. Over half of these chemicals were metals, while the other half included hydrocarbons, pesticides, and PCBs. During the remediation discussion of this site, the authors noted that non-residential uses or paved areas may be acceptable to control surface contamination levels at several times acceptable standards (p. 14), but nevertheless encouraged a cleanup effort that was estimated to run as high as \$195,000 to \$390,000 depending on the amount of soil that needed to be removed. Arsenic, chromium, and lead were found to be above or near state or federal remediation goals (RGs), but still acceptable to commercial or industrial uses. Threats to groundwater were deemed minimal throughout the report. Based on a conversation with Mark Ziegler (City of Wilmington, November 1, 2004), of the 70 initial sites that had potential for brownfield redevelopment, none of those examined in the downtown area were listed. However, the block immediately north of Site #6 did have several parcels that were identified on this initial listing.
- *A Community Plan: NorthSide (City of Wilmington Development Services Department, July, 2003)*. This plan identified a number of themes and specific objectives to enhance the NorthSide community, a historic neighborhood with a high percentage of African-American and low- and moderate income residents. Concentrations of retail establishments are located along North Front and North Fourth Streets in this otherwise residential area. NorthSide is bounded by Market Street, 17th/Campbell Streets, Burnt Mill/Smith Creek, and the Cape Fear River. Some of the relevant recommendations from this plan relating to transportation services are the provision of improved streetscaping and lighting similar to that implemented on North Fourth Street; better sidewalk connections; enhanced transit service in the form of buses and trolleys; provide ongoing maintenance of the railroad corridor beyond that provided currently by NCDOT; and slow neighborhood traffic (traffic calming). Gentrification, more rental residents, more apartments, more truck traffic, and the displacement of long-term residents were things that the neighborhood, when polled, did not want to see happen in NorthSide. Eight responses (out of 118 transportation responses) favored a "multi-transit center"; 17 other responses favored "24/7 public transportation."
- *Wave Short-Range Transit Plan (April, 2004)*. This plan was completed as the New Hanover and City of Wilmington Transit services were being merged into a single authority, called Wave Transit. Wave will operate under an independent authority comprised of

various representatives of local governments. The plan calls for a more distributed system that will cover all of New Hanover County and a small portion of Brunswick County west of the Cape Fear River including Leland, Navassa (Area 2), and Belville. The primary transfer station is to be relocated near the intersection of Kerr Avenue and Market Street, away from downtown. Recognizing the continued need for a strong downtown presence to accommodate a large market base, the Plan also calls for a primary downtown "hub" that coincides with the site of the WMMTC (page iv, Executive Summary). A number of public involvement exercises were conducted, including public workshops in September/December of 2003, on-board surveys, and additional input from the Mayor's Brownbag Lunch Series. The description of the downtown Wilmington Multi-Modal Transportation Center is shown on page 4-2 and reads as follows:

"When completed, the Downtown Wilmington Multimodal Transportation Center may accommodate a passenger rail station (potential intercity Amtrak service), taxi stands, an intercity bus terminal, and local transit service. This station will also provide connections to existing and planned non-vehicular networks (sidewalks, bikeways, and pathways) in the vicinity of the station.

Currently, a study is ongoing to determine the location and design of this facility. Typically, these facilities include amenities such as:

- *Large indoor waiting areas for passengers*
- *24-hour security*
- *Public restrooms*
- *Transportation schedule and route information booth or kiosk*
- *Customer service counter*
- *Commercial/Retail space (e.g., post office, dry cleaner)*
- *Bike racks and storage lockers*
- *Additional rentable building square footage*
- *Bus bays for regional and local buses"*

The plan also discusses some of the service characteristics and demands placed on the WMMTC, including a shuttle service between the WMMTC and the Wilmington International Airport. Although the WMMTC will be required to be compliant with the Americans with Disabilities Act (ADA-compliant), the addition of paratransit vans on-site would require additional considerations for any special accommodations.

2.4 The Multi-Modal Transportation Center Feasibility Study (2000)

Beginning in 1999, this study formally commenced the investigation of the feasibility of various sites for a multi-modal transportation center. An extensive Steering Committee (16 members) that included representatives from the Cape Fear Community College, Port City Taxi, Wilmington Chamber of Commerce, Wilmington Passenger Rail Committee, and the Wilmington Transit Authority. Eight meetings, including one Open House (October, 1999), were held with the Steering Committee during 1999-2000. It was during the course of this phase of the project that many of the requirements for the future station and site were determined (esp. pages 8-13). To update facility requirements as part of the 2004 report, interviews were held with stakeholders. Site selection criteria are similar, but not equal, to those used in this report (pages 14-15).

As identified in the Feasibility Study (page 7), there are several potential benefits of providing a multi-modal transportation center in the Wilmington region. These benefits include:

- Increased convenience for transferring passengers;
- Ability to transfer to or utilize modes that would not be feasible without the proposed terminal;
- Improved comfort for passengers;
- Elimination or reduction of problems associated with on-street bus operations;
- Improved amenities for all modes and their users as a result of shared use and expense;
- Provides a focal point for downtown and improved image for public transportation;
- Potential for joint development with other activities; and
- Can influence local land use decisions as part of an overall land use planning strategy.

The impacts from locating on any particular site include noise, vibration, pedestrian conflicts, and being outside the context of residential or other low-intensity uses. A fairly detailed comparison between Site 2 (Wilmington Police Headquarters) and Sites 5 and 6 of the updated 2004 report was conducted for the 2000 Study. Issues identified with Sites 5/6 included difficulty of providing access to platform of mail delivery vehicles, pedestrian accessibility (although bike accessibility was rated as "good"), security, ownership/acquisition of property, prominence/location in downtown, and difficulty of promoting joint development opportunities due to the smaller site size. This smaller size would presumably not lend itself to either joint development with either the Wilmington Railroad Museum or CFCC.

Ultimately, the Feasibility Study recommended that the Wilmington Police Headquarters (Site 2) be used for the new multi-modal center. The schematic diagrams indicate that the facility would be constructed on three levels, and that the western-most portion of the site be dedicated to office development. The total cost of the mixed-use facility at Site 2 was estimated to be in the range of \$22.4 million to \$34.6 million. This cost was included space constructed by others for CFCC and the Wilmington Railroad Museum.

2.5 Southeastern North Carolina Passenger Rail Feasibility Study (2001)

This study represents the most comprehensive market analysis for passenger rail ridership that exists for the Raleigh to Wilmington corridor. Surveys of attitudinal preferences (October, 1999 and April, 2000), business travelers, telephone interviews, and flight information from the Wilmington International Airport were utilized to compile ridership forecasts for five different alternate services:

1. Wilmington to Raleigh via Goldsboro;
2. Wilmington to Raleigh via Goldsboro with connections to the Carolinian (and the Northeast Corridor);
3. Wilmington to Raleigh via Fayetteville;
4. Wilmington to Raleigh via Fayetteville with connections to the Carolinian (and the Northeast Corridor); and
5. Wilmington to Charlotte with no connections to other passenger rail routes.

A total of 704 responses were received from the two attitudinal surveys, which were conducted during annual festivals. Respondents claimed that they were nearly as likely to have Amtrak origins/destinations within the Northeast as they were in the southeast (23% and 24%, respectively). Eighty-two percent (82%) of respondents claimed that the northeast cities served by Amtrak were the origin/destination of previous travel by rail. Interestingly, Charlotte and Greensboro were ranked behind Richmond/Washington D.C., Florida, and Philadelphia/New York City as final destinations for respondents. This correlates well with information gathered from the Wilmington International Airport that indicated that the Northeast was the origin/destination for the greatest number of travelers by U.S. region. Raleigh ranked first in all destinations for travelers leaving from Wilmington. Coordinated public transportation, food/beverage service, and parking/car rental services were selected as the most important amenities of passenger rail service. Business travelers were also surveyed, with Raleigh/Durham being chosen as the most popular destination over Charlotte by a nearly 2-to-1 margin (988 : 531); more respondents at the two festivals thought there was a need for passenger rail service to Charlotte (98%) than to Raleigh (91%). Convenient parking and transportation options were also important to business travelers, and 58% of business respondents desired a stop at the Wilmington International Airport. Respondents "unanimously" believed that the WMATC would be of economic benefit to

the Wilmington area, with revenues from tourists being the chief economic benefit. Business travelers were also identified as potential riders. In order to make passenger rail competitive for business travelers, the price, travel time, scheduling, amenities, and connectivity at stations were noted as factors by the respondents. Business travelers with multiple stops were not believed to be potential customers for rail service.

3 Existing Transportation Facilities

This memorandum summarizes the existing parking, transit, and transportation services provided in downtown Wilmington, North Carolina. Short-term parking for the general public is provided at on street locations both with and without meters. Long-term parking is provided at several off-street surface and decked pay parking facilities in the downtown. In addition, several surface parking lots are provided by Cape Fear Community College for the exclusive use of their employees, faculty, students, and visitors.

The Cape Fear Public Transportation Authority (Wave Transit) operates six fixed route public bus lines in the Wilmington-area. Each route passes through or radiates from downtown Wilmington in various directions. Downtown Wilmington is also served by a free trolley that is operated by Wave Transit. All six fixed bus routes, as well as the free trolley, converge in downtown Wilmington at Princess Street and 2nd Street (the current *de facto* transportation hub). Local Area Shuttles are provided by Wave Transit to serve the outlying areas of Wilmington.

Within the City of Wilmington, a dial-a-ride transportation alternative is provided for mobility impaired residents called DART (Dial-A-Ride Transportation). Subscription and dial-a-ride bus service is also available for residents who reside outside of the City of Wilmington by Wave Transit along the Castle Hayne and Monkey Junction (formerly the "Blue Line") shuttles. Intercity Bus routes serving Wilmington are provided by Greyhound Bus Lines and Carolina Trailways at the Wilmington Bus Terminal located at 201 Harnett Street. Charter Bus Service is provided by private bus companies.

Other transportation modes serving the Greater Wilmington Area include taxicabs, shuttle vans, and limousines provided by private companies. South of Wilmington, the North Carolina Department of Transportation operates a year-round passenger and vehicle ferry service between the Village of Fort Fisher and Southport. As noted, the City of Wilmington is not currently served by passenger rail service.

3.1 Parking

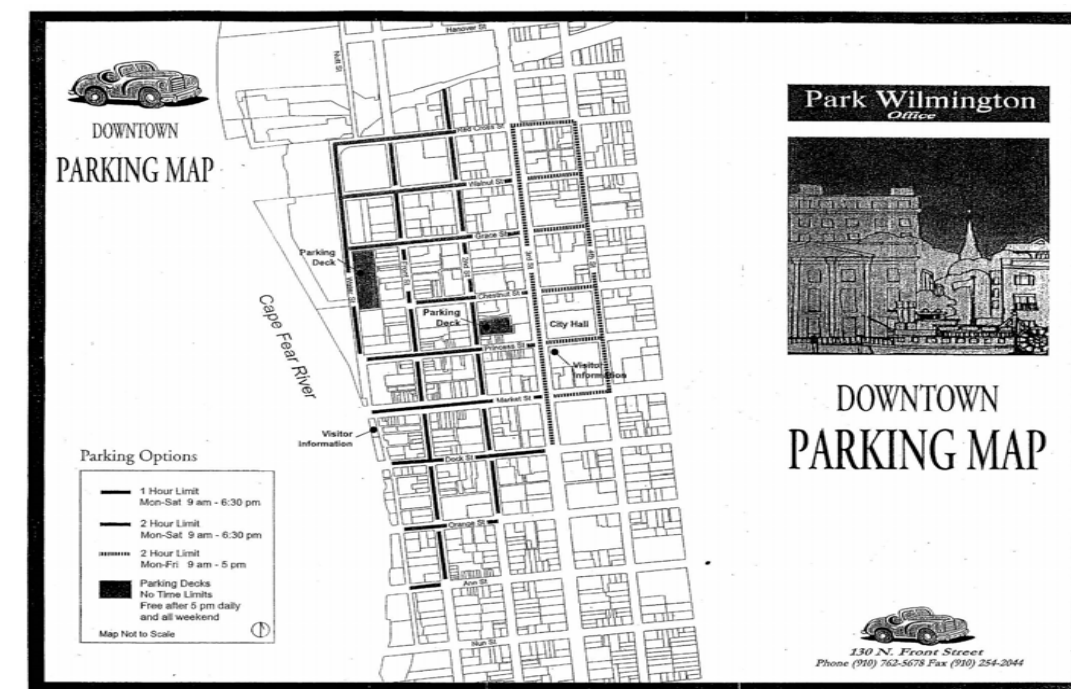
3.1.1 Downtown Parking Facilities

Daily and monthly paid parking is available at four off-street parking facilities within downtown Wilmington. There are no time restrictions at these parking facilities and they are free each weekday after 5:00 PM and on weekends. These facilities include:

- 2nd Street/Princess Street parking deck;
- 2nd Street/Grace Street parking deck;
- 2nd Street surface parking lot and deck located at South 2nd Street and Market Streets, and;
- Water Street parking deck.

The City of Wilmington has 755 metered parking spaces throughout the downtown area. Regulatory signs are provided on each street indicating the days and hours the meters and time restrictions are enforced. The majority of downtown streets have a time restriction of two hours per block that is enforced Monday through Saturday between 9:00 AM and 6:30 PM. Parking on Front Street between Market Street and Walnut Street is restricted to one hour between 9:00 AM and 6:30 PM from Monday through Saturday. All metered parking spaces located east of and including 3rd Street have a time restriction of two hours that is enforced Monday through Friday from 9:00 AM and 5:00 PM. A map depicting the on street and off-street parking locations managed by "Park Wilmington" for the City of Wilmington is provided in [Figure 3](#).

Figure 3. Park Wilmington Downtown Parking Facilities



3.1.2 Cape Fear Community College

Cape Fear Community College (CFCC) is among the largest of North Carolina's 59 community colleges and one of the largest land occupants in downtown Wilmington. Over 7,000 students are enrolled in credit programs at CFCC, while the College also employs 420 full-time employees and several hundred part-time employees.

The downtown Wilmington campus is located generally between 3rd Street to the east, Walnut Street to the south, Front Street/Cape Fear River to the west, and Harnett Street to the north. The College is currently in the process of obtaining a tract of land north of Red Cross Street between Nutt Street and 2nd Street. Known as the Police Headquarters site, the site is currently held by the City and includes access rights to the existing railroad bed.

To accommodate such a large staff and student population, CFCC has four main student parking lots and a series of staff/visitor parking areas situated throughout the campus. [Table 1](#) summarizes the student and staff parking locations. A map depicting the location of these lots is provided in [Figure 4](#).

Table 1. Cape Fear Community College Parking

Parking Area	Location	Visitor Parking?
Student Parking		
Student Lot #1	Front Street & Brunswick Street	No
Student Lot #2	Front Street & Hanover Street	No
Student Lot #3 (East & West)	Both sides of 3 rd Street between Campbell Street & Hanover Street	No
Student Lot #4	3 rd Street & Hanover Street	No
Staff Parking		
Building W (Emmart)	Water Street & Walnut Street	No
Building W (Burnett)	Water Street & Red Cross Street	Yes
Buildings A, N & S	Water Street & Red Cross Street	Yes
Building K	3 rd Street & Walnut Street	Yes
Building X	3 rd Street & Red Cross Street	No
Front Street	Front Street between Red Cross Street & Hanover Street	No
Building P	2 nd Street & Red Cross Street	No
Student Lot #3 (West)	West side of 3 rd Street at Hanover Street	No
Building T	3 rd Street & Brunswick Street	No
Building C	3 rd Street & Bladen Street	No
Building V	2 nd Street & Bladen Street	No
Building E	2 nd Street & Harnett Street	No

Figure 4. Cape Fear Community College Campus Map



Public Information Office 2/12/04

3.2 Bus Transit

3.2.1 Fixed Route

Wave Transit operates six fixed route public bus lines in the Wilmington area. Each route passes through or radiates in various directions from downtown Wilmington at the intersection of Princess Street and 2nd Street. This location currently acts as a defacto transit center as transfers can be made to all of the other fixed bus routes. Buses generally operate from 6:30 AM until 9:30 PM on weekdays, 6:30 AM (some routes begin later) until 9:30 PM on Saturdays and a more limited schedule on Sundays (in which service was recently added). Weekday headways are generally 30 minutes on all routes throughout the day. Headways vary between 30 minutes to one hour on weekends. A one-way adult cash fare is 75 cents, while the fare for handicapped individuals, the elderly and students is 35 cents. UNCW students and faculty with valid IDs ride free. There are also seven-day, 31-day and ten ride discount passes available from the Wave offices. Transfers made between the different bus routes within 30 minutes on a weekday (45 minutes on a Saturday) are free to complete a continuous one-way journey. A map illustrating these six routes has been provided in [Figure 5](#).

Route 1: East Wilmington/Long Leaf Park

Bus Route 1 operates as two separate bus routes connecting downtown Wilmington to both East Wilmington and Long Leaf Park. The East Wilmington bus begins in downtown Wilmington (2nd Street and Princess Street) and travels north on 2nd Street, east on Red Cross Street, Rankin Street, and Princess Place Drive, and terminates at the North 17 Shipping Center/Market Plaza/Food Lion area in the vicinity of Market Street and Kerr Avenue. Inbound bus service from East Wilmington to downtown begins at 6:00 AM on weekdays and the first outbound bus leaves at 6:30 AM. Overall daily bus service on this route ends at 7:30 PM. Saturday bus service is provided from 6:30 AM until 9:45 PM and Sunday service is provided from 9:30 AM until 6:00 PM. Buses on this route operate on 30 minute headways during the weekdays and 45-minute headways on weekends.

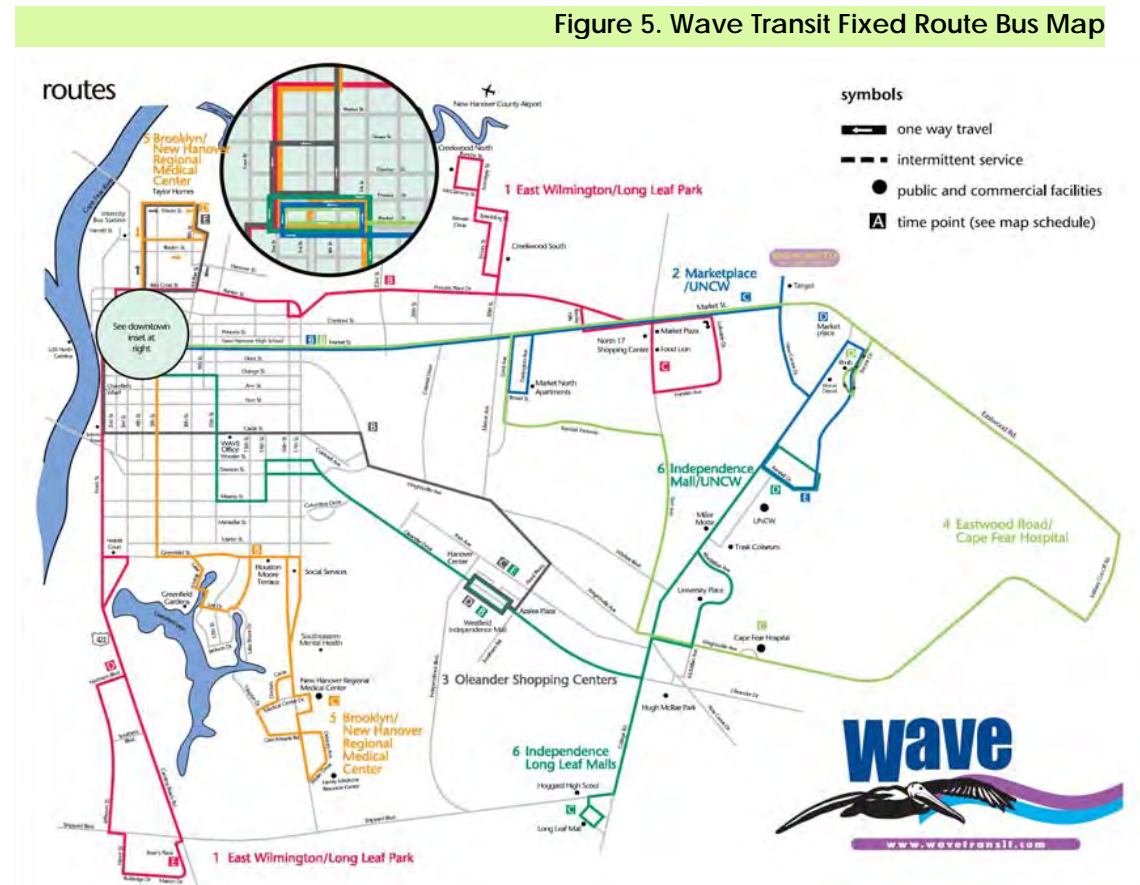
The Long Leaf Park bus also begins in downtown Wilmington and travels south along Front Street, south along Caroline Beach Road, and terminates at Rose's Plaza. Outbound bus service from downtown Wilmington to Long Leaf Park begins at 6:30 AM on weekdays. The first inbound bus leaves at 6:42 AM. Bus service on the route ends at 9:30 PM. Saturday bus service is provided from 7:30 AM until 8:45 PM and Sunday service is provided from 9:45 AM until 5:45 PM. Buses on this route operate on 30-minute headways during the weekdays and 45 minute headways on weekends.

Route 2: Marketplace/UNCW

Bus Route 2 connects downtown Wilmington with Marketplace Mall, the UNCW campus, and Target, which are all located east of the downtown. The route begins in downtown Wilmington (2nd Street and Princess Street) and travels east on Market Street, south on New Centre Drive, loops through the Marketplace (Kohl's, Home Depot), south along Racine Drive to the UNCW campus, north on College Road, and terminates at Target located at Market Street and New Centre Drive.

Outbound bus service from downtown Wilmington to Target begins at 6:30 AM on weekdays and the first inbound bus leaves at 7:02 AM. Overall daily bus service ends at 9:02 PM. Saturday bus service is provided from 8:30 AM until 9:30 PM and Sunday service is provided from 9:30 AM until 6:30 PM. Buses on this route operate on 30-minute headways during the weekdays and one hour headways on weekends.

Figure 5. Wave Transit Fixed Route Bus Map



Route 3: Oleander Shopping Centers

Bus Route 3 connects downtown Wilmington with the Oleander Shopping Centers (Hanover Plaza, Azalea Plaza, and Westfield Independence Mall), which are all located southeast of the downtown. The route begins in downtown Wilmington (2nd Street and Princess Street) and travels south along Front Street, east on Castle Street, southeast on Wrightsville Avenue, southeast on Floral Parkway, and into the Oleander Shopping Centers before traveling back to downtown Wilmington via the same route. After stopping in downtown Wilmington, Bus Route 3 continues north via 4th Street and east on Nixon Street near the Taylor Homes before traveling south back to downtown Wilmington via 8th Street, McRae Street, and Red Cross Street.

Outbound bus service from downtown Wilmington to Oleander begins at 6:30 AM on weekdays and ends 40 minutes later back in downtown Wilmington. The first inbound bus from 8th Street and Nixon Street begins at 7:20 AM and ends 10 minutes later in downtown Wilmington. Overall daily bus service ends at 9:30 PM. Saturday bus service is provided from 6:30 AM until 9:30 PM and Sunday service is provided from 9:30 AM until 6:30 PM. Buses operate on 30-minute headways during weekdays and Saturday evenings and on one hour headways during the remainder of the weekend.

Route 4: Eastwood Road - Cape Fear Memorial Hospital

Bus Route 4 connects downtown Wilmington with Cape Fear Hospital (located southeast of downtown) via Eastwood Road. This route begins in downtown Wilmington (2nd Street and Princess Street) and travels east on Market Street, southeast on Eastwood Road, south on Military Cut-Off Road, west on Wrightsville Road, and terminates at Cape Fear Hospital. For the inbound trip to downtown Wilmington, Bus Route 4 continues east on Wrightsville Road, north on Kerr Avenue, east on Randall Parkway, north on Covil Avenue, and west on Market Street.

Outbound bus service from downtown Wilmington to Cape Fear Hospital begins at 7:00 AM on weekdays and the first inbound bus departs at 7:30 AM. Overall daily bus service ends at 9:30 PM. Saturday bus service is provided from 9:00 AM until 9:00 PM and Sunday service is provided from 9:30 AM until 6:30 PM. Buses operate on 30-minute headways during the weekdays and on one hour headways on weekends.

Route 5: Brooklyn/New Hanover Regional Medical Center

Bus Route 5 connects downtown Wilmington with the New Hanover Regional Medical Center located south of the downtown. This route begins in downtown Wilmington (2nd Street and Princess Street) and travels south on 5th Street, east on Greenfield Street, south on 16th Street, and terminates at the New Hanover Regional Medical Center.

Outbound bus service from downtown Wilmington to Cape Fear Hospital begins at 6:30 AM on weekdays and the first inbound bus leaves at 7:00 AM. Overall daily bus service ends at 9:30 PM. Saturday bus service is provided from 6:30 AM until 9:30 PM and Sunday service is provided from 9:30 AM until 6:30 PM. Buses operate on 30-minute headways during the weekdays and on one hour headways on weekends.

Route 6: Westfield Independence and Long Leaf Malls/UNCW

Bus Route 6 connects downtown Wilmington with Westfield Independence Mall, Long Leaf Mall, UNCW, and Hanover Center which are located southeast of the downtown. This route begins in downtown Wilmington (2nd Street and Princess Street) and travels south on 5th Street, east on Orange Street, south on 10th Street, east on a series of local streets, southeast on Oleander Drive, and into the Westfield Independence Mall. From Independence Mall, Bus Route 6 continues southeast on Oleander Drive, south on College Road, and into Long Leaf Mall. For the inbound trip to downtown Wilmington, Bus Route 6 travels north on College Road into the UNCW campus, south on College Road, and northeast on Oleander Drive.

Outbound bus service from downtown Wilmington to the Long Leaf Mall begins at 6:30 AM on weekdays and the first inbound bus leaves at 7:20 AM. Overall daily bus service ends at 9:30 PM. Saturday bus service is provided from 8:30 AM until 9:15 PM and Sunday service is provided from 10:00 AM until 5:30 PM. Buses operate on 30-minute headways during the weekdays and one hour headways on weekends.

3.2.2 Downtown Trolley

In addition to the six fixed route buses, downtown Wilmington is also served by a free trolley that is operated by Wave Transit. The Front Street Free Trolley is a single (vintage style) trolley bus that operates continuously between 7:20 AM and 9:20 PM from Monday through Friday. Service is also provided between 11 AM and 9:20 PM on Saturdays and between 11:00 AM and 6:00 PM on Sundays. The headway for the Front Street Free Trolley is 20 minutes.



Front Street Free Trolley (Source: Wave Transit).

Like the fixed route bus service, the Front Street Free Trolley also begins and ends in downtown Wilmington at the intersection of 2nd Street and Princess Street. At this location, all six fixed bus routes can be accessed by transferring customers. The trolley travels north on 2nd Street, west on Red Cross Street, and south on Water Street to Ann Street. The trolley continues by traveling east on Ann Street, north on Front Street, and east on Hanover Street. From Hanover Street, the trolley travels south on 3rd Street, west on Market Street, and north on 2nd Street where it returns to Princess Street.

Passengers can board the trolley at any intersection or mid-block location along the route. Passengers can stop the trolley for boarding by simply waving to the driver. For safety purposes, Wave Transit encourages passengers to board the Trolley at intersections where possible. However, with slower moving traffic, especially on Front Street, hailing the Trolley is perfectly safe. The Front Street Free Trolley serves many important buildings and attractions in downtown Wilmington including the City and County parking decks, City Hall,

the New Hanover County Courthouse, Thalian Hall, Cape Fear Community College, and the plethora of shops and restaurants along Front and Water Streets. A map illustrating the Trolley route is provided in [Figure 6](#).

3.2.3 Local Area Shuttles

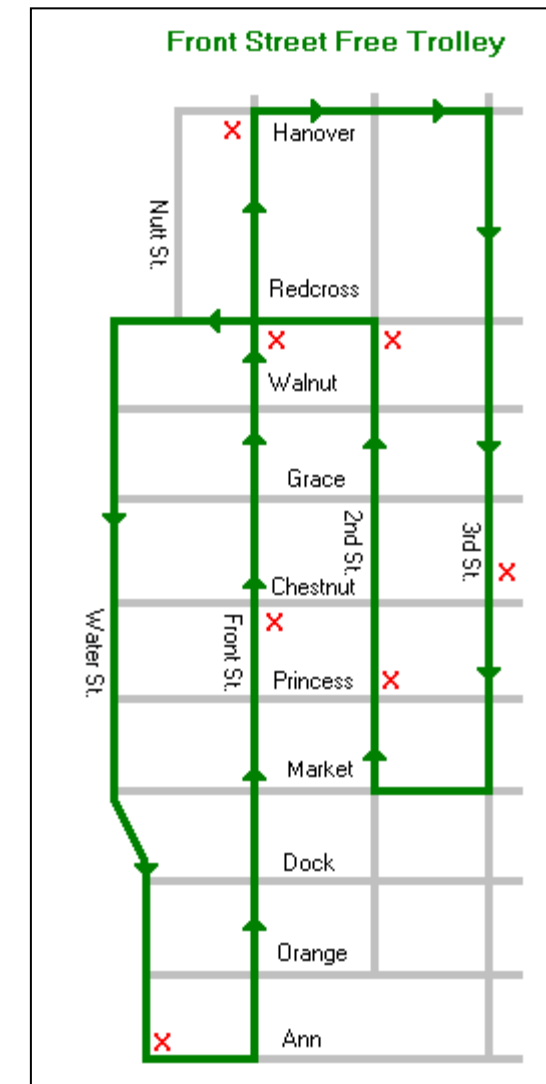
Wave Transit also operates a series of local area shuttles in the outlying areas of Wilmington. Each shuttle route is briefly described below.

UNCW Seahawk Shuttles

There are four shuttle routes that operate in and around the UNCW campus. Hours of operation are Monday through Friday from 7:00 AM to 6:30 PM with 15 minute headways. The exceptions to this schedule are the Seahawk Blue Shuttle which operates on a 20 minute headway and the Seahawk Red Express Shuttle which operates between the Park-and-Ride Shelter and Union Shelter from 7:20 AM until 10:40 AM (Monday thru Friday) continuously at 10 minute headways. UNCW shuttle and fixed route services are free to all UNCW students and faculty that show a valid UNCW identification card. Non-UNCW riders must pay a fare. It should be noted that these routes do not serve downtown Wilmington. Users must transfer to a Wave Transit fixed bus route to access the downtown area.

Figure 6. Route Map of the Front Street Free Trolley

(Source: Wave Transit)



Castle Hayne Shuttle

The Castle Hayne shuttle bus operates between downtown Wilmington (2nd Street and Princess Street) and the Cape Fear Community College (CFCC) North Campus on weekdays. No weekend service is provided on this route. For the outbound trip, shuttle buses travel north on 3rd Street, Castle Hayne Road, and Blue Clay Road to the CFCC North Campus. For the inbound trip, shuttle buses leave the CFCC North Campus and travel south on North College Road/Highway 132, west on Smith Creek Parkway, south on North Kerr Avenue, west on Market Street and Red Cross Street and return back into downtown Wilmington. The first outbound bus begins operation from downtown Wilmington at 6:30 AM and the first inbound bus from the CFCC North Campus begins at 7:04 AM. Daily service ends at 9:25 PM. Shuttle buses operate on one hour headways.

Monkey Junction Shuttle

The Monkey Junction shuttle bus operates between Long Leaf Mall (in southeast Wilmington) and Lowes Home Improvement, serving many businesses and employment centers along its route. The first weekday outbound bus begins operations from Long Leaf Mall at 7:00 AM and the first inbound bus from Lowes Home Improvement begins at 7:15 AM. Weekday service ends at 9:25 PM. Saturday service is from 9:00 AM to 9:25 PM. Shuttle buses run on half hour headways. Again, this route does not serve downtown Wilmington and users must transfer to a Wave Transit fixed bus route to access the downtown area.

Brunswick Connector Shuttle

The Brunswick Connector is a new shuttle service between Brunswick and New Hanover Counties that is jointly operated by Wave Transit and connects to the Brunswick Transit System (BTS). Service starts in downtown Wilmington (2nd Street and Princess Street) with stops in Leland and Navassa. Service is available from Monday through Friday between 6:00 AM and 6:00 PM with 45 minute headways. There is no service between 11:00 AM and 1:00 PM.

3.2.4 Para-transit

The City of Wilmington also operates a dial-a-ride transportation alternative for mobility impaired residents of Wilmington called DART (Dial-A-Ride Transportation). DART service is available to Wilmington residents whose disability prevents them from independently boarding an accessible fixed route bus (with the driver operating the lift) and/or prevents them from accessing a bus boarding location. Reservations to ride must be made at least 24 hours prior to planned travel times. DART is a Wave Transit van that is specially equipped with a wheelchair lift and restraints for standardized wheelchairs. Each van can accommodate both wheelchairs and semi-ambulatory passengers. DART provides curb-to-curb service. No assistants or aides are provided by Wave Transit; although riders may be accompanied by a personal care attendant at no additional charge. Hours of service are Monday through Saturday from 6:00 AM to 8:00 PM. The fare is \$1.50 per one-way trip. In addition, the New Hanover County provides CTP programs that service the needs for out of town medical trips on an as-needed basis.

3.2.5 Community Transit

Subscription and dial-a-ride bus service is available for residents who reside outside of the City of Wilmington. Wave Transit (formerly New Hanover Transportation Services) operates the "Blue Line", a north/south bus route from Castle Hayne on Highway 117 North to Masonboro Commons on Highway 421 South where riders can transfer to Wave Transit local fixed route buses. Hours of operation are from 5:30 AM to 6:30 PM.

3.2.6 Intercity Bus

Long-distance intercity bus routes serving Wilmington are provided by Greyhound Bus Lines and Carolina Trailways (under contract to Greyhound) at the Wilmington Bus Terminal. The bus terminal is located at 201 Harnett Street between 3rd Street and Front Street, just north of downtown Wilmington. Station and ticketing hours are from 8:30 AM to 11:00 AM, 1:00 PM to 5:00 PM, and 8:30 PM to 9:15 PM everyday of the year including weekends and holidays.

Each day, a total of five bus routes stop at the Wilmington Bus Terminal at various times of the day as shown in [Table 2](#). Four of the five routes are operated by Greyhound Bus Lines. The lone route operated by Carolina Trailways is between Wilmington and New York City with various intermediate stops in Delaware, Maryland, Virginia and North Carolina. The New York bound bus leaves Wilmington each day at 2:50 PM and is scheduled to arrive nearly 16 hours later, while the one daily bus from New York is scheduled to arrive in Wilmington at 2:20 PM.

Greyhound Bus Lines provides the balance of the intercity bus service to Wilmington. Greyhound's Route 1040 provides bus service between New York City and Tampa and makes one daily northbound departure from Wilmington (to New York) at 2:50 PM and one daily southbound departure (to Tampa) at 3:55 PM. Greyhound's Route 1043 bus, which travels between Washington, DC and Columbia/Greenville, SC, makes one daily intermediate northbound stop and one southbound stop in Wilmington. Southbound buses bound for Greenville depart from Wilmington each day at 9:25 AM while northbound buses from Columbia bound for Washington, DC depart at 9:00 PM. [Table 2](#) outlines daily intercity bus routes that serve Wilmington.

It should be noted there is currently no direct bus service between Wilmington and the various major metropolitan areas in North Carolina including Raleigh, Charlotte and Greensboro. Wilmington riders must transfer buses at Wallace to travel to Charlotte, at Goldsboro to travel to Raleigh, and both Wilson and Raleigh to travel to Greensboro.

3.2.7 Charter Bus Service

Many tour companies offer bus excursions to Wilmington and the surrounding region. Below is a list of some popular charter bus companies:

- American Charters, Ltd.;
- Eastern Tours & Charters;
- Highway Express Tours;
- Lagrange Bus Co.; and
- United National Tours.

Table 2. Intercity Bus Routes Serving Wilmington, NC

Bus Provider & Route Number	Departs	Time	Arrives	Time	Duration (hrs:mins)	Major Destinations On The Route
Buses From Wilmington, NC						
CCP 902	Wilmington, NC	02:50 PM	New York, NY	06:45 AM	15:55	Norfolk, VA; Wilmington, DE
GLI 1040	Wilmington, NC	02:50 PM	New York, NY	05:15 AM	14:25	Richmond, VA; Baltimore, MA
GLI 1043	Wilmington, NC	09:25 AM	Greenville, SC	07:20 PM	9:55	Columbia, SC
GLI 1044	Wilmington, NC	09:00 PM	Washington, DC	05:40 AM	8:40	Richmond, VA
GLI 1047	Wilmington, NC	03:55 PM	Tampa, FL	08:50 AM	16:55	Charleston, SC; Jacksonville, FL
Buses To Wilmington, NC						
CCP 901	New York, NY	10:00 PM	Wilmington, NC	02:20 PM	16:20	Wilmington, DE; Norfolk, VA
GLI 1040	Tampa, FL	09:35 PM	Wilmington, NC	02:35 PM	17:00	Orlando, FL; Jacksonville, FL; Charleston, SC;
GLI 1043	Washington, DC	12:40 AM	Wilmington, NC	09:10 AM	8:30	Richmond, VA
GLI 1044	Columbia, SC	02:45 PM	Wilmington, NC	08:45 PM	6:00	Myrtle Beach, SC
GLI 1047	New York, NY	01:45 AM	Wilmington, NC	03:40 PM	13:55	Washington, DC; Richmond, VA;

GLI = Greyhound Lines, Inc.
 CCP = Carolina Trailways Pooled

(Source: Greyhound)

3.3 Other Transportation

3.3.1 Taxicabs, Shuttle Vans and Limousines

In Wilmington and nearby Wrightsville Beach, Carolina Beach and Kure Beach, there is an abundance of taxis, shuttles, sedans and limousine companies. Most companies provide either taxi service or limousine/sedan/shuttle van service. However, several companies provide a combination of these services. A partial list of taxi, shuttle and limousine providers serving the Greater Wilmington area is provided below:

- A Capital Style Limo, Sedan, Van & Bus Service;
- A & K Limo Services;
- Azalea Limousine Service;
- Beach Buggy Taxi;
- Clay's Taxi;
- Exquisite Limousine & Transportation Services;
- Kat's Taxi;
- Lett's Taxi and AAA Lett's Limousine Service;
- Port City Taxi Inc.;
- Prestige Limousine Service;
- Roadway Taxicab;
- Top Hat Limousines;
- X-tra Cab;
- Yellow Cab; and
- Wilmington Transpo.

3.3.2 Ferry

Currently, there is no direct ferry service to the City of Wilmington. However, south of the city, the North Carolina Department of Transportation operates a year round passenger and vehicle ferry service on the Cape Fear River between the Village of Fort Fisher (New Hanover County) and Southport (Brunswick County). The first daily ferry leaves Southport at 5:30 AM and the last ferry leaves Fort Fisher at 8:30 PM. Headways are 45 minutes between ferries. One-way fares range from \$1.00 for pedestrians up to \$15.00 for vehicles over 45 feet.

3.3.3 Passenger Rail Service

Currently, the City of Wilmington is not served directly by passenger rail service. As an alternative, regional rail riders can travel between Wilmington and either Wilson or Rocky Mount, NC via daily Amtrak Thruway bus service run in conjunction with Greyhound bus service. At the Wilson and Rocky Mount train stations, riders can board Amtrak's daily north-south train service between New York City and Miami that includes the Carolinian, Palmetto, Silver Star and Silver Meteor trains.

Several existing rail lines that serve Wilmington are either used for freight or have become inactive. Historically Wilmington had five major rail corridors converging on the City. Today that number has dwindled to only one through corridor. Future passenger rail service to/from Wilmington has been examined using two corridors – the active CSX Wilmington/Pembroke corridor and the partially inactive NCDOT/CSX rail corridor between Wilmington and Goldsboro. The Southeast Passenger Rail Study examining these corridors is anticipated for release in late 2004 or early 2005.

As indicated, operations to access the downtown area of Wilmington could be provided utilizing two corridors. In the downtown area, however, a loop was originally provided that allowed trains to enter and exit the downtown area without having to reverse directions. The recent decisions to construct a new police headquarters site north of downtown, the location of a proposed new convention center, and the agreement reached between the City to hand over the existing Police Headquarters site as well as the existing railbed to the CFCC effectively eliminate the possibility of reactivating the northern portions of this rail loop. As a result, trains will be required to turn around to reverse into the proposed WMMTC.

For this project, it was assumed that there would be a maximum of four (4) cars and one locomotive. It is possible that a diesel multiple unit (DMU) could be used for this service, which could dramatically decrease emissions, fuel consumption, and noise. DMUs have their power systems incorporated into the same unit as the passenger cars. Note that the DMU units are capable of reversing directions without turning the vehicle around since there is no separate locomotive. This would minimize the operational difficulties introduced by the elimination of the northern loop in downtown Wilmington.

3.3.4 Pedestrian and Traffic Volumes

Figure 7 on the following page indicates the most recent available traffic count information from the City of Wilmington and observations of pedestrian traffic volumes in the vicinity of the six downtown sites. The pedestrian routes are rated from low to high with high referring to roads with constant pedestrian traffic throughout the business day and medium demand identifying those corridors with pedestrian volumes fluctuating during peaks throughout the day. Low volumes are typically associated with occasional pedestrians often either strolling between shopping opportunities or to parking areas.

The most significant change to traffic volumes will occur when the Martin Luther King, Jr. Expressway opens in September, 2005. This new connection into downtown can be expected to noticeably increase vehicular traffic volumes on North Third Street and probably Fourth Street as well.

Pedestrian demands in the downtown area are influenced by several factors. One major factor is the Cape Fear Community College, including the high level of pedestrian traffic peaking that occurs when classes are transitioning. Another consideration is that the proposed convention center design should be carefully coordinated with the WMMTC due to potential changes in pedestrian and traffic volumes. This could include utilization of rail bed between Nutt and 4th Street as a valuable part of a pedestrian corridor linking the WMMTC and downtown. Since this property is part of the land swap between CFCC and the City, the WMMTC would need to be sensitive to both the pedestrian and overall access needs of the CFCC.

Figure 7. Pedestrian and Traffic Volumes in CBD Vicinity



Traffic & Pedestrian Characteristics Near the Downtown Sites

**Traffic Counts
Volume / Capacity***

- 0% - 10%
- 10% - 20%
- 20% - 30%
- 30% - 40%
- 40% - 50%
- 50% - 60%
- 60% - 70%
- 70% - 80%
- 80% - 90%
- 90% - 100%
- 100% +

- High Pedestrian Activity**
- Medium Pedestrian Activity
- Low Pedestrian Activity

* - Labels show current volumes

** - Based on field observations

0 125 250 Feet



The Louis Berger Group, Inc
1513 Walnut St., Ste 250
Cary, NC 27511
919.467.3885



4 Evaluation Methodology and Steps

As indicated in the purpose and need for this study described in Section 1, the intentions of this analysis are two-fold. Specifically, the report is intended to both document the analysis process conducted as part of previous studies as well as to verify whether the findings are still applicable. In order to complete this analysis, the methodology utilized in the analysis required a cumulative process that, through a series of iterations, examined the large scale issues and then focused in on more specific issues related to site considerations.

The first step was to examine what area of the region that the WMMTC should be located. As documented in the May, 2000 Feasibility Study, four areas were examined as possible sites. Of these, it was determined that a downtown site was preferred for the location of the WMMTC. These area assumptions and analyses are presented in Section 5.

The second step in the analysis was to develop an examination of specific sites in the preferred area. As part of the May 2000 Feasibility Study, two sites were evaluated in downtown Wilmington. As a result of ownership changes at the sites, it was determined that these two sites plus four additional sites would be re-examined. This analysis would focus in greater detail than the area analysis, utilizing a comparison matrix for a determination of sites that were viable. The preliminary Site Analysis is presented in Section 6.

The third step is a more detailed analysis of preferred sites. This more detailed analysis examines in greater detail the engineering and planning requirements of making the WMMTC function on a particular site. The Preferred Site Analysis is shown in Section 6. The purpose of this Section of the report is to determine which areas to carry into the second phase of this study, specifically site design. Note that in some cases, a preferred site may actually be a combination of portions of two sites examined in the Preliminary Site Analysis.

5 Area Evaluation

As part of the initial investigation, four areas were evaluated to determine what area of the region that the WMMTC should be located. As documented in the May, 2000 Feasibility Study, four areas were examined as possible sites. Figure 1 shows the location of the alternative sites that were identified and evaluated during this study. The four areas that were evaluated in Round 1 include: Downtown Wilmington (focused at the Police Headquarters); Carroll Carolina Corp. (Page Oil); Navassa; and the Airport. These sites are described in the following paragraphs.

In evaluating each of these areas, it was recognized that the chosen location for the proposed WMMTC must meet the project purpose and need while enhancing multi-modal transportation options within the Wilmington region. As noted in previous sections, the purpose and needs identified for this project include:

- Increased convenience for passengers transferring between modes;
- Ability to transfer to or utilize modes that would not be feasible without the terminal
- Improved passenger comfort;
- Elimination or reduction of problems associated with on-street bus operations;
- Improved amenities for all modes and their users as a result of shared use and expense;
- Provides a focal point for downtown and improved image for public transportation;
- Potential for joint development with other activities; and
- Can influence local land use decisions as part of a land use planning strategy.

After a review of the purpose and need criteria, it was determined that a downtown site was preferred for the location of the WMMTC. The primary reasons for this include:

- The Downtown area serves as the focal point for bus transit, particularly as a destination for employees. As a result only the downtown area significantly enhances bus transit system operations.
- Another goal of the WMMTC is to encourage the successful introduction of rail service into the Wilmington region from other parts of the state. Based upon experience in other urban areas, rail is most likely to be successful in areas where it has high visibility and is located near to important destinations. The downtown area is the best at providing these characteristics.
- Regional transit facilities may have a greater difficulty attracting riders than suburban locations. The loss of convenient access from bus traffic and tourist-oriented passengers wanting to avoid the expense and nuisance of renting and parking a vehicle is lost in all but the most mixed-use and most intensely-developed environments. This is not only peculiar to rail. Based on the interviews, it was revealed that Greyhound unsuccessfully located it's bus operations in Durham to a suburban location; upon relocating back to downtown ridership increased to former levels.
- In order for a regional WMMTC to encourage joint development with other activities and influence local land use planning strategies, a certain critical mass is necessary. Typically, a downtown urban area or CBD is required to develop the synergy required to successfully implement these land use changes.

Figure 1 shows the location of the alternative sites that were identified and evaluated during this study. These sites are described in greater detail in the following paragraphs.

5.1 Downtown Wilmington

As part of the previous May, 2000 Feasibility Study, the Round 1 analysis determined that a downtown site would be advantageous for the location of the multi-modal center. As part of this analysis, two sites were examined – the Police Headquarters site was examined in the first round and a second downtown site, the Third/Fourth Street site, was added as a possible location in the second round. In terms of determining an appropriate area for the location of a site, however, both of these sites can be considered as downtown sites.

A downtown site was recommended in the previous Feasibility Study as the preferred location for the multi-modal center. Despite initial concerns that the Police Headquarters site was too small to accommodate the functions of a multi-modal transportation center, it was determined that adequate space was available. Preliminary analysis of the downtown indicates that a downtown site could be located to accommodate inter-city bus and local bus needs as well as a future rail connection. Since the downtown area is heavily developed, however, impacts and right-of-way acquisition would be required as part of provision of the facility.

5.2 Carroll Carolina Corp. (Page Oil) Site

This site was considered in previous studies. Preliminary analysis of this site indicated that it could accommodate rail, inter-city bus, and local bus services. This site can also accommodate riverfront tourism type facilities. It is located between Dawson and Surry Streets southeast of the Memorial Bridge, approximately one mile from the downtown core. Although the site is located near downtown, it would not provide the direct link into the downtown area to provide the multi-modal linkage required for the success of the WMMTC. In addition, accessing this area would introduce trains into residential areas. Finally, train routing and operations would add approximately 20 minutes to the rail travel time to Wilmington as a result of circuitous routing, frequent at-grade crossings, and consequently lower travel speeds.

5.3 Navassa Site

This site was recommended during the original May, 2000 Feasibility Study by the Leland Town Manager and Wilmington Transportation staff. Preliminary analysis of this site indicates that it can accommodate rail, inter-city bus, local bus and a demand response bus system. It would function along a future Wilmington to Charlotte rail corridor if this were to be constructed in the future. This area includes approximately 200 acres of vacant land along the railroad upon which an appropriate site could be identified. The site is northeast of Cedar Hill Road and south of Welch's Creek. Although the site has more than adequate real estate for constructing the WMMTC, the location of the site would severely test the ability of the WMMTC to attract rail riders or to shape growth in the area. In addition, it would not serve the bus transit needs of the area that are focused in the downtown area of Wilmington.

5.4 Airport Site

This site received little discussion as part of the May, 2000 Feasibility Study. Vacant land applicable to multi-modal transportation center was identified in the vicinity of the airport along the railroad tracks in the vicinity of Blue Clay Road and North 23rd Street. As with the other downtown locations, however, the airport sites do not serve local transit well, do not provide the best location for generating passenger rail to the Wilmington area, and are not located in an area with an adequate critical mass to allow for increased intensity of land use focused on the WMMTC. In addition, there is minimal synergy between aviation and rail traffic. This could be particularly true in a location such as Wilmington where both modes serve similar trip patterns and may, in fact, compete for the same passengers.

6. Site Evaluation

Since a site in the Downtown area is preferred, a more detailed analysis of specific sites is required. As part of the original Feasibility Study, two downtown sites were considered – the Police Headquarters site and the 3rd to 4th Street site. For this updated analysis, it was decided that a more detailed and comprehensive analysis of potential sites was required. For this reason six sites were identified in the downtown area as shown in [Figure 1](#). The evaluation of these six sites is presented in the following section and in a comparative matrix.

In performing the comparative analysis of the sites, the following assumptions were made:

- In most cases, the evaluation for each criterion was qualitative and based upon preliminary data, stakeholder interviews, and a field overview. All analysis is preliminary and rankings, as such, are subjective.
- This analysis is for the preliminary screening process only. More detailed analysis will occur during the environmental and design study phases.
- No field data collection (traffic, bicycle, or pedestrian counts, accident data, noise or vibration data, determination of historic structures, or other environmental screening) was included in the analysis. All necessary data was provided by the City or collected through stakeholder interviews.
- No roadway or site engineering drawings or sketches were developed as part of this preliminary screening phase. Preliminary costs for each alternative were not developed for any site.
- The previously completed Feasibility Study from May, 2000 study was utilized as an initial source of data and observations as directed by the City of Wilmington.

6.1 Determination of Physical Requirements

The physical requirement for the site includes both internal and external space. Depending upon the final site chosen and the final number of transportation modes involved in the center, the total maximum site space requirements could potentially be reduced by combining common areas such as lobby space, hallways and restrooms.

Primary requirements for areas outside the building would be rail platforms, tracks, bus loading operations, car parking (long and short term), parking (passenger, buses, taxis, employees), and circulation for vehicles, bicycles and pedestrians. Some of the outside area must also be allocated for landscaping depending upon the layout of the site. This report excludes the amount of area needed for the circulation of vehicles and pedestrians, as they are often a function of the building's design and its relationship to the public rights-of-way. In addition, the total land requirements for each site may vary depending upon the provision of multi-level structures as part of the design.

In addition, it is possible to co-locate non-transportation functions within the multi-modal transportation center. These could include office, retail and public uses. No matter what conceptual plans are developed for a multi-modal transportation center at this time, they should be made with provisions for accommodating growth in service by each transportation mode and in public services specific to the Wilmington Urban Area.

This report assumes that rail is the primary transportation mode around which other transportation modes and non-transportation uses will be analyzed to determine the feasibility of combining some or all in one facility. Intra-city rail service is bound to the proximate use of railroad tracks that have very clear limits for their location and connection to the rail network linking Wilmington to the rest of North Carolina. The bus mode, on the other hand, has a considerable degree of flexibility in its circulation being bound to an extensive street network of adequate size to accommodate the vehicles. Therefore, the siting of the WMMTC will be heavily dependent upon the

location impacts to the ridership for each mode, especially rail. This is because a transportation facility's feasibility, and therefore funding, is dependent upon the ridership/usage forecasts for the proposed facility.

The following sub-section addresses the space requirements for each travel mode and related facilities. Note that the 2000 Feasibility Study was utilized as a primary source for identifying spacing requirements. The estimates from this report were adjusted slightly as shown in the text, however. Note that all design elements must be consistent with the American Disabilities Act and Homeland Security Act requirements.

6.1.1 Passenger Rail

The primary requirements for space requirements for rail (and other transportation facilities) must be tied to projections for anticipated usage of the system. As part of the 2000 Feasibility Study, no projections were available for forecasting the passenger ridership for a Wilmington station. Therefore, the 2000 Feasibility Study assumed that the initial Wilmington rail travel patterns will be similar to that projected for the downtown Durham, NC Intrastate Rail Scenario. This reflected a forecast of between 177,000 passengers to approximately 312,000 passengers boarding and alighting per year. (Railroad Station Study, Piedmont High Speed Corridor, Appendix – Space Requirements for PHSC Stations, Final Report for NC DOT – Rail Division, February 26, 1997.)

Since the release of the 2000 Feasibility Study, NCDOT released the Southeastern North Carolina Passenger Rail Feasibility Study which developed projection for rail ridership to Wilmington. The estimate for the route with the highest ridership projections was a total of 43,700 passengers for the Wilmington station (Technical Report, May 2001, p. 2). This is approximately 25 percent of the Durham projections. Based on this comparison, some preliminary adjustments were made in cooperation with the NCDOT Rail Division to identify space requirements for passenger rail as reflected below.

The 2000 Feasibility Study included a recommendation of a minimum 3,000 square foot lobby for 200 to 300 people. Given the reduction in projected riders, NCDOT suggested that the lobby could be conservatively be reduced by 50 percent to 1,500 square feet. It is recommended that the public waiting area be shared with both the intercity bus and transit lobby for the WMMTC. For this reason, the waiting area square footage is further refined in Section 6.1.5 and is not included in the total for this section.

As suggested by the NCDOT Rail Division, a ticketing office sized approximately 16 feet by 30 feet (480 sq. ft) with three ticket windows and removable bulletproof glass is recommended. The total space requirement is 1,980 square feet. Other operational requirements include a baggage/express package room that is at least 20 feet by 30 feet (600 sq. ft). This room should have roll-up doors, access to the platform, and will house a "golf cart" type vehicle for moving baggage. A first class mail lock-up should be provided next to the baggage room with a window. The lock-up room should be 16 feet by 20 feet (320 sq. ft) and can be a fenced-in area within the larger space. The ticketing and baggage facilities require a total of 1,400 square feet.

NCDOT Rail Division requires an office for the lead agent that is 16 feet by 16 feet (256 sq. ft). A break room that is 16 feet by 20 feet (320 sq. ft) should also be provided. The break room will have enough space for 20 lockers and can also be used as a conference room. Additional operations space includes 100 sq. ft per employee with four employees projected (400 sq. ft). This is a total of 976 square feet.

Area	square feet
Ticketing	480
Baggage & Packaging	920
Manager's Office	256
Break Room	320
Operations Space	400
Total	2,376*

** The space requirements do not include the waiting area or restrooms which are summarized in Sections 6.1.5 and 6.1.7.*

The railroad platform will be one of the major features driving the layout of the site. Based on discussions with NCDOT, a 600-foot long platform would be adequate for all foreseeable future operations. Maintaining the desired 20-foot width for this platform produces a total of 12,000 square feet. Note that this is a reduction from the 800-foot platform identified in previous studies. Note that the shorter length could also substantially reduce impacts to adjacent sites if a longer platform were required to extend beyond the limits of the preferred site. Note that the square footage estimate does not include track or right-of-way width requirements. The platform should be covered to protect the passengers from the elements.

NCDOT has recommended the inclusion of 150 parking spaces for all vehicles utilizing the WMMTC from all modes of travel including rail, intercity bus, and transit. Of these, 50 percent would be assigned for long-term passenger parking and 50 percent for combined short-term passenger and employee parking. For purposes of the calculations included in [Table 4](#), it was assumed that this would correspond to 130 spaces for rail passengers. The remainder of the spaces were identified in the table for specific modes. Regardless, the total passenger parking spaces for all modes equals exceeds 150 spaces.

Note that long term passenger parking spaces should be located within a three to four minute (or approximately 800 foot) walk from the rail platform. It was pointed out that the original design may be reduced to 100 parking spaces with allowances for expansion. In determining parking spaces for passenger rail, allowances are provided for holiday peaks.

6.1.2 Trailways/Greyhound Intercity Bus Services

The bus station requirements are from the Trailways staff. They anticipate enough ridership to necessitate four bus loading "tracks" for their future downtown Wilmington operations. As shown in Section 3.2.6, there are currently 5 Greyhound routes leaving and five Greyhound routes arriving in Wilmington daily. Updates to the intercity bus operation specifications portion of the 2000 Feasibility Study were based upon an interview with Trailways as documented in Appendix B..

In terms of space requirements, four covered tracks would be needed for Trailways buses, although three might be sufficient if space is constrained. Facilities are not only acceptable to be shared with rail, but it is actually preferred since it makes the facility more efficient and use less space (citing Williamsburg, Wilson, and Durham as examples). Since Wilmington is a terminus, no refueling or dumping facilities would be required. The bays should be adjacent to the intercity bus passenger waiting area and readily accessible from the baggage storage area. If located outside, they should have a canopy to provide shelter for passengers embarking and disembarking.

The waiting area needs seating for 30 people. Overall, about 1,450 square feet is needed, all of it on the ground floor of the facility. It is recommended that the public waiting area be shared with both the rail and transit components of the WMMTC. For this reason, the waiting area square footage is further refined in Section 6.1.5 and is not included in the total for this section.

<u>Area*</u>	<u>square feet</u>
Manager's Office	108
Storage Locker	76
Driver's Waiting Area	66
Ticketing	180
Baggage & Packaging	290
Total	720*

** The space requirements do not include the waiting area or restrooms which are summarized in Sections 6.1.5 and 6.1.7.*

Parking requirements for Trailways operations are: 20 spaces for short-term parking and six more for employees and loading/unloading passengers under a 15' canopy. The canopy should be deep enough to provide shelter for loading/unloading the bus baggage compartments.

6.1.3 Cape Fear Public Transportation Authority

Since the 2000 Feasibility Study was released, the Wilmington Transit Authority (WTA) expanded to become the Cape Fear Public Transit Authority (CFPTA) with the New Hanover Transportation Services (NHTS) merging into the expanded authority. This organization is independent of local government, and is currently in the process of obtaining its Designated Recipient status from FTA. CFPTA will own and operate the entire public transit system. The current fiscal year operating budget is approximately \$4.5 million; the total budget is \$13 million accounting for capital facility acquisition. An interview was held with Albert Eby, the Transit Director, to determine changes in anticipated space requirements (see Appendix B).

In general, it is estimated that a downtown transfer center would have as many as 16 vehicles entering/exiting the site in a one-hour period: four fixed routes on 30-minute headways; two trolleys on 20-minute headways; and an airport shuttle vehicle on 30-minute headways. These figures are based on the recently-released short-range transit plan. To support the future plan, no change is estimated from the 2000 Feasibility Study that identified parking requirements for seven buses and three trolleys/shuttle vehicles would be required. Five auto parking spaces will be sufficient for employees for CFPTA.

Based upon the 2000 Feasibility Study, building requirements would include:

<u>Area*</u>	<u>square feet</u>
Staff Office	1,825
Ticketing	100
Total	1,925

** The space requirements do not include the waiting area or restrooms which are summarized in Sections 6.1.5 and 6.1.7.*

6.1.4 Pedestrians, Bicycles, Taxis, Hotel Courtesy Vans, and Trolleys

The anticipated traffic by these modes of travel will be heavily dependent upon the nature and type of existing and future development in the vicinity of the multi-modal center. The types of planned development that will generate significant amounts of this type of traffic include; downtown convention centers, restaurants, tourist attractions and hotels. The amount of internal space required by these modes of travel can be accommodated by the design of the transportation center.

A minimum of six reserved taxi parking spaces that are clearly visible to arriving intercity bus and rail passengers should be provided as per Port City Taxi staff. A "curb loading lane" should be provided to accommodate courtesy van and trolley service per the chair of the Cape Fear Coastal Convention & Visitors Bureau.

Provision should be made for a minimum of six open-cage bicycle lockers and one bicycle rack at time of opening with room for additional expansion if required. Consideration of integrating a "bike station" area into the plan should be made depending upon the popularity of bicycle transportation and recreation in Wilmington at the time the final design is being developed. A bike station can provide "valet service" to bike commuters and would also provide bicycle rentals for tourists.

6.1.5 Shared Waiting Areas

As noted in Sections 6.1.1, 6.1.2, and 6.1.3, waiting areas or lobbies are required for passenger rail, intercity bus, and public transportation. The waiting areas can be shared between passenger rail and intercity bus patrons. Sharing this space allows increased flexibility in design as well as the ability to reduce the overall space requirements by taking advantage of differences in traffic patterns for each facility. It is estimated that a shared use facility could reduce total waiting requirements by up to 30 percent. Using this reduction factor, total square footage required for passenger rail and intercity bus patrons is estimated to be 1,600 square feet. Note that Amtrak prefers that bus and rail ticket counters and baggage counters are independent.

A separate waiting area is typically provided for City transit customers. Amtrak also prefers a separate waiting area for its intercity rail passengers from intercity bus passengers. It is estimated that the waiting area for public transportation will be approximately 1,050 square feet. In addition to the indoor waiting area, canopies are recommended over the city bus platforms to provide some shelter while boarding.

Area	square feet
Passenger Rail	1,500
Intercity Bus	736
	2,236
Shared Total (70%)	1,600
Public Transportation	1,050
Overall Total	2,650

As shown above, the two waiting areas were estimated to be 2,650 square feet utilizing the space requirements identified for the passenger rail/intercity bus waiting area and the public transportation waiting area.

6.1.6 Security

One office (81 sq. ft) for on-site security personnel should be sufficient for all anticipated uses. The security personnel office will also house video-monitoring equipment. It is assumed that security personnel would utilize the public restrooms.

Note that a potential amenity for consideration could be the inclusion of regular police substation. If provided, this facility could require approximately 625 square feet. This facility is not included in the summary data, but could be added if deemed appropriate.

6.1.7 Restrooms

For the WMMTC, both employee restrooms and public restrooms will be required. Public restrooms should be provided as part of the Multi-modal Transportation Center. As a result of labor requirements, separate employee restrooms are required for the passenger rail, intercity bus, and public transportation employees.

For each group of employees a single stall unisex restroom of approximately 75 square feet will be provided. The location of these restrooms should be behind the offices or ticket counters separated from the general public. Total employee restroom square footage is 225 square feet.

The public restrooms will be separate men's and women's facilities with approximately 550 square feet for each. Total public restroom square footage is 1,100 square feet.

Area	square feet
Public Restrooms	1,100
Rail employees	75
Bus employees	75
Transit employees	75
Total	1,325

6.1.8 Miscellaneous

A bank of telephones (the actual number to be determined by the phone company) should be included in the design. Vending machines should be provided regardless of whether or not other food services are present. An automatic teller machine should also be included in the waiting area.

In addition to the passenger rail, intercity bus, and transit connection, it may be desirable to include a satellite office for a rental car into the site design. Since the inclusion of such a facility would include cooperation and commitments from a private entity, no formal space requirements have been identified. In general, it is estimated that an office area would be required with room for storing a limited number of cars. Since this would be a satellite location, it is assumed that maintenance, repairs, and storage of vehicles would occur off the WMMTC site. This facility is not included in the summary data, but could be added if deemed appropriate.

6.1.9 Space Summary

The combination of the space calculations is presented in Tables 3, 4, and 5. This data represents an initial estimate of needs based on statements of the transportation operators. The design process that combines the indoor space in one or more buildings and the outdoor space on the site may result in a different quantity of space. The exterior land space may be met with less area due to the layering of floors in a multi level design. Similarly, the land footprint for interior space can be reduced with the sharing of common areas by the transportation modes and by multi-level buildings.

Table 3. Wilmington Multi-Modal Transportation Center Building Space Requirements (square feet)¹

Use	Internal Area	External Area	Total Area
Passenger Rail	2,376	57,500	59,876
Trailways\Greyhound	720	13,500	14,220
CFPTA Fixed Route Transit Service	1,925	10,380	12,305
Pedestrian, Bicycle, Taxi, Trolleys	None	3,600	3,600
Waiting Area	2,650	None	2,300
Security	81	None	81
Restrooms	1,325	None	1,325
TOTAL	9,077	84,980	94,057

Source: Modified from Multi-Modal Transportation Center Feasibility Study (May, 2000)

Note: Does not include square footage from additional services such as Police Substation (625 sq. ft.) or Rental Car satellite office.

Table 4. Car Parking Requirements²

Use	Taxi	CFPTA Transit	Trailways/ Greyhound	Rail	Total
Short-Term Parking	6	0	20	65	86
Long-Term Parking	0	0	0	65	65
Loading and Employee	0	5	6	0	42
Total Vehicles	6	5	26	130	218
Total Square Feet*	2,100	1,750	9,100	45,500	58,450

Source: Modified from Multi-Modal Transportation Center Feasibility Study (May, 2000)

Table 5. Number of Vehicles (by Type) to be Accommodated On-Site³

Type of Vehicle	Taxi	CFPTA Transit	Trailways\ Greyhound	Rail	Total
Number of Vehicles (square feet)	4 cabs (1,500)	7 35'-40' buses and 3 trolleys/ shuttle vehicles (8,630)	4 bus (4,400)	2 trains (12,000)	20 vehicles (30,540)

Source: Modified from Multi-Modal Transportation Center Feasibility Study (May, 2000)

¹ Square footage includes the information listed in Tables 2 and 3. Note that passenger waiting, baggage and ticketing areas can be jointly used by rail and intercity bus patrons.

² Assumes 350 sq. ft per parking space.

³ Maximum Daily Loading Requirements at Peak Hour.

6.2 Criteria for Comparison of Sites

In evaluating each site, specific criteria were utilized. The criteria were divided into three key issues – Site Issues, Impacts to Various Transportation Modes, and Neighborhood Environment. A detailed discussion of the specific criteria for each issue follows:

6.2.1 Site Acquisition Issues

For each site, specific issues related to the acquisition and use of the site for the proposed multi-modal center were examined.

- A. *Site Availability.* The ability to acquire certain pieces of land can be complicated by numerous factors including the importance of existing uses, the presence of multiple owners, and past political decisions. Using these factors an evaluation of the difficulty in obtaining specific sites was estimated.
- B. *Acquisition Costs.* The cost of land procurement is critical to the approval of any site. The costs involved in acquiring right-of-way are especially critical due to the cost of land in the downtown area. The evaluation includes a quantitative review of potential land costs by examining and comparing parcel tax values.

6.2.2 Site Utilization Issues

For each site, specific issues related to the ability of the site to accommodate the proposed multi-modal center including financing, environmental, and construction issues were examined.

- C. *Site Accommodation and Flexibility.* The physical size of each site was assessed to ensure that it can accommodate the range of uses for which it is intended without hampering the operations of any one mode. Since it is anticipated that the site may be used primarily for bus and taxi operations in the near- and middle-term, an cursory evaluation of possible phasing plan was conducted to allow for transition to a bus and passenger rail facility at a future date with a minimum of demolition and disruption to bus service. Public and employee facilities such as parking areas, baggage handling, restrooms, lockers, break room(s), ticketing, and seating areas must also be accommodated. (See Section 6.1)
- D. *Environmental Issues.* Based upon interviews and data provided by the City, any known environmental constraints were identified. Note that a more detailed review would be conducted as part of further studies prior to design on a particular site. In general, the data available for the sites indicated few discriminators between sites except for some potential historic sites and features.
- E. *Constructability Issues.* As part of field visits to each site, specific engineering issues were identified that may require additional cost or expense (grade differences, existing buildings or features, or structures). Note that no formal cost analysis is included in this analysis.

6.2.3 Transportation Impacts

One of the primary reasons for selecting a downtown site was that it best accommodated existing transit and bus systems as well as served those areas with the highest pedestrian demands. Specific impacts to various transportation modes were evaluated as summarized below.

- F. *Local Bus Service, Taxi, and Paratransit Service Impacts.* The existing and planned Wave Transit services must be able to use the proposed site. Private taxi operations must also be accommodated on-site without interfering with passenger loading, unloading, and parking operations. The most recent Transit Plan was reviewed in the evaluation of these issues.
- G. *Intercity Bus Ridership and Operations.* Carolina Trailways has been consulted to determine their operational needs including passenger waiting and ticketing areas, and loading bays. These needs were incorporated into identifying the requirements of the proposed site.
- H. *Rail Ridership and Operations.* Similar to the other modes of travel, future passenger rail service must be accommodated at the proposed site. Potential needs for passenger and employee areas were identified for this study, as well as issues associated with platform location, design, and integration with any existing structures. New structures required to accommodate rail service have been examined. This effort utilized existing data for ridership forecasts and did not include the development of revised projections. No conceptual designs or sketches have been developed for this effort.
- I. *Vehicular Circulation and Traffic Impacts.* The provision of the proposed facility will impact traffic in the vicinity of the site as the result of additional vehicle trips by all modes. For this study a qualitative assessment of traffic has been provided although evaluation of formal levels-of-service have not been prepared. Changes in traffic were compared to existing and projected volumes by mode to obtain a comparative rating of each site.
- J. *Pedestrian and Bicyclist Safety and Accessibility.* Beginning with a review of existing and planned pedestrian and bicycle safety issues and high accident locations, logical ingress and egress points were conceptually established for each site. Potential future conflict points with motorized traffic were identified based on possible pedestrian/bicyclist pathway locations. Pedestrian activities and demographics were considered in the review of the proposed site to assess any barriers that may be presented to pedestrian and bicyclist access to the site and facility, including access for mobility-impaired users.

6.2.4 Neighborhood and Environment

- K. *Compatibility with Existing and Planned Uses.* Current and adopted planning efforts were reviewed to assess any compatibility issues with the proposed site for future development plans. The potential for visual or operational (e.g., noise or construction impacts) conflicts with existing land uses, including residential and college properties, was estimated. In addition, conflicts with campus parking and development plans were estimated based in part on field observation and interviews with staff and faculty of the Cape Fear Community College (CFCC).
- L. *Potential for Complementary Development and Job Creation.* Successful transit environments frequently include complementary uses that support ridership by bus and rail. Joint development opportunities may also exist at or near the proposed site; these were evaluated accordingly. The proposed sites were evaluated for their potential for having positive effects on attracting new development complementary to transit services, such as retail, office, and medium- to high-density residential uses. The Consultant worked with the local Chamber of Commerce, Wilmington Downtown (formerly DARE, Inc.), and others to develop a description of the estimated benefit of each site. Known development projects that are being planned or are underway were identified.
- M. *User Security.* Riders will favor a site that has a strong pedestrian presence throughout the service day, adequate lighting, and open access. A qualitative evaluation based on these factors was developed for each site taking into account potential walking paths and distances.

6.3 Rating of Sites

Six sites were analyzed in the Downtown area as part of the second step in the site selection process. As part of the project evaluation process, a scoring system was used to provide a numerical ranking for each site. The scores are suggestive only, but provide a quantitative method for comparing the positives and negatives of each site.

In order to conduct the evaluation of the sites, three staff members first independently evaluated each site on a 1-5 rating for each of the 13 factors identified in Section 6.2. In this ranking system, a ranking of 1 was considered poor and a ranking of 5 was considered excellent. For each criterion, it was possible that each site could have the same or similar scores. Once each staff member ranked the sites, a conference was then held to resolve any factor score for any site that had a discrepancy of two points or more. If one or more of the evaluators wished to modify his rating for a particular factor after participating in the group discussion, then that was permitted. There was not an attempt to get absolute agreement on every factor for every site.

The individual scores for the 13 criteria were then averaged to determine average scores for four major topics: Site acquisition issues, Site utilization issues, Transportation impacts, and Neighborhood and environmental impacts. Note that in the original analysis, Site Acquisition and Site utilization were included as a single topic. During review with NCDOT and the City it was determined that it would be preferable to split these topics for a separate evaluation. As indicated in Section 6.2, the final breakdown of these criteria included:

Site Acquisition Issues

- A. Site Availability.
- B. Acquisition Costs.

Site Utilization Issues

- C. Site Accommodation and Flexibility.
- D. Environmental Issues.
- E. Constructability Issues.

Transportation Impacts

- F. Local Bus Service, Taxi, and Paratransit Service Impacts.
- G. Intercity Bus Ridership and Operations.
- H. Rail Ridership and Operations.
- I. Vehicular Circulation and Traffic Impacts.
- J. Pedestrian and Bicyclist Safety and Accessibility.

Neighborhood and Environment

- K. Compatibility with Existing and Planned Uses.
- L. Potential for Complementary Development and Job Creation.
- M. User Security.

6.4 Summary of Sites

Six sites were analyzed in the Downtown area as part of the second step in the site selection process. These included two sites that were part of the May 2000 Feasibility Study – the Police Headquarters Site (Site #2) and the 3rd/4th Street site (a combination of Site #5 and Site #6). Each of these sites is discussed in the following sub-section in a series of Site Summary Sheets (see pp. 33-38).

The Site Summary Sheets on the following pages provide a convenient description of the site, an illustration of the site location, a discussion of advantage and disadvantages of each site, and some photos taken at the site. At the bottom of each sheet, a qualitative score for each alternative is provided for each of the four major topics identified in Section 6.3. In this scoring system, a score of 1 was considered poor and a score of 5 was considered excellent. The score for each of the four major topics was then averaged to develop an average score for each alternative site.

Site #1: Existing RR Museum and Convention Center Retail Space

Land Area: 6.8 acres

Distance to Proposed Convention Center: Adjacent

Description of Property and Ownership

This property is currently home to the Wilmington Railroad Museum and the existing Coastline Convention Center, as well as the Best Western Coastline Inn and Wilmington Chamber of Commerce. These properties are primarily controlled by one owner, Charles Carver, although there are other land owners. The presence of properties listed on, or eligible for, inclusion on the National Register of Historic Places presents both opportunities for preservation of important landmarks and challenges related to designing modern rail, bus, and pedestrian operations. This site is as close to major destinations as any in the group; but this is somewhat counterbalanced by the difficulty of integrating rubber-tired vehicular circulation while minimizing pedestrian conflicts. This may be the weakest site from an environmental standpoint due to its higher potential for contamination from historic shipping uses and its proximity to the Cape Fear River.



Current Tax Valuation: \$5,257,000

Operations and Engineering Issues:

- Without the northern "loop" to accommodate rail egress from this site, a long backing movement would be required that would add a minimum of 30 minutes on the train set turn-around time.
- Since the former ACL properties (warehouses and railroad museum) are historic properties, the operations for buses would need to respect the existing available site design.
- Site is relatively flat simplifying construction and potentially reducing costs.

Advantages:

- Most proximate location for interaction with downtown businesses, proposed Convention Center, and CFCC.
- Shortest walk times to major destinations.
- Large site with adequate right-of-way for all required features with new convention center.
- Historic railroad properties would be eligible for Transportation Enhancement funding for refurbishment of structures.
- The Wilmington Railroad Museum will be retained in its current location and would provide an added synergy to the operations of the rail service.
- Although privately owned, a single owner is the responsible party for all properties.

Disadvantages:

- Bus, rail, and pedestrian conflicts with CFCC students would increase at and near Red Cross St/Nutt St and Red Cross/Front St intersections, including temporary blockages of Nutt Street from rail operations.
- Requires longest section of new RR track west of 4th Street (1,800 feet) and reactivation of rail through Police HQ site.
- At-grade rail crossing with Nutt Street.
- Historic structures will dictate to some degree the site design and operational configuration of bus parking.
- Potentially causes disruption to CFCC campus and student activities due to extension of rail track.
- Utilizing this site as a transportation hub is not the 'highest and best use' of riverfront property; the design values would be commensurately greater.
- Diverting sewer line on 2nd Street to Red Cross Street costs \$400,000 additional versus utilizing rail bed.



Convention Center Retail Space



Future Convention Center Site



Railroad Museum

Site #1

Site Acquisition	Site Operations	Transportation Impacts	Neighborhood & Environment	Average Score	Ranking
1.5	3.3	3.4	3.3	2.9	6 of 6

See Section 6.2 for a discussion of factors used in comparison.
See Section 6.3 for the ranking of sites.

Site #2: Wilmington Police Headquarters Site

Land Area: 4.4 acres

Distance to Convention Center:

- 400 feet via RR bed
- 600 feet via Red Cross Street

Description of Property and Ownership:

Known as the Wilmington Police Headquarters site, this site was analyzed as part of the 2000 Study and recommended as the preferred location. Since that time, however, the ownership of the land has been transferred from the City to CFCC including the historic rail corridor. The site is bifurcated by the Front Street overpass making it more difficult to get full integration of the site. In addition, the southeastern quarter of the property is at a higher elevation than the remainder of the property, further limiting integration. The southeastern portion of this site is occupied by the Wilmington Police Building. This building would need to be demolished in order to accommodate a fixed route bus depot, a for-hire vehicle staging area, and parking. In addition, the existing CFCC parking located on Site #2 would need to be relocated or lost as a result of the rail right-of-way required for the at-grade tracks and platforms and an intercity bus depot.



Current Tax Valuation: \$290,700

Operations and Engineering Issues:

- Requires multi-level facility to perform all functions.
- Site issues include bifurcation of by Front Street overpass and varying elevations on the site,

Advantages:

- Central location to downtown businesses, proposed Convention Center, and CFCC.
- Short walk times to major destinations.
- Adequate right-of-way for all required features.
- The Wilmington Railroad Museum might be able to easily relocate to this site, but this may limit additional redevelopment potential for other uses.
- Second Street "stub" could be used to access property by buses, offering separation of bus and passenger car operations.
- Single owner is the responsible party for all properties.
- Although not guaranteed, the historic Wilmington Police Headquarters Building, due to its former existence as part of the ACL complex, would be eligible for Enhancement funding.

Disadvantages:

- Site has passed into control of the Cape Fear Community College and serves as centerpiece linking campus. College has made clear that this site is a key component of the plans.
- The Police Headquarters Building is a historic structure that would need to be included in revised layout of site. The roof, asbestos insulation, and poor wiring and plumbing accommodations would become cost issues in demolition of the structure.
- Construction of new railroad track required west of 4th Street (approximately 1,200 feet).
- Local streets with high pedestrian levels would need to be traversed to reach a major arterial. Red Cross St./Front St. intersection has overlap of car volumes with pedestrians.
- The cobblestones of Second Street form an important historic feature and would not withstand heavy bus traffic.
- The retaining wall on the north side of the rail corridor is historic, and would need to be preserved potentially requiring additional costs.
- Potentially causes the greatest disruption to CFCC campus and student activities.



Existing Police Headquarters



Historic Wall and Smith Shop behind Police Station



Community College

Site #2

Site Acquisition	Site Operations	Transportation Impacts	Neighborhood & Environment	Average Score	Ranking
2.0	3.3	3.4	3.3	3.0	5 of 6

See Section 6.2 for a discussion of factors used in comparison.
See Section 6.3 for the ranking of sites.

Site #3: Second and Third Street Site (South of Railbed)

Land Area: 3.5 acres

Distance to Convention Center:

- 1,000 feet via RR bed
- 1,200 feet via Red Cross St.

Description of Property and Ownership:

This site is currently occupied by several businesses including a building used by CFCC. Most, if not all, of these buildings would need to be demolished in order to accommodate the Multi-modal Center and related functions. The Second Street right-of-way is also included as part of Site #3. It may be difficult to remove the section of Second Street north of Red Cross Street from the City road network because it provides additional access to the adjacent site to the west (Site #2, Wilmington Police Headquarters).



Current Tax Valuation: \$3,247,000

Operations and Engineering Issues:

- Requires multi-level facility to perform all functions.

Advantages:

- Central location to downtown businesses, proposed Convention Center, and CFCC.
- Short walk times to major destinations.
- Adequate right-of-way for all required features.
- No at-grade rail crossings are required that would potentially disrupt bus or passenger car traffic.
- Quick access to Third Street via Red Cross Street and intercity and local bus traffic.
- Passenger car traffic using WMMTC avoids intersection of Front and Red Cross Streets.

Disadvantages:

- Requires construction of new RR track west of 4th Street (800 feet).
- Red Cross St./Front St. intersection has overlap of bus routes with pedestrians.
- Although the smith's shop (see photo for Site #2) is located to the west, the retaining wall on the north side of the railroad bed is still considered historic and would need to be maintained and preserved.
- Numerous owners of individual parcels.
- A walkway from the WMMTC to the convention center is desirable, but would require utilizing the existing railbed through Site #2 that is controlled by CFCC.



Railroad bed



Apartments located near Police Station



Looking north on 3rd from Red Cross Street

Site #3					
Site Acquisition	Site Operations	Transportation Impacts	Neighborhood & Environment	Average Score	Ranking
2.5	3.6	3.4	3.3	3.2	1 of 6 (tie)

See Section 6.2 for a discussion of factors used in comparison.
See Section 6.3 for the ranking of sites.

Site #4: Cape Fear Community College Parking Lots

Land Area: 5.0 acres
2.4 ac (site 4A) and 2.6 ac (site 4B)

Walking Distance to Convention Center:
1,000 feet via RR bed
1,200 feet via Hanover Street

Description of Property and Ownership:

This site is made up of two separate parcels divided by Hanover Street. Both of these parcels are owned by CFCC and utilized as surface parking lots. The southern half of the site (south of Hanover Street) is directly adjacent to the proposed rail line. The northern half of the site is located north of Hanover Street. The grade inclines fairly sharply from south to north, which, combined with Hanover Street itself, represent a physical barrier for pedestrians walking from one side of the site to the other.



Current Tax Valuation: \$1,321,000

Operations and Engineering Issues:

- Site split by Hanover Street and steep driveway adjacent to Hanover Street.

Advantages:

- Adequate right-of-way for all required features.
- No at-grade rail crossings required.

Disadvantages:

- Requires construction of new RR track west of 4th Street (800 feet).
- More than 600 CFCC parking spaces may need to be replaced with new deck or relocated parking lot.
- Moderate walk times to major downtown destinations. A walkway from the WMMTC to the convention center is desirable, but would require utilizing the existing railbed through Site #2 that is controlled by CFCC.
- Construction of new RR track required west of 4th Street (800 feet).
- All vehicles access from Hanover Street, which would require improvements for increased turns and due to heavy CFCC pedestrian usage.
- Most traffic would utilize unsignalized intersection at Hanover and 3rd Street. Signal may be required due to increased turns and crest vertical curve on 3rd Street bridge.
- The design should try to minimize impacts to the historic wall adjacent to connector road (see photo).



CFCC Parking Lots



Looking toward Community College



Looking at connector road and historic wall to Hanover

Site #4

Site Acquisition	Site Operations	Transportation Impacts	Neighborhood & Environment	Average Score	Ranking
3.0	3.3	3.7	2.6	3.1	3 of 6 (tie)

See Section 6.2 for a discussion of factors used in comparison.
See Section 6.3 for the ranking of sites.

Site #5: 3rd and 4th Street Site (South of Railbed)

Land Area: 2.7 acres

Walking Distance to Convention Center:

- 1,400 feet via RR Bed
- 2,200 feet via Hanover
- 1,800 feet via Red Cross

Description of Property and Ownership:

This site is located south of the existing railroad bed between Third and Fourth Street. It is made up of two separate parcels divided by Campbell Street, both located south of the existing RR bed. The northern half of the site to the north of Campbell Street is directly adjacent to the proposed rail line, and is shared with Site #6. The entire site is currently occupied by several businesses including a U-Haul dealer occupying a former A&P supermarket building. Most, if not all, of these buildings would need to be demolished in order to accommodate the Multi-modal Center. Since all of the properties fronting on Campbell Street would be removed as part of the proposed action, the section of Campbell Street between Third and Fourth Streets can be abandoned and/or incorporated into the site design since access does not need to be maintained depending on the site design. However, it is preferable to keep this cobblestone street open as a pedestrian feature that enhances the site. Another historic feature is the building located immediately adjacent to the railbed, which may be eligible for inclusion in the Wilmington downtown historic district. The southern portion of this block fronting Red Cross Street carries an historic property associated with an active furniture store and Shell gas station. Acquiring and preparing these properties for new construction may not be worth the expense or compatible with the WMMTC.



Current Tax Valuation: \$1,162,527

Operations and Engineering Issues:

- Campbell and Fourth Streets are not well-suited structurally to handle heavy vehicle traffic.
- This site has the best opportunities for neighborhood-oriented retail joint development use if the composition included functions such as a grocery, dry cleaner/laundromat, pharmacy or eating establishments.

Advantages:

- Adequate right-of-way for all required features.
- No at-grade rail crossings required.
- This site has good opportunities for neighborhood-oriented retail joint development use if the composition included functions such as a grocery, dry cleaner/laundromat, pharmacy or eating establishments. Possible opportunities for public/private joint ventures.
- Shortest construction of new RR track required west of 4th Street (400 feet).

Disadvantages:

- Routing pedestrians and bicyclists across Third Street would be both difficult and hazardous without encroaching into the existing rail right-of-way to go under Third Street. This passageway would also need some additional construction to repair the bridge deck – and more extensive reconstruction or replacement at a later date.
- Longer walk times to major destinations. Will require schedule changes and re-routing of downtown trolley. A walkway from the WMMTC to the convention center is desirable, but would require utilizing the existing railbed through Site #2 that is controlled by CFCC.
- Portion of either Site 4A or 3B may be lost due to RR extension.
- Crest vertical curve reduces sight distance on Third Street bridge, making egress out of the site at this location potentially hazardous and difficult to mitigate. May need to move access point or signalize intersection.
- Numerous owners control this site.



U-Haul Rental



Historic St. Andrews Church



Historic Firehouse

Site #5

Site Acquisition	Site Operations	Transportation Impacts	Neighborhood & Environment	Average Score	Ranking
4.0	3.0	3.1	2.8	3.2	1 of 6 (tie)

See Section 6.2 for a discussion of factors used in comparison.
See Section 6.3 for the ranking of sites.

Site #6: 3rd and 4th Street Site (North & South of Railbed)

Land Area: 1.6 acres

Walking Distance to Convention Center:

- 1,400 feet via RR Bed
- 1,800 feet via Hanover
- 2,200 feet via Red Cross

Description of Property and Ownership:

Site #6 is very similar to Site #5 except that it straddles the existing railroad bed and requires property north and south of the railroad bed. North of the RR bed, the site is split into two sections. The northern portion is at-grade along Hanover Street and is currently occupied by residential units, which although dilapidated, are reported to have historic significance. These units are adjacent to businesses fronting on Hanover Street. The below grade portion of the site north of the RR bed is occupied by a CFCC parking lot with approximately 90 spaces as well as the existing RR bed. The dilapidated residential units and the buildings with businesses would need to be demolished and the parking spaces would be removed in order to accommodate the Multi-Modal Center. The property north of the railroad tracks is insufficient in size by itself to accommodate all the functions of the WMMTC; hence this property was assumed to also extend south of the RR bed to Campbell Street onto Site #5. This portion is above the grade of the railbed and may carry at least one historic structure.



Current Tax Valuation: \$885,176

Operations and Engineering Issues:

- Extension of RR track west of 4th Street required (400 feet).
- The northern and southern thirds of this site would probably have to accommodate some sort of bridging structure to accommodate parking or second-floor uses such as offices or joint development uses.

Advantages:

- No at-grade rail crossings required.
- This site has good opportunities for neighborhood-oriented retail joint development use if the composition included functions such as a grocery, dry cleaner/laundromat, pharmacy or eating establishments. Possible opportunities for public/private joint ventures.
- Shortest construction of new RR track required west of 4th Street (400 feet).

Disadvantages:

- Longer walk times to major destinations. Will require schedule changes and re-routing of downtown trolley. A walkway from the WMMTC to the convention center is desirable, but would require utilizing the existing railbed through Site #2 that is controlled by CFCC.
- Construction of new RR track required west of 4th Street (400 feet).
- CFCC parking lot north of the RR tracks and east of 4th Street will be lost requiring construction of replacement spaces.
- Crest vertical curve reduces sight distance on 3rd Street bridge making ingress/egress problematic from Hanover Street.



Mixed land use types along Hanover Street



Existing CFCA Parking on Railbed



Existing housing and historic structure

Site #6

Site Acquisition	Site Operations	Transportation Impacts	Neighborhood & Environment	Average Score	Ranking
4.0	2.5	3.1	2.9	3.1	3 of 6 (tie)

See Section 6.2 for a discussion of factors used in comparison.
See Section 6.3 for the ranking of sites.

6.4.1 Ranking of Sites

Using the average score for each site, the six sites were ranked from most preferred (first) to least preferred (sixth). Using this methodology for scoring and then ranking each site, the six preliminary locations were ranked as shown in [Table 6](#).

Table 6. Comparison Matrix of Downtown Sites

Site	Description	Site Acquisition Issues	Site Utilization Issues	Transportation Impacts	Neighborhood & Environment	Average Score	Ranking
Site #1	Existing RR Museum Site	1.5	3.3	3.4	3.3	2.9	6
Site #2	Police Headquarters Site	2.0	3.3	3.4	3.3	3.0	5
Site #3	2 nd and 3 rd Street Site	2.5	3.6	3.4	3.3	3.2	1
Site #4	CFCC Parking Lot Site	3.0	3.3	3.7	2.6	3.1	3
Site #5	3 rd and 4 th Street Site (south)	4.0	3.0	3.1	2.8	3.2	1
Site #6	3 rd and 4 th Street Site (north and south)	4.0	2.5	3.1	2.9	3.1	3

This evaluation indicated that Sites #3 and #5 are the highest ranked alternatives of the six preliminary sites considered. A more detailed comparison of the specifics of each sites indicated:

- Site #1 is located the closest to the downtown area and is located on a large site that could be effectively used to locate a multi-modal transportation facility, although allowances would be required for protecting several historic properties, limiting the efficiency of the WMMTC. A major drawback, however, is that Site #1 requires the longest extension of the railroad tracks to the west resulting in site acquisition issues, traffic impacts, and additional costs associated with impacts to properties adjacent to the railroad line extension.
- Site #2 scores well because it is located near downtown and is located on a large site that could serve as an effective WMMTC integrated into the downtown. Major drawbacks of the site, however, is site acquisition issues – both in terms of cost and difficulty, as well as the need to extend the railroad further west into the downtown area as compared with some of the eastern sites. This site also has been identified as a key parcel to serve as a centerpoint connecting the Cape Fear Community College in downtown, providing a positive role for both the community college as well as the City.
- Site #3, as indicated above, is one of the high-scoring sites identified in the analysis. It balances distance issues to downtown between the western and eastern sites, utilizes land that could serve a higher function for future downtown plans than it currently does and, possibly most importantly, is at a grade that allows for easier construction of a railroad platform than other sites. The primary disadvantage is that the site is made up of several individual parcels that would need to be obtained. It also can be designed with access to Red Cross Street and requires no at-grade rail crossings, allowing for improved traffic operations.
- Site #4, is a very large site divided into the northern and the southern parking lots. At first glance, there are many positives with this site, but the scoring methodology revealed some difficulties. The grade differential between the two parking lots

north and south of Hanover Street result in some difficulties in fully integrating the site. In addition, a traffic signal would probably be required at Hanover and 3rd Street although this is not desired by City transportation staff. Most critical, however, the grade between railroad bed and the adjacent parking lot would not be conducive to the placing of a railroad platform without major reconstruction. In addition, these lots serve as a major location for parking at CFCC and also serve to save land for future expansion, if required.

- Site #5, located east of 3rd Street and south of the existing railroad bed, is one of the top two scoring sites despite being located several blocks from downtown. It provides an opportunity for providing a full WMMTC with reducing the need for extending the railroad west through additional downtown properties. In addition, the site layout will require purchase of several businesses and would change the character of 4th Street.
- Site #6 is very similar to Site #5 except that it straddles the existing railroad bed and requires property north and south of the railroad bed. As a result of this location the utilization of the site is less efficient and will require a more expensive design for the WMMTC than Site #5. Site #6 takes up less land area south of the railroad bed. Note that the land area north of the railroad bed also includes three houses that may qualify as historical structures.

6.4.2 Preferred Site Evaluation

As concluded in Section 6.4, there are two sites that are ranked high based on the scoring criteria outlined in Section 6.3. Regardless, the analysis confirms that most of the sites are feasible locations for the WMMTC. The best choice will probably depend largely upon the design of the facility. Regardless, the two sites with the highest ranking at this level of analysis are Sites #3 and #5.

Site #3

One of the highest ranked sites is Site #3, located between Second and Third Streets south of the railroad bed to Red Cross Street. Based upon the analysis the primary considerations in favor of this site are:

- Avoids extension of RR track to Police Headquarters site or further west.
- Central location to downtown businesses, proposed Convention Center, and CFCC allowing for short walk times to major destinations.
- Adequate right-of-way for all required features.
- No at-grade rail crossings are required that would disrupt bus or passenger car traffic.
- Quick access to Third Street via Red Cross Street and intercity and local bus traffic.
- Vehicular traffic avoids intersection of Front and Red Cross Streets.

In proceeding with this alternative, there are concerns, however, that will need to be addressed. Issues include:

- Red Cross St./Front St. intersection has an overlap of existing bus routes with pedestrians. No new bus traffic should be routed through this high-pedestrian intersection, and all vehicular traffic should be encouraged to use the entrance off of Third Street.
- Although the smith's shop is located to the west, the retaining wall on the north side of the railroad bed is still considered historic and would need to be maintained and preserved.
- The site is divided into numerous parcels owned by separate individuals.

Site #5

Site #5 was also one of the two highest-ranked sites in the project summary matrix. Based upon the analysis the primary considerations in favor of this site are:

- No at-grade rail crossings required.
- This site has good opportunities for neighborhood-oriented retail joint development use if the composition included functions such as a grocery, dry cleaner/laundromat, pharmacy or eating establishments. Possible opportunities for public/private joint ventures.
- Shortest construction of new RR track required west of 4th Street (400 feet).

In proceeding with this alternative, there are concerns, however, that will need to be addressed. Issues include:

- Longer walk times to major destinations. Will require schedule changes and re-routing of downtown trolley. A walkway from the WMMTC to the convention center is desirable, but would optimally utilize the existing railbed through Site #2 that is controlled by CFCC.
- CFCC parking lot north of the RR tracks and east of 4th Street will be lost requiring construction of replacement spaces.
- Crest vertical curve reduces sight distance on 3rd Street bridge making ingress/egress problematic from Hanover Street.

6.4.3 Other Secondary Site Combinations

As concluded in the previous sections, Sites #3 and #5 are viable solutions and recommended for further analysis. If public concerns or physical restrictions result in the desire to consider other sites, additional sites beyond the six evaluated in this document could be considered. In general, these additional sites are hybrid combinations of the six sites evaluated throughout the analysis. The two most logical combinations include:

- A combination of Site #3 and the southern half of Site #4, or
- A combination of the northern half of Site #6 and the southern half of Site #4.

Both of these combined sites create parcels that would provide sufficient acreage to accommodate the WMMTC, provide flexibility in design, provide options for site access, and leverage the positive aspects of separate sites into a unified site. The total amount of land taken as part of each site may vary depending upon the amounts taken from shared sites as well as balancing multi-level versus single level layouts for the WMMTC. A discussion of the details of each site follows.

Combination of Sites #3 and #4

A combination of Site #3 and the southern half of Site #4 is able to take advantage of many of the benefits of Site #4 while addressing the most crucial problem with Site #4, the construction of a rail platform. By constructing the rail platform on the south side of the rail bed on Site #3, a rail bed can be constructed relatively at-grade with the existing bed. Site #4 can essentially remain as currently graded with the existing ramp between the lot and Hanover Street. This configuration would also reduce turning traffic demands at Hanover and 3rd Street by dispersing some traffic to Red Cross Street.

Combination of Sites #6 and #4

A combination of Site #6 and the southern half of Site #4 would address the lack of space on Site #6 north of the rail bed to fully construct the WMMTC. These lots are currently connected by a driveway connection under the 3rd Street bridge that could be utilized to improve circulation within the site. Utilizing Site #6 would also reduce the amount of rail that would need to be extended to the west. Note that CFCC controls Site #4 and approximately half of Site #6.

6.4.4 Next Steps

As part of the next phases in the evaluation process, a design charrette is to be held as discussed in Section 8.3.2. As part of this design exercise an interactive session will be held to develop conceptual design layouts for the WMMTC on the preferred site. The impacts of these and other issues will be discussed and potential mitigation and enhancement options will be considered. If, as part of this process, it is determined that Site #3 or Site #5 are not desirable sites, the possibility exists of examining other secondary sites or combinations of sites. As noted previously, it is likely that the design phase of this project will provide key insights indicating the preferred site for the WMMTC.

Prior to entering into these next steps, some issues need to be resolved to ensure the viability of the WMMTC as a rail transfer center. The primary issue is that, in order to reach the WMMTC site, rail must be extended into downtown Wilmington. Of particular focus in the downtown area is that the Cape Fear Community College maintains ownership of the historic rail corridor between Fourth Street and Nutt Street. If even a small portion of the corridor is unavailable, all six sites could be eliminated from consideration for rail access. In addition to the portion of the corridor included in each site location, an additional allowance of rail will be required to the west of each station site. An understanding of the availability of this land is a critical input into the design.

The availability of the rail corridor also would be strongly desired to provide a grade-separated bicycle/pedestrian corridor from the WMMTC to the proposed new convention center and waterfront. Related to this corridor is an agreement between NCDOT and the City to allow installation of a new force main pipe under the state-owned rail corridor. The agreement assumes that the City puts the pipe at the NCDOT standard design depth below the bottom of the future track structure. Future operations for trains would be precluded if the new force main is located on top of the existing track bed and simply covered with dirt.

7. Public Involvement

The public involvement efforts that have directly or indirectly addressed the siting of the Wilmington Multi-Modal Transportation Center started in 1999 and have continued through to this current report. The majority of the direct public outreach has centered on the time periods of 2000 with the PBQD Feasibility Study (*refer to Section 2.4*) and late 2004 with the completion of the current document. Along with these two reports, the Southeast Passenger Rail Feasibility Study (NCDOT, 2001) conducted a number of market-related studies to help determine potential ridership on various passenger rail connections (*refer to Section 2.5*).

The purposes of public outreach for this study were two-fold: (1) to ensure that the information provided in previous reports was accurate; and (2) to help ensure that the opinions of key stakeholders still matched what has been recorded in earlier outreach efforts. Appendices B.1 and B.2 contain the handout sheet and summary notes from stakeholder interviews, respectively. Elected officials, planning/engineering staff, business leaders, and citizens were interviewed for this project. The following is a brief summary of the findings from these stakeholder interviews, which typically lasted from between 30 minutes to one hour.

In almost every instance, stakeholders felt that the WMMTC either should or must be located in the Wilmington downtown or Central Business District (CBD). The sole exceptions were two individuals associated with the North Fourth Street Partnership that stated the Carroll Carolina/Page Oil site (Area #4) was the best choice, and some in the business community that believed that a site further north in the downtown was preferred to other downtown sites (if Site #2 was unavailable). Reasons for the preference of a downtown location included potential for joint development opportunity, ridership, and visibility. Several interviewees noted that the Wilmington Police Headquarters site (Site #2) was the best site and that the WMMTC should be located there. Scattered support and opposition was provided for each of the other sites, with no site particularly emerging as a clear preference. Additional information was provided about perceived impacts to businesses, ridership segmentations, and operational considerations for some sites. Where appropriate, this information was accounted for in the evaluation of sites in this report.

8. Implementation

Regardless of where the WMMTC is constructed and operated, the facility will have to answer many questions from concerned residents and business owners about how the facility will be implemented, look and function upon completion. The following sections describe some common impacts and how and when they are typically addressed. Critical to resolving each of these issues is the support and cooperation of the community at-large and key stakeholders from local, state, and federal governments.

8.1 Environmental Issues

The development of an appropriate site for the WMMTC will in part hinge upon the ability to identify and remediate environmental issues and concerns of stakeholders, principally property owners in the vicinity of the proposed site. Based on recent studies and input from stakeholders, there are a number of concerns related to the development of the WMMTC, including noise, air pollution, vehicular traffic, personal security, and threats to economic advantage to members of the community. Some of these issues can be addressed through appropriate site design, while other issues will have to be addressed through off-site accommodations. [Table 7](#) illustrates the typical impacts and countermeasures that must be considered during the development process.

It is important to note that none of these issues is anticipated to occur, but must be identified and addressed during detailed environmental studies required for the development of the WMMTC regardless of which site is ultimately selected. Often, successful remediation of impacts occurs because a diverse group of professionals and community members work together flexibly to find answers. The quality and selection of building materials and the degree to which they successfully integrate with the surrounding structures can make a tremendous difference to how well the WMMTC will fit into the surrounding community (*see Figure 8*). Certainly, the potential for contamination to exist on sites that have been adjacent to a railroad corridor for over a hundred years must be recognized and dealt with accordingly. This is typically accomplished through a phased environmental assessment and subsequent remediation techniques, if found to be necessary. In all phases, the WMMTC should strive to improve the quality of the human and natural environments, since people will be working, shopping, living, and playing on and around the WMMTC site for many years.



Figure 8. Integrating the WMMTC with nearby structures requires attention to design and materials for both the building and street faces.

Table 7. Potential Environmental Issues and Remediation

Potential Issue or Impact	On-Site	Off-Site	Remediation
Soil Contamination <i>from soil disturbance during construction and previous uses, potentially including metals, arsenic, PCBs, or other contaminants</i>	<input type="checkbox"/>		Phased environmental assessment of the site and determination of appropriate use. Remediation by soil removal or containment.
Air Pollution <i>from operation of equipment and altered traffic patterns and increased volumes</i>	<input type="checkbox"/>	<input type="checkbox"/>	Identification through static or dispersion air modeling, including increased traffic levels and operation of diesel locomotive units. Remediation through revised traffic patterns, hours of operation, alternative fuels.
Noise <i>from operation of locomotive units, buses, passenger cars, and facility operation; includes construction operations.</i>	<input type="checkbox"/>	<input type="checkbox"/>	Identification by use of baseline noise modeling and estimated increases from all sources. Remediation can include noise attenuation structures, altered operational hours, and site design features such as ingress/egress points.
Vehicular Traffic on Surface Streets <i>from passenger arrival, departure, and drop-off as well as deliveries, bus operations; includes construction operations</i>		<input type="checkbox"/>	Change in construction schedules to avoid peak hour conditions, altered signal timing, additional capacity at intersections, ingress/egress points at the periphery of site.
Visual Impacts <i>from facility itself and vehicles entering, leaving, and parking at the WMMTC</i>	<input type="checkbox"/>		Common remediation measures include vegetative screening, berms, placement of parking, waste disposal, and baggage handling facilities, and integration of materials and design features of surrounding structures. Extending streetscaping to adjacent blocks can enhance the built environment, integrate the facility, and enhance economic benefits.
Economic Benefits <i>ensuring that the WMMTC will benefit the community through improved economic opportunities</i>	<input type="checkbox"/>		Aggressive and innovative pursuit of joint development opportunities, faster acceleration of passenger rail service, using local companies for construction, tax incentives, and the quality of the design relative to the needs of the surrounding community can help to ensure economic benefits are realized.
Safety/Security <i>safety concerns include pedestrian/vehicle conflicts, while security issues imply intentional criminal acts or potential for those acts such as vandalism, robbery, auto theft, and so forth</i>	<input type="checkbox"/>		Remediation measures typically include pedestrian-scale lighting, eliminating hidden views to the interior of the site, and providing on-site security personnel or using a portion of the station as a police sub-station. The site location is crucial, as this dictates how many hours of the day/night passersby will provide a sense of occupation to deter petty theft. Sidewalks, marked pathways, signalization, and traffic calming are options for improving pedestrian and bicyclist safety.

8.2 Funding and Implementation Issues

8.2.1 Revenue Sources

Several local, state, and federal programs currently serve as sources of operating and capital revenues for transit service operations. Historically, the transit system has drawn its operating and/or capital revenues from the following sources:

- Community Transportation Program (CTP)
- Elderly and Disabled Transportation Assistance (EDTAP)
- Urbanized Area Formula Program 5307 (FUZ)
- Job Access and Reverse Commute Grant (JARC)
- Operating Assistance – Work First (OAWF)
- Rural General Public Program (RGP)
- Rural Operating Assistance Program (ROAP)
- State Maintenance Assistance (SMAP)

Securing federal funds requires several important considerations or next steps (i.e., funding, planning and design, environmental). The discussion below highlights how such issues are treated by FTA under various programs.

- Transit Capital Investment Grants and Loans. The Capital Investment Grants Program (Section 5309) provides transit capital assistance for new fixed guideway systems and extensions to existing fixed guideway systems (New Starts), fixed guideway modernization, and bus and bus related facilities.

Eligible recipients for capital investment funds are public bodies and agencies (transit authorities and other state and local public bodies and agencies thereof) including states, municipalities, other political subdivisions of states; public agencies and instrumentalities of one or more states; and certain public corporations, boards, and commissions established under state law. *Funds are allocated on a discretionary basis.* Applicant must have legal, financial, and technical capacity to carry out proposed project and maintain facilities and equipment purchased with Federal assistance. Private transportation companies may participate through contractual arrangements with public agency grantees.

Funded from both the Mass Transit Account of the Highway Trust Fund and the General Fund, this program continues a 90% Federal share for the incremental costs of vehicle-related equipment needed to comply with the Clean Air Act Amendments and the Americans with Disabilities Act requirements and a 80% Federal share for all other eligible costs. The program continues a 40%, 40%, 20% allocation formula distributed among fixed guideway modernization, new fixed guideway systems and extensions, and bus and bus-related facilities, respectively.

- Bus and Bus-Related Projects. Under TEA-21, a total of \$3.3 billion was authorized for bus and bus related facilities (excluding amount for Clean Fuels). The program authorized \$3M /year for the Bus Testing Facility and \$4.85M /year for Fuel Cell Bus and Bus Facility Program.

Eligible project purposes include acquisition of buses for fleet and service expansion, bus maintenance and administrative facilities, transfer facilities, bus malls, transportation centers, intermodal terminals, park-and-ride stations, acquisition of replacement vehicles, bus rebuilds, bus preventive maintenance, passenger amenities such as passenger shelters and bus stop signs, accessory and miscellaneous equipment such as mobile radio units, supervisory vehicles, fareboxes, computers,

shop and garage equipment, and costs incurred in arranging innovative financing for eligible projects. Funds are allocated on a discretionary basis. Costs incurred in arranging innovative financing for eligible projects are also reimbursable under the bus category.

FTA has had a long-standing general provision in the DOT Appropriations Act that allows funds appropriated for the Capital Program for bus and bus related purchases to be available for three years. This three-year availability is specified each year in the DOT Appropriations Act.

- **Urbanized Area Formula Grants.** In addition to discretionary grants, the FTA distributes by legislative formula and through matching requirements. For urbanized areas 50,000 to 199,000 in population, the formula is based on population and population density. For urbanized areas with population of 200,000 and greater, the formula is based on a combination of bus revenue vehicle miles, bus passenger miles, fixed guideway revenue miles, and fixed guideway route miles as well as population and population density. The program operates under a statutory formula as prescribed in 49 USC 5307. The Federal share is not to exceed 80 percent of the net project cost. The Federal share may be 90 percent for the cost of vehicle-related equipment attributable to compliance with the American with Disabilities Act and the Clear Air Act. The Federal share may also be 90 percent for projects or portions of projects related to bicycles. The Federal share may not exceed 50 percent of the net cost for operating assistance.

In terms of the length and time phasing of assistance, sums apportioned under the formula grant program are available for obligation by the Governor or designated recipient for a period of 3 years following the close of the fiscal year for which such sums are apportioned. Unobligated amounts at the end of this period will be reapportioned within the same activity for which they were originally appropriated.

For formula grants, the U.S. DOT may make grants under this section for capital projects to finance the planning, acquisition, construction, lease, improvement, and maintenance of equipment and facilities for use in transit subject to regulations. One percent of the funds apportioned to urbanized areas with a population of at least 200,000 are to be made available for transit enhancements. For urbanized areas with populations under 200,000, grants under this section can be used to finance transit capital or operating costs. Recipients of these grants are required to make information available to the public and to publish a program of projects to afford affected citizens opportunities through public hearings to submit comments on the proposed program and the performance of the recipient.

- **Flexible Funds.** Under the Federal-aid highway program, "flexible funding" programs were reauthorized by the Transportation Equity Act for the 21st Century (TEA-21) and may be used for either transit or highway projects. The following programs, often dedicated to highway purposes, can be used for funding transit initiatives.
 - the Surface Transportation Program (STP) Minimum Allocation
 - the Donor State Bonus, and
 - Congestion Mitigation and Air Quality Improvement (CMAQ) programs

8.2.2 Funding Limitations and Restrictions

Although these Federal Highway Administration (FHWA) programs have intermodal flexibility, there are both programmatic and distributive limitations to the use of at least some portions of some funds. Nevertheless, Capital Program applicants are encouraged to investigate possibilities in these other programs.

- **Competition for Funding Resources.** Demand for assistance to undertake worthy transit projects always exceeds the amount of Federal funds available for those projects. FTA advises grant applicants to investigate funding assistance in other FTA programs and in programs outside of FTA to support transit needs.
- **Requisite Credentials or Documentation to Receive Funding.** There must be a resolution by an authorized public body approving the filing for an application; projects must be included in an urbanized area's transportation improvement program (TIP), in the state transportation improvement program (STIP) and approved by FTA and FHWA. Information must be provided on labor and relocation; environmental impact statement; legal opinion; coordinated regional planning documentation; maintenance certification; and compliance with certifications and assurances as compiled in FTA's Annual List of Certifications and Assurances. Cost will be in accordance with OMB Circular No. A-87 for State and local governments.
- **Application and Award Procedure.** The program is subject to the provisions of OMB Circular No. A-87 and 49 CFR Part 18 and FTA Circular 9300.1A, "Capital Program: Grant Application Instructions," October 1, 1998. Applications are made to the regional offices of the Federal Transit Administration. At the beginning of each fiscal year, closing dates are established for the receipt of applications in the Regional Office. An FTA grant award obligating Federal funds is reflected in a grant agreement. To access funds, the recipient must execute the grant agreement.
- **Environmental Considerations.** Many projects and activities assisted with bus category funds normally do not involve significant environmental impacts. The joint FHWA/FTA environmental regulations use the term "categorical exclusions" to describe those projects that are categorically excluded from the requirement to prepare an environmental document (environmental assessment or environmental impact statement). In accordance with the regulations, bus and bus-related projects that are predetermined to be categorical exclusions include:
 - the acquisition of buses to replace old buses;
 - the acquisition of buses for minor fleet expansions where use of these buses can be accommodated by existing facilities;
 - bus rehabilitation;
 - alterations to buses or facilities to make them accessible for the elderly and persons with disabilities;
 - purchase and installation of bus operating or maintenance equipment to be located within an existing facility, with no significant impacts off the project site;
 - installation of fencing, signs, pavement markings, small passenger shelters, and traffic signals where no substantial land acquisition or traffic disruption will occur; and
 - construction of pedestrian and bicycle lanes, paths, and facilities.

However, there is a second group of bus category projects that involve more construction and a greater potential for off-site impacts and, typically, require more scrutiny of environmental effects. New construction or expansion of bus terminals and transfer facilities, bus storage and maintenance garages, office facilities, and transit centers with park-and-ride facilities are examples of projects that require more environmental documentation. For these projects, the grant applicant must prepare

environmental documentation with appropriate technical analysis to support a categorical exclusion, if appropriate, or a finding of no significant impact (FONSI), depending on the scope and magnitude of the probable environmental impacts.

Many construction projects can be built and operated without causing significant impacts if they are carefully sited in areas with compatible, non-residential land use where the primary access roads are adequate to handle the additional bus traffic. FTA may approve the designation of these projects as categorical exclusions if the grant applicant can provide documentation that clearly demonstrates that the conditions for significant adverse impacts have been avoided. Grant applicants are advised by the FTA to refer to the list of categorical exclusions requiring FTA approval contained in the joint FHWA/FTA environmental regulations.

For any project not meeting the conditions for a categorical exclusion, the grant applicant must prepare an Environmental Assessment (EA) that documents the impacts of the proposed project and considers alternatives to the proposed site or design. An EA is subject to public comment. If significant environmental impacts are identified for a bus category project, an Environmental Impact Statement (EIS) will be required.

Federal regulations place limitations on project development while the NEPA process is being conducted. FTA's environmental review process has two primary objectives: to fully disclose the probable environmental impacts resulting from a proposed project and to develop measures that will avoid or mitigate adverse environmental effects. Before FTA may approve a capital program grant, FTA must make a finding that either "no adverse environmental effect is likely to result from the project, or no feasible and prudent alternative to the effect exists and all reasonable steps have been taken to minimize the effect."

In addition to specific statutory requirements for the Capital Program, several other Federal environmental statutes and regulations may be applicable and impose requirements on the project:

- The National Environmental Policy Act of 1969, as amended (NEPA);
- Section 4(f) of the DOT Act protecting historic sites and public parks and refuges;
- Section 106 of the Historic Preservation Act;
- Section 404 of the Clean Water Act, as amended; and
- Section 176 of the Clean Air Act, as amended.

Federal environmental regulations applicable to the Capital Program include the joint FHWA/FTA regulations, "Environmental Impact and Related Procedures." These joint regulations have been drafted to accommodate most of the requirements of the statutes listed above and their implementing regulations. Other environmental requirements have been established by Federal executive orders or state laws (e.g., protection of wetlands, flood plains, prime agricultural lands, and coastal zones).

Capital Program projects have a wide range of environmental effects and thus require varying levels of documentation and review. The joint FHWA/FTA regulations classify projects based on their potential to significantly affect the environment--including the built environment as well as natural resources--and they detail the environmental analysis and review process required, depending on the classification. A project with uncertain environmental impacts requires an environmental assessment. Substantial controversy surrounding a proposed project will influence the level of documentation and review required for the project. The classification of a project in the context of FTA's environmental impact procedures is determined by the FTA Regional Office in consultation with the grant applicant.

The preparation and review of environmental documents for major transit projects can be a lengthy process, involving technical analysis of a wide range of project impacts and subsequent coordination with Federal, state, and local agencies having regulatory programs for protecting various types of environmental resources. To the extent permitted by Federal law and regulations, a grant applicant may avoid duplication by complying with state or local environmental protection requirements in the course of complying with the joint FHWA/FTA regulations.

Because a federally assisted project may not advance beyond the preliminary engineering phase until the environmental review has been completed, early consultation with the FTA Regional Office concerning environmental requirements is critical. This limitation on further project development during the environmental review applies not only to FTA's ability to grant funding but also to activities that the grantee might undertake with local funds. The restriction is necessary to ensure objective consideration of all alternatives being studied in the NEPA review. The review is completed only when FTA has approved a record of decision or a finding of no significant impact or a categorical exclusion, depending on the project's classification. Hence, the NEPA process should be initiated well before a grantee submits a grant application for construction funds.

FTA has prepared valuable environmental guideline documents that provide important detail on approaches to environmental topics that extend beyond regulatory references. One document useful to environmental practitioners is the Guidelines for the Environmental Protection Process (UMTA Circular 5620.1A (Draft), February 20, 1991). It should be understood, however, that the FTA notes that this draft document was never issued by the agency, although it is acknowledged that the documents contains useful information on many environmental topics (except noise and air quality impacts). The document, however, does not contain any mention of the Executive Order 12893 on Environmental Justice or the subsequent DOT Order on Environmental Justice or discussion of the DOT policy on use of brownfields.

FTA also prepared, Guidelines for Preparing Environmental Assessments (UMTA C 5620.1, October 16, 1979). This earlier circular provides key guidance on the form and content of environmental assessments for public transportation projects and for the evaluation of the significance of environmental impacts. The Guidelines list several topics of relevance for addressing environmental impacts comprehensively including:

- Land Acquisition and Displacements
- Land Use and Zoning
- Air Quality
- Noise
- Water Quality
- Wetlands
- Flooding
- Navigable Waterways and Coastal Zones
- Ecologically Sensitive Areas
- Endangered Species
- Traffic and Parking
- Energy Requirements and Potential for Conservation
- Historic Properties and Parklands (Section 106; Section 4(f))
- Construction
- Aesthetics
- Community Disruption
- Safety and Security
- Secondary Development
- Consistency with Local Plans

- **Clean Air Act Compliance.** In nonattainment and maintenance areas, federally assisted transportation projects must comply with the conformity requirements of the Clean Air Act Amendments of 1990. In order to receive Federal funding, transportation plans, programs, and projects must be found to conform to applicable state implementation plans (SIPs) for air quality. The proposed bus improvement must be included in a current long-range plan and transportation improvement program (TIP), which have been determined to conform to the SIP.

In general, any project expected to have a quantifiable effect on regionwide, transportation-related emissions in an air quality nonattainment area must be included in the regional emissions analysis required for the area's transportation plan and TIP. In addition, some large bus projects (e.g., new intermodal terminals) must be analyzed for their potential localized impact on air quality. This is normally accomplished as part of the environmental analysis undertaken to comply with the National Environmental Policy Act (NEPA). The FTA Regional Office can provide guidance on how to analyze the localized air quality impacts of various bus projects.

Many bus category projects are exempted from the conformity requirements because they are presumed to have a negligible effect on regional and localized air quality. The grant applicant should refer to the Environmental Protection Agency (EPA) regulations governing the conformity process, for a complete list of exempt projects. There may be cases in which a normally exempt transit project will require an air quality analysis and a conformity determination; hence, the grant applicant should review the proposed project with the FTA Regional Office to decide whether an exemption is appropriate. FTA's exemption determination is usually made in consultation with the agencies responsible for the area's air quality attainment plan.

- **Real Property Acquisition and Relocation Assistance.** If a grant applicant intends to use Federal financial assistance in a project which will require real property, the applicant must provide assurances--required by Sections 305 and 210 of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act)--that it will comply with the Uniform Act and with U.S. DOT implementing regulations.

The 49 C.F.R. Part 24 regulation is a government-wide regulation that applies to all Federal or federally assisted activities that involve the acquisition of real property or the displacement of persons. As such, the regulation is specific in naming certain actions that must be taken to achieve uniformity in the treatment of property owners and displaced persons. Grantees in the process of planning a federally-assisted project that will require the displacement of persons should be aware of the need for relocation planning during the early stages of project development.

In addition to the requirement for early relocation planning, following is a list (not exhaustive) of other actions required by 49 C.F.R. Part 24:

- No person (individual, family, partnership, corporation or association) will be required to move without at least 90 days' advance notice.
- In the case of persons displaced from residences, the 90-day notice must also include the availability of at least one comparable replacement dwelling.
- All displacees--both business and residential--are reimbursed for moving expenses.
- There must be as many residential dwellings available as there are families who will be displaced.

- The dwellings must be comparable to the ones from which the families are displaced. In addition, the comparable replacement dwellings must be decent, safe and sanitary; located in the same area or in areas generally not less desirable in regard to public utilities and public and commercial facilities; reasonably accessible to the displacee(s) places of employment and within the financial means of the displaced families.
- Replacement housing must be open to all persons regardless of race, color, religion, sex, or national origin.
- Before making an offer to the property owner, the grantee must first establish market value of the parcel to be purchased. Market value is to be established through a current appraisal and appraisal-review.
- No owner shall be required to surrender possession of real property without either payment of the agreed purchase price or deposit of the established just compensation in condemnation court, with the deposit available to the owner.
- The grantee must expeditiously reimburse property owners for actual, reasonable, and necessary expenses incidental to transfer of title.
- If the acquisition leaves the owner with an uneconomical remnant, the grantee must offer to acquire that remnant. An uneconomical remnant is defined as a parcel of real property in which the owner is left with an interest after the partial acquisition of the owner's property, and which the acquiring agency has determined has little or no value or utility to the owner.
- Any decrease or increase in market value caused by the project or caused by the likelihood that a particular property is to be acquired for the project will be disregarded in determining just compensation for the property.

One may contact an FTA Regional Office for a copy of the Uniform Act, itself, in its amended form. One may also download a copy of 49 C.F.R. Part 24 from the GPO website at: "www.access.gpo.gov/su_docs/aces/aces140.html."

In addition, the grantee should inform itself of state laws regarding compensation for real property and requirements for relocation of persons and personal property.

Prior FTA concurrence must be obtained for property transactions in excess of \$250,000; for administrative settlement acquisitions exceeding current market value by \$50,000; and for initiating condemnation action. The effects of contamination should be investigated prior to taking title. FTA Circular 5010.1C, "Grant Management Guidelines," lists program management requirements.

Real property may be contributed as part of the local matching share. Credit can be allowed only for that portion of the property needed to carry out the scope of the project. Federal funds must not have been used to purchase the property proposed as local matching share. The contribution-in-kind property will be valued at its current market value and when incorporated into the project will be subject to the same reporting and disposition requirements required of all project property.

■ **Requirements Related to Bus Facilities.** FTA assists in building two categories of bus facilities:

- Facilities that support transit operations, such as maintenance garages and administrative buildings, and
- Facilities that provide passenger amenities and extend into the urban environment, such as bus terminals, stations, shelters, and park-and-ride lots.

FTA supports projects that are transit-related; an applicant will need to justify costs that are only indirectly related to transit. FTA participates in those portions of a project most physically and functionally connected to transit and, generally speaking, does not participate in the costs outside the "transit footprint" of a development project.

- **Treatment of Intermodal Facilities.** With regard to intermodal facilities, FTA will participate on a pro rata basis, based on the public transit use or portion of the project. FTA assistance for parking is generally limited to parking for transit passengers or ride-sharing. FTA funds may not be used to support parking for shoppers or sports events unrelated to transit usage. To ensure that Federal funds appropriated for transit purposes are used as Congress intended, FTA may require a grantee to reserve FTA-assisted parking areas for transit users. Incidental use of parking areas, however, may be acceptable; an example of acceptable incidental use would be weekend use by shoppers of a parking area normally restricted for transit users during the week.
- **Facility Size.** FTA's general policy is to provide assistance for facilities that are adequate for the grant applicant's present needs and that will meet in a realistic way the needs of the future. Thus, for a transit agency that at the present time operates 20 vehicles, a request for a bus maintenance garage that will accommodate 20 vehicles and have space for a 10 to 25 percent growth would be considered an acceptable grant request. For the same transit agency, a grant request for a garage for 40 vehicles would not be acceptable, unless the transit agency was absolutely committed to expanding its fleet to 40 vehicles. However, the purchase of enough land for the future expansion of the fleet and the garage may be justifiable.
- **Project Staging.** When applying for a grant to build a facility, a grant applicant must be able to fully describe the project and estimate the cost of the facility. Often the best method for proceeding is first to request funds for facility design and engineering and, where allowable under FTA's environmental requirements, for acquisition of real estate, and later to apply for a grant amendment for construction funds when the cost of construction can be accurately estimated.
- **Planning Justifications.** There must be a planning basis for every project or for every group of projects. Planning studies at varying levels of detail should be undertaken in support of projects to acquire, install, or construct major transit facilities. In the grant application, a grant applicant may choose to cite in reference and summarize pertinent parts of documents in which results of project studies were reported (for example, transportation plans, unified planning work programs, and management systems). FTA may request copies of studies or summaries of study results upon reviewing a grant application. Possible items to be considered in planning studies include:
 - Passenger Shelters -- Passenger shelters proposed at load and transfer points, park-and-ride stations, employment concentrations, and housing concentrations for the elderly and persons with disabilities are eligible for FTA assistance. A program for bus shelters should be developed for the existing and proposed

network based on the operator's shelter criteria, and, in the case of significant increases, should be described in the grant application. A map indicating the transit network and shelter location should be developed and be available.

- Transfer Facility or Transportation Center – The basis for a new transfer facility or transportation center should be documented in a planning study. Elements would include a determination of transit demand and other use, an evaluation of existing transfer facilities or sites to satisfy existing and future transit needs, evaluation and selection of sites if a new facility is warranted, preliminary concept design and cost estimate of the transit transfer facility, development of a staging and financing plan, and environmental documentation for the new facility.
- Park-and-Ride Facilities -- The basis for a new park-and-ride lot should be documented in a planning study. Generally, activities would include an evaluation of demand and service needs, evaluation of sites to satisfy existing and future transit needs, preliminary concept design of the park-and-ride lots, development of a staging and financing plan, and environmental documentation for the new facility.
- Maintenance and Administrative Facilities -- The basis for new maintenance and administrative facilities or major expansions or renovations of existing facilities should be documented in a planning study. Activities would include an evaluation of the condition and adequacy of the existing facility, development of site evaluation criteria, identification and evaluation of alternative sites based upon site evaluation and design requirements, final site selection and preliminary concept building design, environmental documentation, and the development of a staging and financing plan.

8.3 Site Approval and Design Issues

8.3.1 Expected Timeframe for a Bus Facilities Project

The following is a prospective timeline for an FTA-assisted bus facilities project. If one assumes that the project is to construct a new bus facility and that a preferred site has been selected by the grant applicant, then the following timeline may be helpful, according to FTA guidelines:

Table 8. Timeframe for Bus Facilities Project	
Milestone	Time Required
Planning Study, Environmental Impact Study, Conceptual design completed	6 to 12 months, for projects costing up to \$10 million
	12 to 24 months, for projects costing up to \$40 million
Design/Engineering	3 to 6 months, for projects up to \$10 million
	12 to 24 months, for projects costing up to \$40 million
Construction	12 to 18 months, for projects up to \$10 million
	24 to 36 months, for projects up to \$40 million

Some factors that might expedite or delay the project include availability of local share, environmental requirements, site selection (sometimes a major delay), design review process, various construction permits, construction problems, labor relations, and local politics. Grant applicants applying to FTA for financial assistance for any one of these phases should also include in their calculations the FTA grant application review period.

8.3.2 Conceptual Design Process

Central to addressing these and other issues is involving stakeholders and concerned community members during the earliest stages of the facility design. Successful transportation centers have been constructed or refurbished in a number of urban environments in North Carolina in the last decade, commensurate with the increasing recognition of the importance of passenger rail service to the mobility choice and economic vitality of their surrounding environs. The large number of interests in the development and impacts of the WMMTC indicate that an inclusive design process is warranted, both to gain support for the project and to make the structure a favorable element of the community in general. The following charrette process has been recommended for this project, and is described in the chart and text below.

1. Attend and/or facilitate up to three meetings on-site in advance of the charrette to collect information and meet with stakeholders.
2. Prepare public relations materials for the advertisement of the charrette including posters, postcards, letters, and press releases.
3. Facilitate a pre-charrette kickoff workshop approximately one week in advance of the charrette. This workshop will present the initial analysis of the sites as well as establish primary goals and objectives for the design of the station and the surrounding property.
4. Conduct a multiple day public planning and design workshop. During the charrette the Consultant will need to:
 - Serve as the primary facilitator, leading and coordinating all public meetings;
 - Assist in the planning and design of the proposed station(s) with Urbahn during the charrette; and
 - Lead the detailed planning and design of the blocks surrounding the station. Typical drawings include a detailed plan showing suggested building forms and up to three perspectives.
5. A post-charrette public workshop will be held for the purpose of presenting the charrette findings one additional time to participants who were not able to attend the closing presentation during the charrette. This meeting is typically held approximately one-two weeks following the charrette.
6. The preparation of the final report will include the refinement of all graphics produced during the charrette and the writing of appropriate narrative. In addition, a master plan project poster and placemats will be prepared for use in education and marketing of the plan.
7. Additional meetings with a stakeholder advisory committee and/or government boards/commissions should be planned to steer the process.

Site approval must be gained through standard City of Wilmington permitting processes, including driveways, zoning, and occupancy procedures. Current height restrictions and proposed future changes must be accounted for in the design process, but are not anticipated to appreciably affect any foreseeable design concepts identified for the WMMTC. The current zoning for the recommended site (and all downtown sites; see *Figure 10*) is Central Business District (CBD), which permits many kinds of uses but does apply important rules on architectural, historical, and massing integrity of new structures. Rather than imposing restrictions on the facility design, this code provides an excellent starting point for considering materials, architecture, height relationships, and streetscaping. It is for this reason that the entire CBD zone description (Wilmington City Code Section 19-31) is repeated in its entirety in Appendix C.

Figure 9. Sample Four-Day Charette Schedule and Process*

8:00	Team Arrives	Breakfast	DESIGN	Breakfast	DESIGN	Breakfast		
9:00		9:00 Interest group meetings and interviews		9:00 Interest group meetings and interviews		DESIGN	DESIGN	
10:00 11:00	Set up Design Studio							
12:00	Lunch	Lunch				Lunch		Lunch
1:00	1:00 Tour of Project Area and Overview by Local Staff 3:00 Market Study Presentation	1:00 Interest group meetings and interviews				DESIGN		DESIGN
5:00	Dinner	5:30 Pin-Up Session and Project Update				5:30 Pin-Up Session and Project Update		Close-Up Studio
6:00		Dinner				Dinner		Dinner
7:00	Opening Presentation by the Consultant	3.1 DESIGN		3.2 DESIGN		Closing Presentation by the Consultant		

*source: The Lawrence Group

8.4 Potential for Complimentary Development

Successful transit environments frequently include complementary land uses that support ridership by bus and rail. Transit investments such as the Wilmington Multi-Modal Transportation Center (WMMTC) and proposed bus and rail services, have the potential to influence land development and create economic benefits that can be captured with proper planning, an integration of transit oriented development (TOD)/transit joint development (TJD) strategies around stations, and a favorable real estate market. These benefits may include increased economic activity (i.e., employment, shopping, and demand for services), increased property values, and redevelopment of existing buildings and infrastructure. Likewise, creating a transit-friendly environment and the development of complementary land uses around transit stations can help support and potentially increase ridership by bus and rail. Together, transit investments combined with complementary land use development can create a synergy that stimulates additional land and economic development and increased transit patronage.

This section examines the potential impacts of transit investments on land development by exploring the relationship between rail/multi-modal transit and property values found in prior studies. Next, TOD and TJD are defined and the potential benefits of these strategies are discussed. This section concludes with a discussion of TOD/TJD strategies that are applicable to the potential site areas and an assessment of development opportunities adjacent to and near the sites.

8.4.1 Property Value Impacts of Transit Investments

To the degree that transit investments confer travel-time savings and enhance accessibility, theory holds that these benefits will get capitalized into increased land values and market rents. Many studies have been conducted nationwide that explore the impacts of rail and multi-modal transit on property values over the past twenty years (see Table 9). Overall, studies have shown a positive relationship between transit investments and residential and commercial property value increases.

Some key highlights include:

- System implementation of the proposed Baltimore Regional Rail System is anticipated to generate a combined increase in regional property values of \$641 million to \$1.19 billion.
- In studying the light rail system in Dallas, Texas, Weinstein (2002) found that the median value of residential properties located near a station increased by 32.1 percent between 1997 and 2001 while residential properties not located near a station increased by 19.5 percent.
- In Santa Clara County, California, Cervero (2001) found that the value of a square foot of commercial space located within walking distance of a light rail station was 23 percent higher than the mean and the value of a square foot of commercial space located within walking distance of a commuter rail station was 120 percent higher than the mean.
- In Washington, D.C., Rybeck (1981) found that office properties immediately adjacent to heavy rail stops, commanded a \$2 per square foot price premium. The author noted an even higher premium for suburban condominiums adjacent to two metro stops in Arlington, Virginia.
- In a June 2003 study entitled *Economic and Impact Analyses of Station Revitalization*, NCDOT examined property values in Burlington, NC related to a transit station revitalization and concluded that there was a 25 percent increase in property values resulting from the improvements.

Figure 10. Wilmington Zoning Categories. Source: City of Wilmington, NC, Planning Department



Table 9. Transit Center Developments and Property Values: A Summary of the Literature

Notes: As reported in *Impacts of Rail Transit On Property Values*, Roderick B. Diaz, Booz-Allen & Hamilton Inc., McLean, VA.

Source: *The Louis Berger Group, Inc., 2004.*

Authors	Rail Mode	Location of Transit Facility	Extent of Property Value Impact	Major Conclusions
Michaelson, Juliette (2004)	Commuter Rail	Northern New Jersey (NJT)	Properties within 1/2-mile of a NJTransit station served by the MidTown Direct service experienced appreciation at a rate of 1.41 times the rate of properties between 1/2 and 5- miles of stations	Properties within 1/2- mile of NJTransit stations with MidTown Direct service appreciated much faster than similar properties located outside the typical walking radius.
Transportation Economic and Management Systems, Inc. (2002)	Combination Light, Heavy, and Commuter Rail	Baltimore, Maryland (MTA)	An increase in regional property values in the range of \$641 million to \$1,190 million was projected, realized over a 3 to 10- year period following the proposed system's full implementation	Regional property values in the Baltimore area would be greatly increased if a region- wide rail system were implemented.
Weinstein, Bernard and Clower, Terry (2002)	Light Rail	Dallas, Texas (DART)	Median values of residential properties near rail stations increased 32.1% compared to 19.5% for those not near rail stations and for office buildings, the increase was 24.7% compared to 11.5%	Proximity to a current or future light rail station appears to have had an additional positive impact on median valuations for most classes of property.
Cervero, Robert and Duncan, Michael (2001)	Light Rail and Commuter Rail	Santa Clara County, California (VTA)	23% higher than the mean value for a square foot of commercial space if within walking distance of a light rail station and 120% higher if within walking distance of a commuter rail station	Rail transit has a significant positive effect on the value of commercial properties.
The Great American Station Foundation (2001)	Multi- Modal	Multiple locations based on population and density characteristics	Revitalization of transit stations increases property values by \$25- \$205 million in large cities	Revitalization of transit stations has a significant positive impact on property values, particularly for large cities.
Baum- Snow, Nathaniel and Kahn, Matthew E. (2000)	Multi- Modal	Multiple locations based on the existence of transit improvements between 1980 and 1990	A reduction in distance from 3 to 1 kilometers between housing units and transit stations increased rents by \$19 per month and house values by \$4972	Transit improvements and system expansions have a positive effect on housing values and ridership
Weinberger, Rachel (2000)	Light Rail	Santa Clara County, California (VTA)	Commercial properties that lie within a 1/2 mile of a light rail station command higher lease rates than those that are not	Overwhelmingly, the presence of the light rail system has conferred a rental premium on office properties that lie within its catchment or service area.
Gruen Gruen + Associates (1997)	Commuter and Heavy Rail	Chicago, Illinois (CTA & Metra)	Estimated an annualized proximity premium of \$3,400 for housing within 500 feet of transit facilities in Chicagoland	The estimated cost of proximity and transit fares are less than the estimated cost of auto ownership and parking
Cervero, Robert (1996)*	Heavy Rail	San Francisco Bay Area (BART)	10- 15% higher rents for rental units within 1/4 mile of BART station	Units within a 1/4 mile of the Pleasant Hill Bart station rented for around \$34 more per month than comparable units farther away.
Landis, John, et al. (1994)*	Heavy Rail	San Mateo County (Caltrain)	Negative effect on proximity to Caltrain	The extent to which a rail system captures ridership from its market area affects the extent to which property values are increased. Also, Frequency of service and regional accessibility affect the amenity of a rail system.
	Heavy Rail	San Francisco Bay Area (BART)	Plus \$1.96 to \$2.29 per meter closer to BART station	
	Light Rail	Sacramento (RT)	No discernible impact	
	Light Rail	San Jose (VTA)	Negative \$1.97 per meter closer to light rail (this effect may be due to proximity to industrial and commercial uses)	
	Light Rail	San Diego (MTS)	Plus \$2.72 per meter closer to Trolley	
Gatzlaff, Dean and Smith, Marc (1993)*	Heavy Rail	Dade County, Florida (Miami Metrorail)	At most a 5% higher rate of appreciation in real estate sales value compared to the rest of the City of Miami	Residential values were, at most, only weakly impacted by the announcement of the new rail system. Also, higher priced neighborhoods have experienced greater increases in property values near Metrorail stations while declining ones have not.
Al- Mosaind, Musaad, et al (1993)*	Light Rail	Portland, Oregon (MAX Eastside Line)	Plus 10.6% for homes within 500 meters of stations	Where transit plays a minor role, transit's impacts on property values are minimal. Also, positive effects of accessibility are stronger than the negative nuisance effects.
Nelson, Arthur (1992)*	Heavy Rail	Atlanta, Georgia (MARTA East Line)	Plus \$1000 on home prices for each 100 feet house is closer to a rail station in low- income transit adjacent census tracts and a slight negative effect in high- income tracts (although this may be due to proximity to industrial uses or to low- income neighb	For lower- income neighborhoods, the benefit effects of accessibility more than offset any nuisance effects. Also, higher value homes may be more sensitive to nuisance effects than by improvements in accessibility.
Voith (1991)*	Commuter Rail	Southern New Jersey (PATCO)	Plus 10% premium for median home price in census tracts served by rail line	Proximity to commuter rail service has some positive effects on median home values.
		Suburban Philadelphia (SEPTA)	Plus 3.8% premium for median home price in census tracts served by rail line	
Baic, Vladimir (1983)*	Heavy Rail	Toronto (Spadina Line)	\$2,237 premium for the average home near a rail station	Commute time savings contributes most to home value premiums.

Although not all studies have found beneficial impacts such as those described above, rail transit and multi-modal transit facilities have demonstrated a generally positive impact on property values, particularly for residential and commercial office uses. Furthermore, recent studies tend to confirm transit, particularly rail, affects property values most significantly in regions with relatively high concentrations of central business district employment.

Development of the WMMTC and proposed bus and rail services have the potential to significantly impact the attractiveness of property around the Center and connecting stations. Several of the proposed sites are adjacent to North Third Street, which, upon completion of the Martin Luther King, Jr. Expressway, will become the central gateway into the City's core. Creating a structure with high design standards at any of these locations, such as has been done in a number of other cities in North Carolina and elsewhere, will strengthen the sense of significance of the downtown core. This increased attractiveness can be anticipated to lead, in turn, to improved property values and stimulate new development and/or redevelopment of properties adjacent to and near the WMMTC and connecting stations. Through proper planning and supportive public policies; inspired architecture and urban design; and favorable market forces the WMMTC could further encourage investment, secondary development, and trigger growth in the valuation of commercial properties.

8.4.2 Transit Oriented Development and Transit Joint Development

Transit oriented development (TOD) is compact, mixed-use development near new or existing public transportation infrastructure, generally within ¼- to ½-mile of a transit station, that provides the densities, diversity of activities and convenient pedestrian linkages to support transit ridership. Within the broader scope of TOD lies transit joint development (TJD). According to the Federal Transit Administration (FTA), TJD is "any income-producing activity with a transit nexus related to a real estate asset in which FTA has an interest or obtains one as a result of granting funds." Furthermore, FTA defines TJD projects as "commercial, residential, industrial, or mixed-use developments that are induced by or enhance the effectiveness of transit projects."⁴ Generally speaking, TJD is development located directly on or adjacent to a transit facility site and involves a formal agreement or arrangement between a public transit agency and a private party. An example of a TJD is a private developer purchasing the air rights above a multi-modal transit facility to construct a mid-rise building that includes a mix of office and residential uses.

While there are several benefits associated with TOD and TJD, such as enhanced mobility choices, reduced rates of vehicle miles traveled (VMT) and increased economic activity, the primary benefit for transit is increased ridership. Several studies have shown that living and working near transit stations correlates with higher ridership. Key findings from these studies include:

- In the San Francisco Bay Area, Cervero (1994) found that those living near transit were generally three-to-four times more likely to commute by transit than other residents.
- Research conducted in metropolitan Washington, D.C., and Toronto found that station-area residents had higher market shares than other residents, with transit capturing more than half of all commute trips made by apartment dwellers living near rail stops (JHK and Associates 1987, 1989; Stringham 1982).
- In Portland, Oregon, a survey found that nearly 80 percent of residents living near a light rail station indicated that their transit usage had increased since moving into their new residence (Arrington 2000). Higher ridership was partly attributable to homebuyers receiving annual transit passes when they purchased homes near the station. While these survey findings do not indicate the magnitude of ridership impacts, they do reveal that proximity to transit induces increased transit usage for most residents.

⁴ For more information regarding FTA's definition of TJD and using FTA funds to implement TJD projects, visit http://www.fta.dot.gov/legal/guidance/circulars/9000/963_1225_ENG_HTML.htm.

Pursuing TOD and/or TJD strategies at and around the Multi-Modal Center site will help create an environment supportive of transit and potentially increase transit ridership, especially for the proposed rail service. Together, these strategies combined with the transit investments proposed in this study can turn the WMMTC and surrounding area into a socially and economically vibrant place, creating a destination for people to live, work, shop and visit.

8.4.3 Strategies to Encourage TOD/TJD

Many transit and land use planning professionals and practitioners are convinced that TOD and TJD can result in substantial benefits, some of which were discussed in this section. For them, understanding ways to effectively implement successful TODs and TJDs is of the highest importance. While research shows that a favorable real estate market is essential for successful TODs and TJDs to be implemented, several strategies and tools can help with implementation. These include:

- Supportive public financing and taxation policies – A conducive fiscal environment is vital to the implementation of TOD and TJD projects. A growing number of public agencies recognize this and have developed financial and tax incentives to create a more conducive fiscal environment and encourage TOD and TJD projects. These incentives include grants, impact fees, tax abatements, direct public sector financial participation, benefit assessment districts, tax increment financing and loans.⁵
- Supportive land use and zoning policies – Land use and zoning policies that support and encourage TODs and TJD projects include land assembly, swaps and banking; sale or lease of development rights; municipal zoning changes; planned urban developments (PUDs); and transfer of development rights (TDRs).
- Implementation of complementary infrastructure – Complementary public improvements, such as sidewalks, landscaping, parks and civic plazas, and underground utilities, can spur private-sector investments. Government grants can be used to upgrade infrastructure, improve connections between stations and surrounding neighborhoods, and generally spruce up the immediate area around a transit facility.
- Procedural and programmatic approaches – There are several procedural and non-land use-based strategies that can be pursued to encourage and help implement successful TODs and TJDs, including streamlining the development review process and giving priority to TOD and TJD related projects; assisting with remediation; sharing resources to offer cost savings through economies of scale; locating government facilities at or near transit stations; and implementing Transportation Demand Management (TDM) measures that promote alternative modes of travel (e.g., transit).
- Long-range planning – While the aforementioned tools and strategies will help implement TODs and TJDs, the long term success of TODs and TJDs is partially dependent on long-range land use and transportation planning. TOD and TJD strategies need to be incorporated into an active comprehensive planning process to ensure that the strategies are integrated into the long-range vision of an area. Without this integration, TODs and TJDs run the risk of becoming islands in a sea of auto-oriented land use development.

The aforementioned strategies and tools can encourage and help implement successful TODs and TJDs. While a favorable real estate market is essential, utilizing these strategies and tools when the real estate market is flat or anemic will help set the stage for implementing TODs and TDJ projects once the market turns favorable. Institutionalizing and consistently pursuing these measures regardless of the state of the real estate market is the most effective way to ensure the implementation of successful TOD and TDJ projects.

⁵ For more information regarding these incentives and the strategies and tools discussed below, see APTA's *Transit Resource Guide*, which can be found at http://www.apta.com/research/info/briefings/briefing_8.cfm, and TCRP's *Transit-Oriented Development and Joint Development in the United States: A Literature Review*, which can be found at http://trb.org/publications/tcrp/tcrp_rrd_52.pdf.

8.4.4 Local Development Opportunities

The development of complementary land uses in and around the proposed WMMTC through sound TOD and/or TJD strategies can help support and potentially increase ridership by bus and rail. Some of the key factors considered in determining development potential are availability of vacant or underutilized land; existing land ownership structure; proximity to downtown and other activity generators, particularly those that are within walking distance and have the potential to generate increased transit usage; consistency with local land use and economic development plans (e.g., the *Vision 2020 Plan*); connectivity to existing transit services; and the presence of compatible uses (i.e., restaurants and food service providers, dry cleaners, retail shopping opportunities, and visitor destinations). Based on these factors and others, a preliminary assessment of development potential for each of the proposed WMMTC sites was conducted. Findings from this assessment are summarized below.

- Site 1: Existing RR Museum and Convention Center Retail Space – Overall, development potential at and around this site is favorable for several reasons, including close proximity to downtown and other major destinations, adjacent to the future Convention Center site, presence of complementary land uses (e.g., the Railroad Museum), the properties are controlled by a single owner, consistency and compatibility with the Downtown Plan and proposed extension of the River Walk, and the availability of vacant and/or underutilized land. On the down side, this site is not well connected to the existing transit system and developing the Multi-Modal Center here would require the rerouting of several existing services.
- Site 2: Police Headquarters Site – The 2001 Study found that this site had the greatest development potential, including the possibility of an effective joint development arrangement, due to its proximity to Cape Fear Community College and the Wilmington Railroad Museum (both of which have expressed a need for expansion); proximity to downtown; and the retail market appeal of the site; especially given the presence of a growing number of students and staff at the College and potential expansion of the Museum. While these factors have a positive influence on development potential, there are additional factors, one of which arose after the 2001 Study, which reduces the development potential of the site. These include transfer of land ownership from the City to the CFCC. This site serves as a critical linkage for the CFCC campus and currently provides student parking.
- Site 3: 2nd and 3rd Street Site adjacent to Police Headquarters – The development potential of this site is very similar to that of Site 2. Positive factors include proximity to downtown and other major destinations (i.e., proposed Convention Center, Wilmington Railroad Museum, and CFCC), the retail market appeal of the site, and consistency and compatibility with the *Vision 2020 Plan*. On the down side, this site would require the rerouting of existing bus services, there are multiple parties controlling the land, and the western portion of the site serves as a critical linkage for the CFCC.
- Site 4: CFCC Parking Lots North of the Railbed – Overall, the development potential at and around this site is moderate at best. The site is not well connected to the core downtown retail areas, but does have good access to the proposed convention center site if additional streetscaping and pedestrian accommodations were used to enhance the viability of Hanover Street as a pedestrian corridor. Additionally, the site consists of over 600 surface parking spaces that would need to be offset by a new parking structure, possibly limiting the development of complementary land uses unless they were reintegrated into a site redevelopment plan. The degree to which this site could accommodate joint development also depends on if it could be used in conjunction with Site #3.
- Site 5 and 6: 3rd and 4th Street Site (South and North of Railbed) – Overall, the development potential of these sites is unfavorable due to the relatively poor proximity to downtown and other major destinations, presence of several businesses that would need to be relocated and buildings that would need to be demolished, and the need to reschedule and reroute the downtown trolley. While the overall development potential is unfavorable, these sites are well-integrated with existing bus service and there are multiple redevelopment opportunities surrounding the sites. In addition, North Fourth Street has been undergoing a major transformation for the past decade that includes new streetscaping and redevelopment of formerly abandoned buildings.

In summary, sites 1, 2 and 3 have the most development potential of the six potential downtown locations. While these sites require the most extensive investments in terms of rail infrastructure and rerouting of existing bus services; their proximity to downtown and other major destinations; consistency with local land use plans and other planning initiatives; and market appeal for new development and/or redevelopment make the overall development potential of these sites favorable.

Appendix A. Resources and References

Section 2. Project History

The Atlantic Coast Line Railroad Company. "The Story of the Atlantic Coast Line". 2000.

Hoffman, Glenn. Building a Great Railroad: A history of the Atlantic Coast Line Railroad Company". 1998.

Kernan, Charles. "Rails to Weeds: Searching Out The Ghost Railroads". 1995.

City of Wilmington. "A Community Plan: NorthSide". July 2003.

EDAW, Inc. "Wilmington Vision 2020: A Waterfront Downtown". September 2004.

Rich & Associates, Inc. "2002 Parking Study Update." 2002.

Kimley-Horn and Associates, Inc. "Wave: Short-Range Transit Plan". April 2004.

Parsons Brinckerhoff Quade and Douglas, Inc. "The Wilmington Urban Area Multi-Modal Transportation Center Feasibility Study". May, 2000.

Research Triangle Institute, Center for Geosciences, "City of Wilmington Brownfields Assessment Pilot Project Report 2000-02". May 2002.

North Carolina Department of Transportation. "Southeastern North Carolina Passenger Rail Feasibility Study: Technical Report." May 2001.

Section 5. Area Evaluation

AECOM Consult and North Carolina Department of Transportation, "Economic and Fiscal Impact Analyses of Station Revitalization". June, 2003.

Section 8. Implementation

Al-Mosaind, M., Dueker, K. and Strathman, J. 1993. *Light-Rail Transit Stations and Property Values: A Hedonic Price Approach*. Transportation Research Record 1400, pp. 90 – 94.

Arrington, G.B. 2000. Reinventing the American Dream of a Livable Community: Light Rail and Smart Growth in Portland. Washington, D.C.: Paper presented at 8th Joint Conference on Light Rail Transit Investment for the Future, Transportation Research Board.

Bajic, V. 1983. *The Effects of a New Subway Line on Housing Prices in Metropolitan Toronto*. Urban Studies, Vol. 20.

Baum-Snow, Nathaniel & Kahn, Matthew E., 2000. *The effects of new public projects to expand urban rail transit*. *Journal of Public Economics*, Elsevier, vol. 77(2), pages 241-263, 8.

Cervero, R. 1994. Transit-Based Housing in California: Evidence on Ridership Impacts, *Transport Policy*, Vol. 3, pp. 174-183.

Cervero, R. 1996. *Transit-Based Housing in the San Francisco Bay Area: Market Profiles and Rent Premiums*. Transportation Quarterly, Vol. 50, No. 3, pp. 33 – 47.

Cervero, R. 2002. *TCRP Research Results Digest 52: Transit-Oriented Development and Joint Development in the United States: a Literature Review*. Washington, D.C.: Transportation Research Board of the National Academies. http://gulliver.trb.org/publications/tcrp/tcrp_rrd_52.pdf.

Cervero, R. and Duncan, M. 2001. *Transit's value-added: effects of light and commuter rail services on commercial land values*. Transportation Research Board, 81st Annual Meeting presentation. http://www.apta.com/research/info/briefings/documents/cervero_duncan.pdf.

Diaz, R. 1999. *Impacts of Rail Transit on Property Values*. Booz Allen & Hamilton Inc. Mclean, VA.

Gatzlaff, D. and Smith, M. 1993. *The Impact of the Miami Metrorail on the Value of Residences near Station Locations*. Land Economics, Vol. 69, No. 1, pp. 54- 66.

Great American Station Foundation. 2001. *Economic Impact of Station Revitalization*. <http://www.stationfoundation.org/pdfs/EI%20Study%20final%20report.pdf>.

Gruen Associates. 1997. *The Effect of CTA and Metra Stations on Residential Property Values*. Regional Transportation Authority. JHK and Associates. 1987. Development-Related Survey I. Washington, D.C.: Washington Metropolitan Area Transit Authority.

JHK and Associates. 1989. Development-Related Survey II. Washington, D.C.: Washington Metropolitan Area Transit Authority.

Landis, J., Guhathakurta, S. and Zhang, M. 1994. *Capitalization of Transit Investments into Single-Family Home Prices*. Working Paper, University of California Transportation Center, 38pp.

Michaelson, J. 2004. *Walk and Ride: How Midtown Direct has Affected Residential Property Values within Walking Distance of Train Stations*. A thesis submitted to the faculty of Columbia University in partial fulfillment of the requirements for the degree of Master of Science in Urban Planning.

Nelson, A. 1992. *Effects of Elevated Heavy-Rail Transit Stations on House Prices with Respect to Neighborhood Income*. Transportation Research Record 1359, pp. 127-132.

Stringham, M. 1982. Travel Behavior Associated with Land Uses Adjacent to Rapid Transit Stations. *ITE Journal*, Vol. 52, No. 1, pp. 18-22.

Rybeck, W. 1981. *Transit-Induced Land Values: Development and Revenue Implications*. Economic Development Commentary (National Council for Urban Economic Development), 5, 1 (October): 23-27.

NCDOT Rail Division in association with AECOM Consult, *Economic and Impact Analyses of Station Revitalization, June 2003*

Transportation and Economic Management Systems, Inc., *Baltimore Regional Rail Rent Study, 2002*.

Voith, R. 1991. *Transportation, Sorting and House Values*. AREUEA Journal, Vol. 117, No. 19.

Weinberger, R. 2000. *Commercial Property Values and Proximity to Light Rail: Calculating Benefits with a Hedonic Price Model*. Washington, D.C. Paper presented at the 79th Annual Meeting of the Transportation Research Board.

Weinstein, B. and Clower, T. 1999. *TCRP Legal Research Digest 12: The Initial Economic Impacts of the DART LRT System*. Washington, D.C.: Transportation Research Board of the National Academies.

Appendix B. Stakeholder Interview Summaries

September 27, 2004

Frank Funk, President, Board of Trustees and Sadie Hood, Executive Director
Wilmington Railroad Museum

The North Carolina Department of Transportation (NCDOT) had generally promised funding to help move the museum's contents, including locomotive/tender, caboose, lathe and all external artifacts, to another location if that was the decision. The museum's operators do not want to see the facility moved to another location, but if they are to move then there will need to be adequate space for the preserved locomotive equipment. They are generally in favor of moving to the Police Headquarters site, since it is close enough to tourism activity and the proposed convention center to generate visitors.

The museum currently operates on a year-to-year lease, and went up by \$24,000 in 2003 (note: Charles Carver is the property owner and leasing agent for this property and adjacent Coastline Convention Center properties). When asked about the stability of their current leasing arrangement, they expressed satisfaction that the property owner would continue to work with them to arrive at an optimum arrangement. Their current plan is to keep operating for three more years until the convention center opens, providing additional revenue. The museum's operators are hoping that a longer-term lease or other property will provide long-term security for the museum. In the past, they have received small grants from CSX and the City of Wilmington, which have helped cover some costs.

The Wilmington Railroad Museum has considered a number of options for financing the ongoing operations of the Museum, including being a County- or City-funded operation. Comparable county-run facilities have large staffs and more financially secure. The Board of Directors would prefer to remain a privately-run entity until such time as the location and probable influence of the Convention Center can be assessed.

Bill Penny, Mark Tinkler, Jim Flechtner, Don Bennett, and Hugh Caldwell

City of Wilmington Transportation and Utilities

Development Services

City of Wilmington

305 Chestnut Street

PO Box 1810

Wilmington, NC 28402-1810

The purpose of locating the station downtown is to help revitalization efforts, with the potential market for train riders being retirees, tourists. Business riders will be limited due to the low level of frequency of train service. Shuttle bus service is needed, even extending to Wrightsville Beach, to help generate ridership. If stimulating downtown redevelopment is not the main objective, then finding a different location away from downtown may be a viable option again. It was suggested that the existing "Y" south of Market Street and East of Kerr Avenue may be a logical location, since it would share the site of the future bus transfer center and be conveniently located for a number of destinations. This site would pose a major disruption for vehicular traffic when trains came through the City, temporary closing Market Street, Kerr Avenue and other major roadways. A downtown station would also pose disruption to a number of streets, but is a preferred location for accessibility to core train passenger markets. The Wilmington Multi-Modal Transportation Center is seen as an accessory project to other north end developments.

The City had requested an easement from Fifth to Front Streets in order to place a 48"-diameter force sewer main. The width of the requested easement was 30 feet. The costs of moving a portion of this force main to Second Street would exceed \$400,000 over the requested alignment.

Residents and a school (Dorothy B. Johnson, a year-round middle school) in the vicinity of a downtown location will not perceive the disruption the train causes favorably, and would need to be worked with closely to ensure that they understand the low levels of noise and vibration from modern, urban train operations. This disruption can be minimized in part due to the low frequency of train operations, concrete ties, noise mitigation, and slow speeds as the train passes. The site east of Third Street (Red Cross and Campbell) would need to consider poor existing street radii, pavement conditions, narrow lanes on Campbell Street, and controlling on-street parking so as not to introduce sight distance problems. Some of these issues, such as on-street parking, are within the control of the City. This is in addition to the primary concern about getting people and vehicles across Third Street, complicated by the vertical curve on the Third Street/CSX Bridge and higher traffic volumes anticipated when MLK, Jr. Boulevard opens to traffic. A brief discussion about the condition of the Third Street/CSX Bridge was discussed, with the general opinion being that the bridge needed some level of repairs although the extent of those repairs (whether cosmetic or structural) is not fully known.

Susi Hamilton, Executive Director

Wilmington Downtown (formerly DARE, Inc.)

225 South Water Street

PO Box 2235

Wilmington, NC 28402

910.763.7349(T) susihamilton@wilmingtondowntown.com

Ms. Hamilton stated that she had concerns about finding an appropriate site for the Wilmington Multi-Modal Transportation Center after the land transaction agreement between the Cape Fear Community College and City of Wilmington. Although a location west of Third Street would be an important enhancement to the City's redevelopment plans, a location east of Third Street would be difficult to design properly to overcome the perception that it is cut off from the core areas that riders would like to arrive at should they choose to come by train to Wilmington. Furthermore, the Center would be a hindrance to redevelopment activities in this area, which has seen renewed interest of late. Finally, Ms. Hamilton felt that the location east of Third Street would not serve the proposed convention center site very well as it is too far distant and the perceptions of isolation due to the Third Street barrier would be difficult to overcome. The cost of acquiring property would be high, perhaps prohibitively so, in several locations.

Ms. Hamilton did not foresee a large business contingent using a train to get to Wilmington, instead seeing the market as being made up primarily of day-trippers for recreational purposes. The access provided by Interstate 40 is too good for a rail service to be really competitive to the private automobile, although this condition may change in the very long-term (more than 30 years). Both the business and tourism components will be required to make the proposition of passenger rail service work in Wilmington. In no way is she interested in a bus-only facility, although there is a recognition that passenger rail service would only go into the facility at a later date.

The (Cape Fear) Community College is emerging as a potential barrier to both east-west and north-south accessibility to the core retail and business centers of downtown Wilmington. There are no identified access points to get across the campus at this point in time. From this standpoint, the closer to the proposed convention center that the Center can be located the better, since that would help develop the business market potential of the service and increase accessibility to the downtown. Joint development of a shared parking facility with CFCC might attract them to enter into an agreement to acquire property to develop a station site, as might improved pedestrian conditions for their students. (Note: Ms. Hamilton cited figure of 6,000 students attending the downtown campus with an average age of 29 years, and that State statutes prevented the campus from charging more than their current rate of \$38/student for parking fees). She was not able to verify or deny statements made by CFCC that students were not using the existing WAVE (Wilmington local) transit services.

A downtown trolley service with 10- to 15-minute headways would be a critical addition to get people from the north end of town to the south, possibly traveling up Fourth Street to form a circulator pattern. Ms. Hamilton is aware of several examples (Rocky Mount, Wilson, and Salisbury) of where multi-modal stations have done "right" and have been a strong benefit to their communities. She also cited Norfolk, VA as an example of where a strong transit circulator system (electrified trolley) has been implemented. The current trolley has a very low ridership.

September 28, 2004

James Quinn
Wilmington City Council

The purpose of the passenger rail line is not to get people between Wilmington and Raleigh, but to get people to the AMTRAK service and points on the AMTRAK system. The real benefit of passenger rail service in Wilmington won't be realized until gas prices or congestion levels increase to the point that it is prohibitively expensive to travel by automobile on Interstate 40. Mr. Quinn felt that the Wilmington Multi-Modal Transportation Center would be a catalyst for many different kinds of development.

The main passengers on a rail system would be conventioners. This observation is based on his experience that he rarely travels alone to conventions out-of-town. The existing Wilmington Police Station site is ideal because it is close to the proposed convention center property. Mr. Quinn noted that there are currently discussions of a cruise ship docking in Wilmington. This could also provide an ancillary market for rail passengers linking to the ship.

The downtown trolley/circulator is a good way to link the north and south ends of the downtown in Wilmington, and gives more flexibility to the siting of the Wilmington Multi-Modal Transportation Center. Rental car availability on or near the site of the station would also provide more flexibility to the traveler. Additionally, there needs to be strong consideration of a parking structure adjacent to the facility/station.

Laura Padgett
Wilmington City Council

Ms. Padgett feels that the downtown is the only viable place for the Wilmington Multi-Modal Transportation Center. The airport site is limited in its development potential due to noise and land use restrictions. She also noted that the Carroll Carolina property has been sold to different owners. Ms. Padgett has reservations about the site east of Third Street as well, since Third Street provides a difficult barrier to cross into the heart of downtown, constitute a negative impact on adjoining properties, and will have less development potential than other locations. Ms. Padgett suggested that at this point, any site would need to require condemnation of property to be reached or to allow for the movement of passengers once they have left the facility. At this point, her opinion is that Site 3 is the most viable location, noting that there is rental housing currently on-site. She also suggested that Site 4 would be more amenable to trolley/circulator bus service.

The Cape Fear Community College has suggested that they would like to close Front Street to vehicular traffic, which, combined with the consolidation of property, would foster a situation where there is a rich, privately-oriented north end and a poor, retail-oriented south end of downtown. CFCC is a very important component to the critical mass for development and ridership for circulator/trolley service.

She continued by stating that the WMMTC needs to be much more to the community than just a train station and a bus stop. The WMMTC needs to be visible from a distance in downtown, so that travelers know their way to the station. The number of train passengers and joint development opportunities depends heavily on the quality of the station design and the level of marketing the service receives. The amount of vendor activity on the site is a factor in its utility. Ms. Padgett suggests that business travelers would take advantage of the time spent on the train, and that tourism would be an important component to the passenger rail market as well.

Ms. Padgett voiced a general concern about being sidelined by high speed rail service without this proposed connection to the AMTRAK system. She felt that Myrtle Beach is a short enough distance away that it presents a tempting opportunity for federal officials to consider that as the primary destination for rail service.

Theresa Walker and Louis Green

North Fourth Street Partnership and Residents of North Fourth Street Community

Louis Green: 910.763.5291

Ms. Walker and Mr. Green explained their histories with the North Fourth Street Community: Ms. Walker had been a resident for 80 years; Mr. Green was the current chairman of the Partnership.

Any downtown site for the WMMTC poses some hardship for the community; the major concerns about the WMMTC focus on traffic congestion and noise from bus and train operations. The WMMTC should be in a place that is on the other side of town due to the fact that a downtown site would cause more traffic congestion. Loop buses could handle traffic to and from the convention center and other destinations – today's more mobile society is accustomed to making those connections. For example, taxis are pretty universal at every big hotel.

The Carroll Carolina site is the best place for the WMMTC. Locating the facility on North Fourth Street is a bad idea due to the fact that this street will be a major retail-oriented traffic artery. There is still a need for many services that the community has talked about for many years but never received: grocery store, drug store, laundromat, day care, neighborhood center, and eating establishments. The black community doesn't get what it asks for but instead gets what it didn't ask for.

Safety, drug use, and crime levels are major concerns in the community; a new police chief may change things for the better, but they will have to wait and see if that is true. Training young people for jobs are needed, especially now that a major community grant program has been halted due to tax cuts. Loans are being developed for small businesses in the area, and there are more new facilities being built oriented towards the people of the community like the African-American Heritage Museum (corner of 4th and Harnett Streets).

Dexter Hayes, Planning Director

New Hanover County Planning Department

There is some justification for an airport location for the WMMTC, but that was eliminated early on due to the improbability of passenger rail patrons choosing to switch major modes of travel. When coming to the area, there is a desire to end the trip in Wilmington, regardless of if they are going to visit nearby beaches or other areas. Although not all multi-modal centers are located in downtowns, most are (cited Greensboro as a near-downtown location). Even UNC-W students and day-trippers would make Wilmington-Raleigh trips by train if the option were available.

There is a pressing need to preserve the rail corridor for access opportunities into the future if for no other reason. Placing the location east of Third Street (Sites 5/6) is probably too far distant from major walking destinations, even though it is only one block away from the other sites. However, if this is the only downtown choice then it is still preferable than a site that is not located in the downtown core area.

The economic benefits are real (if located in a downtown area), but will probably be just a train stop for some time. Some benefits would be realized by PPD employees, who are perceived as making frequent trips to Raleigh/RTP and Washington, DC. However, Mr. Hayes did state that he never interpreted the WMMTC as a major economic generator like a commercial airport, although it could support some eating establishments.

September 29, 2004

J. Leslie Bell, Planning Director
Brunswick County Planning Department
PO Box 249
Bolivia, NC 28422
910.253.2033 (T) lbell@brunsko.net

Mr. Bell explained the rapid pace of growth in Brunswick County. Sewer service is available in many, disconnected parts of the County and provided by several municipalities and sanitary sewer districts. These various providers are being consolidated into a county-wide authority that is providing sewer service to the county with a phased implementation plan. In Brunswick County, many new people are retirees 50 years in age or more that moved to Brunswick County for its access to beaches, golfing, and so forth. There are pockets of younger people that are moving to the east side of the County to access urban area jobs in the area and in New Hanover County. There are virtually no large industries in Brunswick County so the market is primarily tourists. The County has been focusing on attracting smaller businesses. There is also some discussion of locating a commercial airport in Brunswick County; the concept of jointly siting the WMMTC and this airport are attractive, but may not be feasible to do in close enough proximity to an urban area to make the transit station function to its potential.

Mr. Bell does not know the exact location of the original site of the proposed WMMTC; staff in the Town of Navassa may know. Brunswick County has become very supportive of bicycle transportation connecting the East Coast Greenway and County parks to residential areas. At this point, there is not a true, traditional downtown in Brunswick County. Mr. Bell believes that consolidating two or more of the small towns in the County and the completion of the I-40 Bypass would be needed to form a true downtown. The WMMTC would require higher subsidization and might count against locating the facility in the County. The biggest need for public transportation is in the northern part of the County where there is already basic bus service, and, later, in the southern part of the County. Given the 10-year time frame for constructing the WMMTC, Navassa may be a good candidate site due to the completion of the I-40 Bypass.

Allen Pope, Division Engineer
NCDOT Highway Division 3

Mr. Pope was asked to comment on the most significant concerns that he had from an NCDOT perspective on traffic operations and roadway conditions that may be impacted on by the Wilmington WMMTC. His biggest concern was preserving capacity on major corridors.

In general, he anticipated that vehicle access and capacity could be readily provided for if either the Airport location or the Navassa location were selected, although he acknowledged that both of these locations would require a shuttle system that could serve most passengers since very few destinations were in walking distance. For the Carroll Carolina location, he indicated that access could also be provided, but indicated that site access would need to be provided in such a way as not to restrict access or introduce delays to traffic utilizing the bridge US 76 Cape Fear River bridge crossing. Mr. Pope saw similar issues with respect to access at downtown sites. His particular concern in the downtown area was preserving the functionality of the 3rd Street and Market Street corridors.

As part of this discussion, potential signalization of the 3rd Street/ Hanover intersection was discussed combined with a discussion of the 3rd Street bridge that introduces a crest vertical curve on the northern approach to this intersection. He indicated that in order for a signal to be constructed it would first need to meet signal warrants (as outlined in the Manual of Uniform Traffic Control Devices). In addition, a proposed design would need to meet required safety guidelines including sight distance. In general, however, if a safe design could be shown, NCDOT would not be against installing a traffic signal.

Mr. Pope also provided information on the condition of the 3rd Street bridge. In general, he confirmed that the canopy structure under the bridge is in place to protect cars from having small pieces of concrete falling from the older sections of the bridge structure. Despite some concrete spalling and cracking, the bridge is structurally sound and sufficient. No replacements or improvements are planned or anticipated for the bridge at this time.

Albert Eby, Director
Cape Fear Public Transportation Authority
PO Box 2258
1110 Castle Street
Wilmington, NC 28402
910.202.2035(T) aeby@wavetransit.com

The Wilmington Transit Authority and New Hanover Transportation Services have been dissolved, and are being replaced by the Cape Fear Public Transportation Authority (CFPTA). This organization is independent of local government, and is currently in the process of obtaining its Designated Recipient status from FTA. CFPTA will own and operate the entire public transit system. The current fiscal year operating budget is approximately \$4.5 million; the total budget is \$13 million accounting for capital facility acquisition.

A downtown transfer center would have as many as 16 vehicles entering/exiting the site in a one-hour period: four fixed routes on 30-minute headways; two trolleys on 20-minute headways; and an airport shuttle vehicle on 30-minute headways. These figures are based on the recently-released short-range transit plan. For these reasons, local transit service needs to be tightly integrated with site design decisions. The CFPTA would assume control over the funding acquisition and maintenance of the facility. Generally, they are not opposed to joint development opportunities on-site (cited Greensboro and Rocky Mount as examples).

The CFPTA has openly approved of a downtown location for the transit center site, necessary to maintain its current schedule of buses operating in this area. Contrary to some opinions voiced during the planning process, Cape Fear Community College (CFCC) students do use the public transit system (for example, LTV route to the campus carried 275 passengers in August, 2004). Any site east of Third Street would require an access through the existing rail corridor to make it workable. Mr. Eby is very optimistic about the economic feasibility of the project, citing a 90-10 split for federal earmark on the WMMTC. This would include funding a parking structure, and recouping revenue streams from parking fees. However, the local match may be difficult to acquire now that the Wilmington Police Department building has been lost to the City.

In terms of working with the Cape Fear Community College to develop any site adjacent to the campus, historically they have been difficult to compromise with on any solution. The relationship between the CFPTA and North Fourth Street Community has been waning over the past year; objections to sites east of Third Street may be hard to mitigate. With regard to a Kerr Avenue rail facility, Mr. Eby said he is not immediately opposed to the idea but feels that operations for train sets are not feasible or practical on that site.

The trolley service has been fairly successful during the summer tourist season, averaging 4,000 riders per month (25,000-30,000/year). The service is comprised of two vehicles (now owned instead of leased) that run on 20-minute headways.

Tom Cunningham, Director
Greater Wilmington Chamber of Commerce
Herb McKim, Daniel and Pearl Retchin, Gene Merritt, Scott Cromarte, Susi Hamilton, David Nathans also present

The site needs to go downtown, but there was considerable discussion about the merits and impacts of various sites. A downtown site would ensure rail service for future generations of Wilmingtonians and connect to the southeast high speed rail corridor network. The land swap between CFCC and the City of Wilmington has made the location decision much more difficult, perhaps impossible. Any site will be very expensive now to acquire. One person suggested that Site 2 (WPD) should be condemned and used over the wishes of the CFCC.

Sites 5/6 were opposed strongly by some present due to the conflict with proposed redevelopment opportunities now underway, to fill in gaps in retail opportunities and make the street "whole" again. Some noted that this site met with strong opposition from concerned residents when initially suggested. Some of the retail opportunities long desired by the residents of North Fourth Street are now becoming a reality. Optimally, the WMMTC

should have been built in conjunction with the proposed new convention center to achieve a mutually beneficial effect. Some expressed that Site 4A had the best potential of any site shown on the map at this point. Other sites discussed included:

- WWAY TV station, which has expressed an interest in relocating and being a willing partner in acquisition for the WMMTC; it was noted that this small site would only work if additional property was acquired to the south of the station.
- The two properties that the City of Wilmington is gaining in the deal with CFCC were also mentioned as strong possibilities for consideration, due to (1) less disturbance to residents/businesses; and (2) adjacency to major new, proposed developments. There was a degree of consensus that this site offered the best potential at this point in time. The most flexible opportunities are with Sites 3 and 4A.

J. Kevin Denny, Senior Long-Range Planner

Planning Division, City of Wilmington

PO Box 1810

305 Chestnut Street

Wilmington, NC 28402-1810

910.341.5800(T)

Kevin.Denny@ci.wilmington.nc.us

Mr. Denny noted that he was not working in Wilmington during most of the time the WMMTC studies were being conducted. Agreed to speak to Mr. Wayne Clark, Planning Director, who has been with the City for six years and would be more familiar with specific issues.

The WMMTC needs to be in a downtown location to provide a strong base for ridership, which the developments at the convention center and Almont properties would provide. Generally, the hope for transit is limited by very low densities in the City (average of 2.5/homes per acre). As tourism is the key to the economic future of Wilmington, linking the City by rail to northeast population centers is an important function of the WMMTC.

The new Vision 2020 comprehensive land use plan is much more detailed than the older plan it replaced, which was mainly policy-directed. Mr. Denny believes that the City must get more vertical and dense in order to support transit populations. The hope for downtown is to have more retail opportunities in the north end of the downtown to attract families and pedestrian traffic. Mr. Denny feels that Sites 4A and 4B are the best, as well as sites north of CFCC and east of the PPD properties.

Lethia Hankins, Councilmember

Wilmington City Council

910.395.0074 (H)

The primary market for passenger train service are business people (professionals) and not blue collar workers; some tourists and conventioners (once a new convention center is constructed).

The WMMTC needs to be constructed in downtown to help revitalize the development of the north side of downtown. Sites 5/6 are preferred; most adjacent properties are rental or businesses. These sites would help generate economic renewal in the area, and she would prefer them if the WMMTC would help revitalize the area. This would be true even if the WMMTC would primarily be a bus station for the first 10 years of its life before adding passenger rail service. She recognizes that a shuttle service would be required to get people between the WMMTC and the proposed convention center and retail locations. Ms. Hankins never favored Site 2 (WPD) since it would have divided the CFCC campus (Ms. Hankins serves on the CFCC Board of Trustees). She wants to ensure the safety of students and continued growth of the student population of CFCC. Working with CFCC is possible, and both Ed Krueel and Dr. McKeithan can be reasoned with in discussions of shared facilities. The CFCC must be approached properly.

She is very familiar with the North Fourth Street area, and feels that the Eden's Institute, boxing center, and cultural arts center are signs of progress.

Bill Saffo, City Councilmember
Wilmington City Council
3901 Oleander Drive
Wilmington, NC 28403

The synergism of development downtown with convention center, tourists, and shoppers makes a downtown location very important for the WMMTC. Locating the WMMTC downtown in a walkable area is a sensible decision.

Mr. Saffo prefers Sites 5/6 since they are not too far distant to walk to Front Street and retail opportunities to the south and the proposed convention center to the north. Students at CFCC could also use the bus service. The convention center would enjoy benefits of passenger rail service as well. Site 3 is also a good choice, but Site 4 should be seen as a last resort since it would take longer to acquire the property from CFCC. Mr. Saffo does not feel that CFCC could be enticed to participate in a joint development effort; they have not done so in the past and he would be surprised if they would change their minds now. Mr. Saffo expressed interests in the transit potential of Wilmington, facts about the passenger rail service, and transit-oriented development opportunities.

Spence Broadhurst, Mayor
Wilmington City Council

Mayor Broadhurst feels that the site must be located on a downtown site to get support for the WMMTC and to make it functional. He believes that Sites 5/6 are great sites for the WMMTC and can spur economic growth in the immediate neighborhood. He does not feel that Third Street poses a significant barrier, or is one that could not be overcome. Regardless of which downtown site is developed, a shuttle service would be required to move people out of the WMMTC to destinations downtown – no business person would walk even two blocks with a suitcase. The current trolley system is a good system that should be enhanced.

The market for passenger train riders is not Raleigh residents or business people. If there is a national trend for rail service then the riders will largely originate from the northeast. Mayor Broadhurst is not bullish on the prospect of passenger rail service to Wilmington or in general.

He believes that Site 3 is too close to the CFCC and will be difficult in terms of property acquisition. Site 4 (4A and 4B) is "off the table" and he does not believe NCDOT will proceed with condemnation of land of another state-owned property. CFCC has plans now to construct classroom space on this land with individual parking structures underneath each building. He believes that the challenge in working with CFCC is to replace classroom space, not lost parking opportunities. He has attempted to talk with CFCC about a parking structure independent of the classrooms. Mayor Broadhurst thought that CFCC would be willing participants in discussions about selling some land for access through the existing railbed, but he will not reopen negotiations at this time to change the original deal that he had verbally agreed to with CFCC. At this time, there is pressure on CFCC to put more funding into their north campus, and that they may have some difficulty in acquiring significant new funds to develop the downtown campus in the near future.

October 1, 2004

Elvis Latiolais, General Manager
Carolina Trailways

Mr. Latiolais quickly affirmed that he was strongly in favor of a downtown location for the WMMTC, and that any of the downtown locations could be made to work for his operations. He stated he has no interest in operating Trailways out of Wilmington International Airport, and that in other areas such as Durham, North Carolina sales have actually dropped when relocated away from downtowns. Downtowns are easy to locate, convenient with local transit services, and have good walking access. Without being located in a downtown area, there is very little exposure for transit services. When asked about the airport site specifically, Mr. Latiolais reiterated that there is no synergy between intercity buses and airports, and that there is insufficient traffic at the Wilmington International Airport to make such a location worthwhile. In general, his passengers would complain about the distance from downtown.

In terms of space requirements, four covered tracks would be needed for Trailways buses, although three might be sufficient if space is constrained. Facilities are not only acceptable to be shared with rail, but it is actually preferred since it makes the facility more efficient and use less space (citing Williamsburg, Wilson, and Durham as examples). Since Wilmington is a terminus, no refueling or dumping facilities would be required. The waiting area needs seating for 30 people. Overall, about 1,450 square feet is needed, all of it on the ground floor of the facility:

<u>Area</u>	<u>square feet</u>
Waiting Area	736
Manager's Office	108
Storage Locker	76
Driver's Waiting Area	66
Ticketing	180
<u>Baggage & Packaging</u>	<u>290</u>
<i>Total</i>	<i>1,456</i>

Parking requirements for Trailways operations are: 20 spaces for short-term parking and six more for employees and loading/unloading passengers under a 15' canopy.

Bus routing would change very little for any downtown site, especially on the east side of Third Street (Sites #5 and #6) since they already traverse Fourth Street. At present, approximately 200 passengers/day board or alight in Wilmington; this number increases to 300/day during peak holiday seasons. The transit markets are the elderly, tourists, and UNC-W/CFCC students. This market is similar to that for a train as well, since business travelers generally need access to a private automobile, in his opinion, as well as many travel options and high frequency of service.

November 1, 2004

Wayne Clark, Planning Director
Wilmington Planning Department

Mr. Clark was asked to comment on the viability of a downtown location as opposed to one outside of the downtown core. He stated that there is insufficient critical (population) mass in Navassa to have a viable rail station located there; the Carroll Carolina (Page Oil) site has access issues and is too far from downtown. The Wilmington International Airport, during the initial studies, did not work for local buses since a branch line would need to provide access. In general, he felt that the downtown was the right location among the alternatives provided.

The market for passenger rail riders is outside of his area of expertise, but two groups are thought to be amenable to using such a service: weekend visitors/tourists and business people as well (the convention center may spur increased ridership among the latter group). He's not sure that major passenger rail traffic between Raleigh and Wilmington is imminent; it would be a major leap to convince people to use transit. It will have to compete against the private auto and therefore be time-competitive.

Sites 5/6 would seem to work almost as well as either Site 4 or Site 3 - one block won't make a difference if people are traveling more than two hours by train to reach their destination. Facility design is going to be very important to gain acceptance of the site regardless of location. The North Fourth Street connections will have to be designed very carefully to integrate the WMMTC with a mixture of uses (Mr. Clark cites Charleston, SC as an example of a good joint development opportunity that has been implemented). Height restrictions are in place in these downtown sites and it is a fractious issue. They are going to be re-written to accommodate citizen concerns in early 2005, but the current restrictions should not impede the development of a multi-story structure.

(Note: Additional contacts were made with Mark Ziegler and Maggie O'Connor during this week to investigate possible brownfield redevelopment and sites of historical interest, respectively.)

Dr. Eric B. McKeithan, President
Cape Fear Community College (910.362.7555)

(The following responses were elicited from Dr. Eric McKeithan to questions posed by Scott Lane during a telephone interview. Only minor alterations were made to correct spelling and to make formats compatible.)

The WMMTC needs to be at the airport, since shuttles, an active rail line and taxi service are already present there. Most people won't be going to downtown destinations that use the passenger rails service, they will be going to beaches and other places accessible by automobile. The first study unfairly limited the sites to be considered to the Wilmington Police Department site. The need for the WMMTC has never been firmly established, even to the city leaders. The number of passengers for a one-way trip, based on relevant survey information, is about 50 passengers, which could be accommodated by one Trailways bus. Population densities in Wilmington do not support train service according to literature on the topic that Dr. McKeithan has seen.

The major competition for passenger rail service will be with the intercity bus service; few people will take the train after the inaugural runs. The surveys that were taken were 'cheerleading' efforts and did not accurately reflect the real market for non-high speed rail service. The market will not be tourists, and business travelers will not suffer the 3-4 hour travel and stoppage (dwell) time. In the first study for the WMMTC, people tried to get CFCC to support the intermodal station and prove that it would be a benefit to the students, but the CFCC students are primarily local. CFCC does not market outside its home counties, mainly New Hanover and Pender. Hence, CFCC students would not be expected to utilize passenger rail service as it has been described.

CFCC cannot get funds to construct on state-owned property for parking decks. The problem with sharing a deck under the initial proposal whereby CFCC would give up 300 spaces and get 400 in return but would lose the ability to build vertically for decks, classrooms, laboratories, and so forth in

the coming decades. The Trustees of CFCC are planning long-term, 35-40 years, hence swapping the air rights for 100 extra parking spaces is not acceptable.

The only real benefits of the WMMTC and the associated transportation services would be to provide transportation services to those people that don't have other means of transportation. If there is a lucrative market between Wilmington and Raleigh, why doesn't Trailways install an express bus service? New taxes will have to pay for a new building and facility, but Dr. McKeithan is not sure if more people will be using the service. Local buses come right to CFCC near the library and health sciences building now and have been for many years. The most people they ever saw using the bus was 6-7 over the course of an entire day. Their students live all over the county and had jobs and homes dispersed throughout the community before they ever enrolled at CFCC. The Front and Red Cross intersection is already bad (reported as one of the worst 25 accident intersections in North Carolina at one point), and the traffic impacts from a successful WMMTC facility would make the intersection of Front and Red Cross even worse. A one-or-two block difference would make a potentially significant difference in the traffic effects at this location.

In terms of appropriate sites as shown on the map provided, Sites 1 and 2 are essentially off the table due to problems related to ownership; Site 3 has been granted an easement to the County for sewer, contingent upon a pathway being allowed to access between Sites 2 and 4A. Dr. McKeithan stated that he isn't sure if Site 4 is available at all. Sites 5 and 6 are preferred (of the downtown sites) if the 100 spaces that would be lost to CFCC can be offset somewhere else. Pedestrian traffic could use the existing signal at Red Cross and Third Streets. Shuttle service from the Hilton would accommodate passengers from the WMMTC in the unlikely event that it draws a lot of visitors. The City's free trolley service could be easily augmented to serve Sites 5/6. This is the place to put it if it will help generate new business opportunities in what is now a largely minority area of the City. The possibility of re-establishing passenger rail service to Wilmington appears to have been the driving factor behind discussion of a downtown transit center since Wilmington already has an intercity bus station in downtown that operates well below capacity, since taxis can be dispatched from any location, and since a more central transfer station for city buses is planned elsewhere in the City.

Data produced to date, needed to document the need for restoration and financial viability of passenger rail service to/from Wilmington and the need for a multi-modal transit center, is highly suspect. If reliable data establishes a clear need, then the best place for such a facility appears to be at the airport since nearly all the infrastructure---adequate highways, airlines, hotel shuttles, rental cars, taxi service, an active rail line, and ample space for additional parking---are already present, and since most prospective users of these services might have destinations other than the central business district of downtown Wilmington.

The first NCDOT "study" failed to show a link between questionable survey data obtained at two street festivals in downtown Wilmington and at a rest stop on I-40, and rail ridership on passenger train service between Wilmington and Raleigh. NCDOT nevertheless projected that the most optimistic number of passengers for a one-way trip between Wilmington and Raleigh would average about 59 passengers at some point during a 25 year planning period---just about enough people to fill one Trailways bus. If there is a need for more public transportation between Raleigh and Wilmington, why hasn't Trailways simply added an express bus service between Wilmington and Raleigh?

The first multi-modal study limited the evaluation of several "non-downtown" sites when the City's former senior transportation planner defined the WPD site as the only "downtown" site and instructed the consultant and the steering committee that the focus on the study was to be on downtown." When an additional "downtown" site of two blocks (Campell to Brunswick streets, between Third and Fourth streets) was finally added to that study, the consultant reported that some unidentified City official(s) had directed him to consider only a one-block site (between Campbell and Hanover) in his study, signaling manipulation of that first study so that only the WPD location would emerge as the recommended WMMTC site.

In the first study, some rail proponents espoused the idea that passenger rail (located at the WPD site, or in "downtown") would benefit CFCC students as a means of commuting to class. These proponents failed to realize that the overwhelming majority of CFCC students (average age of 29) lived and worked throughout New Hanover and Pender counties before enrolling at CFCC and continue to be dispersed throughout the region during and after their studies at CFCC. CFCC does not recruit outside its service area. It defied logic to believe that any CFCC students would drive from New Hanover or Pender counties to Goldsboro or Fayetteville or another train stop, in order to board the train to ride back to CFCC's Wilmington Campus.

As for local bus service, local buses already come to CFCC's Wilmington Campus, as they have for several decades. Counts of people who used the City bus service to come to CFCC found the highest daily count was 7 people, likely attributable to the limited routes of City buses and the flexible transportation needs most older CFCC students require in juggling demanding job/family/education schedules.

The WPD location was a poor choice for many reasons, including (1) a lack of on-site parking, (2) large vehicle noise and vibration not compatible with residential and educational uses of adjoining properties, (3) a lack of adjoining land for commercial development (a claimed advantage of a transit center), and (4) planned ingress/egress to/from that site located directly between two highly problematic intersections---Front and Red Cross and Third and Red Cross, ranked among North Carolina's 25 worst intersections in 2000, according to newspaper reports. Traffic impacts from a successful WMMTC facility at that location would have made both intersections worse. A difference in location of just a few blocks could make a significant difference in traffic effects, if the center must be located in downtown.

In 2000, after the City of Wilmington had hastily approved the WPD site for a transit center, NCDOT met with CFCC officials, acknowledged that the site was indeed too small to accommodate on-site parking for projected customers and employees of such a facility, and inquired about constructing a parking deck on adjoining CFCC property to serve the transit center. The CFCC Board of Trustees rejected the request, noting that CFCC's Wilmington Campus is perhaps the smallest main campus of any community college in the entire state, is extensively used during day and evening hours, and that vertical redevelopment of the campus will be required as CFCC serves an ever-growing population over the next several decades.

If there is a need, the case has not been clearly made. Population densities all along the Wilmington-to-Raleigh route are far less than those transportation experts say are necessary to adequately support passenger rail service, according to transportation planning literature. Important questions are thus left unanswered as to the real need, the future financial sustainability, and the amount and source of tax-subsidized funding that will be required for passenger rail service.

The literature also suggests that passenger rail service and intercity bus service often compete for the same public transportation market. Few people may take the train after the novelty of the inaugural run wears off, when prospective riders learn that a one-way trip between Wilmington and Raleigh will take 3-4 hours, not including stoppage time at numerous stops. Business travelers will require something far more efficient and timely than the 3-4 hour travel and additional stoppage (dwell) time and additional time and costs associated with arranging ground transportation at both ends of the service.

The most significant benefits of the WMMTC and the associated transportation services might be to provide options to those people that don't have other means of transportation, though it bears noting that city bus service, intercity bus service, air service, and taxi service are already available.

Sites 1 and 2 are off-the-table due to other announced uses: (1) convention center for site 1; and (2) site 2 is to replace 3.5 acres/264 parking spaces/40,000 sf of classrooms/laboratories CFCC has agreed to exchange with the City. The old abandoned railbed, shown as part of Site 3, is part of the exchange between CFCC and the City and will contain a sewer easement for New Hanover County and the City, needed to expand the 23rd Street sewage treatment station. The easement will be granted by CFCC, with elevations of the forced sewer lines to accommodate an entry drive over the same easement to other portions of the CFCC campus. Given the existing property exchange with the City of Wilmington and resulting expenses facing CFCC, Site 4 is no longer a consideration that CFCC could consider. Moreover, CFCC's Wilmington Campus is master-planned for long-term enrollment of 12,000 curriculum students, meaning that all existing surface parking lots will eventually be redeveloped as multi-story buildings and parking decks to enable the institution to serve future populations.

Pedestrians routinely cross Third Street at traffic lights throughout the downtown. Any pedestrian traffic headed west across Third Street from the WMMTC, if located between Third and Fourth streets, could use the existing signal at Red Cross and Third Streets to cross Third Streets. Given that hotels already send shuttles to the airport to pick up and deliver guests, the same shuttles could serve the WMMTC. Moreover, the City's free trolley could be easily routed to this location.

Appendix C. City of Wilmington Code: Central Business District

Sec. 19-31. CBD, Central Business District.

(a) *Purpose.* This district is established to create and maintain a high density commercial, office, service and residential area meeting city, county and regional needs. It encourages the full utilization of public services and contributes to the economic base of the city. The *Wilmington Downtown Plan: Vision 2020* outlines a plan for the future of downtown Wilmington in a way that balances historic preservation, maintains city character, encourages economic development, and protects critical natural and environmental resources. The plan envisions the development of a living, working, learning and mixed-use community from "bridge to bridge." The intent of the design standards is to retain the quality and continuity of existing historic buildings and the preservation of the cohesive character of the downtown area by compatible, sympathetic construction. In addition to these standards, the United States Secretary of the Interior's Standards for Rehabilitation should be considered when proposed work impacts existing historic buildings or structures. If there is documentary evidence of an architecturally significant structure that has been demolished, incorporation of elements of the removed structure into the new design is encouraged when appropriate.

The urban planning framework within which these standards apply must also be considered if the *Vision 2020* goals are to be fulfilled. There are four premises which relate to the district as a whole beyond the scope of individual parcels:

Heritage. The central business district's heritage and historic resources should be recognized and respected as evidence of past development and as contributing to the image of downtown. While new development shall reinforce the historic integrity of the district, each property shall be recognized as a physical record of its time, place and use. Some portions of the district have a wealth of historically significant structures while others have few. In addition to the context of the developed urban core, compatibility with the immediate context should be considered.

Public spaces and pedestrian scale. The central business district is to be considered primarily as a pedestrian oriented domain. The introduction of public spaces within or in conjunction with new development is encouraged. The physical boundaries defining these pedestrian zones shall reinforce the building setbacks for that area. Existing pedestrian thoroughfares such as the riverwalk shall be enhanced by nearby development with the use of pedestrian-scale features.

Circulation. New development shall reinforce the existing grid for pedestrian and vehicular thoroughfares. Development shall also be respectful to gateway areas, arrival corridors and major public destinations throughout the district. Overlays of vehicular and pedestrian oriented areas should provide safe and accessible transitions.

Districts and nodes. The central business district is comprised of different areas and nodes such as the government offices node, historic commercial areas, historic residential pockets, river industrial area and community college node. New development shall consider the immediate area identity in terms of scale and physical attributes of the developed urban core.

(b) *Density.* Multifamily--None for structures existing at the time of the adoption of this chapter; thirty-six and three-tenths (36.3) units per acre for structures built after the adoption of this chapter; all other uses--None.

(c) *Description.* With the exception of the Fourth Street extension northward, the Central Business District has historically been bounded by Red Cross Street on the north, Fourth Street on the east, Orange Street on the south and the Cape Fear River on the west. Some variations on this general area have occurred, but they are immediately related to the core.

(d) *Wilmington Downtown Plan: Vision 2020 Central Business District supplemental regulations.* In addition to the general and specific regulations imposed by this chapter on the use of property in the *Downtown Vision 2020 Plan* area, the following regulations apply to the Central Business District. The portions of the existing CBD that are also part of the existing Historic District Overlay Zone are not subject to the supplemental regulations of the Vision 2020 Plan.

For all new residential and commercial construction and redevelopment where applicable:

(1) Building orientation. All new commercial buildings and new residential construction shall be oriented towards major ways and streets to reinforce the downtown grid pattern. On corner properties, both street elevations are considered front facades for new commercial buildings. Building facades on corner lots should address the corner.

(2) Massing and development scale. Facades shall be designed to reduce the massing, scale and uniform monolithic appearance of large unadorned walls, while providing visual interest that will be congruous with the developed urban core and character through the use of detail and scale. Building massing shall have periodic transitions across the facade as needed to relate to the existing central business district developed urban core. The following design element standards apply to all new construction:

a. Building facades shall incorporate periodic transitions such as expression of structural lines with offsets or change of materials. Transitions shall be no further apart than two-thirds of the building height which will produce a vertical orientation. This shall also be the predominant orientation of fenestration within the facade. Large building facades shall be varied so that they are divided into distinct massing elements utilizing details that are perceived at the scale of the pedestrian.

b. If the height of a building exceeds the plane as allowed in section 19-39(c)(1) of this ordinance, then the scale and relationship to the existing adjacent structure shall be addressed by transitional elements such as stepped massing incorporating offsets or other delineating features relating to the scale of the surrounding context.

c. All roofs for new construction shall be a flat roof (low slope) with parapet walls, barrel roofs or have a minimum pitch of 4:12. Vertical changes from the dominant roof condition should be encouraged for facades facing a major street having flat roofs with parapet walls.

(3) Height relationships. In calculating the dimensions of a story for new construction, the following provisions shall apply: The exterior expression of the facade height at the pedestrian level, that may be distinguished by a distinct horizontal architectural member, or a change in materials or fenestration, shall not be less than thirteen (13) feet, four (4) inches. This standard does not apply to interior floor plates or structures less than two stories.

(4) Street wall definitions. New commercial and residential buildings shall be constructed immediately adjacent to or within five (5) feet of the street right-of-way unless publicly accessible landscaped spaces are required by section 19-31(d)(17). In addition, exceptions to this requirement may be permitted to align buildings with the setbacks of neighboring structures or to preserve historic public vistas. Doors, windows or other architectural elements that relate to the character of the front facade of the building shall be used on the remaining elevations visible from the public right-of-way.

(5) Building entries and pedestrian scale materials. Buildings fronting sidewalks shall have detailed facades that create a pedestrian-scale environment by marking entryways with identifiable elements that orient the structure and break down the scale of the facade, such as the use of recessed windows and entries, arcades, facade transitions, balconies, covered walkways or differentiated roof forms or wall surfaces.

(6) Street level facades. Retail stores shall front onto public sidewalks to reinforce activity levels along public streets. Window glazing shall be the predominant material in the first story of the street level facade for commercial retail development. Such glazing shall be transparent under all lighting conditions, however, spandrel or colored glass may be used in the area above the height of the door head. Storefront glazing shall extend from the sill or from a base of contrasting material to at least the height of the door head. Storefront entrances shall be recessed from the property line allowing a pedestrian space between the sidewalk and the front door. For buildings located on street corners, a corner entrance is permissible. Exterior burglar bars, fixed "riot shutters", or similar security devices shall not be installed in any new or existing commercial storefront.

(7) Exterior building materials. Acceptable exterior building materials for the CBD must be congruous with the historic context of the district. Equal or substitutive material should be consistent in color, texture and appearance to that of the original structure. Materials without a visual historic precedent in the developed urban core shall not be permitted. Vinyl siding is not permitted.

(8) Original facades. If original facade material is degraded and in need of repair, improvements shall be made with materials that are visually equal to that of the original structure. Improvements made to structures that are considered contributing resources to the Wilmington National Register Historic District or over fifty (50) years old, should apply The Secretary of the Interiors Standards for Rehabilitation. These properties may also be eligible for a rehabilitation tax credit administered by the State Historic Preservation Office.

(9) Minimum height requirement. Heights of new commercial buildings east of Front Street in areas 2 and 3 as referenced in section 19-39(c)(1) of this ordinance shall be built to a minimum of two (2) stories or a minimum height of twenty-five (25) feet, whichever is greater, for at least fifty (50) percent of the building area. The two-story, or twenty-five (25) foot portion of the building, must be adjacent to the street.

(10) Alterations. Alterations or additions to buildings and/or structures that are considered contributing resources to the Wilmington National Register Historic District or over fifty (50) years old, should apply [to] the Secretary of the Interiors Standards for Rehabilitation. These improvements shall be made in a manner and style that if such alterations were removed in the future, the essential form and integrity of the structure would be unimpaired.

(11) Parking and access. For all new construction on corner or double frontage lots, curb cuts to parking lots shall be placed on side streets, and/or to the rear of buildings, except where no other access is available. New surface parking lots shall be located to the interior sides and rear of buildings and screened from the principal street frontage by permanent walls, fences, shrubbery or hedges no more than four (4) feet in height. Chain link fences are not permitted. Landscaped islands with trees shall be interspersed throughout the lots, so that a tree will be located within one hundred (100) feet of any space.

(12) Streets, landscaping. For new commercial development, street tree plantings in below grade planters on the public right-of-way shall be included at the rate of one (1) tree for each thirty (30) feet of frontage. If the city manager or his/her designee determines there is no plaza or other space available for tree plantings in the right-of-way, or determines that the planting is problematic for the site, then a payment in lieu, equal to the cost for required trees, shall be paid by the developer into the City of Wilmington Tree Improvement Fund. All plans for street tree plantings must be reviewed and approved by the city manager or his/her designee and must be a minimum of three (3) inches in caliper.

(13) Drive-thrus and service islands. Drive-thru services and service islands shall be located in the side or rear yards. For corner lots, drive-thrus or service islands shall be located in the rear.

(14) Residential density.

- a. There is no maximum density requirement for rehabilitation of existing buildings for residential purposes, regardless of parcel size.
- b. There is no maximum density requirement for new residential construction on a site less than one-half (1/2) acre.
- c. The maximum density for new residential construction on all parcels exceeding one-half (1/2) acre in size shall be one hundred (100) dwelling units per acre.

(15) Residential garages and accessory structures. Only rear or side yard siting is permitted. The scale of the freestanding garage or accessory structure shall not be greater than fifty (50) percent of the primary structure in massing and scale.

(16) Additional treatments. HVAC equipment, air conditioning window units, and other electrical equipment shall not be located on facades with street frontage. All such equipment shall be placed in the interior yards or on the roof of the building and screened from the right-of-way. Through-wall mechanical units are permitted on any facade if they are incorporated into the design of the building,

flush with the facade on which they are located, concealed by a vent cover and have an internal drip system for condensation. Utility meters, transformers and fixed trash disposal receptacles which cannot be located out of sight shall be screened.

(17) Third Street Corridor North of Red Cross Street. In addition to the above requirements, the following requirements are intended to deter large parking lots in front of buildings and creation of a "strip" environment.

a. Setbacks. Setbacks between the Holmes Bridge and Red Cross Street shall be twenty (20) feet from the edge of sidewalks for yards fronting North Third Street. No parking is permitted in the front yard setback for this area.

b. Landscaping. Landscaping in the setback shall consist of trees, live vegetation, ground cover and shrubbery, which cover at least fifty (50) percent of its area and shall be selected from the technical standards manual or approved by the city manager or his/her designee.

(Ord. of 3-27-84, § 32-31; Ord. of 8-1-00, §§ 2, 3)