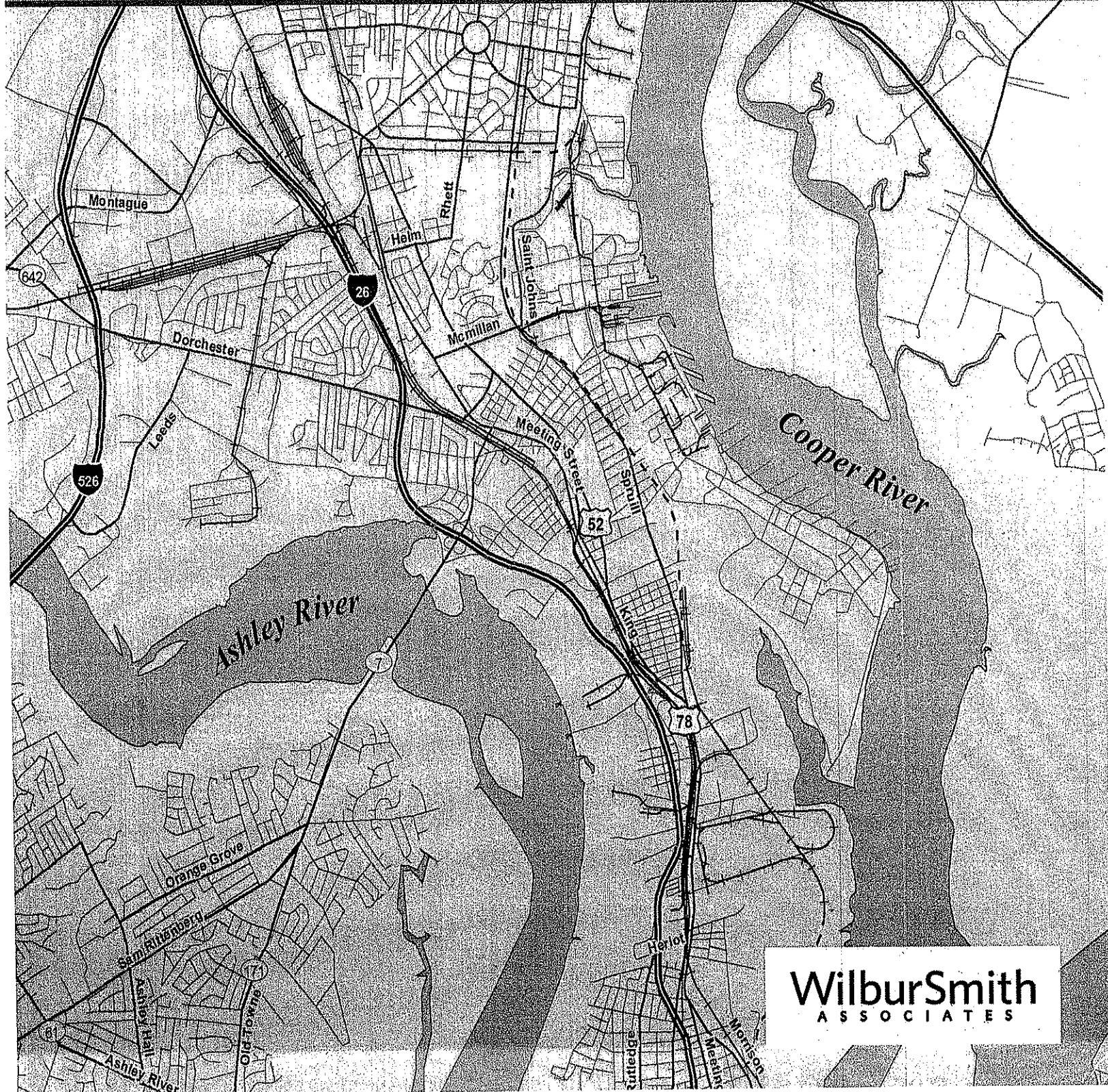


CHARLESTON NECK RAIL STUDY

Presented to: Cities of Charleston and North Charleston
Submitted by: Wilbur Smith Associates





The purpose of this study is to develop a future rail plan for "the Neck", that narrow part of the peninsula along the boundary between the Cities of Charleston and North Charleston running generally between Cosgrove Avenue and Mt. Pleasant Streets. The work effort is designed to obtain insights into the requirements for a rail system within the study area that will meet anticipated rail traffic demands from both existing and future rail users. New and expanding industries and terminals along the eastern side of "the Neck" along with potential rail commuter service, for example, are expected to place significant additional demand on the rail system. At the same time land uses in the area are being converted from industrial to less rail-compatible commercial and residential that are expected to generate significant vehicular traffic. Needed rail system improvements and modifications are identified while at the same time means to minimize impacts on future land use and roadway vehicular traffic are explored.

Charleston Area Rail System

The rail system serving the Cities of Charleston and North Charleston is depicted on the illustration on the following page compiled by the Berkeley-Charleston-Dorchester Council of Governments (BCDCOG). Three railroads are involved in operation of the rail lines shown on the exhibit - CSX Transportation (CSXT), Norfolk Southern Railway (NS), and the South Carolina Public Railways (SCPR).

Principal Rail Lines - Three rail lines enter the area in the northwest corner of the figure. The green line is the Columbia - Charleston main track of the Norfolk Southern Railway. It continues through the study area and terminates in downtown Charleston. The westernmost red line is the CSXT's "A Line", its main track from the Northeast to Florida¹. It passes through North Charleston turning west, crossing the NS main track, and exiting the area mapped along the western border of the figure at the Ashley River. The location where the two main tracks cross is known as SY Junction. The easternmost red line is CSXT's "S Line" which runs from Hamlet, North Carolina through Dillon and Andrews and passes the Charleston Naval Complex (CNC) on the west in North Charleston before joining the CSXT port line and terminating just north of Columbus Street Terminal in Charleston. It is a secondary freight line. The other rail lines on the exhibit serve local industries, marine terminals of the South Carolina State Ports Authority and private operators, and government installations.

¹ CSXT has submitted an application to the U.S. Department of Transportation to include its "A Line" as an I-95 rail corridor in the DOT's Corridors of the Future program. The CSXT corridor is one of 14 selected as a finalist in competition for five designations. The program is an element of the DOT's strategy to reduce congestion on America's transportation network. CSXT has identified the need for additional main tracks to handle the present and future demand for passenger, intercity and commuter, and freight service. Based on the application, the Corridor handles an average of 24 trains per day, including AMTRAK service, between Florence and Charleston.



Terminal Facilities – With the exception of CSXT’s Cooper Yard located on the “S Line” in the area designated as Allied Terminals on the BCDCOG map (currently used for car storage and bulk transfers) and Cosgrove Yard (used by both CSXT and NS) at the North Charleston Terminal, the other railroad facilities are located at SY Junction – CSXT’s Bennett Yard just to the west on the “A Line”, its intermodal facility just to the south, and both the NS Seven Mile Yard and its intermodal facility just to the north on the NS main.

Passenger Service – Charleston is served by AMTRAK, which operates three interstate passenger trains per day each way through the area. Station stops for the Silver Meteor and the Palmetto occur in North Charleston on CSXT’s “A Line” just north of SY. The Auto Train also runs on the same route but does not stop.

There is also local interest in commuter rail as exhibited by a 2006 assessment by the Charleston Area Regional Transportation Authority (CARTA) of such service on the NS main track from Summerville to downtown Charleston terminating at the Visitor’s Center². Although the analyses in the study are very preliminary, a reasonable amount of evidence was developed that a commuter rail service in the corridor could be viable in the future. It was also found that the geography of the

Charleston peninsular that funnels travel along a well-defined corridor – nowhere more evident than in “the Neck” – is a major contributor to the potential viability as are the area’s major residential and employment developments proposed and underway.



An evaluation of the potential for commuter service from Moncks Corner to Charleston

over CSXT’s “A Line” has been initiated by the BCDCOG. This latest study effort will also develop additional details of the potential feasibility of commuter service over the NS main line to Summerville. Both routes would make use of the I-26 - King Street – Meeting Street corridor to reach downtown Charleston.

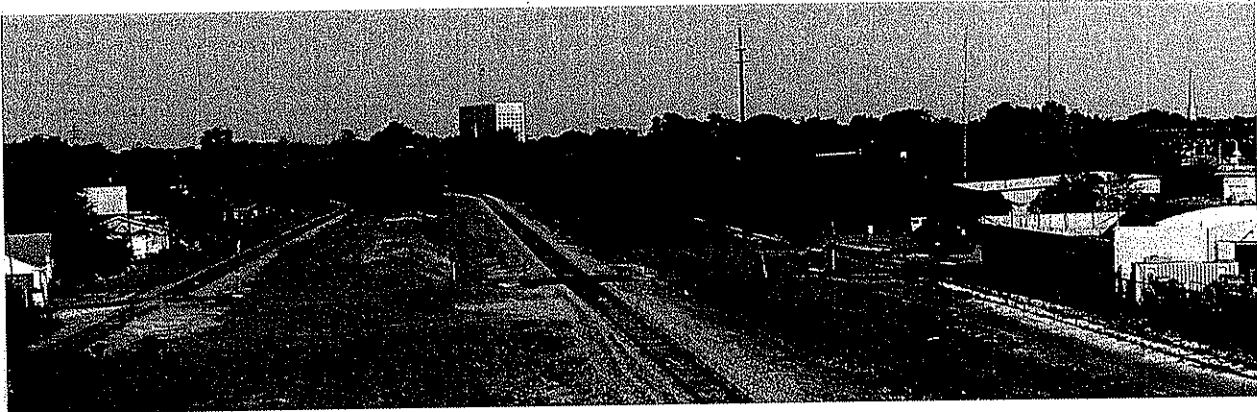
² Charleston Metropolitan Area Commuter Rail Feasibility Study prepared for the Charleston Area Regional Transportation Authority by Wilbur Smith Associates in association with URS Corporation, May 2006.



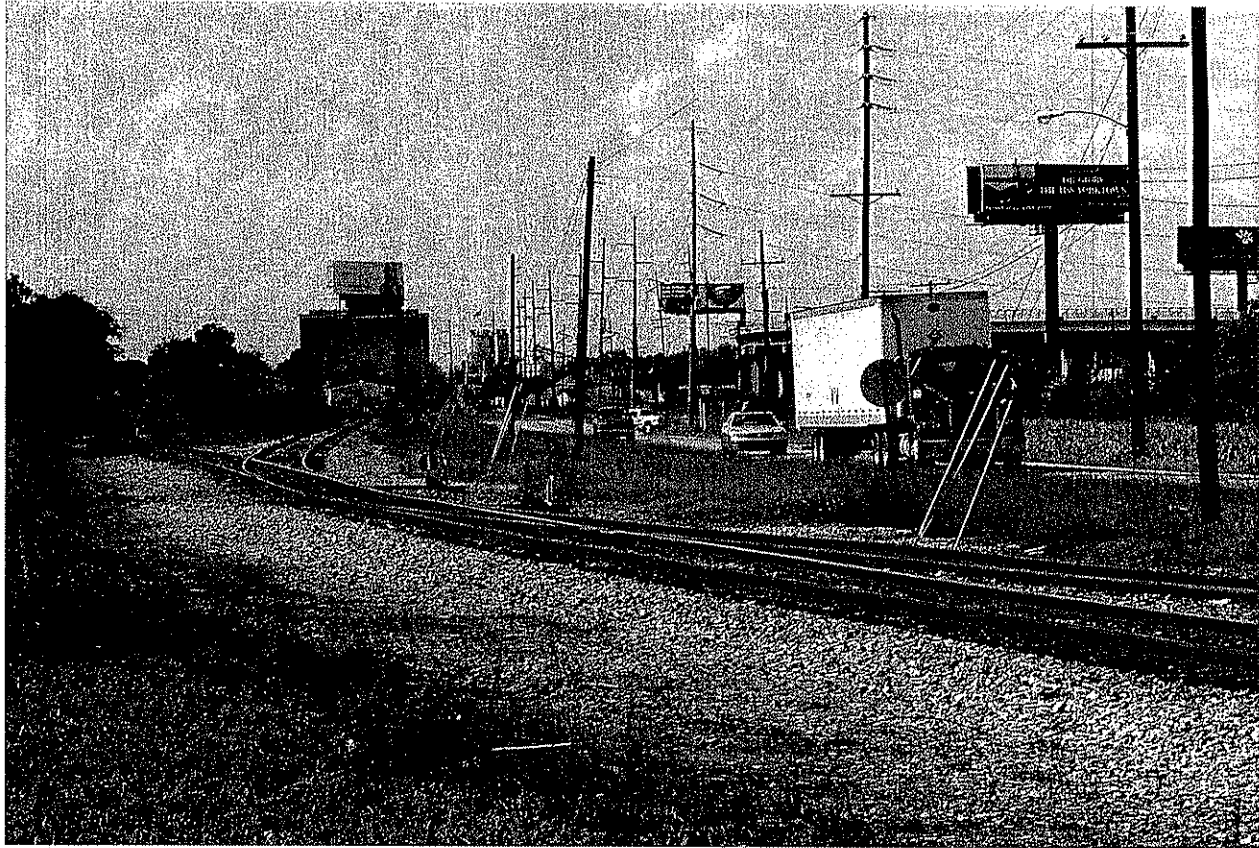
Study Area Rail System

There are four rail lines that basically run north-south in or through the Neck. The existing rail lines are a result of several consolidations over time that have resulted in the removal of a lot of redundant trackage. With the exception of one line running along the east side of the Neck, the other three lines lie in the I-26-King-Meeting Streets corridor.

Three of the four lines spring from or cross CSXT's "A line" at or in very close proximity to SY Junction (the crossing of the Norfolk Southern's main track between Columbia and Charleston and the "A Line"). The westernmost is CSXT's Downtown Lead which originates at the eastern end of the railroad's Bennett Yard and runs parallel and adjacent to I-26 initially and eventually ends up parallel and adjacent to King Street on the west serves a number of industries, the largest of which is Rhodia, Inc. The line terminates in the vicinity of Ford Ready Mix at Monrovia Street. Both railroads provide weekday service over the spur.



Lying between I-26 and Meeting Street initially are two rail lines, one belonging to CSXT (closest to Meeting) and the other to NS. The CSXT line is a remnant of predecessor Atlantic Coast Line's track to downtown Charleston and the docks of the South Carolina State Ports Authority. The line has been truncated in the vicinity of Hackerman Street before reappearing at Cherry Hill Avenue and continuing to a junction with the South Carolina Public Railways at the northern boundary of Columbus Street Terminal. The northern end of the line is the location of CSX Intermodal's Charleston terminal. The NS line is the original route of the South Carolina Canal and Rail Road Company constructed in the early 1830s. The NS line ends up in between King and Meeting Streets in the Neck and continues on between the two roadways until it terminates at Spring Street in downtown Charleston. Columbus Street Terminal and Union Pier Terminal bound NS trains cross over to the CSXT line described above near Covington Street for interchange of traffic with SCPR at Columbus Street Terminal. The NS main from that point to its downtown terminus is out of service. The joint port line is used by the NS BMW unit train 6 days per week and other port-bound trains of both railroads less frequently.



The CSXT line lying along the eastern side of "the Neck" enters the study area running parallel and adjacent to Spruill Avenue and then Meeting Street until it diverges on a route closer to the Cooper River and finally joins the joint CSXT and NS line enroute to Columbus Street Terminal. This rail line was owned by CSXT's predecessor Seaboard Air Line and thus is designated the "S Line." It is out of service except for the segment from the north end of Cooper Yard to Kinder Morgan.

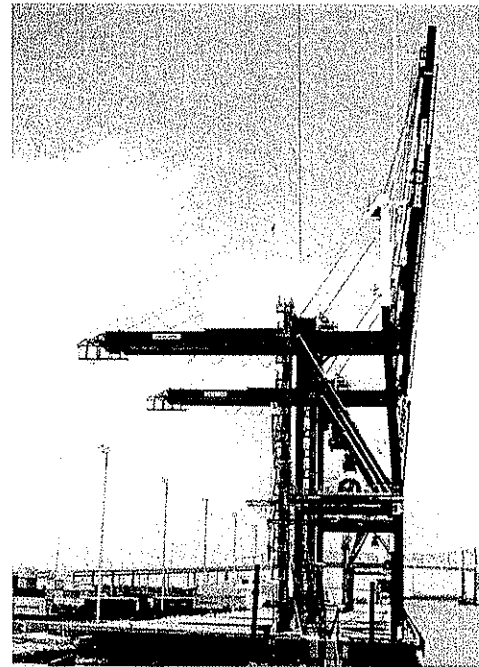
Future Rail Service Needs

As stated previously, land use in "the Neck" is changing. The dominant heavy industrial use in the past along both rivers is rapidly disappearing at least on the Ashley River side. The mixed-use Magnolia project on the Ashley River and the Promenade development on the Cooper River are examples of major non-industrial/terminal projects while SCSPA's new container terminal and the Macalloy Industrial Park are examples of projects with more traditional "Neck" land uses (major project areas are the subject of the illustration contained in the pocket following this page). In addition, there are a number of historic neighborhoods that are to be protected.



Marine Terminal Developments – The existing rail users in the study area include Rhodia, Inc. and Ford Ready Mix located on the Ashley River side and Kinder Morgan Terminals, Chevron, North Charleston Sewer District and CSXT (Cooper Yard and bulk transfer facility) located on the Cooper River side. In addition, both NS and CSXT run trains through the Neck with port-related traffic for interchange with SCPR at Columbus Street Terminal. Additional rail demand is expected from new and expanded facilities.

The recently permitted new container terminal of the SCSPA sited on the south end of the former Charleston Navy Complex will not be directly rail served but railroad intermodal facilities are located within three miles. Direct rail service, however, is desired for the nearby bulk, break-bulk and RO-RO Veterans Terminal, also located on the southern half of the former Navy Base.



An agreement on use of the former Navy property executed by the City of North Charleston and the SCSPA in 2002 specifies “The SPA acknowledges that the City does not want the SPA to utilize rail access from the north end of the Property, and the SPA will use rail access exclusively from the south end of the Property.” Current access to the CNC is through the north end of the property on North Charleston Terminal Company trackage jointly used by both CSXT and NS. Rail service on the CNC proper at the time of this report is provided by the SCPR.

Kinder Morgan is seeking approval to expand its Shipyard River Terminal and increase its coal transloading capacity from approximately 3.5 million tons to 10 million tons per year. The application is still pending.

Port Related Development – The previously referenced agreement between the City of North Charleston and the SCSPA also designates a Port Overlay District generally lying between Spruill Avenue and Shipyard Creek. The area includes the Macalloy Industrial Park, the Montenay Incinerator, and CSXT’s Cooper Yard among other properties. Based on the agreement, the City is to encourage the location of port-related activities in this area and discourage new residential development. Similar land uses are anticipated in the existing industrial area lying south of the City of North Charleston between Meeting Street and Shipyard Creek.

It is not certain what CSXT plans to do with Cooper Yard at this juncture. The railroad commented during the permitting phase for the new container terminal that while they had no



specific plans for Cooper Yard, they did expect that the property would be developed to meet needs generated by the marine facility and other area traffic. CSXT also expressed concern over clearances associated with the port access road and the improvement of a grade crossing to handle local area traffic near the north end of the yard. The location of the crossing is such that it will limit rail operations and restrict terminal development.

Development plans for the 135-acre Macalloy Industrial Park are not yet finalized either. However, land uses that would be compatible with the Port Overlay District designation are being considered.

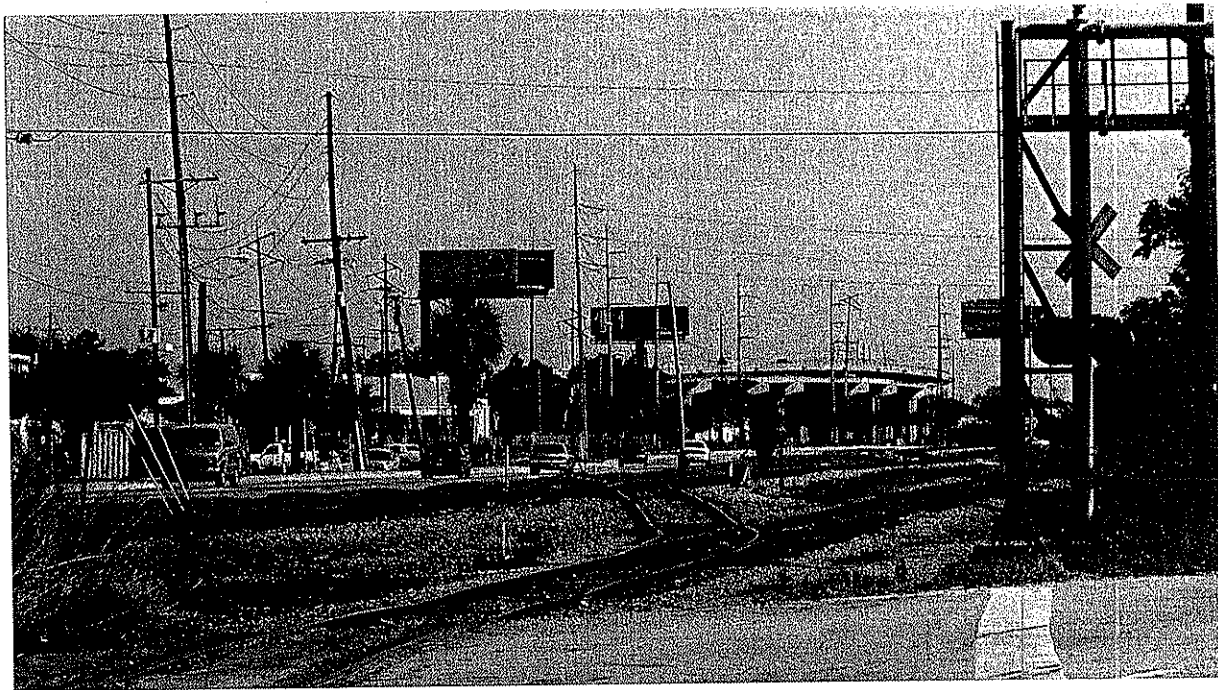
Concept Plan

Planning for rail service in the Neck Study area considered Rhodia, Inc. and the smaller rail users along CSXT's Downtown Lead, Kinder Morgan's Shipyard River Terminal, the SCSPA's Veterans Terminal, the Macalloy Industrial Park, CSXT's Cooper Yard, and access to the SCSPA's Columbus Street and Union Pier Terminals. Most of the existing rail users are jointly served by both CSXT and NS and both major railroads have access to the CNC albeit from the north end. It is not clear what future role CSXT has planned for Cooper Yard, but potential intermodal use has been considered.

Public Concerns – The principal public complaint in regard to rail service in “the Neck” relates to interference with vehicular traffic on the area's principal roadways, namely King and Meeting Streets (vehicular traffic volumes have been forecast in excess of 35,000 and 15,000 vehicles per day for Meeting and King Streets, respectively, south of the Spruill Avenue intersection³), and impacts on residential neighborhoods. A lack of east-west connecting roadways due to the presence of the north-south rail lines is another related concern. It was decided to focus on means of separating rail and roadway traffic to the extent possible while keeping rail improvements in existing corridors and industrial areas.

Track Alterations - There are three at-grade rail crossings of Meeting Street in the Neck area -- one at the intersection of Meeting and Milford Streets, one just to the north at Cherry Hill Avenue and the other near Cunningham Avenue, the latter on the jointly used CSXT line to the port terminals. An at-grade rail crossing of King Street also exists in the same general area resulting from a crossover (track) connecting CSXT's Downtown Lead with the NS main track to gain access to Kinder Morgan and the CSXT track leading to SCSPA terminals to the south.

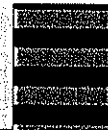
³ Based on revised land use input to the CHATS model as described in Appendix C, page 88, of the Interstate 26 Relocation Feasibility Study, prepared for the Berkeley-Charleston-Dorchester Council of Governments by Wilbur Smith Associates, 2006. By comparison, the 2003 observed daily traffic volumes were 12,100 and 8,500 for Meeting Street and King Street, respectively (page 8).



By altering track arrangements, rail traffic now crossing Meeting Street at Milford and Cherry Hill can be concentrated at the Milford location and the crossing at Cherry Hill eliminated while still providing a means to access Kinder Morgan, Cooper Yard, and existing rail users on the "S Line", namely Chevron and the North Charleston Sewer District facility. This same track arrangement can be extended to reach the Macalloy Industrial Park and Veterans Terminal as shown on the exhibit contained in the pocket following this page that depicts roadway and track modifications.

The proposed new trackage is shown in red on the exhibit. It consists of a new connection to the Kinder Morgan track and another connecting with CSXT's "S Line" in the vicinity of the North Charleston Sewer District facility. New trackage also springs from the south end of Cooper Yard passing under the proposed Port Access Road (shown in dark blue), running along the western edge of the Macalloy tract, crossing the local port access road at grade and extending through the Port Overlay Area onto the CNC (Federal Law Enforcement property) and Veterans Terminal. A trackage rights agreement with CSXT would be necessary for NS to use this track. Order-of-magnitude costs are estimated to range from \$3 to \$8 million depending on a number of alternate requirements. Additional input and approval from the parties involved in establishing this route will be necessary before the concept can be advanced and cost estimates finalized.

Roadway Alterations - Past planning efforts for "the Neck" have focused on development of a north-south multi-use transportation corridor involving King and Meeting Streets and the railroad rights-of-way while simultaneously improving east-west connections. An overriding problem has been crossing the rail lines lying between the two roadways. There are several approaches to addressing roadway issues.



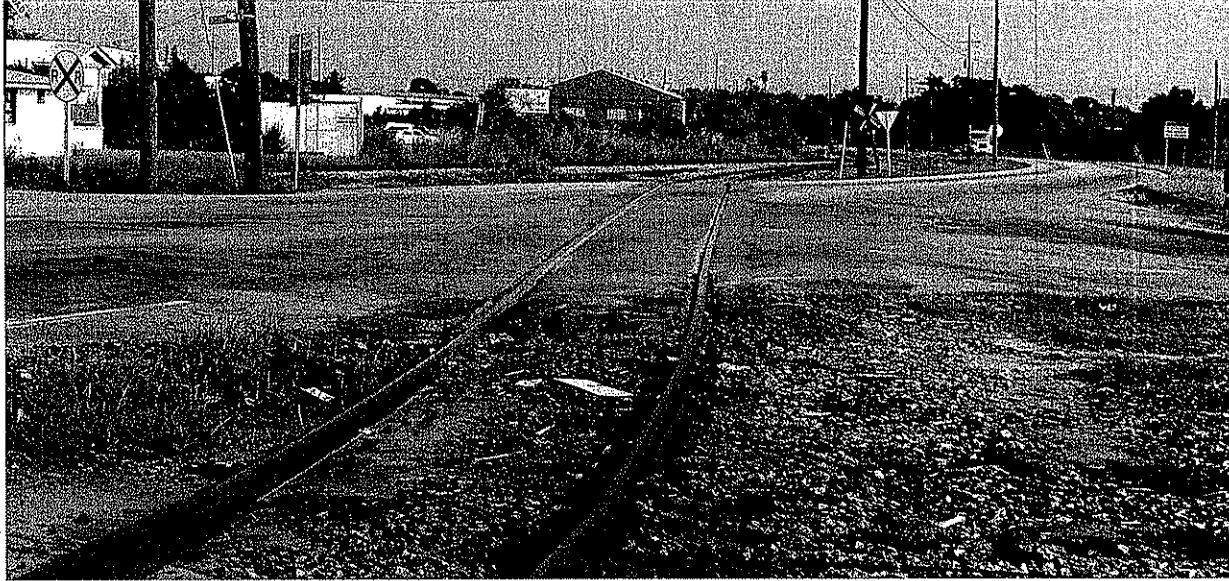
Principal Throughfare - Meeting Street currently carries the most vehicular traffic of the two roadways based on recent counts and is the most developed with four lanes vs. King Street's two. If King Street were to be designated the principal throughfare, and improved to handle through traffic and Meeting Street relegated to local access, impacts at the Meeting Street crossings would be significantly mitigated. However, the existing King Street right-of-way may be inadequate for expansion to a multi-lane facility as it is bounded by the multi-track rail corridor to the east and CSXT's Downtown Lead to the west, the latter which still provides access to active rail users in the area including Rhodia Inc. and Ford Ready Mix. Expansion at some future date could be possible if this track were no longer needed for rail purposes.

Assuming Meeting Street remains the principal roadway, there are two crossing still to be addressed - near Cunningham Avenue and Milford Street. The former may well see significant reduction in the number of trains depending on whether or not development of Veterans Terminal involves relocation of cargo now using Union Pier which accounts for most of the port-related rail business south of "the Neck". This possibility would also increase the feasibility of east-west connections between King and Meeting Streets south of the crossing near Milford.

Grade Separation - An alternate solution for the crossing near Milford with heavy vehicular flows and numerous train movements would be a grade separation, in this case a roadway overpass. An overpass for Meeting Street with 23 feet clearance over the proposed track would be some 3,200 feet long.

A similar mitigation measure is available -- an intelligent transportation system approach that would provide roadway users advance warning of train crossings of Meeting Street and recommend use of alternative routes. One alternate route (at least for automobiles - trucks are directed away from the structure) could consist of the grade-separated crossing of King Street and the railroad corridor near Clements Avenue combined with a new cross street connecting King and Meeting just south of Milford Street.

King and Discher Streets - To eliminate the CSXT crossing of King Street (See photo on the top of page 12), the CSXT track lying east of the NS main and west of Meeting Street, which has been partially abandoned, would be reconstructed and/or rehabilitated as needed until it passes under the King Street overpass (approximately 8,000 feet). The same crossover also creates an at-grade crossing of Discher Street, one of the few east-west connections between King and Meeting Streets. Both of these crossings can be eliminated with the replacement/rehabilitation of the former CSXT line running between the NS main track and Meeting Street. The crossovers between the lines would be relocated in a suitable location north of the King Street-rail corridor overpass. Order-of-magnitude costs approach \$2.5 million for these track improvements.



Local Access - The roadway improvement shown in orange near the proposed Veterans Terminal lead track crossing of Bainbridge Avenue on the CNC would provide relief for traffic from the Federal Complex in case the proposed at-grade crossing was blocked. Even without a crossing blockage, access from the Federal Complex to the Port Access Roadway will be improved.

Modifications of Area Rail Operations - Changes in railroad operations have the potential to mitigate rail-highway conflicts also. Improvements in the track layout on Kinder Morgan's terminal, for example, have eliminated the need for switching moves across Meeting Street to breakup and assemble long trains. Thus, Meeting Street crossings have been reduced to assembled trains entering and exiting the terminal.

The total number of trains traversing "the Neck" could also be reduced if operations of CSXT and NS were consolidated. Given the number of area industries/terminals served by both, train movements would be reduced if service were provided by one carrier, perhaps a neutral party such as SCPR.

Conclusions

The Concept presented for rail service in "the Neck" retains rail service for all existing rail users, maintains access to CSXT's Cooper Yard, and provides for rail access to new developments namely the SCSPA's Veterans Terminal and the MacAlloy Industrial Park. In doing so, the plan conforms to previous land plans for the area, uses existing rail corridors and the lone new track extension is located through property designated for port-related development. It also satisfies the terms of the MOU between the City of North Charleston and the SCSPA for rail access to marine terminals on the former CNC, and has the potential to



mitigate rail-highway conflicts in the study area by eliminating at-grade crossings of local roadways. In regard to the latter, several alternatives have been discussed which hopefully will be considered during the conduct of the BCDCOG's on-going Neck Area Master Plan.

The plan presented is a basic concept with a variety of details yet to be addressed. Progression will require the cooperation of a number of parties including governmental units, landowners, developers, and the providers and users of rail service among others. Participation of all parties in review of the concept and continuing related planning efforts such as the previously mentioned BCDCOG *Master Plan for the "Neck" Area of the Charleston Peninsula* is essential.