CHAPTER 1 PURPOSE AND NEED

The Richmond/Hampton Roads Passenger Rail Project proposes passenger rail service improvements in the major east-west travel corridor linking Richmond and the Hampton Roads region of Virginia. The purpose of the project is to deliver predictable, consistent, and shorter travel times; augment the existing transportation infrastructure; and help relieve highway congestion and freight rail capacity constraints.

The following sections identify the project, and the purpose of and the need for the project. This chapter also provides project background and a description of the project area, including an overview of the Hampton Roads region and the Richmond/Hampton Roads corridor. Finally, this chapter provides a matrix of the goals and objectives that will be used to evaluate which alternatives best meet the projects' Purpose and Need as defined in this chapter.

1.0 Introduction

The Richmond/Hampton Roads Passenger Rail Tier I Draft Environmental Impact Statement (Draft EIS) is being prepared by the Virginia Department of Rail and Public Transportation (DRPT), in cooperation with the Federal Railroad Administration (FRA), to evaluate potential higher speed passenger rail service improvements in an east-west corridor linking Richmond and the Hampton Roads region of Virginia. This Draft EIS is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended; Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR §§ 1500-1508); and FRA environmental impact assessment procedures.

The FRA published a Notice of Intent (NOI) to prepare a Draft EIS in the Federal Register on February 24, 2004, to advise the public and other participating agencies that a Tier I Draft EIS would be prepared for the Richmond/Hampton Roads Passenger Rail Project. The other participating agencies include the Federal Highway Administration (FHWA), U.S. Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (USACE), and the U.S. Fish and Wildlife Service, (USFWS).

The Draft EIS is being prepared as a program-level document versus a project-level document. A program-level Tier I EIS is prepared when large geographic areas are being addressed for proposed improvements. This tiered approach allows the project sponsor to look at general environmental conditions and impacts that are associated with the project. The program-level Tier I Draft EIS is prepared to support DRPT and FRA decisions regarding technology, maximum operating speeds and what alignment and station location options can be eliminated from further consideration and which to select for more detailed technical analysis during subsequent preparation of project-level environmental documents at Tier II.

A program-level Tier I Draft EIS is an informational document intended to highlight, analyze and disclose to the public and to public decision-makers the environmental effects and benefits of a proposed action and its alternatives. The preparation, circulation and review of a Tier I Draft EIS provides information necessary for the evaluation of alternatives, including a No Action alternative; the assessment of all significant environmental impacts; and the opportunity for public comment to help the decision-making process. Evaluating alternatives, as required by the FRA (64 F.R. § 28545 [May 26, 1999]) and Council on Environmental Quality (CEQ) regulations (40 CFR § 1508.28), helps ensure that avoidance and/or minimization of potential environmental impacts are addressed, and that the potential benefits, costs and trade-offs of the alternatives are considered.

The program-level Tier I Draft EIS document addresses the following questions:

- What is the purpose of the Richmond/Hampton Roads Passenger Rail Project?
- Why do we need it?
- What are the potential regional impacts of such a system?

- What is the best general location for the system (i.e. what general route); and
- How does high-speed rail compare with other travel options within the corridor?

Environmental analyses for each Alternative were performed based on readily available data. Because this is a program-level document, specific "build" actions will not be taken as a result of this environmental documentation.[1]

Following this Tier I EIS, a determination will be made by the DRPT whether to move forward to implement a higher speed rail program in the region. Upon selection of the preferred alternative by the Commonwealth Transportation Board (CTB), the state will develop a final rail plan that is consistent with the Tier I EIS Record of Decision. This final plan will identify the specific actions needed to fully implement the project in the region.

If the decision is made to move forward, Tier II project-specific environmental documents will be prepared that examine potential impacts of the proposed action in more detail. The appropriate Tier II environmental documents (project-level) would be prepared for those specific actions. A decision on the type of Tier II environmental document to be prepared would also be made at that time. The Tier II environmental documents could include any of the following of three types based upon the proposed action:

- Categorical Exclusions (CEs) for actions that do not individually or cumulatively have a significant environmental effect.
- Environmental Assessments (EAs) for actions in which the significance of the environmental impact is not clearly established. EAs can lead to the development of EIS documents or a Finding of No Significant Impact (FONSI).
- Environmental Impact Statements (EISs) for projects where it is known that the action will have significant environmental effect.

The Tier II studies would be detailed in nature, as appropriate to the action, and would continue the public involvement effort already begun in this Tier I Draft EIS. These detailed environmental analyses will assess the environmental impacts of each action and identify ways to avoid, minimize and mitigate impacts. The FRA, DRPT and cooperating federal agencies would use the Tier II studies to determine the exact location and magnitude of each action, such as number of tracks, types of structures, station location and configuration, routing within existing right-of-way, bypasses, etc. As Tier II documents are completed, the permitting process (as appropriate) would be initiated and completed, and the construction process could proceed.

1.1 Project Description

The Richmond/Hampton Roads Passenger Rail Project proposes passenger rail service improvements in the major east-west travel corridor linking Richmond and the Hampton Roads region of Virginia. The corridor is divided by the James River. The project evaluates two principal transportation facilities: the existing CSXT/Amtrak route from Richmond to Newport News north of the James River on the Virginia Peninsula (Peninsula/CSXT) and the Norfolk Southern rail route south of the James River between Petersburg and Norfolk (Southside/NS). No passenger rail service currently operates on the Southside/NS Route being evaluated. Successful implementation of this service improvement would require re-establishing a link between the Norfolk Southern track and tracks utilized by CSXT and Amtrak passenger trains in Petersburg. . The DRPT has determined that the connection from the Southside/NS route will occur at the northeast quadrant of the off grade railroad crossing between CSXT and Norfolk Southern just north of Collier Yard in south Petersburg. The railroads are parallel to two principal highway facilities serving this corridor. The Peninsula/CSXT Route is parallel to I-64 while the Southside/NS Route is parallel to Route 460. Both highways experience congestion and related safety problems.

Currently, Amtrak's Staples Mill Road Station, located almost 27 minutes by rail north of the Main Street Station in downtown Richmond, is the primary rail passenger station serving Richmond. Amtrak trains

[1] Unless those actions have independent utility and require no further environmental documentation.

destined for points south of Richmond stop at the Staples Mill Road Station but bypass the Main Street Station by operating on the CSXT A Line (the former Atlantic Coast Line route) to reach Petersburg, Virginia. The current station location does not support the City of Richmond's desire to attract development and foster economic growth in the Downtown area. Consequently, Amtrak recently restored service to the Main Street Station at the request of the City of Richmond in order to foster economic growth in Downtown Richmond. At present, Amtrak service to Newport News via the Peninsula/CSXT Route uses the most eastern station tracks at this facility. Working with DRPT and Amtrak, the City of Richmond is interested in restoring full rail passenger service into and through the station southward to Petersburg.[2] Therefore, the Downtown Richmond Main Street Station is the terminus for intercity passenger rail service improvements evaluated in this Tier I Draft EIS.

1.1.1 Project Study Area

Figure 1-1 depicts the Richmond/Hampton Roads Passenger Rail Project study area. The project study area is bounded by I-95 in the west, I-64 in the north, Route 460 on the south and Norfolk in the east, forming a trapezoidal pentagon shape. The James River effectively splits the study area into Peninsula and Southside route options and service alternatives.

The project has impact beyond the immediate study area and therefore addresses the greater travel shed in which the project would serve. Issues regarding operating schedule, freight rail operations and capacity constraints, and ridership are examined in this regard. This project is unique in that these issues—ridership, capacity, and scheduling—require the analyses to assess numerous factors falling outside the study area. To properly address these unique issues, the greater travel shed was determined to include geographic regions identified in Figure 1-2. This is an essential concept for this study, in that most of the origin and destination trips that this project aims to capture are in the 100-to-500 mile travel market, whether by intercity bus, air, or private auto.

1.1.2 Hampton Roads and Richmond Region

Hampton Roads is the name given to the southeastern region of Virginia. Hampton Roads is the birthplace of Colonial America. It is home to Jamestown, the first permanent English settlement, and to Colonial Williamsburg. These early colonial settlements have become heritage tourist attractions. Colonial Williamsburg is the state's second most popular tourist attraction, bringing over 700,000 visitors annually to the area. Virginia Beach, at the furthest end of the corridor, attracts over 3 million annual visitors to its beaches, restaurants and shops.

The region's most notable geographic characteristic is proximity to a variety of waterways and especially its deep water port. Bordered on the east by the Atlantic Ocean, Hampton Roads is where the James, Nansemond and Elizabeth Rivers empty into the Chesapeake Bay. The region is blessed with the world's largest natural harbor, which has given the ports an important role in the region's economic development and history. The Norfolk Naval Base is the largest naval installation in the world, and by population the largest military base of any kind in the world. There are approximately 109,000 active naval personnel stationed in the Norfolk area, and over 40,000 civilians work at the area's naval installations.

The Hampton Roads and Richmond regions are the second and third largest metropolitan areas in the Commonwealth, with populations of 1.6 and 1.1 million people respectively. The Hampton Roads region includes the cities of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg; and the counties of Gloucester, Isle of Wight, James City, Mathews, Southampton, Surry and York; and Currituck in North Carolina.

[2] Amtrak *Auto Train* would not use Main Street Station but would continue to follow its current route between Acca Yard and Petersburg.

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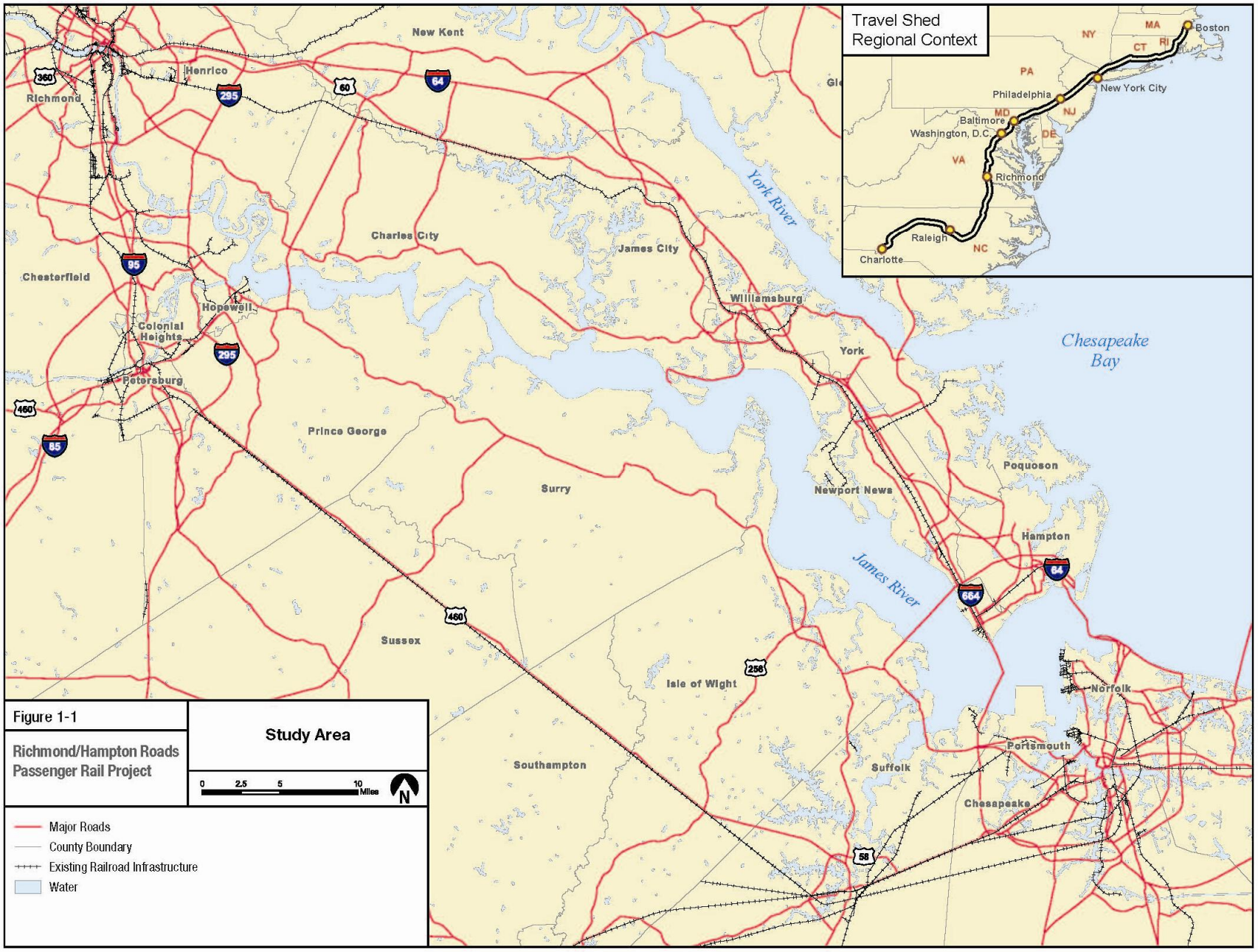
Travel Shed
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York River
Chesapeake Bay
James River
Newport News
Poquoson
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Figure 1-1
Richmond/Hampton Roads Passenger Rail Project
Study Area
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Major Roads
County Boundary
Existing Railroad Infrastructure
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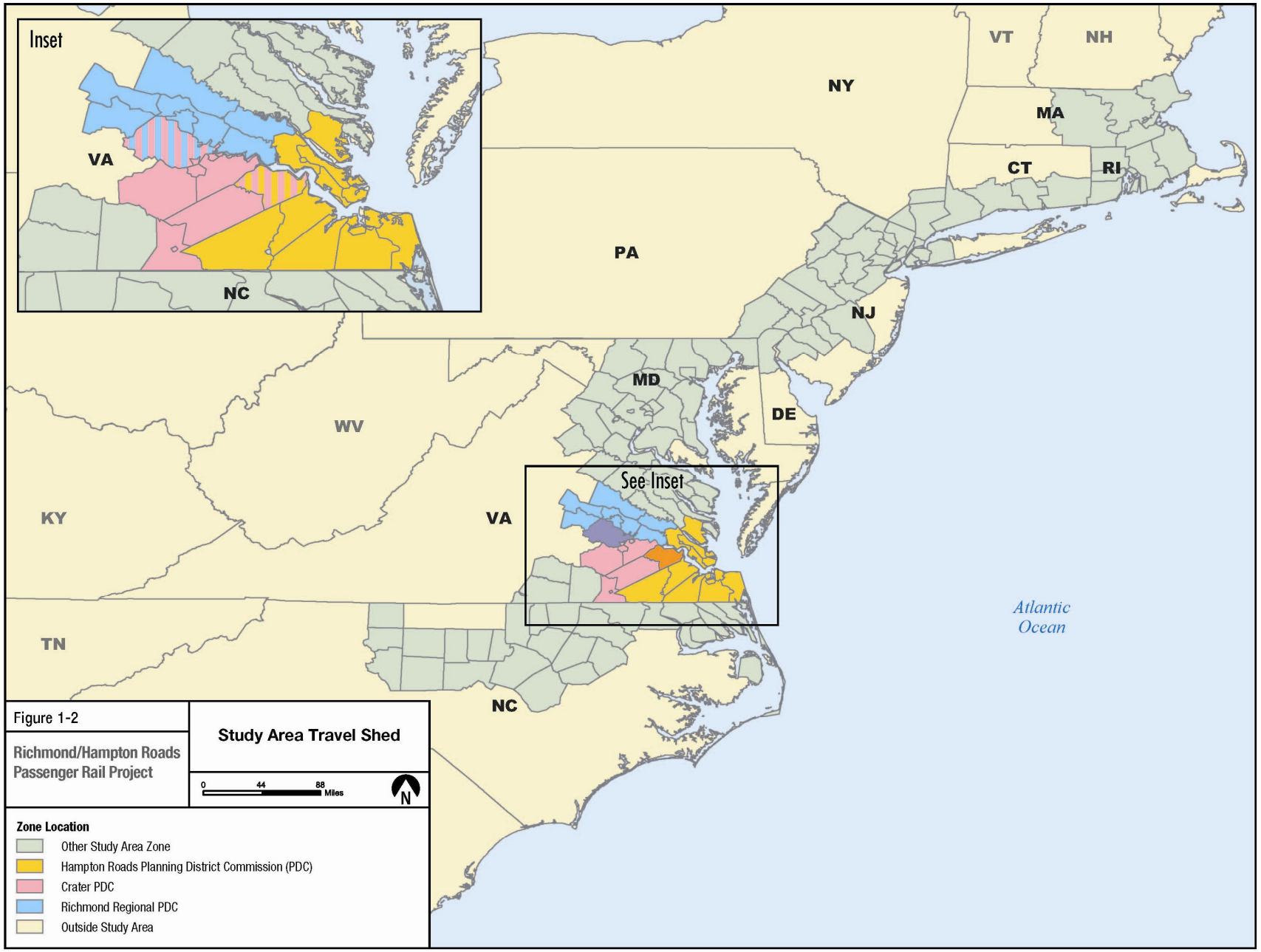
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Figure 1-2
Richmond/Hampton Roads Passenger Rail Project
Study Area Travel Shed
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Zone Location
Other Study Area Zone
Hampton Roads Planning District Commission (PDC)
Crater PDC
Richmond Regional PDC
Outside Study Area

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The region is connected to Richmond and Petersburg, which are located along the I-95 corridor at the western boundary of the study area, principally by I-64 and the CSXT railroad north of the James River on the Peninsula and south of the James River by Route 460 and the Norfolk Southern railroad. Because of geographic constraints and regional land-use patterns, I-64 functions as the primary link between Southeast Virginia and the rest of the state.

Richmond is the state capital. Regional travel patterns within the study area are greatly influenced by the large concentrations of population and employment located at each end of the corridor.

Population growth and economic development forecasts indicate that the highest growth rates are at the edges of the urbanized areas, typical of sprawl development patterns throughout the United States. This will cause population and employment patterns to be more dispersed, adding to localized travel on area highways, especially on I-64 and routes that lead to I-64.

Route 460 on the south side of the James River provides a link for seaport cargo and airfreight delivery between the ports and airports in both Hampton Roads and the Richmond-Petersburg area. Therefore, it serves as an important shipping route and carries a large amount of truck traffic. The percentage of through truck traffic along Route 460 is higher and growing faster than alternate routes such as Route 58 and Interstate 64. Future traffic volumes will result in increased travel delays on Route 460 due to capacity limitations caused in part by traffic signals and the lack of access control.

The CSXT rail line on the Peninsula is an active freight corridor primarily utilized for coal and general cargo trains. The rail corridor is also the route of Amtrak passenger trains connecting Richmond, Williamsburg and Newport News. Amtrak provides connecting thruway bus services to Norfolk and Virginia Beach. The Norfolk Southern rail line on the south side of the James River carries a significant amount of coal and intermodal rail traffic to and from the Norfolk ports. Passenger rail service on this line ended in 1971. Freight rail traffic on both lines is increasing, which may create capacity constraints limiting rail traffic growth and constraining economic development related to port and intermodal freight traffic activities if not addressed by the rail line owners.

1.1.3 Existing Passenger Transit Service in the Corridor

A varied network of surface transportation options exists between Richmond and Hampton Roads. However, public transportation is limited to urbanized areas.

Passenger Rail Service - Amtrak currently operates conventional rail service providing two round trips per day between Richmond and Newport News, with thruway bus service between the Newport News station, Norfolk, and Virginia Beach. These trains also serve Williamsburg as an intermediate stop between Richmond and Newport News. In 2007, there were 158,559 passengers served by the existing train service to/from Newport News (including those using the connecting bus service). Most of these passengers travel to/from Washington, New York, and other locations in the Northeast Corridor. Replacement or enhancement of this service with time competitive, reliable, and frequent service could divert additional auto travelers to passenger rail service. Regional and urbanized area traffic is steadily increasing, which affects intercity trips by delaying travelers where capacity is constrained. With population in the region projected to grow substantially over the next 20 years, intercity and regional travel will also increase. This growth in travel will increase congestion. Improved rail passenger service can expand transportation choice and capacity, limiting the growth of traffic congestion on regional highways.

Intercity Bus - Greyhound and Carolina Trailways Lines collectively operate nine round trips in the corridor. Service on the south side of the James River is extremely limited, with only one Carolina Trailways bus scheduled. Bus service on the north side of the river ranges in travel time from 1-hour-45 minutes to 2-hours-50 minutes between Richmond and Norfolk. Passengers from Petersburg to South Hampton Roads are routed via Richmond and Newport News, with an average travel time of over four hours. Improved bus services would be caught in the increased highway congestion even if more frequent schedules were added to the existing services.

Local Public Transportation - Existing transit services are provided by a number of local transit operators in the corridor. These services could provide an efficient means of distribution within the context of the proposed passenger rail system. The transit agencies operating in the corridor include:

- Greater Richmond Transit Company;
- Petersburg Area Transit;
- Hampton Roads Transit; and
- Williamsburg Area Transport.

1.2 Project Background and Planning History

1.2.1 Study Context

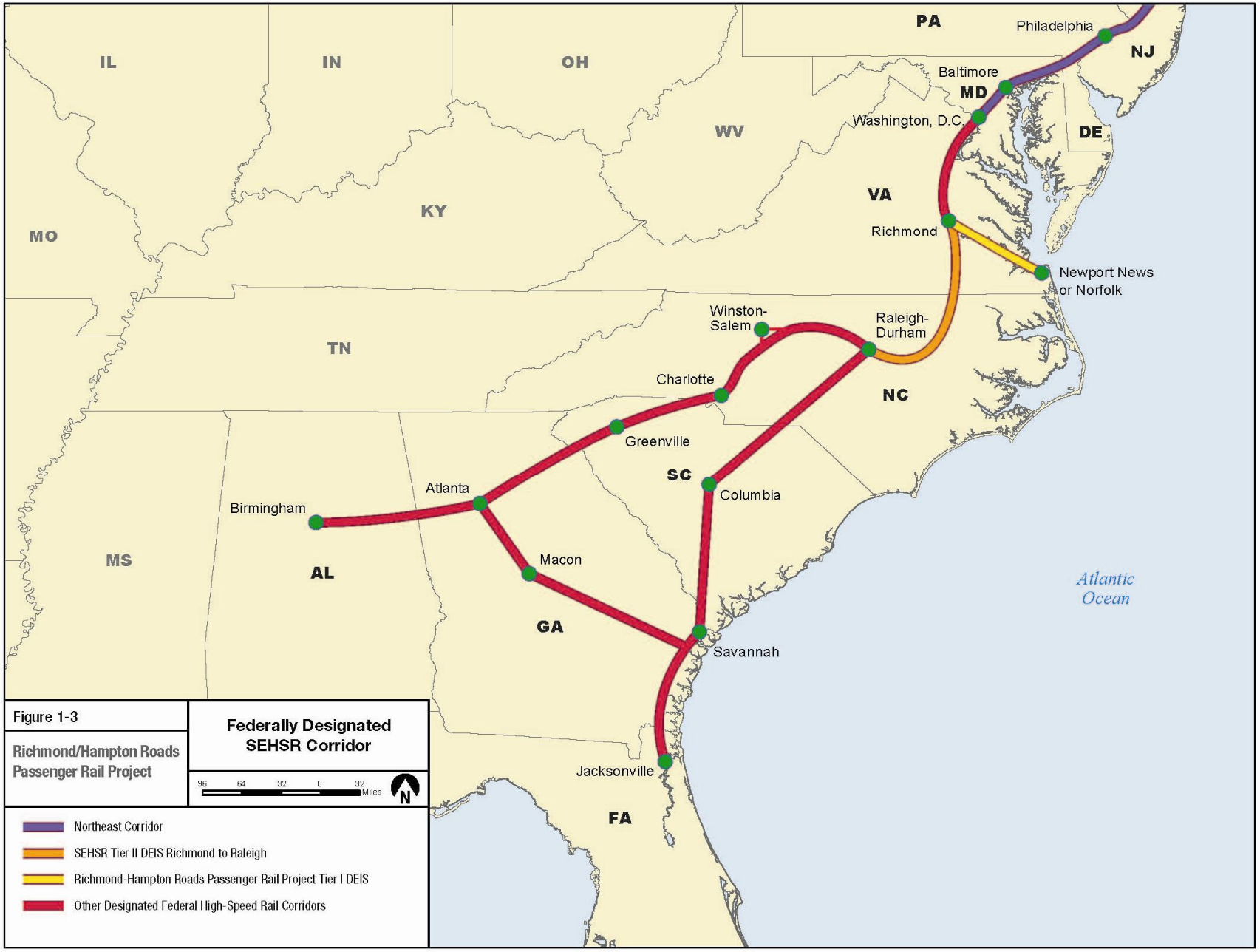
DRPT has been actively studying intercity rail passenger services throughout the Commonwealth as an outgrowth of the 1995 Statewide Intermodal Long-Range Transportation Policy Plan. As an important element of the economic development goals of the Commonwealth, the Long-Range Transportation Policy Plan required DRPT to identify strategic passenger and freight rail intermodal corridors in the Commonwealth and the needed project improvements in these corridors to support improved passenger rail and double-stack intermodal freight rail services. DRPT has encouraged the MPOs to support these projects and incorporate these corridors into their regional transportation plans. All of the passenger rail corridors currently under evaluation use Richmond Main Street Station as the central hub within Virginia.

The 2008 Virginia Statewide Rail Plan discusses the current state of the Commonwealth's rail system as well as challenges facing the system, such as the increasing demand for freight and passenger service, accommodating population growth, transportation system capacity limits and quality of life issues such as the increase in fuel prices and the decline in air quality. To address these issues and improve the overall rail system, the Statewide Rail Plan proposes several projects to address rail needs in the Commonwealth. The projects identified in the plan include high-speed and intercity passenger rail initiatives, including SEHSR and Richmond/Hampton Roads passenger rail projects.

1.2.2 Southeast High-Speed Rail Corridor

The Southeast High Speed Rail (SEHSR) Corridor was formally designated as an emerging high-speed rail corridor under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), reauthorized by the Transportation Equity Act for the 21st Century (TEA-21) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: a Legacy for Users (SAFETEA-LU). The SEHSR Corridor reaches from Washington, D.C. south to Richmond, Petersburg, Raleigh, Greensboro, Charlotte, Atlanta, and Macon. Following this designation, a number of extensions have been added by the USDOT, including the Richmond to Hampton Roads Corridor in 1996. The corridor now extends from Washington, D.C. through Virginia, North Carolina, South Carolina, Georgia, and Florida. Figure 1-3 depicts the federally designated SEHSR Corridor.

The Commonwealth of Virginia, the Federal Railroad Administration (FRA), CSXT, Amtrak, and the North Carolina Department of Transportation, Rail Division (NCDOT) all have worked collaboratively to advance the study and construction of the SEHSR Corridor. Numerous studies of the SEHSR Corridor between Charlotte, Richmond, and Washington, D.C. have contributed to the development of this high-speed rail corridor.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Winston-
Salem
Raleigh-
Durham
TN
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Figure 1-3
Richmond/Hampton Roads
Passenger Rail Project
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SEHSR Tier II DEIS Richmond to Raleigh
Richmond-Hampton Roads Passenger Rail Project Tier I DEIS
Other Designated Federal High-Speed Rail Corridors

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In August 1999, the North Carolina Department of Transportation Rail Division (NCDOT) and DRPT initiated a tiered environmental study process of the SEHSR project. The SEHSR Corridor was first studied at a Tier I (programmatic) level of environmental analysis through the Southeast High Speed Rail Tier I Environmental Impact Statement (EIS) from Charlotte, NC to Washington, D.C. The Tier I EIS presented a corridor level review of the alternatives. The study partners, including DRPT, FRA, and FHWA, determined that the SEHSR program should be analyzed using the incremental high-speed rail approach using fossil fuel train sets.[3] It was determined that this approach would minimize impacts to both the human and natural environments by utilizing existing rail infrastructure and right-of-way, thus reducing the initial capital investment. The proposed SEHSR Corridor adds to the national high-speed rail network, furthering a goal of achieving an economically efficient, environmentally sound, and globally competitive nationwide intermodal transportation network. The SEHSR project is needed because of the rapid growth in Virginia, North Carolina, and other locations within the Northeast Corridor and the associated congestion in the existing transportation system. It has become increasingly difficult to expand the existing transportation system without negative impacts. Congestion decreases efficiency, safety, and reliability of the existing transportation infrastructure. Ridership models have estimated that over one million passengers per year could be diverted to rail from air and auto travel by the SEHSR project by 2015.[4]

The SEHSR Tier I Final EIS was issued in June 2002. This document received a Record of Decision (ROD) from the FRA and FHWA in October 2002. The ROD supports a phased incremental development approach to high speed rail in the corridor, thereby reducing the potential for environmental impacts by maximizing the use of the existing infrastructure and right of way.

After the release of the ROD, Virginia and North Carolina partnered to develop the segment of the SEHSR Corridor from Richmond to the Raleigh. This segment is currently being investigated through a Tier II EIS, which is a more rigorous project level analysis that will further define and quantify potential impacts to resources to avoid, minimize or mitigate impacts to the human and natural environments.

The SEHSR Tier II EIS, under development, will identify specific actions needed to fully implement high speed rail in the corridor, including the identification of specific alignments, station locations, and number of train stops, detailed environmental and engineering analyses and more accurate capital cost estimates. During the Tier II process, planning will be done to avoid and minimize impacts to both human and natural environments by accurately identifying resources at the detail level and subsequently examining different design options. Consideration will be given to potential construction and operational impacts.

In 1996, the United States Secretary of Transportation, at the request of the Commonwealth of Virginia, expanded the federally designated Southeast High-Speed Rail (SEHSR) Corridor to include a link from Richmond to Hampton Roads. The designation did not specify which rail route would be utilized between Richmond and Hampton Roads. Two previous studies of rail service to Hampton Roads have been conducted. These studies found that higher speed passenger rail service between Richmond and Hampton Roads was a feasible goal, provided that requisite infrastructure improvements are constructed. The need for these improvements was also established. The studies provided the foundation for the initiation of the Richmond/Hampton Roads Passenger Rail Project, the development of preliminary goals and objectives, and project alternatives.

The Richmond/Hampton Roads Passenger Rail Project is proposing to use the SEHSR project segment from Richmond to Petersburg in its route analysis from Richmond Main Street Station to Norfolk. Detailed analysis of this segment is contained in the SEHSR Tier I Documents and the Tier II document under development. The Tier I documents and current information about the Tier II documents can be found at www.sehsr.org.

1.2.3 Previous Richmond to Hampton Roads Area Studies

I-64 Major Investment Study - In 1999, the Virginia Department of Transportation (VDOT) completed the Interstate 64 (I-64) Major Investment Study (MIS). The I-64 MIS Locally Preferred Alternative included plans

[3] High-Speed Ground Transportation for America, US DOT – FRA, September, 1997.
[4] SEHSR Washington, DC to Charlotte, NC – Tier I DEIS, August 2001.

for the widening of I-64 and recommendations for double tracking the entire rail corridor, increasing the maximum train speed to 110 mph, and increasing the frequency of passenger trains to eight round trips per day on the CSXT rail line on the Peninsula parallel to I-64.

Richmond to South Hampton Roads High-Speed Rail Feasibility Study - In 2002, DRPT completed a study of the feasibility of high-speed rail between Richmond and South Hampton Roads. The study examined both the CSXT route on the Peninsula north of the James River and the Norfolk Southern route via Petersburg parallel to the Route 460 Corridor on the south side of the James River. The study examined operating plans for services on both sides of the James River. The study suggested that the Peninsula/CSXT Route would require reinstallation of double track. The study developed an alignment and operating plan for the Southside/NS Route that would support the requirements of all potential users of the Norfolk Southern rail line with the goal that all operators and sponsors—intercity passenger, commuter, and freight railroads—could operate passenger and freight services at higher levels of traffic with greater reliability than those operating on the corridor at present. The study found that high-speed rail is feasible, provided that requisite infrastructure improvements are constructed to alleviate potential conflicts with freight rail operations. Moreover, this study identified three possible alignments through Petersburg that would connect to the Norfolk Southern track leading to Norfolk. The Ettrick Connection was found to be the alternative most favored by the localities. All the Petersburg connection alternatives were found to involve significant capital investment in new rail infrastructure, including a new or rebuilt bridge across the Appomattox River.

Route 460 Location Study – The Route 460 Location Study Draft EIS was approved by FHWA in June 2005. The proposed action involves the construction of a new limited access east-west highway facility between Route 58 in the City of Suffolk and I-295 in Prince George County, Virginia. The study area extends approximately 55 miles and includes the counties of Prince George, Sussex, Surry, Southampton, Isle of Wight and the City of Suffolk. Alternatives for the U.S. 460 study originally included a rail envelope, complementing improvements to the highway facility. However, due to the planned alignments of the improved Route 460 highway being unsuitable for a rail line when compared to the existing Norfolk Southern line, the reservation of a rail envelope was abandoned early in the Route 460 Location Study. The Commonwealth Transportation Board (CTB) approved the Locally Preferred Alternative in November 2005 and adopted a resolution resolving "that the Commonwealth, along with other stakeholders, continue to study and seek solutions to maximize the use of rail freight in the corridor." The Final EIS for the Route 460 Location Study is currently being prepared.

1.3 Purpose

The purpose of the proposed action is to provide a competitive transportation choice between Richmond and the Hampton Roads region that would effectively and efficiently expand the region's transportation system capacity and provide residents, tourists and visitors with a broader array of reliable transportation choices. The project, or proposed action, represents a response to numerous transportation related needs in the corridor arising from the growth of the regional economy. Currently, few alternatives to the private automobile are available to corridor residents, employees and tourists. This lack of travel choice affects the quality of life in the corridor. Continued dependence on automobile travel contributes to the growing congestion on the principal highway facilities, namely I-64 and Route 460; contributes to the nation's dependence on foreign sources of oil for transportation fuels; and degrades the environment by increasing mobile sources of greenhouse gases.

Specifically, the proposed Richmond to Hampton Roads passenger rail service would accomplish the following:

- **Regional Linkage and Improve Travel Time** - Improve regional linkage and travel time to Hampton Roads by improving the reliability and frequency of passenger rail connections from the region to the Southeast, Northeast, and Mid-Atlantic regions at Richmond Main Street Station by way of the proposed Southeast High-Speed Rail Corridor;

- **Limit the Growth of Traffic Congestion** – Limit the growth of congestion on roads and airports by diverting car and airplane trips to trains by providing improved transportation choices for the traveling public, particularly special populations such as the elderly and the disabled;
- **Multimodal System Development** – Improve rail system capacity and public transit connections resulting in a more balanced use of the overall transportation system while minimizing environmental impacts;
- **Safety** – Reduce accidents by diverting auto traffic to rail and improving grade crossings;
- **Air Quality and Energy Efficiency** - Improve air quality and energy efficiency by diverting automobile users to trains;
- **Economic Development** – Enhance economic opportunities, tourism and regional competitiveness by improving the freight and passenger rail system; and
- **Hurricane Evacuation** – Provide expanded transportation system capacity for more effective evacuation of the Hampton Roads region during weather emergencies.

The following sections in this report outline why the proposed action is needed and how it would fulfill the project purpose in the study area.

1.4 Need for Transportation Improvements

Several interrelated conditions and trends exhibited in the larger travel region and study area contribute to the need for improvements in the transportation system. These needs include the following, which are described in further detail in this section:

- Regional linkages and improve travel time;
- Limit growth in highway congestion;
- Multimodal system development;
- Safety;
- Air Quality and Energy Efficiency;
- Economic development; and
- Hurricane evacuation

Other conditions that are of concern include the air quality impacts from mobile source emissions and limitations to existing intercity passenger transportation service in the study area.

1.4.1 Regional Linkages and Improve Travel Time

As travel demand grows, intercity transportation by air, bus, and private auto increasingly suffer from congestion and delays—especially during peak travel periods, holidays, and inclement weather. Accompanying declines in levels of service negatively impact the transportation network and its users and affect regional linkages and ultimately competitiveness. Regional linkages and total travel time to Hampton Roads can be improved by improving the frequency and reliability of passenger rail connections from the region to the Southeast, Northeast, and Mid-Atlantic regions at Richmond Main Street Station (or Petersburg) by way of the proposed Southeast High-Speed Rail Corridor.

Total travel time is the time spent getting to a station or airport, waiting for the scheduled departure, getting to the boarding area, time spent in vehicle, checking and retrieving luggage, and traveling to the ultimate final destination. Total travel time is affected by reliability and frequency of service. Projected increases in automobile travel time are largely caused by increased travel demand causing increased congestion in a constrained highway network. Increasing the frequency of passenger rail service reduces the amount of waiting time and makes the choice of rail more viable for many trips.

Reliability is the delivery of predictable, consistent travel times that remain the same over a long period of time. Increasing congestion on roadways, airports and freight railroads are adversely affecting travel time reliability. Weather related events are an additional source of travel disruption and delay that affect travel time reliability.

Over the last several decades, the increase in air traffic has far outpaced increases in airport capacity, creating delays. The finite number of air slots available for commercial air traffic and consequent delays has an impact on travelers in terms of time and inconvenience. Though there has been a decline in air travel post-September 11, 2001, projections indicate total annual domestic passenger growth at 4.3 percent through 2015.[5] Frequent air travelers often look for more time-competitive and reliable ways to travel, avoiding overcrowded airports, airliners filled to capacity and the incessant delays caused by air capacity constraints and weather. The Federal Aviation Administration (FAA) has identified and recommended actions to prevent projected growth in delays, including the development of high-speed passenger rail service as a potential means of diverting short haul air traffic trips (500 miles or less).[6]

The Richmond/Hampton Roads Passenger Rail Project could directly compete for air travelers in the less than 500 mile travel market. Rail travel is highly competitive with air travel in these short haul markets, taking into account the time required at the airports and the time required traveling between the airport and the city centers. Rail service does not often include long terminal times and most stations are located in the middle of cities and activity centers. According to the FAA's 10 percent sample of airline passengers, about 650,000 of the 1.9 million enplanements at Norfolk International Airport in 2006 were to short haul markets within the NEC or North Carolina. Passenger rail provides a competitive alternative to these trips, and a reduction in trips through Norfolk International would improve and speed the flow of remaining passengers through the airport.

1.4.2 Limit Growth of Highway Congestion

Over the past 20 years, the number of highway vehicle miles traveled (VMT) and the number of registered vehicles in the Commonwealth continued to outpace the expansion of lane miles or freeway capacity. This growth in VMT has produced increasing amounts of congestion on the transportation network. Vehicle travel in Virginia increased by 29 percent between 1990 and 2002. Travel increased from 60.2 billion vehicle miles of travel (VMT) to 77.5 billion VMT. Vehicle travel in Virginia is projected to increase by another 40 percent by 2020, to 108 billion vehicle miles of travel. Highway lane miles increased over the same period at a rate of about 1.2 percent annually.

1.4.2.1 I-64 Corridor

The I-64 MIS collected traffic volume data and projected future traffic volumes for 27 defined segments of the roadway. The 1996 baseline traffic volumes ranged from 39,400 to 140,000 for Average Summer Daily Traffic. As would be expected, traffic volumes were the heaviest near urbanized areas with the lowest traffic volumes occurring in the central sections of the highway. The highest volumes were recorded in the eastern sections near Newport News and ranged from 96,000 to 140,000 vehicles. Level of service (LOS) is a measure used by traffic engineers to determine the effectiveness of highways. The transportation LOS system uses the letters A through F to grade highway effectiveness, with A being best and F being worst. LOS A is best described as conditions where traffic flows freely and all motorists have complete mobility between lanes. LOS E is an unstable flow. LOS F is the lowest measurement of efficiency for a road's performance and is best described as stop and go traffic flow.

During the AM peak, 9 of the 27 segments of the roadway operate at a level of service (LOS) E or F in one or both directions. In the PM peak hour, 15 of the 27 segments of the roadway operate at LOS E or F in one or both directions. If no improvements were made to the I-64 Corridor, congestion would seriously degrade system performance with 92 percent of the highway expected to operate at LOS E or worse and 50 percent of

[5] FAA Forecast Fact Sheet for Fiscal Years 2004 and 2015.
[6] USDOT, FRA. High-Speed Ground Transportation for America, September 1997.

the highway operating at LOS F conditions. The I-64 MIS concluded that simply improving the roadway through widening was insufficient to reduce congestion to manageable levels.

More recent AADT data provided through VDOT indicates continued strong traffic growth throughout the I-64 corridor. The table below presents historical AADT across three locations in the I-64 corridor, plus the average annual growth rates for two time periods. While growth has slowed a bit in the last six years in the Richmond (Henrico County location) region, growth continues to be strong. In the Eastern end of the corridor, strong growth has been maintained or increased over the past six years.

Table 1-1: Interstate 64 Historical AADT

Interstate 64 AADT			
Year	**I-295 to VA 33 (Henrico County)**	**VA 33 to VA 30 (New Kent County)**	**Yorktown Rd. to Ft. Eustis Blvd (Newport News)**
1990	39,850	27,130	56,975
1995	47,000	37,000	66,000
2000	62,000	39,000	71,000
2005	68,000	47,000	86,000
2006	71,000	48,000	91,000
AAGR (90-06)	3.7%	3.6%	3.0%
AAGR (00-06)	2.3%	3.5%	4.2%

Source: VDOT

Continued traffic growth in the corridor will be ongoing, as indicated by population and employment forecasts (see Tables in the section below) for the region. Based on their 2004 regional transportation model, the Hampton Roads Planning District Commission forecasts that by 2025 travel times between downtown Norfolk and downtown Richmond will increase by about 20 minutes, a 15 percent increase from 2000, and travel times between Williamsburg and Richmond will increase by about 17 minutes, about 30 percent higher than 2000.

There are no confirmed plans to increase the capacity of I-64, and with transportation funding challenges in Virginia, congestion relief cannot be counted on. While passenger rail in the corridor will not solve the highway congestion and growth issues, it will provide travelers with another alternative while also taking some cars off the road. As I-64 is the only interstate linking Richmond and Hampton Roads and air travel is not a cost or time efficient alternative in the corridor, each passenger rail trip between the metro areas represents one less intercity highway trip (not accounting for new or "induced" rail trips) using I-64. Additionally, in cases where passengers are able to walk or use transit to access stations, rail travel could provide some, though very minor, local congestion relief.

As an alternative to congested highways, passenger rail provides reliable travel times. Proposed service in the corridor would be designed to operate with an on-time performance averaging 90 percent. This is a desired benefit for travelers who otherwise have to account for unpredictable highway and/or tunnel congestion when making their travel plans.

1.4.2.2 Route 460 Corridor

Route 460 provides a link for seaport cargo and airfreight delivery between the ports and airports in both Hampton Roads and the Richmond-Petersburg Metropolitan Area. Therefore, it serves as an important shipping route and carries a large amount of truck traffic. Route 460 truck volumes within the study area currently range from approximately 2,600 to near 4,100 trucks per day, with through truck volumes near 3,700. This represents between six percent and 34 percent of all vehicles on Route 460. The percentage of through truck traffic along Route 460 is higher and growing faster than on alternate routes such as Route 58 and Interstate 64. Along Route 460, the percentage of through trucks has increased by 13 percent since

1990. On Route 58 and Interstate 64, the percentage of through trucks has declined by 8 percent and 6 percent respectively.

Table 1-2: Route 460 Historical AADT

Route 460 AADT			
Year	**East of I-295 (Prince George County**	**Suffolk/Isle of Wight Line**	**West of I-64/ I-664 (Chesapeake)**
1990	9,950	13,200	32,000
1995	14,000	15,000	44,000
2000	13,000	11,000	55,000
2005	16,000	16,000	67,000
2006	16,000	16,000	69,000
AAGR (90-06)	3.0%	1.2%	4.9%
AAGR (00-06)	3.5%	6.4%	3.9%

Source: VDOT

Waterborne freight shipments to, from, and within Virginia are projected to increase from 24 million tons in 1998 to 40 million tons by 2020, an increase of 67 percent. The majority of this freight (59 percent) will be arriving and departing from the ports of Hampton Roads. To accommodate this increasing demand, two new port facilities will open in the future, increasing freight shipments from the ports. Route 460 has roadway design deficiencies that result in numerous problems related to safety, and accommodation of truck traffic. Route 460 does not comply with current VDOT design standards for roads of similar purpose and functional class. Route 460 is classified as a rural principal arterial, according to guidelines published by the American Association of State Highway and Transportation Officials (AASHTO). Using this classification, it does not meet VDOT's rural arterial design standards for lane width, median width, left turn lane protection, shoulder width, clear zone protection and access control.

The increasing truck traffic on Route 460, combined with the geometric deficiencies of the existing roadway, has led to operational problems. Residents traveling to and from the eastern sections of the Hampton Roads region tend to travel the I-64 corridor in order to avoid these issues along Route 460. As truck traffic continues to increase in the future with the opening of the new ports, automobile traffic will likely continue to shift to I-64, further adding to the congestion issues. Rail passenger service in the corridor would provide an intercity alternative for these travelers.

1.4.2.3 Third Crossing

A major area of discussion in the Hampton Roads region is the potential building of a new Third Crossing over/under the Hampton Roads to help ease the current and projected congestion over the Hampton Roads Bridge Tunnel and the Monitor-Merrimac Bridge Tunnel. While there is no definite plan to add a Third Crossing, the growth within the region is causing concern that the present capacity provided by the two existing crossings will be insufficient to meet future demands. In the region today, the tunnels are often congested, especially during peak periods and holidays. When planning trips, travelers who use one of the tunnels need to take into account the congestion and the unpredictable travel time. Passenger rail service in Norfolk and on the Southside would provide travelers an additional, reliable alternative for trips requiring crossing the Hampton Roads.

1.4.3 Multimodal System Development

Given significant federal investment to build the Interstate highway system and fund airport construction and operate the air traffic control system, it is not surprising that 97 percent of intercity travelers in this country choose the relative convenience of autos (90%) and airplanes (7%), and only one percent travel by passenger rail. Other developed western nations provide travelers with more balanced options—bus and rail trips are 24.6 percent of long distance trips in Japan and 14 percent in Italy, Germany, France and Britain. The lack of intercity travel options in the U.S., where people travel nearly twice as many miles each year as

their European or Japanese counterparts yet have fewer travel options, has contributed to growing congestion levels on our freeways and at our airports.

The I-64 MIS found that a more balanced investment strategy produced lower congestion and improved LOS on more highway segments than highway improvements alone. Consequently, the I-64 MIS concluded with a recommendation for improved passenger rail service.

However, it also must be pointed out as a practical consideration that people using rail passenger services must rely on local highway connections to travel to the rail station, much the way people travel to airports. Hampton Roads is a very automobile-dependent environment. Hampton Roads is very spread out and few new rail stations are planned—this is a limiting factor in terms of attracting people's use of passenger rail service. Local transit services and better taxi and rental car facilities must accompany any planned improvements in rail passenger service.

1.4.4 Safety

For the Richmond Hampton Roads Passenger Rail Service to divert travelers from other transportation modes, potential riders must have confidence that the service is not only fast and reliable, but also as safe as or safer than other modes. Nationally, passenger rail is one of the safest ways to travel. Railroad safety in the U.S. has steadily improved over the past several decades, despite increases in both rail traffic and highway traffic crossing rail lines at-grade.

Significant growth in freight rail activity is expected by 2025. The movement of goods and services throughout the Commonwealth and service to the ports and industry is expected to increase by 40 percent. Currently, Virginia's railroads move 30 percent of the freight, nearly 123 million tons of freight per year. The balance of the freight activity within the Commonwealth is relegated to the region's already overburdened highway network and available commercial air slots. The Port of Virginia is one of the largest ports on the Atlantic Coast and is an important gateway for international commerce. The Virginia Port Authority has been exploring plans to double its on-dock rail capacity at Norfolk International Terminals to meet growing demand. In addition to expansion at the Port of Virginia, the Maersk Group, a shipping and logistics company, is building a marine terminal in Portsmouth to bring goods into the United States and distribute them throughout the East. The terminal will generate road and rail traffic in the surrounding areas. This increased freight traffic will have implications on the existing rail infrastructure as well as impacts on highway system capacity, LOS and safety. For example, Route 460 in the study area has higher accident, injury, and fatality rates than similar facilities statewide. Four-lane undivided roadways usually have higher than average crash rates due to the lack of median and access control and the impact that turning vehicles have on slowing traffic flows and increasing crash potential. Also, a high percentage of vehicles traveling on Route 460 are trucks. Larger vehicles increase accident severity. Of the 555 crashes documented by VDOT along the corridor from 1999 to 2001, 76 crashes involved tractor-trailers (14 percent). Approximately half of the fatal crashes in the Route 460 corridor involved tractor-trailers. Crashes involving tractor-trailers constituted approximately 28 percent of all property damage related to vehicle crashes. With more and more traffic on the highways, the potential for accidents increases.

A comparison between Route 460 and the average of four-lane roadways in Virginia confirmed Route 460's higher-than-average crash rates. The crash fatality rate for Route 460 in the study area is 220 percent greater than non-Interstate four-lane freeways, with the injury crash rate 164 percent greater. Compared with divided roadways with no access control, the crash fatality rate in the Route 460 corridor is 137 percent greater; and the injury crash rate is 107 percent greater. The need to improve safety on Route 460 has been cited by the public via comments submitted to VDOT, and also by transportation managers of distribution centers located within the study area. Adding more trucks to this rural arterial road will be hazardous to the traveling public. Conversely, passenger rail is one of the safest modes of intercity transport. In 2002, the

number of U.S. fatalities on passenger trains was seven passengers or just .02 percent of all transportation fatalities in comparison to autos, which were 37,187 or 83 percent.[7]

The I-64 Major Investment Study showed a significant increase in traffic, accompanying congestion and the number of accidents. The I-64 traffic analysis estimated a 21 percent increase in the number of accidents between 1996 and 2015. These accident estimates took into account the safety enhancements and benefits attributable to ITS strategies expected to be in place in 2015. In addition, certain areas of I-64 tend to be more vulnerable to accidents, especially at interchanges.

However, throughout the Commonwealth accidents involving rail service have declined in the past several decades due to improvements at grade crossings. Rail accidents along the CSXT rail line in the I-64 Corridor are infrequent. The DRPT, in cooperation with VDOT, has been making special efforts to improve crossing safety. Efforts by Virginia include the construction of highway and pedestrian bridges over rail lines. In addition, Virginia has been expanding the use of protection devices at private crossings. Virginia has participated in the testing of active physical barriers to prevent motorists from violating the highway-grade crossing warning devices. Virginia is installing constant warning time protection devices within the corridor between Richmond, VA and Washington, DC.

In the Transportation Efficiency Act for the 21st Century (TEA-21), the United States Congress established funding specifically intended to improve highway-rail crossings and accommodate high-speed rail. Section 1103 (c) of the TEA-21 provides funds for the High-Speed Rail Crossing Improvement Program. The purpose of this program is to reduce or eliminate the hazards at highway-rail grade crossings in designated high-speed rail corridors. Work eligible for funding includes:

- Installation or improvement of warning devices;
- Improvement of track circuitry which activates warning devices;
- Improvements such as crossing surfaces, improved sight distances, crossing illumination;
- Closure of crossings with or without attendant highway relocations;
- Grade separation construction or reconstruction; and
- Combining crossing warning systems with advanced train control and/or intelligent highway traffic control systems.

The safety improvements discussed above will result in improved overall rail passenger safety within the rail corridor when compared to existing rail service and other modes of transportation currently serving the area.

The FRA has developed the following safety guideline to address safety concerns at highway crossings along high-speed rail corridors:[8]

> *Public and private crossings where train speeds are between 90 and 110 mph should be equipped with special crossing protection devices, grade separated, or closed.*

In addition, Virginia participates in the Federal Railroad Administration's safety inspection program. The program involves state and federal inspectors working together to inspect the condition of the rail infrastructure. Inspection elements covered by the program include equipment, signal systems, track and operating practices. The FRA has established Track Safety Standards that are based on train speeds. The standards specify nine classes of track, with the class of track determined by the maximum speed of trains on that track segment, ranging from 10 mph to a maximum of 200 mph. Higher track classifications require correspondingly higher safety standards.

[7] Distribution of Transportation Fatalities by Mode, Table 2-4 in 2002, Bureau of Transportation Statistics, 2005.

[8] This guideline applies to the SEHSR program. The allowable speed at any given location is also influenced by design characteristics such as track conditions, track geometry, terrain, right-of-way restrictions, type of train equipment, and adjacent land use. The condition of rail infrastructure is critical for rail because rail operates on a fixed guideway. Typical infrastructure defects include settled or soft roadbeds, track geometry defects, rail and joint bar defects, and signal failures.

1.4.5 Air Quality and Energy Efficiency

Increased public investment in passenger rail could help achieve our national goals of reducing dependence on foreign oil and improving air quality. Relative to other modes of transport, passenger rail emits less air pollution than automobiles or airplanes and has the capacity to carry far more passengers than any other mode.

Several counties located within the Richmond/Hampton Roads Corridor are experiencing air quality impacts from mobile source emissions. Areas of the country where air pollution levels persistently exceed the national ambient air quality standards for any pollutant may be designated as a "non-attainment" area for that pollutant. The majority of counties within the Richmond to Hampton Roads project area have been designated as non-attainment. This issue has been addressed by the study area MPOs through their respective Long Range Transportation Plans. Automobile emissions are harmful and contribute to ozone formation. As VMT and congestion increase within the corridor, air quality impacts may become more pronounced.

Diverting some auto traffic to passenger rail service may result in less pollution.[9] A recent analysis of the 11 federally-designated proposed high-speed rail corridors found that investing in these systems could yield significant air quality benefits. If all 11 high-speed rail systems were built, there would be a total emissions savings of 6 billion pounds of carbon dioxide per year (2.7 $MMTCO_2$)[10] Overall, high-speed rail is estimated to generate approximately half of the emissions it saves by enabling passengers to switch from other modes. Savings from avoided automobile and airplane trips are the primary sources of the emissions savings; together these two modes make up 80 percent of the estimated emissions savings from all modes.[11]

Passenger rail is also less energy intensive. Current intercity passenger rail service uses approximately 25 percent less energy than airplanes or personal autos and light trucks. Today 56 percent of airline take-offs are for trips under 500 miles[12]. An interconnected system would allow bus and rail to be a competitive energy-reducing alternative. By shifting a significant percentage of the intercity trips that are currently on the least efficient modes—auto and air—to the more efficient modes—bus and rail—the U.S. could save billions of barrels of oil each year and the problems that accompany its use.

Improving passenger rail would also improve the system for freight rail, which is also more efficient for goods movement. On average, railroads are at least three times more fuel efficient than trucks.[13] Reducing VMT could improve energy efficiency by reducing the total amount of fuel consumed and by improving the efficiency of trains on a per passenger mile basis.

1.4.6 Economic Development

Improved rail connections between Hampton Roads and other metropolitan areas can help to manage regional growth pressures and improve economic competitiveness. Building a stronger intercity passenger rail system would create additional jobs, could be a catalyst for local economic development near rail stations and could continue to serve and enhance the tourism industry. This is particularly critical for the Main Street Station in Downtown Richmond and increasing train travel to Williamsburg and Hampton Roads. Traffic congestion and delay compound the cost of doing business in the region and makes it less attractive than other deep water ports on the East Coast.

Significant growth in population within the entire travel shed impacts the travel needs of its residents. Population growth in Virginia and within the corridor has occurred over the past several decades. This trend is projected to continue into the future. Approximately two million additional people are projected to live in

[9] SEHSR Washington, DC to Charlotte, NC – Tier I DEIS, August 2001.
[10] One million metric tons CO_2 ($MMTCO_2$) = 2,205 million pounds CO_2.
[11] Winkleman, Steve and Albert Benedict, Peter Haas and Jen McGraw; "High Speed Rail and Greenhouse Gas Emissions in the U.S." Center for Clean Air Policy, working paper.
[12] "Climate Matters: Transportation Demand and GHG Emission Reduction", working paper from Center for Clean Air Policy, Center for Neighborhood Technology, and the Surface Transportation Policy Project, 2003.
[13] AASHTO Rail Committee. "Intercity Passenger Rail Transportation." Bottom Line Report series, 2002, p. 29.

Virginia by 2025, mostly in areas that are already heavily populated.[14] Table 1-3 shows 2000 population and the projected population for 2025 within 5-mile and 15-mile radii of the potential station stops. Several of the potential station areas demonstrate significant population growth by 2025.

Table 1-3: Corridor Population Data

Station Stops	For Year 2000		For Year 2025		Percent Change	
	5 Mile	15 Mile	5 Mile	15 Mile	5 Mile	15 Mile
Richmond Main Street	249,115	740,651	275,553	974,650	10.6 %	31.6%
Williamsburg	52,473	203,299	77,455	280,790	47.6 %	38.1%
Newport News Amtrak	177,891	640,898	197,714	736,410	11.1 %	14.9%
Newport News Downtown	118,528	755,955	116,408	858,511	-1.8 %	13.6%
Petersburg	68,946	218,666	88,672	346,742	28.61%	58.57%
Bowers Hill	132,935	679,426	160,058	779,368	20.4 %	14.7%
Norfolk Downtown	299,466	908,961	312,405	1,025,522	4.3 %	12.8%

Source: 2026 LRP for Crater Planning District Commission; Hampton Roads Planning District Commission: and Richmond Regional Planning District Commission.

*Supporting thematic maps for 2000 and 2025 population within a ½-mile and five-mile radius of the proposed station stops in urban locations are included in Appendix A.

In recent years, Virginia's employment has outperformed the nation in terms of employment growth and continues to grow at significant levels. The Commonwealth is expected to add an additional 1.9 million new jobs by 2025. Total employment in the region is projected at 6.3 million jobs in 2025, up from 4.4 million in 2000.[15] Most of the growth is predicted to occur in the urban regions of the Commonwealth. Strong employment growth is indicated in the potential station areas within the corridor. Table 1-4 shows employment growth between year 2000 and projected year 2025 within 5-mile and 15-mile radii of the proposed stations in the major urban areas of the corridor. Most station areas demonstrate significant growth by 2025, especially within a 5-mile radius of each area.

Table 1-4: Corridor Employment Data

Station Stops	For Year 2000		For Year 2025		Percent Change	
	5 Mile	15 Mile	5 Mile	15 Mile	5 Mile	15 Mile
Richmond Main street	261,964	594,161	265,447	766,975	1.3 %	29.1%
Williamsburg	55,336	117,174	68,618	158,658	24.0 %	35.4%
Newport News Amtrak	121,849	414,469	145,317	467,571	19.2 %	12.8%
Newport News Downtown	79,456	515,817	90,056	579,904	13.3 %	12.4%
Petersburg						
Bowers Hill	45,327	478,012	66,717	544,965	47.2 %	14.0%
Norfolk Downtown	250,358	639,316	287,121	713,807	14.7 %	11.7%

Source: 2026 LRP for Crater Planning District Commission; Hampton Roads Planning District Commission: and Richmond Regional Planning District Commission.

*Supporting thematic maps for 2000 and 2025 employment within a ½-mile and five-mile radius of the proposed station stops in urban locations are included in Appendix B.

According to the U.S. Census Bureau, nearly 17 percent of the Commonwealth's population has a disability. Combined with this, the Commonwealth's aging population is projected to increase to 18 percent of the population at retirement age by 2025. These demographic changes are likely to change travel characteristics.[16] In addition, approximately 17 percent of Commonwealth residents reside in areas without public transportation. The percentage without adequate access is far greater. Nearly 200,000 households do not own personal vehicles, mostly in the same areas where public transportation is unavailable. The VTRANS 2025 Initiative has identified needed transportation improvements and options for these populations in their long-term transportation plan in terms of access, leisure travel, and special needs. Rail passenger service addresses this need by providing people with viable travel options other than automobile or air.

[14] VTrans 2025 - Phase 3 and Final Report to the General Assembly, November 17, 2004.
[15] VTrans 2025 - Phase 3 and Final Report to the General Assembly, November 17, 2004.
[16] Ibid.

Improved passenger rail will provide service to the major activity centers and high growth areas throughout the corridor. The transportation system in many of these areas is dominated by auto travel, as the airports are located outside of the activity centers. High growth in these areas could produce strain on the highway infrastructure and the system could approach capacity. Passenger rail service within close proximity or walking distance to residents and employment centers would provide another alternative to support the population and employment growth in the corridor, without adding autos to the highway system.

Locating passenger rail within activity centers will also provide an intercity travel mode for households who do not own a car. Additionally, passenger rail could offer a desirable travel alternative for the aging population, who may be wary of driving themselves.

One of the major economic drivers of the Hampton Roads area is tourism, including Virginia Beach and attractions in Williamsburg and throughout the region. If highway congestion continues to increase, tourists may look for other locations to visit. Significant delays, especially through the tunnels, already slow traffic to/from Virginia Beach, and with strong population and employment growth predicted for the region, the traffic and delays will only increase. Improved passenger rail service in the region will offer tourists another alternative which offers more reliable travel times, especially during the peak periods and holidays.

1.4.7 Hurricane Evacuation

Intercity passenger rail can provide critical mobility during times of crisis to help evacuate citizens or equipment and keep the economy moving. In the wake of September 11th, 2001, ridership on the Northeast Corridor jumped 60 percent for a 2-week period while the airline industry was grounded and public anxiety was high. Conversely, the impact from a lack of mobility options during Hurricanes Katrina and Rita was tragic as Gulf Coast residents had either no means for personal evacuation or were forced to endure day-long traffic jams. Providing people with travel options enhances mobility and can save lives and aid in the evacuation prior to a storm.

Route 460 is signed as a designated hurricane evacuation route for south side Hampton Roads communities. Data from the Hurricane Emergency Response Plan indicates that the total number of people evacuating dwelling units south of the Hampton Roads Bridge Tunnel ranges from 103,200 to 421,000. The number of vehicles evacuating from these dwelling units ranges from 41,300 to 151,700. These figures do not include the employment-based population and freight operations that may also be evacuating during an emergency. Additionally, these figures do not include the residents and tourist populations for northeastern North Carolina, including portions of the Outer Banks that would evacuate using Route 168 through Chesapeake.

Clearance times estimated for these vehicles range from three to 26.75 hours for cities located in south side Hampton Roads. Capacity improvements through the improvement of passenger rail service could reduce the clearance time during an emergency.

Despite Route 460's important role for hurricane and emergency evacuation, the roadway is susceptible to the effects of severe weather. During two recent hurricanes, this primary evacuation route was closed due to effects caused by these storms. The existing Route 460 has a narrow right-of-way that does not provide either a clear zone or shoulders adjacent to the travel lanes. The narrow right-of-way contributed to the amount of storm debris blocking the travel lanes during Hurricane Isabel in September 2003. In 1999, heavy rainfall from Hurricane Floyd caused flooding along the Blackwater River with the river crest (about nine feet above the surface of the roadway) rendering Route 460 impassible for over a week.

The Federal Emergency Management Agency (FEMA) has recently begun developing new hurricane evacuation plans that call for using passenger rail service to provide additional capacity to evacuate ambulatory, elderly and other special needs populations.

1.5 Transportation Goals and Objectives

The following goals and objectives were developed based on the transportation needs described above. Goals that were included in regional long-range transportation plans were also incorporated. Goals and

objectives were further refined with public and agency participation during scoping. The goals and objectives provided an important framework for the study process and the evaluation of transportation corridors and modal technologies. The goals and objectives are as follows (See Table 1-5):

Table 1-5: Transportation Goals and Objectives

Goals		Objectives
1	Regional linkage	• Improve trip reliability • Reduce trip time
2	Limit growth of highway congestion	• Limit growth in ADT volumes • Increase rail passengers • Provide mode choice
3	Safety	• Grade crossing protection • Right-of-way • Hurricane evacuation
4	Cost Effectiveness	• Maximize system value by balancing costs and benefits • Return on investment
5	Minimize environmental impacts	• Air quality standards met • Avoid, minimize and mitigate impacts to wetlands, floodplains and critical habitat • Minimize operating noise • Avoid/minimize adverse impact to sensitive land uses, historic properties and open spaces

1.6 Tier I EIS Development Process

The Richmond/Hampton Roads Passenger Rail Project Tier I EIS began with a Notice of Intent (NOI) being published in the Federal Register on February 23, 2004 announcing the intent to prepare an EIS. Following the NOI, the scoping process began and was designed to inform the public, interest groups, and involved agencies about the proposed project, alternatives, and issues for public and agency review and input. The main goal of the scoping meetings was to encourage the active participation of the public and agencies early in the decision-making process. As part of these outreach efforts during scoping, a public participation plan was developed. The public participation program included several different elements designed to target specific audiences in a variety of ways. These elements included formal meetings with the Technical Working Group (TWG), public workshops and information meetings, and presentations to general interest groups in the corridor and elsewhere in the study area. More detail on public and agency coordination efforts is provided in Chapter 7 of this Tier I Draft EIS.

The scoping meetings provided the public with an opportunity to communicate issues and concerns to help develop alternatives before considerable resources were expended. It is from this process that the purpose and need emerged. The scoping process also helped to define the alternatives to be examined in the study and the impacts to be considered, and it enabled the establishment of goals and objectives that guided the evaluation of alternatives. The Tier I EIS process has been divided into 5: phases:

- Phase 1- Scoping;
- Phase 2 – Alternatives Development;
- Phase 3 – Alternatives Analysis (AA);
- Phase 4 – Tier I Draft Environmental Impact Statement (Draft EIS, Hearing); and
- Phase 5 – Tier I Final Environmental Impact Statement (Final EIS, ROD).

At the onset of the EIS, a wide range of alternatives were developed based on prior studies, scoping input and planning, cost, community input, and financial issues. Following public and agency review of the Tier I EIS and the issuance of a Record of Decision (ROD) by the FRA, the project will be further refined and mitigation measures finalized during preliminary engineering, assuming a Build Alternative is selected. These activities occur during preparation of the Tier II Draft and Final EIS documents. Following completion of

appropriate Tier II documents and funding commitments, the project could be advanced into acquisition, final design/permitting, and construction.

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