

a transit vision plan
for HAMPTON ROADS



VISION PLAN DOCUMENT

March 2009



A TRANSIT VISION PLAN FOR HAMPTON ROADS

Prepared in cooperation with the Virginia Department of Rail and Public Transportation.

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TABLE OF CONTENTS

1. Introduction	1	Corridor 11: Peninsula CSX Corridor, Newport News, James City, York, Williamsburg	46
1.A Project Purpose.....	1	Corridor 12: Downtown Hampton to Oyster Point, Hampton, Newport News.....	48
1.B Background and Objectives	1	Corridor 13: Downtown Newport News to Buckroe, Newport News, Hampton	50
1.C Envisioning the Future.....	1	Corridor 14: US 17/Gloucester County Corridor, Gloucester, York, Newport News	52
1.D Process	3	Corridor 15: Poquoson to Oyster Point and Coliseum, Poquoson, Newport News, York, Hampton	54
2. Vision Framework	6	Corridor 16: Hampton Roads Harbor Crossings, Newport News, Hampton, Norfolk	56
2.A Introduction	6	Corridor 17: Princess Anne Road and Lynnhaven Parkway Corridors, Virginia Beach	58
2.B The Region’s Foundation for Transit.....	6	Corridor 18: Downtown Suffolk to Harbour View, Suffolk	60
2.C Current Plans and Projects.....	7	3.D Local Bus Improvements.....	62
2.D Guidelines for Transit Supportive Development	8	4. Future Transportation Demand Management Vision	65
2.E Future Transit Supportive Planning	9	4.A Methodology.....	65
3. Future Transit Vision	12	4.B Implementation Recommendations	66
3.A Methodology.....	12	5. Vision Implementation	70
3.B Preliminary Corridor Refinements.....	15	5.A Sequenced List of Service Improvements.....	70
3.C Proposed High Speed/High Capacity Corridors	15	5.B Transportation and Land Use Planning Summary	73
Corridor 1: Eastern Virginia Medical School to Newtown Road, Norfolk	18	5.C Funding Policies and Program Summary	74
Corridor 2: Christopher Newport University to Denbigh Boulevard, Newport News ...	20	5.D Next Steps	75
Corridor 3: Newtown Road to Oceanfront, Virginia Beach	22		
Corridor 4: Military Highway/I-64 Corridor, Norfolk	24		
Corridor 5: Downtown Norfolk to Naval Station Norfolk.....	26		
Corridor 6: Campostella Road and Battlefield Boulevard, Chesapeake	28		
Corridor 7: Route 168/I-464 Corridor, Chesapeake.....	30		
Corridor 8a: Eastern Virginia Medical School to Midtown & Downtown Portsmouth .	32		
Corridor 8b: High Street/Churchland Corridor, Portsmouth, Chesapeake, Suffolk	34		
Corridor 8c: Portsmouth Boulevard Corridor, Portsmouth, Chesapeake, Suffolk.....	36		
Corridor 8d: Western freeway Corridor, Portsmouth, Chesapeake, Suffolk, Isle of Wight.....	38		
Corridor 9a: US 460/I-264/CSX Corridor, Suffolk, Chesapeake, Portsmouth, Norfolk	40		
Corridor 9d: I-664/I-264 Corridor, Chesapeake, Portsmouth, Norfolk.....	42		
Corridor 10: Oceanfront Corridor, Virginia Beach	44		

Appendices (available under separate cover)

- A Transit Vision Plan for Hampton Roads, Technical Memorandum
- A Transit Vision Plan for Hampton Roads, Transportation Demand Management Element

LIST OF FIGURES

Figure 1-1: Development Process of the Transit Vision Plan (TVP)	4
Figure 2-1: Comprehensive Plan Policies of the Hampton Roads Region.....	6
Figure 2-2: Key Findings on Transit Supportive Development.....	8
Figure 2-3: FTA New Starts Land Use Criteria & Factors	9
Figure 2-4: Hampton Roads Transit Supportive Development Framework.....	10
Figure 3-1: Map of Activity Centers – Peninsula	13
Figure 3-2: Map of Activity Centers - Southside	13
Figure 3-3: Regional Transit Vision Map for Hampton Roads.....	16
Figure 3-4: Local Bus Improvement Areas – Peninsula	63
Figure 3-5: Local Bus Improvement Areas - Southside	64
Figure 4-1: Preliminary List of Potential Park and Ride Lot Improvements	67
Figure 4-2: HOV Network Map.....	68
Figure 5-1: Regional Transit Vision Map for Hampton Roads – Near-Term Projects	70
Figure 5-2: Regional Transit Vision Map for Hampton Roads – Long-Range Projects.....	71
Figure 5-3: Regional Transit Vision Map for Hampton Roads – Extended-Range Projects	72
Figure 5-4: Typical Transit Supportive Development Programs, Regulations, and Incentives	73

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EXECUTIVE SUMMARY

OVERVIEW

The Hampton Roads Metropolitan Planning Organization (HRMPO) undertook an effort to develop a regional vision of public transportation indicating the combination of transit service and land use intensity best suited for the region. The local governments of Hampton Roads understand that transit can help achieve the goals of relief from traffic congestion, improved quality of life, preservation of natural resources, and economic development. However, these gains require collaborative planning and integration of land use and transportation plans.

This visionary transit plan recommends one way of creating an integrated system of transit connections. By reviewing past studies and plans, generating new ideas, and building transit concepts with key stakeholders in the region, the Hampton Roads Transit Vision Plan offers a coherent plan to help the region achieve its long-term transit vision – planning, building and maintaining an integrated, high-speed/high-capacity transit system.

The Vision Plan is a comprehensive study that provides a strategic approach for the development and implementation of a robust regional mass transit system. The plan – and the research, analysis, and public process supporting it – has been undertaken by the HRMPO at the request of the Virginia Department of Rail and Public Transportation (DRPT). The Vision Plan recommendations and concepts will be used: (1) by the MPO, CBT, DRTP, and local transit agencies to guide service implementation; and, (2) by local governments as they direct development to transit corridors requiring greater activity prior to service implementation.

ENVISIONING THE FUTURE

The Hampton Roads Transit Vision Plan establishes a vision statement, goals, and recommendations to help the region achieve its long-term transit vision – planning, building, and maintaining an integrated, higher-speed/ high-capacity transit system. Based on the project background and objectives as well as feedback from the public, a project review committee, and regional planning agencies, the following vision statement was developed to capture the essence of the region’s desired transit system and to guide future transit planning and development efforts.

TRANSIT VISION STATEMENT FOR HAMPTON ROADS

An integrated public transit network will provide Hampton Roads with transportation choice, thereby ensuring greater mobility, economic development, environmental protection, energy independence, and quality of life.

Now is the Time for Transit

Globally, as well as regionally, interest in transit is being driven by many environmental, social, and economic conditions. Transit, when designed and implemented as part of a larger strategic and regional plan, addresses challenges of growth that have become more complex or more pressing due to these changing conditions.

Limited Infrastructure Budgets

States, regions, and local governments have increasingly limited infrastructure budgets to provide expected services and improvements. The construction of new and repair of existing roadways, in particular, can pose a fiscal challenge. Transit offers the opportunity to increase roadway capacity, moving more people per vehicle when compared to automobiles.

Greater Mobility Options

An increasingly significant portion of the population will rely on transportation options other than the single-occupant, personal vehicle. A greater range of mobility options is needed to serve aging Baby Boomers and other non-drivers, including those too young or unable to drive and those unable to afford personal investment in a car or truck. In addition to serving a greater variety of mobility needs, transit also serves travel preferences. Increased travel options, in particular transit on an exclusive or dedicated track or lane, provides a less congested and often less time consuming travel option. The compact, transit supportive design necessary for successful transit systems put a greater variety of destinations within walking or biking distance. Good public transportation design improves walkability, further reducing motorized travel demand.

Improved Land Use and Transportation Coordination

The trend toward growth management, or “smart growth” planning, has begun to address the issues related to sprawling, geographically dispersed land use patterns and to better coordinate land use and transportation. Transit is a cornerstone of growth management techniques and transit supportive development key to vibrant, walkable, and accessible activity centers. By providing the transportation system capacity that

supports more compact development, transit (fixed guideway, in particular) allows growth to be concentrated in centers. These development patterns are also supported by focused water, sewer, energy and other infrastructure investments. Coordinating these investments through a comprehensive plan, transportation plan, or other long-range plan gives jurisdictions the ability to direct and manage development patterns and benefit from transit supportive development patterns. The bulleted list below summarizes the general benefits of transit supportive development.

Improving land use, transportation, and infrastructure coordination encourages development in areas that can support it, while disincentivizing growth in sensitive areas with natural or cultural resources. Population growth and demographic changes are still accommodated, but land is used more efficiently and in context with geographic and environmental constraints.

GENERAL BENEFITS OF TRANSIT SUPPORTIVE DEVELOPMENT

- A method for community revitalization
- Improved connectivity and access options
- Increased local real estate tax revenue
- Increased local sales tax revenue
- Diversified housing choices
- Enhanced employment opportunities
- Neighborhood/district shopping opportunities
- Concentrations of mixed-uses and public uses
- Community/neighborhood gathering location
- Context sensitive design/enhancements

Energy, Air Quality, and Climate Change

No longer solely of national concern, minimizing energy consumption and taking action to stabilize air quality impacts are on local and regional policy agendas. The creation and improvement of transit systems is critical to tackling these challenges. Transit reduces fossil fuel consumption by requiring less energy to transport more people than conventional personal vehicles. Transit can also improve energy security and independence, reducing energy demand and allowing the use of domestically produced electricity and natural gas.

Creating integrated transit systems has become an indispensable tool for regions to regain air quality conformity. By reducing individual vehicles on the roadways, transit reduces greenhouse gas emissions and improves air quality.

Regional Competitiveness and Economic Growth

Transit is an economic asset, attracting employers, industries, and new residents. An integrated transit system and the transit supportive development patterns necessary to support it, increase a region's ability to absorb growth without sacrificing local quality of life or disproportionately depleting natural resources. Vibrant mixed use communities, accessible and compact commercial and retail districts, and increased mobility options all support economic growth and sustainability.

Goals of the Transit Vision Plan

The Transit Vision Plan proposes that an integrated, high-capacity transit system will help address some of the region's social, environmental, and economic challenges that are interrelated to land use and transportation planning. Based on public input, consultation with local planning agencies, and analysis of the region's planning efforts, the Transit Vision Plan recommends a robust transit system to achieve the following regional goals:

1. Maximize limited infrastructure budgets through parity between transit and highway investments

2. Provide greater mobility options through an integrated, high-capacity transit system
3. Improve land use and transportation coordination by encouraging transit supportive development within mixed-use activity centers and corridors
4. Reduce energy consumption, improve air quality, and mitigate climate change with a robust transit system based on renewable energy sources
5. Promote economic growth and regional competitiveness through a transit system that connects major activity and employment centers

In proposing a regional transit system that will help achieve these goals, the Transit Vision Plan will support greater equity, sustainability, and accessibility in the Hampton Roads region.

Foundations of this Vision Plan

Environmental, social, and economic conditions make transit necessary to maintaining the health of the region. The jurisdictions of Hampton Roads recognize this need and have provided guidance in determining what the regional transit goals should be and how to achieve them. This Transit Vision Plan recommends an integrated, cohesive, transit system and identifies strategies to achieve local and regional goals.

The envisioned transit network provides access to major activity centers that serve diverse functions, including governmental, cultural, educational, and commercial uses. The system improves connections between these centers, better connecting cities within the region; it also better connects Hampton Roads to neighboring regions. The Plan considers a range of modes, recognizing that a sustainable and successful transit network consists of light and heavy rail, express and local bus service, and dedicated and fixed guideway service. The envisioned network creates intermodal connections, allowing transit riders to transfer between buses and light rail, and connect to regional rail and the airport.

This Plan compares existing conditions, plans, and policies to those required to achieve the region's

transit Vision. It identifies the land use changes necessary to support this Vision and to support higher capacity and higher speed transit. It builds on transportation improvements currently under consideration and examines their utility to the envisioned transit network.

For the short-term, the Vision Plan offers recommendations on how to address current inadequacies in existing service or in underserved areas. It suggests ways to slow growing traffic congestion, linking short-term strategies with long-term goals of reduced congestion and increased transit usage. For the long-term, the Plan provides guidance on creating the land uses and development patterns necessary to support the desired transit network. Taken together, the recommendations and strategies presented in this Vision Plan will help the Hampton Roads region obtain and maintain an integrated, enhanced, and truly sustainable transit network.

FIXED ROUTE MODES CONSIDERED

The Transit Vision Plan considered the following fixed route modes.

- Commuter Rail
- Light Rail
- Streetcar/Trolley
- Bus Rapid Transit (BRT)
- Express bus
- Enhanced bus
- Local bus

For the purposes of this study, the fixed route modes were defined as follows.

Commuter Rail operates on freight rail corridors, perhaps in mixed operation with freight trains, using rolling stock compliant with Federal Railroad Administration regulations. Stations are spaced approximately three to five miles apart and are designed mainly for drive access. They are located in lower density suburban areas and have park-and-ride lots. Service is provided primarily on weekdays during commuting peak periods. Propulsion is likely diesel, but the line could be electrified. An example

of Commuter Rail would be the Virginia Railway Express (VRE) in Northern Virginia.

Light Rail Transit (LRT) operates primarily on an exclusive running way, but can also operate on city streets in exclusive lanes. Stations are spaced one-half to two miles apart. Stations can have parking or can be designed for walk access. Service is all day and frequent – at least four trains per hour during peak periods. Propulsion is electric with an overhead catenary system, making trains quiet and reducing pollution from the vehicle. Examples would include the Lynx Blue Line in Charlotte and the Baltimore Light Rail.

Streetcar operates primarily on city streets, typically sharing lanes with cars. Stations are spaced 1/8- to 1/4-mile apart and are simple. They generally have a shelter, information signing, a fare machine, and no parking. Service is all day and frequent. Propulsion is electric. An example would be the Portland Streetcar. The differences between light rail and streetcar are station spacing, exclusive versus non-exclusive running way, and station amenities.

Bus Rapid Transit (BRT) has similar characteristics to Light Rail, except the vehicle is a bus instead of a train. Bus Rapid Transit operates primarily on an exclusive running way, but can also operate on city streets in exclusive lanes. Stations are spaced one-half to two miles apart. Stations can have parking or can be designed for walk access. Service is all day and frequent – at least four buses per hour during peak periods. Vehicles are fueled by diesel or compressed natural gas (CNG). An example of BRT would be the Orange Line in Los Angeles.

Express Bus operates on existing roads in mixed traffic or on High Occupancy Vehicle (HOV) lanes were present. Express buses serve one or a few park-and-ride lots in lower density suburban areas then travel non-stop, often via freeways, to core activity centers where there may be several closely spaced stops. Service is primarily during commuting peaks, but can be all day. Vehicles are fueled by diesel or compressed natural gas (CNG). Often vehicles are over-the-road motorcoaches, as

opposed to 30- to 40-ft transit buses. An example of Express Bus would be HRT's MAX service.

Enhanced Bus operates on existing roads in mixed traffic with cars, mainly along surface arterial roads. Stops are farther apart than on local bus, perhaps 1/2-mile or more apart, and stops have shelters and more amenities than local bus stops. Service is all day and frequent, using a diesel- or CNG-propelled transit bus, which could be specially branded. Examples of Enhanced Bus would be Metro Rapid in Los Angeles and MetroExtra in Washington, DC.

Local Bus operates on existing roads in mixed traffic with cars. Stops are every few blocks apart and usually no more than 1/4-mile apart. Amenities at stops are limited, perhaps as little as a sign and a concrete pad. Service is all day with frequencies of one to eight buses per hour, depending on time of day and location. Vehicles are typically 30- to 40-ft long and fueled by diesel or compressed natural gas (CNG) propulsion. An example would be HRT bus service.

PLANNING PROCESS

The process to develop this integrated Transit Vision Plan was initiated by the Hampton Roads Partnership, a nonprofit public/private organization dedicated to enhancing the competitiveness of the Hampton Roads region. Joining with the Hampton Roads Metropolitan Planning Organization (HRMPO) and the Virginia Department of Rail and Public Transportation (DRPT), a study was launched with the establishment of a Public Transportation Plan Technical Committee (PTPTC), including staff from 13 jurisdictions and representatives from the HRMPO, DRPT, Hampton Roads Transit, and the Hampton Roads Partnership.

The methodology used to generate the Vision Plan's recommendations relied on technical and experiential analysis. Both aspects of the analysis – examining the data and research available as well as discussing existing and desired conditions and experiences with technical committees, local jurisdiction staff, and the public – were critical in

conceptualizing and refining high-speed, high-capacity corridors, local bus enhancements, and transportation demand management measures. In addition, dozens of conversations with jurisdiction staff, MPO, HRT, and DRPT influenced this Plan's recommendations.

Because of the importance of tying transportation improvements to land use, the technical process was based on an analysis of existing land use, comprehensive plans, and forecast demographics. Demographic data were collected from the Hampton Roads Planning District Commission (HRPDC) for the years 2000 and 2034. The region is divided up into 1,059 zones and demographic factors have been estimated for each zone. The transit supportive parts of the region were identified using land use analysis and transit supportiveness maps were developed for the region.

The transit supportive parts of the region were compared with areas currently served by the existing bus network. Similarly, concentrations of non-drivers, as identified by the HRPDC, were examined against the existing bus network coverage and the transit supportive parts of the region.

The parts of the region most supportive of transit were compared to land use plans found in the various jurisdictions' comprehensive plans to identify the major regional activity centers in Hampton Roads, supported by input from the public and PTPTC. Corridors connecting the major activity centers were proposed as candidates for high-speed, high-capacity transit service. Existing transit studies provided the alignments for many of the candidate corridors. The set of candidate corridors was reviewed with the PTPTC and modified based on their comments. Different transit modes were considered for each candidate corridor. The candidate corridors were analyzed using several criteria to assess their feasibility and to choose which mode or modes were most suitable.

Three levels of evaluation were applied to the candidate corridors (see process diagram below). The first level was to assess transit-supportiveness of the corridor.

The transit-supportiveness evaluation criteria were:

- Existing Land Use – a review of the types and character of development in the corridor
- Transit-Supportive Plans and Policies – a review of the policies that support transit such as growth management, zoning regulations, and tools to implement land use policies
- Performance and Impacts of Policies – a review of how land use policies have shaped development and how the transit investment might impact regional transit use

The second level of evaluation was a feasibility review based on five categories.

- Projected Demand – the ability for the proposed transit mode to meet travel demand in the corridor
- Service Area Corridors – the ability to identify right-of-way for the proposed transit service
- Institutional Arrangements – the existence or ability to create the organizational structures to operate the transit service
- Supportive Land Uses – the ability of forecast land uses to support transit usage
- Funding Strategies and Programs – the potential to find sources of funding to implement the transit project

The third level of evaluation was to identify the reasonable sequence in which to implement the

proposed transit projects. The criteria were:

- Project readiness – How easily and quickly the project can be implemented as determined by the stage of planning process, right-of-way availability, and funding
- Effectiveness at enhancing mobility – Serving corridors forecast to be heavily congested and the ability to avoid congestion (such as fixed guideway, separate lanes, and signal prioritization)
- Service efficiency – Providing a high level of service versus the cost per vehicle-revenue-mile
- Land use supportiveness - Ability of land use to develop in a transit supportive way, as reflected in demographic projections, zoning, and redevelopment potential

Analysis of land use played a significant role in all three levels of evaluation.

After the feasibility review, further discussions with the PTPTC and jurisdictional staff, the corridors and the proposed transit service in them were refined into Draft Vision Plan recommendations. Input from the public, PTPTC, HRT, HRMPO, DRPT and jurisdictional staff received on the Draft Vision Plan was addressed to develop this final version of the Hampton Roads Transit Vision Plan.

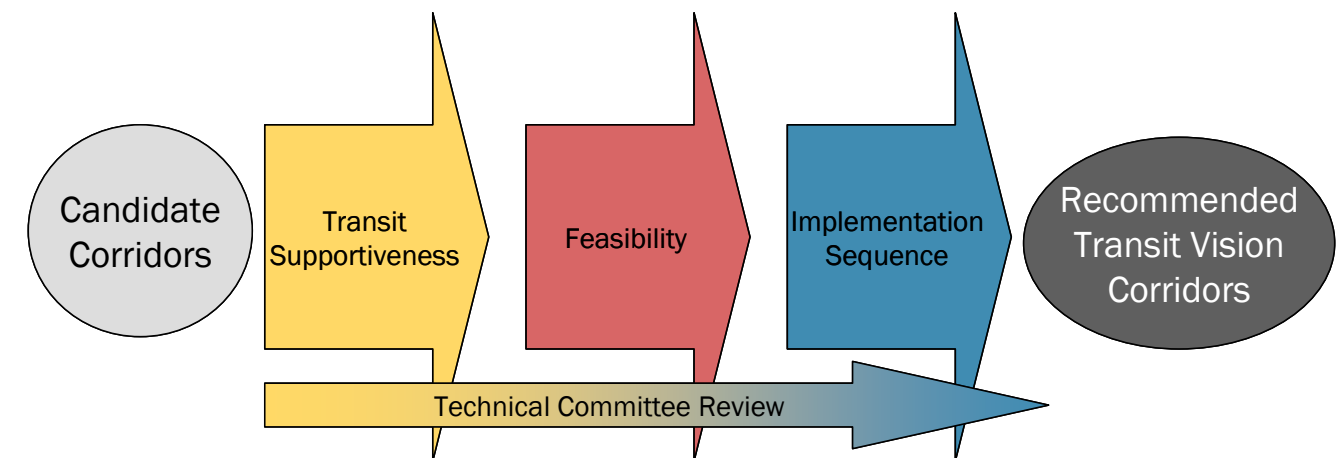


Figure ES-1: Regional Transit Vision Map for Hampton Roads – Entire Network

RECOMMENDATIONS

As shown in Figure ES-1, this Vision Plan recommends an integrated high-speed/high-capacity regional transit network, including express bus, ferry service bus rapid transit, light rail and commuter rail services that cross jurisdictional boundaries and connect activity centers within the region. The high-speed /high-capacity corridors recommended in this Plan connect the entire region with high quality, attractive transit service. The transit service will both support and be supported by additional focused development. For each of the proposed corridors, recommendations are given for improving the transit supportiveness of land use in the corridor.

A range of transit modes are recommended, from express bus to light rail, such that the mode is most appropriate for the types of development anticipated in each corridor. The corridors come together at various important regional activity centers. Intermodal hubs are recommended to allow convenient transfers between different transit modes. The primary hubs that emerge from this Plan are:

- Downtown Norfolk, with Eastern Virginia Medical School on west and Harbor Park on east intermodal center
- Naval Station Norfolk
- Oyster Point/City Center in Newport News

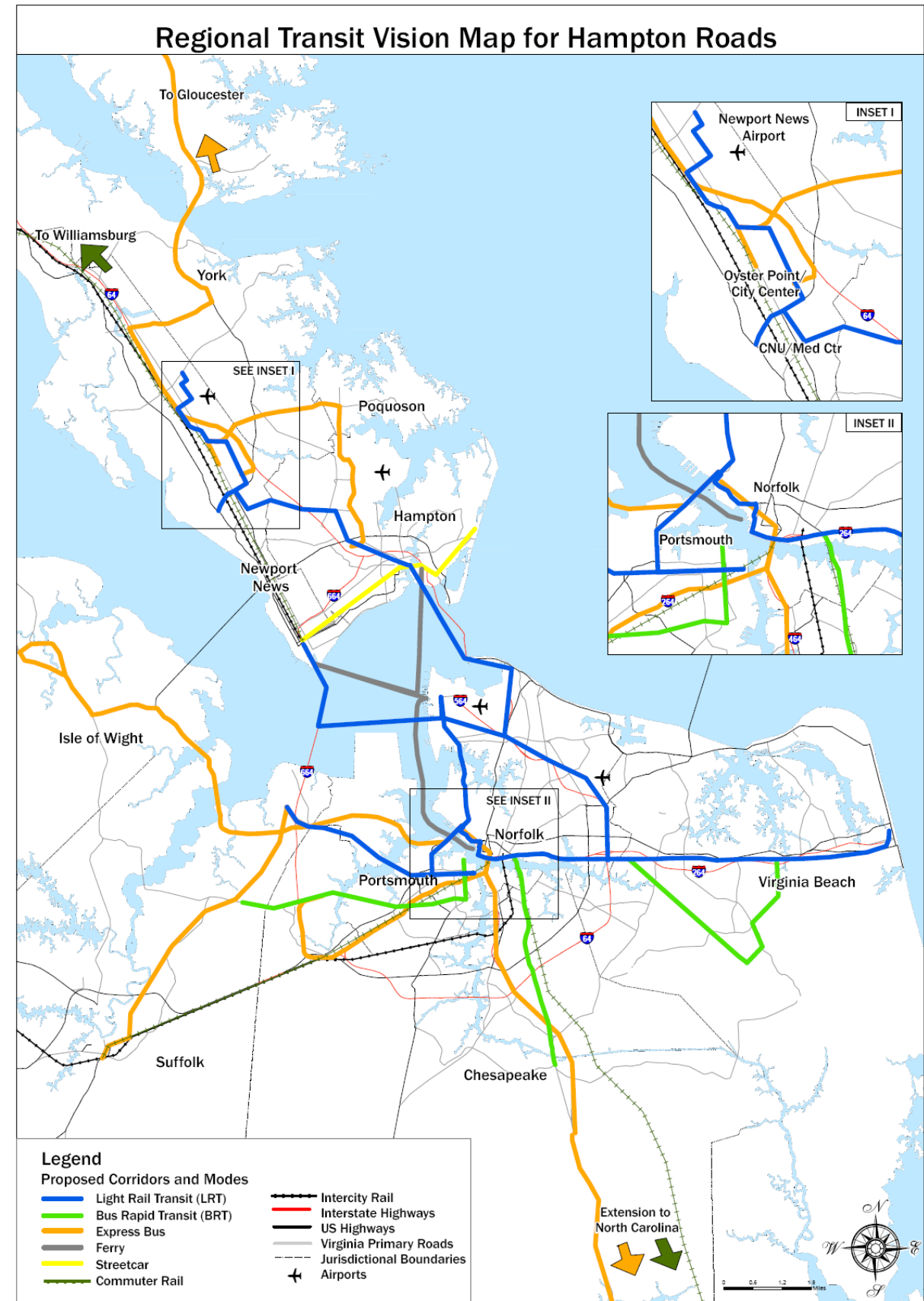
Furthermore, the Vision Plan presents Transportation Demand Management (TDM) recommendations to reduce automobile travel on the roads by using Hampton Roads' existing transportation and infrastructure and by systematically expanding programs that attract new transit users, serve commuters, and increase mobility options.

NEXT STEPS

The Transit Vision Plan is the first step in the process to connect the entire Hampton Roads region with high quality, attractive transit service, and to guide development in a more transit supportive manner. Many refinements should be expected as the region pursues its goals of greater mobility options, more efficient land use, improved air quality, energy independence, regional competitiveness, and economic growth.

The Transit Vision Plan (TVP), as well as its cost and ridership estimates completed independently of this study document, will feed two processes. The first process is the creation of the transit component of the MPO's multi-modal Long Range Transportation Plan (LRP). In order to meet the financial constraint requirements of MPO LRPs, that portion of the TVP's Long-Range system which can be implemented and maintained using reasonably expected funding (up to 100%) will be included in the region's 2034 LRP.

The second process is to incorporate the region's Transit Vision into a Statewide Transit Plan. The Statewide Transit Plan will synthesize the transit plans from all regions in Virginia into one plan. The Statewide Transit Plan will be combined with similar plans for highways, railroads, ports, and airports to create a comprehensive multimodal plan called VTRANS 2035.



INTRODUCTION

1.A PROJECT PURPOSE

The Hampton Roads Metropolitan Planning Organization (HRMPO) undertook an effort to develop a regional vision of public transportation, indicating the combination of transit services and land use intensity best suited for the region. The basic premise of this study is that public transportation provides a mobility option valuable to the individuals who use it and beneficial to the whole community as part of its economic infrastructure. Route-based public transportation services are generally financially feasible where they connect high activity locations.

This plan is being conducted at the request of the Virginia Department of Rail and Public Transportation (DRPT) and will be used: (1) by the MPO, CBT, DRTP, and local transit agencies to guide service implementation; and, (2) by local governments as they direct development to transit corridors requiring greater activity prior to service implementation.

Following completion of this study, the HRMPO will constrain the short-, mid-, and long-range elements of the Vision Plan in accordance with 2034 land use and 2034 finances to develop the financially-constrained transit component of its 2034 Long-Range Transportation Plan (LRP). Furthermore, this plan will be used as input into the Hampton Roads component of the Virginia 2035 Statewide Transit Plan.

1.B BACKGROUND AND OBJECTIVES

The Vision Plan has not been targeted for a specific horizon year. Rather the intent of this plan is to identify those corridors and districts where transit services are most likely to be successfully implemented. The Plan includes recommendations for the levels of usage that are necessary to support high speed/high capacity transit in specific

corridors. The plan also makes recommendations on changes to land use development patterns that will support the high capacity transit.

The Vision Plan is a comprehensive study that provides a strategic approach for the development and implementation of a robust regional mass transit system based on the following study objectives:

- The Vision Plan addresses all fixed route surface public transportation modes (i.e. local and express bus, bus rapid transit, street car/trolley, light rail, and commuter rail). Transportation Demand Management (TDM) services are also analyzed in this study.
- Transit corridor and TDM recommendations cover short-range, mid-range, and long-range time spans, where long-range recommendations are for the 2034 timeframe. Recommendations also are made for beyond 2034.
- The Vision Plan provides recommendations for supportive land uses appropriate to enhancing public transportation services.
- Recommendations for dedicated, on-going funding programs to meet capital and operating needs are included in the plan.

1.C ENVISIONING THE FUTURE

The Hampton Roads Transit Vision Plan establishes a vision statement, goals, and recommendations to help the region achieve its long-term transit vision – planning, building, and maintaining an integrated, high speed/high capacity transit system. Based on the project background and objectives as well as feedback from the public, a project review committee, and regional planning agencies, the following vision statement was refined to capture the essence of the region’s desired transit system and to guide future transit planning and development efforts.

TRANSIT VISION STATEMENT FOR HAMPTON ROADS

An integrated public transit network will provide Hampton Roads with transportation choice, thereby ensuring greater mobility, economic development, environmental protection, energy independence, and quality of life.

1.C.1 Now is the Time for Transit

Globally, as well as regionally, interest in transit is being driven by many environmental, social, and economic conditions. Transit, when designed and implemented as part of a larger strategic and regional plan, addresses challenges of growth that have become more complex or more pressing due to these changing conditions.

Limited Infrastructure Budgets

States, regions, and local governments have increasingly limited infrastructure budgets to provide expected services and improvements. The construction of new and repair of existing roadways, in particular, can pose a fiscal challenge. Transit offers the opportunity to increase roadway capacity, moving more people per vehicle when compared to automobiles. This allows transportation investments to serve a greater number of taxpayers. In addition, an increase in transit vehicles and the associated increase in transit ridership can help mitigate increased traffic congestion. Reduced traffic congestion translates into a reduced need for new automobile lanes.

Greater Mobility Options

An increasingly significant portion of the population will rely on transportation options other than the single-occupant, personal vehicle. A greater range of mobility options is needed to serve aging Baby Boomers and other non-drivers, including those too young or unable to drive and those unable to afford personal investment in a car or truck.

In addition to serving a greater variety of mobility needs, transit also serves travel preferences. Increased travel options, in particular transit on an exclusive or dedicated track or lane, provides a less congested and often less time consuming travel option. The compact, transit supportive design necessary for successful transit systems put a greater variety of destinations within walking or biking distance. Good public transportation design improves walkability, further reducing motorized travel demand.

Improved Land Use and Transportation Coordination

The trend toward growth management, or “smart growth” planning, has begun to address the issues related to sprawling, geographically dispersed land use patterns and to better coordinate land use and transportation. Transit is a cornerstone of growth management techniques and transit supportive development key to vibrant, walkable, and accessible activity centers. By providing the transportation system capacity that supports more compact development, transit (fixed guideway, in particular) allows growth to be concentrated in centers. These development patterns are also supported by focused water, sewer, energy and other infrastructure investments. Coordinating these investments through a comprehensive plan, transportation plan, or other long-range plan gives jurisdictions the ability to direct and manage development patterns and benefit from transit supportive development patterns.

Improving land use, transportation, and infrastructure coordination encourages development in areas that can support it, while disincentivizing growth in sensitive areas with natural or cultural resources. Population growth and demographic changes are still accommodated, but land is used more efficiently and in context with geographic and environmental constraints.

Energy, Air Quality, and Climate Change

No longer solely of national concern, minimizing energy consumption and taking action to stabilize air quality impacts are on local and regional policy agendas. The creation and improvement of transit systems is critical to tackling these challenges. Transit reduces fossil fuel consumption by requiring less energy to transport more people than conventional personal vehicles. Transit can also improve energy security and independence, reducing energy demand and allowing the use of domestically produced electricity and natural gas.

Relative to climate change, the State of Virginia and the Hampton Roads region are aware of the potential for flooding due to sea-level rise. This issue should be addressed in any environmental impact assessments for future transit projects, so that costly infrastructure is not located within areas susceptible to flooding.

Creating integrated transit systems has become an indispensable tool for regions to regain air quality conformity. By reducing individual vehicles on the roadways, transit reduces greenhouse gas emissions and improves air quality. These same reductions are important in acting to mitigate climate change. Climate change initiatives, ranging from the U.S. Mayors' Agreement to Cool Counties, emphasize the important role of transit in meeting local and regional targets.

Regional Competitiveness and Economic Growth

Transit is an economic asset, attracting employers, industries, and new residents. An integrated transit system and the transit supportive development

patterns necessary to support it, increase a region's ability to absorb growth without sacrificing local quality of life or disproportionately depleting natural resources. Vibrant mixed use communities, accessible and compact commercial and retail districts, and increased mobility options all support economic growth and sustainability. In addition, for individuals using transit, costs associated with getting to work or running errands can be greatly reduced, often allowing a slight increase in other areas of household spending.

1.C.2 Goals of the Transit Vision Plan

The Transit Vision Plan proposes that an integrated, high speed/high capacity transit system will help address some of the region's social, environmental, and economic challenges that are interrelated to land use and transportation planning. Based on public input, consultation with local planning agencies, and analysis of the region's planning efforts, the Transit Vision Plan recommends a robust transit system to achieve the following regional goals:

1. Maximize limited infrastructure budgets through parity between transit and highway investments
2. Provide greater mobility options through an integrated, high speed/high capacity transit system
3. Improve land use and transportation coordination by encouraging transit supportive development within mixed-use activity centers and corridors
4. Reduce energy consumption, improve air quality, and mitigate climate change with a robust transit system based on renewable energy sources
5. Promote economic growth and regional competitiveness through a transit system that connects major activity and employment centers

In proposing a regional transit system that will help achieve these goals, the Transit Vision Plan will support greater equity, sustainability, and accessibility in the Hampton Roads region.

1.C.3 Foundations of this Vision Plan

Environmental, social, and economic conditions make transit necessary to maintaining the health of a region. The jurisdictions of Hampton Roads recognize this need and have provided guidance in determining what the regional transit goals should be and how to achieve them. This Transit Vision Plan recommends an integrated, cohesive, transit system and identifies strategies to achieve local and regional goals.

The envisioned transit network provides access to major activity centers that serve diverse functions, including governmental, cultural, educational, and commercial uses. The system improves connections between these centers, better connecting cities within the region; it also better connects Hampton Roads to neighboring regions. The Plan considers a range of modes, recognizing that a sustainable and successful transit network consists of light and heavy rail, express and local bus service, and dedicated and fixed guideway service. The envisioned network creates intermodal connections, allowing transit riders to transfer between buses and light rail, and connect to regional rail and the airport.

This Plan compares existing conditions, plans, and policies to those required to achieve the region's transit vision. It identifies the land use changes necessary to support this vision and to support higher capacity and higher speed transit. It builds on transportation improvements currently under consideration (Third Crossing, Intercity Rail), and examines their utility to the envisioned transit network.

For the short-term, the Vision Plan offers recommendations on how to address current inadequacies in existing service or in underserved areas. It suggests ways to slow growing traffic congestion, linking short-term strategies with long-term goals of reduced congestion and increased transit usage. For the long-term, the Plan provides guidance on creating the land uses and development patterns necessary to support the

desired transit network. The table below summarizes the benefits of transit supportive development. Taken together, the recommendations and strategies presented in this Vision Plan will help the Hampton Roads region obtain and maintain an integrated, enhanced, and truly sustainable transit network.

GENERAL BENEFITS OF TRANSIT SUPPORTIVE DEVELOPMENT

- A method for community revitalization
- Improved connectivity and access options
- Increased local real estate tax revenue
- Increased local sales tax revenue
- Diversified housing choices
- Enhanced employment opportunities
- Neighborhood/district shopping opportunities
- Concentrations of mixed-uses and public uses
- Community/neighborhood gathering location
- Context sensitive design/enhancements



1.D PROCESS

The process to develop this integrated Transit Vision Plan was initiated by the Hampton Roads Partnership, a nonprofit public/private organization dedicated to enhancing the competitiveness of the Hampton Roads region. Joining with the Hampton Roads Metropolitan Planning Organization (HRMPO) and the Virginia Department of Rail and Public Transportation (DRPT), a study was launched with the establishment of a Public Transportation Plan Technical Committee (PTPTC), including staff from 13 jurisdictions and representatives from the HRMPO, DRPT, Hampton Roads Transit, and the Hampton Roads Partnership.

The PTPTC crafted the study scope that outlined the analytical process that was followed. This process is depicted in Figure 1-1.

The process was anchored by two public meetings, two meetings with the HRMPO Board, and numerous milestone meetings with PTPTC during the study execution to guide the formation of recommendations.

At the beginning of the study, a public information meeting was held to inform the public about the study and to solicit input. Presented at the meeting were display boards showing the existing transit network, past plans for high speed/high capacity transit, land use and demographic information, data on regional travel patterns, and a solicitation for ideas for future transit services. Multiple means of providing input and getting information were available, including comment cards, writing on maps, writing on flip charts, interacting with study staff one-on-one, and asking questions and making comments in a public forum. The meeting was held simultaneously in two locations in Chesapeake and Hampton, connected by live interactive video. The public could also provide input to the study team after the meeting by e-mail, fax, mail, or the project web site at www.hamptonroadstransitplan.com.

After publication of a draft Vision Plan, a second public meeting was held to present draft Plan findings, including the preferred and recommended

corridors and local bus enhancements. Display boards provided information on the Plan's high-speed, high-capacity corridors, local bus enhancements, implementation sequencing, and transportation demand management (TDM) recommendations. After a brief presentation highlighting recommended corridors and key findings, meeting participants were invited to break up into small groups for facilitated conversations. Each small group discussed transit priorities, regional and personal benefits of transit, and how implementation of recommended improvements might affect interest in and ability to use transit. The meetings were offered a total of four times, twice at each meeting location in Hampton and Norfolk. Comments and input were received in one-on-one conversations with technical and consultant staff, during the small group discussions, on written comment sheets, by e-mail, and on the project web site. Below are participant responses to a small group discussion question at the February 24, 2009 public meeting.

What benefits of transit enhancements are most important to you?

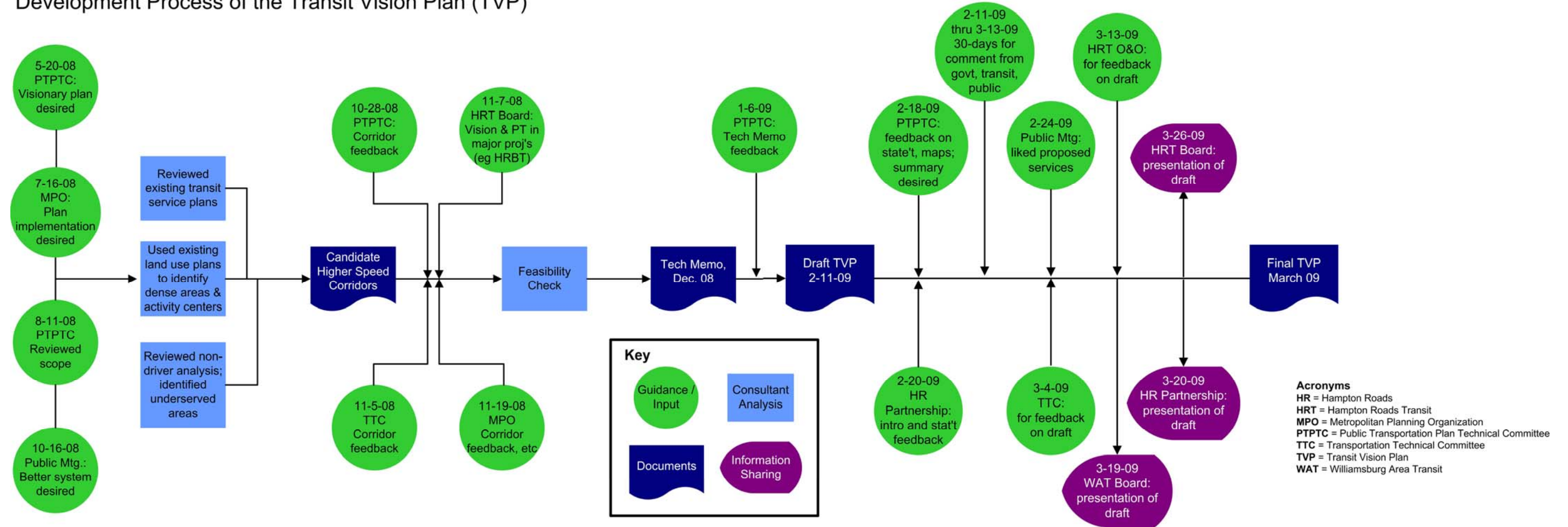
- Congestion reduction
- Economic development
- Mobility of workforce
- Traffic management
- Connecting the region
- Tourism
- Quality of life
- Serving the people
- Reliable travel options, don't have to have a car, can go where/when I want to go
- Improved Sunday service, Virginia Beach service, more direct point A to point B service, better transfers
- Information on system delays - real time
- Extended para-transit services, hours, more reliable outreach and communications

Public comments were reviewed to determine how the Vision Plan could be refined to address substantive issues related to the scope of this study. Any comments that did not directly relate to the scope of this study were forwarded to the MPO, DRPT, and HRT for future consideration.

The diagram shown in Figure 1-1 represents the Transit Vision Plan process as a series of milestones, or major steps. Points of guidance and input, consultant analysis, publication of documents, and information sharing are identified. Interspersed among these tasks were meetings, teleconferences, and correspondence with jurisdictional staff and Hampton Roads Transit representatives to further refine the evolving plan. The present document is the final Transit Vision Plan.

Figure 1-1: Development Process of the Transit Vision Plan (TVP)

Development Process of the Transit Vision Plan (TVP)



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VISION FRAMEWORK

2.A INTRODUCTION

Hampton Roads Transit (HRT) currently provides an extensive bus transit service, Norfolk is building the region's first light rail transit corridor, and Virginia Beach and Newport News are planning for future light rail transit. In addition, the region desires a more robust transit network of high speed/high capacity transit modes, including express bus, bus rapid transit, streetcars, light rail, and commuter rail. A broad and integrated regional transit network will increase mobility options, contribute to energy and natural resource conservation, and strengthen the regional economy. This Vision Framework summarizes the region's foundation for transit, describes the level of transit supportive development needed for a more robust transit system, and concludes with a transit supportive development framework for future planning efforts.

2.B THE REGION'S FOUNDATION FOR TRANSIT

HRT and the region's jurisdictions have past and current plans that provide a basic foundation for future high speed/high capacity transit modes. To become more competitive for state and federal transit funding, HRT and local jurisdictions are committed to creating future plans, policies, and programs to maximize transit use within proposed transit corridors and near transit stops.

2.B.1 Past Plans and Studies

The Hampton Roads metropolitan region consists of thirteen local jurisdictions. The comprehensive plans and transportation plans related to these jurisdictions have been reviewed and summarized to highlight how local and regional bodies have already begun to lay the groundwork for improved transit services.

2.B.2 Comprehensive Plans Summary

The Comprehensive Plans for the region's jurisdictions were reviewed for transit supportive land uses, plans, and policies. The jurisdictions that address transit supportive policies have been noted in Figure 2-1 and relate to the following categories.

- **Growth management:** includes land conservation and/or preservation policies and the provision of infrastructure based on these policies.
- **Targeted growth areas:** includes activity centers, strategic investment areas, and any specific designation of a type of area to receive growth and/or intensification.
- **Mixed use development:** specific mention of mixed-use areas and mixed-use development; discussion of areas with multiple uses near each other are not included here.
- **Fixed guideway transit:** specific mention of rapid rail or bus rapid transit, or fixed guideway; may reference a corridor study specifically or generally.
- **Bus transit improvements:** discussion of growing existing local and express service or adding new service where none exists.
- **Transit-supportive densities:** citations of specific numeric residential and/or commercial densities to help support transit, or more urban development patterns.
- **Pedestrian and bike facilities:** includes policies or planning efforts to add new infrastructure to support pedestrian and bicycle accessibility and access.

Figure 2-1 indicates that a solid foundation for transit supportive policies exists in most jurisdictions. It is important to note that Figure 2-1

highlights only Comprehensive Plans, the state-mandated long-range land use policy and planning tool. Transit supportive policies and regulations are also found in small area plans and zoning ordinances, which often specify both qualitative and quantitative transit supportive requirements. In designing this Vision Plan and assessing individual corridors, all sources of transit supportive policies were taken into account. For example, while Virginia Beach's comprehensive plan policies do not cite specific densities, its small area plans and

zoning districts have numerous transit supportive policies and regulations. In addition, older comprehensive plans, such as Norfolk's comprehensive plan, cannot be expected to address some policy areas that were generally not considered at the time of its production. As comprehensive plans – as well as small area plans and zoning ordinances – are updated, transit supportive policies should be refined and added to specifically address the proposed corridors within this Transit Vision Plan.

Figure 2-1: Comprehensive Plan Policies of the Hampton Roads Region

Comprehensive Plan/Year		Growth management	Targeted growth areas	Mixed use development	Fixed guideway transit	Bus transit improvements	Transit-supportive densities	Pedestrian and bike facilities
Chesapeake	2005	X	X	X	X	X		X
Gloucester	2001	X	X	X		X		
Hampton	2006		X	X	X	X		X
Isle of Wight	2001	X	X	X			X	X
James City	2003	X	X	X			X	X
Newport News	2008 draft	X	X	X	X		X	X
Norfolk	1992				X	X		X
Poquoson	2008 draft	X	X			X		X
Portsmouth	2005	X	X	X		X	X	X
Suffolk	2006	X	X	X		X	X	X
Virginia Beach	2003	X	X	X	X			X
Williamsburg	2006		X	X	X		X	X
York	2005	X	X	X		X		X

2.B.3 Transportation Plans Summary

In addition to local comprehensive plans, there are numerous transportation plans in the region that provide the basis for a more transit supportive environment. The following summaries highlight the most relevant aspects of these transportation plans.

- Williamsburg Area Transit 2030 Plan (2006) is based on the Williamsburg Area Public Transportation study (2005) and identifies areas that require shuttle service and transportation centers.
- Williamsburg Area Public Transportation Study (2005) discusses the governance, structure, and jurisdictional participation of the various public transportation services within the area. Capital and cost allocation plan are presented as part of the study.
- Williamsburg Area Transit Transportation Improvement Plan for 2009-2012 reviews the administration and operation of the Williamsburg area transportation services and makes recommendations to improve them.
- Regional Fixed Guideway Long Range Plan (2004) identifies several generic corridors and recommends a suitable type of mode for each of them.
- Pembroke Area Comprehensive Transportation Plan (2008) looks at city- and region-wide transit as well as local transit serving the Pembroke area. With 25-30 years of planning horizon, this plan makes multimodal recommendations for short-, mid- and long-range timelines for the Pembroke area. In addition, the plan also includes a parking plan addressing short and long-term parking.
- Virginia Beach Resort Area Strategic Action Plan (2008) calls for transit service connecting the Oceanfront and the Dome Site.

- Hampton Roads 2030 Long Range Transportation Plan (2007) is based on socioeconomic forecasts and includes six toll projects. As “planning by others,” the document includes copies of the Williamsburg Area Transport and Hampton Roads Transit long-range plans.
- Hampton Roads Transit 2030 Long Range Plan (2006) includes regional express bus services with defined headways, new routes in Williamsburg area, bus improvements for Portsmouth and Chesapeake, new park and ride lots, maintenance facilities, and modified local bus service.
- Coliseum Central Master Plan, Hampton (2007) focuses on redevelopment for the area and examines circulator bus routes.
- Hampton Community Plan (2006) outlines key corridors and districts and also considers a few transit concepts pertaining to Hampton.
- Hampton Roads Area Public Transportation Human Services Coordinated Transportation Plan (2008) is by and largely aimed at interagency coordination.
- Richmond to Hampton Roads Passenger Rail Study (2005) examines three basic alignments and presents engineering analysis for infrastructure needs.

2.C CURRENT PLANS AND PROJECTS

The HRT 2030 Regional Transit Plan is the most current transit plan for the region and serves as the primary foundation for the region’s long-range transit vision. In addition, Norfolk is currently constructing 7.3 miles of light rail transit that will serve as the backbone for a more robust regional system of high capacity transit. Also, Virginia Beach and Newport News are currently studying the feasibility of high capacity transit to serve the region’s transit needs. The current work that is being completed will provide a solid basis for future transit planning and investments.

2.C.1 HRT 20-year Transit Plan

The HRT 2030 Regional Transit Plan is a long-range plan that will be used to determine potential new bus and rail alignments and service over the next 25 years. The 2030 Regional Transit Plan includes improvements for bus service, rail service, paratransit service, vanpool program, and ferryboat service.

- **Bus Service:** The local bus network is the backbone of all transit services in the HRT service area. Without local bus service, the proposed regional bus and rail projects would not reach their full ridership potential. The HRT 20 Year Transit Plan calls for modifications to existing bus service to reflect the Norfolk light rail transit project as well as to rationalize longer routes.
- **Rail Service:** Several rail service projects have been proposed in the HRT service area to address travel needs in heavily congested corridors. The primary short-term projects include Norfolk’s light rail transit (LRT) and Peninsula fixed guideway service. Fixed guideway service to Norfolk Naval Base and to Virginia Beach are also being considered. Lastly, seven potential corridors were identified in Portsmouth and six potential corridors were identified in Chesapeake, with connections to the Norfolk LRT Project.

- **Paratransit Service:** The Federal Transit Administration (FTA) mandates paratransit service within 3/4-mile of either side of existing fixed route service. Since the fixed route service improvements proposed within this Plan are along existing routes, paratransit service is anticipated to grow at a slower rate than fixed route service.
- **Vanpool Service:** TRAFFIX is a brand name for HRT’s regional vanpool program, which includes a total of 55 vans of which 37 are leased to major employers. The Plan estimates that the TRAFFIX program will grow an average of two vanpools per year.
- **Ferryboat Service:** HRT provides year-round ferry service between downtown Norfolk and downtown Portsmouth, at 15 minute frequencies at peak times and 30 minute frequencies otherwise. HRT has proposed two new high-speed ferry routes: (1) Newport News Ferry Service, between downtown Newport News to Naval Station Norfolk; and, (2) Hampton Ferry Service, between downtown Hampton to the Naval Station Norfolk.

2.C.2 Norfolk LRT Project

The Norfolk light rail transit project, called The Tide, received approval in April 2006. A 7.3-mile alignment is being constructed from the Eastern Virginia Medical School to Newtown Road along a Norfolk Southern Railroad corridor and city streets. Eleven stations are being constructed, including: Eastern Virginia Medical School, York Street, Monticello Avenue, Plume Street, Government Center, Harbor Park, Norfolk State University, Ballentine Boulevard, Ingleside Road, Military Highway, and Newtown Road. This light rail alignment is envisioned to serve as the first segment of a larger regional rail system.

2.C.3 Peninsula Rapid Transit Project

In 2001, HRT began an Alternatives Analysis for a rapid transit alignment on the Peninsula. Because of the large regional scale of the project, HRT proposed phased implementation, beginning with a Minimum Operable Segment. Based on evaluation criteria, including the operational and capital costs associated with establishing a light rail transit line on the CSX Railroad right-of-way between Newport News and Williamsburg, a separate alignment in the City of Newport News was selected.

In conjunction with the City of Newport News, HRT has pursued the analysis for an alignment that includes service to the City Center/Oyster Point area. The rigorous analysis has indicated that, at this time, it is almost certain that a light rail transit project would not qualify for federal funding under the New Starts program. Because of this, in collaboration with the City of Newport News, \$9 million in Regional Surface Transportation Program funds previously programmed for this project has been reprogrammed to three other projects.

It remains an objective of the City of Newport News to create a light rail transit system to support future development with a balanced transportation system. The City has requested that HRT consider several supportive tasks be completed to assist the City in achieving a future light rail transit project over a longer period of time. This additional work will entail determination of right-of-way requirements, estimation of right-of-way costs, determination of ridership requirements and financial implications, enhanced land use analysis, transit oriented development planning, and analysis of supporting transit facilities.

2.C.4 Virginia Beach LRT Project

In the 1990s, light rail along the Norfolk Southern railroad corridor was being considered as part of The Tide light rail project currently under construction in Norfolk. In 1999, the City of Virginia Beach placed the light rail project on hold within its city limits. Planning work is now continuing for light rail in this corridor, including acquisition of the

Norfolk Southern right-of-way and beginning environmental documentation.

2.D GUIDELINES FOR TRANSIT SUPPORTIVE DEVELOPMENT

To build the integrated transit network envisioned for the Hampton Roads region, land use development patterns should change over time to encourage and support future transit services. Changes in location of development, types of uses, and densities should focus more people within major activity centers and along proposed transit corridors to support the transit network. More transit supportive development will help create the ridership demand necessary for obtaining state and federal transit funding and maximizing the benefits of a transit investment.

2.D.1 What is Transit Supportive Development?

Transit supportive development is a moderate to high density mix of homes, shops, restaurants, offices, entertainment, employment, or government uses within a pedestrian-friendly network. Transit supportive development within each “station area” along a transit corridor attracts and increases transit use. A station area is typically defined as a 10-minute walk or one-half mile distance from the transit stop to nearby destinations. It is within this station area where transit supportive development will provide positive effects on transit use and provide the greatest economic development potential for a local jurisdiction. Figure 2-2 lists key findings on transit supportive development.

Figure 2-2: Key Findings on Transit Supportive Development

Key Findings on Transit Supportive Development

- Factors that most influence transit ridership are station proximity, transit quality, and parking policies.
- Fast, frequent, and comfortable transit service will increase ridership.
- High parking charges and/or constrained parking supply also will increase ridership.
- Free or low-cost parking is a major deterrent to transit ridership.
- Because station area residents are nearest to transit, station areas should be among the first locations that transit agencies implement specialized programs to encourage ridership.
- Transit supportive development (e.g., mixed uses, high densities, reduced parking) is still illegal around station areas in many cities and transit districts.
- Steps transit agencies are taking to promote transit supportive development include: reconsidering replacement parking requirements at park and rides, advocating for zoning changes, land assembly, joint development, and educational efforts.

Source: TCRP Report 128: Effects of TOD on Housing, Parking, and Travel, G.B. Arrington and Robert Cervero, Transit Cooperative Research Program, Transportation Research Board, 2008

2.D.2 State Transit Service Design Guidelines

In 2008, the Virginia Department of Rail and Public Transportation (DRPT) developed Transit Service Design Guidelines to help transit providers, local governments, and the general public better understand the types of transit available to meet regional and community transit needs. DRPT has incorporated these guidelines into its grant funding application process for new transit services, so the guidelines should be used at the early stages of transit planning. A major consideration in selecting the best transit service should be the transit

supportive development principles known as the “4Ds” – Density, Diversity, Design, and Distinguish.

Density

- Highest density development should be closest to the transit station or bus stop.
- Effective transit supportive development should offer easily accessible critical services to help reduce auto dependency.
- Compact building design, infill development, and structured parking are ways to increase density.

Diversity

- Mixed-use development is a major factor for a vibrant, active community, and should be mixed within the same building and between adjacent sites.
- Successful mixed use environments include civic uses, retail, housing, office/employment, entertainment, and small parks and public spaces.
- Varied housing choices should include apartments, condominiums, townhomes, small-lot single-family homes, and housing over retail.

Design

- Design guidelines and standards should scale the size and variety of development to fit local needs.
- Coordinated visual treatments help define character such as architecture, streetscapes, and landscaping.
- Pedestrian and bicycle access is a key design consideration to reduce impacts from automobile access and traffic.

Distinguish

- Recognize the unique qualities of each community and provide a customized approach instead of a one size fits all approach.
- Provide a framework for conceptual regional level planning as well as more detailed station area planning.
- Facilitate the evaluation of transit impacts on existing development patterns and future land use.

2.D.3 Federal Transit Administration Guidelines

Due to the high costs of transit infrastructure and the need for federal subsidies, the Federal Transit Administration (FTA) has established “New Starts Criteria” to develop overall project ratings, make decisions for advancing proposed projects, and for recommending projects for funding. The FTA makes these decisions by evaluating five criteria, including: mobility improvements; environmental benefits; operating efficiencies; cost-effectiveness; and, transit supportive land use.

As shown in Figure 2-3, the FTA considers three categories and their interrelated factors to evaluate transit supportive land use: (1) existing land uses; (2) transit supportive plans and policies; and, (3) performance and impacts of policies within a proposed transit corridor. Since federal transit funding is constrained, those communities with transit supportive development, plans, and policies will obtain a higher evaluation under the FTA land use criteria and increase their chances to secure federal funding to design and construct new transit service through the FTA New Starts program.

Figure 2-3: FTA New Starts Land Use Criteria & Factors

Existing Land Use

- Existing corridor and station area development
- Existing corridor and station area development character
- Existing station area pedestrian facilities
- Existing station area parking supply

Transit Supportive Plans & Policies

- Concentration of development around transit
- Plans and policies to increase station area development
- Plans and policies to enhance transit-friendly character
- Plans to improve pedestrian facilities
- Zoning ordinances that enhance transit-oriented character
- Zoning ordinances that allow for reduced parking
- Outreach to government agencies, developers, and the public
- Regulatory and financial incentives for TOD

Performance & Impact of Policies

- Demonstrated cases of development affected by policies
- Station area development proposals and status
- Adaptability of station area land for development
- Corridor economic environment

2.E FUTURE TRANSIT SUPPORTIVE PLANNING

The Hampton Roads Metropolitan Planning Organization (HRMPO) has worked with HRT and the local jurisdictions to develop the Hampton Roads Transit Vision Plan to establish a long term vision for the region’s transit system that incorporates and goes beyond the parameters of HRT’s 2030 Regional Transit Plan. The Hampton Roads Transit Vision Plan provides a “blueprint” for local jurisdictions to plan and encourage more transit supportive development along proposed transit routes and transit stops.

In the future, local jurisdictions should evaluate, update, or amend their overall development plans, policies, and programs for consistency with the unique needs of desired transit modes. For instance, light or heavy rail projects require the largest densities and potential ridership to justify costly investments. On the other hand, bus rapid transit or streetcar transit has lower minimum standards on densities and ridership since these projects cost less. Therefore, each jurisdiction should consider DRPT’s transit guidelines and the FTA land use criteria to determine what they are doing now and what they should be doing to create a transit supportive environment for the proposed transit services.

Based on the aforementioned principles and guidelines, a transit supportive development framework is provided in Figure 2-4 on the subsequent page and highlights various station area types, local development character, densities, and potential transit options that are described in Section 3.A.3. This transit supportive development framework can be used by local jurisdictions to understand and plan for feasible transit corridors in the future.

Figure 2-4: Hampton Roads Transit Supportive Development Framework

























STATION TYPE	STATION DESCRIPTION	HOUSING DENSITY	JOB DENSITY	TRANSIT OPTIONS	TRANSIT SUPPORTIVE IMAGES		
<p>METROPOLITAN CENTER</p>	<ul style="list-style-type: none"> Primary urban activity hub within metropolitan region High-density areas of employment and population Major destination within the region Large mixed-use center with retail, commercial, entertainment, institutional, civic, and residential uses Example: Downtown Norfolk 	<p>15+ homes/acre</p>	<p>25-75 jobs/acre</p>	<p>Commuter Rail Light Rail Transit (LRT) Street Car</p>			
<p>DOWNTOWN / MIXED-USE CENTER</p>	<ul style="list-style-type: none"> Moderate size urban or suburban hub within a jurisdiction Medium-density areas of employment and population Destination primarily for people from surrounding or nearby communities Mixed-use center with retail, commercial, entertainment, institutional, civic, and residential uses Examples: Portsmouth, Hampton, Oyster Point, Port Warwick 	<p>7-15 homes/acre</p>	<p>25-75 jobs/acre</p>	<p>Light Rail Transit (LRT) Street Car Bus Rapid Transit (BRT) Express Bus</p>			
<p>EMPLOYMENT CENTER</p>	<ul style="list-style-type: none"> Medium-density employment area Employment destination for people within the region Primary land uses may include office uses, industrial uses, military facilities, or port facilities Examples: Norfolk Naval Station, Northrop Grumman Shipyard, Expressway Business Park 	<p>N/A</p>	<p>25-75 jobs/acre</p>	<p>Light Rail Transit (LRT) Street Car Bus Rapid Transit (BRT) Express Bus Enhanced Bus</p>			
<p>INSTITUTIONAL CENTER</p>	<ul style="list-style-type: none"> Medium-density employment and/or residential area Employment destination for people within the region and/or education destination within the region, state, or U.S. Primary land uses may include education or medical facilities, research and development facilities, and ancillary residential uses Examples: Eastern Virginia Medical School, Christopher Newport University, College of William and Mary 	<p>7-15 homes/acre; may not be applicable</p>	<p>4-25 jobs/acre</p>	<p>Light Rail Transit (LRT) Bus Rapid Transit (BRT) Express Bus Enhanced Bus</p>			
<p>ENTERTAINMENT CENTER</p>	<ul style="list-style-type: none"> Medium-density employment and/or residential area Entertainment destination for people within the region, state, or U.S. Primary land uses may include entertainment complex, convention center, sports arena, and tourism-based commercial uses Examples: Hampton Coliseum, Virginia Beach Oceanfront, Busch Gardens 	<p>7-15 homes/acre; may not be applicable</p>	<p>4-25 jobs/acre</p>	<p>Commuter Rail Light Rail Transit (LRT) Bus Rapid Transit (BRT)</p>			

Figure 2-4: Hampton Roads Transit Supportive Development Framework (Continued)

STATION TYPE	STATION DESCRIPTION	HOUSING DENSITY	JOB DENSITY	TRANSIT OPTIONS	TRANSIT SUPPORTIVE IMAGES		
HIGH-DENSITY RESIDENTIAL	<ul style="list-style-type: none"> High-density residential area within or adjacent to a center Attractive residential option for those who desire convenient access to nearby employment, commercial, and entertainment uses Primary land uses may include medium to high-rise apartments or condominiums, with ancillary retail uses Examples: Downtown Norfolk 	15+ homes/acre	N/A	Commuter Rail Light Rail Transit (LRT) Street Car Bus Rapid Transit (BRT) Express Bus			
MEDIUM DENSITY RESIDENTIAL	<ul style="list-style-type: none"> Medium-density residential area within or adjacent to a center Attractive residential option for those who desire convenient access to nearby employment and commercial uses Primary land uses may include low to medium-rise apartments, condominiums, townhomes, and two-family homes Examples: Port Warwick 	7-15 homes/acre	N/A	Light Rail Transit (LRT) Street Car Bus Rapid Transit (BRT) Express Bus Enhanced Bus			
LOW-DENSITY RESIDENTIAL	<ul style="list-style-type: none"> Low-density residential area distant from a center Attractive residential option for those who desire solitude over convenient access to nearby employment and commercial uses Primary land uses may include single-family or two-family homes Examples: Ingleside 	4-7 homes/acre	N/A	Express Bus Enhanced Bus Local Bus			
PARK-N-RIDE	<ul style="list-style-type: none"> Parking lot facility related to public transit use Convenient public use targeted to auto-dependent populations in order to reduce highway congestion and air pollution and to increase mobility 			Commuter Rail Light Rail Transit (LRT) Street Car Bus Rapid Transit (BRT) Express Bus			

FUTURE TRANSIT VISION

3.A METHODOLOGY

The methodology used to generate the Vision Plan's recommendations relied on technical and experiential analysis. Both aspects of the analysis – examining the data and research available as well as discussing existing and desired conditions and experiences with technical committees, local jurisdiction staff, and the public – were critical in conceptualizing and refining high speed/high capacity corridors, local bus enhancements, and transportation demand management measures.

The sequence of experiential inputs – public meetings, technical committee meetings, and MPO meetings – are described and represented graphically in the Process section of the Introduction. In addition to the depicted process milestones, dozens of additional conversations occurred with jurisdiction staff, MPO, HRT, and DRPT and influenced this Plan's recommendations. Without this local input and the iterative process it supported, this Plan's recommendations would have been incomplete.

Likewise, this Plan would have been incomplete without the technical analysis and research conducted. Because of the importance of tying transportation improvements to land use, the technical process was based on an analysis of existing land use, comprehensive plans, and forecast demographics.

Demographic data (population, employment, number of households, and number of vehicles available) were collected from the Hampton Roads Planning District Commission (HRPDC) for the years 2000 and 2034. The region was divided up into 1,059 zones and demographic factors have been estimated for each zone. The transit supportive parts of the region were identified using the land use analysis criteria described in Section 3.C in the Technical Memorandum included in the Appendix. The resulting transit supportiveness maps also can be seen in the Technical Memorandum.

3.A.1 Identifying potentially underserved areas

The transit supportive parts of the region were compared with areas currently served by the existing bus network. It was found that a few transit supportive areas are not served. Some of the transit supportive, underserved areas were discovered to have lower residential density and therefore best served by local bus. However, some underserved areas include employment densities best served by high speed/high capacity transit services. This analysis is fully explained in the land use analysis in Section 3.C in the Technical Memorandum (included in the Appendix).

Similarly, concentrations of non-drivers, as identified by the HRPDC, were examined against the existing bus network coverage and the transit supportive parts of the region. Most concentrations of non-drivers were found to be served by existing bus routes. Local bus improvements were proposed in areas where non-drivers are underserved. Section 3.D of this report describes these proposed local bus improvements.

3.A.2 Identifying places to connect with high speed/high capacity transit

The parts of the region most supportive of transit were compared to land use plans found in the various jurisdictions' comprehensive plans to identify the major regional activity centers in Hampton Roads, supported by input from the public and PTPTC. The result was a set of maps of activity centers as shown in Figures 3-1 and 3-2.

Corridors connecting the major activity centers were proposed as candidates for high speed/high capacity transit service. Existing transit studies provided the alignments for many of the candidate corridors. The set of candidate corridors was reviewed with the PTPTC and modified based on their comments. Different transit modes were considered for each candidate corridor (see Section 3.A.3). The candidate corridors were analyzed using

several criteria to assess their feasibility and to choose which mode or modes were most suitable. This analysis was documented in the Technical Memorandum included in the Appendix.

3.A.3 Transit Modes Considered

The Transit Vision Plan considered the following fixed route modes.

- Commuter Rail
- Light Rail
- Streetcar/Trolley
- Bus Rapid Transit (BRT)
- Express bus
- Enhanced bus
- Local bus

For the purposes of this study, the fixed route modes were defined as follows.

Commuter Rail operates on freight rail corridors, perhaps in mixed operation with freight trains, using rolling stock compliant with Federal Railroad Administration regulations. Stations are spaced approximately three to five miles apart and are designed mainly for drive access. They are located in lower density suburban areas and have park-and-ride lots. Service is provided primarily on weekdays during commuting peak periods. Propulsion is likely diesel, but the line could be electrified. An example of Commuter Rail would be the Virginia Railway Express (VRE) in Northern Virginia.

Light Rail Transit (LRT) operates primarily on an exclusive running way, but can also operate on city streets in exclusive lanes. Stations are spaced one-half to two miles apart. Stations can have parking or can be designed for walk access. Service is all day and frequent – at least four trains per hour during peak periods. Propulsion is electric with an overhead catenary system, making trains quiet and reducing pollution from the vehicle. Examples would include the Lynx Blue Line in Charlotte and the Baltimore Light Rail.

Streetcar operates primarily on city streets, typically sharing lanes with cars. Stations are spaced 1/8- to 1/4-mile apart and are simple. They generally have a shelter, information signing, a fare machine, and no parking. Service is all day and frequent. Propulsion is electric. An example would be the Portland Streetcar. The differences between light rail and streetcar are station spacing, exclusive versus non-exclusive running way, and station amenities.

Bus Rapid Transit (BRT) has similar characteristics to Light Rail, except the vehicle is a bus instead of a train. Bus Rapid Transit operates primarily on an exclusive running way, but can also operate on city streets in exclusive lanes. Stations are spaced one-half to two miles apart. Stations can have parking or can be designed for walk access. Service is all day and frequent – at least four buses per hour during peak periods. Vehicles are fueled by diesel or compressed natural gas (CNG). An example of BRT would be the Orange Line in Los Angeles.

Express Bus operates on existing roads in mixed traffic or on High Occupancy Vehicle (HOV) lanes where present. Express buses serve one or a few park-and-ride lots in lower density suburban areas then travel non-stop, often via freeways, to core activity centers where there may be several closely spaced stops. Service is primarily during commuting peaks, but can be all day. Vehicles are fueled by diesel or compressed natural gas (CNG). Often vehicles are over-the-road motorcoaches, as opposed to 30- to 40-ft transit buses. An example of Express Bus would be HRT's MAX service.

Enhanced Bus operates on existing roads in mixed traffic with cars, mainly along surface arterial roads. Stops are farther apart than on local bus, perhaps 1/2-mile or more apart, and stops have shelters and more amenities than local bus stops. Service is all day and frequent, using a diesel- or CNG-propelled transit bus, which could be specially branded. Examples of Enhanced Bus would be Metro Rapid in Los Angeles and MetroExtra in Washington, DC.

Figure 3-1: Map of Activity Centers - Peninsula

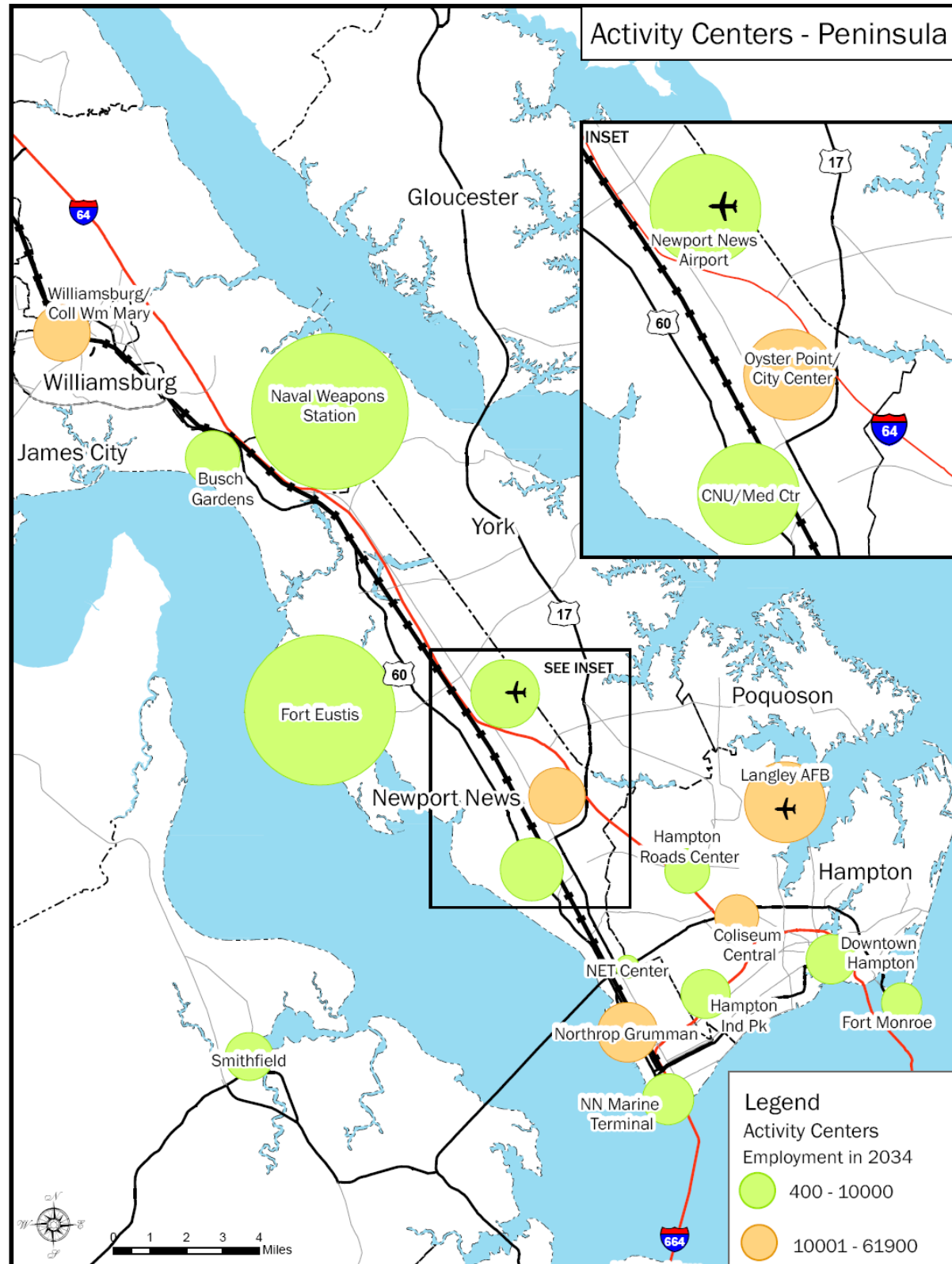
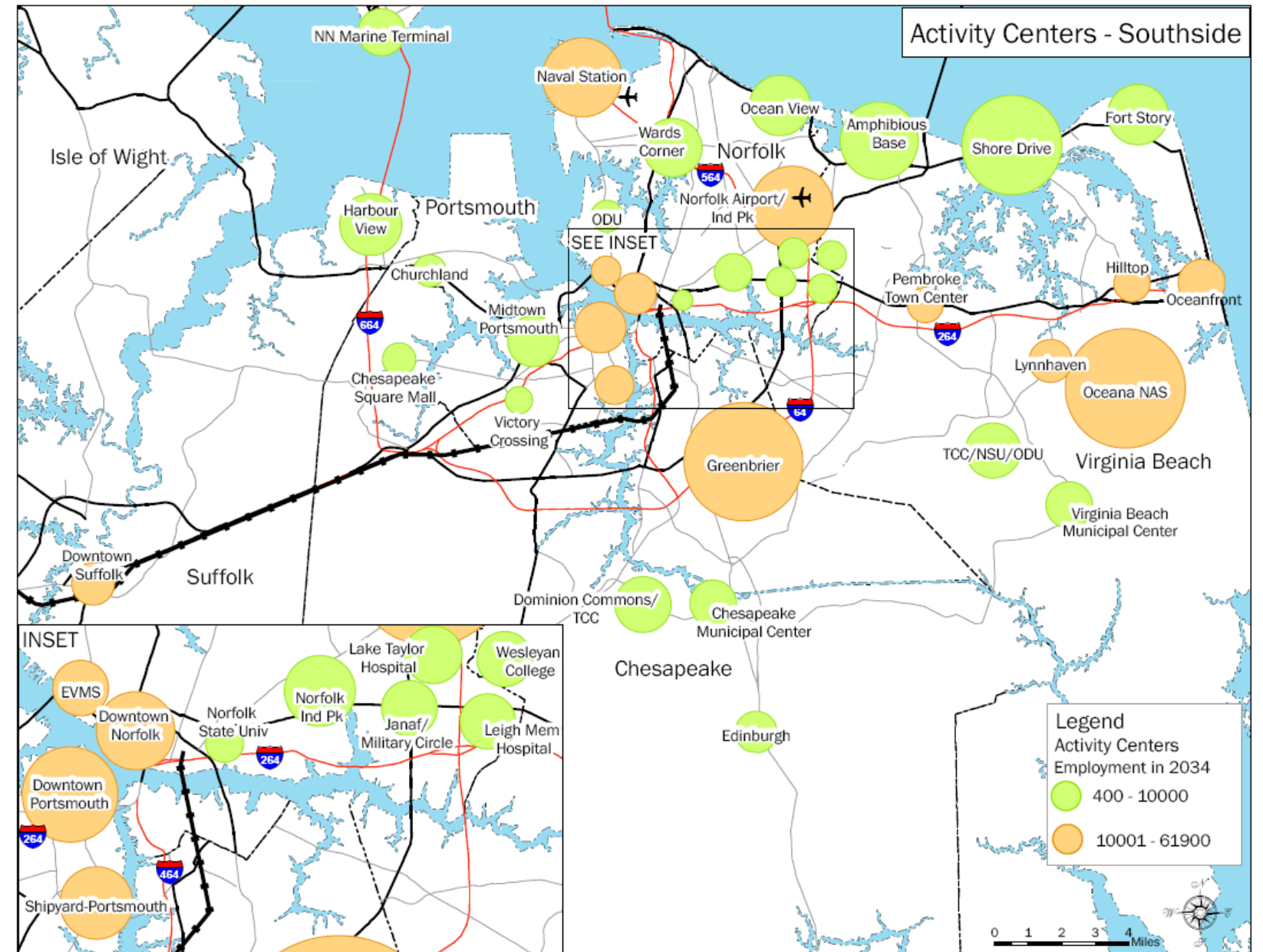


Figure 3-2: Map of Activity Centers - Southside



Local Bus operates on existing roads in mixed traffic with cars. Stops are every few blocks apart and usually no more than 1/4-mile apart. Amenities at stops are limited, perhaps as little as a sign and a concrete pad. Service is all day with frequencies of 1 to 8 buses per hour, depending on time of day and location. Vehicles are typically 30- to 40-ft long and fueled by diesel or compressed natural gas (CNG) propulsion. An example would be HRT bus service.

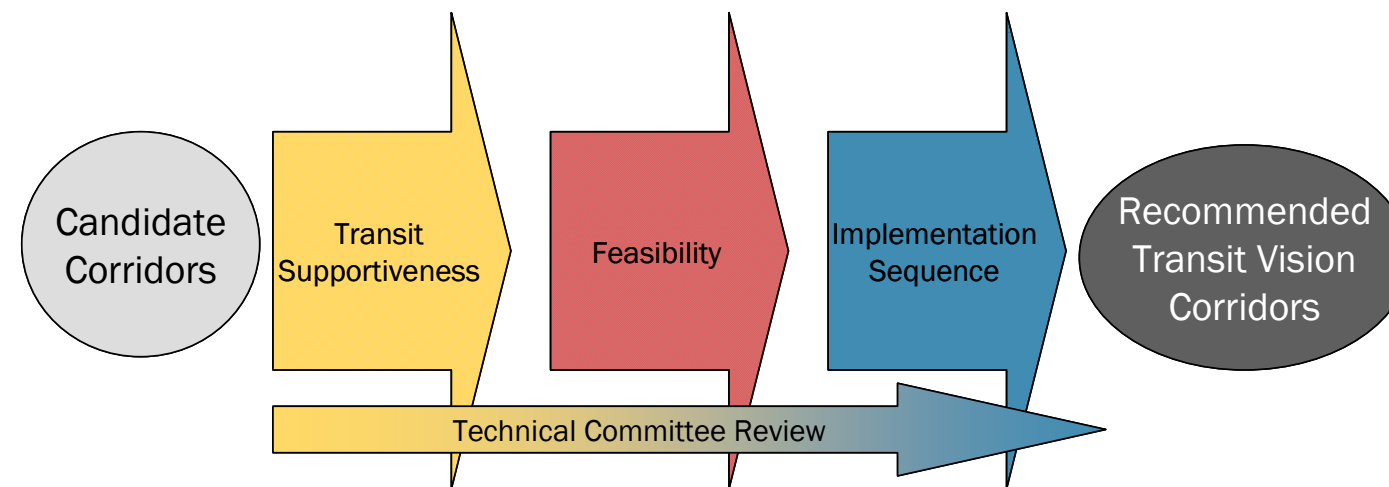
3.A.4 Corridor Assessment

Three levels of evaluation were applied to the candidate corridors. The first level was to assess transit-supportiveness of the corridor, using criteria contained in the Federal Transit Administration guidelines for the New Starts funding program. This was out of necessity a high-level, qualitative review as the proposed transit projects are not yet well defined. The transit-supportiveness evaluation criteria were:

- Existing Land Use – a review of the types and character of development in the corridor
- Transit-Supportive Plans and Policies – a review of the policies that support transit such as growth management, zoning regulations, and tools to implement land use policies
- Performance and Impacts of Policies – a review of how land use policies have shaped development and how the transit investment might impact regional transit use

The second level of evaluation was a feasibility review based on five categories.

- Projected Demand – the ability for the proposed transit mode to meet travel demand in the corridor
- Service Area Corridors – the ability to identify right-of-way to implement the proposed transit improvement



- Institutional Arrangements – the existence or ability to create the organizational structures to operate the transit service
- Supportive Land Uses – the ability of forecast land uses to support transit usage
- Funding Strategies and Programs – the potential to find sources of funding to implement the transit project

The first two levels of evaluation are described in more detail in a Technical Memorandum, included under separate cover in the Appendix.

The third level of evaluation was to identify the reasonable sequence in which to implement the proposed transit projects. The criteria were:

- Project readiness – How easily and quickly the project can be implemented as determined by the stage of planning process, right-of-way availability, and funding
- Effectiveness at enhancing mobility – Serving corridors forecast to be heavily congested and the ability to avoid congestion (such as fixed guideway, separate lanes, and signal prioritization)

- Service efficiency – Providing a high level of service versus the cost per vehicle-revenue-mile
- Land use supportiveness - Ability of land use to develop in a transit supportive way, as reflected in demographic projections, zoning, and redevelopment potential

Analysis of land use played a significant role in all three levels of evaluation.

After the feasibility review and further discussions with the PTPTC and jurisdictional staff, the corridors and the proposed transit service in them were refined into recommendations to be brought forward in the Transit Vision Plan. These recommendations are described in detail in Section 3.C.

3.B PRELIMINARY CORRIDOR REFINEMENTS

Based on the analysis documented within the Technical Memorandum (included in the Appendix) as well as jurisdictional comments on that report, corridor refinements were made and brought forward into a Draft Transit Vision Plan.

The Technical Memorandum rated as having lower feasibility four of the candidate corridors and modal options. As a result, the following refinements were made:

- Light rail in Candidate Corridor 8d via the Midtown Tunnel and Western Freeway in Portsmouth was rated as having lower feasibility, primarily because it missed important activity centers in Portsmouth. Express bus service was carried forward as the suitable transit mode for Corridor 8d.
- Commuter rail in Candidate Corridor 9c between Suffolk and Norfolk was rated as having lower feasibility, primarily because it missed important activity centers in Portsmouth and traversed undevelopable land. This corridor was dropped from further consideration, as other corridors met the transportation needs.
- Light rail in Candidate Corridor 11 along the CSX Railroad on the Peninsula was rated as having lower feasibility, primarily because current and anticipated development patterns in the northern part of the corridor can be served with commuter rail. In addition, commuter rail is more likely due to its compatibility with CSX operations. However, both LRT and commuter rail will be evaluated in an Alternatives Analysis study and an Environmental Impact Statement (EIS) to make a final determination of the appropriate mode.
- Express bus in Candidate Corridors 15a and 15b from Poquoson to Oyster Point and Coliseum Central was rated as having lower feasibility, primarily because demand for public transportation in Poquoson was rated low. Even though these transit routes would be readily

implemented, service was recommended to be deferred to beyond 2034.

Further refinements were made in the process of review with the HRMPO, PTPTC, and jurisdictional staff.

- Corridors 8c and 8e were combined to make a single corridor, called Corridor 8c.
- Express bus service Corridor 8d was extended from its previous western terminus in the Harbour View area of Suffolk to Smithfield in Isle of Wight County. At present Isle of Wight County only has express bus service to Newport News. The recommended change will improve transit connections from Isle of Wight County to region's core.
- A new Corridor 17 was added, calling for bus rapid transit service along the Princess Anne Road and Lynnhaven Parkway corridors in Virginia Beach. This service would connect Strategic Growth Areas in Virginia Beach with one another and with a potential light rail line paralleling I-264.
- A new Corridor 18 was added, calling for express bus service between Downtown Suffolk and Harbour View. While current levels of development would unlikely support transit service, in the long-range an improved cross-city transit connection in Suffolk would be of value.
- The ultimate mode in Corridor 12 between Downtown Hampton and Oyster Point via Coliseum Central was changed from bus rapid transit to light rail. While the forecast land use in this corridor is moderately supportive of high speed/high capacity transit, this change was recommended because of the importance of Coliseum Central as an activity center on the Peninsula.

A Draft Transit Vision Plan incorporating the refinements listed above was generated and submitted to the members of the technical committee, HRTMPO, and DRPT for review and comments. The preliminary findings were presented at public meetings. This Final Vision Plan document incorporates refinements based comments received on the Draft Vision Plan.

3.C PROPOSED HIGH SPEED/HIGH CAPACITY CORRIDORS

The high speed/high capacity corridors recommended in this Plan, shown in Figure 3-3, connect the entire region with high quality, attractive transit service. The transit service will both support and be supported by additional focused development. A range of transit modes are recommended, from express bus to light rail, such that the mode is most appropriate for the types of development anticipated in each corridor. In many corridors, the mode will evolve over time as more intensive development occurs. For example, beginning with bus rapid transit and eventually converting to light rail has been recommended in some corridors.

The corridors come together at various important regional activity centers. Intermodal hubs are recommended to allow convenient transfers between different transit modes. The primary hubs that emerge from this Plan are:

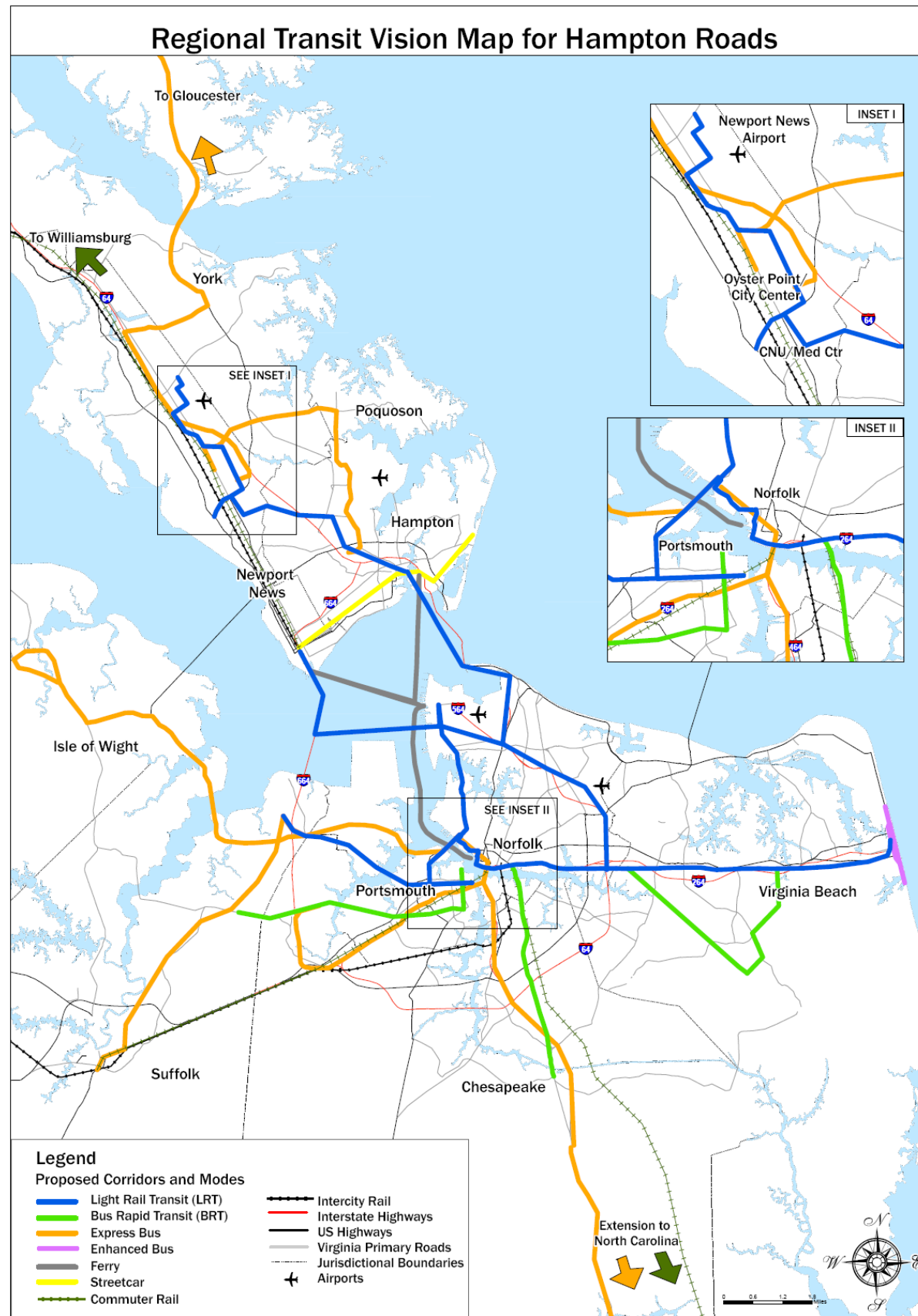
- Downtown Norfolk, with Eastern Virginia Medical School on west and Harbor Park on east intermodal center
- Naval Station Norfolk
- Oyster Point/City Center in Newport News

On the next several pages, each corridor is described and illustrated. The transit service proposed for each corridor, which may evolve over time, is reviewed. Recommendations are given for improving the transit supportiveness of land use in the corridor. Finally, supporting projects, regional connections, and additional planning decision to be made are discussed. While the corridors are designated using numbers, no priority is implied by the numbering.

After the high speed/high capacity corridors are presented, the recommended local bus service improvements are described in Section 3.D.

The high speed/high capacity transit service recommended in this Plan is anticipated to serve more than 670,000 jobs and more than 820,000 residents in the region. The recommended light rail network on the Southside alone is anticipated to serve more than 360,000 jobs and 320,000 residents.

Figure 3-3: Regional Transit Vision Map for Hampton Roads



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CORRIDOR 1. Eastern Virginia Medical School to Newtown Road, Norfolk

Description of Corridor

Corridor 1 runs from the Eastern Virginia Medical School (EVMS) in Norfolk to Newtown Road in Norfolk. The corridor goes through multiple activity and employment centers including Downtown Norfolk and Norfolk State University. This corridor, which has the most intensive commercial development in the region, is logically the hub and starting point for the regional high speed/high capacity transit network envisioned in this Plan.

Implementation

A light rail transit (LRT) line called The Tide is currently being constructed in this corridor. The short-range plan calls for completing construction of The Tide light rail project and begin operating the service by 2010. Light rail service will continue to operate throughout the timeframe of the Vision Plan. Bus service will be modified to better serve light rail stations along the corridor. It is anticipated that service frequency will increase over time as ridership demand increases and additional light rail extensions are built, as recommended in this Plan.

Other Discussion

Supporting Projects

Light rail service in Corridor 1 is supported by operational changes to existing bus service. The following existing routes should be reoriented to serve light rail stations and better coordinate with light rail service.

- Route 4 to serve Medical Center Station
- Route 11 to serve Medical Center Station
- Route 15 to serve Military Highway Station
- Route 17 NET Circulator modified to coordinate with light rail service
- Route 18 to serve Ballentine Boulevard Station
- Route 20 to serve Military Highway Station
- Route 23 to serve Newtown Road Station
- Route 25 to serve Newtown Road Station
- Route 27 to serve Newtown Road Station
- Route 44 to serve Medical Center Station

Regional Connections

Other transit corridors will connect this corridor into the region’s integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan.

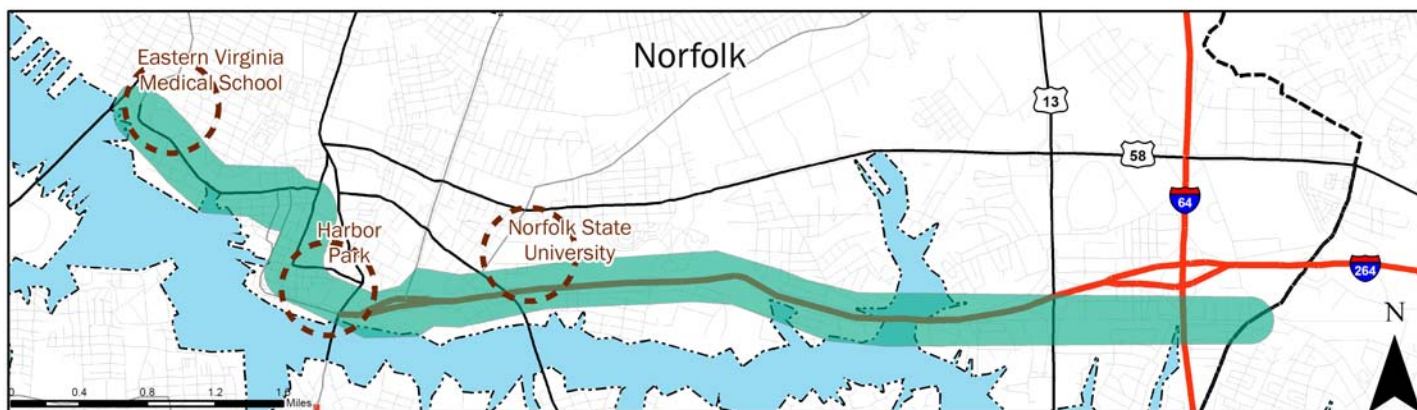
Ridership on this initial light rail line will be greatly enhanced by future extensions to the light rail network, as called for in the Vision Plan.

- Corridor 3 light rail service would provide connections to central Virginia Beach and the Oceanfront
- Corridor 4 and Corridor 5 light rail service would enable connections to Naval Station Norfolk around the east and west sides of Norfolk, as well as service to Norfolk International Airport.
- Corridor 8a rapid transit service would enable connections to Portsmouth and the southwestern part of the region.

In addition, an intermodal hub at Harbor Park Station would be created under the Vision Plan. Commuter rail trains to Chesapeake (Corridor 7) and Portsmouth and Suffolk (Corridor 9a) would terminate at Harbor Park, as would intercity rail service from Richmond via Petersburg.

Light rail service in Corridor 1 is also supported by the enhanced bus service called for in Corridor 5.

RECOMMENDED CORRIDOR



IMPLEMENTATION PHASING

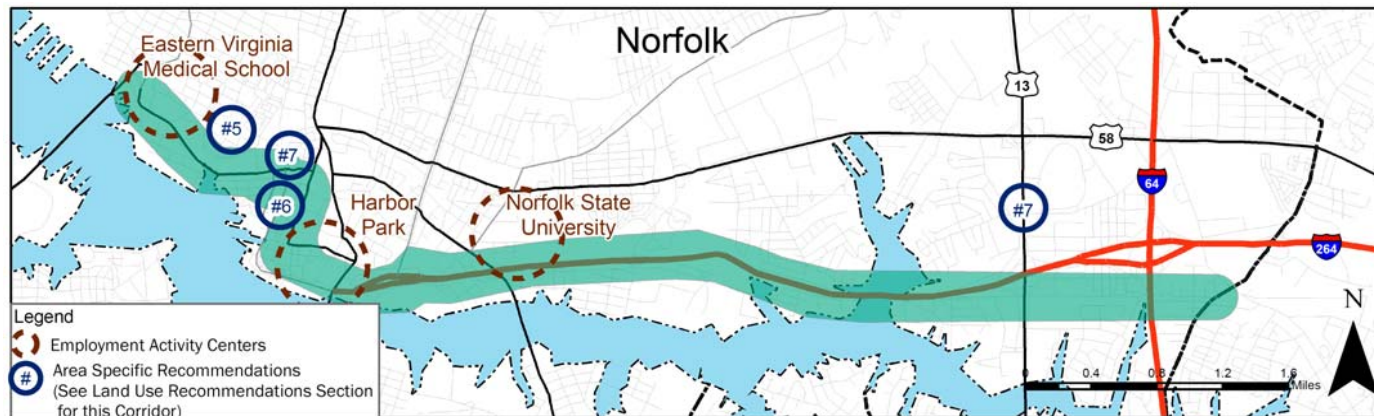
Near-Term		Long-Range (2026–2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016–2025)		
Complete construction and begin operating LRT	Continue operating LRT	Continue operating LRT with increased frequency	Continue operating LRT with increased frequency

Land Use Recommendations

Downtown Norfolk's growing mix of uses and compact, walkable development patterns serve as a local model of transit supportive development. To fully utilize other LRT station areas, a variety of higher density housing options, mixed-use and compact development, minimal surface parking, and improved pedestrian accessibility are needed.

1. Focus redevelopment and higher intensity uses within one-half mile of each LRT station, using transit-oriented development best practices as a guide to refine local plans and zoning.
2. Create attractive, accessible, pedestrian-friendly, and mixed use station areas that taper and transition smoothly to adjacent moderate density residential areas.
3. Provide increased circulator service between the LRT stations and residential neighborhoods outside of the one-half mile station area. This will help build ridership in the early days of the LRT and provide additional travel options to users.
4. Update the Comprehensive Plan and provide land use policies that more accurately reflect Norfolk's current and future land use and transportation plans. Build in additional guidance for the development of future high capacity transit services.
5. Continue strategic development in Downtown Norfolk. Encourage high density residential uses, retail, and entertainment. Foster more diversity in the commercial and employment markets.
6. Continue to use and refine the Downtown District's design review criteria specified in the zoning ordinance to encourage desired types of development.
7. Identify strategic actions to encourage additional employment in the corridor by focusing development in the Downtown Norfolk and Military Highway areas.

CORRIDOR 1: LAND USE CONDITIONS AND RECOMMENDATIONS



Note: Norfolk's 1992 Comprehensive Plan map does not delineate specific, targeted centers. However, Norfolk is currently assessing how to update its Comprehensive Plan over the next two years.

CORRIDOR 2. Christopher Newport University to Denbigh Boulevard, Newport News

Description of Corridor

Corridor 2 runs from Christopher Newport University (CNU) to Denbigh Boulevard in Newport News. There are multiple activity centers along this corridor, including two existing model mixed use, transit-supportive centers in Port Warwick and Oyster Point, as well as Newport News/Williamsburg International Airport and Patrick Henry Mall. The CNU and City Center portions of this corridor are forecast to have residential and employment densities supportive of high speed/high capacity transit investment.

The City of Newport News has been advancing planning for high speed/high capacity transit in this corridor and has established a preferred alignment and potential station locations. The City continues to encourage higher density, mixed use development in the corridor in order to realize the community’s vision for light rail service. The City and HRT are collaborating on additional analysis in support of ultimately building light rail in this corridor, including determination of right-of-way requirements, estimation of right-of-way costs, determination of ridership requirements and financial implications, enhanced land use analysis, transit oriented development planning, and analysis of supporting transit facilities.

Implementation

The ultimate transit vision for this corridor is light rail service.

In the short range, the City in coordination with Hampton Roads Transit should identify the routing and stop locations for enhanced or premium bus service in the corridor. Enhanced bus service should have more widely spaced stops than local bus service, at least 4 trips per hour, bus shelters at all stops, and perhaps specially branded buses. Enhanced bus service could be constrained to this Corridor or, better yet, be extended along Jefferson Avenue to Downtown Newport News, similar to Route 131 contemplated in HRT’s Proposed 20-Year Transit Plan (2006). If the latter option is pursued, this service could be branded as bus rapid transit service, with stations spaced one-half to two miles apart

In the mid-range, enhanced bus service should continue to operate. The City of Newport News should continue with its transit-supportive land use planning and high speed/high capacity transit planning. The environmental documentation needed for the light rail line should be completed in this timeframe. This includes completing the Alternatives Analysis and the Environmental Impact Statement (assuming federal funding will be pursued).

In the long-range, the light rail project should be constructed and service should commence in the corridor.

In the extended-range, the light rail service should continue operations.

Other Discussion

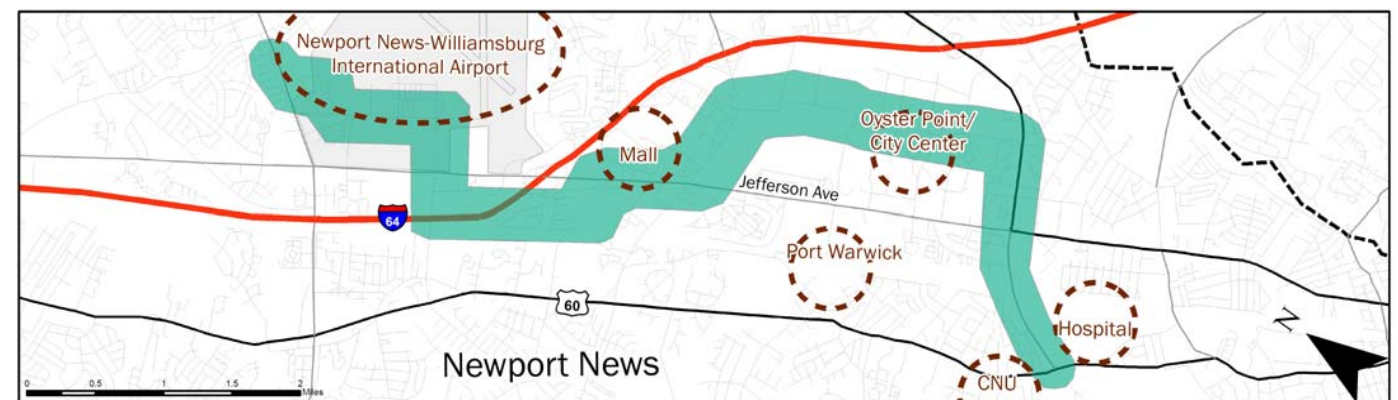
Supporting Projects

Realizing the transit vision in this corridor will be greatly enhanced by implementing high speed/high capacity transit in other Corridors in this Plan. Foremost would be to connect to the light rail system on the Southside via Corridor 12 through Hampton, and Corridor 16c light rail crossings of the Hampton Roads harbor, as called for in this Plan.

Light rail service in Corridor 2 would be supported by operational changes to existing bus service. The following existing routes should be reoriented to serve light rail stations and better coordinate with light rail service.

- Route 106 to serve Patrick Henry Mall Station
- Route 107 to serve Patrick Henry Mall Station and CNU Station
- Route 111 to serve Thimble Shoals Boulevard and Riverside Regional Medical Center Stations as well as shortened to reduce duplication with light rail service
- Route 112 to serve Thimble Shoals Boulevard, Jefferson Lab, and Patrick Henry Mall Stations as well as to reduce duplication with light rail service
- Route 113 to serve Patrick Henry Mall Station

RECOMMENDED CORRIDOR



IMPLEMENTATION

Near-Term		Long-Range (2026–2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016–2025)		
<i>Begin operating enhanced bus service in corridor</i>	<i>Continue operating enhanced bus. Complete AA/DEIS and FEIS for LRT project</i>	<i>Construct and operate LRT</i>	<i>Continue operating LRT</i>

- Route 116 to serve Patrick Henry Mall Station
- Route 119 could be eliminated as its service would be duplicated by light rail service
- Route 121 to serve Patrick Henry Mall Station

In addition, a local circulator route would be beneficial for connecting Port Warwick with other employment and commercial centers in the corridor. This circulator could be publicly or privately operated.

Regional Connections

Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan.

Light rail service in Corridor 2 would connect with other projects called for in the Vision Plan:

- Corridor 11 commuter rail service along the Peninsula, including Amtrak service to Richmond.
- Corridor 12 bus rapid transit and eventually light rail service to Coliseum Central and Downtown Hampton. Light rail service in Corridor 12 would also support regional light rail connectivity to the Southside.
- The Oyster Point section of Newport News is a hub for regional express bus service such as in Corridor 14 to York and Gloucester Counties and Corridor 15a to Poquoson.

Planning Decisions

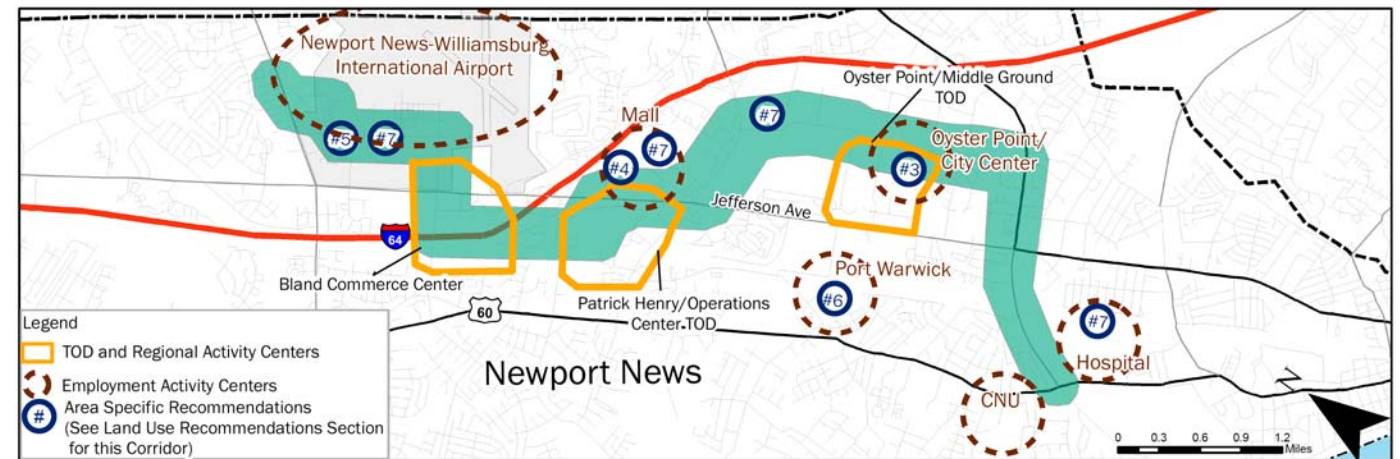
As planning proceeds for high speed/high capacity transit service in Corridor 2, decisions need to be made with regard to how transit will interact with commuter rail service in Corridor 11 (CSX corridor) called for in this Plan.

Land Use Recommendations

Newport News has two of the region's model mixed-use developments – Port Warwick and Oyster Point at City Center. The densities, combination of uses, walkability, and pedestrian-oriented design and accessibility make these centers both attractive and transit-supportive. Future development at proposed transit stations along this corridor should continue to be compact and mixed-use to support the community's vision for LRT service.

1. Encourage station area development along this corridor to use Port Warwick and Oyster Point at City Center as models of transit supportive mixed-use developments.
2. Continue to use high intensity and mixed use zoning districts, such as the Mixed Use District and Neotraditional Overlay District, to create pedestrian-oriented and transit supportive development.
3. Continue to develop Oyster Point at City Center with medium-density, mixed uses.
4. Redevelop the Patrick Henry Mall as a mixed-use center, using either of the corridor models as guides.
5. Determine an appropriate scale and mix of uses for the areas north of the Airport and then encourage that type of redevelopment.
6. Ensure frequent and reliable connecting service between Port Warwick and enhanced transit service along the corridor. Connecting these residential areas to the employment centers at Oyster Point, near the airport, at the Medical Center, and CNU will make fixed route or rail transit more feasible.
7. Identify strategic actions to encourage additional employment in the corridor by focusing development in the Airport, Patrick Henry Mall, Jefferson Lab, and Medical Center areas.

CORRIDOR 2: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 3. Newtown Road to Oceanfront, Virginia Beach

Description of Corridor

Corridor 3 runs from Newtown Road in Norfolk to the Oceanfront resort area in Virginia Beach, following the unused Norfolk Southern Railroad line and Virginia Beach Boulevard. This corridor runs through or near multiple activity and employment centers, including Pembroke Town Center, Lynnhaven office parks, Oceana Naval Air Station, Hilltop shopping area, and the Oceanfront.

Corridor 3 forms a logical eastward extension of Corridor 1, where The Tide light rail line is being constructed.

Some of the highest employment and residential densities in the region are found in this corridor. The amount of employment is already supportive of high speed/high capacity transit, and residential densities in the corridor have the potential to support rail in the future. High worker trip volumes from Virginia Beach to Norfolk and presence of several Strategic Growth Areas along this corridor justify a high speed/high capacity transit investment in the corridor.

Implementation

The ultimate transit vision for this corridor is light rail service.

In the short-range, limited stop bus service should be implemented along Virginia Beach Boulevard from Newtown Road to the Pacific Avenue Transit Center. Consideration should be given to dedicating the curb lane to buses, HOVs, and taxis during peak travel periods to improve travel times and service reliability. All bus stops should have shelters. Service should be frequent, with at least 4 trips per hour. Stop locations should be at major crossing arterial streets and activity centers likely to have a light rail station in the future.

Also in the short-range, the Alternatives Analysis and environmental documentation for implementing light rail in the corridor should be completed. The Norfolk Southern right-of-way should be acquired.

In the mid-range, the final design and construction of the light rail project should be completed. Local bus routes should be reoriented to serve light rail station areas. In the long- and extended-range, operation of the light rail line will continue.

Other Discussion

Supporting Projects

Certain land use and transportation projects will help support implementation of the recommendations described above. Some enabling and supporting projects are:

- Completion of the initial light rail line in Norfolk (Corridor 1) is a critical enabling project for light rail service in Corridor 3.
- Enhanced and extended circulator bus service (or bus rapid transit) in Corridor 10 is necessary to distribute passengers using light rail throughout the Oceanfront resort area.
- Pembroke Town Center could become a model station area based on compact, mixed use, and walkable development.

Bus service should be reoriented to serve light rail stations. Additional planning will be required to determine station locations (as described further below) and exact service modifications. Examples of bus service modifications include:

- Route 36 routed to serve a Pembroke Town Center station
- Route 29 routed to serve a Lynnhaven Parkway station
- Route 20 routed to serve multiple stations and allow connections between longer distance and

local trips along Virginia Beach Boulevard

- Route 32 may be redundant with light rail service and discontinued or replaced with local circulators

New local bus service, as called for in Section 3.D of this Plan, should also be implemented to support light rail service in Corridor 3. Examples include:

- New route in the Kempsville Road and Witchduck Road corridor, serving a Witchduck Road station.
- New route in the Rosemont Road corridor, serving a Rosemont Road station.

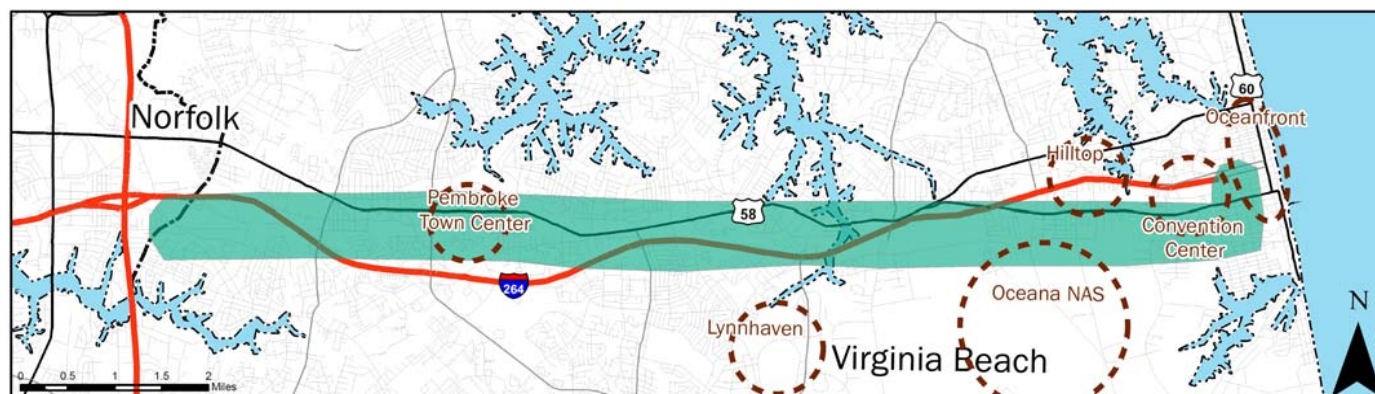
Regional Connections

Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan.

Light rail service in Corridor 3 would connect with other projects called for in the Vision Plan:

- Corridor 10 enhanced and extended circulator bus service is an enabling project to connect throughout the Oceanfront resort area.

RECOMMENDED CORRIDOR



IMPLEMENTATION

Near-Term		Long-Range (2026-2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016-2025)		
Begin enhanced bus service along US 58 Complete AA and EIS for LRT project	Construct and operate LRT	Continue operating LRT	Continue operating LRT

- Corridor 17 bus rapid transit service would tie into light rail service in two locations to increase regional connectivity
- Corridor 4 light rail service would enable longer distance, high speed/high capacity transit trips between Virginia Beach and Naval Station Norfolk as well as Norfolk International Airport.
- Corridor 1 light rail service would enable connections to Downtown Norfolk.

Planning Decisions

Questions to answer in the environmental documentation phase include whether the light rail alignment should remain within the Norfolk Southern Railroad right-of-way or deviate from the right-of-way to serve office parks along Lynnhaven and retail areas in Hilltop. Also, the location of the eastern project terminus needs to be determined, namely whether the project terminates near the Virginia Beach Convention Center or extends east closer to the Oceanfront hotels.

Potential Station Locations

Below is a list of potential light rail station locations to be considered in future studies. In addition, whether and how much parking should be built at each station needs to be determined. The locations of grade separations at major crossing arterials also need to be studied.

- Kempsville/Arrowhead Shopping Center
- Witchduck Road
- Kellam Street
- Pembroke Town Center
- Rosemont Road/Little Neck Road
- Lynnhaven Parkway
- London Bridge Road
- Oceana Boulevard
- Birdneck Road
- Virginia Beach Convention Center

Land Use Recommendations

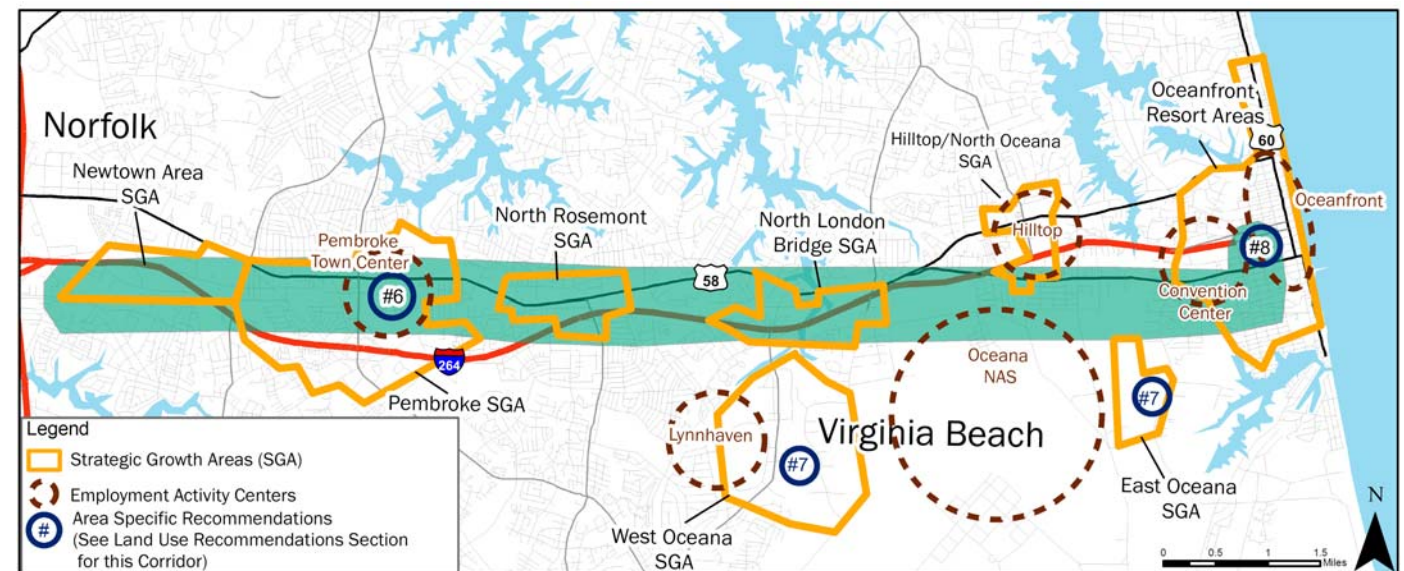
Significantly, the proposed corridor contains 125,000 jobs and meets federal guidelines for corridor level employment. This level of employment supports transit ridership when major employers are located near stations, bus connections are provided from stations to major employers, and park-and-ride lots or parking garages are provided at stations. Based on these conditions, Corridor 3 has the most appropriate level of employment to support high speed/high capacity transit service among the corridors in this Plan. The policy basis for increasing transit-supportive conditions along this corridor and compact mixed use development – including a variety of higher density housing options – exists in Virginia Beach. The following land use recommendations are based in part on the policies and actions suggested within the Virginia Beach Comprehensive Plan and other local area plans.

1. Focus on redevelopment in Strategic Growth Areas (SGAs) along the corridor. This includes Pembroke Town Center, Lynnhaven, Oceana Naval Air Station, Hilltop, and Oceanfront. Ensure that the zoning districts used within these SGAs permit mixed uses and transit-supportive residential densities. (Note: Due to its military functions, there are development restrictions around Oceana Naval Air Station.)
2. Increase residential densities in targeted areas within SGAs along the corridor to (a) support desired transit and (b) create markets for additional neighborhood-oriented, walkable retail. Encourage a variety of housing types: high density (20 or more units per acre) high- and mid-rise multi-family, and moderate density (8 to 12 units per acre) single-family attached and detached housing.
3. Use Comprehensive Plan and area plan policies as well as SGA design guidelines to ensure internal circulation and non-vehicular connectivity as centers intensify. Provide pedestrian and bicycle facilities so that residents and workers can take advantage of mobility options.

4. Maximize development potential in redeveloping mixed use centers such as the Pembroke Town Center and Oceanfront SGAs by minimizing surface parking and updating parking and pricing policies. Reconsidering quantity, type, and location of parking will contribute to increased walkability, and permit a broader variety of development types and design.
5. Identify strategic actions to encourage higher housing unit density in the corridor by focusing development in the Town Center, Lynnhaven Parkway, and Oceanfront areas.
6. Continue to support development in Pembroke Town Center, implementing the transit-oriented recommendations of the Pembroke Area Comprehensive Transportation Plan. Continue to use the Pembroke Central Business zoning district.

7. Connect those SGAs near but not bisected by the corridor (Lynnhaven, Oceana Naval Air Station, Hilltop) to the main corridor with frequent transit service. Consider enhancements to local bus service or encouraging employers and developers to provide shuttle service.
8. Continue with redevelopment planning for the Oceanfront resort area and around the Virginia Beach Convention Center. Develop a sequencing plan for the recommendations included within existing resort area plans (Oceanfront Resort Area Plan, Virginia Beach: Creating an Old Beach District Center) to aid implementation. Encourage infill development in older, established areas of the Oceanfront.

CORRIDOR 3: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 4. Military Highway/I-64 Corridor, Norfolk

Description of Corridor

Corridor 4 runs from I-264 parallel to Military Highway and I-64 to Naval Station Norfolk. Currently adopted 2034 forecasts of residential density in the corridor do not support rail, except along Little Creek Road west of I-564. However, the corridor links several important regional activity centers including providing improved transit access to Norfolk International Airport and Naval Station Norfolk. A study conducted in 1999 identified this corridor as feasible for extending light rail to Naval Station Norfolk. High speed/high capacity transit in this corridor is further justified by the large number of workers who commute from Virginia Beach to Naval Station Norfolk.

Implementation

The ultimate transit vision for this corridor is light rail service.

In the short-range, existing MAX Routes 919 and 922 express bus service would continue operating in the corridor. The Alternatives Analysis should be initiated as funding for this study has been allocated.

In the mid-range, the Alternatives Analysis and environmental documentation necessary for implementing light rail service should be completed. Right-of-way acquisition should begin, as should final design.

In the long-range, the light rail project should be constructed and begin operations.

In the extended-range, operation of the light rail line will continue.

Other Discussion

Supporting Projects

Certain transportation projects will help support implementation of the recommendations described above. Some enabling and supporting projects are:

- Completion of the initial light rail line in Norfolk (Corridor 1) is a critical enabling project for light rail service in Corridor 4.
- Extension of light rail to Virginia Beach (Corridor 3) would greatly support ridership for light rail service in Corridor 4 by connecting to more jobs and residences.

Bus service should be reoriented to serve light rail stations. Additional planning will be required to determine station locations (as described further below) and exact service modifications. Examples of bus service modifications include:

- Route 3 routed to serve a Chesapeake Boulevard station
- Route 8 routed to serve a Tidewater Drive station
- Route 9 routed to serve a Chesapeake Boulevard station
- Route 15 routed to serve multiple stations and allow connections between longer distance and local trips along Military Highway
- Route 23 routed to serve a Northampton Boulevard station

Regional Connections

Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan. Light rail service in Corridor 4 would connect with other projects called for in the Vision Plan:

- Corridor 1 light rail service would enable connections to Downtown Norfolk via Norfolk State University.
- Corridor 3 light rail service would enable connections across central Virginia Beach and the Oceanfront resort area.
- Corridor 5 light rail service would enable connections to Downtown Norfolk via Old Dominion University
- Corridor 16c light rail service would enable connection across Hampton Roads harbor to Downtown Hampton and the Peninsula. In the interim, cross harbor ferry service in Corridor 16a would provide connections to the Peninsula.

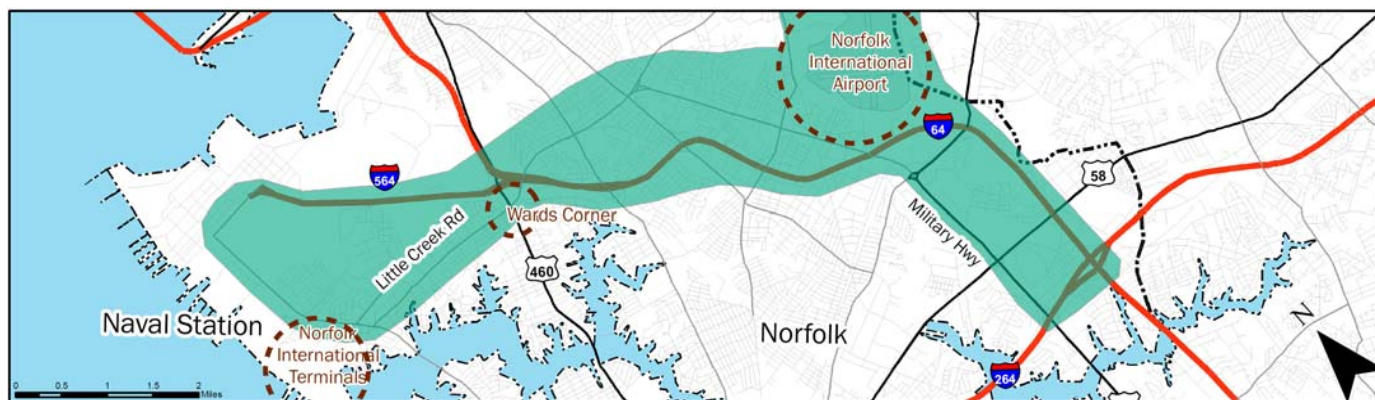
Planning Decisions

Questions to answer in the environmental documentation phase include the preferred alignment of the light rail line. In particular, whether to serve Norfolk International Airport with a branch line or along the main line needs to be decided. Also, the departure point or station from The Tide initial light rail line needs to be determined.

A transit operating plan needs to be created. Issues to be resolved include:

- Whether to continue MAX Route 919 once light rail service is implemented.
- Whether light rail service in Corridor 4 operates independently (that is, requiring a transfer to light rail service between Downtown Norfolk and Virginia Beach) or if through service is offered from Oceanfront to the Naval Station or from Downtown Norfolk to the Naval Station.
- Whether local bus service within the Naval Station loop is replaced by light rail service

RECOMMENDED CORRIDOR



IMPLEMENTATION

Near-Term		Long-Range (2026-2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016-2025)		
Continue MAX express bus service in corridor. Initiate AA.	Complete AA and EIS for LRT project	Construct and operate LRT	Continue operating LRT

Potential Station Locations

Below is a list of potential light rail station locations to be considered in future studies. In addition, whether and how much parking should be built at each station needs to be determined. The locations of grade separations at major crossing arterials also need to be studied.

- Virginia Beach Boulevard
- Northampton Boulevard
- Norfolk Commerce Park
- Norfolk International Airport
- Norview Avenue/Azalea Garden Road
- Chesapeake Boulevard
- Tidewater Drive
- Wards Corner
- Torgerson Road
- Beechwood Ave/Norfolk International Terminals
- Naval Station Norfolk loop with multiple stations

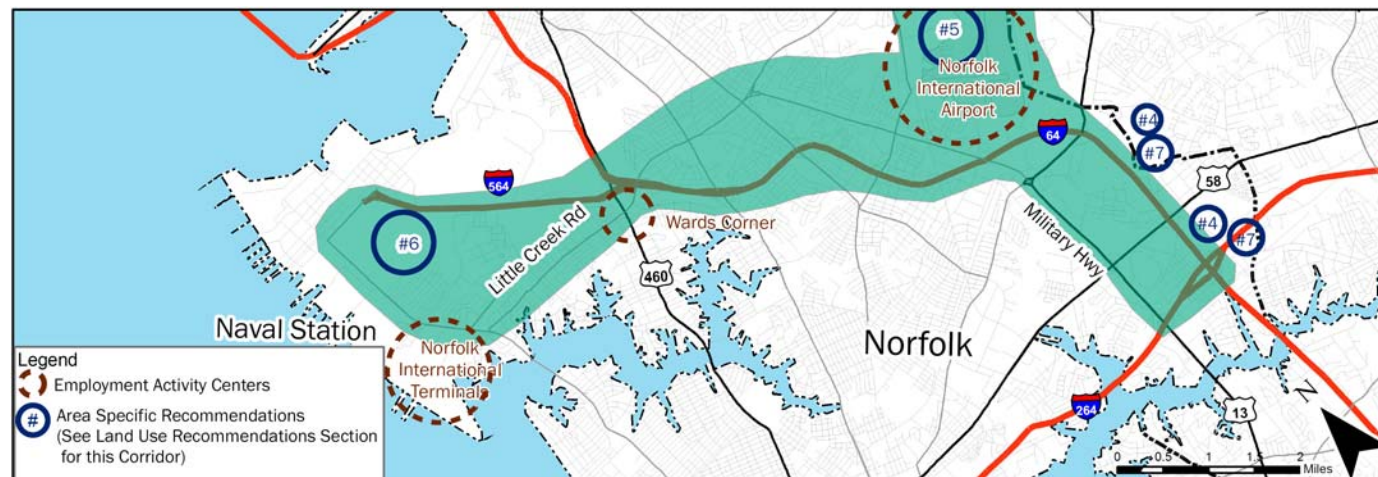
Land Use Recommendations

This corridor links a nationally-significant naval base—which also serves as the region’s largest employment centers—to the airport, to the future Tide LRT station, and to activity centers with high redevelopment potential. There are many opportunities for creating transit-supportive conditions within these areas, but additional policy guidance, redevelopment, and additional amenities are needed.

1. Update the Comprehensive Plan to include policies to specifically support Norfolk’s transit initiatives, including those along this corridor.
2. Encourage moderate density residential development along this corridor. Use existing policies and apply zoning designations used in other areas to achieve desired results.
3. Provide bus shelters, sidewalks, and other improvements to support existing bus service within and between the corridor’s activity centers.

4. Conduct small area planning studies for Military Circle Mall and Janaf Shopping Center to determine how these two activity centers can be improved or redeveloped to better support transit and to become more accessible, pedestrian-friendly destinations. Incorporate study findings into an updated Comprehensive Plan.
5. Focus additional commercial development near the Airport.
6. Work with the U.S. Navy to determine the most efficient means of providing enhanced transit service to commuting employees. Discussing topics such as access and security will help design the most feasible mid- and long-range solutions.
7. Identify strategic actions to reverse anticipated job losses at Norfolk Naval Base and encourage additional employment in the corridor by focusing development in the Military Circle Mall and Janaf Shopping Center area.

CORRIDOR 4: LAND USE CONDITIONS AND RECOMMENDATIONS



Note: Norfolk’s 1992 Comprehensive Plan map does not delineate specific, targeted centers. However, Norfolk is currently assessing how to update its Comprehensive Plan over the next two years.

CORRIDOR 5. Downtown Norfolk to Naval Station Norfolk, Norfolk

Description of Corridor

Corridor 5 runs between the Naval Station Norfolk and Downtown Norfolk on the west side of Norfolk. Until the 1950s streetcar service ran on streets in and near this corridor. An abandoned railroad right-of-way traverses the southern portion of this corridor.

Corridor 5 forms a logical western and northern extension of Corridor 1, where The Tide light rail project is being constructed.

Three important regional activity centers anchor this corridor: Naval Station Norfolk to the north, Old Dominion University in the middle, and Eastern Virginia Medical School to the south. In addition to institutional uses, residential density along this corridor has the potential to support high speed/high capacity transit service. When connected with seamless transit service to Downtown Norfolk, corridor employment is already supportive of high speed/high capacity transit.

Implementation

The ultimate transit vision for this corridor is light rail service.

In the short-range, limited stop bus service should be implemented in this corridor, in preparation for future light rail service. Stop locations should be farther apart than for local bus service, and service should be at least 4 buses per hour each direction. Vehicles may be specially branded, and bus stops should have shelters. At the same time, care should be given not to over-invest in amenities that may be discarded when light rail service is implemented.

In the mid-range, the Alternatives Analysis and environmental documentation necessary for implementing light rail service should be completed. Right-of-way acquisition should begin.

In the long-range, final design should be completed and construction of the light rail project should begin. On-street right-of-way along this corridor is very narrow making an exclusive guideway mode more challenging to implement. For this reason streetcar operating in mixed traffic is an alternative that could be implemented.

In the extended-range, operation of the light rail (or streetcar) line will continue.

Other Discussion

Supporting Projects

Certain transportation projects will help support implementation of the recommendations described above. Enabling and supporting projects include:

- Completion of the initial light rail line in Norfolk (Corridor 1) is a critical enabling project for light rail service in Corridor 5.

Bus service should be reoriented to serve light rail stations. Additional planning will be required to determine station locations (as described further below) and exact service modifications. Examples of bus service modifications include:

- Route 2 routed to serve multiple stations and allow connections between longer distance and local trips along Hampton Boulevard
- Route 4 routed to serve an ODU station and a Kensington neighborhood station

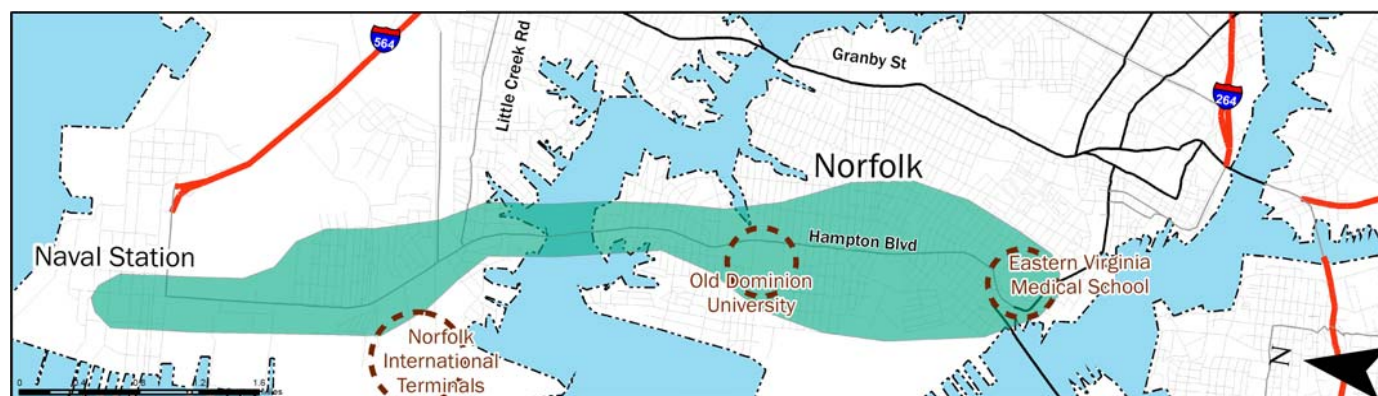
Regional Connections

Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan.

Light rail service in Corridor 5 would connect with other projects called for in the Vision Plan:

- Corridor 4 light rail service would enable connections to Norfolk International Airport and the east side of Norfolk. Corridor 4 and Corridor 5 light rail service could overlap within Naval Station Norfolk.
- Corridor 1 light rail service would enable connections through Downtown Norfolk and Norfolk State University. Coupled with Corridor 3 light rail service, connections across central Virginia Beach and the Oceanfront resort area would be made.
- Corridor 8a rapid transit service would enable connections to Portsmouth and the southwestern portion of the region.
- Corridor 16b light rail service would enable connection across Hampton Roads harbor to Downtown Newport News and the Peninsula. In the interim, cross harbor ferry service in Corridor 16a would provide connections to the Peninsula.

RECOMMENDED CORRIDOR



IMPLEMENTATION

Near-Term		Long-Range (2026–2034)	Extended-Range (Beyond 2034)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016–2025)		
Begin enhanced bus service.	Complete AA and EIS for transit project	Construct LRT (or streetcar)	Continue to operate LRT (or streetcar)

Planning Decisions

Questions to answer in the environmental documentation phase include the preferred alignment of the light rail line. North of the Lafayette River, following Hampton Boulevard seems the most logical choice. However, south of the Lafayette River the options for reasonable alignments increase.

A transit operating plan needs to be created. Issues to be resolved include:

- Whether light rail service within the Naval Station is provided by the Corridor 4 route, the Corridor 5 route, or both.
- Whether light rail service in Corridor 5 operates independently of The Tide initial line (that is, requiring a transfer at EVMS) or if through service is offered to Downtown Norfolk and points east.
- Whether through service is offered from Corridor 4 via the Midtown Tunnel into Portsmouth.
- Whether local bus service within the Naval Station loop is replaced by light rail service.

Potential Station Locations

Below is a list of potential light rail station locations to be considered in future studies. In addition, whether and how much parking should be built at each station needs to be determined.

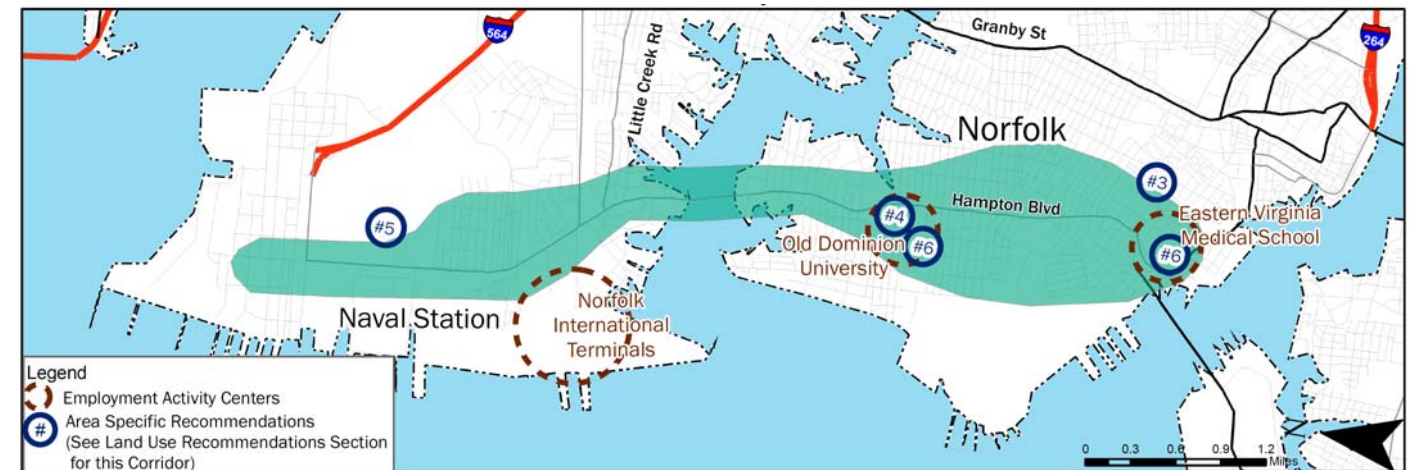
- West Ghent/Westover
- Kensington
- Old Dominion University
- Larchmont
- Little Creek Road
- Beechwood Ave/Norfolk International Terminals
- Naval Station Norfolk loop with multiple stations

Land Use Recommendations

Existing transit-supportive residential densities and major employment centers provide an important foundation for high capacity transit service along this corridor. Updating Comprehensive Plan policies, encouraging infill development, and closely coordinating with large employers and institutions will make future transit service more feasible and more likely to be successful.

1. Encourage infill development along the corridor that is consistent in scale and complementary in character with existing structures.
2. Take advantage of the historic and pedestrian-friendly street network. Provide streetscape and landscape improvements and encourage a mix of uses with ground floor retail, especially adjacent to transit stations and within business districts or retail corridors.
3. Continue mixed-use infill development and redevelopment in Downtown Norfolk.
4. Engage Old Dominion University in discussing the university's long-range and campus planning to appropriately address their transit needs with the proposed corridor and service.
5. Work with the U.S. Navy to determine the most efficient means of providing enhanced transit service to commuting employees. Discussing topics such as access and security will help design the most feasible mid- and long-range solutions.
6. Identify ways of stabilizing anticipated job losses at the Naval Base by focusing new development in the Old Dominion University and Downtown Norfolk areas.

CORRIDOR 5: LAND USE CONDITIONS AND RECOMMENDATIONS



Note: Norfolk's 1992 Comprehensive Plan map does not delineate specific, targeted centers. However, Norfolk is currently assessing how to update its Comprehensive Plan over the next two years.

CORRIDOR 6. *Campostella Road and Battlefield Boulevard, Chesapeake*

Description of Corridor

Corridor 6 runs along Campostella Road and Battlefield Boulevard in Chesapeake and also encompasses the Norfolk Southern rail line. This corridor links Chesapeake's major activity centers and planned transit-oriented villages to Downtown Norfolk and to southern Chesapeake. Areas served include South Norfolk, Greenbrier, and Great Bridge. The City of Chesapeake anticipates a substantial increase in population, mostly residing in suburban developments in the southern portion of the City. The northern portion of the corridor is largely urban with stable population. Transit along this corridor would serve the large number of worker trips from Chesapeake to Norfolk as well as serve as the transportation backbone of Chesapeake's urban core.

Implementation

The ultimate transit vision for this corridor is bus rapid transit (BRT).

In the short-range, HRT Route 13 will continue to operate in the corridor. Alternatives Analysis and environmental documentation for the bus rapid transit project should be completed. This process would include identifying station locations and beginning right-of-way acquisition. BRT service should have limited stops. All bus stations should have shelter and either parking/walking access. The BRT alignment would likely follow Campostella Road and Battlefield Boulevard, but could also follow the Norfolk Southern right-of-way.

In the mid-range, the BRT should begin operating and continue to operate throughout the long-range and extended-range.

Other Discussion

Supporting Projects

Certain transportation projects will help support implementation of the recommendations described above. Supporting projects include:

- Completion of the initial light rail line in Norfolk (Corridor 1) would support bus rapid transit service in Corridor 6.

Local bus service should be reoriented to support bus rapid transit. Examples include:

- Route 13 routed to serve multiple stations and allow connections for local trips along Campostella Road and Battlefield Boulevard, perhaps truncated to only serve south of Military Highway
- Route 6 routed to serve a Liberty Street station
- Route 12 routed to serve an Indian River Road station
- Route 57 routed to serve a Military Highway station
- Route 58 routed to serve a Military Highway station
- Route 15 routed to serve a Volvo Parkway station
- Route 922 routed to serve a Volvo Parkway station
- Route 967 routed to serve a Volvo Parkway station

Regional Connections

Bus rapid transit service would make a connection to light rail service at one of The Tide's light rail stations, such as at Harbor Park Stadium or Brambleton Avenue. If Harbor Park Stadium is chosen as the northern terminus or connection

point, BRT would serve a regional intermodal hub that would be constructed for light rail and commuter rail.

In addition, a new transit hub near Volvo Parkway in Greenbrier could provide connections for regional express bus services such as MAX Routes 922 and 967.

Planning Decisions

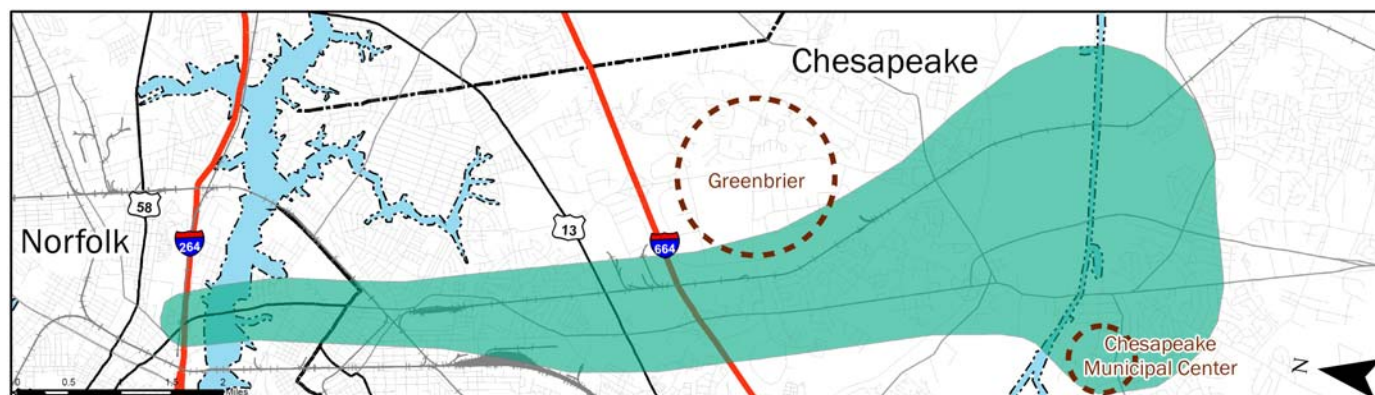
Questions to answer in the environmental documentation phase include the preferred alignment of the bus rapid transit rail line. While the bus rapid transit line would likely follow Campostella Road and Battlefield Boulevard, other options exist, including using some of the Norfolk Southern right-of-way.

Potential Station Locations

Below is a list of potential bus rapid transit station locations to be considered in future studies. In addition, whether and how much parking should be built at each station needs to be determined.

- Harbor Park Stadium Station OR Brambleton Avenue Station (existing)
- Indian River Road
- Berkley Avenue
- Liberty Street (South Norfolk Transit Village)
- Providence Road (Transit Village)
- Military Highway (Robert Hall Boulevard Transit Center)
- Volvo Parkway (Greenbrier Transit Village)
- Oak Grove Road
- Medical Parkway
- Great Bridge Blvd
- Cedar Road (Great Bridge Transit Village)
- Municipal Center

RECOMMENDED CORRIDOR



IMPLEMENTATION

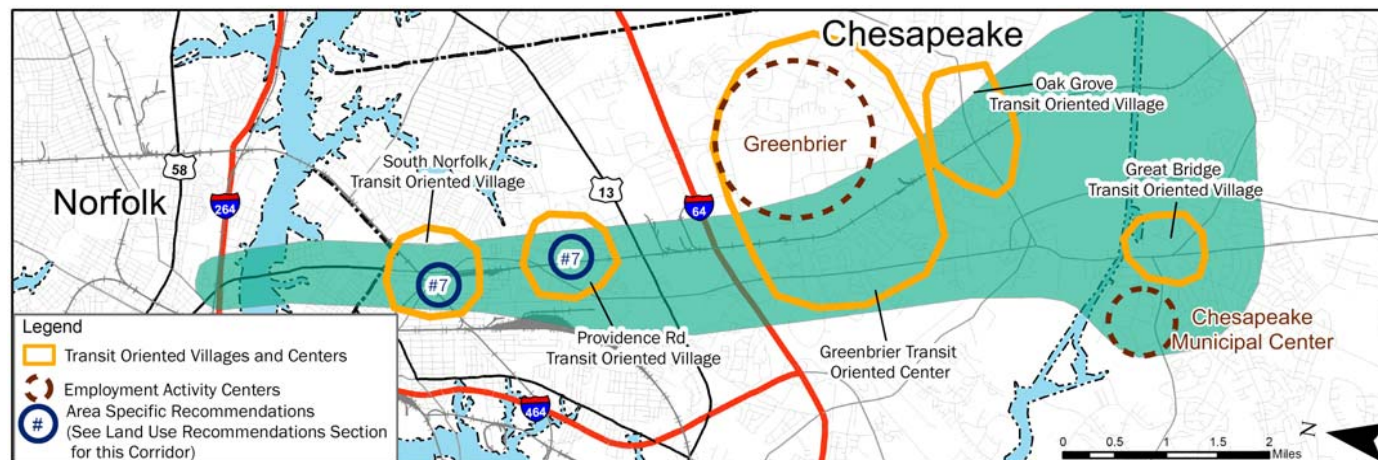
Near-Term		Long-Range (2026-2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016-2025)		
Continue HRT Route 13 in corridor. Complete AA and EA for BRT project	Construct and begin operating BRT in the corridor.	Continue to operate BRT	Continue to operate BRT

Land Use Recommendations

Transit-supportive policies and plans are in place in Chesapeake and can be applied to this corridor. Encompassing several activity centers, this corridor has a high potential for success with the application of targeted transit-oriented development and design.

1. Focus development in the transit-oriented villages and centers along this corridor. Under-utilized retail and commercial areas with expansive parking lots should be considered for master planned mixed use centers.
2. Apply existing Comprehensive Plan policies that emphasize streetscape, pedestrian-oriented design, and accessibility.
3. Provide bus shelters, sidewalks, and other improvements to support enhanced bus service within and between the corridor's activity centers.
4. Encourage moderate and high density residential development within the activity centers along the corridor.
5. Use the Urban Overlay and Mixed Use Urban zoning districts to further develop transit-oriented centers and villages. These zoning districts allow transit-supportive levels of residential and non-residential development and describe appropriate and desired mixes of uses.
6. Foster unique identities for each of the activity centers as they redevelop. Encourage each center to have slightly different characters and to maintain ties to adjacent neighborhoods, as appropriate.
7. Identify strategic actions to encourage additional employment in the corridor by focusing development in the northern portion of the City.

CORRIDOR 6: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 7. Route 168/I-464 Corridor, Chesapeake

Description of Corridor

Corridor 7 runs along Route 168/I-464 and the railroad joining North Carolina and Norfolk. The City of Chesapeake anticipates a substantial increase in population, mostly residing in suburban developments in the southern portion of the City. Transit in this corridor would serve the large number of worker trips from Chesapeake to Norfolk. Transit would need to be suited toward the low-density suburban development in southern Chesapeake. Therefore, express bus and ultimately commuter rail should be implemented in this corridor.

Implementation

In the short-range, the City of Chesapeake should coordinate with HRT, TRAFFIX, and VDOT to identify park and ride lot locations from which to operate express bus service. Also, stop locations and routing in Portsmouth and Norfolk should be determined. Express bus service could begin within the short-range timeframe.

In the mid-range, express bus service would continue operating.

In the long-range express bus service could be extended to North Carolina as demand warranted. The Alternatives Analysis and environmental document for the commuter rail project should be completed.

In the extended-range a regional intermodal hub should be constructed near the Harbor Park light rail station in Norfolk to serve as the terminus for commuter and intercity rail lines. The first segment of the Chesapeake commuter rail line should be constructed and put into operation, perhaps as far south as Fentress or Etheridge Manor Boulevard. Further into the extended-range the commuter rail line could be extended to Moyock, North Carolina, as demand warranted.

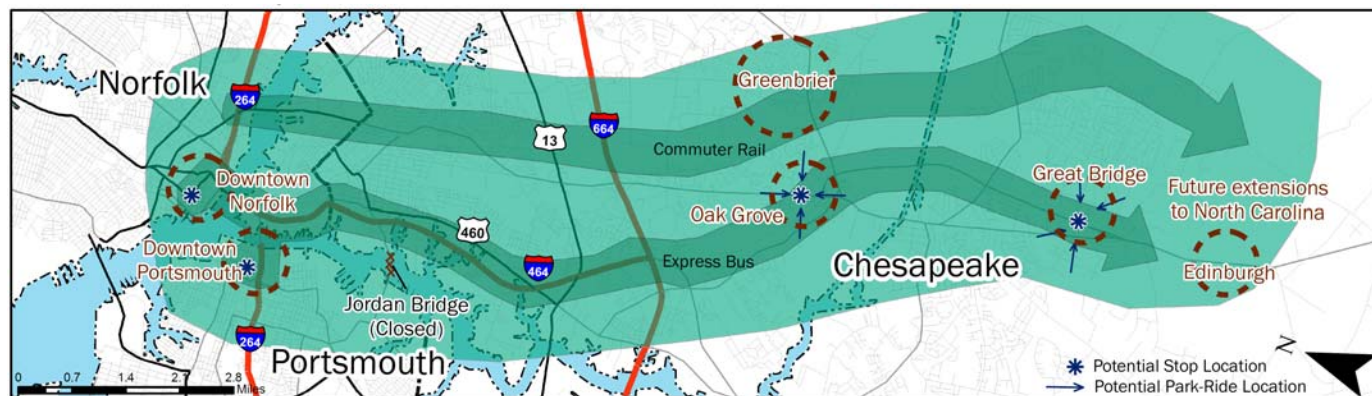
As commuter rail service is implemented, demand for express bus service may be reduced. Express buses could be re-oriented to serve trips from Chesapeake to Portsmouth or to feed commuter rail stations.

references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan.

Express bus and commuter rail services in Corridor 7 would connect with other projects called for in the Vision Plan:

- Corridor 1 light rail service would provide connections from both express bus and commuter rail to central Norfolk. Light rail extensions in Corridor 3 and 5 would expand regional connectivity to include Naval Station Norfolk and central Virginia Beach.
- Corridor 8a rapid transit and Corridor 8b bus and ultimately light rail service would enable connections from Downtown Portsmouth to Midtown and the western parts of Portsmouth.
- Corridor 8c BRT service would enable connections from Downtown Portsmouth to the Naval Hospital, the Portsmouth Naval Shipyard, Victory Crossing and points west.
- The intermodal hub at Harbor Park would enable connections to commuter rail service to Downtown Suffolk as well intercity passenger rail service to Richmond via Petersburg.

RECOMMENDED CORRIDOR



IMPLEMENTATION

Near-Term		Long-Range (2026–2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016–2025)		
Begin express bus along the corridor	Continue operating express bus	Complete AA and EIS for commuter rail project. Continue express bus and extend the route to North Carolina	Construct and begin operating commuter rail, ultimately extending to North Carolina. Phase out or modify express bus service as necessary.

Other Discussion

Supporting Projects

Existing bus service in many cases serves as local circulator to and from express bus stops and commuter rail stations reducing the space demand at park-ride lots. Hence, existing bus service should be reoriented to serve express bus stations. Additional planning will be required to determine station locations (as described further below) and exact service modifications. Examples of bus service modifications include:

- Route 13 to serve a Kempsville Road park-and-ride lot or commuter rail station
- Route 15 to serve a Volvo Parkway transit hub or commuter rail station
- Route 922 to serve a Volvo Parkway transit hub or commuter rail station
- Route 967 to serve a Volvo Parkway transit hub or commuter rail station

Regional Connections

Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor

Planning Decisions

The location and size of express bus park-and-ride lots in Chesapeake should be determined. Potential park-and-ride lot locations that would support the operation of the express bus service are:

- Oak Grove, near Route 168 and Kempsville Road
- Great Bridge, near Route 168 and Hanbury Road

Questions to answer in the environmental documentation phase include the preferred alignment of the commuter rail line. The commuter rail line would likely follow the Norfolk Southern right-of-way, but it could divert from that alignment

to better serve major activity centers (such as Greenbrier) or residential communities.

Significant coordination will be required with the North Carolina Department of Transportation's Public Transportation and Rail Divisions, as well as with Currituck County, to extend either commuter rail or express bus service to North Carolina.

Potential Station Locations

Below is a list of potential commuter rail station locations to be considered in future studies. In addition, the amount of parking that should be built at each station needs to be determined.

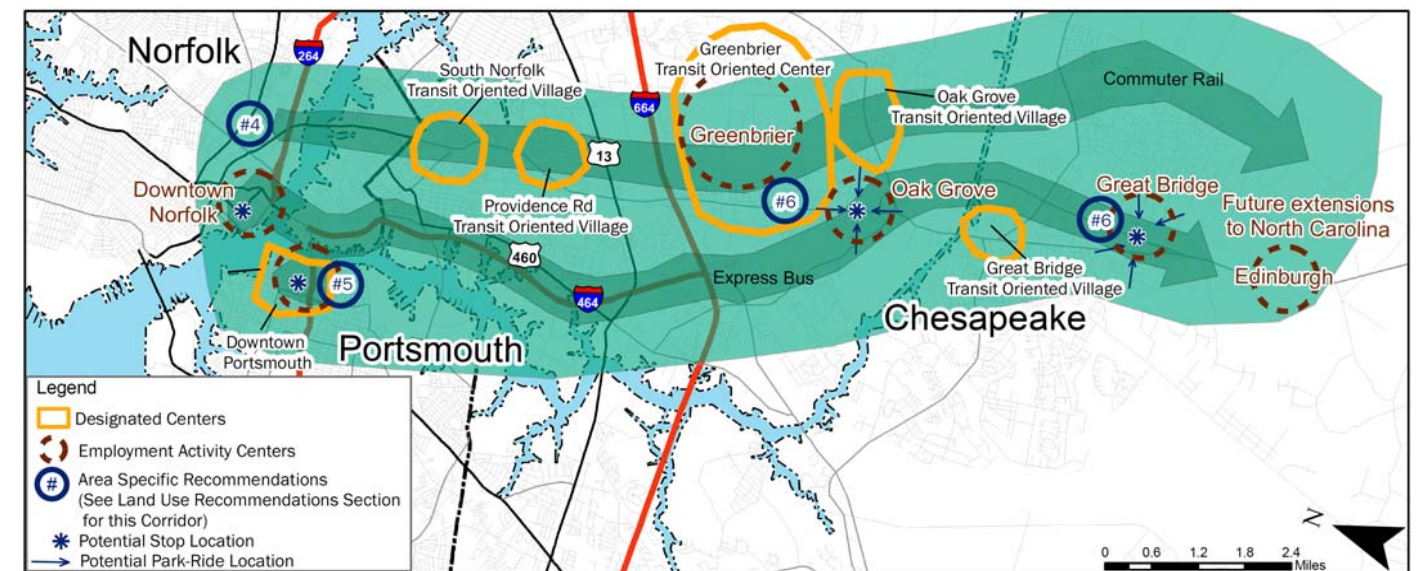
- Harbor Park Stadium
- Providence Road (Transit Village)
- Volvo Parkway
- Kempsville Road
- Mount Pleasant Road/Fentress
- Etheridge Manor Blvd
- Hickory
- Moyock, NC

Land Use Recommendations

The Chesapeake Comprehensive Plan has many focused policies to support transit-oriented development, such as streetscape and circulation design principles, growth management, and the designation of transit-oriented villages and major activity centers. Key to creating transit-supportive centers along this corridor will be focusing development in existing activity centers and proposed transit villages and increasing residential densities near proposed stations.

1. Encourage moderate and high density residential development in identified centers along the corridor. Provide pedestrian and bike amenities from these residential communities to proposed future transit stops.
2. Focus development in activity centers to minimize suburban sprawl and preserve natural and agricultural areas outside of the centers. Intensifying uses should be focused in those areas with sufficient infrastructure.
3. Identify appropriate locations for park-and-ride lots and provide appropriate amenities in those areas. Supporting retail uses should be considered and provided.
4. Continue urban-scale and infill development in Downtown Norfolk.
5. Identify and implement incremental phases of infill and redevelopment for Downtown Portsmouth. Use existing policies promoting mixed uses, compact development, and transit-supportive densities as guides for future development.
6. Identify strategic actions to encourage additional employment in the corridor by focusing development in the Greenbrier and Great Bridge areas.

CORRIDOR 7: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 8a. Eastern Virginia Medical School to Midtown & Downtown Portsmouth

Description of Corridor

Corridor 8a runs from Eastern Virginia Medical School (EVMS) to Midtown and Downtown Portsmouth via the Midtown tunnel. This corridor connects a major employment center in Norfolk to an employment and residential area in Portsmouth. Activity centers that would be served include EVMS, Naval Medical Center, Midtown Portsmouth, Downtown Portsmouth, and Victory Crossing. Some of the highest employment and residential densities in the region are to be found in this corridor. Residential densities in the corridor have the potential to support rail in the future.

Corridor 8a forms a logical western and southern extension of Corridor 1, where The Tide light rail project is being constructed.

While it would be beneficial to have a transit component in the Midtown Tunnel, the environmental process and design of the Midtown Tunnel project have advanced to the point where it is not feasible to incorporate the transit component under the current widening project. Therefore, the possibility of adding a transitway connection at the Midtown Tunnel should be explored in the future as part of the Alternative Analysis that will need to be conducted for high speed/high capacity transit in Corridor 8a between Norfolk and Portsmouth.

Implementation

The ultimate transit vision for this corridor is light rail service.

In the short-range, HRT Route 44 would continue to operate in this corridor. Also in the short-range, stop locations and routing for express bus service in Norfolk and Portsmouth should be determined and ready for implementation when the tunnel and freeway project is complete. Express buses would likely use I-264 and the MLK Freeway to access Downtown Norfolk.

In the mid-range, express bus service should begin operating in this corridor.

In the long-range, the environmental planning process to implement rapid transit service in the Midtown Tunnel should be conducted. Any additional right-of-way acquisition should begin.

In the extended-range, rapid transit should be constructed and operation should begin. Rapid transit service would operate along a dedicated transitway through the Midtown Tunnel.

Other Discussion

Supporting Projects

Certain transportation projects will help support implementation of the recommendations described above. Supporting projects include:

- Completion of the initial light rail line in Norfolk (Corridor 1) would support the initial express bus service in Corridor 8a and would be a critical enabling project for light rail in Corridor 8a.
- Constructing the Midtown Tunnel/MLK Freeway Project would be a critical enabling project for express bus and light rail service in Corridor 8a.

Light rail service in Corridor 8a would be supported by operational changes to existing bus service. The following existing routes should be reoriented to serve light rail stations and better coordinate with light rail service.

- Route 47 to serve multiple stations enable connections between local and longer distance trips
- Routes 41, 44, 45, 50 to serve Downtown and Midtown Portsmouth stations.

Regional Connections

Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan. Light rail service in Corridor 8a would connect with other projects called for in the Vision Plan:

- Corridor 1 light rail service would enable connections to Eastern parts of Norfolk.
- Corridor 5 light rail service would enable connections to Norfolk Naval Station and Old Dominion University.
- Corridor 7 express bus service would enable connections to Chesapeake and eventually to North Carolina.
- Corridor 8b light rail service would enable connections to western parts of Portsmouth, Churchland, and Harbour View
- Corridor 8c BRT service would enable connections to western parts of Chesapeake and Suffolk.
- Corridor 8d express bus service would enable connections to Suffolk and Smithfield.

RECOMMENDED CORRIDOR



IMPLEMENTATION

Near-Term		Long-Range (2026-2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016-2025)		
Continue HRT Route 44 in the corridor.	Begin express bus service.	Continue to operate express bus service. Conduct an Alternative Analysis and develop the supportive environmental documentation to implement rapid transit.	Construct and operate rapid transit.

- Corridor 9a express bus and ultimately commuter rail service would enable connections to Downtown Suffolk.

Planning Decisions

Questions to answer in the environmental documentation phase of the rapid transit project include the preferred alignment of the rapid transit line outside of the limits of the Midtown Tunnel.

A rapid transit operating plan needs to be formulated to determine whether through service from Portsmouth is provided via Downtown Norfolk (Corridor 1), Old Dominion University (Corridor 5), or both.

Potential Station Locations

Below is a list of potential rapid transit station locations to be considered in future studies. In addition, whether and how much parking should be built at each station needs to be determined.

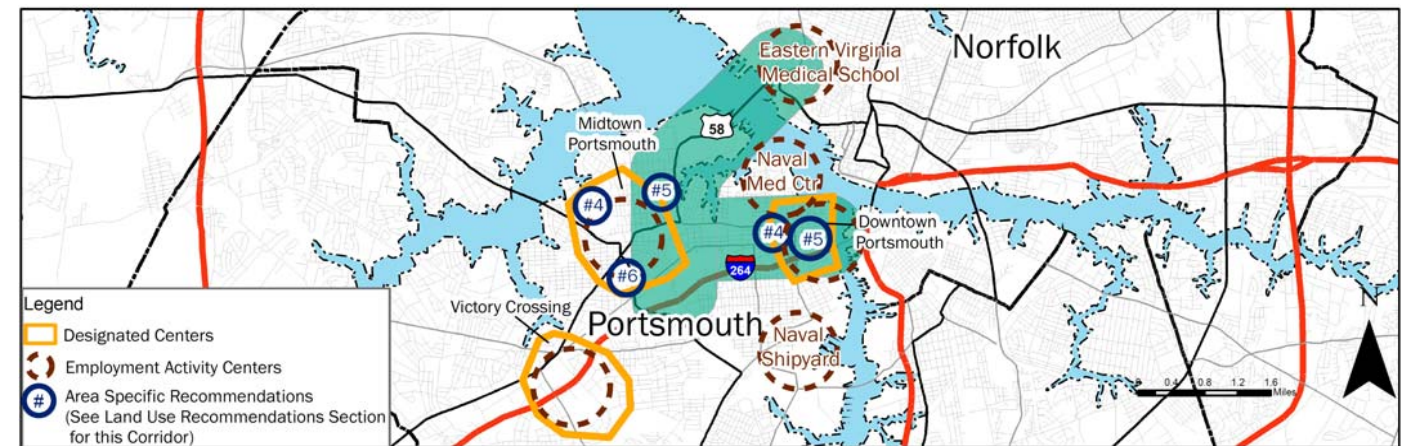
- MLK Freeway/Cleveland Street
- MLK Freeway/London Boulevard
- MLK Freeway/I-264
- Old Towne Market Place
- Effingham Street
- Crawford Parkway
- Naval Medical Center

Land Use Recommendations

Portsmouth has several transit-supportive plans, policies, and regulations that relate to Downtown Portsmouth and other activity centers. Creating corridors that can support the proposed modes of transit requires implementing these policies and regulations in a strategic manner.

1. Focus development in identified regional, community, and neighborhood activity centers. Encourage concentrated and compact development.
2. Develop strategies for redeveloping brownfield and greyfield sites near the industrial centers of these corridors. Work with federal entities, such as the Naval Medical Center, to determine appropriate uses for nearby and adjacent redevelopment areas.
3. Continue to use Portsmouth’s transit-supportive zoning designations, such as the Office, Waterfront, and Mixed Use/Employment Center Districts, to promote compact, mixed use development in targeted areas.
4. Encourage infill development within Downtown and Midtown Portsmouth that is appropriate in scale and use, enhances urban character, and complements the City’s historic resources. Take advantage of the existing, historic, and pedestrian-friendly street grid and encourage uses that will activate the public realm.
5. Re-examine parking policies in Downtown and Midtown Portsmouth and emerging activity center developments. Consider using parking maximums, shared parking, and performance parking (variable pricing) techniques.
6. Identify strategic actions to encourage additional employment in the corridor by focusing development in Midtown Portsmouth.

CORRIDOR 8A: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 8b. High Street/Churchland Corridor, Portsmouth, Chesapeake, Suffolk

Description of Corridor

Corridor 8b runs from Downtown Portsmouth to Harbour View approximately following High Street and Churchland Boulevard. This corridor connects commercial and residential uses in Downtown Portsmouth to a growing activity center in Suffolk. Major activity centers that fall in this corridor include Naval Medical Center, Downtown Portsmouth, Midtown Portsmouth, Churchland and Harbour View. Harbour View is a major development focus area for the City of Suffolk.

While local bus is already in place for shorter trips along this corridor, high speed/high capacity transit in this corridor would support longer distance trips between Portsmouth and Suffolk as well as support land development goals in both these cities.

Corridor 8b forms a logical western extension of Corridor 8a, called for in the Vision Plan.

Implementation

The ultimate transit vision for this corridor is for light rail service. In the interim, bus rapid transit is the high speed/high capacity mode most suited to the corridor.

In the short-range, Alternatives Analysis and environmental documentation for the bus rapid transit project should be completed. The alignment and stop locations should be identified. Stop locations should be one-half to two miles apart and in appropriate locations for conversion to light rail service in the future. BRT service should be at least 4 buses per hour each direction, with specially branded vehicles and station stops. Any needed right-of-way should be identified and acquired.

In the mid-range, BRT should begin operating along the corridor.

In the long-range, any updates to the environmental documentation to convert BRT to light rail should be completed. Final design for the conversion should also be completed.

In the extended-range, the light rail project should be constructed and begin operation.

Other Discussion

Supporting Projects

While the bus rapid transit project could be implemented independently of other projects, conversion to light rail would be greatly benefited by operating light rail through the Midtown Tunnel to connect with light rail lines in Norfolk.

BRT and light rail service in Corridor 8b would also be supported by operational changes to existing bus service. The following existing routes should be reoriented to serve stations and better coordinate with high speed/high capacity service.

- Route 47 to serve multiple stations to allow connections between local and longer distance trips in the corridor
- MAX Route 967 to serve an I-664 station
- Route 50 to serve stations in Downtown Portsmouth
- Route 45 to serve stations in Downtown Portsmouth
- Route 44 to serve stations in Midtown Portsmouth
- Route 41 to serve stations in Downtown Portsmouth

In addition, BRT or light rail service should connect to the existing paddlewheel ferry service between Portsmouth and Norfolk.

Regional Connections

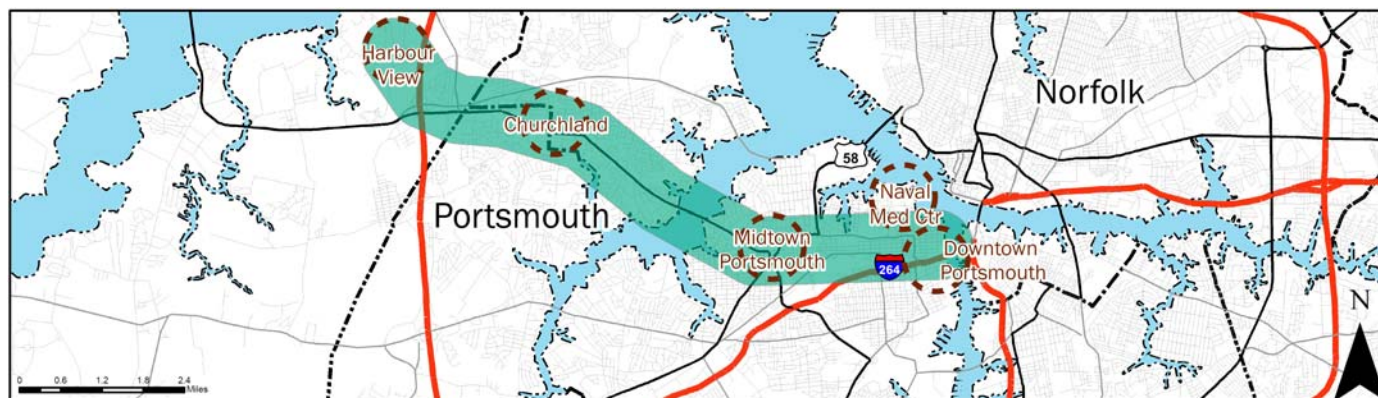
Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan. BRT and ultimately light rail service in Corridor 8b would connect with other projects called for in the Vision Plan:

- Corridor 7 express bus service would enable connections to Chesapeake and eventually to North Carolina.
- Corridor 8a rapid transit service would enable connections to the west end of Downtown Norfolk.
- Corridor 8c bus rapid transit service would enable connections to southern and western Portsmouth.
- Corridor 9a commuter rail service would enable connections to Downtown Suffolk.

Planning Decisions:

Questions to answer in the environmental documentation phase of the BRT project include the preferred alignment of the bus rapid transit line that can be sensibly converted to light rail service in the future.

RECOMMENDED CORRIDOR



IMPLEMENTATION

Near-Term		Long-Range (2026-2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016-2025)		
Complete AA and EIS for BRT project	Implement BRT along the corridor.	Continue operating BRT. Update EIS for LRT project	Construct and operate LRT

Potential Station Locations

Below is a list of potential station locations to be considered in future studies. In addition, whether and how much parking should be built at each station needs to be determined.

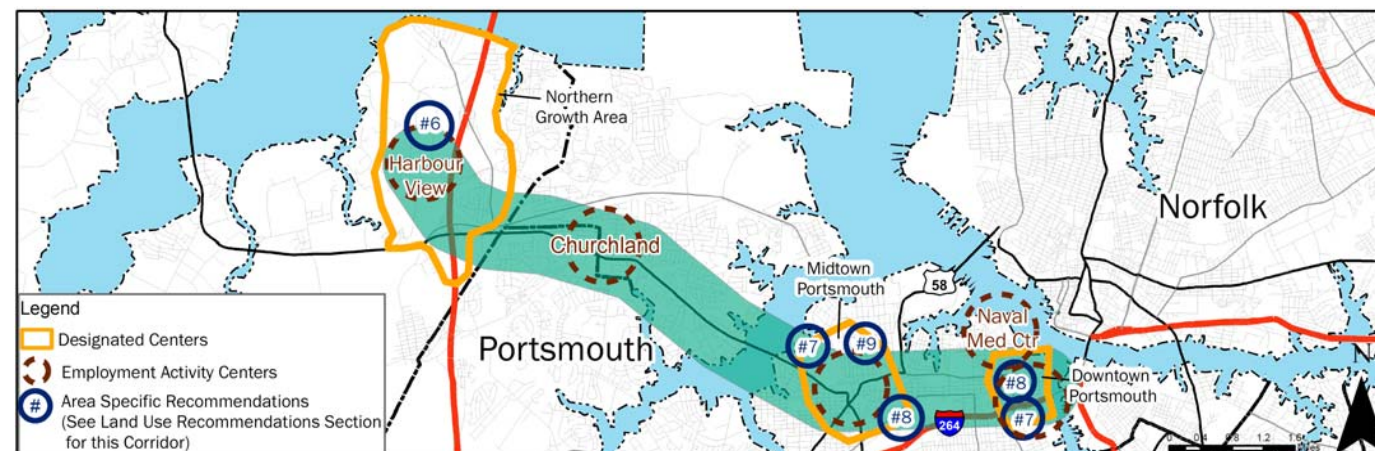
- Naval Medical Center
- Crawford Parkway (with connections to the paddlewheel ferry)
- Effingham Street
- Old Towne Market Place
- MLK Freeway/London Boulevard
- Frederick Boulevard
- Maryview Medical Center
- Cedar Lane
- Tyre Neck Road
- Taylor Executive Center
- Mast Center Corporate Research Park
- Landview East Industrial Park / I-664
- Bridgeway Commerce Park

Land Use Recommendations

Portsmouth has several transit-supportive plans, policies, and regulations that relate to Downtown Portsmouth and other activity centers. Creating corridors that can support the proposed modes of transit requires implementing these policies and regulations in a strategic manner.

1. Focus development in identified regional, community, and neighborhood activity centers. Encourage concentrated and compact development.
2. Continue to use Portsmouth’s transit-supportive zoning designations, such as the Office, Waterfront, and Mixed Use/Employment Center Districts, to promote compact, mixed use development in targeted areas.
3. Redevelop older shopping centers located in designated activity centers. These centers, such as the Churchland shopping area, should be encouraged to add a variety of uses, redevelop more compactly, and provide enhanced pedestrian amenities.
4. Develop strategies for redeveloping brownfield and greyfield sites near the industrial centers of these corridors. Work with federal entities, such as the Naval Medical Center, to determine appropriate uses for nearby and adjacent redevelopment areas.
5. Identify appropriate locations for park-and-ride lots within these corridors. Encourage bus or shuttle connections between the park-and-ride transit centers and nearby residential areas.
6. Continue to develop emerging employment centers such as Harbour View. Encourage supporting retail uses and pedestrian-friendly land use patterns within these centers.
7. Encourage infill development within Downtown and Midtown Portsmouth that is appropriate in scale and use, enhances urban character, and complements the City’s historic resources. Take advantage of the existing, historic, and pedestrian-friendly street grid and encourage uses that will activate the public realm.
8. Re-examine parking policies in Downtown Portsmouth, Midtown Portsmouth, and emerging activity center developments. Consider using parking maximums, shared parking, and performance parking (variable pricing) techniques.
9. Identify strategic actions to encourage additional employment in the corridor (in combination with other corridors in Portsmouth) by focusing development in the Midtown area.

CORRIDOR 8B: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 8c. Portsmouth Boulevard Corridor, Portsmouth, Chesapeake, Suffolk

Description of Corridor

Corridor 8c runs from Northgate Commerce Park in Suffolk to the Naval Medical Center in Portsmouth via the Naval Shipyard. This corridor connects major activity centers in Portsmouth, Chesapeake, and Suffolk, including Naval Medical Center, Downtown Portsmouth, Naval Shipyard, Victory Crossing, Chesapeake Square Mall, and Northgate Commerce Park.

While local bus is already in place for shorter trips along this corridor, high speed/high capacity transit in this corridor would support longer distance trips between Portsmouth and Suffolk as well as support land development goals in both these cities as well as the City of Chesapeake.

Implementation

The ultimate transit vision for this corridor is bus rapid transit.

In the short-range, Alternatives Analysis and environmental documentation for the bus rapid transit project should be completed. The alignment and stop locations should be identified. Stop locations should be one-half to two miles apart and in appropriate locations for conversion to light rail service in the future. BRT service should be at least four buses per hour each direction, with specially branded vehicles and station stops. Any needed right-of-way should be identified and acquired.

In the mid-range, BRT should begin operating along the corridor. In the long- and extended-range operation of BRT will continue.

Other Discussion

Supporting Projects

The bus rapid transit project in Corridor 8c could be implemented independently of other projects. However, also implementing BRT in Corridor 8b would broaden higher quality transit service across more of Portsmouth.

Bus rapid transit service in Corridor 8c would also be supported by operational changes to existing bus service. The following existing routes should be reoriented to serve stations and better coordinate with high speed/high capacity service.

- MAX Route 967 to serve a Chesapeake Square Mall station
- MAX Route 962 to serve a Chesapeake Square Mall station and a Victory Crossing station
- Route 41 to serve multiple stations to allow connections between local and longer distance trips in the corridor
- Route 45 to serve multiple stations to allow connections between local and longer distance trips in the corridor

Regional Connections

Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan.

BRT service in Corridor 8c would connect with other projects called for in the Vision Plan:

- Corridor 8a rapid transit service would enable connections to Norfolk.
- Corridor 8b bus rapid transit service and ultimately light rail service would improve connections to Midtown Portsmouth.

- Corridor 9a express bus service and ultimately commuter rail service would enable connections to Downtown Suffolk.

Planning Decisions

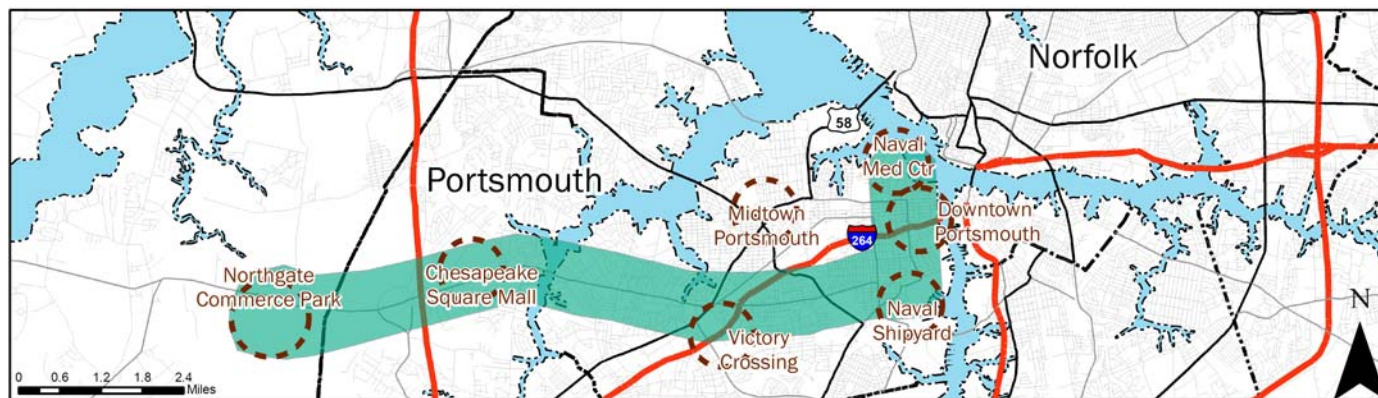
Questions to answer in the environmental documentation phase of the BRT project include the preferred alignment of the bus rapid transit line.

Potential Station Locations

Below is a list of potential BRT station locations to be considered in future studies. In addition, whether and how much parking should be built at each station needs to be determined.

- Naval Medical Center
- Ferry Dock
- Port Centre Commerce Park
- Naval Shipyard
- Elm Avenue
- Frederick Boulevard
- Victory Crossing Shopping Center
- Elmhurst Lane
- Hodges Ferry Road
- Chesapeake Square Mall (perhaps two stations)
- Jolliff Road / I-664
- Northgate Commerce & Industrial Park

RECOMMENDED CORRIDOR



IMPLEMENTATION

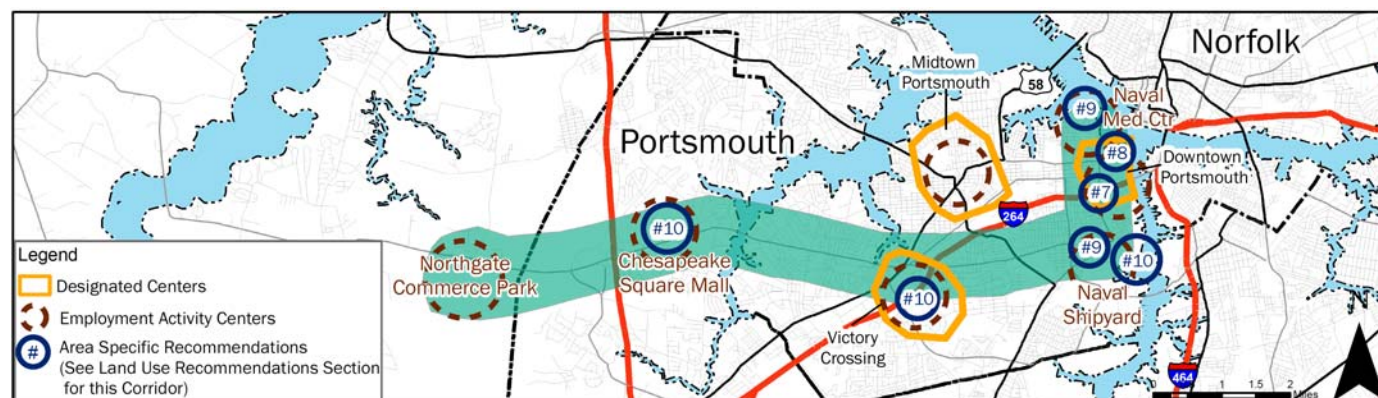
Near-Term		Long-Range (2026-2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016-2025)		
Complete AA and EIS for BRT project	Implement BRT along the corridor	Continue operating BRT	Continue operating BRT

Land Use Recommendations

Portsmouth has several transit-supportive plans, policies, and regulations that relate to Downtown Portsmouth and other activity centers. Creating corridors that can support the proposed modes of transit requires implementing these policies and regulations in a strategic manner.

1. Focus development in identified regional, community, and neighborhood activity centers. Encourage concentrated and compact development.
2. Continue to develop emerging employment centers such as Victory Crossing. Encourage supporting retail uses and pedestrian-friendly land use patterns within these centers. Apply these same standards to the redevelopment and improvement of Northgate Commerce Park and other existing employment areas within these corridors.
3. Redevelop older shopping centers located in designated activity centers. These centers, such as Chesapeake Square Mall and Victory Crossing Shopping Center, should be encouraged to add a variety of uses, redevelop more compactly, and provide enhanced pedestrian amenities.
4. Develop strategies for redeveloping brownfield and greyfield sites near the industrial centers of these corridors. Work with federal entities, such as the Naval Shipyard, to determine appropriate uses for nearby and adjacent redevelopment areas.
5. Foster multi-jurisdictional cooperation on the provision of bus rapid transit (BRT) and express transit rider amenities, such as bus shelters, benches, and signing.
6. Continue to use Portsmouth's transit-supportive zoning designations, such as the Office, Waterfront, and Mixed Use/Employment Center Districts, to promote compact, mixed use development in targeted areas.
7. Encourage infill development within Downtown Portsmouth that is appropriate in scale and use, enhances urban character, and complements the City's historic resources. Take advantage of the existing, historic, and pedestrian-friendly street grid and encourage uses that will activate the public realm.
8. Re-examine parking policies in Downtown Portsmouth and emerging activity center developments. Consider using parking maximums, shared parking, and performance parking (variable pricing) techniques.
9. Encourage retail and residential development between the Naval Shipyard and Naval Medical Center to support enhanced circulator service.
10. Identify strategic actions to encourage additional employment in the corridor by focusing development around Chesapeake Square Mall, Victory Crossing, and the Naval Shipyard.

CORRIDOR 8C: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 8d. Western Freeway Corridor, Portsmouth, Chesapeake, Suffolk, Isle of Wight

Description of Corridor

Corridor 8d runs from Eastern Virginia Medical School (EVMS) to Smithfield via the Western Freeway, US 17, and US 258. Activity centers served by this corridor include EVMS, Churchland, Harbour View, and the Town of Smithfield.

The EVMS and Churchland portions of this corridor are forecast to have residential and employment densities supportive of high speed/high capacity transit investment. However, much of the corridor has lower development densities suitable for express bus service. Express bus service in this corridor would increase transit options to Downtown Norfolk from I-664 and from northern Isle of Wight County. At present, Isle of Wight County only has express bus service to Newport News. Express bus service would also enable high speed/high capacity reverse direction transit commutes from Norfolk to Harbour View.

Operating transit in this corridor would also take advantage of the Midtown Tunnel improvement project.

Implementation

The ultimate transit vision for this corridor is express bus service.

In the short-range, the routing for express bus service should be determined. Park-and-ride lot locations in western Portsmouth and northern Suffolk from which to operate the service should be identified. Shared parking arrangements should be made, right-of-way for park-and-ride facilities should be acquired, or both. Express bus service between Harbour View and Downtown Norfolk would commence in the short-range.

In the mid-range, express bus service would make use of the improved Midtown Tunnel. Bus service should use the dedicated transitway until it is converted to light rail service.

In the long-range express bus service would continue, and in the extended-range service would be extended to the Town of Smithfield in Isle of Wight County. However, a transfer point would be designated in Downtown Portsmouth to facilitate a transfer between express bus to rapid transit service into Norfolk.

Other Discussion

Supporting Projects

Express bus service in Corridor 8d could be implemented independently of other transportation improvements. However, improvements to the Midtown Tunnel would improve service reliability.

Regional Connections

Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan.

Express bus service in Corridor 8d would connect with other projects called for in the Vision Plan:

- Corridor 1 light rail service would enable connections to eastern Norfolk.
- Corridor 5 light rail service would enable connections to Naval Station Norfolk.
- Corridor 8a rapid transit service would enable connections to Downtown and Midtown Portsmouth.

Planning Decisions

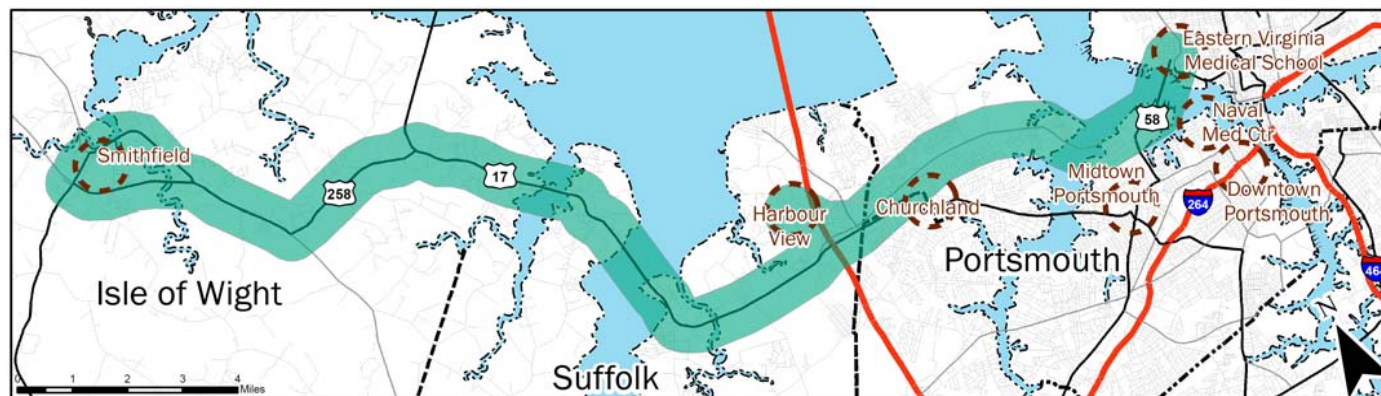
The routing of express bus service, particularly in Smithfield, the Harbour View area, and Downtown Norfolk, remain to be decided.

Potential Park-and-Ride Locations

Below is a list of potential park-and-ride lot locations to be considered in future studies. How much parking should be built at each location needs to be determined.

- Route 258 at Route 10 in Smithfield (existing park-and-ride lot)
- Near Carrollton Boulevard and Brewers Neck Boulevard in Isle of Wight County
- Near I-664 in the Harbour View area of Suffolk
- Near Cedar Lane in the Churchland area of Portsmouth

RECOMMENDED CORRIDOR



IMPLEMENTATION

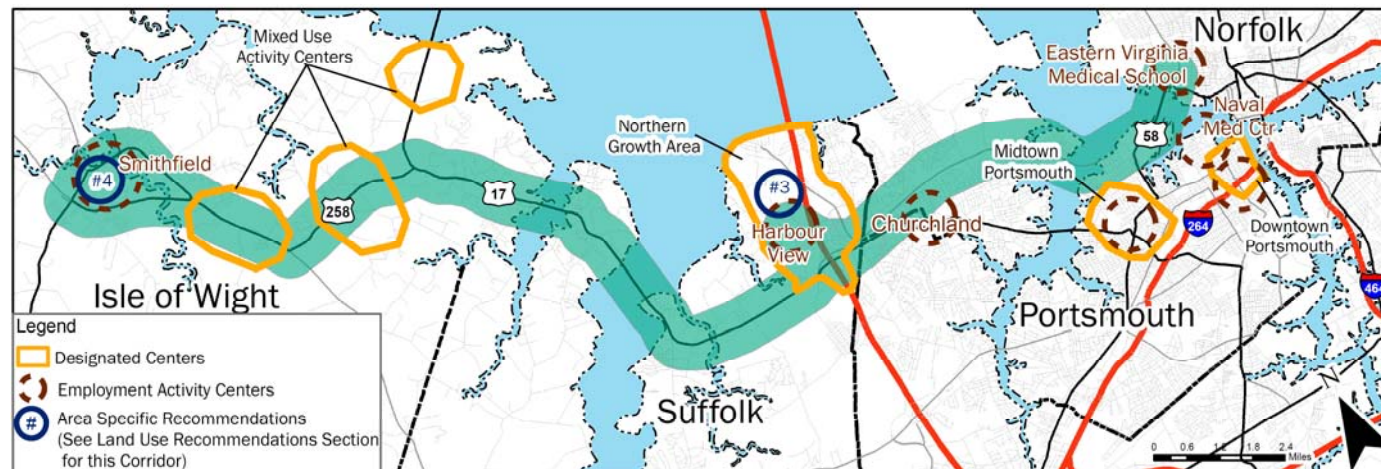
Near-Term		Long-Range (2026–2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016–2025)		
Implement express bus service from Harbour View to Norfolk.	Continue operating express bus service, using the improved Midtown Tunnel	Continue operating express bus service	Extend express bus service to Smithfield. Designate transfer point from express bus to light rail for service into Norfolk.

Land Use Recommendations

Portsmouth has several transit-supportive plans, policies, and regulations that relate to Downtown Portsmouth and other activity centers. Similarly, Suffolk's comprehensive plan and zoning ordinance provide for transit-supportive densities. Creating corridors that can support the proposed modes of transit requires implementing these policies and regulations in a strategic manner.

1. Focus development in identified regional, community, and neighborhood activity centers. Encourage concentrated and compact development.
2. Identify appropriate locations for park-and-ride lots within these corridors. Encourage bus or shuttle connections between the park-and-ride transit centers and nearby residential areas.
3. Continue to develop emerging employment centers such as the Harbour View area. Build off the Suffolk Comprehensive Plan to encourage transit-supportive densities in this area. Encourage supporting retail uses and pedestrian-friendly land use patterns within these centers by applying existing provisions in the zoning ordinance.
4. Increase retail and commercial uses within Smithfield. Encourage compact growth, providing the scale and variety to strengthen the retail district. Follow the guidance of the Isle of Wight Comprehensive Plan by designating centers that emphasize pedestrian scale, streetscape, and moderate residential densities of 10 to 12 units per acre.

CORRIDOR 8D: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 9a. US 460/I-264/CSX Corridor, Suffolk, Chesapeake, Portsmouth, Norfolk

Description of Corridor

Of competing candidate corridors 9a, 9b, and 9c, following different paths to join Downtown Suffolk to Downtown Norfolk, Corridor 9a was chosen due to highest feasibility. (For more detail see “Feasibility Evaluation” in Tech Memo in the Appendix.)

Corridor 9a runs from Downtown Suffolk to Downtown Norfolk via US 460 and I-264. The activity centers that fall in this corridor include Downtown Norfolk, Downtown Portsmouth, Victory Crossing, and Downtown Suffolk.

Due to the spacing of activity centers and suburban nature of uses in Suffolk, express bus and commuter rail are appropriate modes for the corridor. Express bus service already operates as far west as the Magnolia Park & Ride Lot. Extending express bus service in the corridor would increase the ridership and build demand for future commuter rail.

Corridor 9a would work well in combination with Corridor 8a (via the Midtown Tunnel), called for in the Vision Plan, as an alternate route for express bus service into Downtown Norfolk.

High speed/high capacity intercity passenger rail is being studied that would pass through this corridor. The contemplated intercity service would run from Richmond via Petersburg and Suffolk terminating in Norfolk.

Implementation

The ultimate transit vision for this corridor is commuter rail service. In the interim, express bus would continue to operate in the corridor, with improvements.

In the short-range, stop locations and routing for express bus service in Downtown Suffolk should be determined. A park-and-ride lot in Downtown Suffolk should be identified, either as shared parking with another use or as strictly commuter parking. The park-and-ride lot and stop locations should be coordinated with existing local bus routes in Suffolk. MAX Route 962 service should then be extended to Downtown Suffolk.

In the mid-range, operation of express bus service should continue.

In the long-range, Alternatives Analysis and environmental documentation for commuter rail project should be completed. Any needed right-of-way acquisition for stations or sidings should begin.

In the extended-range, commuter rail service will be implemented as far as Downtown Portsmouth. Transfers to the paddlewheel ferry and to rapid transit in Corridor 8a would be needed to complete a trip into Norfolk. Later in the extended-range, the rail connection to a Harbor Park Stadium intermodal station could be built.

Other Discussion

Supporting Projects

Express bus service in Corridor 9a is supported by local bus service in Suffolk connecting to express bus in Downtown Suffolk. It is also supported by local bus service in Portsmouth connecting at Victory Crossing.

Express bus service in Corridor 9a and 9d would need to be coordinated with each other. The proposal for Corridor 9d is to operate a new MAX route from Chesapeake Square Mall rather than have MAX Route 962 divert from direct service along Route 460 and I-264.

Implementing express bus service in Corridor 8a would also need to be coordinated with service in Corridor 9a. Service from Suffolk to Norfolk could either divert via the MLK Freeway through the Midtown Tunnel to the west side of downtown, or remain on I-264 via the Downtown Tunnel to the east side of downtown.

Commuter rail service in Corridor 9a would be supported by operational changes to existing bus service. The following existing routes should be reoriented to serve commuter rail stations.

- Local Suffolk bus routes 71, 72, 73, and 74 to serve a Downtown Suffolk park-and-ride station

- Routes 41, 45, 50, and 57 to serve a Victory Crossing station
- Route 57 to serve a Bowers Hill station

At the time of commuter rail implementation MAX Route 962 could be rerouted or eliminated to reduce redundancy with the commuter rail service.

Commuter rail service in Corridor 9a would need to be coordinated with intercity passenger rail service between Richmond and Norfolk. It is likely these services would share tracks. Commuter rail ridership could be enhanced by transfers to and from intercity passenger service.

Regional Connections

Other transit corridors will connect this corridor into the region’s integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan. Commuter rail service in Corridor 9a would connect with other projects called for in the Vision Plan:

- Corridor 7 express bus and ultimately commuter rail service would enable connections to Chesapeake and eventually North Carolina.
- Corridor 8a rapid transit service would enable connections to the west side of Norfolk.

RECOMMENDED CORRIDOR



IMPLEMENTATION

Near-Term		Long-Range (2026–2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016–2025)		
Extend express bus in the corridor to Downtown Suffolk.	Continue operating express bus service	Complete AA and EIS for commuter rail project	Construct and operate Commuter Rail

- Corridor 8b light rail service would enable connections to Midtown Portsmouth, Corridor 8c BRT would enable connections to Downtown Portsmouth, the Naval Shipyard, and Chesapeake Square Mall.

Planning Decisions

The location of an additional park-and-ride lot in Downtown Suffolk needs to be decided. Substantial ongoing coordination will be required with the CSX Railroad and with the high speed/high capacity intercity passenger rail study team. An operating plan for freight, intercity passenger, and commuter rail services needs to be created.

An alternative to following Corridor 9a with commuter rail service would be to follow a more southerly route bypassing Downtown Portsmouth and crossing the Elizabeth River on existing bridges. This alternative would allow service to an intermodal hub at Harbor Park Stadium in Norfolk to be implemented sooner, but has the disadvantage of requiring a transfer to another mode to get to Downtown Portsmouth.

Potential Station Locations

Below is a list of potential commuter rail station locations to be considered in future studies. In addition, whether and how much parking should be built at each station needs to be determined.

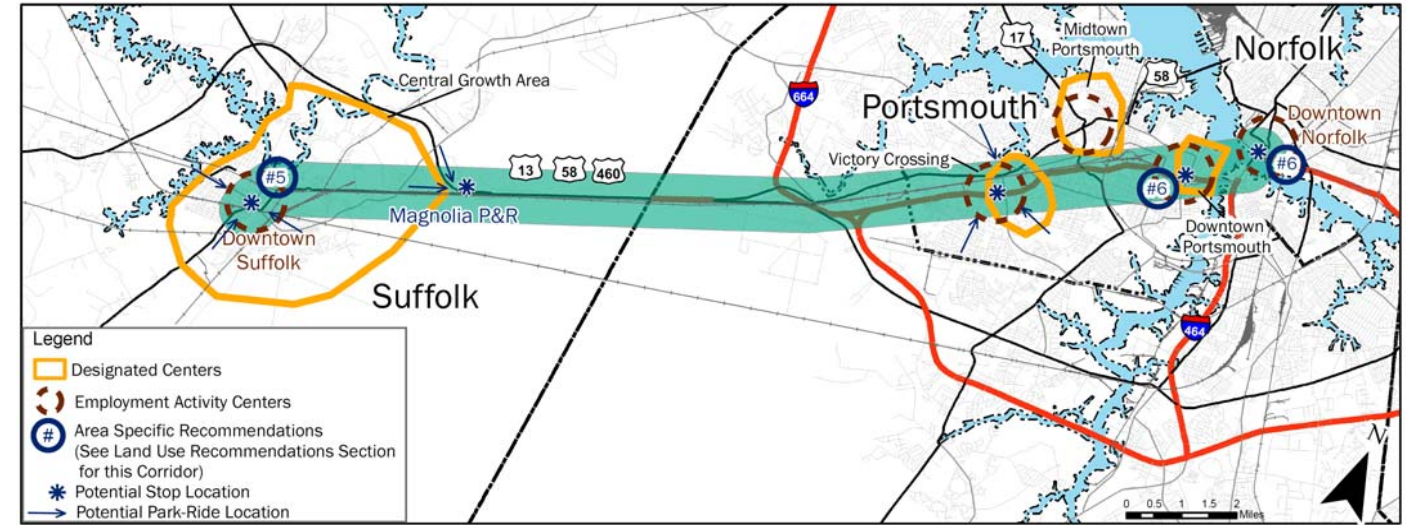
- Downtown Norfolk
- Downtown Portsmouth
- Victory Crossing
- Bowers Hill
- Downtown Suffolk

Land Use Recommendations

This corridor connects various existing developments, land use patterns, and jurisdictions. Encouraging redevelopment and compact growth within activity centers and updating plans and policies will be very important for creating transit supportive conditions in these corridors.

1. Follow recommendations in the Suffolk Comprehensive Plan to update the zoning ordinance to better support and encourage mixed use centers. Zoning districts that describe compact growth, combinations of uses, pedestrian and bike facilities, and public realm improvements can be used to build transit supportive communities.
2. Identify appropriate locations for park-and-ride lots within these corridors. Encourage bus or shuttle connections between the park-and-ride transit centers and nearby residential areas.
3. Encourage moderate density residential development in identified activity centers. Expand housing options within proposed transit corridors by providing multi-family housing types.
4. Increase density and encourage supporting and mixed uses within identified activity centers. Intensifying uses should be focused in those areas with sufficient infrastructure.
5. Foster development in Downtown Suffolk, its designated “Central Growth Area.” Encourage compact and transit-supportive growth, as supported by Suffolk’s Comprehensive Plan policies.
6. Continue redevelopment of Downtown Norfolk and Downtown Portsmouth.

CORRIDOR 9A: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 9d. I-664/I-264 Corridor, Chesapeake, Portsmouth, Norfolk

Description of Corridor

Corridor 9d runs from Chesapeake Square Mall in Portsmouth to Norfolk via I-664 and I-264. Major activity centers in this corridor include Chesapeake Square Mall, Victory Crossing, Downtown Portsmouth and Downtown Norfolk.

This corridor connects predominately suburban uses in western Portsmouth and Chesapeake to Norfolk’s Downtown, which will continue to remain suburban in the future. Hence, continued express bus is the appropriate transit service to serve trips between Portsmouth and Norfolk.

Corridor 9d would work well in combination with Corridor 8a (via the Midtown Tunnel), called for in the Vision Plan, as an alternate express bus route into Downtown Norfolk.

Implementation

The ultimate transit vision for this corridor is express bus service.

In the short-range, MAX Route 962 service to Chesapeake Square Mall would be replaced by a new route, so that Route 962 would have more direct service between Suffolk and Norfolk.

In the mid-range, once the Midtown Tunnel/MLK Freeway project is complete, a branch of the new express bus service could begin operating to the west side of Norfolk via the Midtown Tunnel.

In the long- and extended-ranges, operation of express bus will continue.

Other Discussion

Supporting Projects

Express bus service in Corridor 9a can operate independently of other proposed transit services in the Vision Plan. However, express bus ridership would be supported by the completion of light rail projects in Norfolk to broaden the number of destinations reachable by transit.

Several existing local bus routes are already routed to allow transfers to express bus service in this corridor:

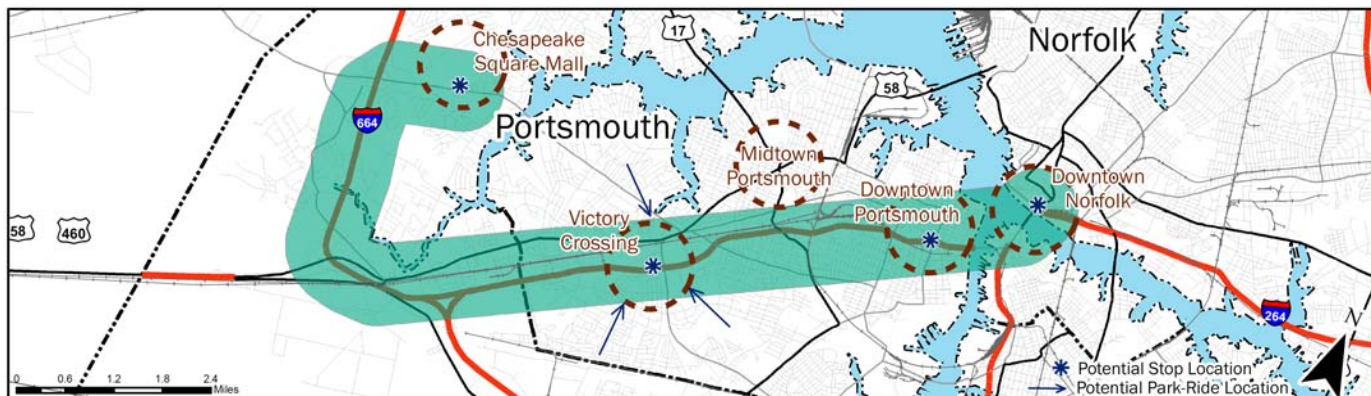
- Route 44 and MAX Route 967 at Chesapeake Square Mall
- Routes 41, 45, 50, and 57 at Victory Crossing

Planning Decisions

The highway and park-and-ride infrastructure to operate express bus service in Corridor 9a is already in place. With increased transit usage, additional parking may be needed.

Additional planning will be needed to establish a coordinated operating plan for express bus service and to review timed transfers from local bus service.

RECOMMENDED CORRIDOR



IMPLEMENTATION

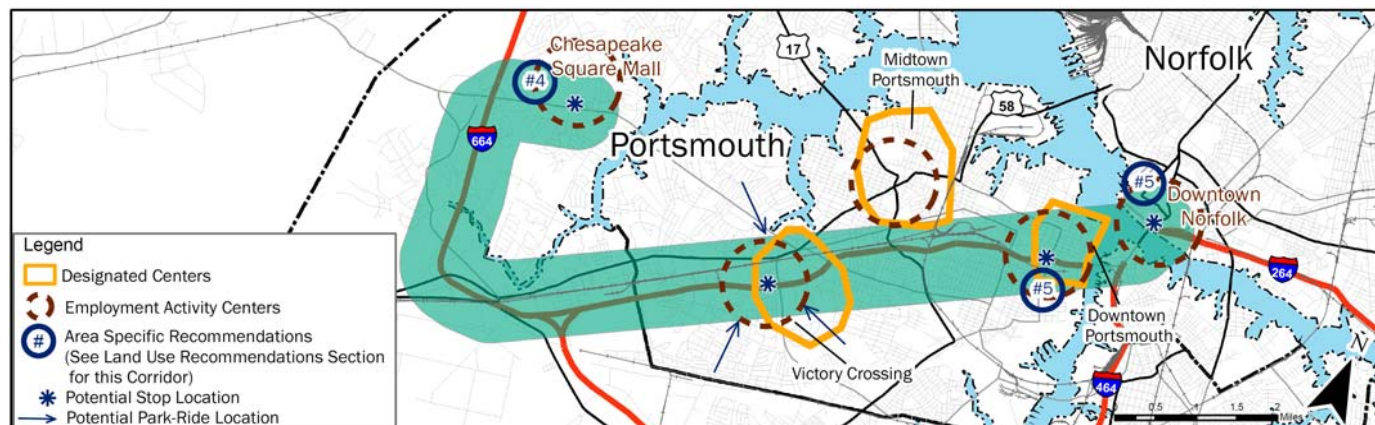
Near-Term		Long-Range (2026–2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016–2025)		
Begin operating a new MAX express bus route	Continue operating Express Bus	Continue operating Express Bus	Continue operating Express Bus

Land Use Recommendations

This corridor connects various existing developments, land use patterns, and jurisdictions. Encouraging redevelopment and compact growth within activity centers and updating plans and policies will be very important for creating transit supportive conditions in these corridors.

1. Identify appropriate locations for park-and-ride lots within these corridors. Encourage bus or shuttle connections between the park-and-ride transit centers and nearby residential areas.
2. Encourage moderate density residential development in identified activity centers. Expand housing options within proposed transit corridors by providing multi-family housing types.
3. Increase density and encourage supporting and mixed uses within identified activity centers. Intensifying uses should be focused in those areas with sufficient infrastructure.
4. Develop a phased approach for redeveloping the older shopping areas within these corridors, such as Tower Mall and Chesapeake Square, into mixed-use centers.
5. Continue redevelopment of Downtown Norfolk and Downtown Portsmouth.

CORRIDOR 9D: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 10. Oceanfront Corridor, Virginia Beach

Description of Corridor

Corridor 10 serves the Oceanfront area in Virginia Beach. This corridor covers the North Beach, Central Beach, Convention Center, and Marina activity centers, which experience high transportation demand during summers. With the expansion of the convention center, the forecasted number of events and total attendees is expected to increase at a faster rate. Transit in this corridor would improve mobility of residents, employees, tourists, and convention attendees in the Oceanfront area.

BRT for this corridor was studied in 2004, and it was determined to be a feasible transit service. However, Virginia Beach does not want any further consideration of BRT service, and instead, wants to continue the existing VB Wave circulator service. In the long-range future, Virginia Beach would like to conduct studies on an appropriate transit project.

Implementation

The ultimate transit vision for this corridor is to continue with the VB Wave and study an appropriate mode in the long-range future.

In the short-range, operation of the existing VB Wave circulator bus routes (Route 30, 31, and 32) will continue.

In the mid-range, expansion of the existing VB Wave should occur to serve new developments within activity centers.

In the long- and extended-range, an Alternatives Analysis (AA) and environmental documentation for Resort Area transit should be completed.

Other Discussion

Regional Connections

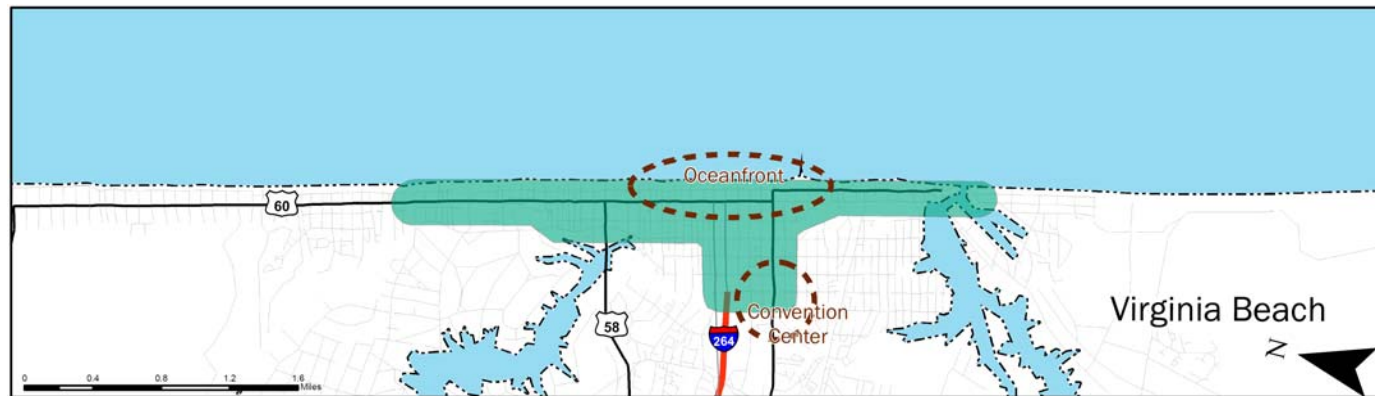
Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan. Local transit service in Corridor 10 should connect with other projects called for in the Vision Plan:

- Corridor 3 light rail service would enable longer distance trips from Virginia Beach to Norfolk.
- Corridor 1 and Corridor 4 light rail service in combination would enable connections from Virginia Beach to several parts of Norfolk.

Planning Decisions

The Virginia Beach Oceanfront Bus Rapid Transit Feasibility Study (2004) identified a feasible route for bus rapid transit in Corridor 10. However, a great deal of local concern was expressed about the BRT concept, the scale of BRT vehicles, and the compatibility of BRT with the resort district. For these reasons, Virginia Beach will continue VB Wave service and study an appropriate transit mode in the long-range future.

RECOMMENDED CORRIDOR



IMPLEMENTATION

Near-Term		Long-Range (2026–2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016–2025)		
Continue existing VB Wave circulator bus	Begin expansion of VB Wave circulator bus	Complete AA and EIS for Resort Area transit project to determine mode and alignment. Continue operating VB Wave Circulator bus.	Complete AA and EIS for Resort Area transit project to determine mode and alignment. Continue operating VB Wave Circulator bus.

Land Use Recommendations

Redevelopment, compact growth, and an increased mix of uses will not only increase this corridor's ability to support transit, it will also help the Oceanfront area become more economically sustainable and more of a year-round destination. Policies to support this change exist in current community plans and guidelines.

1. Implement policies recommended in the Oceanfront Resort Area and other plans; build on recent Virginia Beach Resort Area Strategic Action Plan findings. Use Oceanfront Resort Area Design Guidelines to direct development and improvements.
2. Monitor and adjust parking policies and regulations along the corridor to reduce any oversupplies of parking. Reduced or more urban scale parking standards will allow more varied and pedestrian-oriented development.
3. Continue to maintain and improve pedestrian amenities throughout the Oceanfront area to encourage walking.
4. Encourage infill development in older developed areas of the Oceanfront in order to maintain existing and historic character.
5. Encourage the development of moderate density housing throughout the corridor.
6. Focus high density development within the North Beach, Central Beach, and Marina areas. Ensure that new, high density areas taper and transition smoothly to the adjacent residential areas.
7. Develop the area around the Convention Center as a gateway to the Oceanfront. Encourage a high level of design and architectural excellence along this entryway.

CORRIDOR 10: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 11. Peninsula CSX Corridor, Newport News, James City, York, Williamsburg

Description of Corridor

Corridor 11 runs along the CSX corridor from Lightfoot in the north to Downtown Newport News in the south. This corridor links several important activity centers including Colonial Williamsburg, Busch Gardens, Newport News/Williamsburg International Airport, Oyster Point, and Downtown Newport News. Some of the highest employment and residential densities in the region are to be found in this corridor. Transit in this corridor would serve large worker trip volumes between Williamsburg and Newport News.

The CSX Railroad operates freight service in this corridor. In addition Amtrak offers two daily round trips between Newport News and Richmond with continuing service to and from Washington, DC.

The southern half of this corridor is urbanized and is well suited to light rail transit. In contrast, the northern half of the corridor has lower density development and more widely spaced activity centers making express bus and commuter rail service more appropriate. However, it may be more likely feasible to operate commuter rail for the entire corridor due to compatibility with CSX operations.

Implementation

The ultimate transit vision for this corridor is likely to include commuter rail service.

In the short-range, operation of express bus Routes 113 and 121 (primarily on I-64) should continue. The planned increase in Amtrak service, as documented in the Statewide Rail Plan, should be implemented. In addition, enhanced bus service along Jefferson Avenue, as described under Corridor 2, should also be implemented.

In the mid-range, the Alternatives Analysis and environmental documentation for either light rail transit (LRT) or commuter rail should be completed. Any needed right-of-way acquisition at station locations and sidings should begin.

In the long-range, frequency should be increased for both Amtrak service as called for in the Statewide Rail Plan. Commuter rail service is likely to be implemented as the preferred transit mode due to compatibility with CSX operations.

In the extended-range, commuter rail should continue operations.

Other Discussion

Supporting Projects

Commuter rail service could operate independently of other transit improvements recommended in the Vision Plan. However, commuter rail service would be supported by additional Amtrak service.

Commuter rail in Corridor 11 would be supported by operational changes to existing bus service. The following existing routes should be reoriented to serve commuter rail stations and service.

- Routes 101, 103, and 105 to serve a Downtown Newport News station
- Route 106 to serve Oyster Point and a Fort Eustis station
- Routes 107, 111, and 112 to serve Oyster Point
- Route 116 to serve a Bland Blvd station and a Fort Eustis station
- Express Route 113 to serve a Fort Eustis station
- Express Route 121 could be shortened or eliminated to reduce redundancy with light rail and commuter rail service

Regional Connections

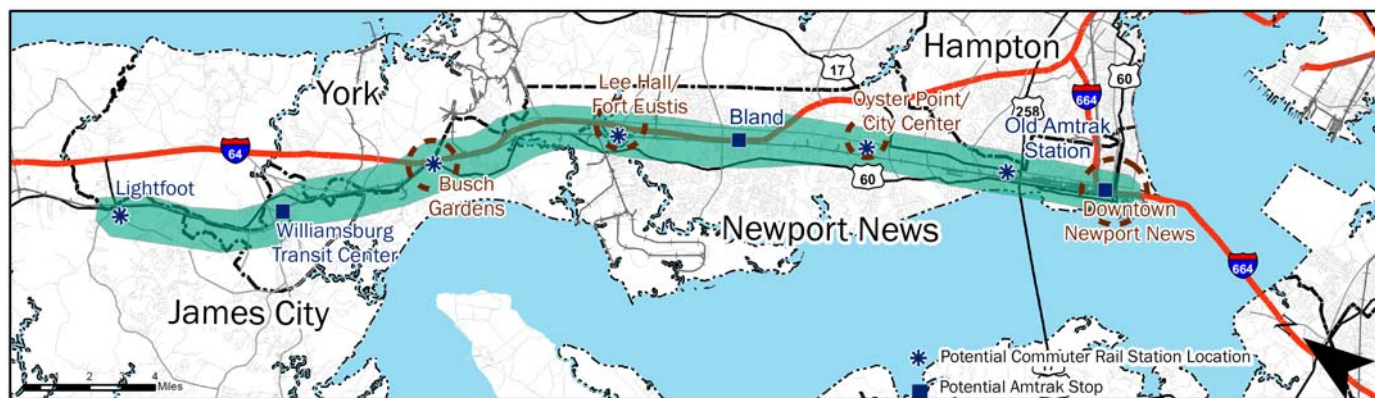
Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan. Commuter rail service in Corridor 11 would connect with other projects called for in the Vision Plan:

- Corridor 13 enhanced bus and ultimately streetcar service would enable regional connections to Hampton all the way to Buckroe Beach.
- Corridor 14 express bus service would enable connections to Gloucester.
- Corridor 15a express bus service would enable connections to Poquoson.
- Corridor 16a ferry service and Corridor 16b light rail service would enable connections to Norfolk and the Southside.

Planning Decisions

Corridor 11 is a complex corridor in the Vision Plan which requires additional planning beyond the assessment conducted for this study.

RECOMMENDED CORRIDOR



IMPLEMENTATION

Near-Term		Long-Range (2026-2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016-2025)		
Continue express bus and increase Amtrak service.	Continue express bus and Amtrak service; LRT and commuter rail will be evaluated: commuter rail is likely due to compatibility with CSX operations.	Construct and operate rail service (see "Mid-Range" for mode). Increase Amtrak service further.	Continue operating rail service (see "Mid-Range" for mode).

- Implementing transit in Corridor 11 will require extensive coordination with the CSX Railroad.
- The location needs to be determined for a local intermodal hub in Downtown Newport News to allow connections among local bus, express bus, and rail.

Potential Station Locations

Below is a list of potential transit station locations to be considered in future studies. In addition, whether and how much parking should be built at each station needs to be determined.

Commuter Rail Stations

- Downtown Newport News (with Amtrak)
- Bland Blvd (with Amtrak)
- Lee Hall/Fort Eustis
- Busch Gardens
- Williamsburg Transit Center (with Amtrak)
- Lightfoot

Land Use Recommendations

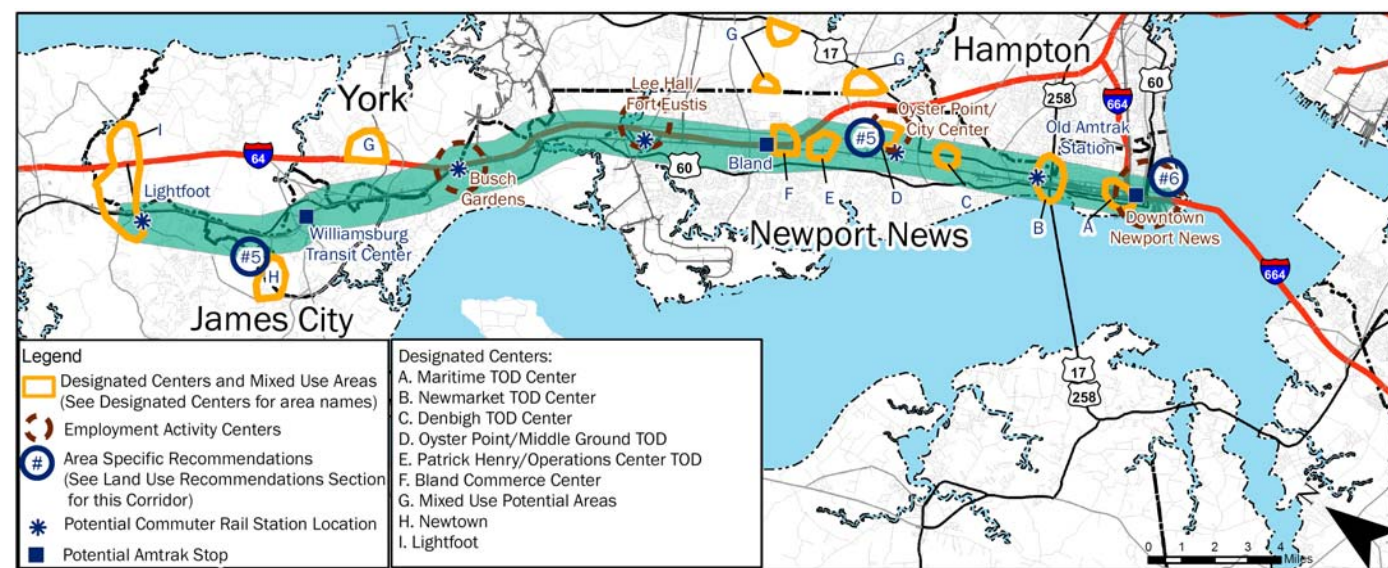
To create transit-supportive conditions along this corridor, strategic compact mixed use development is needed. The length of the corridor and range of existing land use conditions will also require a variety of scales and types of centers.

- Focus development within designated activity centers along the corridor, including Lightfoot, central Williamsburg, and Oyster Point in Newport News. Concentrate residential and non-residential developments in these areas and prevent sprawling land use patterns.

1. Ensure a mix of uses in all retail and commercial centers, in particular those in suburban or less urban contexts, such as Lightfoot.
2. Provide bus or shuttle connections between the corridor's light rail or commuter rail and nearby residential, employment, and recreational centers. Ensure frequent connections to major cultural and entertainment destinations, such as Busch Gardens, during holiday and vacation seasons.

3. Identify appropriate locations for park-and-ride lots. Consider the full range of this corridor's core transit users, both commuters and vacationers. Provide adequate parking and accessibility in these locations, and also encourage supporting retail uses appropriate in scale.
4. Use existing mixed use developments—such as Oyster Point, Port Warwick, and New Town Williamsburg—as models for new transit supportive developments.
5. Develop a phased, incremental approach to revitalizing Downtown Newport News. Use existing Comprehensive Plan policies on transit-oriented design and regional activity centers to guide redevelopment.

CORRIDOR 11: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 12. Downtown Hampton to Oyster Point. Hampton, Newport News

Description of Corridor

Corridor 12 runs from Downtown Hampton to Oyster Point/City Center in Newport News. The corridor links three major regional activity centers of the Peninsula, including Downtown Hampton, Coliseum Central, and Oyster Point. High speed/high capacity transit in the corridor would create opportunities for “smart growth” type development on undeveloped land along the corridor. The Hampton Comprehensive Plan supports improved transit service between Downtown and Coliseum Central as these are the city’s strategic investment areas. For these reasons, high speed/high capacity transit is justified in this corridor.

Corridor 12 would work in combination with Corridor 16, called for in the Vision Plan to connect the Peninsula and Southside with light rail. It would also serve as a connection to Corridors 14 and 15a, called for in the Vision Plan, serving trips to Gloucester and York Counties and the City of Poquoson.

Implementation

The ultimate transit vision for this corridor is light rail service. In the interim, bus rapid transit is the high speed/high capacity mode most suited to the corridor.

In the short-range, limited stop bus service should be implemented in this corridor, in preparation for future BRT service. Stop locations should be farther apart than for local bus service, and service should be at least 4 buses per hour each direction. Vehicles may be specially branded, and bus stops should have shelters.

In the mid-range, the Alternatives Analysis and environmental documentation for the bus rapid transit project should be completed. Station locations and routing of the BRT fixed guideway should be identified, bearing in mind the ultimate conversion to a light rail guideway. Right-of-way acquisition should begin.

In the long-range, operation of BRT in the corridor should begin.

In the extended-range, BRT will be converted to light rail.

Other Discussion

Supporting Projects

Bus rapid transit service in Corridor 12 could be implemented independently of other transit improvements called for in the Vision Plan. Light rail service in Corridor 12, while not wholly dependent on a light rail crossing of Hampton Roads harbor, would be greatly enhanced by that other project.

Virtually every bus route in Hampton intersects Corridor 12. Realignments of all local bus routes would be expected to serve BRT and ultimately light rail stations.

Regional Connections

Other transit corridors will connect this corridor into the region’s integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan. Bus rapid transit and ultimately light rail service in Corridor 12 would connect with other projects called for in the Vision Plan:

- Corridor 2 light rail service would enable better connections in Oyster Point, the Newport News/Williamsburg International Airport, and Downtown Newport News.

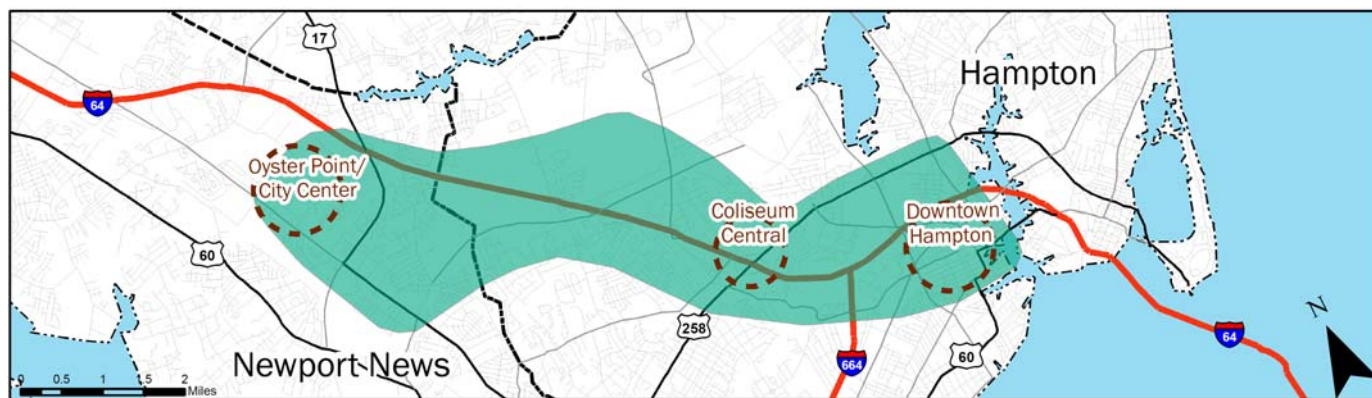
- Corridor 13 enhanced bus and ultimately streetcar service would enable regional connections to Downtown Newport News and Buckroe Beach.
- Corridor 14, Corridor 15a, and Corridor 15b express bus services would enable connections to Gloucester and York Counties, Poquoson, and Langley Air Force Base
- Corridor 16a ferry service and Corridor 16c light rail service would enable connections to the Southside. Once light rail is built in Corridor 16c and Corridor 12 transit service is converted to light rail, one seat rides will be possible between the Southside and Oyster Point and potential Newport News Airport.

Planning Decisions

Questions to answer in the environmental documentation phase of the BRT project include the preferred alignment of the bus rapid transit line that can be sensibly converted to light rail service in the future.

An operating plan would need to be formulated for the conversion for BRT to light rail and integrating this corridor’s light rail service with Corridor 2 light rail and Corridor 11 commuter rail.

RECOMMENDED CORRIDOR



IMPLEMENTATION

Near-Term		Long-Range (2026–2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016–2025)		
Begin enhanced bus service in the corridor	Complete AA and EIS for BRT project	Implement BRT	Convert BRT to light rail

Potential Station Locations

Below is a list of potential station locations to be considered in future studies. In addition, whether and how much parking should be built at each station needs to be determined.

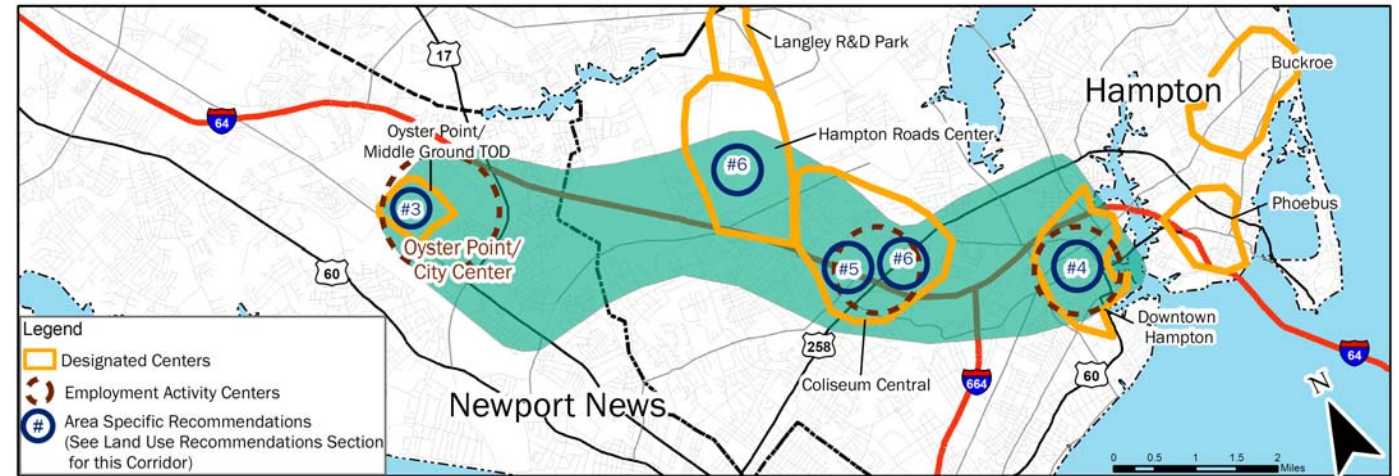
- Downtown Hampton
- Crossroads Center
- Peninsula Town Center
- Coliseum Central Hospitals
- Hampton Roads Center
- J Clyde Morris/Jefferson

Land Use Recommendations

Transit improvements within this corridor will benefit from continuing the development efforts at the two major activity centers anchoring this corridor – Downtown Hampton and Oyster Point. Implementing existing policies and creating additional housing options is also recommended.

1. Focus development and redevelopment efforts in designated activity centers, such as Oyster Point, Hampton Roads Center, Coliseum Central, and Downtown Hampton. Encourage compact and mixed use development. Provide streetscape and other pedestrian-oriented infrastructure improvements.
2. Provide transit supportive housing options within existing activity centers and proposed transit station areas, such as multi-family apartments, condominiums, and townhomes, at densities of 15 units per acre or higher.
3. Continue to develop Oyster Point/City Center as a model mixed use center.
4. Promote context-sensitive infill development in Downtown Hampton. Promote the adaptive re-use of historic and cultural structures and resources.
5. Assess progress on implementing the policy recommendations and implementation plan of the Coliseum Central Master Plan. Prepare a specific, feasible action plan to achieve the policies that are still relevant and important, but not yet complete.
6. Identify strategic actions to encourage additional employment in the corridor by focusing development in the Coliseum Central and the Hampton Roads Center areas.

CORRIDOR 12: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 13. Downtown Newport News to Buckroe, Newport News, Hampton

Description of Corridor

Corridor 13 connects Buckroe in Hampton to Downtown Newport News. This corridor links several regional activity and employment centers including Buckroe Beach, Hampton University, the Veterans Administration hospital, Downtown Hampton, and Downtown Newport News. Transit in this corridor would serve potential lower income communities and serve as a revitalization tool for Hampton and Newport News. Newport News is planning revitalization for the area east of the CSX which lies in this corridor.

Corridor 13 is already well served by local buses. High speed/high capacity transit would provide for faster transit trips and encourage reinvestment in the historic cores of Hampton and Newport News. The existing urban form, redevelopment potential, and downtowns anchoring each end of the corridor justify a fixed guideway transit solution in the corridor.

Corridor 13 in combination with Corridors 11 and 12 could create a triangular rail network serving the core urban population areas of the Peninsula. Corridors 16b and 16c would create rail connections to the Southside, linking the entire region.

Implementation

The ultimate transit vision for this corridor is streetcar service. In the interim, enhanced bus service is appropriate as the corridor redevelops.

In the short-range, limited stop bus service should be implemented in this corridor. Stop locations should be farther apart than for local bus service, and service should be at least 4 buses per hour each direction. Vehicles may be specially branded, and bus stops should have shelters.

In the mid-range, operation of enhanced bus service should continue.

In the long-range, the Alternatives Analysis and environmental documentation for implementing streetcar service should be completed. Routing for streetcar line should be identified; this alignment may be different from the limited stop bus route. Streetcar stops should be sheltered and in general would not include parking. Right-of-way acquisition, if any is required, should also begin.

In the long-range, construction of streetcar along the corridor should begin.

In the extended-range, streetcar service would be implemented.

Other Discussion

Regional Connections

Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan.

Streetcar service on Corridor 13 would serve as feeder or regional circulator for the following projects called for in the Vision Plan.

- Commuter rail service on corridor 11 connecting areas in Newport News to Williamsburg.
- Ferry and light rail service on Corridor 16 connecting Peninsula to the Southside.

Planning Decisions

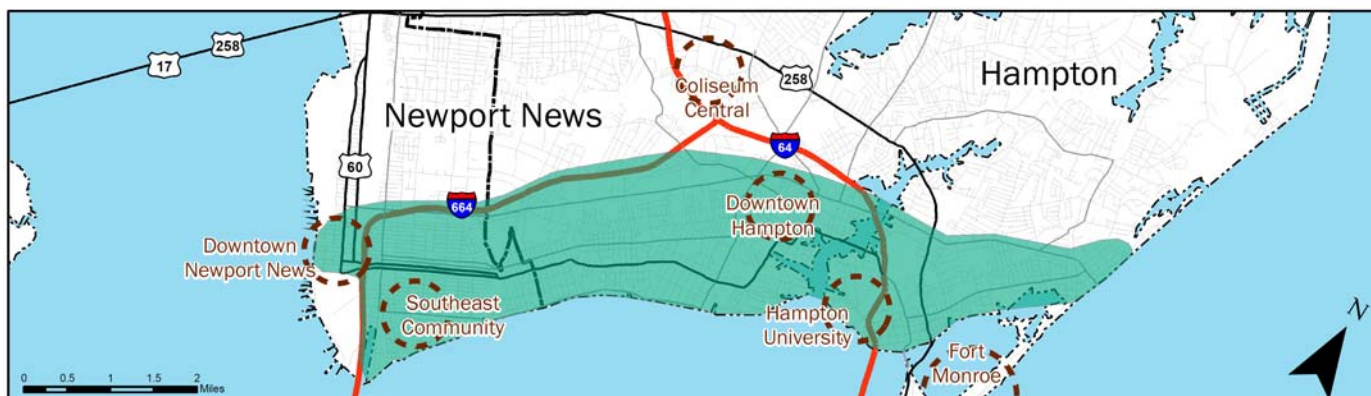
Questions to answer during the Alternatives Analysis phase include the preferred alignment of the streetcar line and whether interlining between the light rail lines in Corridors 11 and 12 and the streetcar line will be accommodated.

Potential Stop Locations

Stops along the streetcar line could be quite frequent. Below is a list of potential streetcar stop locations to be considered in future studies. Many more stops than these are likely to be built.

- Buckroe Beach
- Mallory Street/Mercury Blvd (Phoebus)
- Hampton University
- Downtown Hampton
- Wythe Place
- Chestnut Avenue
- Downtown Newport News

RECOMMENDED CORRIDOR



IMPLEMENTATION

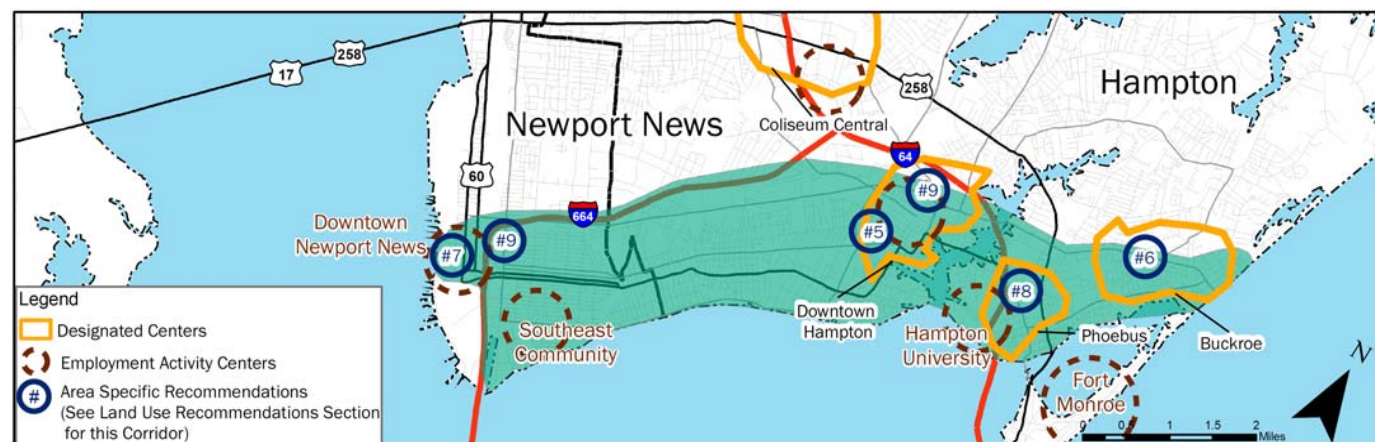
Near-Term		Long-Range (2026–2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016–2025)		
Begin enhanced bus service in corridor.	Continue enhanced bus service.	Complete AA and EIS for streetcar project. Begin right-of-way acquisition.	Construct and operate streetcar

Land Use Recommendations

Recommendations for this corridor center on creating a mix of uses appropriate in scale and character, providing new multi-family housing options, improving the quality of housing stock, and supporting community revitalization.

1. Develop homeowner assistance programs to provide loan assistance to improve the quality of existing housing stock along the corridor.
2. Increase the variety and types of multi-family housing along the corridor by targeting vacant or abandoned properties for redevelopment.
3. Provide ground-floor retail zoning for new residential buildings adjacent to transit stops along the proposed corridor to encourage neighborhood supporting retail and commercial uses.
4. Provide streetscape and landscape improvements as a means of community revitalization and to encourage pedestrian activity along the proposed corridor.
5. Promote context-sensitive infill development in Downtown Hampton. Encourage historic resource preservation while also promoting an economically sustainable mix of uses.
6. Encourage development that is sensitive to natural resources near Buckroe Beach. Encourage compatible residential and commercial uses that will also permit environmental conservation and restoration.
7. Develop a phased, incremental approach to revitalizing Downtown Newport News. Use existing Comprehensive Plan policies on transit-oriented design and regional activity centers to guide redevelopment.
8. Engage Hampton University in discussing the university's long-range and campus planning so that proposed transit service addresses their transit needs.
9. Identify strategic actions to encourage additional employment in the corridor by focusing development in Downtown Hampton and Downtown Newport News.

CORRIDOR 13: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 14. US 17/Gloucester County Corridor, Gloucester, York, Newport News

Description of Corridor

Corridor 14 extends from central Gloucester County to Oyster Point/City Center. Activity centers in this corridor include Oyster Point, Yorktown, Gloucester Point, and Gloucester Courthouse. Transit in the corridor would primarily serve commuting trips, operating in peak periods only. Transit in this corridor would help mitigate congestion on US 17.

This corridor connects predominately suburban uses in Gloucester County to Downtown Newport News, which will continue to remain suburban in the future. Therefore, express bus is the appropriate transit mode to serve the commuting trips between Gloucester County and Newport News.

Connections from Corridor 14 could be made to Downtown Hampton, Downtown Newport News, and Coliseum Central via other transit improvements called for in the Vision Plan.

Implementation

The ultimate transit vision for this corridor is express bus service.

In the short-range, stop locations and routing for express bus service should be determined. Service should be offered primarily during commuting peaks. Park-and-ride lots in Gloucester County and York County from which to operate the express bus service should be identified, including opportunities for shared parking as well as dedicated commuter parking.

In the mid-range, operation of express bus service in the corridor should begin. Use of HOV lanes on I-64 for the service should be considered.

In the long- and extended-range operation of express bus service will continue.

Other Discussion

Supporting Projects

Express bus service in Corridor 14 could be implemented independently of other transit improvements called for the Vision Plan. However, ridership would be greatly increased by providing high quality transit connections to places beyond Oyster Point. For example, the enhanced bus service recommended for Corridor 2 would bring commuters to Downtown Newport News, and the BRT service in Corridor 12 would bring commuters to Coliseum Central and Downtown Hampton.

A local intermodal hub should be created in central Newport News, for example at Patrick Henry Mall, at which transfers from express bus to local bus could be made.

Regional Connections

Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan. Express bus service in Corridor 14 would connect with other projects called for in the Vision Plan:

- Corridor 11 commuter rail service would enable connections to Williamsburg and throughout Newport News, including Downtown.

- Corridor 12 BRT and ultimately light rail service would enable connections to Coliseum Central and Downtown Hampton.
- Corridor 15a express bus service would enable connections to Poquoson.
- By way of Corridors 12 and 16c, light rail service would enable connections to the Southside.

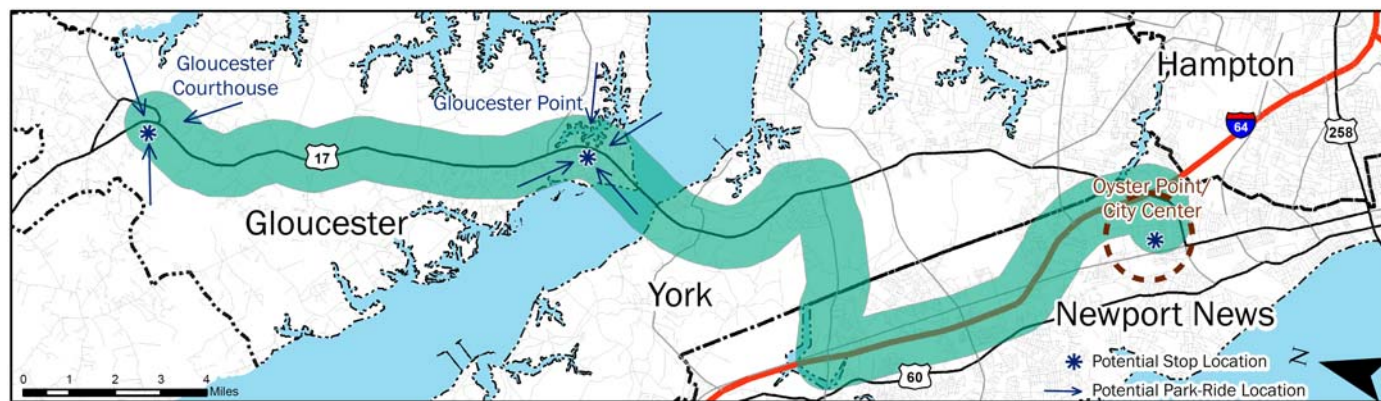
Planning Decisions

The Transit Vision Map shows Corridor 14 following US 17 to Fort Eustis Boulevard (Route 105), then west to I-64 before continuing south to Oyster Point. Alternative routes are possible and should be studied.

Potential park-and-ride lot locations for the express bus service in this corridor are listed below. The required quantity of parking remains to be studied.

- Gloucester Courthouse, Gloucester County
- Gloucester Point, Gloucester County
- Patriot Square Shopping Center, York County

RECOMMENDED CORRIDOR



IMPLEMENTATION

Near-Term		Long-Range (2026-2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016-2025)		
No additional transit service	Begin express bus service in the corridor	Continue operating express bus	Continue operating express bus

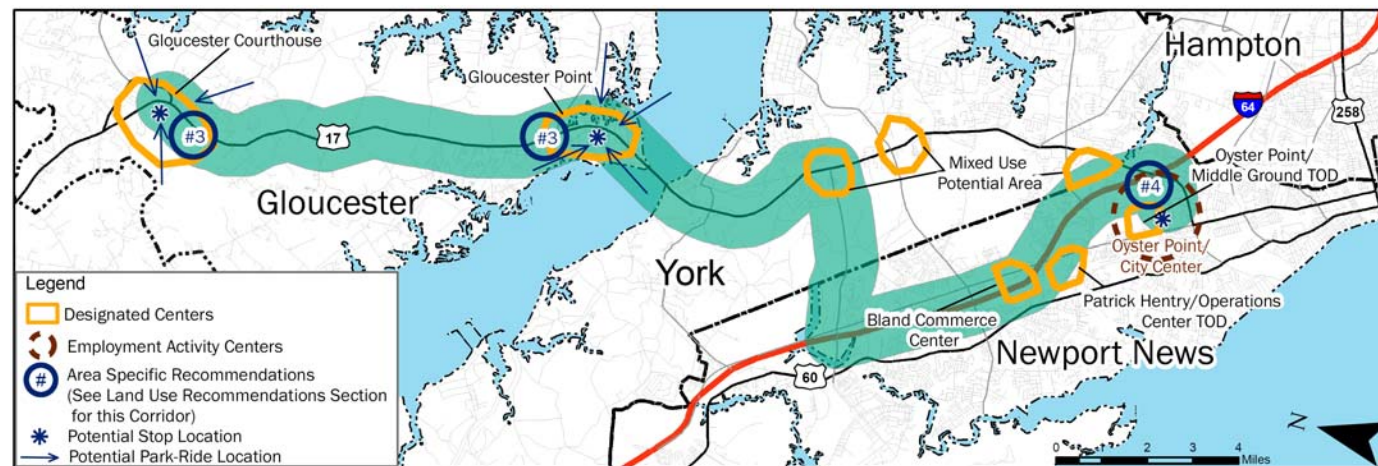
Land Use Recommendations

Focusing transit-supportive development within activity centers and minimizing sprawling land use patterns is recommended for this corridor. Other recommendations emphasize identifying the locations of transit facilities, such as station areas and park-and-ride lots.

1. Determine future locations for express bus stops and conduct a planning study on appropriate combinations of uses and densities for these intermediate stops. Features such as mixed uses, compact development, pedestrian and bicycle amenities, streetscape and landscape design should be considered.
2. Identify appropriate locations for park-and-ride lots. Provide adequate parking and accessibility in these locations, and also encourage small-scale supporting retail.

3. Focus development within activity centers and station areas throughout the corridor. Within Gloucester, new development should be encouraged within the Gloucester Point and Gloucester Courthouse areas to minimize sprawling land use patterns, natural resource degradation, or loss of agricultural and historically rural lands.
4. Continue development in Oyster Point/City Center in Newport News.

CORRIDOR 14: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 15. Poquoson to Oyster Point and Coliseum, Poquoson, Newport News, York, Hampton

Description of Corridor

Corridor 15a runs from Poquoson to Oyster Point via Victory Boulevard. Transit in this corridor would help mitigate congestion along Victory Boulevard.

Corridor 15b runs from Poquoson to the Coliseum Central area of Hampton via Wythe Creek Road, with the potential to serve the NASA Research Center, Langley Air Force Base, and Langley Research and Development Park. Transit in this corridor would help mitigate congestion along Wythe Creek Road.

This corridor connects predominately suburban uses in Poquoson to Newport News and Hampton, which will continue to remain suburban in the future. Transit in both the sub corridors would primarily serve commuting trips, operating in peak periods only. Therefore, express bus is the appropriate transit mode for this corridor.

Implementation

The ultimate transit vision for this corridor is express bus service.

In the short- and mid-range, no additional transit service is proposed along both the sub corridors. However, planning for carpool parking should continue.

In the long-range, stop locations and routing for express bus service should be determined. Service should be offered primarily during commuting peaks. Carpool and park-and-ride lots in Poquoson from which to operate the service should be established. Carpool lots should begin operation to encourage ridesharing and increase the propensity to use transit.

In the extended-range operation of express bus in both the sub corridors would commence.

Other Discussion

Supporting Projects

Express bus service in Corridors 15a and 15b could operate independently of other transit improvements called for in the Vision Plan. However, these services would be greatly enhanced by:

- Circulator systems to Langley Air Force Base and around Oyster Point and Coliseum Central
- Realigning local bus service to connect at local intermodal hubs in central Newport News and central Hampton.
- High speed/high capacity services such as BRT, and ultimately light rail, in Corridor 12.

Regional Connections

Other transit corridors will connect this corridor into the region’s integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan.

Express bus service in Corridors 15a and 15b would connect with other projects called for in the Vision Plan:

- Corridor 12 BRT and ultimately light rail service would enable connections from Coliseum Central to Downtown Hampton
- Corridor 11 commuter rail service to Williamsburg would complement the transit service provided by Corridor 15.

Planning Decisions

While the Transit Vision Map suggests potential routes for express bus services, other alternatives are possible.

Potential Stop Locations

Below is a list of potential stop locations to be considered in future studies. In addition, whether and how much parking should be built at each station needs to be determined.

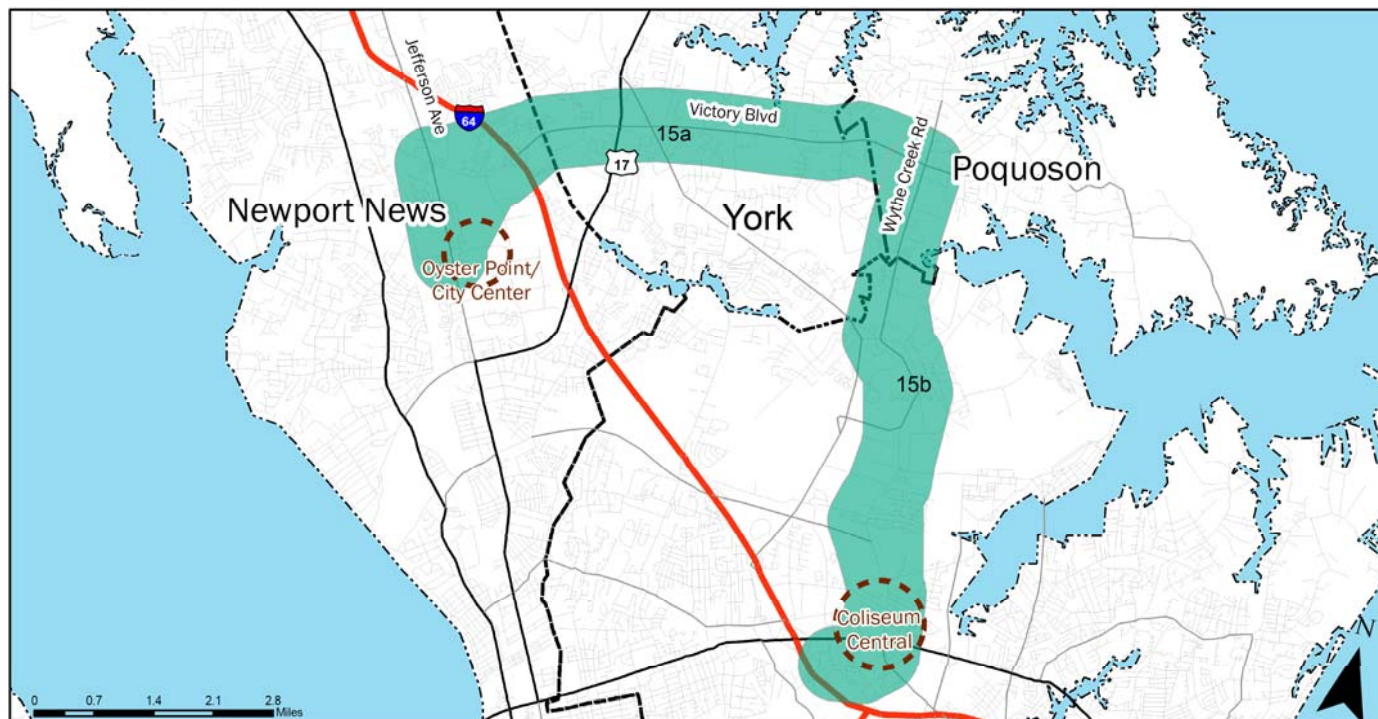
Corridor 15a express bus stops

- Oyster Point (several stops)
- Kiln Creek Corporate Center
- Poquoson Shopping Center

Corridor 15b express bus stops

- Poquoson Shopping Center
- NASA Research Center (Langley AFB)
- Coliseum Central (several stops)

RECOMMENDED CORRIDOR



IMPLEMENTATION

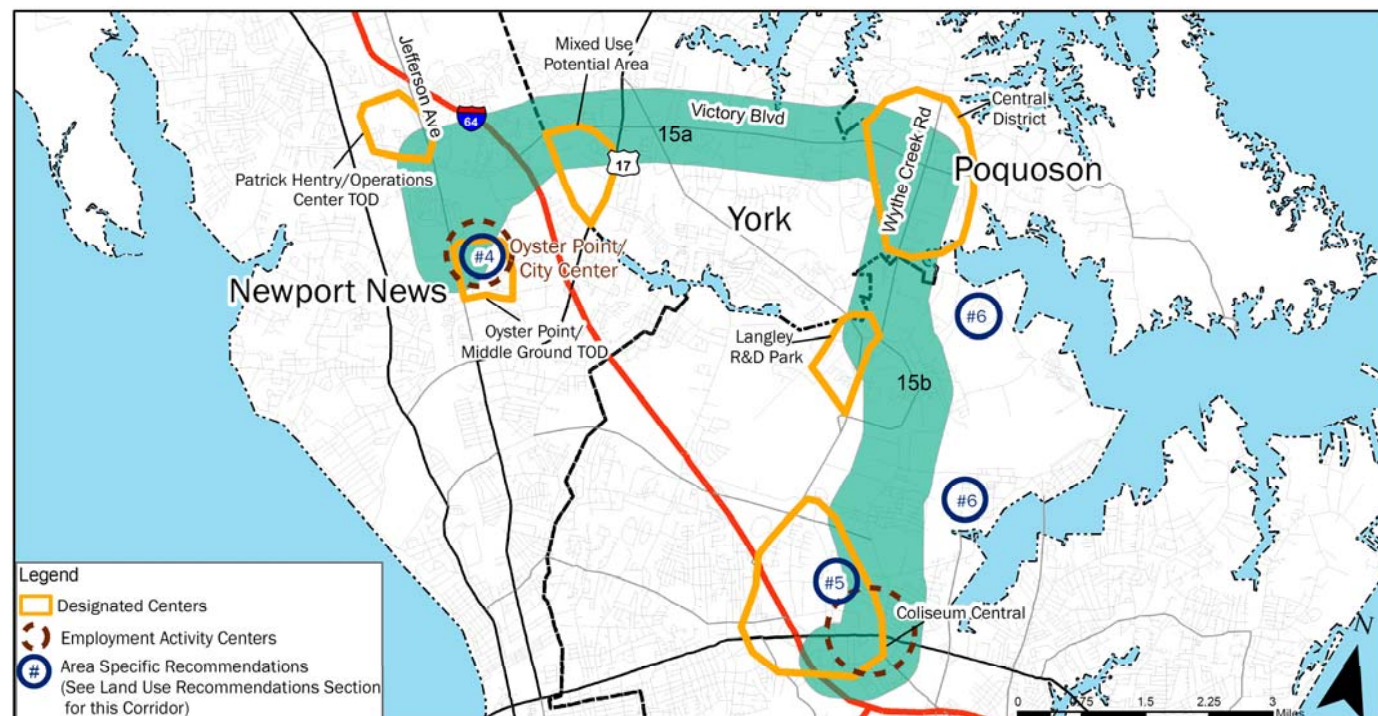
Near-Term		Long-Range (2026–2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016–2025)		
No additional transit service	No additional transit service	Establish Carpool and Park-Ride lots for Express Bus service	Operate express bus service

Land Use Recommendations

To successfully link the primarily residential areas in Poquoson with employment centers in Newport News and Hampton by transit requires clustered and compact redevelopment, the provision of pedestrian amenities, streetscape improvements, and commuter parking. Comprehensive Plans and zoning ordinances should be updated to support new transit service and more transit-supportive conditions.

1. Cluster new development near transit stops within the corridor to create areas of interest with a mix of uses. Redevelop underutilized commercial and retail sites.
2. Provide streetscape and landscape improvements, including sidewalks and pedestrian amenities, at station areas and along the corridor.
3. Update the Poquoson Comprehensive Plan and zoning ordinance to encourage an appropriate uses and amenities best suited for bus station areas.
4. Continue to develop the mixed use center at Oyster Point/City Center.
5. Implement existing policies and develop a strategic plan to revitalize and intensify the Hampton Coliseum area.
6. Provide shuttle service between transit stops on the corridor and major employment centers nearby. Coordinate with Langley Air Force Base and the NASA Research Center in designing frequency of shuttle service and stop locations.

CORRIDOR 15: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 16. Hampton Roads Harbor Crossings, Newport News, Hampton, Norfolk

Description of Corridor

Corridors 16a, 16b and 16c connect the Peninsula to the Southside. Some of the 17,000 worker round trips between Hampton/Newport News and Norfolk/Portsmouth would be assisted by this service.

Ultimately, with the addition or improvement of highway linkages between Southside and Peninsula, light rail would be extended from both Newport News via the proposed Third Crossing (Corridor 16b) and from Hampton parallel to the Hampton Roads Bridge Tunnel (Corridor 16c). Plans for the Third Crossing include a multi-modal tube which could be used for light rail. Transit connections would be made with Corridors 4, 5, 11, 12 and 13.

Implementation

In the mid-range, environmental documentation for the ferry project (Corridor 16a) should be undertaken. Construction of ferry docks should begin.

In the long-range, ferry service between Newport News, Hampton and Norfolk along sub corridor 16a should be initiated. Also in the long-range, feeder bus and employee shuttles to complement the ferry service should be established. For sub corridors 16b and 16c, Alternatives Analysis and environmental documentation for the light rail projects should be completed.

In the extended-range, final design should be completed and construction of the light rail projects along sub corridors 16b and 16c should begin operation. Once light rail service is initiated, ferry service could be discontinued.

Other Discussion

Supporting Projects

Ferry service, as mentioned above, would be enabled by local bus connections to the ferry terminals. Affected bus service on the Southside includes Routes 2, 15, 919, and 922. In Newport News, Routes 105, 106, and 107 are the primary routes affected. In Hampton, all routes serving Downtown are potentially affected.

High speed/high capacity projects will also support ferry service, including bus rapid transit service in Corridor 12 and enhanced bus service as described in Corridor 2.

Regional Connections

Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan.

Light rail and ferry service in Corridor 16 would connect with several other projects called for in the Vision Plan:

- Commuter rail service in Corridor 11 would enable connections to northern Newport News and Williamsburg.

- Light rail service in Corridors 5 and 1 would enable connections to Old Dominion University, the west side of Norfolk, and Downtown Norfolk.
- Light rail service in Corridor 4 would enable connections to Norfolk International Airport and east side of Norfolk.
- Bus rapid transit and ultimately light rail service in Corridor 12 would enable connections to Coliseum Central and Oyster Point.

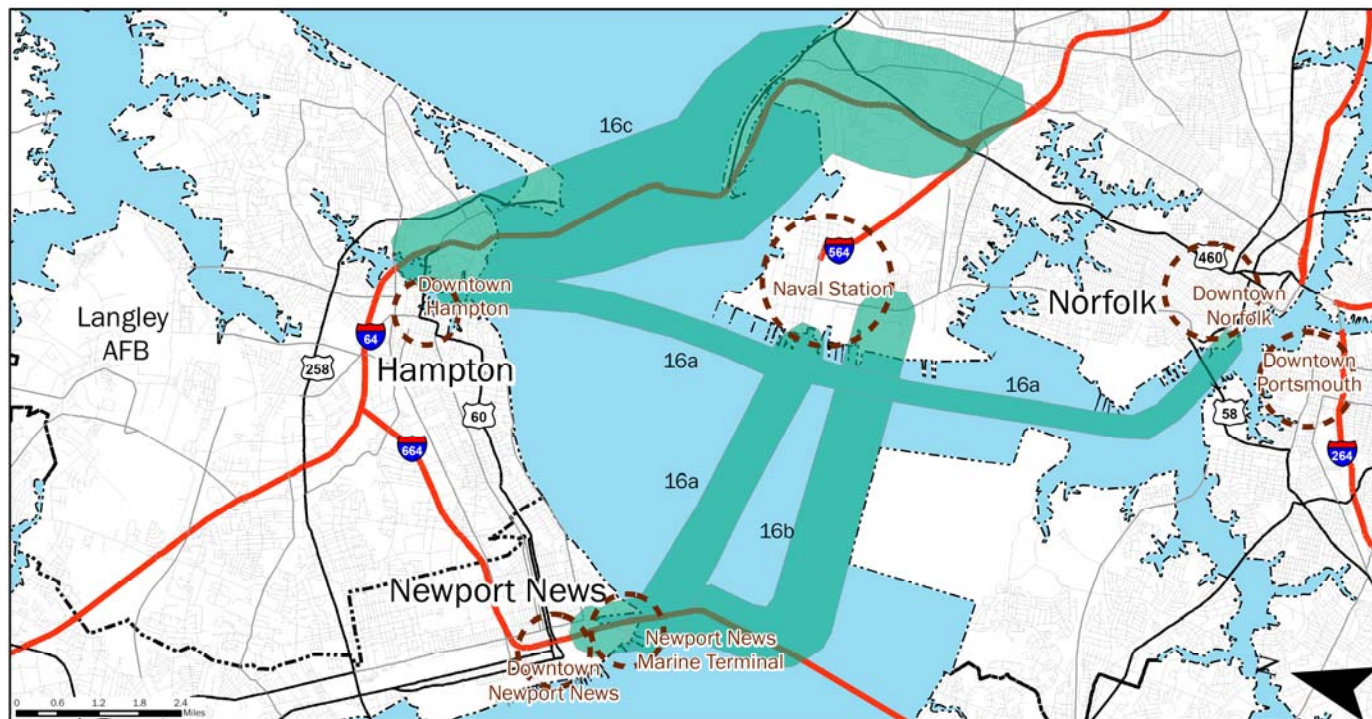
Planning Decisions

Substantial planning would be required to implement ferry service. The identification of the appropriate locations for ferry terminals in Newport News, Hampton, and Norfolk would be required. These terminals should be close to existing or modified local bus routes and also provide for parking. Assessing the amount of needed parking would require further study.

At a minimum four ferry terminals would be required for ferry service in Corridor 16a:

- Downtown Newport News
- Downtown Hampton
- Near Naval Station Norfolk
- Downtown Norfolk

RECOMMENDED CORRIDOR



IMPLEMENTATION

Near-Term		Long-Range (2026–2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016–2025)		
No additional transit service	Prepare EIS for ferry and construct ferry docks	Initiate Ferry service. Complete AA and EIS for LRT projects	Construct and operate LRT projects. Ferry service could be discontinued.

Potential Station Locations

Below is a list of potential light rail station locations to be considered in future studies of light rail crossing of the Hampton Roads harbor. Whether and how much parking should be built at each station needs to be determined.

Corridor 16b stations (Third Crossing):

- Downtown Newport News
- Newport News Point
- Near Beechwood Ave in Norfolk

Corridor 16c stations (Hampton Roads Bridge Tunnel route):

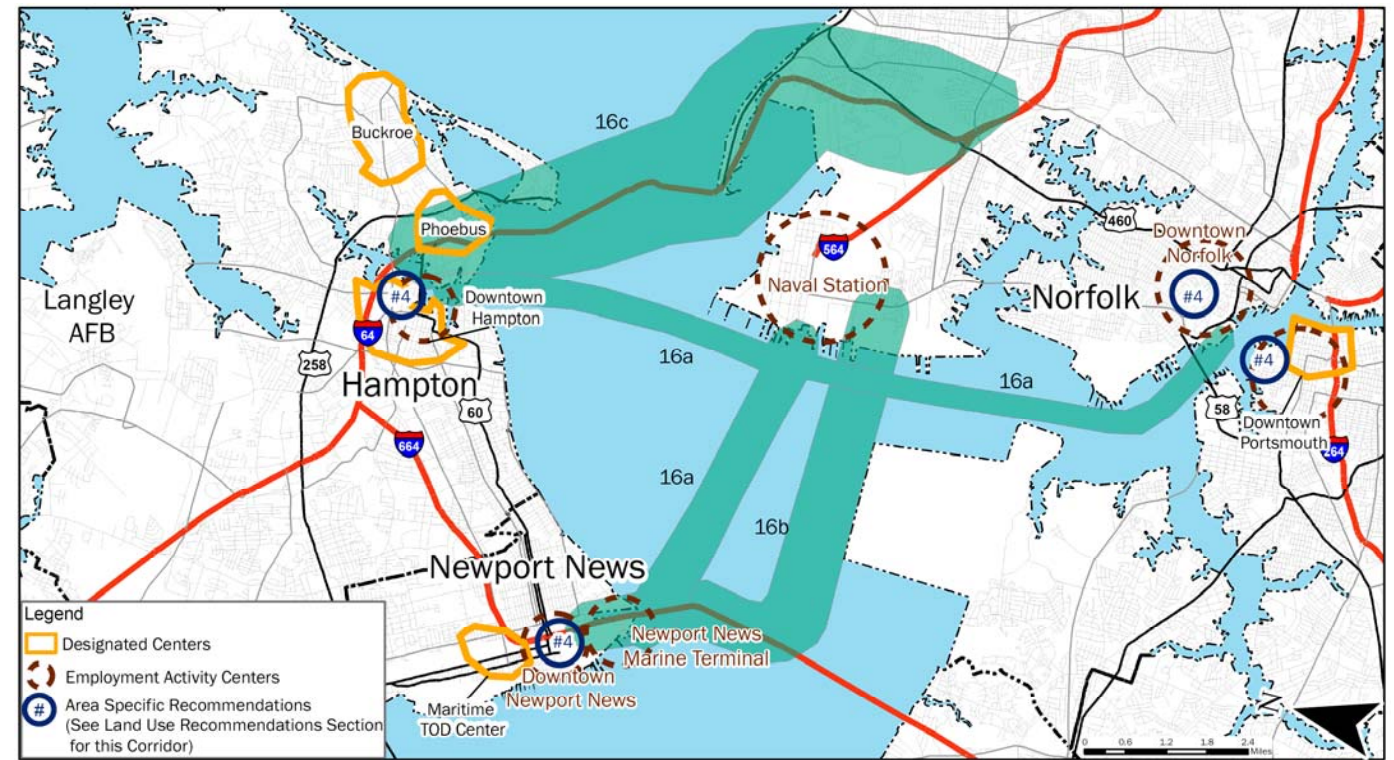
- Downtown Hampton
- Hampton University/ VA Medical Center
- Willoughby
- 1st View Street
- Wards Corner

Land Use Recommendations

Continuing transit-supportive development within the downtown areas and ensuring infrastructure will support increased ferry service are the focus for recommendations for these corridors.

1. Collaborate with the U.S. Navy and other large institutional employers along the corridors to determine appropriate locations and frequency of ferry service. Considerations will include peak hours of workforce travel, public accessibility, and any security concerns.
2. Foster inter-jurisdictional coordination for the provision of ferry service along the corridors. Determine needed infrastructure, appropriate dock and station improvements, and accessibility.
3. Provide frequent circulating bus service between employment areas and ferry stops. Improve pedestrian amenities and provide bus shelters.
4. Continue redevelopment activity, compact growth, and strategic improvements in the corridors' downtowns – Hampton, Newport News, Portsmouth, and Norfolk.

CORRIDOR 16: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 17. Princess Anne Road and Lynnhaven Parkway Corridors, Virginia Beach

Description of Corridor

Corridor 17 runs along or near Lynnhaven Parkway and Princess Anne Road in Virginia Beach. This corridor connects several activity, employment, and educational centers including Lynnhaven Mall, Tidewater Community College-Virginia Beach campus, NSU/ODU Higher Education Center, Virginia Beach Amphitheater, and Newtown Strategic Growth Area. Oceana Naval Air Station is another center that could be served from this corridor with shuttles or circulator buses.

Corridor 17 is already served by local buses. High speed/high capacity transit service in this corridor would provide for faster travel time for longer distance trips and will support anticipated employment growth in Virginia Beach’s Strategic Growth Areas.

Implementation

The ultimate transit vision for this corridor is bus rapid transit service.

In the short- and mid-range, no additional high speed/high capacity transit service is being recommended along the corridor.

In the long-range, Alternatives Analysis and environmental documentation for bus rapid transit service should be completed. This analysis includes determining BRT station locations. BRT service should have limited stops. All bus stations should have shelter and have either parking or walking access. Right-of-way acquisition for BRT should begin in the long-range.

In the extended-range, the BRT project should be constructed and service should begin.

Other Discussion

Supporting Projects

BRT service in Corridor 17 would be supported by operational changes and coordination with existing bus service. Additional planning will be required to determine station locations and exact service modifications. Examples of bus routes that could be modified or coordinated with include:

- VB Wave Route 32
- Local bus Routes 26, 29 and 37 to serve a Lynnhaven Mall station
- Local bus Routes 12, 33 and 36 to serve a TCC station
- Local bus Route 25 to serve several stations to allow for connections between local and longer distance trips in the corridor

Regional Connections

Other transit corridors will connect this corridor into the region’s integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan.

Bus rapid transit service in Corridor 17 would connect with other projects called for in the Vision Plan:

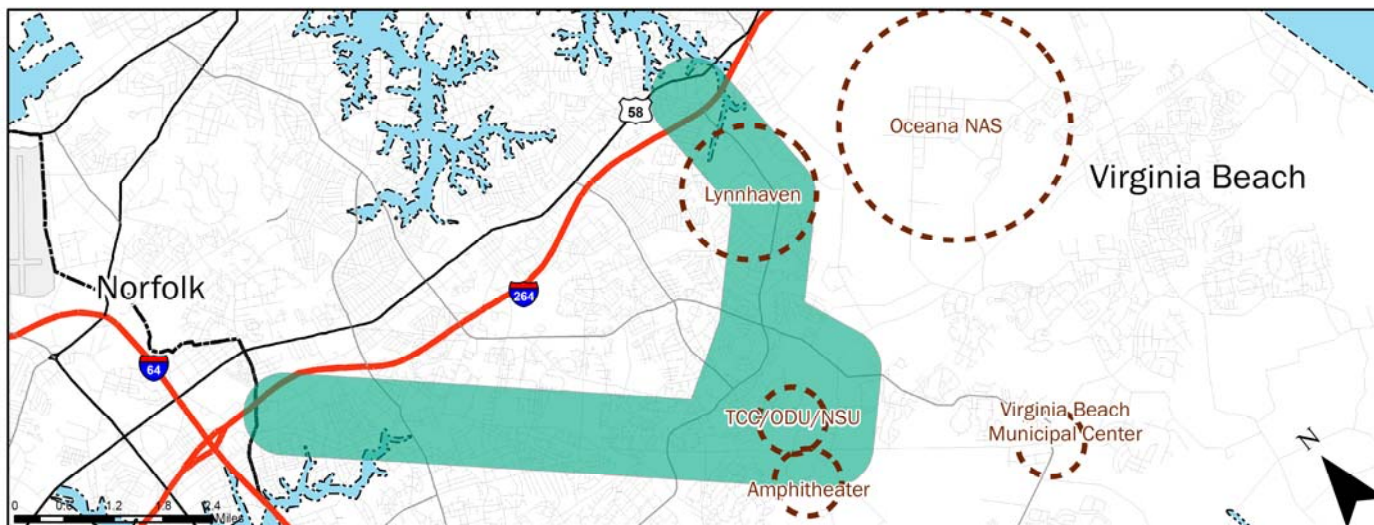
- Light rail service in Corridor 1 would enable connections to Eastern Norfolk.
- Light rail service in Corridor 3 would enable connections to Oceanfront area.

Potential Stop Locations

Below is a list of potential stop locations to be considered for the bus rapid transit service in future studies. Whether and how much parking should be built at each station needs to be determined.

- Lynnhaven Parkway LRT station (Corridor 3)
- Oceana West Industrial Park
- Lynnhaven Mall (multiple stations)
- Green Run / Holland Road
- Rosemont Road
- TCC/NSU/ODU (more than one station)
- Amphitheater
- Princess Anne Market Center / Independence Boulevard South
- Salem Crossing Shop Center / Lynnhaven Parkway
- Plaza Trail South
- Edwin Drive
- Baxter Road
- Kempsville Plaza
- Arrowhead Shop Center (Corridor 3)
- Newtown Road (Corridor 1)

RECOMMENDED CORRIDOR



IMPLEMENTATION

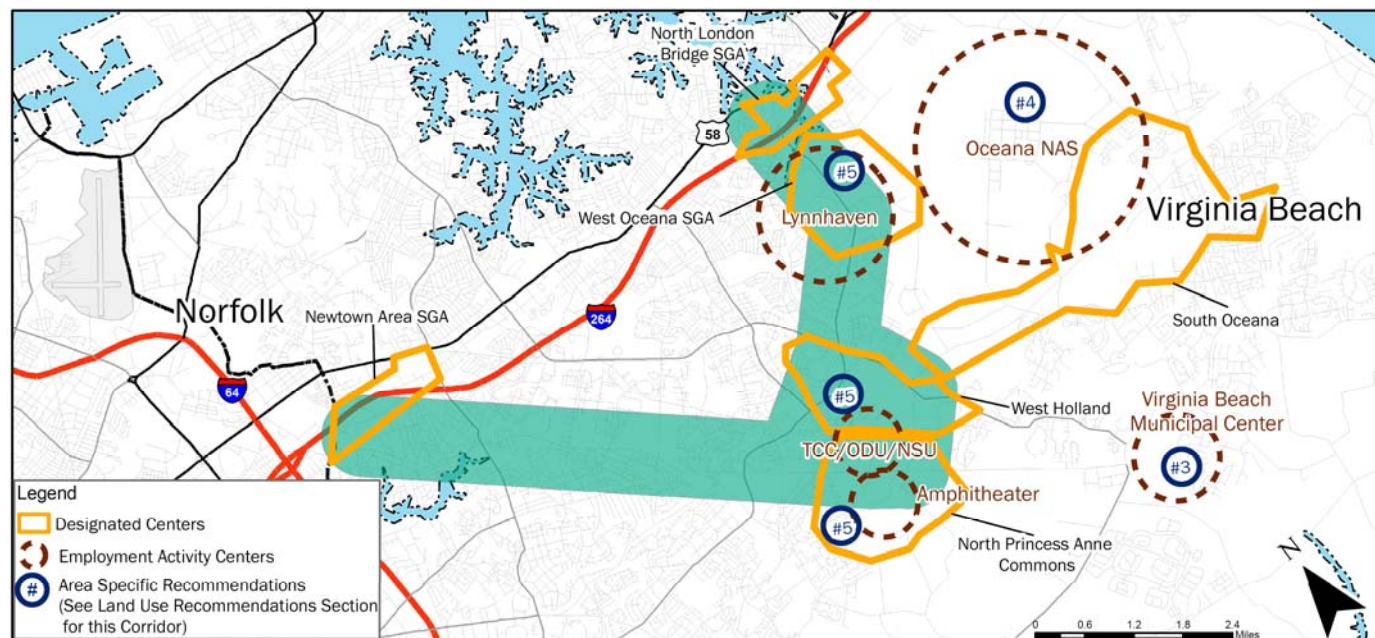
Near Term		Long-Range (2026–2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016–2025)		
No additional transit service	No additional transit service	Complete AA and EIS for BRT project. Begin right-of-way acquisition.	Construct and operate BRT

Land Use Recommendations

Plans, studies, and design guidelines exist for portions of this corridor. Targeted development and policy updates are needed to encourage more transit-supportive development and more sustainable land use patterns.

1. Focus development in activity centers, such as Lynnhaven. Encourage compact growth, a mix of uses, and improved sidewalks and streetscapes.
2. Consider ways to update and integrate the Princess Anne Corridor Study, the Princess Anne Commons Design Guidelines, and other existing plans for this area of the corridor. Policies should be updated to encourage compact, transit-supportive development that is appropriate in scale and use for these less urbanized areas. Preservation of natural and cultural resources will remain centrally important; sprawling land use patterns should be minimized.
3. Review and update the Municipal Center Master Plan. Consider proposed transit improvements and update and create new policies to support new bus service.
4. Provide circulating bus or shuttle service between the Oceana NAS and transit stops along the corridor.
5. Identify strategic actions to encourage additional employment in the corridor by focusing development in the North Commons, West Holland, and West Oceana Strategic Growth Areas.

CORRIDOR 17: LAND USE CONDITIONS AND RECOMMENDATIONS



CORRIDOR 18. Downtown Suffolk to Harbour View, Suffolk

Description of Corridor

Corridor 18 runs from Harbour View to Downtown Suffolk. Activity and employment centers in this corridor include Harbour View, Northgate Commerce/Industrial Park, Willroy Industrial Park, and Downtown Suffolk.

This corridor connects predominately suburban uses in Suffolk, which will continue to remain suburban in the future. Furthermore, the spacing between the activity centers is relatively high, making express bus an appropriate transit mode for this corridor. Express bus service already operates as far west as the Magnolia Park & Ride Lot.

Implementation

The ultimate transit vision for this corridor is express bus service.

In the short- and mid-range, no additional transit service is recommended along the corridor. However, planning for carpool parking should continue.

In the long-range, stop locations and routing for express bus service should be determined. Carpool and park-and-ride lots in Suffolk from which to operate the service should be established. Carpool lots should begin operation to encourage ridesharing and increase the propensity to use transit.

In the extended-range operation of express bus in the corridor would commence.

Other Discussion

Supporting Projects

Express bus service in Corridor 18 could operate independently of other transit improvements called for in the Vision Plan. However, this service would be greatly enhanced by implementing express bus service in Corridor 8d enabling trips between Suffolk, Smithfield and Eastern Norfolk.

Express service in Corridor 18 would also be supported by operational changes to existing bus service. The following existing routes should be reoriented to serve stations and better coordinate with high speed/high capacity service.

- Local Suffolk bus routes 71, 72, 73, and 74 to serve a Downtown Suffolk park-and-ride stop
- Local bus Route 47 to serve Harbour View stops
- Service modification to MAX Route 962 by extending the service to Downtown Suffolk
- MAX Route 967 to serve a Harbour View park-and-ride stop

Regional Connections

Other transit corridors will connect this corridor into the region's integrated transit network. Any corridor references are meant to show regional connections. Full corridor descriptions and maps may be found within Section 3.C of the Vision Plan.

Express bus service in Corridor 18 would connect with other projects called for in the Vision Plan:

- BRT and ultimately light rail service in Corridor 8b would enable connections to Churchland and Downtown Portsmouth
- BRT service in Corridor 8c would enable connections to the Naval Medical Center via the Naval Shipyard
- Express bus service in Corridor 8d would enable connections to Smithfield and Eastern Norfolk

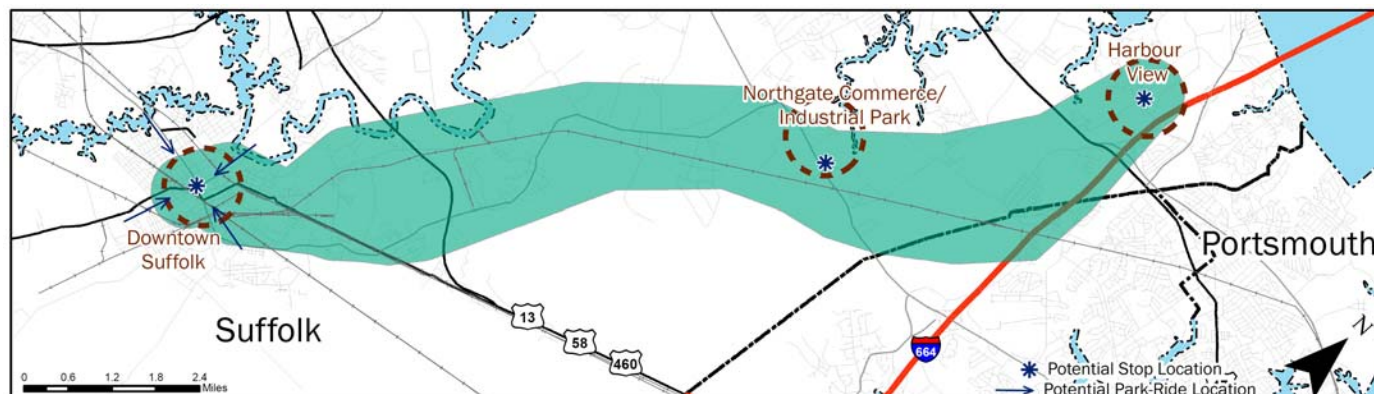
- Express bus and ultimately commuter rail service in Corridor 9a would enable connections to Victory Crossing, Downtown Portsmouth, and Downtown Norfolk

Potential Stop Locations

Below is a list of potential stop locations to be considered for the express bus service in future studies. As additional growth occurs in the corridor, new activity centers are likely to emerge, each with a potential stop. Assessing the amount of required parking will require further studies.

- Harbour View (multiple stops, including a park-and-ride stop convenient to I-664)
- Northgate Commerce/Industrial Park
- Wilroy Industrial Park
- Magnolia Park-and-Ride
- Downtown Suffolk (potentially multiple stops)

RECOMMENDED CORRIDOR



IMPLEMENTATION

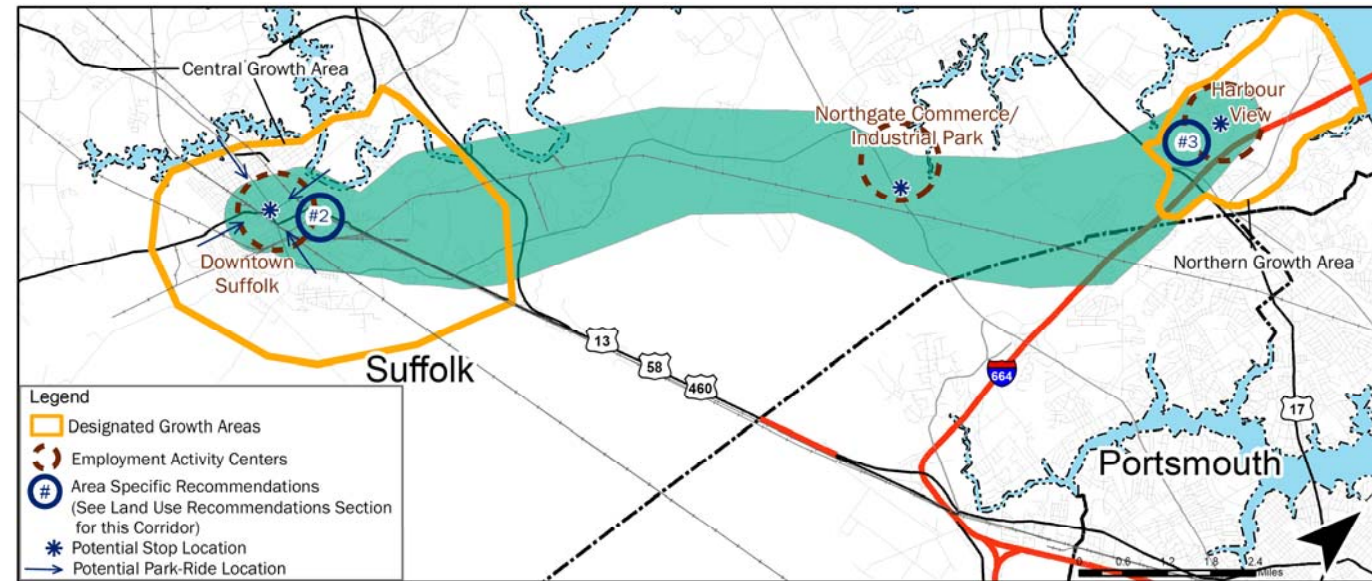
Near Term		Long-Range (2026–2035)	Extended-Range (Beyond 2035)
Short-Range (Six-Year Improvement Plan 2010-2015)	Mid-Range (2016–2025)		
No additional transit service	No additional transit service	Establish Carpool and Park-Ride lots for Express Bus service	Operate express bus service

Land Use Recommendations

Continuing to foster transit supportive development and redevelopment in the two anchors of this corridor and identifying future station areas are central to creating the conditions needed to support transit along this corridor.

1. Conduct a transit feasibility study to determine probable alignment, potential locations of transit stops, and appropriate densities, mixes of uses, and amenities for the transit corridor. Update Comprehensive Plan policies to include the study's recommendations.
2. Foster development in Downtown Suffolk, the City's Central Growth Area. Encourage compact and transit-supportive growth, as supported by Suffolk's Comprehensive Plan policies.
3. Continue to develop the emerging employment centers of Harbour View, and encourage supporting retail uses and pedestrian-oriented amenities.

CORRIDOR 18: LAND USE CONDITIONS AND RECOMMENDATIONS



3.D LOCAL BUS IMPROVEMENTS

There are three components to the local bus service improvements called for in this Transit Vision Plan. First are the improvements that will be recommended by the Comprehensive Operational Analysis (COA) study that is currently ongoing. The second component are improvements identified in Hampton Road Transit's Proposed 20-Year Transit Plan (2006) and Williamsburg Area Transport's 2030 Plan. The third component are improvements identified in the course of the technical analysis and stakeholder input supporting this Transit Vision Plan.

In addition to new and modified bus routes described below, consideration should be given to improving service duration (hours of the day and days of the week) and service frequency of local bus service in the region. While "one size does not fit all" in a region as expansive and developmentally varied as Hampton Roads, a policy of increased service would serve transit dependent customers more reliably, make transit far more attractive to choice riders, and would create more consistent service among the region's jurisdictions.

To adequately serve the integrated, high speed/high capacity transit network within the Vision Plan, local bus improvements should be considered now and in the future as the network is constructed. Due to the size of the region and its transit agency, 20- or 30-minute headways for local bus services during all operating hours would enhance and facilitate the use of the proposed high speed/high capacity transit network.

3.D.1 Comprehensive Operational Analysis

The Vision Plan was conducted concurrently with a Comprehensive Operational Analysis (COA), as managed by Hampton Roads Transit (HRT). The COA is reviewing HRT's existing operations and is developing recommendations to make the company's transit services more effective and efficient.

The COA will issue specific local bus service improvement recommendations. The nature of the recommendations are geared toward improving on-time performance and productivity through techniques such as re-routing and splitting longer routes into two shorter routes.

3.D.2 HRT Proposed 20-Year Transit Plan

The HRT Proposed 20-Year Transit Plan was reviewed for new routes and major route modifications. These improvements were found to be reasonable and supportive of broader regional transit service goals.

New routes

- Route 59 Greenbriar Circulator – Circulator service in Greenbriar is highly desirable to mitigate growth in automobile traffic associated with the projected very large increases in employment. It would connect to high speed/high capacity transit recommended in this plan, such as bus rapid transit service in Corridor 6 and commuter rail service in Corridor 7.
- Route 64 Azalea Garden Road – This route provides additional service to transit supportive neighborhoods of Norfolk as well as job centers such as Norfolk Industrial Park and Norfolk Commerce Park. Extending this route to Norfolk International Airport should be considered. This route would connect to light rail service in Corridor 1 (Ballentine Boulevard) and in Corridor 4.
- Route 67 South Norfolk Circulator – This route would serve transit supportive neighborhoods with lower auto availability in Norfolk and Chesapeake. This route would connect to bus rapid transit service in Corridor 6.
- Route 69 Old Dominion University to Tidewater Drive – This route would serve highly transit supportive neighborhoods in Norfolk and provide for cross town trips without going through Downtown Norfolk. This route would connect to light rail service in Corridor 5.

- Route 71 Newtown Road to Virginia Beach Town Center – This new route is a reasonable prelude to light rail service in Corridor 3. Enhanced bus service in Corridor 3 called for in this Plan would satisfy similar demand, but with higher frequency and fewer stops. (The route number 71 is currently in use by Suffolk local bus service.)
- Route 72 South Chesapeake to Virginia Beach cross town – This route would serve lower density suburban portions of Chesapeake and Virginia Beach, supporting trips to Greenbriar and (with minor routing adjustments) the I-64 South Strategic Growth Area. This route would connect to bus rapid transit service in Corridors 6 and 17 and commuter rail service in Corridor 7. (The route number 72 is currently in use by Suffolk local bus service.)
- Route 73 Lynnhaven circulator – Circulator service in Lynnhaven is highly desirable to connect to light rail service in Corridor 3 and support additional job growth. (The route number 73 is currently in use by Suffolk local bus service.)
- Route 74 Town Center circulator – Circulator service around Pembroke Town Center is highly desirable to connect to light rail service in Corridor 3 and support additional job growth. (The route number 74 is currently in use by Suffolk local bus service.)
- Route 75 Portsmouth/Norfolk Shuttle – Shuttle service between Downtown Portsmouth and Downtown Norfolk complements the paddlewheel ferry service and is highly desirable until dedicated transitways can be built in Corridors 8a and 9a.
- Route 85 Harbour View area – This route would support growing transit demand as development continues in the Harbour View area of Suffolk. This route would serve as a prelude to bus rapid transit service and eventually light rail service in Corridor 8b, and would complement these high speed/high capacity services by serving local trips.

- Route 122 Phoebus area – This route would serve transit supportive neighborhoods in Hampton and would complement enhanced bus and eventually streetcar service in Corridor 13.
- Route 123 Lucas Creek Road – This route would serve transit supportive neighborhoods in northern Newport News and connect to light rail and commuter rail service in Corridors 2 and 11.
- Route 124 Kiln Creek – This route would serve York County and Newport News as a circulator feeding an intermodal hub in central Newport News with connections to express bus (Corridors 14 and 15a), light rail (Corridors 2, 11, and 12), and commuter rail (Corridor 11).
- Route 131 Downtown Newport News to Denbigh Boulevard – This route, or one like it, is recommended as an early implementation in Corridor 2. It could be branded as enhanced bus service or as bus rapid transit.
- Route 201 Marcella Drive Circulator and Route 202 Coliseum Circulator – These circulators around the Coliseum Central section of Hampton are highly desirable to mitigate growth in automobile traffic associated with the projected large increases in employment and residences. These routes would connect to bus rapid transit and eventually light rail service in Corridor 12 as well as express bus service in Corridor 15b.
- Route 203 Oyster Point Circulator and Route 204 Port Warwick Circulator – These circulators are highly desirable to support residential and employment increases. Connections would be made to express bus (Corridors 14 and 15a), light rail (Corridors 2, 11, and 12), and commuter rail (Corridor 11).

Major route modifications

- Truncation of Route 1 and extension of Route 36 – This modification is desirable to improve reliability on Route 1 and make the service easier to understand by new riders by having all trips serve the entire route

- Truncation of Routes 8 and 15 and replacement with Route 65 Little Creek Road cross town – This modification also would support improved reliability and better enables cross town trips.
- Truncation of Route 3 and replacement with Route 66 Oceanview Road – This modification would support improved reliability and better enables cross town trips.
- Truncation of Route 13 and replacement with Route 68 Cedar/Battlefield Road – This modification would support better on-time performance and would connect to bus rapid transit service in Corridor 6.
- Realignment of Route 106 and Route 107 – This modification would reduce service duplication.

3.D.3 WAT 2030 Plan

The Williamsburg Area Transport 2030 Plan calls for a new local route that has yet to be implemented.

- New route serving College of William and Mary/Downtown, High Street, and New Town Williamsburg – This route is highly desirable to connect with one another the main retail centers near Williamsburg. Frequent service would make the route attractive to students and tourists. The High Street and New Town areas were designed specifically to be transit supportive.

3.D.4 Transit Vision Plan Analysis and Stakeholder Input

Based on feedback received from the technical review committee members or from public meeting input, the following areas within the region have been identified through the Transit Vision Plan process for consideration of additional local bus services. These areas are highlighted in Figures 3-4 and 3-5.

- The Rosemont Road area in Virginia Beach was identified as a transit supportive area currently underserved by local buses. It would have a connection to light rail service in Corridor 3.
- The Diamond Springs/Witchduck Road/Kempsville Road area in Virginia Beach was identified as a transit supportive area currently underserved by local buses. It was also identified in public comments as a way of improving access to jobs in the Airport Industrial Park and Burton Station development along Diamond Springs Road. It would have a connection to light rail service in Corridor 3.
- The Port Norfolk area of Portsmouth was found to be underserved by local buses. Modification of existing HRT Route 44 would improve service coverage. Connections to light rail service would be made to Corridors 1, 5, 8a, and 8b.
- The State Route 199 corridor south of Williamsburg is forecast to have high employment growth to transit supportive levels. Connections would be made to other WAT local bus service and to commuter rail service in Corridor 11.
- The High Street/New Town area north of Williamsburg was identified for new local bus service.
- The Cedar Rd/Dominion Boulevard area in Chesapeake was identified as a growth area that would benefit from extended local bus service. The truncation of Route 13 and adding a new Route 68 as called for in HRT's Proposed 20-Year Transit Plan would satisfy transit demand in this growth area.

- The Great Bridge Boulevard area in Chesapeake was identified for new local bus service to improve access to social services.
- The proposed Southeastern Parkway corridor in Chesapeake and Virginia Beach could benefit from local or limited stop bus service. This would be a long-range idea, as the road is not yet built, and the development in the area is not yet transit supportive.

Other corridors identified in Technical Memorandum have not been carried forward as recommendations in the Vision Plan:

- Local bus improvements along High Street in Portsmouth are covered by bus rapid transit and ultimately light rail in Corridor 8b.

Figure 3-4: Local Bus Improvement Areas – Peninsula

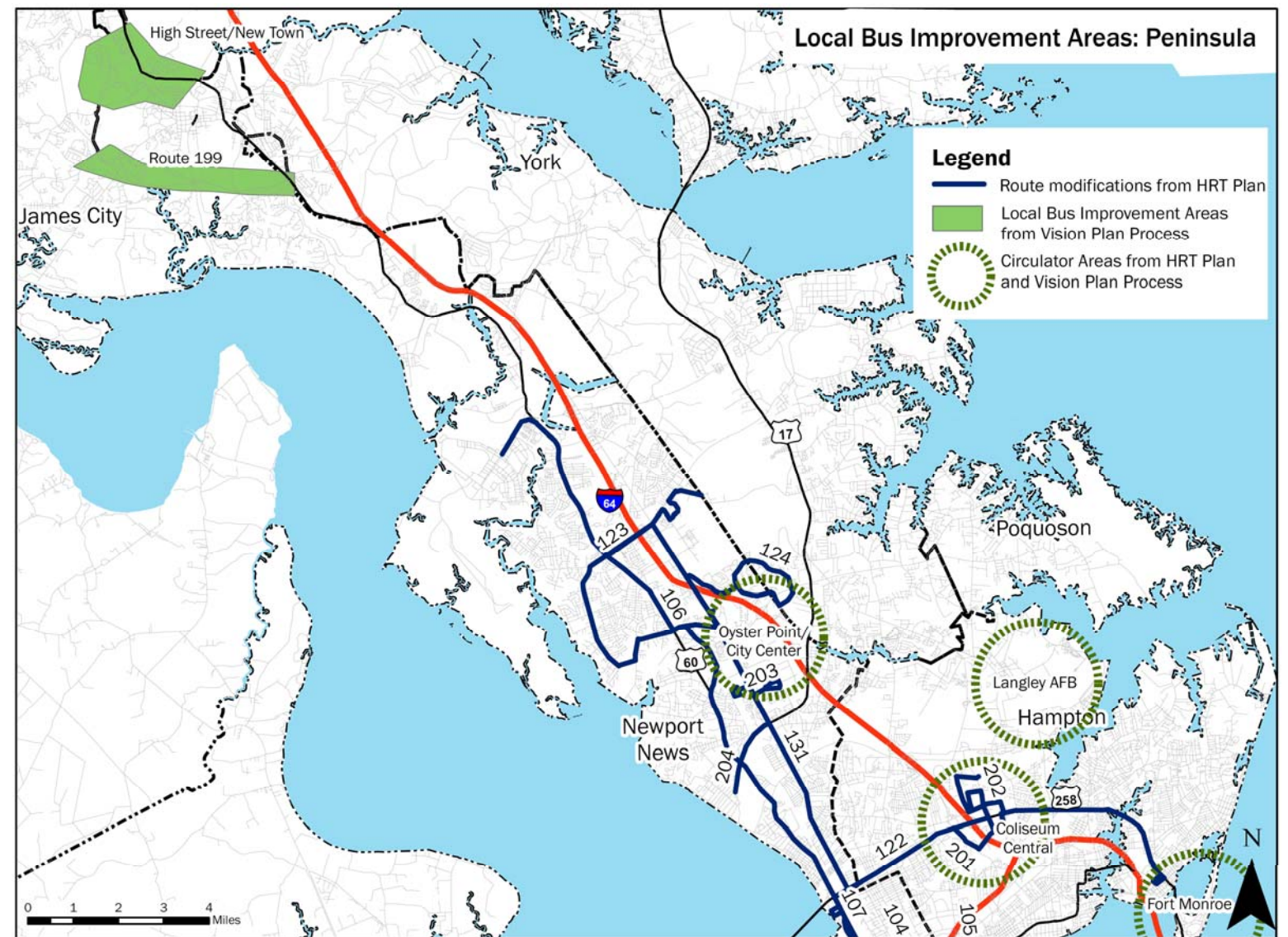
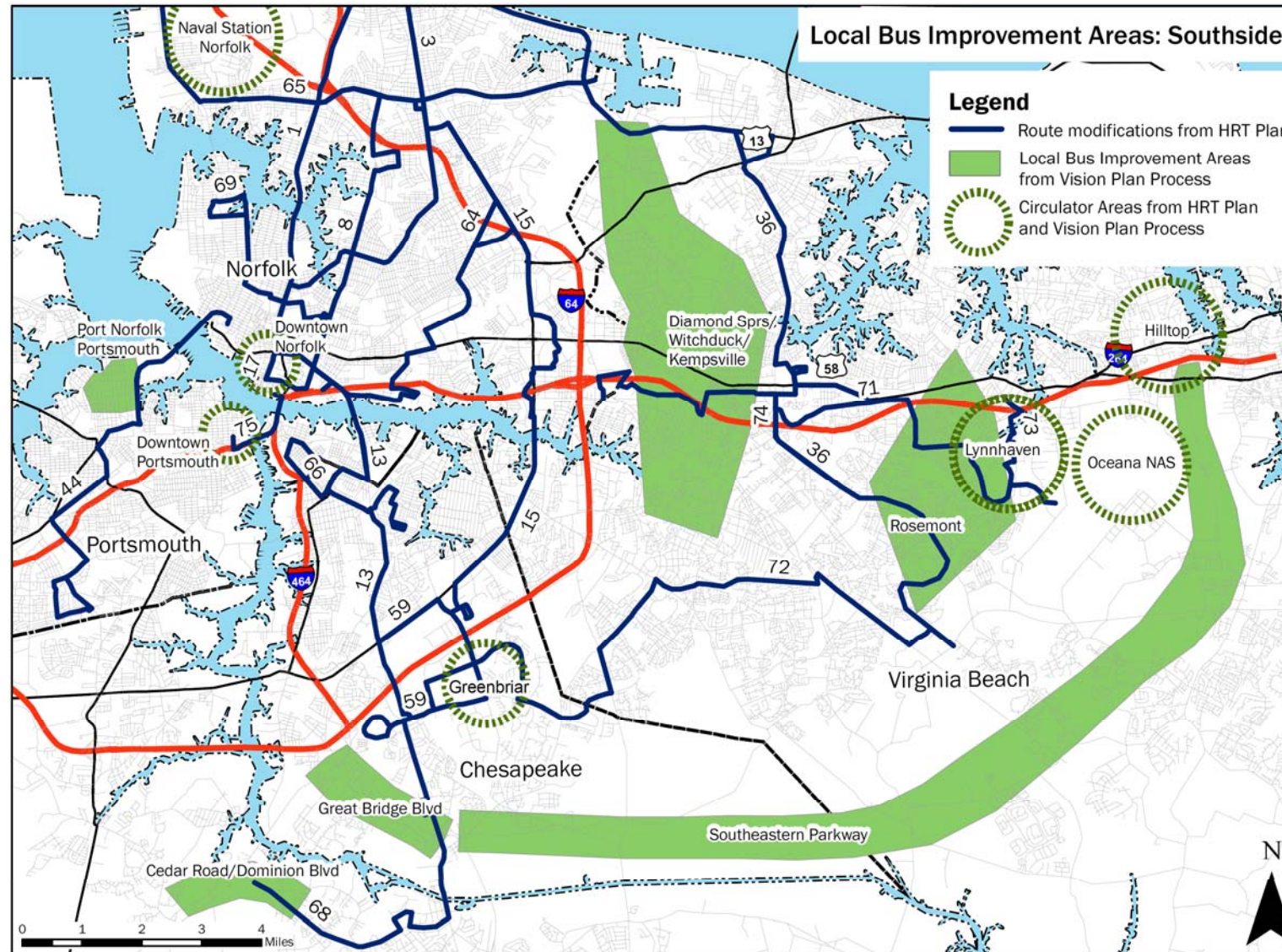


Figure 3-5: Local Bus Improvement Areas - Southside

- Local bus improvements along Granby Street and Chesapeake Boulevard in Norfolk were found not to be needed by the City of Norfolk; however, the Comprehensive Operational Analysis may have recommendations for this area.
- Local bus improvements between Downtown Hampton to Downtown Newport News are covered by enhanced bus and ultimately streetcar service in Corridor 13.
- Centerville Turnpike has been mentioned. There is an SGA in the north and very little development in the south
- Local improvements along Shore Drive in the Bayfront section of Virginia Beach were considered and will be addressed in the COA study.

In addition to circulator routes identified in the HRT 20-Year Plan, the Vision Plan recommends the following circulator routes be considered.

- Bus circulator in Naval Station Norfolk to coordinate with light rail service in Corridors 4 and 5.
- Fort Monroe circulator to connect to transit services in Corridors 12, 13, and 16c.
- Langley Air Force Base circulator to serve the NASA Research Center and coordinate with transit services in Corridors 12 and 15b.
- Oceana circulator to connect to transit in Corridor 3.
- Continued circulator service in Downtown Norfolk (Route 17)
- Continued circulator service to the Hilltop shopping district in Virginia Beach (Route 32)



FUTURE TRANSPORTATION DEMAND MANAGEMENT

4.A METHODOLOGY

The definition of Transportation Demand Management (TDM), as provided by the U.S. Department of Transportation, Federal Highway Administration is “programs designed to reduce demand for transportation through various means, such as the use of transit and of alternative work hours.” TDM programs involve strategies for the reduction of automobile travel on the roads by utilizing the existing transportation and infrastructure within Hampton Roads and systematically expanding the programs offered to attract new users and meet the greater mobility needs of commuters. Examples of TDM strategies are public transportation, carpooling, vanpooling, walking, bicycling, telecommuting, and van leasing.

The first step in the TDM analysis was to conduct an Environmental Scan. An environmental scan is an analysis of the factors that influence a commuter’s decision on his or her mode of transportation. Demographic and socio-economic factors such as population densities, employer/employee densities, employment characteristics, opportunities for teleworking, and vehicle ownership rates have a significant impact on the likelihood that a commuter will choose an alternative to the single occupancy vehicle. Commuter stress factors such as road congestion, commute length and difficulty, parking availability, and fuel prices also impact mode decisions. The availability and awareness of public transit, HOV lanes, park-and-ride lots, and ridesharing information and assistance play a significant role in commuter choices. Data sources for the environmental scan were the 2007 Virginia State of the Commute Study, U.S. Census, Virginia Employment Commission, and the Hampton Roads Metropolitan Planning Organization (HRMPO), Accomack Northampton Planning District Commission (ANPDC), and Southampton County.

Next a workshop with the TRAFFIX Oversight Committee was held to analyze the strengths and weaknesses of existing TDM programs in Hampton Roads, uncover opportunities for and threats

against improved programs, and establish strategic priorities for the future.

The strategic priorities for TDM in the Hampton Roads region are:

- Private and public sector partnerships need to be further developed and expanded
- Markets for ridesharing need to be further identified and cultivated based on continuing market research.
- TDM infrastructure, including park-and-ride-lots and HOV lanes, need to be fully developed in the Hampton Roads region.
- Dedicated sources of funding should be acquired at the state and local levels.
- Trade associations for TDM need to be developed on the state level.
- Emphasize TDM ambassador program to encourage employers to promote TDM strategies to employees.
- Promote land use strategies that support TDM programs.
- Continue to support, through logistical and consultative efforts, the “Green strategies” of our Hampton Roads regional TRAFFIX stakeholders.
- Continue to work with large employers, including private firms and the military, to provide ridesharing services.

Promote the advantages to employers and employees of utilizing alternatives to the single-occupant vehicle.

Finally, a set of goals was established and action steps were identified. These action steps, described on the following pages, comprise the TDM Vision for Hampton Roads.

A report documenting the TDM analysis is included in the Appendix.

Strengths

- TRAFFIX has support from the Virginia Department of Transportation (VDOT) in the form of technical assistance and funding.
- There is a systematic outreach to employers by TRAFFIX.
- TRAFFIX has an oversight committee that meets quarterly and is responsible for evaluating numbers and discussing opportunities for improving the TDM program.

Opportunities

- Hampton Roads has been a non-attainment area for air quality. Therefore, TDM has an opportunity to become a permanent part of the transportation network.
- The great majority of commuters travel in single-occupant vehicles.
- Each jurisdiction in the Hampton Roads region has a strategic plan. TRAFFIX has the opportunity to review land use plans as it develops its own long-term strategic plan.
- The region is working with TRAFFIX and requesting consulting assistance to plan and prepare for growth in employment. As a result, the lines of communication between TRAFFIX and the local jurisdictional planning efforts are open and TRAFFIX can become part of the solution to transportation challenges in each jurisdiction.

Weaknesses

- State funding for TDM is not growing to keep up with rising costs.
- Lack of a regional dedicated funding source to support TDM efforts.
- TDM does not have a champion within the State Legislature and at the highest levels of state government.
- There are not enough park-and-ride lots in enough locations in the Hampton Roads region.
- The park-and-ride lots also have too few spaces when utilization of ride share and express bus service is at its peak ridership. The largest lot in the region has 200 spaces.

Threats

- The local portion of the funding for the TRAFFIX programs is allocated annually and there is no dedicated funding source.
- There is no statewide TDM advocacy organization, similar to the American Public Transportation Association.
- The historically scattered development patterns and lack of population and employment density in the Hampton Roads region is a threat to TDM programs.
- The average commute times for workers in the Hampton Roads region are relatively low. The propensity to use TRAFFIX services increase with higher commute times.

4.B IMPLEMENTATION RECOMMENDATIONS

4.B.1 Goal: Develop and Expand Private and Public Sector Partnerships

Action Steps

- Contact all of the region's largest 25 employers to determine any interest in starting or expanding a rideshare program.
- Identify and contact clusters of smaller employers located at industrial and business parks and other areas where employers are located in close proximity to one another. Target areas where multiple businesses are experiencing limited parking and/or traffic congestion.
- Develop a new partnership with an additional business association similar to the existing partnership between HRT and the Ghent Business Association. Include the development of the ambassador program in such partnerships.

4.B.2 Goal: Entice Commuters to Choose TDM Programs.

Action Steps - Financial-based incentives

- Update TRAFFIX Toolkit for employers to include strategies for employers to promote ridesharing including:
 - Provide free or discounted transit fares for employees who use transit
 - Provide travel allowances for employees to rideshare or use transit
 - Provide free or discounted parking for rideshare vehicles
 - Reduced employee parking subsidies for those commuters who drive their personal

vehicle, so they must pay some or all of their parking costs

- Offer cash equivalent to commuters that use alternative travel modes as opposed to subsidized parking
- Charge for parking to serve as financial disincentives to driving alone
- Provide employer-paid transit benefits. These are tax-exempt up to \$100 per month for an employee and serve as a tax deduction for the employer
- Provide employee-paid, pre-tax transportation benefits that allow employees to set aside up to \$100/month of pre-tax income to pay for transit or vanpooling, saving the employee money due to the amount set aside not being subject to payroll taxes
- Provide Shared-cost transportation benefits, which are a hybrid of the above two incentives, and it is a tax benefit to both employer and employee
- Manage and price the most convenient public parking spaces to favor car and vanpools.

Action Steps - Convenience/service-based incentives

- Update TRAFFIX Toolkit for employers to include strategies for employers to promote ridesharing including:
 - Provide preferential parking for employees that participate in vanpooling or carpooling
 - Adopt a telecommute/telework option for employees, which eliminates the commute

and reduces need for office space and parking facilities

- Provide an employer sponsored guaranteed ride home program for those that rideshare or use other alternative commuting modes
- Encourage the development of shuttle service from transit stops to employment sites
- Continue to offer carpool matching services at employment sites
- Give employees the option of "flexing" their arrival/departure times
- Allow employees the option to stagger work hours, thereby spreading out the arrival/departure times of employees;
- Allow employees the option to compress work weeks, allowing employees to shorten their work week by working longer hours each day
- Provide some on-site services, eliminating the need for employees to have their cars at work every day. (i.e., cafes, daycare, banking/ATM, dry cleaning, etc).
- Provide real-time information to commuters relating to congestion, accident and weather information to aid in day-to-day commuter route planning
- Provide car and vanpool information to employees as part of a customized transit route planning package to facilitate the use of commute alternatives

4.B.3 Goal: Improve Public Awareness

Action Steps

- Conduct market research studies every two (2) years. TRAFFIX should identify a qualified organization and/or individuals to be responsible for conducting marketing studies and developing recommended responses to study results. Some recommended research techniques include:
 - Survey commuters to determine preferences, knowledge, and perceived barriers and opportunities for using TDM strategies offered by TRAFFIX
 - Identify barriers or perceived barriers that exist in the Hampton Roads region and are preventing commuters from changing the way they travel to and from work
 - Identify commuters who are using a SOV but are most able and willing to change their travel patterns and design marketing strategies that will entice them to try a TRAFFIX program
- Based on market research, identify and implement actions to increase the number of people who are ridesharing or using an alternative to the SOV
- Promote green strategies and the environmental benefits associated with slowing the growth of vehicular travel such as improved air and water quality
- Hire a qualified individual or dedicate an existing staff member to establish and manage the ambassador program, who will be responsible for recruiting ambassadors into the program. The participating employer will designate an ambassador from its employees.

4.B.4 Goal: Improve TDM infrastructure

Action Steps

- Continue to work with owners of the park-and-ride lots to develop formal, written, memorandums of understanding (MOUs) that assign responsibilities and procedures for maintaining park-and-ride lots.
- Conduct a study of potential locations for new park-and-ride lots that are both inside and outside the HRT transit service area. The following information should be determined for the additional park-and-ride locations:
 - Number of parking spaces needed
 - Identify the optimum locations for new park-and-ride lots

Identify potential sites and/or shared parking opportunities with existing lots that are owned by local businesses. Figure 4-1 gives a preliminary list of potential park-and-ride lot improvement locations to support public transportation services. Additional locations may be warranted to promote ridesharing.

- Continue to work with the Hampton Roads MPO to encourage the planning and future development of HOV lanes in the region.

Figure 4-2 shows the existing regional HOV lane network.

4.B.5 Goal: Advocate For and Obtain Sustainable Funding for TDM Programs

Action Steps

- Coordinate with stakeholders (HRMPO, HRT, county and city planners, VDRPT, and FHWA) and the TRAFFIX advisory group to identify potential sources and advocate for dedicated funding for TDM projects.
- Seek to supplement federal, state, and local funding with private sector funding from employers that participate in TRAFFIX TDM programs.

Figure 4-1: Preliminary List of Potential Park and Ride Lot Improvements

	Express Bus	Ferry	Commuter Rail	Light Rail
Smithfield, Isle of Wight Co. (expand existing lot)	X			
Downtown Suffolk	X		X	
Harbour View, Suffolk	X		X	
Great Bridge, Chesapeake	X			
Oak Grove, Chesapeake	X			
Greenbrier, Chesapeake (expand existing lot using mall parking)	X			
Chesapeake Square Mall, Chesapeake (use existing mall parking)	X			
Bowers Hill, Chesapeake			X	
Greenbrier/Volvo Pkwy, Chesapeake			X	
Greenbrier/Kempsville Rd, Chesapeake			X	
Centreville Tpk/Fentress Rd, Chesapeake			X	
Victory Blvd/Wythe Creek Rd, Poquoson	X			
Gloucester Point, Gloucester Co.	X			
Gloucester Courthouse, Gloucester Co.	X			
Williamsburg Transportation Center, Williamsburg	X		X	X
Busch Gardens, James City Co. (use existing lots)			X	X
Lightfoot, James City Co.			X	
Fort Eustis / Lee Hall Area, Newport News (expand existing Yorktown Rd lot, or new location)	X		X	X
Patrick Henry Mall, Newport News (use existing mall parking)	X			
Downtown Newport News [new Amtrak station]			X	X
Bland Blvd, Newport News [new Amtrak station]			X	X
Newport News ferry terminal		X		
Hampton Transit Center (use existing transit center lot)	X			
Hampton ferry terminal		X		
Churchland, Chesapeake				X
Norfolk Naval Station ferry terminal		X		
Military Highway Corridor, Norfolk [two locations, TBD]				X
Pacific Ave at 19th St, Virginia Beach (use existing transit center lot)	X			
Rosemont Rd, Virginia Beach				X
Lynnhaven Pkwy, Virginia Beach				X
Oceana Blvd, Virginia Beach				X
Virginia Beach Convention Center				X
Denbigh Rd, Newport News				X
Main Street, Newport News				X

4.B.6 Goal: Land Use Strategies that Support TDM Programs.

Action Steps

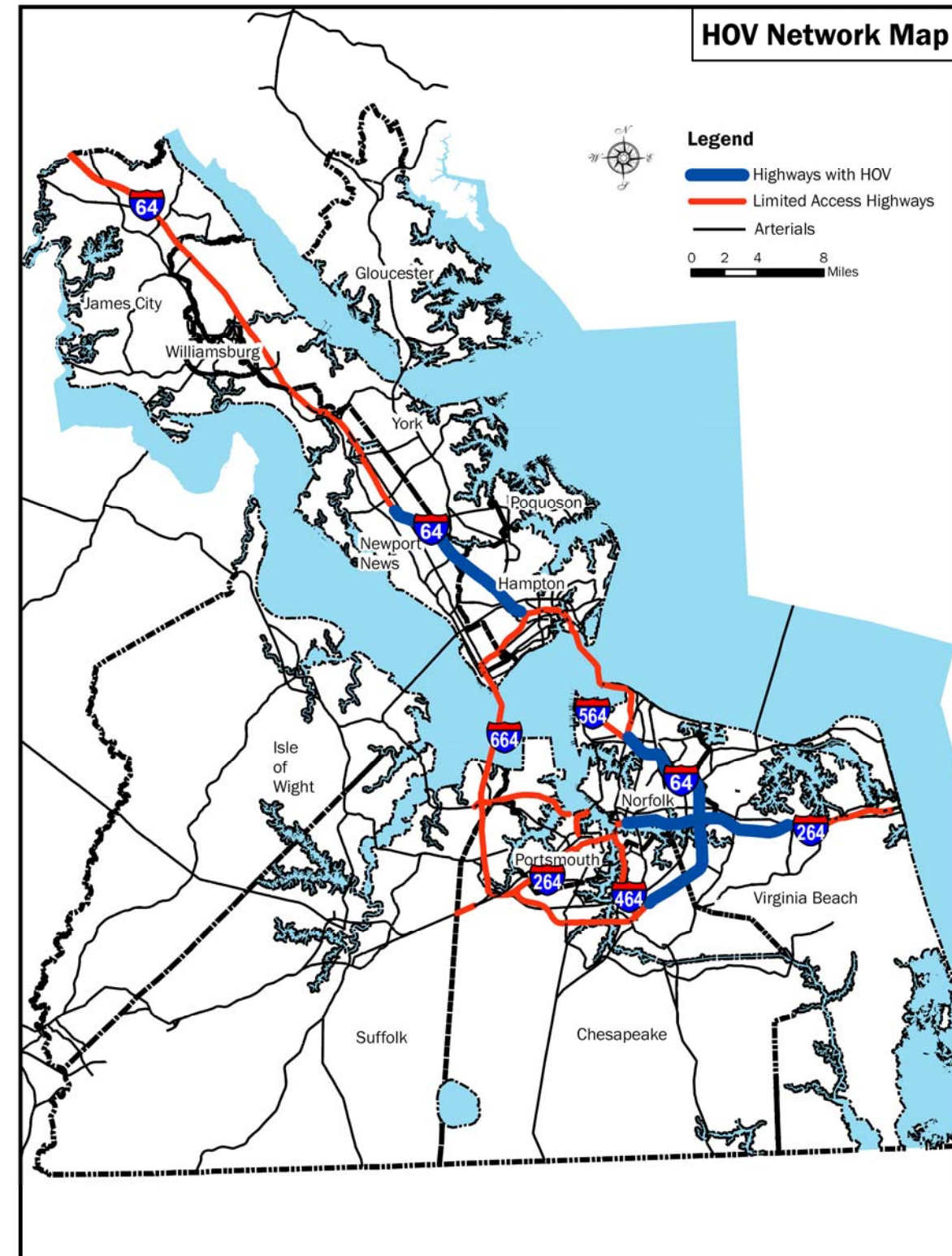
- Include TDM components in land use development plans for Hampton Roads jurisdictions. TRAFFIX must inform planners and engineers about the direct impacts of planning developments, communities, and facilities that support alternatives to the SOV (i.e., less parking, facilities for cyclists, and pull-outs for large transit vehicles)
- Encourage Hampton Roads jurisdictions to establish land use objectives that preserve the environment, neighborhoods, walkability, park-and-ride lots, public transit, and other TDM programs
- Promote local policies to reduce automobile travel and the amount of land used for parking facilities in the developing suburban and rural areas
- Develop integrated transportation/land use models with regional planners. Ultimately, land use and transportation demand management policies should be complementary to promote alternatives to the SOV as the future for Hampton Roads
- Educate public transit systems about the possibilities for TDM strategies to provide a cost effective means for achieving their objectives
- Prepare transportation options to facilitate connecting commuters/employees to light rail stations without the need for their personal vehicle to make the entire trip from home to the station. Potential options include park-and-ride lots, carpools/vanpools, secure bicycle parking, and showers for cyclists.

4.B.7 Goal: Improve advocacy and technical assistance for TDM in the Hampton Roads region at the state and/or national level.

Action Steps

- Research and network with existing national transportation associations (i.e., ACT, APTA) that may provide resources and direction for developing a state TDM association.
- Promote the concept of a state trade association that will educate legislators, the public, employers, and transportation providers about the multitude of available resources and needs related to TDM strategies locally and nationally.

Figure 4-2: HOV Network Map



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VISION IMPLEMENTATION

5.A SEQUENCED LIST OF SERVICE IMPROVEMENTS

On the next several pages, the regional high speed/high capacity transit network is shown according to the implementation sequence: Near Term, Long Range, and Extended Range Projects. Near Term projects will be implemented by 2025, and are shown in Figure 5-1. Long Range projects will be implemented by 2034, and are shown in Figure 5-2. These two sets of projects will be constrained financially to become the Long Range Transit Plan for the Hampton Roads region. Extended Range projects will be implemented after 2034, and are shown in Figure 5-3.

- The Near Term Projects (2010 – 2025)**
1. Completion of The Tide light rail project
 2. Enhanced bus service between Oyster Point and Downtown Newport News
 3. Enhanced bus service in short-range and east-west light rail transit in mid-range between Newtown Road and Virginia Beach Oceanfront
 4. Continue express bus service along Military Highway/I-64 Corridor to Naval Station Norfolk
 5. Enhanced bus service between Eastern Virginia Medical School and Naval Station Norfolk
 6. A north-south bus rapid transit line through Chesapeake
 7. Express bus service along I-464/Route 168 between Chesapeake and Norfolk
 - 8a. Express bus service via MLK Freeway/Midtown Tunnel between Portsmouth and Norfolk
 - 8b. An east-west bus rapid transit line between Downtown Portsmouth and Harbour View
 - 8c. An east-west bus rapid transit line between Downtown Portsmouth and Northgate Commerce Park in Suffolk
 - 8d. Express bus service along the Western Freeway between Harbour View and Norfolk
 - 9a. Express bus service between Downtown Suffolk and Norfolk via Portsmouth
 - 9b. Express bus service between Chesapeake Square Mall and Norfolk via Portsmouth
 - 9c. Express bus service between Chesapeake Square Mall and Norfolk via Portsmouth
 - 9d. Express bus service between Chesapeake Square Mall and Norfolk via Portsmouth
 10. Continue and expand VB Wave circulator
 11. Continue express bus and increase Amtrak service between Newport News and Richmond
 12. Enhanced bus service between Downtown Hampton, Coliseum Central, and Oyster Point
 13. Enhanced bus service between Downtown Newport News and Buckroe Beach
 14. Express bus service between Gloucester County and Oyster Point
- Local bus service improvements

Figure 5-1: Regional Transit Vision Map for Hampton Roads – Near-Term Projects

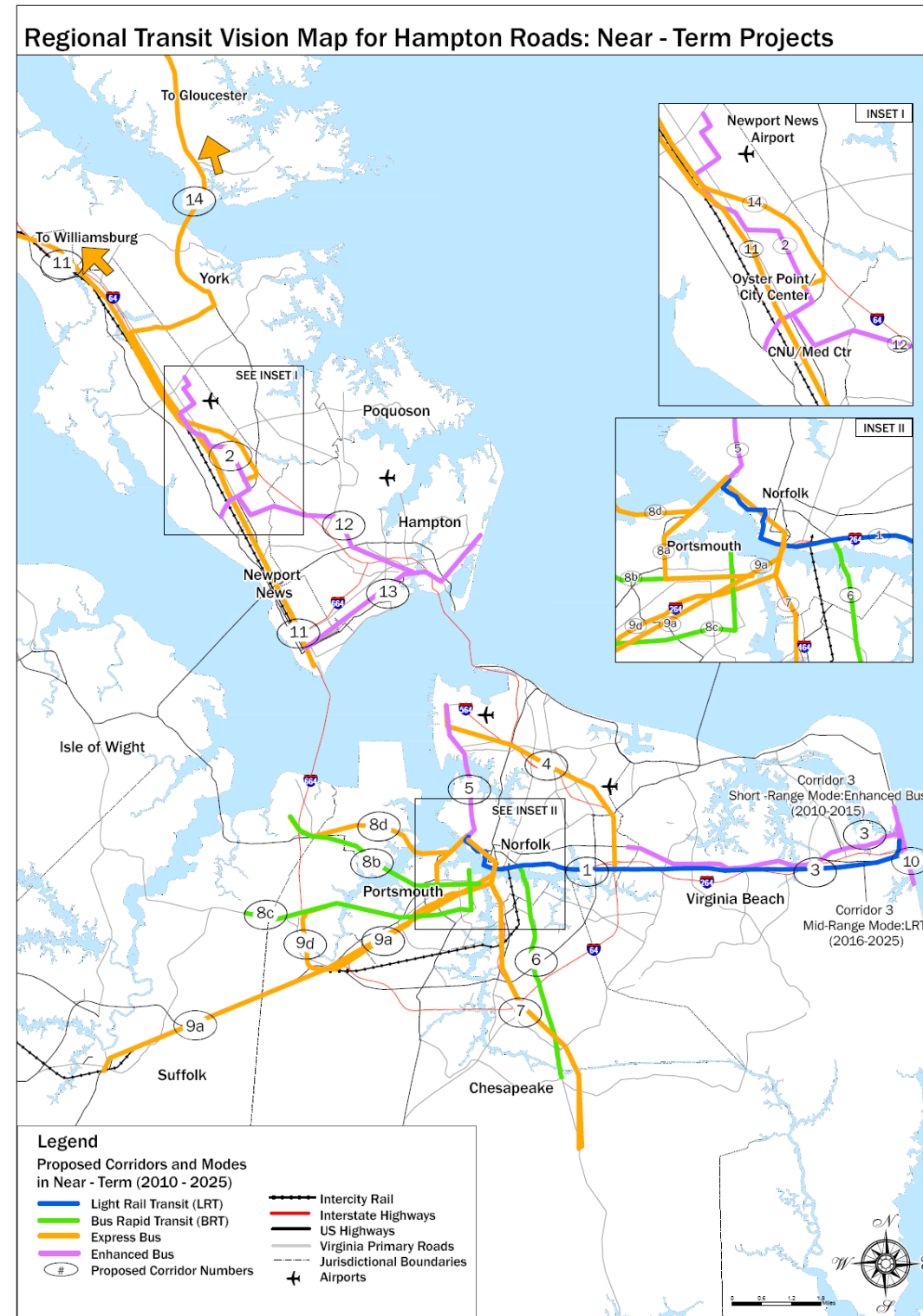


Figure 5-2: Regional Transit Vision Map for Hampton Roads – Long-Range Projects

- The Long Range Projects (2026 - 2035)**
4. A north-south light rail transit line along the east side of Norfolk to Naval Station Norfolk
 5. A north-south light rail transit or streetcar line along the west side of Norfolk to Naval Station Norfolk
 7. Extended express bus service to North Carolina via Chesapeake
 11. A commuter rail line between Downtown Newport News and Lightfoot
 12. A bus rapid transit line connecting Downtown Hampton, Coliseum Central, and Oyster Point
 - 16a. Ferry service between Newport News and Norfolk and between Hampton and Norfolk
 2. A north-south light rail transit line between Christopher Newport University and Huntington Pointe

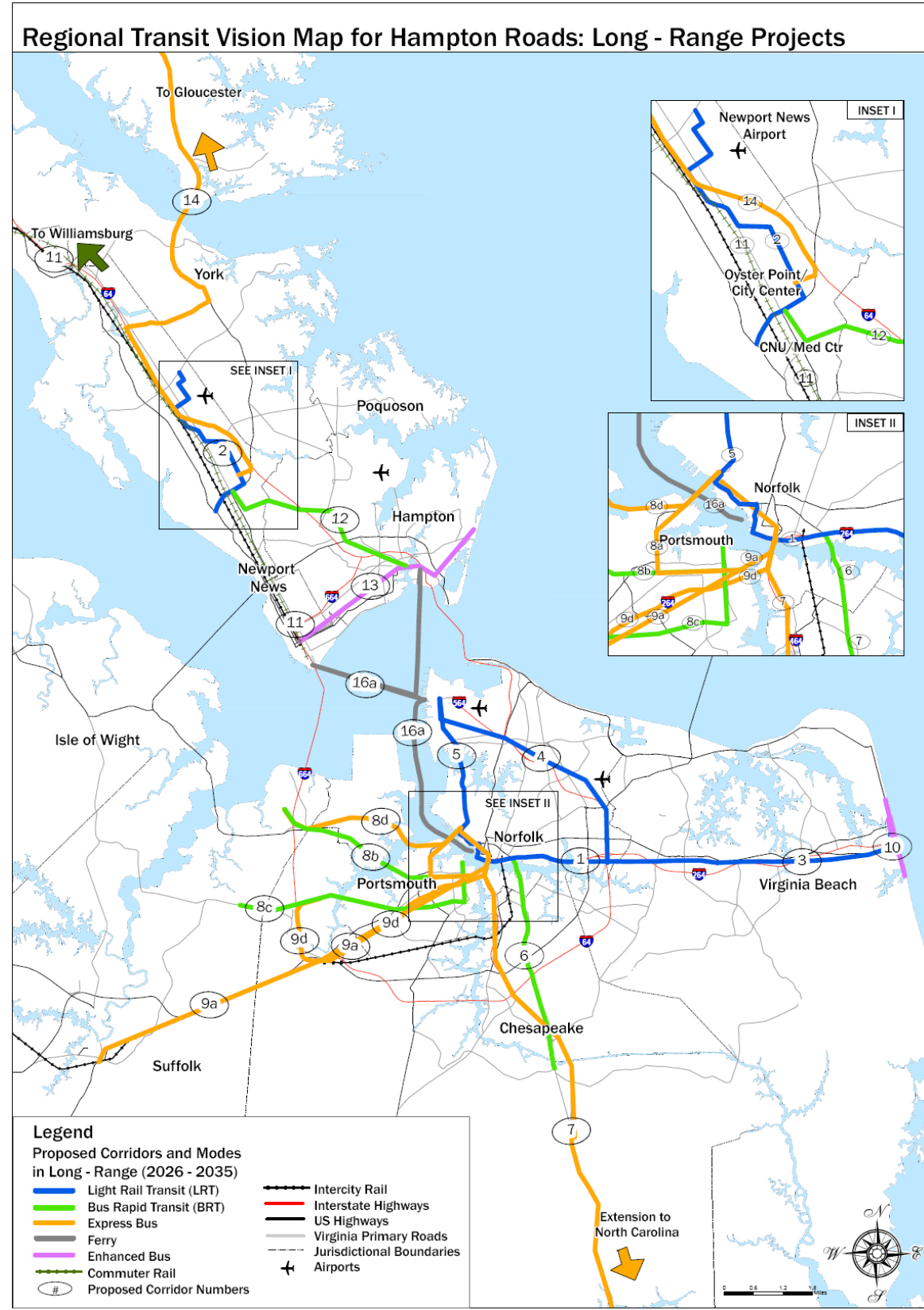
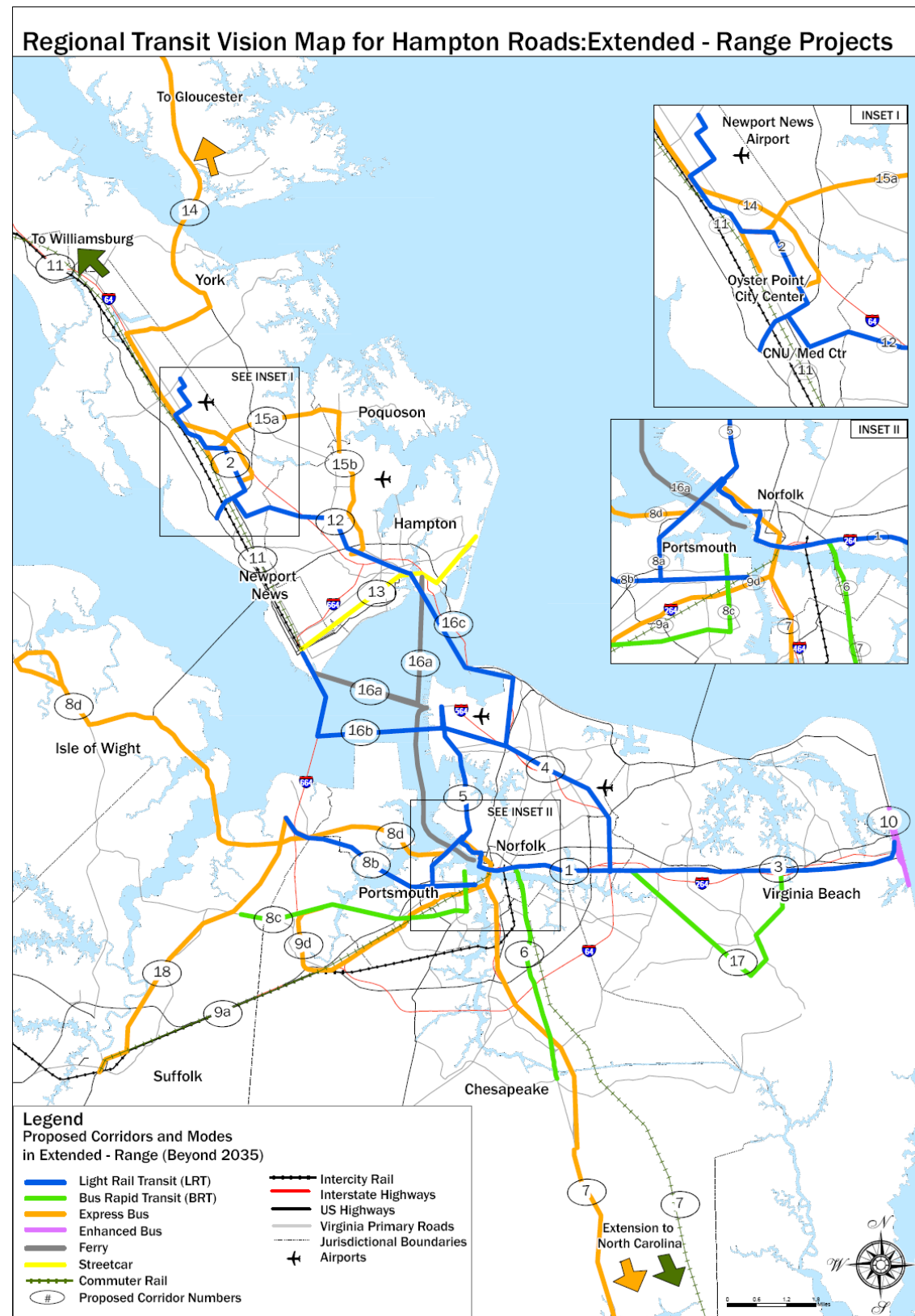


Figure 5-3: Regional Transit Vision Map for Hampton Roads — Extended-Range Projects

The Extended Range Projects (Beyond 2035)

- 7. A north-south commuter rail line from Chesapeake to Norfolk, with a potential future extension to North Carolina
- 8a. A rapid transit line via the Midtown Tunnel between Norfolk and Midtown Portsmouth
- 8b. Conversion to light rail transit of the east-west bus rapid transit line between Downtown Portsmouth and Harbour View
- 8d. Extended express bus service from Smithfield to Norfolk via Harbour View and the Western Freeway
- 9a. A commuter rail line between Downtown Suffolk and Downtown Portsmouth
- 12. Conversion to light rail transit of the bus rapid transit line connecting Downtown Hampton, Coliseum Central, and Oyster Point
- 13. A streetcar line between Downtown Newport News and Buckroe Beach
- 15a. Express bus service between Poquoson and Oyster point
- 15b. Express bus service between Poquoson and Coliseum Central via Langley Air Force Base
- 16c. A light rail transit line crossing the Hampton Roads harbor between Newport News and Naval Station Norfolk
- 16b. A light rail transit line crossing the Hampton Roads harbor between Hampton and Naval Station Norfolk
- 17. A bus rapid transit line along the Princess Anne Road and Lynnhaven Parkway corridors in Virginia Beach
- 18. Express bus service between Downtown Suffolk and Harbour View



5.B TRANSPORTATION AND LAND USE PLANNING SUMMARY

To become more competitive for future state and federal transit funding, the local jurisdictions should conduct transportation studies to determine the most feasible transit alignments and station locations and update land use plans, policies, and programs to encourage transit supportive development. Appropriate local transportation and land use planning will help generate more transit supportive environments along the proposed transit corridors within this Vision Plan and help secure funding for engineering studies and capital expansion projects.

5.B.1 Future Transportation Planning

Each proposed transit corridor will require a sufficient level of analysis based on state and federal transportation planning guidelines and regulations. One option is to conduct an alternative analysis (AA) to determine feasible alternative alignments and modes and to select a locally preferred alternative (LPA). The sponsoring community would seek state and federal approval of the AA in order to conduct a draft environmental impact statement (DEIS) on the preferred alternative. A second option is to conduct a combined AA/DEIS to expedite the analysis, which is more likely to be considered for existing rail corridors with dedicated right-of-way. Local jurisdictions should seek guidance on the most appropriate planning option from HRT, MPO, and DRPT.

Based on the Section 3 implementation steps, a total of four AA/EIS studies are necessary for the short-range projects (2010-2015); five AA/EIS studies are necessary for the mid-range projects (2016-2025); and, nine AA/EIS studies are necessary for the long-range projects (2026-2035).

General Decision-Making Process for AA/EIS

1. Alternative Analysis (AA)
 - Broad range of general alignment and mode alternatives are considered
 - Information needed to evaluate alignment and mode alternatives is developed
 - Conclusion is the selection of a locally preferred alternative (LPA)
2. Environmental Scoping
 - Scoping process ratifies the sufficiency of the AA that led to the LPA
3. Environmental Impact Statement (EIS)
 - Draft EIS is conducted to compare the LPA against the “No-Build” Alternative
 - LPA design options are analyzed and considered
 - Adverse impacts and avoidance or mitigation techniques are identified
 - Public hearing and agency comments are considered
 - Final EIS is produced based on public and agency comments
 - Federal Transit Administration issues a Record of Decision
4. Final Design and Engineering
 - Final design begins with a positive Record of Decision and funding commitments

5.B.2 Future Land Use Planning

Local jurisdictions should evaluate, update, or amend their current comprehensive plans and development programs, regulations, and incentives for consistency with the unique needs of transit supportive development. As a starting point, an initial set of land use recommendations have been documented for each proposed corridor within Section 3.C of the Vision Plan. In addition, the potential station areas for each proposed corridor could be identified and evaluated for transit supportiveness through a transit-oriented development study, a sub-area plan as part of the comprehensive plan, or as part of the transportation element of the comprehensive plan. Lastly, local jurisdictions should consider the programs and strategies listed in Figure 5-4 to determine what they are doing now and what they could be doing to create a more transit supportive development environment along proposed corridors.

Figure 5-4: Typical Transit Supportive Development Programs, Regulations, and Incentives

Zoning

- Identification of permissible land uses
- Identification of non-permissible land uses
- Building setbacks/establishing a street wall
- Allowable densities/density thresholds
- Density bonuses for affordable housing, public spaces, etc.
- Transit-oriented or mixed-use overlay districts

Development Review

- Expedited or streamlined development review process

Design Guidelines

- Encourage a mix of uses to generate activity beyond normal business hours
- Façade improvement program

Parking

- Reductions in parking requirements
- Use on-street spaces to satisfy minimum parking standards
- Restrictions, reductions, or elimination of surface lots

Infrastructure

- Reduction in traffic impact assessments/fees for new developments near stations
- Streetscape improvement program
- Minimum bicycle parking requirements

Financing/Funding Assistance

- Favorable lending terms through dedicated bonding issues, direct grants or loans
- Assistance with land assembly/underwriting land costs
- Direct grants or loans
- Funding for strategic station area plans
- Land banking/land acquisition by municipality
- Capital funding for ancillary improvements, such as streetscape enhancements
- Density bonuses for affordable/inclusionary housing
- Sliding scale impact fees to bring down the cost of affordable housing in station areas
- Tax increment financing or special service area assessments

5.C FUNDING POLICIES AND PROGRAM SUMMARY

Transit funding is provided through federal, state, and local programs to provide public services, reduce roadway congestion, and minimize air quality impacts. This section of the Hampton Roads Transit Vision Plan briefly describes current funding sources, potential future funding sources, and recommended funding options for the Hampton Roads Region. It is important to note that this section is not meant to financially constrain the Vision Plan, but simply to inform the local debate and consensus needed to determine a dedicated funding source for a more robust transit network.

5.C.1 Current Funding Sources

A variety of programs offer capital and operating funds to facilitate the development and maintenance of public transit service. Most federal programs only provide a portion of capital and operating costs, while state programs are structured to provide a match as required by federal funding programs. The following federal and state funding sources will likely continue to provide the majority of the region's transit funding.

Federal Aid Grant Programs

- FTA Section 5303 – supports transit planning expenses; formula-based program
- FTA Section 5307 – supports planning/engineering; capital costs for buses/fixed guideways and capital maintenance; formula-based program
- FTA Section 5309 – supports planning/engineering; capital costs for new fixed guideways, guideway modernization, and new buses and bus facilities; discretionary funding programs
- FTA Section 5310 – supports purchase of vehicles and equipment for transit providers serving elderly and disabled individuals; formula based program

- FTA Section 5311 – supports transit operating/capital costs in non-urbanized area; formula based program
- FTA Section 5313 – supports local and statewide transit planning projects; formulas based program
- FTA Jobs Access & Reverse Commute Program – supports operating and capital costs of programs to connect low-income people to jobs
- Federal Statewide Surface Transportation Program – supports transit capital projects as well as highway capital projects

State Aid Grant Programs

- Formula Assistance – supports costs borne by eligible recipients for operating expenses; formula based program
- Capital Assistance – supports costs borne by eligible recipients for capital projects
- TDM/Commuter Assistance – supports administration of existing or new local and regional transportation demand management or commuter assistance programs
- Demonstration Project Assistance – assists communities in preserving and revitalizing public or private public transportation service by implementing innovative projects for one year
- Technical Assistance – supports planning or technical assistance to help improve or initiate public transportation related services
- Transportation Efficiency Improvement Funds – supports reduction in demand for new/expanded transportation facilities and innovative approaches to reducing traffic congestion

5.C.2 Future Funding Sources

Based on President Obama's campaign positions, the transportation industry predicts that the new administration will strongly support an increase in transit funding and remove perceived obstacles within federal programs. However, the local funding matches needed for transit operating and capital costs in the Hampton Roads region will exceed the amount currently available through local general fund contributions. Regional cooperation and consensus is necessary to determine the most appropriate sources for dedicated local funding. The following funding sources have been considered and used elsewhere, and are recommended for serious consideration by the Hampton Roads region.

Formula-Based Annual Contributions

A formula-based contribution from participating jurisdictions is a currently used funding arrangement based on the level of service in each jurisdiction. Since local jurisdictions are interested in receiving high speed/high capacity transit, such as bus rapid transit or light rail, the formula-based contribution could be modified dependent on the mode of service. The advantage of this arrangement is that jurisdictions can decide how much service they want to purchase each year. The disadvantage is that this makes it difficult to conduct long-term planning since revenues can vary from year to year.

Special Tax in Participating Jurisdictions

Another option for funding transit is to levy a dedicated tax in those jurisdictions that receive transit service. A special tax could be implemented to provide the formula-based annual contribution for new high speed/high capacity transit within a specific jurisdiction. While this option would require legislation by the General Assembly, it would provide a stable source of funding that can be projected allowing the transit agency to develop more realistic, sustainable service plans. Depending on the tax, non-residents may also contribute a portion of the costs for transit service. These transit-related

taxes could include hotel lodging fees per night stay, rental car fees, parking fees, or tolls.

Transit Service District

Another solution that provides funding based on the level of transit is called a service district, which is a funding source being used for the Dulles Corridor in Northern Virginia. A service district has the authority to levy property taxes to those areas that directly benefit from transit, such as the half-mile station areas along high speed/high capacity transit corridor, and to fund capital and operating costs within the service district. This option may be an appropriate regional solution as HRT considers future high speed/high capacity transit that may significantly benefit one or two jurisdictions more than others. It also provides a financial incentive for more transit supportive planning and development.

Gasoline Tax

Virginia state statutes have previously granted Transportation Commissions in Northern Virginia the authority to levy a 2% gasoline tax. This tax not only provides a source of revenue provided by both residents and non-residents, but also provides an incentive for people to use transit. Although HRT is a designated Transportation District Commission, it was not granted the authority to levy a gas tax. New legislation could be passed to provide this authority based on a local consensus for the region's future transit system and the necessity of a dedicated local funding source. Gas tax receipts would be expected to decline over time as travelers change behavior to drive less due to higher prices. Nevertheless, a gas tax is the single most prevalent form of transit funding sources.

Sales Tax

The General Assembly could consider allowing a portion of sales tax revenues to be dedicated to support transit capital and operating needs. The means of achieving this are varied. The General

Assembly could restructure Transportation Authorities or Transportation Commissions in such a way that they can levy taxes. Alternatively, Transportation Commissions' constituent jurisdictions could be granted the authority to increase the local sales tax and dedicate those revenues to the Transportation Commissions as a condition of membership in those Commissions. Finally, the General Assembly could allow regions to hold referenda to levy taxes dedicated to funding public transportation. In many places in the United States it has taken several attempts to pass referenda before success.

Vehicle Registration Fee

Implementing a weight-based vehicle registration fee averaging \$100 could generate millions a year in statewide transportation funding. However, this funding source is typically implemented on a state-wide basis. The weight-based fee would also penalize the owners of heavier, fuel-consumptive vehicles. Vehicle registration/title/license fees are among the most common forms of state funding for transit, according to a 2007 survey by the American Association of State Highway and Transportation Officials, with at least 10 states generating transit funding by charging these fees.

5.C.3 Recommended Funding Sources

Based on current federal and state funding programs, the MPO, HRT, and local jurisdictions who desire high-speed/high capacity transit services will need to determine a creative funding approach that is most applicable for a transit service within a specific corridor. For example, Norfolk's light rail transit is being funded through a variety of sources, including federal New Starts, Surface Transportation Program (STP), and Congestion Mitigation and Air Quality Improvement Program (CMAQ), as well as state sources and municipal bonds. Although current funding sources may provide a significant amount towards the region's transit system, future funding sources need to be identified that will serve as a dedicated local funding source. Based on current debates and efforts within the General Assembly, the recommended funding sources for the Hampton Roads region should include: special

taxes within participating jurisdictions, transit service districts based on the corridor and type of service, a gasoline tax, and local sales tax.

The Benefits of Dedicated Transit Funding

- Revenue is more readily forecasted
- Revenue has lower risk of fluctuation from year to year
- Revenue does not have to compete with other funding interests
- The annual process of asking jurisdictions for funding is alleviated
- It may be more equitable in that jurisdictions with more service will pay more
- It could provide resources to areas that have less ability to pay for service
- It would allow for a more uniform service policy throughout the region

5.D NEXT STEPS

Planning-level construction and operating costs for the recommended transit improvements will be estimated. Preliminary ridership estimates will also be made. These two estimates will be documented in a separate report.

The Transit Vision Plan (TVP) and the cost and ridership estimates will feed two processes. The first process is the creation of the transit component of the MPO's multi-modal Long Range Transportation Plan (LRP). In order to meet the financial constraint requirements of MPO LRPs, that portion of the TVP's Long-Range system which can be implemented and maintained using reasonably expected funding (up to 100%) will be included in the region's 2034 LRP.

The second process is to incorporate the region's Transit Vision into a Statewide Transit Plan. The Statewide Transit Plan will synthesize the transit plans from all regions in Virginia into one plan. The Statewide Transit Plan will be combined with similar plans for highways, railroads, ports, and airports to create a comprehensive multimodal plan called VTRANS 2035.

The Transit Vision Plan is the first step in the process to connect the entire Hampton Roads region with high quality, attractive transit service, and to guide development in a more transit supportive manner. Many refinements should be expected as the region pursues its goals of greater mobility options, more efficient land use, improved air quality, energy independence, regional competitiveness, and economic growth.