Executive Summary

The proposed Southeast High Speed Rail (SEHSR) project involves the development, implementation, and operation of high speed passenger rail service in the approximately 500-mile travel corridor from Washington, DC through Richmond, VA and Raleigh, NC to Charlotte, NC.

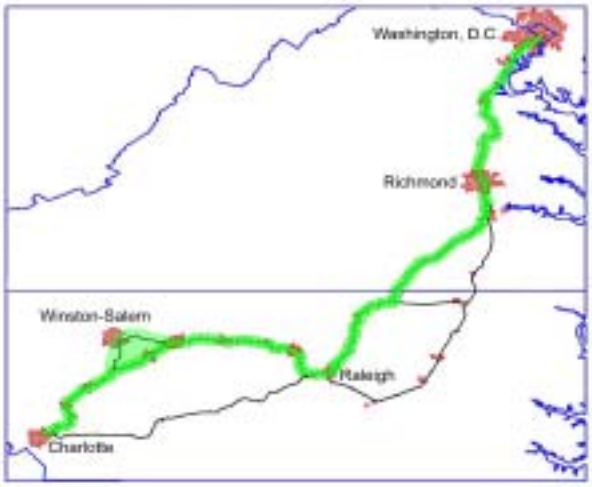
A 10-year long alternatives development process resulted in the identification of nine alternatives. The impacts to both the human and natural environments were minimized by utilizing the existing rail infrastructure and rail rights-of-way. Using existing infrastructure also minimized the initial capital investment required by the system. The purpose of the proposed SEHSR project is to reduce travel time for intercity passenger rail service, thus offering an additional competitive modal choice for transportation within the overall travel corridor.

In August 1999, the North Carolina Department of Transportation Rail Division (NCDOT) and the Virginia Department of Rail and Public Transportation (VDRPT) initiated a tiered environmental study process of the nine alternatives. In August 2001, the agencies, in cooperation with the Federal Railroad Administration (FRA) and the Federal Highway Administration (FHWA), issued a Tier I Draft Environmental Impact Statement (DEIS) on the project. The Tier I EIS is a program level document, and as such does not seek agency permits. This Final Tier I Environmental Impact Statement (FEIS) builds on the Tier I DEIS by identifying the preferred alternative and the basis for that choice, along with a discussion of the alternatives not chosen. This Tier I FEIS also includes the comments and responses from the Tier I DEIS public hearing process, and any corrections or additions to the information in the Tier I DEIS. Following issuance of this Tier I FEIS and a Record of Decision (ROD), Tier II studies would commence at the local/corridor level on the recommended alternative if a decision is made to proceed with high speed rail. These studies would address appropriate environmental and engineering factors.

NCDOT and VDRPT have identified Alternative A (NCRR & S-line), modified with passenger connectivity to Winston-Salem (Alternative B) as the combination of alternatives that best meets the project's purpose and need while minimizing environmental impacts. The agencies also recommend that the Alternative A portion be developed first and that the Alternative B portion be developed in conjunction with the efforts of the Piedmont Authority for Regional Transportation (PART), as appropriate. PART is responsible for coordinating the regional transportation system in the counties around the Winston-Salem connection. The reasons for the selection of the combination of Alternative A and Alternative B include:

- It minimizes potential impacts to wetlands and threatened and endangered species, with moderate levels of potential environmental complexity, and strongest agency support, while providing:
- The highest level of service: highest projected annual ridership, largest combined trip diversions from auto and air to rail, with competitive total travel time;
- Second best net reduction in NO_x emissions and overall net energy use reduction;
- Best operating cost recovery; and
- Highest level of public support.

Figure 1
Recommended Alternative
Alt. A + Alt. B



1.0 ALTERNATIVES

1.1 Introduction and Overview

The SEHSR project proposes to extend high speed passenger rail service from Washington, DC to Charlotte, NC, via Richmond, VA and Raleigh, NC. The Tier I DEIS examined nine alternative corridors. The corridors consist of existing railroad rights-of-way. Because these are shared corridors, any implementation of higher speed passenger rail service must also facilitate freight movement and other existing, and proposed uses of the corridors.

The primary motivation for the proposed rail service is captured by the following key statements from the Purpose and Need sections of the Tier I DEIS:

- Provide the traveling public – particularly special populations such as the elderly and the disabled – with improved transportation choices;
- Help ease existing and future congestion (air, highway, passenger rail) within the corridor;
- Improve safety and energy effectiveness within the transportation network;
- Reduce the overall air quality related emissions per passenger mile traveled within the corridor; and
- Improve overall transportation system efficiency within the corridor, with a minimum of environmental impact.

Background and Legislative History

The proposed SEHSR project is part of a plan by the US Department of Transportation (USDOT) and the states to develop a nationwide high speed rail network. Authorization for a program of national high speed rail corridors was included in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA-PL 102-240, Section 1036) and continued in the Transportation Equity Act for the 21st Century (PL 105-178, Section 7201). In 1992, the USDOT designated the SEHSR Corridor as one of five original national high speed rail corridors.[1] Further extensions to the corridor in 1998 added connections into South Carolina, Georgia, and Florida.[2]

Since the initial corridor designation, the Federal Railroad Administration (FRA) and the Federal Highway Administration (FHWA) have worked with North Carolina and Virginia to facilitate development of rail transportation options. In early 1998, FRA, FHWA, NCDOT, and VDRPT entered into a joint Memorandum of Understanding to coordinate and document each agency's respective roles and responsibilities in developing environmental documentation for the rail programs in both states.

[1] The designated corridor extended from Washington, DC to Charlotte, NC via Richmond, VA and Raleigh, NC. This designation allowed federal monies to be spent on improvements to the existing rail system in order to achieve high speed rail service.

[2] The USDOT designated an extension of the SEHSR from Richmond to Hampton Roads in 1996. In 1998, the USDOT extended the corridor into South Carolina, Georgia, and Florida. Further extensions in 2000 added corridor connections in Georgia and Florida.

The SEHSR program is identified for funding in the FY 2000-2006 NCDOT Transportation Improvement Plan and in the Virginia Department of Transportation (VDOT) FY2000-2005 Six-Year Improvement Program. Virginia, North Carolina, and the FRA have conducted specific studies to plan for high speed rail. [3] In addition, both states are undertaking improvements along some routes under study to address existing conventional passenger and freight rail needs in safety and operations.

Project Approach

Based on the findings of earlier feasibility studies[4], NCDOT, VDRPT, FRA, and FHWA, focused on Incremental High Speed Rail (HSR) to formulate and analyze the SEHSR project in the DEIS.[5] This approach minimizes the impacts to both the human and natural environments by utilizing the existing rail infrastructure and rail rights-of-way. By using existing infrastructure, the initial capital investment required by the system is also reduced.

Although the rail facilities already exist in most locations, the Incremental HSR approach would require improvements at various locations within the travel corridor. These improvements would accommodate higher passenger train speeds and increase the capacity of the infrastructure to handle additional passenger and freight rail traffic. This incremental approach for SEHSR would utilize fossil fuel train sets capable of speeds up to 110 mph where safe and practical.[6]

Since the SEHSR could potentially be funded with federal funds and may require federal permits, the Environmental Impact Statement process was required, pursuant to the National Environmental Policy Act (NEPA). Because of the magnitude of the study area and the conceptual level of project detail, the NCDOT, VDRPT, and the federal partners chose a Tiered EIS[7] as the appropriate process for environmental documentation. [8]

The SEHSR Tier I DEIS provides an overview of the travel corridor and study area alternatives. Approved state transportation plans and programs were the primary context for the transportation analysis. Environmental data was derived from the most current, readily available

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[3] Examples of studies conducted include:

The Transit 2001 Commission, North Carolina, appointed in September 1995 (recommendations for improving public transportation in the 21st century; resulted in goal to reduce rail travel times between Raleigh and Charlotte to two hours from 3.75 hours).

Potential Improvements to the Washington – Richmond Corridor, FRA, 1999 (establishment of infrastructure improvements needed to accommodate mix and volume of services projected for 2015).

Washington, DC to Richmond, VA Passenger Rail Study, VDRPT, 1995 (evaluation of future demand, revenues, needed improvements, and cost projections for alleviating congestion and implementing high speed rail).

Preliminary Engineering and Feasibility Study for Additional High Speed Track, Washington, DC to Richmond, VA to the North Carolina State Line, VDRPT, 1992.

[4] Feasibility Study Summary & Implementation Plan, NCDOT – Rail Division, April, 1999.

[5] High Speed Ground Transportation for America, US DOT – Federal Railroad Administration, September 1997.

[6] High Speed Ground Transportation has been defined by the USDOT as ground transportation service that is time competitive with air and automobile travel on a door-to-door basis, in the range of 100 to 500 miles. Source: *High Speed Transportation for America*, USDOT – Federal Railroad Administration, September, 1997.

[7] As described in 23CFR 771.111[g] and CEQ regulations 1502.20 & 1508.28.

[8] When conducting an environmental impact analysis, two types of documents can be developed: a program-level document or a project-level document. A program-level document (Tier 1) is typically performed when a large physical area is being addressed for a proposed project, or when a new program is being introduced that may have far reaching effects. A program-level document typically looks at general environmental conditions and general levels of impact. This is because site-specific details have not yet been identified or designed. A project-level document is performed when a specific project is being looked at in detail. Under this type of analysis, detailed impacts are quantified and analyzed and potential mitigation measures are identified. Sometimes a broad, general document (Tier I) is followed by a number of more detailed documents (Tier II). This is called a tiered approach.

sources and used to analyze potential environmental impacts within the study area. Based on the findings and recommendations contained in the Tier I document and the Record of Decision, subsequent, more detailed Tier II analysis and documents would be completed as appropriate for the proposed actions.

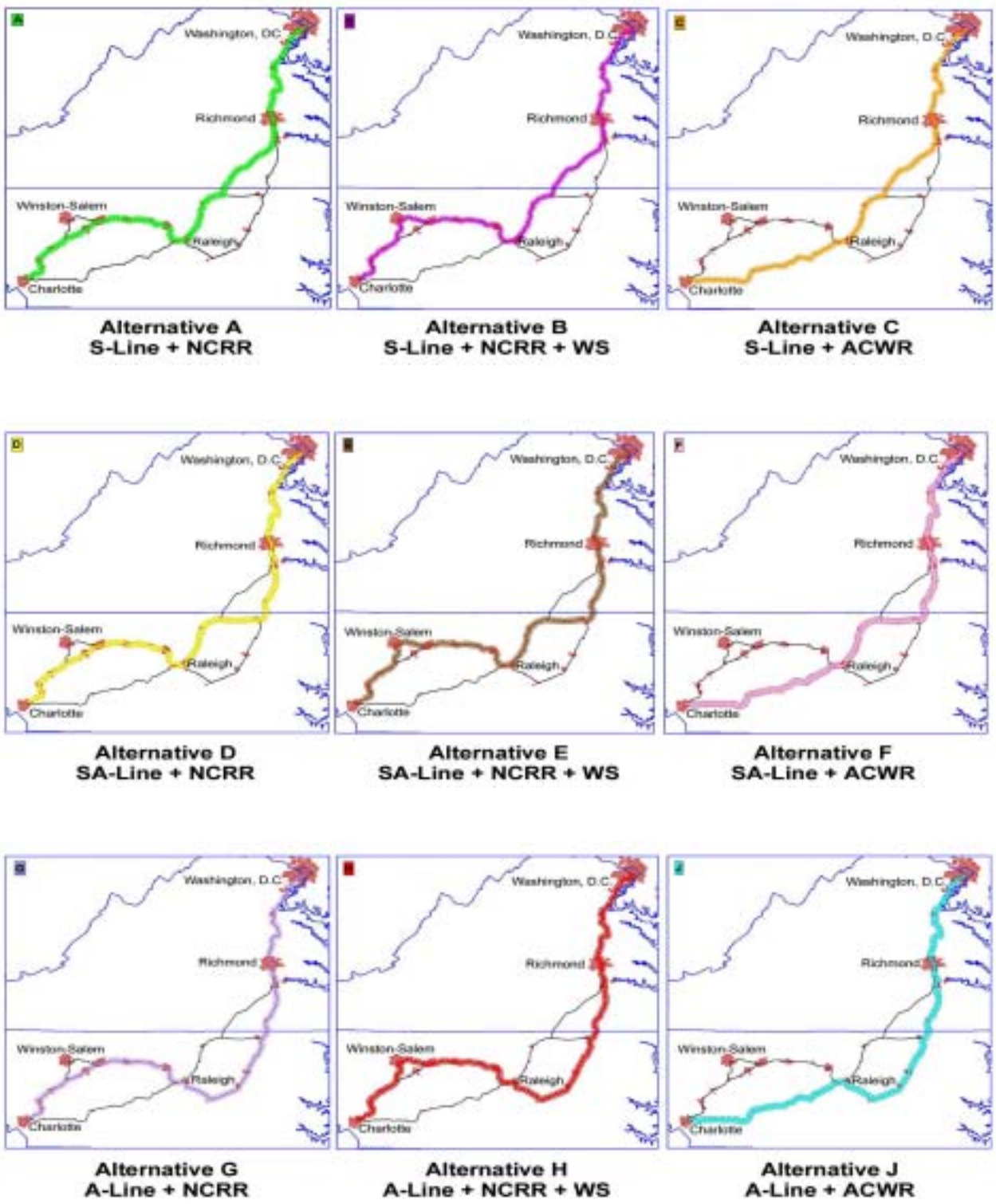
1.2 Preferred Alternative and Basis

Based on previous feasibility studies, and the interactive scoping process, the states with their federal partners identified nine study area alternatives and a "no build" scenario. The overall study area is shown in the Figure 1.1. The individual study area alternatives are approximately six miles wide[9] and centered on existing rail rights-of-way as shown in Figure 1.2.

Figure 1.1
SEHSR Overall Study Area

[9] An exception to the 6 mile width is the study corridor north of Richmond, VA up to Doswell, VA. Here the study area includes both the old C&O line and the old RF&P main line. Only the RF&P was used for analysis.

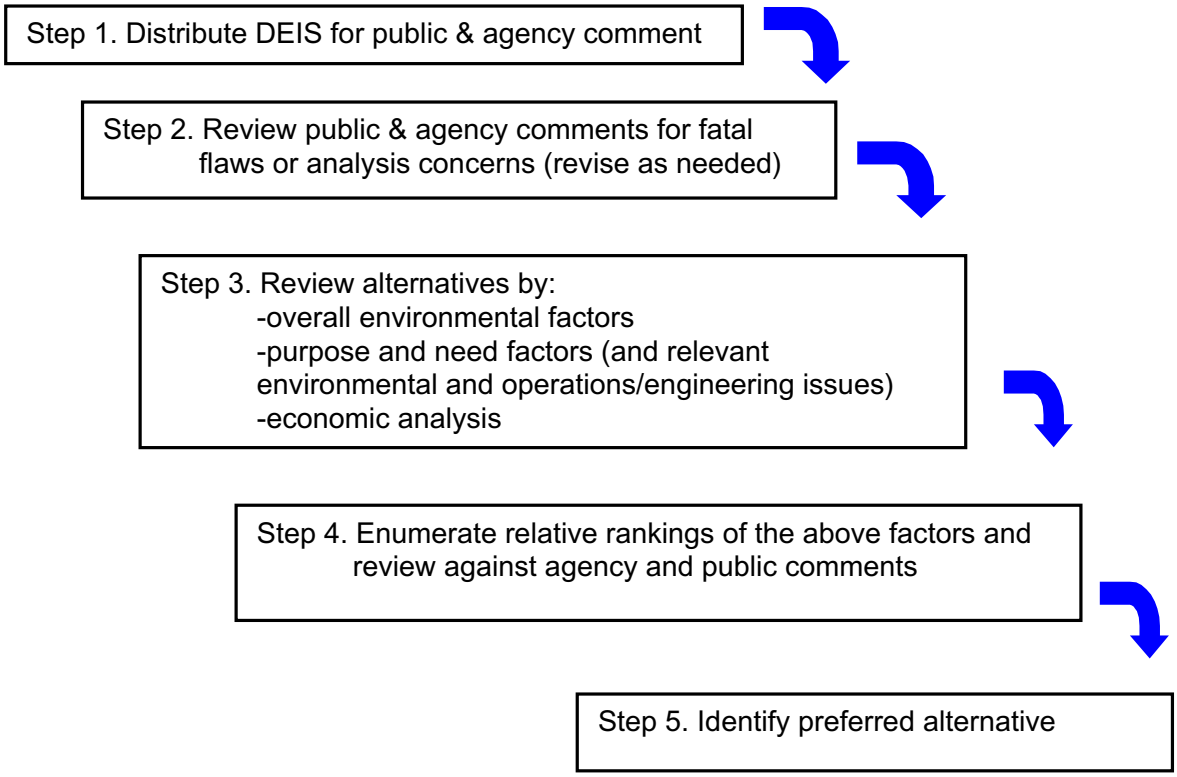
Figure 1.2
SEHSR Study Area
Alternatives



Process for Evaluating Study Area Alternatives

To evaluate the study area alternatives and determine a preferred alternative, the following "waterfall" process was used:

Figure 1.3
Process for Identifying Preferred Alternative(s)



The "waterfall" process was a methodical and sequential means for:

1. Receiving and addressing comments (public, freight railroad, agency, etc.);
2. Correcting for fatal flaws in the analysis or for disqualifying an alternative (as appropriate);
3. Using the summary table of impacts, the purpose and need criteria, and the economic analysis to enumerate the relative rankings of the nine alternatives;
4. Reviewing the relative rankings of the alternatives against comments received; and
5. Identifying the recommended alternative.

The first step of the evaluation process is discussed in the next section with a discussion of the distribution of the DEIS.

Step 1- Distribution of the DEIS for Public and Agency comment

In August 2001, the Tier I DEIS was mailed to state, federal, and local agencies[10] in both states, and was distributed to public viewing locations along all nine study area alternatives. This distribution was followed by a series of 18 public hearings with comments being received through December 2001. The Executive Summary of the DEIS was available on the project web site, and CD's of the full document were made available upon request.

Step 2- Evaluation of Public and Agency Comments

Up to the release of the Tier I DEIS in August 2001, public comments were recorded at workshops, through a hotline, with mail-in comment forms, and in interviews. Between 500 and 600 comments were received. Over 250 of these were substantive feedback, e.g. identification of community concerns. The remaining comments were requests for further project information or clarification. Typical issues included:

- Safety, noise, vibration, and impact on property values,
- Mix of commuter and freight rail and increased congestion,
- Access to high speed passenger rail service, and
- Impact on tourism and preservation of historic districts.

From September to December 2001, a series of public hearings were held in 18 locations along the study area alternatives in both states. The public comments received from these hearings were reviewed and analyzed to determine the public's overall support of, or opposition to, SEHSR. Six hundred and fifty comments were supportive with eleven comments opposed. The following table shows the distribution of these comments.

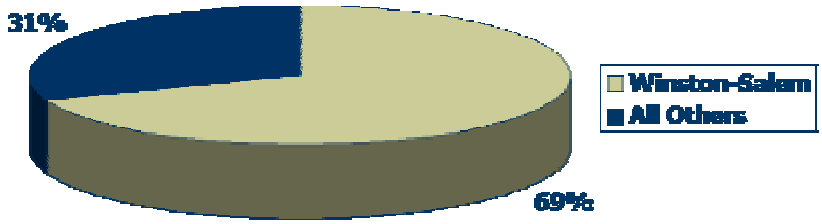
Table 1.1
Public Comments: Support for and Opposition to SEHSR

Location	For	Against	Other	Total
Winston Salem, NC	449	1	6	456
Henderson, NC	36	2	6	44
Roanoke Rapids, NC	24	1	5	30
South Hill, VA	19	0	1	20
Springfield, VA	19	0	26	45
Wilson, NC	19	0	3	22
Greensboro, NC	18	0	3	21
Cary, NC	12	0	1	13
Durham, NC	9	1	16	26
Charlotte, NC	9	0	2	11
Raleigh, NC	9	0	6	15
Richmond, VA	8	0	24	32
Salisbury, NC	8	0	2	10
Star, NC	4	6	4	14
Petersburg, VA	3	0	13	16
Fredericksburg	2	0	3	5
Sanford, NC	2	0	2	4
Emporia, VA	0	0	0	0
Totals	***650***	***11***	***123***	***784***

[10] The full distribution list is located in Chapter 5 of the DEIS. Copies were also sent to the Advisory Committee in both states.

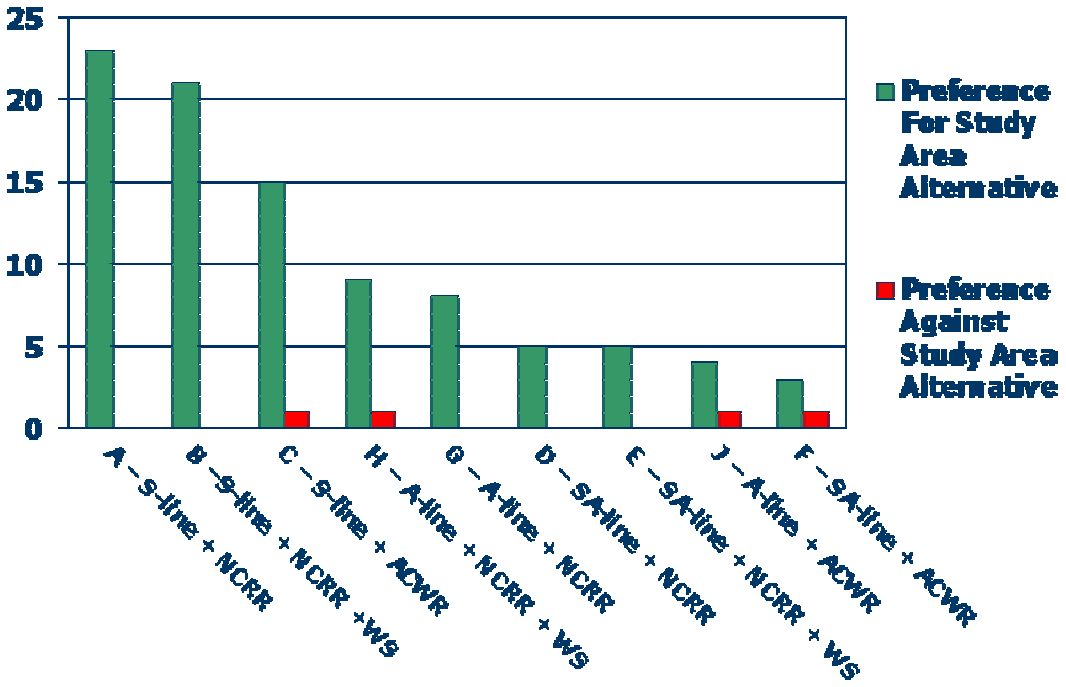
Figure 1.4
Public Comments: Support for SEHSR

Figure 1.4 shows that of the 650 comments that support SEHSR, 69% came from the Winston-Salem area. While most of the comments received from Winston-Salem did not specify support for a specific alternative, they all expressed support for service to Winston-Salem. Service to Winston-Salem is accomplished through alternatives B, E and H.



There were 39 comments that expressed a preference for or against a specific study area alternative; Figure 1.5 shows the distribution of these preferences.

Figure 1.5
Preferences for Study Area Alternatives



About 83 percent of the general public who provided comments on the DEIS were favorably disposed to the overall proposed SEHSR project. One percent of the commenting general public opposed the project.

In summary, overall public input favors Alternative A with strong support for Alternative B.

Through the advisory committee process and other direct communications, regulatory and resource agencies were engaged to facilitate sound decisions and to ensure their input on the SEHSR project. These agencies were involved in the review of each key product as the document process moved forward. As part of the Tier I DEIS distribution process, over 50 federal, state, regional, and local agencies received copies of the Tier I DEIS for review and comment.

Agencies in both states have been supportive of the tiered environmental process. This gave the agencies a big picture look at the future work, and allowed their input from the very earliest planning stages. Thirteen agencies provided comments on the SEHSR Tier I DEIS. Other agencies indicated they will wait until more detailed information is available at the Tier II level to review and comment on the proposed project. Table 1.2 (continued on next page) shows the nature of comments provided by regulatory and resource agencies.

Table 1.2
Summary of Resource and Regulatory Agency Comments

	Preference for Specific Alternative(s) to Carry Forward	Defer Comment to Tier II	Further Analysis/ Clarification Needed in FEIS	Recommend Maximum Use of Existing ROW	Possible Impacts	No Specific Comment
U.S. Department of Army, Corps of Engineers, (Virginia)	✓[11]			✓		
U.S. Department of Army, Corps of Engineers, (North Carolina)	✓[12]			✓		
U.S. Department of Agriculture, Natural Resources Conservation Service						✓
U.S. Department of the Interior, Ecological Services – Virginia Field Office						✓
U.S. Department of the Interior, U.S. Fish and Wildlife Service		✓		✓		✓
Environmental Protection Agency, Region III NEPA Compliance Section			✓[13]			
National Oceanic and Atmospheric					✓[14]	

[11] The Corps of Engineers (VA) recommends either A,B,C,D,E, or F be carried forward in the FEIS.
[12] The Corps of Engineers (NC) recommend Alts. A or B, based on minimizing environmental impacts and maximizing operating efficiency.
[13] The EPA suggested providing a summary of each alternative to make clear which alternative appears best from an operational standpoint, which is potentially the most disruptive to communities, or which alternative may be the most impacting to natural resources (note: this information now appears in this document in narrative form and in table form in the appendix). In addition, the EPA recommended a more detailed analysis of the following issues: (1) noise and vibration; and (2) the potential magnitude of disturbances associated with crossings of state and federal Scenic Rivers. These are addressed in the Chapter 3 responses.

	Preference for Specific Alternative(s) to Carry Forward	Defer Comment to Tier II	Further Analysis/ Clarification Needed in FEIS	Recommend Maximum Use of Existing ROW	Possible Impacts	No Specific Comment
Administration						
Dept. of Transportation, Federal Hwy. Administration – Virginia Division	✓[15]		✓[16]			
Federal Emergency Management Agency		✓				
Northern Virginia Regional Commission						✓
Virginia Dept. of Historic Resources		✓				
Virginia Dept. of Environmental Quality				✓		
Virginia Dept. of Mines, Minerals and Energy		✓[17]				
North Carolina Division of Water Quality	✓[18]					

Many agencies had positive comments about the extent of coordination during the document preparation and review process. The review by the agencies did not reveal, from their perspective, that any regulatory or other environmental "fatal flaws" existed in any of the nine alternatives evaluated.

EPA recommends additional analysis of two topics: potential receptors and the potential impacts of noise and vibration in communities; and an estimation of the potential impacts due to disturbances of state and federal scenic rivers. These comments are responded to in Chapter 3 of this document. The comments of FHWA-VA division office on the issues of estimated ridership for Alternative C are also addressed in Chapter 3.

The agencies favor alternatives that utilize the most urbanized corridor sections (NCRR corridor and Winston-Salem) along with the routing along the highest ground minimizing potential wetland impacts. Thus alternatives A and B have the strongest overall agency support.

[14] The National Oceanic and Atmospheric Administration expressed concern about possible impacts to geodetic control monuments by the proposed SEHSR.
[15] FHWA-VA originally expressed a preference for Alternative C, but upon further clarification now supports Alternatives A & B as preferred.
[16] FHWA-VA asked for additional clarification concerning impact of existing service on ridership if Alt. C is developed. This is answered in Chapter 3 of this document.
[17] The Virginia Department of Mines, Minerals and Energy indicated that our database is incomplete. They asked that we send maps to them to be updated for Tier II.
[18] The North Carolina Division of Water Quality recommended that Alternatives B, E, or H be carried forward for further study, with specific support for service to the heavily populated piedmont region of NC (the NCRR and Winston-Salem areas).

In summary, from Figure 1.5, Alternative A has the highest level of public support from those individuals expressing a preference among the nine alternatives. From Figure 1.4, 69 percent of the favorable comments received came from the Winston-Salem area, indicating a desire for passenger service to the Winston–Salem area, which is satisfied through Alternative B. The primary difference between Alternative A and B is the connecting service to the Winston-Salem area. Alternatives A and B also received the most support from those regulatory/resource agencies that expressed support for specific alternatives. Therefore, from the standpoint of both public and agency comments, Alternatives A and B have the strongest support.

The next step in the evaluation was a review of the alternatives by: overall environmental issues; purpose and need factors (as they relate to the relevant environmental and engineering & operation issues), and; economic or business case analysis.

Step 3- Review by Overall Environmental Factors, Purpose and Need Factors, and Business Factors

Overall Environmental Factors **-**The Tier I EIS is a "tiered" environmental document, which means that a “big picture” look at the proposed SEHSR project is taken. It includes consideration of the full range of environmental issues (natural and man-made), but through a broad, program-level evaluation.

Concerning environmental factors, the Tier I DEIS focused on the identification of known jurisdictional features within the project area. The term “jurisdictional” is used in this context to refer to those environmental factors which are subject to regulatory review, control, or permitting in addition to those required under the National Environmental Policy Act. Examples of jurisdictional features include wetlands, which are regulated under the Clean Water Act, and protected species, which are protected under the Endangered Species Act. Most jurisdictional issues deal with the natural environment. However, impacts to the human environment must also be considered. Although not typically considered “jurisdictional,” other federal laws and regulations exist which provide for special consideration and protection for cultural and community resources, such as historic sites, and publicly owned community facilities. Some of these laws and regulations include the National Historic Preservation Act and the Civil Rights Act. Therefore the locations of community facilities such as parks, schools, and churches/religious institutions were also identified at a broad level. In this way, planning can begin in the earliest stages to avoid or minimize impacts to all elements of the natural environment and cultural landscape.

The information provided in the DEIS presented a corridor level review of the study area alternatives to identify known environmental elements. Information was sought from the appropriate regulatory and resource agencies, and numerous databases and resource agency files were researched.

The information gathered provides for a broad analysis of the potentially affected environment and the potential cumulative impacts within the entire project study area. The subsequent Tier II environmental documents would provide more detailed environmental impact analysis, evaluating specific segments of the preferred study area alternative with additional research, coordination, and field surveys.

For comparison purposes the estimated potential for environmental impacts of the proposed improvements within each study area was based on three primary considerations: the actual footprint of possible improvements based on a 200-foot conceptual engineering corridor, the

possibility of proximity impacts, and the fact that at this level of review the locations of many features are approximate. Proximity impacts come in several forms depending on the environmental feature being considered. Therefore, a potential impact zone or evaluation buffer width greater than the 200-foot conceptual engineering corridor was used to evaluate possible impacts to known environmental features. This increased width allows for inclusion of features very near and possibly within the future design corridor, and provides a "worst case" representation of the known environmental constraints possibly affected within each study area.

A conceptual engineering alignment was developed to maximize use of the existing rail infrastructure between Charlotte and Washington, DC, while minimizing environmental impacts and seeking to meet the conceptual engineering design[19]. All extended evaluation areas were based on the centerline of the conceptual engineering corridor. Table ES-3 (see Appendix) identifies the evaluation buffer width used in identifying the potential impacts within each study area. Three hundred-foot buffer widths were used for most environmental features identified, unless otherwise noted. The items for which wider buffers were used, and the rationale for deviations from the 300-foot width, are explained below.

The full six-mile corridor was considered for potential impacts to federally protected species. One bird species, the red-cockaded woodpecker (*Picoides borealis*), is listed for many of the North Carolina and Virginia counties within the study areas. Where populations are known to occur, an area within a one-half mile radius of the colony site receives a level of protection under the Endangered Species Act. Other animal species commonly listed in many North Carolina and Virginia counties, such as the bald eagle (*Haliaeetus leucocephalus*) and many fish species, have habitat areas of varying size and level of protection.

Impacts to cultural resources, particularly historic properties and districts include not only direct impacts to the historic property itself, but also indirect affects due to changes to the character, setting, and audible and visual landscape surrounding the property. Therefore, the impact zone considered for historic architectural properties was extended to 1500 feet, 750 feet on each side of the conceptual engineering centerline. In this way a possible "worst case" analysis of the potential for adverse effects to historic properties within the area is provided.

The determination of potential impacts to community facilities, Superfund and other hazardous waste sites, and public parks and recreation areas was based on one-half mile buffer areas. The one-half mile buffer width was used for community facilities because impacts to these vary depending on the type of facility and its function within a community. A wider buffer was used in identifying hazardous waste sites due to the propensity of free product within the soil or groundwater to move from its point of origin.

National Rivers Inventory, Water Supply Watersheds, and Prime Farmland were all considered for the entire six mile corridor due to the nature of the data sets (watersheds and farmlands cover expansive areas, and the length and meandering nature of the rivers were better displayed in the larger context).

Concerning the natural environment, the Natural Heritage Program files for both states were searched for records of locations of federally protected species, state listed species, and other

[19] Desired maximum authorized speed: 110 mph (FRA Class 6 track), and desired minimum authorized speed: 80 mph. Subject to physical, environmental, economic and other constraints. Design speeds may fall below 80 mph in certain urban areas or in certain track conditions that discourage high speeds.

rare and unusual geological, ecological, or topographic features within each study area. Also, critical habitat areas as designated by the US Fish and Wildlife Service were identified.

Potential habitat for protected species is minimized along alternatives A, B, and G. These routes use the highly urbanized NCRR corridor which parallels the I-85 corridor between Charlotte NC and Raleigh NC. The greatest potential for habitat exists along the ACWR (the southern routing from Charlotte to Raleigh) because of its rural character (Alternatives C, F, and J).

Potential wetlands were derived from an overlay of wetlands areas shown on National Wetlands Inventory maps and hydric soils, as shown on Natural Resources Conservation Service soil surveys. Hydric soils are soils that are inundated with water long enough to produce anaerobic conditions, and they are one indicator of jurisdictional wetlands. The preponderance of wetland areas in VA and NC are in the eastern portions of the state. The existing A-line runs parallel to I-95 corridor in NC and VA and those routes using this section of line have the greatest potential wetland impacts (alternatives H, J and G). Wetlands potential is minimized on alternatives B, C and A which follow higher ground to the west and north.

Potential 100 year flood plain impacts were assessed using only the information from FEMA's Flood Insurance Rate Map program. This program is urban in nature; therefore stream crossings may provide a better overall indicator of potential flood plain impacts. The greatest negative potential exists along alternatives J and F. Both those routes use the ACWR corridor. That corridor also has the greatest negative potential relative to rivers on the National Rivers Inventory (rivers potentially eligible for Wild and Scenic designation) because the Deep River parallels the existing rail right of way for over 15 miles. A portion of this section of the Deep River is also classified as High Quality Water under the North Carolina Water Quality Classification system. The other alternatives are fairly equal concerning potential stream or flood plain impacts, based on the level of assessment at this time. It is anticipated that impacts to waters of the states (wetlands, streams, water supplies, etc.) would be minimized by use of the existing right of way to the maximum extent practicable. Further avoidance and minimization would be practiced in the Tier II designs, and then Best Management Practices would be followed for design, sedimentation and erosion control, and for construction practices.

The alternatives which use the NCRR corridor and the Winston-Salem connection have the most potential to positively impact air quality maintenance and/or non-attainment areas by virtue of the counties that they pass through. Alternatives J, C and F have the least potential reduction of NOx because they utilize the largely rural ACWR route. The other alternatives vary based on the number of trips diverted from auto use, since air diversions were not used in the calculations for NOx reduction (it was not possible to reasonably determine the affect on flight numbers attributable to trip diversions from air). Alternatives A, B and D have the highest combined diversions from air and auto.

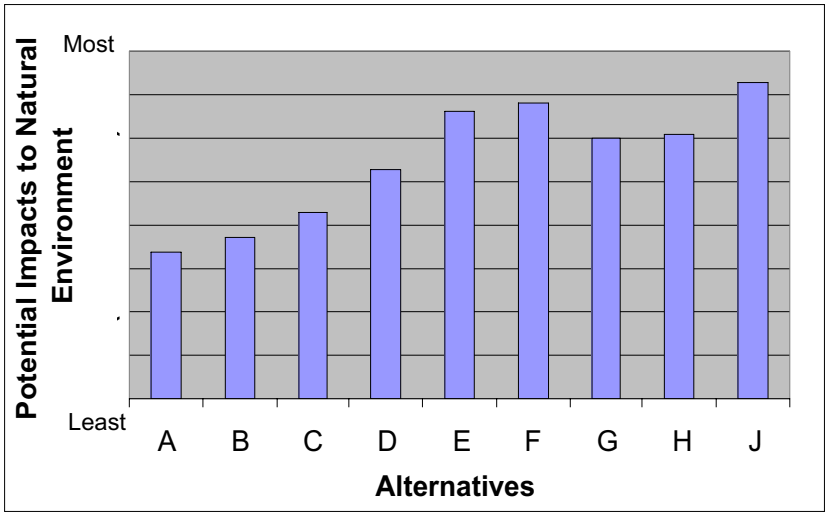
Prime and unique farmlands exist in both Virginia and North Carolina, and are important in the agricultural economies of both states. While there are variances in the total potential acres of these lands between the different alternatives, in most cases this farmland surrounds the rail right of way. Thus diversions from the existing right of way should allow the recovery of the previously impacted farmland back to farm use if desired. This concept could be similarly applied to potential game lands impacts (potential impacts to both farmland and game lands are greatest along alternatives F, J and E).

Under the no build scenario, similar kinds of impacts could be expected due to improvements required for expansion of the existing freight and conventional passenger rail system depending

on whether speed and/or capacity are the focus. While the impacts are potentially spread out over a longer period of time (due to slower expansion of the systems), they could potentially be accompanied by other impacts due to additional auto or air capacity needed to handle the trips which would not be diverted under the no build alternative. The no build alternative lacks the positive benefits of improved air quality and net energy reduction per passenger mile traveled in the corridor. It also fails to meet the other key purpose and need factors of offering additional transportation choices, easing of congestion, while improving overall transportation system safety and effectiveness while minimizing environmental impacts. Thus the no build alternative is not considered responsive to the project purpose and need.

Figure 1.6
Potential Impacts to Natural Environment

In summary, from a pure natural environmental view-point, potential impacts would be minimized on alternatives A, B, C and D as shown in the chart Figure 1.6[20]



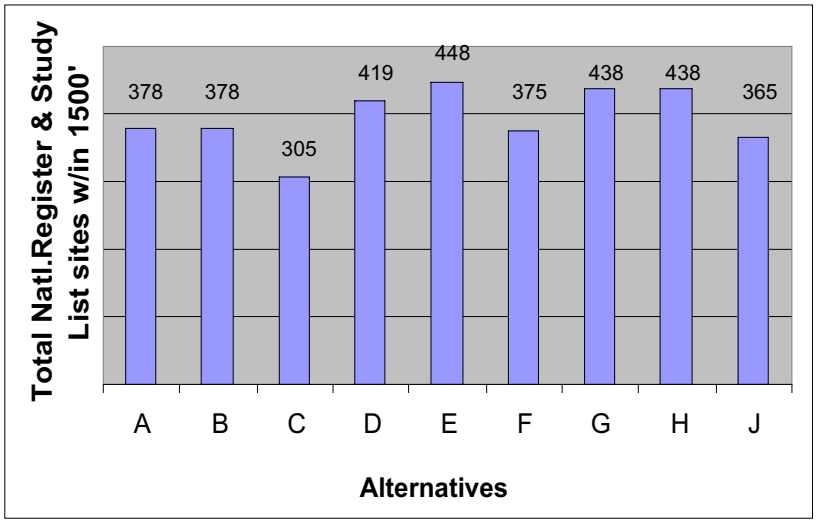
Concerning cultural resources, Section 106 of the National Historic Preservation Act requires that all federal agencies consider the impact of their actions on properties, sites, structures, or objects listed on, or eligible for listing on the National Register of Historic Places. In addition, the use of property within the historic boundaries of any such property is regulated under Section 4(f) of the Department of Transportation Act of 1966.

The railroad lines are an important part of the historic context of many of the cities and towns along all of the alternatives. The majority of the historic structures exist in the cities and towns, as such, we anticipate being able to minimize actions outside of the existing right of way through those areas, which would help minimize potential impacts to such structures and districts. Figure 1.7 displays the total National Register & Study List Sites by alternative. It shows that the greatest potential for impacts exists along alternatives E, G and H. These have the highest combined totals of National Register and Study List sites (i.e. sites identified as potentially

[20] Potential impacts are rank ordered from 1-9, with 1 being the least potential based on the data found in Tables ES-2 and ES-3 in the appendix for the appropriate data types. These are unweighted rankings.

eligible for the National Register). No known archaeological sites were located within the study buffer of any of the alternatives, however, archaeological surveys would be conducted as needed in Tier II. For total historic sites, Alternative C has the least potential number of sites within the buffer zone, with alternatives A, B, F and J in close proximity for second place.

Figure 1.7
Total National Register & Study List Sites



Assessment of community impacts is a qualitative and quantitative evaluation of the potential effects of the proposed project on communities within the Study Area Alternatives. A number of community characteristics are assessed at a programmatic level to determine both positive and negative impacts, including: physical aspects (including noise and vibration), visual environment, land use, social effects, safety, mobility and accessibility provision of public service, economic conditions, and displacements. In general, no significant negative, and some potentially positive, community impacts were found for the Study Area alternatives. A highlight of the program level analysis for noise and vibration, environmental justice and community impacts follows.

Noise and vibration potential is minimized on the routes using the rural ACWR corridor (Alternatives C, J and F) however, this also avoids serving over half the population of North Carolina which lives within 30 miles of the I-85 corridor (the NCRR corridor utilized by alternatives A, B, D, E, G and H). The rural southern routing would also fail to fully meet the project purpose and need in areas related to diversions from highway and air travel, overall energy savings, overall air quality improvements and increased mobility options for the elderly and disadvantaged.

It should be noted that all alternatives that utilize routings where portions of track were previously removed (Alternatives A, B, C, D, E, F) have the potential to introduce new noise and vibration for buildings built within the last 15-30 years in close proximity to the tracks.

Due to the program level of this document, and the fact that this document is looking at 6 mile wide study areas versus specific alignments, as well as the lack of current aerial photography for the entire study area, and the size of the study area being considered (over 1200 miles of existing rail rights-of-way), it was not deemed appropriate to run a detailed noise model or to

identify individual residential receptors (Category II receptors) for the Tier I analysis. Other detailed studies of similar projects proved helpful in considering the potential for significant new noise or vibration impacts. Studies performed for the Chicago to St. Louis High Speed Rail matched the conditions of the Tier I SEHSR EIS in a number of important areas, mainly:

-eight new passenger round trips daily, mixed with existing freight use
-fossil fuel locomotives
-train sets composed of 2 locomotives with 6 cars
-max speed over most of the route at 110 mph (with a short section of 125 mph)
-a mixture of continuous welded rail and some jointed rail (mainly on special sections such as crossovers and switches)
-a mixture of urban and rural sections over several hundred miles of corridor

Using the assessment methods described in the FRA and FTA manuals, the Chicago to St. Louis study calculated existing and future noise estimates for receptors located within 250 feet of the track centerline, and accounted for the projected change in train volume and operating speeds throughout the corridor for both passenger and freight trains. The appropriate FRA and FTA manuals were also used for analyzing potential vibration impacts.

The noise study identified 3498 residential receptors and 71 institutional receptors within 250 feet of the track centerline. The three major sources of rail noise were: 1) the steel wheel on steel rail interaction; 2) engine noise from fossil fuel locomotives; and 3) horn sounding at crossings. As train speeds exceed 80 mph the major source of noise was the interaction of the steel wheels on steel rail. The study found that there were increases in noise levels associated with all build alternatives over the no-build alternative. However, these increases were all less than 2.4 dBA, with the exception of a 3.5 dBA at one location, and the overall exposure at that one receptor was less that 60 dBA. Changes of 3 dBA or less are generally not severe, and total resulting noise levels less than 60 dBA are not often considered significant. Thus, even with over 3500 receptors there were no new noise impacts, and likewise there were no new vibration impacts.

Because of the similarity in project conditions between the Chicago to St. Louis project and the SEHSR project, it is anticipated that similar findings will exist along the SEHSR corridor when the Tier II detailed studies are performed. This conclusion supports the use of the NCRR corridor (alternatives A, B, D, E, G and H) where the overall purpose and need of the project is best met. Best management practices will also be applied for both noise and vibration during the Tier II studies in order to help minimize the increases in noise and vibration throughout the project corridor. Examples of such practices include grade separations were practicable, use of continuous welded rail, trenching, berming, noise walls, ballast mats, etc., as well as design features of the actual train sets.

Over the past several decades, public concerns have increased over economic, racial and ethnic fairness in the distribution of the environmental and socioeconomic burdens of transportation projects, as well as the economic and mobility benefits derived from transportation projects. The impetus behind environmental justice is to ensure that traditionally underrepresented communities, such as minority communities and low-income communities, are fairly represented.

The potential for environmental justice and community impacts (positive or negative) is fairly evenly distributed among the nine alternatives. There is little variation among the Study Area Alternatives in the percents of estimated minority populations and estimated low-income households that may be affected by SEHSR. The most consistent community concern

expressed during the public hearings was safety. The majority of the towns along all routes were desirous of the project utilizing their corridor because of improved rail access (both passenger and freight), potential jobs, diversions of other vehicles off the roadways, and the potential to attract development in those areas where rail service had previously ceased. There were some negative concerns over existing rail congestion in Emporia, VA (alternatives D, E, F, G, H and J) and the heavy traffic near the Washington DC area (this affects all alternatives), but these concerns would continue even with the no build scenario. Public recreation areas serve important roles within their communities as places where citizens interact, spend leisure time, and provide for the needs of children, adults and pets. Therefore, their role in a community's cohesion must be evaluated in any analysis of community impacts for an environmental document. While alternatives E, G, and H contain the highest numbers of parks, these impacts may be minimized regardless of the alternative chosen by staying on or near the existing rights-of-way.

At this point in the Tier I study and given the methodological assumptions and preliminary GIS findings concerning environmental justice and the variation of the minority and low income populations across the route combinations, it is not possible to identify a preferred alternative relative to environmental justice.

While this assessment focused on identifying those locations along the corridor that could potentially be adversely affected, these same populations may actually support the project, as they could perceive the positive economic development impacts and improved mobility options for their communities. The community leadership interviews supported this line of thinking by expressing strong support for the project. Furthermore, Amtrak statistics show that current passenger rail service is disproportionately utilized by low-income and minority populations. These population groups would likely continue to use and benefit from enhanced passenger rail service in the SEHSR study areas.

Therefore from the community impact and environmental justice criteria there is no clear preferred alternative based on negative impacts, and positive impacts exist along all Study Area Alternatives under consideration. Environmental Justice would continue to be a focus of attention in any Tier II studies.

Cumulative Impacts- Future development will occur primarily around existing train stations, with commensurate levels of noise and congestion associated with the increased use of the facility, as well as with secondary commercial and residential development that may be drawn to the station areas. This could help focus development around the existing infrastructure and minimize the use of undeveloped lands, and thus could help to limit growth of urban sprawl. In areas where no current rail service exists (i.e. the S-line from Petersburg VA to Norlina NC) there may be secondary industrial development because of the new availability of freight access. This could also include expansion of infrastructure and supporting services required by the industrial development (roads, water/sewer, food service, etc.). Industrial development in rural areas could result in impacts to wetlands, water quality, and habitat for both threatened and non-threatened species. Because of the extensive use of existing right-of-way, it is anticipated that the overall cumulative environmental effects of the project would be neutral to positive. The chief potential negative impact would be noise and vibration caused by the re-introduction of service along the S-line in Virginia where there is presently no rail service. Both

states have indicated a desire[21] to restore conventional service to this segment of line, therefore similar impacts would be possible even under the no build scenario. In the no build scenario, if conventional passenger service grows in use, then similar cumulative effects could be seen as with the any of the SEHSR build alternatives. In the build alternatives the overall air quality effect is beneficial based on the number of trips diverted from auto. This benefit would increase proportionally if the cumulative effect of improvements results in the rail mode capturing more of the corridor trips than currently modeled. The net energy use per passenger mile is substantially less for rail than either air or auto, giving a net positive energy benefit. There is a net positive safety benefit because of the safety advantages of train versus auto travel in the corridor, along with the net positive affect of increased mobility choices for all populations, including minority and low income. These net positive impacts would grow if the cumulative effect of the improvements results in higher use of the rail transportation system. From the program level of study the cumulative impacts appear to be similar along all nine alternatives.

Section 4(f) - The provisions of 49 USC 303(c) and 23 CFR 771.135 [commonly referred to as "section 4(f)"] are generally discussed in the DEIS on pages 4-98 through 4-102. Section 4(f) forbids the U.S. Secretary of Transportation to use land from any significant publicly owned park, recreation area, or wildlife and waterfowl refuge, or any significant historic site (whether or not publicly owned) unless there are no prudent and feasible alternatives to the use of that land and all possible planning has been done to minimize harm to the park, recreation area, refuge, or historic site. Because this document is a tiered EIS, the provisions of 23 CFR 771.135 (o) apply. Broadly stated, this section provides that an evaluation should be made on the potential impacts that a proposed action would have on section 4(f) land to the extent that the level of detail available at the first-tier EIS stage allows, and that the decisions made during the first-tier stage should not preclude opportunities to minimize harm during the later stages. These requirements have been met in this document by several strategies:

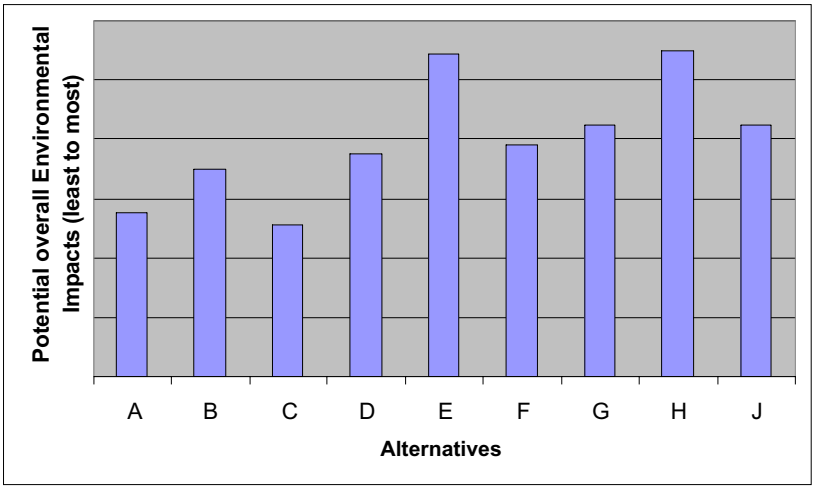
- First, by maximizing the use of the existing right-of-way, potential impacts to resources are minimized across all alternatives.
- Second, by identifying which study area alternatives best meet project purpose and need, while minimizing potential impacts to the above mentioned resources, and
- Finally by use of a wide (6 mile) study area to be carried forward into the tier II studies. The six mile width of the study areas was specifically chosen to ensure that opportunities to avoid and minimize harm at subsequent stages in the development process (Tier II) would not be precluded by decisions made during the Tier I process.

Tier II studies would evaluate all feasible and prudent alternatives to the use of such land, and would include all possible planning to minimize harm to section 4(f) lands.

[21] *Investing in the Future: North Carolina's Passenger Rail Development Programs*, NCDOT-Rail Division, January 2002

In summary, ranking all categories regarding potential overall environment impacts (both natural and human) from 1 to 9, with 1 being the least potential for impacts gives us a pure unweighted assessment of the overall environmental factors favoring alternatives C, A, B and D, as shown in Figure 1.8[22].

Figure 1.8
Potential for Overall
Environmental Impacts



Purpose and Need Factors- The five key factors of the SEHSR project purpose and need were related to the appropriate data taken from tables: ES-2, *Operational and Physical Characteristics Summary Information for Study Area Alternatives*, and ES-3, *Summary of Potential Impacts and Benefits of the Study Area Alternatives*, from the Tier I DEIS Appendix. The following table shows the criteria that were used to assess each purpose and need factor.

Table 1.3
Evaluation Criteria for Selecting a Preferred Alternative

Key Purpose and Need Factors	Criteria Used in The Assessment
Providing the traveling public – particularly special populations such as a the elderly and the disabled – with improved transportation choices	• Annual Ridership
Helping ease existing and future congestion (air, highway, passenger rail) within the corridor.	• Annual Diversions in 2025
Improving safety and energy effectiveness within the transportation network	• Net energy reduction (fuel gal/yr.) • Number of at grade crossings
Reducing the overall air quality related emissions per passenger mile traveled	• Air Quality – Reduction in NO_x

[22] Potential impacts are rank ordered based on the data found in Tables ES-2 and ES-3 in the appendix for the appropriate data types.

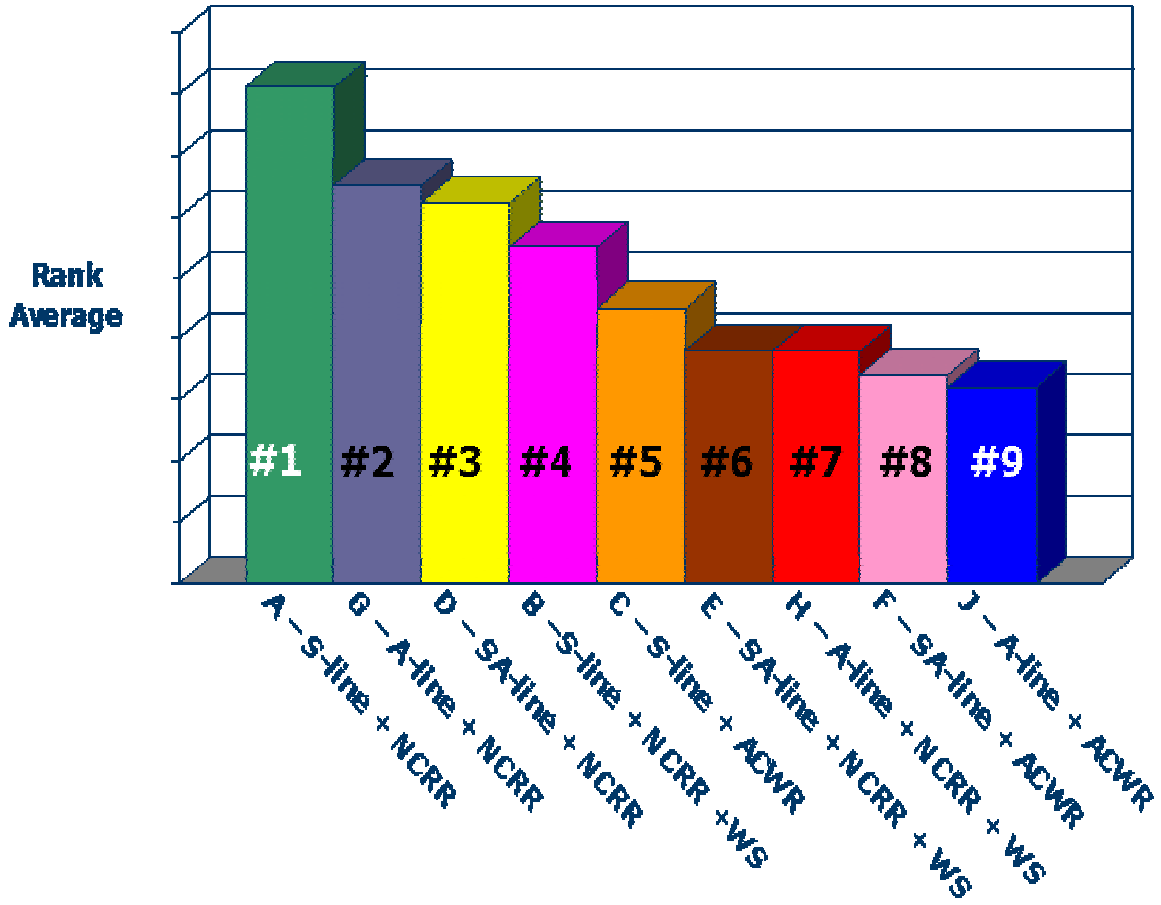
Key Purpose and Need Factors	Criteria Used in The Assessment
within the corridor	
Improving overall transportation system efficiency within the corridor, with a minimum of environmental impacts	• Average Total Travel Time • Net Operating Contribution • Capital Cost Efficiency Factor[23] • Environmental Complexity Index • Engineering and Operations Complexity Index

Of the criteria used in the assessment, six refer to operating/engineering characteristics. Three refer to a composite index or individual environmental factors and one refers to public safety. The emphasis on the operating characteristics is due to the need that the recommended alternative be a viable business alternative with a minimum of environmental impacts.

Each study area alternative was scored on a scale of one to nine (with nine being a higher, or more favorable, ranking) on each of the evaluation criteria shown in Table 1.3. An unweighted average score was computed for each study area alternative to determine rank averages. The results of this process are shown in Figure 1.9.

[23] The Capital Cost Efficiency Factor was calculated by dividing the net operating contribution in 2025 by conceptual capital cost and multiplying the result by a factor of 1000.

Figure 1.9
Relative Ranking of Study Area Alternatives
Based on Purpose & Need

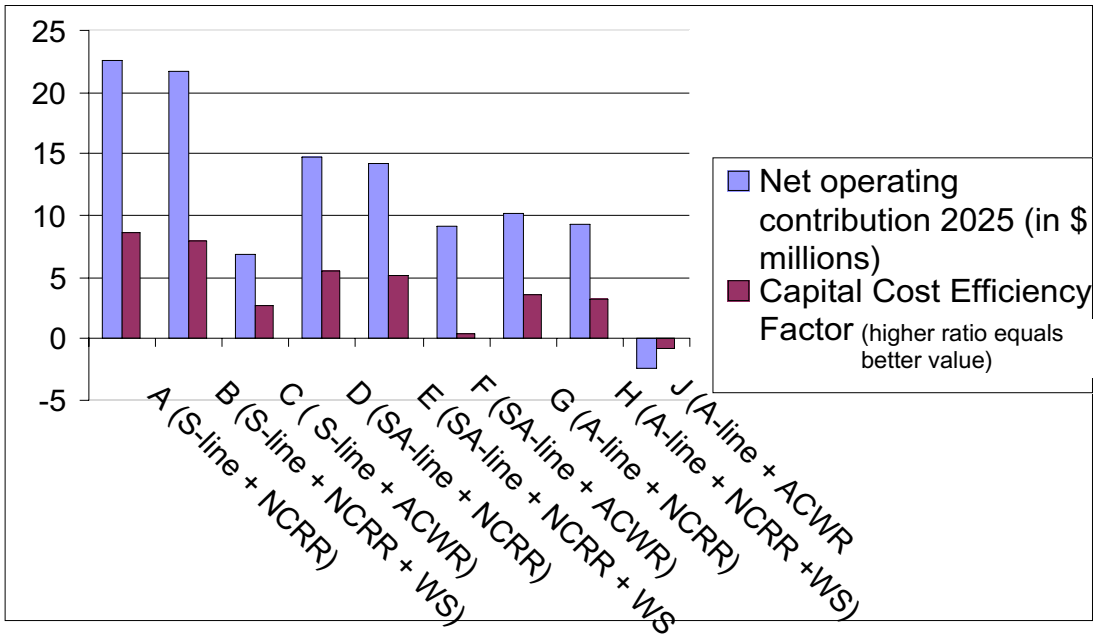


Alternative A ranks highest because it is the best of all nine alternatives for five of the 10 assessment criteria, namely annual ridership, annual air to rail diversions in 2025, net operating contribution, capital cost efficiency, and areas of engineering complexity. Alternative A is second best for four of the 10 criteria, namely annual auto to rail diversions in 2025, net energy reduction, net reduction in NO_x emissions, and average total travel time for the route. From a permitting standpoint, Alternative A is among the lowest for potential wetland impacts and has the lowest potential impacts to threatened & endangered species. Alternative G ranks best in three of the ten criteria, namely annual auto to rail diversions in 2025, net reduction in NO_x emissions, and net energy reduction.

Business Factors- The SEHSR project's "business case" requires the recommended alternative to be economically viable. In order to determine relative economic viability (among the different study areas), study area alternatives were examined based on the potential net

operating contribution[24] and the conceptual capital cost[25]. The net operating contribution did not assume any income from ancillary services such as express mail. The net operating contribution is comparative only, and not intended to predict actual future revenue which would be dependent upon future operating conditions and requirements. The capital cost efficiency factor is the net operating contribution divided by the conceptual capital cost and multiplied by 1000. This gives a form of a benefit/cost ratio for comparison between the different alternatives. Figure 1.10 shows the comparison of study area alternatives based on these two elements.

Figure 1.10
Analysis of Study Area Alternatives Based on SEHSR Economic Viability Factors
(note: Net Operating Contribution is for 8 SEHSR trains only)



A review of Table 4.8 (Revenues and Expenses for SEHSR in 2025- found in the appendix) also shows that Alternatives A and B generate the highest net operating contribution, highest passenger mile/train mile, best revenue/cost ratio, and highest contributions per passenger mile. Therefore Alternatives A and B are strongly preferred from the business case perspective.

Step 4 Review of the Rankings Against Agency and Public Comments

At this point, Alternatives A, B, C, and D are the most viable candidates for the recommended alternative based on all the relative rankings examined. Of the four alternatives, Alternative A

[24] Ticket revenues were based on ridership derived from the KPMG Ridership/Revenue Model. The model assumed four daily round trips between Charlotte, Raleigh, Richmond, Washington, and New York, and four daily round trips between Charlotte and Raleigh, for a total of eight daily round trips between Charlotte and Raleigh. Each train assumes two diesel locomotives, five coaches, and one cafe-lounge car. Net Operating Contribution is the revenue generated less the operating expenses for each routing. Operating expenses were projected using cost factors developed in the Amtrak Intercity Business Unit State Pricing Model. The base year for all expenses is 1997, and they have been inflated to 2000 dollars using Amtrak inflation rates ranging from three to five percent annually.
[25] Conceptual costs were based on using current cost factors applied to a conceptual engineering design (approx. 10% engineering level) with a 60% contingency added.

and Alternative B show the strongest potential for economic vitality (see Figure 1.10), which is essential for long term success as a transportation option.

Alternative A and Alternative B also minimize potential wetland impacts (Alternative B is lowest). Alternative A offers a moderate level of environmental complexity (6), this is the level of difficulty required to avoid or minimize environmental impacts in a certain area. It ranks second highest in net energy reduction and net reduction in NO_x primarily because it offers service along the most populated areas of the NCRR and it offers the greatest combined passenger diversion from auto and air to rail. Alternative B is similar to alternative A, but has some increased environmental complexity (8) due to grade issues in the Winston-Salem area. Alternative C has the lowest level of environmental complexity (4), but the highest potential for impacting protected species and significant natural areas, along with the poorest air quality benefits due to bypassing the heavily populated sections of NC; as well as the highest potential water quality impacts due to the Deep River paralleling the track in this alternative. Alternative D, has a moderate level of environmental complexity (5), but has potentially greater impacts to wetlands, which are more prevalent in eastern North Carolina, and also has the greatest potential impact for prime farmland, historic resource impacts, and the most major stream crossings.

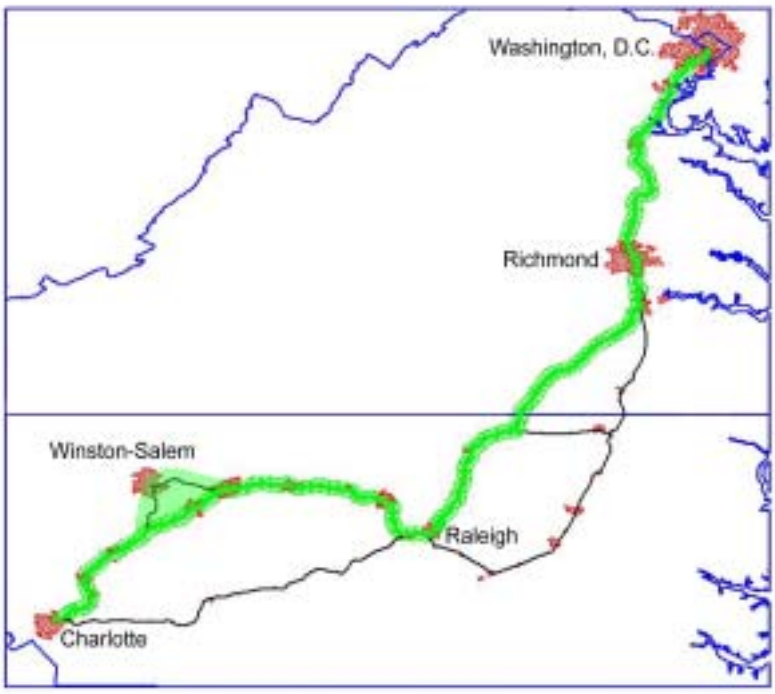
Considering the complexity of avoiding and/or mitigating for significant wetland acreage, the presence of substantial protected species, and prime farmland impacts, along with water quality concerns, Alternatives A and B are the environmentally preferred among those candidates satisfying the criteria for purpose and need and economic viability. These two alternatives are also supported by the overall agency and public comments.

Step 5 Identify the Preferred Study Area Alternative

The overall analysis indicates a strong case for Alternative A. In addition, public comment, agency comment, and economic viability suggest strong consideration for Alternative B. Therefore the agencies have concluded that Alternative A (NCRR & S-line), modified with passenger connectivity to Winston-Salem (Alternative B) is the combination of alternatives that best meets the project's purpose and need while minimizing environmental impacts. The agencies recommend that these two study areas be carried forward into Tier II level studies. Alternative A is recommended to be developed first because it is comprises the presently functioning Amtrak route from Charlotte NC to Raleigh NC. It is recommended that Alternative B be developed in conjunction with the regional transportation efforts of the Piedmont Authority for Regional Transportation (PART). PART is responsible for coordinating the regional transportation system in the counties around the Winston-Salem connection. The agencies through the Tier II studies would determine the exact phasing of the development of the overall corridor. Because the no build scenario would not achieve the project's purpose and need, and would still contribute to potential negative effects (due to potential increases in freight and conventional passenger use), without the potential for the overall positive effects due to the improved HSR system, the preferred alternative is also the environmentally preferred alternative. The combination of the two alternatives:

- Minimizes potential impacts to wetlands and threatened & endangered species, with moderate levels of potential environmental complexity, and strongest agency support, while providing;
- The highest level of service: highest projected annual ridership, largest total annual trip diversions from auto and air to rail, with competitive total travel time;
- Second best net reduction in NO_x emissions and overall net energy use reduction;
- Best operating cost recovery; and
- Highest level of public support.

Figure 1.11
Recommended Alternative: Alt. A + Alt. B.



1.3 Agency Coordination and Public Involvement

Together, the NCDOT Rail Division and VDRPT worked with federal agencies, freight railroad companies, state resource and regulatory agencies, and the public to allow for early and on-going input on the SEHSR project.

At the federal level, FHWA and FRA are the lead federal transportation agencies. Because of an existing Memorandum of Agreement (MOA) in Virginia, the US Coast Guard, the US Army Corps of Engineers, and the US Fish & Wildlife Service agreed to participate as formal cooperating agencies. A Notice of Intent to prepare a Tier I Environmental Impact Statement was published in the Federal Register on August 5, 1999.

The SEHSR team developed a scoping process to gather input from federal, state, and local agencies with areas of responsibility relevant to the project and from the public who are in some way affected by the project. The SEHSR Tier I EIS scoping process was composed of the following:

- Informal communications with agencies about the project – regulatory and resource agencies received informal letters and phone calls in July 1999 to introduce the project concept, prepare for the upcoming tiered EIS process, and provide an early chance to ask questions, seek clarification, and provide input.

- Formal joint bi-state scoping meeting – a full project overview was presented at the joint bi-state scoping meeting on October 12, 1999. The input from this meeting, provided by oral

comments and written comments submitted after the meeting, helped to direct the study efforts of the project team.

- Information briefings and small-group meetings – meetings for regulatory and resource agencies were held in both states to familiarize them with the project and to obtain their input on their key issues. Small group meetings were also held with interested organizations along the corridor in both states.

- Written data and input requests – written requests for data regarding planning efforts within the study area were made of planning directors and school boards. Coordination with State Historic Preservation Officers (SHPOs) was conducted mainly through telephone conversations and meetings.

- The formation of an Advisory Committee – an advisory committee was formed to facilitate sound decisions and to insure input from a broad range of stakeholders in both states (Metropolitan Planning Organizations; Planning District Commissions; local, state, and federal transportation officials; Amtrak; freight railroads; and regulatory and resource agencies). The Committee met in March 2000 to receive a project overview, to ask questions, and to provide input. It reconvened in November 2000 for review and input concerning the Draft *Purpose & Need Statement* and the Draft *Study Area & Modal Alternatives Analysis* Report, and again in late July/early August 2001 to review the DEIS. In December 2001, the Committee met for a review and discussion of the Tier I DEIS key findings and recommendations. The Committee also reviewed the Recommendation Report in early March 2002.

- Public Involvement Program – a proactive public involvement program was conducted to ensure the integration of community feedback through the entire process. The public involvement program would continue to function throughout the life of the project. Pre-DEIS public involvement in the study area included:

    - Almost 7,000 people were contacted, in order to complete a 1,200-sample public opinion survey to determine opinions and concerns about potential high speed rail service and to help shape outreach approaches and techniques.
    - Direct mailings were sent to more than 225,000 addresses along the corridors in both states.
    - Twenty-six public workshops were held to provide a project overview and to view display maps of the entire study area, as well as detailed maps related to specific workshop locations.
    - Community outreach tools, including the SEHSR Web site, project hotline, mobile display units, newsletters, and fact sheets were developed to inform the public about the project.
    - Media outreach was extensive, including media kits, follow-up calls, and editorial board briefings, to increase the visibility of the project.
    - Community outreach research was comprised of environmental justice analysis and community leadership interviews to develop strategies to involve underrepresented groups in decision-making.
    - Public feedback was recorded at workshops, through the project toll-free hotline, mail-in comment forms, and in interviews.
    - 18 public hearings, 12 in North Carolina and 6 in Virginia were held over a four month period.

The following table shows dates and cities of public hearings and viewing locations for the DEIS document. At each hearing, the public was provided the opportunity to give comments on the Tier I DEIS verbally, in writing, to a certified court recorder, or by mail within 10 days of the public hearing date. A total of 784 comments were received as a result of the Tier I DEIS public hearing process.

Table 1.4
Public Hearing and DEIS Viewing Locations

Hearing Date	City and Viewing Location	Hearing Date	City and Viewing Location
9/18/01	Durham, NC NCDOT Division 5 Office	10/23/01	Salisbury, NC NCDOT Division 9, District 1 Office
9/20/01	South Hill, VA South Side Planning District Comm.	10/25/01	Emporia, VA Emporia City Hall
9/25/01	Sanford, NC Lee County Manager's Office	10/30/01	Winston-Salem, NC NCDOT Division 9 Office
9/27/01	Wilson, NC NCDOT Division 4 Office	11/1/01	Greensboro, NC NCDOT Division 7 Office
10/2/01	Roanoke Rapids, NC NCDOT Division 4, District 1 Office	11/7/01	Richmond, VA VDOT Richmond District Office, Colonial Heights, & the Richmond Planning District Comm.
10/9/01	Henderson, NC NCDOT Division 5, District 3 Office	11/8/01	Petersburg, VA Crater Planning District Commission
10/11/01	Springfield, VA VDOT Northern Virginia District Office	11/13/01	Raleigh, NC NCDOT Division 5, District 1 Office
10/16/01	Star, NC Star Municipal Building	11/20/01	Fredericksburg, VA VDOT Fredericksburg District Office
10/18/01	Charlotte, NC NCDOT Division 10, District 2 Office	12/10/01	Raleigh/Cary Area, NC NCDOT Division 5, District 1 Office

Table 1.5 shows the distribution of public hearing comments by proximity to the public hearing locations and by the topic of comment.

Table 1.5
Summary of Tier I DEIS Public Comments By Location and Topic

Comments By Location	Number of Comments		Comments By Topic	Number of Comments
Cary	13		Cost	21
Charlotte	11		Cultural Resource Impact	4
Durham	26		Natural Resource Impact	7
Emporia	0		Noise	5
Fredericksburg	5		Project Schedule	3
Greensboro	21		Property Impact	14
Henderson	44		Public Involvement	8
Petersburg	16		Record Opinion	466
Raleigh	15		Safety	10
Richmond	32		Service Features	119
Roanoke Rapids	30		Stops	90
Salisbury	10		Other	37
Sanford	4			
South Hill	20		***Total***	***784***
Springfield	45			
Star	14			
Wilson	22			
Winston Salem	456			
Total	***784***			

1.4 Future Actions to Reduce Potential for Environmental Impacts

The incremental HSR approach reduces the potential for environmental impacts by maximizing the use of the existing infrastructure and right of way.

By using a tiered document, the overall program concept is examined, allowing opportunity to best minimize potential environmental impacts while still meeting the project purpose and need. During the Tier II process, planning would be done to avoid and minimize impacts to both the human and natural environment by accurately identifying resources at the detail level, and then by examining different design options, giving consideration not only to potential construction impacts, but also to operational impacts.

The actions for implementing HSR in the SEHSR corridor would each receive the appropriate level of environmental documentation during the Tier II process.

Detailed noise and vibration studies would be done as appropriate to identify mitigation needs. Potential mitigation techniques range from noise walls and ballast pads, to quiet zones and modification in the design of the actual train sets.

Care would be taken to span waterways where practicable, and to avoid paralleling flood plains and waterways, as well as avoiding wetlands to the maximum extent practicable. Best Management Practices would be followed in the planning, design, and construction stages.

Detailed field studies, coupled with completion of Endangered Species Act, Section 7 consultations, along with completion of the Section 106 process of the National Historic

Preservation Act, would help insure the avoidance and reduction of potential impacts to natural and cultural resources.

Every effort would be made to continue the communication process with the regulatory and resource agencies that has been initiated during this first tier phase. This communication would allow input from the agencies to help guide the planning, design, and construction in a way that would minimize potential negative impacts. This same communication process has included the local communities along the preferred study area alternative, and their continued input would be critical in reducing potential impacts to the human environment to the maximum extent practicable.

During the detailed Tier II studies, mitigation plans would be developed as appropriate for unavoidable impacts in concert with the regulatory and resource agencies and local communities.