

### Virginia's Long-Range Multimodal Transportation Plan

# Corridors of Statewide Significance: Heartland Corridor

**Prepared for: Commonwealth Transportation Board** 

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# 1 Corridor Overview

#### 1.1 Transportation Facilities

The Heartland Corridor is mostly defined by U.S. 460, which is a highway running east-to-west from Norfolk, Virginia to Frankfort, Kentucky and is considered a spur of U.S. 60. In the Commonwealth of Virginia, there are two separate stretches of U.S. 460. The main highway runs between Norfolk and West Virginia, exiting Virginia west of Blacksburg in Giles County. It reenters Virginia in the Town of Bluefield in Tazewell County and continues to the west into Kentucky. Figure 1 illustrates the

entire Heartland Corridor and Figure 2 illustrates the corridor in Virginia.

U.S. 460 travels a total of over 400 miles through Virginia, providing local access to a number of communities and connecting the larger areas of Lynchburg, Petersburg, and Hampton Roads. It also connects to U.S. 29 in Lynchburg, I- 81, I-95, and I-85. The Heartland Corridor is an important freight corridor. Norfolk Southern freight rail lines run along most of the corridor as part of its Heartland Corridor, one of the important freight corridors in the eastern United States, providing access between the Port of Virginia and the Midwest.

U.S. 460 is primarily a four-lane facility throughout its length in Virginia, though there are a few sections where it is a limited-access facility, such as through Blacksburg and Christiansburg, around Lynchburg, and where it bypasses smaller cities and towns such as Bedford, Farmville, and Appomattox. U.S. 460 provides local access to the many small communities it connects as well as offers an alternative east-west throughway for passengers and freight. There are sections where U.S. 460 is a four-lane undivided facility and sections where it is divided.

#### U.S. 460 Jurisdictions

- Buchanan County
- Tazewell County
- ➤ Giles County
- Montgomery County
- Roanoke County
- ► City of Salem
- ► City of Roanoke
- Bedford County
- City of Bedford
- Campbell County
- > City of Lynchburg
- Appomattox County
- > Prince Edward County
- Nottoway County
- Dinwiddie County
- City of Petersburg
- > Prince George County
- Sussex County
- Southampton County
- Isle of Wight County
- City of Suffolk
- City of Chesapeake
- > City of Norfolk



FIGURE 1 Heartland Corridor National Context Map



# Virginia Statewide Multimodal Transportation Plan MARYLAND 95 Chesapeake Bay P Newport News Marine Terminal Suffol unicipa

FIGURE 2 Heartland Corridor Map



There are numerous air facilities along the Heartland Corridor, including commercial service in the Hampton Roads region and in Lynchburg, and many general aviation facilities. In addition, there are some transit options, and there is a substantial amount of freight rail movement, especially along Norfolk Southern rail lines. Figure 3 illustrates the detail of the eastern section of U.S. 460 with all modal facilities shown, while Figure 4 illustrates the detail of the central section of U.S. 460 with all modal facilities shown.

U.S. 460 serves as an east-west corridor in Virginia, connecting the Hampton Roads region with Petersburg and the Richmond region, Lynchburg, Roanoke, and West Virginia. It accesses many smaller communities and provides the main access to these communities. In addition, it is a major freight corridor in Virginia, with significant rail transport of freight. The Heartland Corridor travels through seven separate Planning Districts and travels through the Hampton Roads Metropolitan Planning Organization (MPO) as well as the Richmond MPO, the Lynchburg MPO, the Roanoke MPO, and the Blacksburg MPO. The roadway exits Virginia into West Virginia for a short stretch before reentering the western portion of the Commonwealth and traveling through to Kentucky. It is primarily a four-lane highway throughout Virginia, with some limited access areas and many stretches where it is undivided, though there are also two-lane and three-lane sections.

There are no parallel roadway facilities to U.S. 460, though the roadway does run concurrently with other routes for short stretches, most notably I-85 through part of Dinwiddie County and through the City of Petersburg. U.S. 460 also links up with U.S. 29 in Lynchburg as both of these routes bypass the city and run along the same roadway as U.S. 13 and U.S. 58 in the Hampton Roads region, where it is known as the Military Highway. Also in Hampton Roads, an alternate route, known as U.S. 460A, travels through Chesapeake and Portsmouth.

U.S. 460 runs concurrently with U.S. 15 through Prince Edward County for a short stretch and with U.S. 360 through Nottoway County. U.S. 460 also runs concurrently with U.S. 221 around Roanoke and through Botetourt County and with U.S. 11 through

#### U.S. 460 Auxiliary and Concurrent Roadway Facilities

Auxiliary:

► U.S. 460A

#### Concurrent:

- ≻ I-85
- ➤ U.S. Highways 29, 15, 360
- > U.S. Highways 11, 11A, 360
- ► U.S. Highways 221, 19, 501
- > Virginia Routes 83, 67, 42
- ► Virginia Routes 116, 220, 122
- ► Virginia Routes 122, 191, 166
- ► Virginia Routes 168, 337

Roanoke, Salem, and Christiansburg. There is also a stretch of concurrence with U.S. 19 in Tazewell County, a small stretch of overlap with U.S. 501 in Lynchburg and multiple Virginia State routes also overlap with U.S. 460 at various places in Virginia as well.

Line-haul service along U.S. 460 can be found in two areas of the Commonwealth. In the western portion of Virginia, the Two Town Trolley provides service between Blacksburg and Christiansburg via U.S. 460. This route provides afternoon and evening service Monday through Saturday and a reduced schedule on Sundays. The trolley also provides connections to the Blacksburg Transit System that services the Town of Blacksburg and campus of Virginia Tech.



FIGURE 3 Heartland Corridor Map - East



Heartland Corridor Map - Central



The second service is located in the Hampton Roads area and travels a portion of the Heartland Corridor that overlaps with U.S. 13 and U.S. 58, known as the Military Highway. Metro Area Express (MAX) bus routes connect Suffolk with Portsmouth and Norfolk via this corridor. The route accesses park and ride lots and provides connections to the larger Hampton Roads Transit (HRT) system with local routes serving the entire Hampton Roads region.

There are local transit systems in Lynchburg, Blacksburg and Christiansburg as well. There are numerous park and ride facilities not only in the Hampton Roads region but also in and around Lynchburg, Roanoke, Blacksburg and Christiansburg, and even in the western portion of the Virginia in Tazewell County and Buchanan County. In addition, Greyhound provides bus service along the corridor, with stops in Norfolk

#### U.S. 460 Transit Facilities

- ➤ Two Town Trolley
- ► Metro Area Express (MAX)
- ► Hampton Roads Transit (HRT)
- ➤ Greyhound
- ► Park-and-ride lots

and Suffolk in Hampton Roads and stops in Petersburg, Farmville, Lynchburg, and Roanoke.

U.S. 460 provides access to the Port of Virginia, which includes three separate major port facilities in the Hampton Roads area. U.S. 460 is a major freight corridor for moving freight in and out of the Port of Virginia, and it provides direct access to the major east coast freight corridors, including I-95 and I-81 which handle well over half of the total interstate truck traffic in Virginia. In addition, U.S. 460 provides access to the James River Navigational Channels.

Norfolk Southern operates their Heartland Corridor within this corridor. This is one of the most important rail corridors in Virginia, and it connects the Port of Virginia to West Virginia and then to Midwest markets in Ohio, Illinois, and other states. It is Norfolk Southern's primary rail corridor to connect the Port of Virginia with national markets.

The Norfolk Southern Heartland Corridor rail lines also connect to other major rail corridors in Virginia, such as Norfolk Southern's Coal Corridor and both lines of their Crescent Corridor, which run along the I-81 and U.S. 29 corridors. The Heartland Corridor also accesses CSX's Coal Corridor and CSX's National Gateway Corridor, which runs along the I-95 corridor.

#### U.S. 460 Rail and Port Facilities

#### Ports:

- ➤ Norfolk International Terminals
- ➤ Newport News Marine Terminal
- ► Portsmouth Marine Terminal
- ► James River Navigational Channels
- ► Hampton Roads Barge

#### Freight Rail:

➤ Norfolk Southern Heartland Corridor

#### Connections to:

- Norfolk Southern Coal Corridor
- ► Norfolk Southern Crescent Corridor
- CSX Coal Corridor
- ➤ CSX National Gateway Corridor

While there is no passenger rail directly along the Heartland Corridor and along U.S. 460, Amtrak's Carolinian Line is available in Petersburg, which connects Charlotte, NC to New York and to their Northeast Corridor, which connects Newport News, VA to Boston, MA. In addition, other east coast corridors can be accessed from Petersburg, including the Silver Star Route, running from Miami and Tampa, FL to



New York; the Palmetto Route, running from Savannah, GA to New York; and the Silver Meteor Route, running from Miami, FL to New York. In Lynchburg, the Crescent Route runs from New Orleans, LA to New York and along the U.S. 29 corridor throughout Virginia.

There are numerous airport facilities along the Heartland Corridor, including a few with commercial service. Norfolk International Airport and Newport News Williamsburg Airport, both in the Hampton Roads region, have commercial service. Richmond International Airport is available north of the Heartland Corridor in Richmond, and both Lynchburg Regional Airport and Roanoke Regional Airport have some commercial service at their facilities. In addition to these commercial service airports, there are several general aviation facilities within the corridor, and two reliever facilities in the Hampton Roads region. Table 1 details the airport facilities available along the Heartland Corridor, including their location and designation by the Virginia Air Transportation System Plan.

Airport	Туре	Location
Norfolk International	Commercial Service	City of Norfolk
Newport News Williamsburg	Commercial Service	City of Newport News
Richmond International	Commercial Service	Henrico County
Lynchburg Regional	Commercial Service	Campbell County
Roanoke Regional	Commercial Service	Albemarle County
Hampton Roads Executive	Reliever	City of Chesapeake
Chesapeake Regional	Reliever	City of Chesapeake
Chesterfield County	Reliever	Chesterfield County
Grundy Municipal	Local Service	Buchanan County
Tazewell County	General Aviation – Regional	Tazewell County
Virginia Tech Montgomery	General Aviation – Community	Montgomery County
Smith Mountain Lake	Local Service	Bedford County
New London	Local Service	Bedford County
Falwell	Local Service	Campbell County
Farmville Regional	General Aviation – Regional	Cumberland County
Crewe Municipal	Local Service	Nottoway County
Blackstone AAF	General Aviation – Community	Nottoway County
Dinwiddie County	General Aviation – Community	Dinwiddie County
Lunenburg County	General Aviation – Community	Lunenburg County
Wakefield Municipal	General Aviation – Community	Sussex County
Suffolk Municipal	General Aviation – Regional	City of Suffolk

#### Table 1 Heartland Corridor Airport Facilities



# 2 Corridor Functions

#### 2.1 Corridor Functions in Virginia

The Heartland Corridor is one of the most important freight corridors in the Commonwealth of Virginia. Norfolk Southern operates their Heartland Corridor line along the corridor, which is the most important rail route for transport between the Port of Virginia and markets to the west of Virginia. The corridor also links the Hampton Roads region to Petersburg and the Richmond region, and to Lynchburg and points west, such as West Virginia and Kentucky. U.S. 460 also connects to military facilities, Hampton Roads and provides another evacuation route from that area.

#### Functions of U.S. 460

- ► Freight corridor
- Evacuation route and link between urban areas and to other corridors
- Military access
- ➤ Education
- ► Tourism

U.S. 460 access to Hampton Roads does not have to cross any major waterways, and it provides access to numerous educational facilities and tourist areas along its length.

#### 2.2 Freight Movement

The Heartland Corridor is an important freight corridor, with most freight movement accomplished via trucking along the highway, though other options exist, including rail and air. Trucking accounts for most of the freight movement, while freight rail accounts for most of the remainder. This is mostly along Norfolk Southern's Heartland Corridor, which runs along the Heartland Corridor throughout its length in Virginia. The Heartland Corridor is an important rail corridor for getting freight from the Port of Virginia to Midwestern markets and beyond. Figure 5 shows the tonnage by mode along the Heartland Corridor as well as the freight value by mode.





(Source: Statewide Freight Study)

As seen in Figure 5, most freight along the Heartland Corridor is handled by truck despite the presence of Norfolk Southern rail lines along the entire corridor. While almost three-quarters of the total tonnage is handled by truck, over 99 percent of the total value is handled by truck.

Figure 6 illustrates that trucks account for anywhere between 1 and 16 percent of the total traffic along U.S. 460. This demonstrates the importance of U.S. 460 as a freight corridor and illustrates the fact that a large amount of freight is moved by truck using the highway facilities.



Traffic is heaviest in the Hampton Roads region, with truck percentages and total trucks the highest through the City of Suffolk. While total traffic volumes are much lower to the west of the City of Suffolk, truck percentages peak near 16 percent between Isle of Wight County and Prince George County. However, total truck volumes along the roadway are not significantly lower. Traffic is also heavier in and around the City of Lynchburg and the Cities of Roanoke and Salem. Truck percentages are fairly high through Giles County and Bedford County and lower throughout the remainder of the corridor.





Figure 7 shows the major distribution centers in Virginia. As seen in the figure, a number are located directly along the Heartland Corridor. This allows for easy access from the corridor to the distribution centers.





Figure 7 Major Virginia Distribution Centers

(Source: Statewide Freight Study)

Table 2 lists the distribution centers located along the Heartland Corridor. As seen in the table, there are a large number of these facilities, which provide a destination for freight along U.S. 460. Most are located near larger urban areas, such as Roanoke, Petersburg, Lynchburg, or Hampton Roads.

		Area
Store	Location	(Square Feet)
QVC Network	Suffolk	1,200,000
Sysco Food Systems	Suffolk	285,000
Food Lion	Hopewell	1,200,000
Ace Hardware	Petersburg	800,000
Wal-Mart	Petersburg	1,200,000
Ericsson	Lynchburg	107,000
Bausch & Lomb	Lynchburg	40,000
J. Crew	Bedford	292,500
Orvis Co.	Roanoke	340,000
Advanced Auto Parts	Roanoke	442,000
Hanover Direct	Roanoke	550,000
Home Shopping Network	Roanoke	255,000
Volvo	Blacksburg	1,000,000

#### Table 2U.S. 460 Warehouse and Distribution Facilities

(Source: Statewide Freight Study)



Figure 8 shows the freight tonnage and value by direction. As seen in this figure, approximately three-quarters of the freight moved along the Heartland Corridor is through freight, likely between the Port of Virginia and markets to the west of Virginia. There is some inbound and some outbound freight and a small percentage of internal movement within Virginia.



#### Figure 8 Freight Tonnage and Value by Direction

(Source: Statewide Freight Study)

According to the Statewide Freight Study, freight volumes along the Heartland Corridor will continue to grow and will be influenced by a number of factors leading to increased transportation demand. Population growth along the corridor, while less than the overall population growth in Virginia, will play a major role. In addition, changes in national and global logistics patterns and the corridor's evolving industry structure will lead to increased demand for freight along this already heavy freight corridor.

With increases in freight demand, it is important that capacity to carry the expected volumes of freight will exist in the future, not only along the highway facilities but along the rail facilities as well. Norfolk Southern has many planned projects for their Heartland Corridor. These projects include access improvements for the Roanoke Region Intermodal Facility, development of a parallel double-stack route, additional tunnel clearances, and track capacity improvements. All these projects will increase the capacity of the Heartland Corridor. In addition, there are projects that will expand capacity at the Port of Virginia, including the Norfolk Internal Terminals Central Rail Yard Expansion, the Craney Island expansion and rail connection, and the Norfolk/Portsmouth Beltline Railroad which will increase capacity into and out of the Port. These projects will likely lead to more freight being transferred to rail from truck, but with the total amount of freight through the Port expected to increase substantially, truck transport along U.S. 460 will still be very prevalent along the highway facilities. It is important that with these projects, more freight is moved to rail to connect with national markets as well with the Port of Virginia and distribution centers. This will assist capacity for both freight traffic and passenger traffic along the U.S. 460 highway facilities and improve safety.



#### 2.2.1 Link between Hampton Roads and Points West

The Heartland Corridor serves as an important corridor linking Hampton Roads with Petersburg, Lynchburg, Roanoke, Blacksburg, and West Virginia. It also links to Kentucky to the west and crosses the I-95, I-85, U.S. 29, and I-81 corridors along its run through Virginia. U.S. 460 is mostly a multi-lane highway through Virginia west of Hampton Roads, though two-lane sections do exist. There are also limited-access portions of the highway around small communities and larger areas such as Lynchburg.

The Heartland Corridor is also an important east-to-west link across Virginia, offering another and more southern option than I-64 and a more northern and generally faster option than U.S. 58. U.S. 460 also operates as an evacuation route from Hampton Roads in case of a hurricane or other event that requires evacuation. It does not cross water at Hampton Roads as do I-64 and I-664, and it provides easy access to the west to I-95 and I-85.

#### 2.2.2 Population Projections

The Virginia Transportation Research Council (VTRC) completed a report as part of VTrans2035, detailing population and employment trends and projections to 2035 for these socioeconomic factors. Increases in population will impact the amount of traffic on the roadway, impacting local traffic as well as through traffic along the roadway and will impact both passenger and freight traffic along the highway.

Table 3 details the population projections for 2010 and 2035 based on two different sources, one a private vendor (NPA Data Associates) and one a public source (Virginia Employment Commission-VEC). Projections by both sources only extended to 2030, so linear regression was used by VTRC to project to 2035. The data was organized by Planning District. Figure 9 illustrates the population density projections for the year 2010 at the Planning District level along the Heartland Corridor, and Figure 10 illustrates the density projections for the year 2035 and the increase in population density from 2010 to 2035.



Table 3

	2010	2010 Value Midpoint 2025 Ecrocest		125 Earocast	Percentage		Annual Effective	
PDC (Number)	VEC	NPA	VEC	NPA	VEC	NPA	VEC	NPA
Cumberland Plateau	114,700	112,940	118,522	116,592	3.3%	3.2%	0.1%	0.1%
New River Valley	175,336	170,200	196,909	199,490	12.3%	17.2%	0.5%	0.6%
Roanoke Valley-Allegheny	267,634	266,590	287,827	287,762	7.5%	7.9%	0.3%	0.3%
Region 2000 Regional	243,276	245,130	280,997	288,340	15.5%	17.6%	0.6%	0.7%
Piedmont	101,455	101,630	114,833	121,866	13.2%	19.9%	0.5%	0.7%
Crater	180,353	170,420	220,226	190,100	221.1%	11.5%	0.8%	0.4%
Hampton Roads	1,662,480	1,652,080	1,977,027	2,060,607	18.9%	24.7%	0.7%	0.0%
Statewide Totals	8,010,340	8,057,350	10,278,943	10,926,181	28.3%	35.6%	1.0%	1.2%

#### Population Projections to 2035

As seen in this table and in the graphics, the increases in population between 2010 and 2035 along the Heartland Corridor are generally less than that for Virginia as a whole. In the western part of the state, within the Cumberland Plateau PDC, the population will remain fairly flat for the next twenty-five years. There will be increases of less than 1 percent per year in all Planning Districts, with the highest growth rates and highest total growth in the Hampton Roads region, which is to be expected as it is the most urban region along the Heartland Corridor.

According to the VTRC Trends Report, between 76 and 81 percent of the total population increase in Virginia will take place in four Planning Districts (Northern Virginia, Richmond Regional, Hampton Roads, and George Washington Region). The only one of these that the Heartland Corridor accesses is the Hampton Roads PDC, and more overall growth will take place in this region than in all the other regions combined. The transportation infrastructure will need to keep up with the growth in population along the entire corridor but especially in the urban Hampton Roads region, where U.S. 460 serves as a major local arterial.



FIGURE 9 Population Density 2010 Projections - Heartland Corridor



FIGURE 10 Population Density 2035 Projections -Heartland Corridor



#### 2.2.3 Population Over Age 65

In addition to general population projections, VTRC projected the ages of the population, separated into five-year increments for a total of 18 categories. The percentage of population that is over age 65 was calculated based on these projections, and this information is available in Figure 11 for the years 2010, 2020, and 2030. The percentages were calculated for each Planning District along the Heartland Corridor.

As seen in this figure, the percentage of the population over the age of 65 is expected to increase in all Planning Districts, with the total population over age 65 expected to exceed 20 percent in four mostly rural Planning Districts and 25 percent in the Cumberland Plateau Planning District. In the three remaining Planning Districts, the over age 65 population is expected to exceed 15 percent.

As the older population increases, it is likely that the population without access to a vehicle will increase as well, leading to a need for other modes of transportation, especially transit. While transit is available in Hampton Roads, Roanoke, and Lynchburg, there are few if any transit options in the rural areas with a high percentage of the population over age 65. As the population ages, increased demand-response transit for the elderly and disabled should be investigated and likely implemented.







#### 2.2.4 Levels of Service

Figures 12 shows the existing levels of service (LOS) along the Heartland Corridor, with the red areas indicating undesirable levels of service (i.e., LOS 'E' or LOS 'F'). All areas not marked in red are where acceptable levels of service (i.e., LOS 'A' through LOS 'D') currently exist. As seen in Figure 12, the only areas of deficiency under existing conditions are short sections in the Hampton Roads region, in Lynchburg, and in Roanoke. The remainder of the corridor operates at acceptable levels of service along the highway facilities.

Figure 13 shows the future levels of service along the Heartland Corridor, with the same color coding. As seen in the figures, levels of service along the corridor are expected to degrade somewhat in various locations. There are more stretches in the Hampton Roads region and in Roanoke that are expected to operate at undesirable levels of service, and there are longer stretches through Lynchburg projected to be deficient. In addition, there are small stretches of highway through Blacksburg that are expected to have undesirable levels of service. For the most part, however, the U.S. 460 will operate acceptably, especially between the urban areas and mostly through the urban areas.

The future levels of service take into account projects along the roadway that are planned by the Virginia Department of Transportation. Even with planned expansions of the roadway and other programmed improvements, the highway facilities of the corridor are expected to degrade somewhat in the urban areas and in the areas where the corridor runs concurrently with other corridors. To combat this, localities, PDCs, and MPOs should identify the worst areas and plan for improvements to these areas.

#### 2.2.5 High-Crash Rate Areas

Figure 14 (entire corridor), Figure 15 (eastern portion of the corridor), and Figure 16 (western portion of the corridor) illustrate areas along U.S. 460 that have been identified as high-crash rate areas, according to the Virginia Department of Transportation. As seen in the figures, the high-crash rate areas are mostly concentrated in certain regions of the corridor, such as in and around Lynchburg and Roanoke. There are also some high-crash rate areas near Blacksburg and Petersburg and a few along more rural portions of the roadway. The lack of adequate access management has been identified by numerous jurisdictions as being an issue along U.S. 460. This could be a cause of some of these high-crash areas, especially in the more populated areas such as Lynchburg and Roanoke. In many places along the roadway, there is no median separation and no separate turn lanes in addition to a large number of driveways and entrances, which could lead to unsafe conditions.



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FIGURE 12 Heartland Corridor Existing Conditions



# Virginia Statewide Multimodal Transportation Plan MARYLAND 95 Chesapeake Bay 95

FIGURE 13 Heartland Corridor Future Conditions



FIGURE 14 Heartland Corridor High-Crash Rate Locations Map



FIGURE 15 Heartland Corridor High-Crash Rate Locations Map - East



Heartland Corridor High-Crash Rate Locations Map - Central



#### 2.3 Military Access, Tourism and Education

#### 2.3.1 Military Access

The Heartland Corridor is an important corridor for accessing military installations. There are many installations in the Hampton Roads region, with access to the Heartland Corridor. This region is a very important U.S. Naval region with access to the Atlantic Ocean and Chesapeake Bay. The U.S. Navy has set up multiple installations in this region. Other branches, such as the Air Force and the Army, have also set up facilities in this region. U.S. 460 is the main corridor linking these facilities and providing access to the rest of Virginia. In addition, there are multiple facilities in the Richmond region. Figure 17 illustrates the locations of all military installations along the Heartland Corridor, while Figure 18 provides a closer look at the military installations between the Richmond area and the Hampton Roads area.

#### 2.3.2 Tourism

The Heartland Corridor provides access to numerous tourist areas, such as state parks, state forests, and wildlife and fishing areas. In addition, it provides access to the George Washington National Forest and the Thomas Jefferson National Forest in the western part of the state. Figure 19 illustrates all the tourist facilities along the Heartland Corridor and includes airport locations to show an alternative mode for accessing these locations.



## Virginia Statewide Multimodal **Transportation Plan**

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FIGURE 17 Heartland Corridor Military Installations Map



FIGURE 18 Heartland Corridor Military Installations Map - East



FIGURE 19 **Heartland Corridor Tourist Areas Map** 



#### 2.3.3 Educational Access

The Heartland Corridor is an important corridor for accessing educational institutions. Figure 20 illustrates the large number of educational institutions along the corridor, including numerous facilities in the Hampton Roads region, numerous facilities in the Richmond region, numerous facilities in and around Roanoke and Lynchburg, and Virginia Tech in Blacksburg. In addition, there are also educational facilities along the western part of the corridor, and throughout the corridor between the larger, more urbanized areas. The educational institutions are listed in Table 4, along with current and projected enrollments for the year 2016. A study produced by Chmura Economics & Analytics for the State Council of Higher Education for VA titled "Projecting Enrollment Demand for the Virginia's Higher Education Institutions, 2007-2016" produced these enrollment numbers. The study stated that between the years 2006-2016 there would be an increase of 16.4% in systemwide enrollment, including 9.8% at public four-year colleges, 23.2% at public two-year colleges, and 15.8% at private four-year colleges. These percentages were applied to derive enrollment figures for 2016. The institutions listed at the bottom of the table are smaller institutions for which no figures were available.



Table 4

#### Heartland Corridor Educational Institutions Current and Projected Enrollments

College/University	Enrollment	2006 Enrollment	2008 Enrollment	2016 Estimate
Liberty University	32222	17776	33604	20585
Virginia Tech	30380	28470	30739	31260
Tidewater Community College	26898	24938	26898	30724
Old Dominion University	23086	21625	23086	23744
Radford University	9157	9220	9157	10124
John Tyler Community College	8808	7165	8776	8827
Norfolk State University	6325	6238	6325	6849
Central Virginia Community College	5407	4721	5412	5816
Virginia State University	5042	4872	5042	5349
Longwood University	4727	4479	4727	4918
Hampton University	4700	6152	5427	7124
Virginia Western Community College	4665	8365	8532	10306
Southwest Virginia Community College	3984	3580	3984	4411
Regent University	3885	4286	4460	4963
Virginia Wesleyan College	2707	1455	1381	1685
Lynchburg College	2572	2398	2572	2777
Roanoke College	2021	1970	2021	2281
Richard Bland College	1634	1368	1634	1685
Hampden-Sydney College	1120	1106	1120	1281
Hollins University	1058	1061	1058	1229
Jefferson College of Health Sciences	995	922	995	1068
Bluefield College	745	844	745	977
Appalachian School of Law		373	352	432
Eastern Virginia Medical School		779	807	902
Atlantic Baptist Bible College		N/A	N/A	N/A
Christ College		N/A	N/A	N/A
Edward Via Virginia College of Osteopathic Medicine		N/A	N/A	N/A
Randolph-Macons Women's College		N/A	N/A	N/A
Troy University Atlantic Region		N/A	N/A	N/A



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FIGURE 20 Heartland Corridor Educational Institutions Map



# **G** Corridor Strategies

This section discusses the general corridor strategies for the Heartland Corridor, which have been formulated to improve safety, mobility, and capacity along the corridor. The functions of the Heartland Corridor are listed below, and Figure 21 presents a matrix that shows how the strategies relate to each function.

#### Functions of Heartland Corridor

- > Freight corridor
- Evacuation route and link between Hampton Roads, Petersburg, Lynchburg, link to U.S. 29 and I-81
- ➤ Military
- ► Education
- > Tourism and historic region

Strategies were formulated based on trends, system performance, issues/challenges, elements of the VDOT Six-Year Program along each corridor, the Constrained Long-Range Plans for each Metropolitan Planning Organization (MPO), visions and plans for the various Planning Districts, and any available Comprehensive Plan visions and strategies for each county and jurisdiction within each corridor. A Regional Planning Forum was held in the spring of 2009 with transportation representatives from across Virginia, including VDOT, Planning Districts and MPOs, transit providers, the Virginia Airport Authority, the Port of Virginia, and other stakeholders in the Virginia transportation system. Public meetings were held in four locations in June and July of 2009 (Northern Virginia, Richmond, Hampton Roads, and Roanoke). Corridor deficiencies and what could be done to alleviate these deficiencies were discussed, with this information playing a major role in the formulation of these strategies. These strategies are part of a continuing planning process and are designed to be used as a guide for future transportation plans along the corridor within Virginia. They are not the explicit policy of the Commonwealth Transportation Board (CTB) though they are designed to assist the CTB, state and local transportation agencies, and local planning organizations in their planning efforts along the corridor. Specific corridor strategies and improvement recommendations will ultimately be developed as part of subsequent planning analyses at the State and local level.

#### Figure 21 - Heartland Corridor Strategies vs. Functions Matrix

	Functions				
Strategies	Freight Corridor	Evacuation/Link between Urban Centers	Military Access	Education	Historic/ Tourism
Increase capacity of Heartland Corridor for both passengers and freight by expanding freight rail service and adding capacity to allow for higher-speed rail.	٠	0	0	0	0
Ensure multimodal freight movement coordination with the proposed Craney Island expansion and divert more freight to rail.	٠	0	0	$\odot$	$\odot$
Support expanded freight capacity by expanding intermodal facilities.	•	0	0	0	0
Improve transit along the Heartland Corridor in the Hampton Roads area and in rural areas by offering increased demand response services and services for the elderly and disabled.		0		$\odot$	
Complete construction of the U.S. 460 realignment west of Suffolk and increase the highway capacity of U.S. 460 in strategic locations.	٠	•	0	$\odot$	$\odot$
Improve safety along the Heartland Corridor by addressing high crash rate areas and making necessary improvements.	٠	•	•	•	٠
Improve access management along the Heartland Corridor.	0	٠	$\odot$	$\odot$	$\odot$
Encourage commercial and industrial development along the Heartland Corridor, encourage concentrated development centers to avoid strip development, and coordinate land use and transportation decisions.	$\odot$	•	0		
Strong Correlation OMedium Correlation	n OSo	me Correlation			



#### 3.1 Strategies for Heartland Corridor

## <u>Strategy: Increase capacity of Heartland Corridor for both passengers and freight by expanding freight rail service and adding capacity to allow for higher-speed rail.</u>

Norfolk Southern's Heartland Corridor service runs along the Heartland Corridor throughout the Commonwealth of Virginia. The Virginia Statewide Rail Plan states that there are plans to double freight capacity along this corridor. This is a project of national significance. This would include the raising of tunnel heights in some locations to allow for double-stack operations. In addition, there is an initiative to expand capacity along Norfolk Southern's Coal Corridor service, which runs concurrent with U.S. 460 for much of its length through the Commonwealth. Multiple jurisdictions believe there is a need for expanded freight rail service, especially between the Hampton Roads area and the Port of Virginia and Petersburg and the Richmond region. This corridor is an important freight corridor in Virginia, and expansion of freight rail capacity will help this function immensely. This expansion may also remove trucks from the highway facilities, allowing for better passenger linkage between Hampton Roads and points west and for access to the military facilities in the Hampton Roads region.

In addition, when the national high-speed rail corridor is constructed through Virginia, there should be a spur between the Richmond/Petersburg region to the Hampton Roads area, either along I-64 or the Heartland Corridor where rail lines currently exist and will be expanded. Many residents of the Hampton Roads area desire a high-speed rail connection from this heavily-populated region. This would allow better passenger connection from Hampton Roads to the I-95 corridor and points west.

#### <u>Strategy: Ensure multimodal freight movement coordination with the proposed Craney Island</u> <u>expansion and divert more freight to rail</u>.

According to the Virginia Statewide Rail Plan, the Central Rail Yard Expansion project at Norfolk International Terminals at the Port of Virginia will allow more freight coming into the Port of Virginia to travel by rail instead of by truck. In addition, with the expansion of Craney Island, it is expected that 50 percent of the total freight from this major new facility will be moved by rail from the Port of Virginia. With expansion of the Port of Virginia through the Craney Island project, more rail capacity and more freight movement via rail is essential for capacity and safety along U.S. 460's highway facilities.

#### Strategy: Support increased freight movement capacity by expanding intermodal facilities.

With the expansion of freight rail capacity along the Heartland Corridor, intermodal facilities will need to be expanded. These are facilities that transfer freight, usually containers, from one mode to another, such as from rail to truck. The Virginia Inland Port is the largest intermodal facility in Virginia, and there are plans to construct another intermodal facility near Roanoke as part of the rail initiatives along Norfolk Southern's Heartland Corridor. In addition, there are over 50 private intermodal facilities in Virginia, and most of these are near the Port of Virginia with access to the



Heartland Corridor. These facilities will need to be able to handle the amount of freight coming into and out of Virginia and traveling throughout the state on expanded rail and port facilities, including at the new Craney Island facility and the expanded rail yards at Norfolk International Terminals.

#### <u>Strategy: Improve transit along the Heartland Corridor in the Hampton Roads area and in rural</u> areas by offering increased demand response services and services for the elderly and disabled.

There are urban areas, such as Hampton Roads, Petersburg, and Lynchburg that are served by local transit systems with extensive fixed-route schedules. However, in some rural areas along the Heartland Corridor, access to transit is limited if not non-existent. Many County, City, and Town Comprehensive Plans call for the need for more modal options and less use of single-occupancy vehicles, and they discuss the need for demand response service to more rural areas for those without vehicles. With the elderly population in Virginia expected to increase in the future, the need for these services will increase. The elderly and disabled will require services to shuttle them to medical facilities along the Heartland Corridor as well as to urban centers. While fixed route services are likely not feasible in most of these areas, increased demand response services could fill this need. In addition, transit should be expanded in transit-heavy areas, such as in Hampton Roads. Light-rail is proposed throughout the region, and this would add another modal option for commuters when constructed.

### <u>Strategy: Complete construction of the U.S. 460 realignment west of Suffolk and increase the highway capacity of U.S. 460 in strategic locations</u>.

U.S. 460 is planned to be reconstructed and realigned west of Suffolk, and this project should be a priority for the highway facilities. In addition, since most of U.S. 460 is not a limited-access highway, capacity issues can arise in more developed areas. While there are some bypasses of towns such as Appomattox, Bedford, and Farmville and other sections of limited-access highway, such as through Christiansburg and Blacksburg, additional areas should be considered to improve capacity. In addition, intersection improvements, including additional turn lanes and signalization could assist in increased capacity, and the construction of interchanges and widening should be considered as well. An increase in highway capacity assists with highway freight movement and passenger movement between the major urban centers, educational facilities, and military installations.

## Strategy: Improve safety along the Heartland Corridor by addressing high-crash rate areas and make necessary improvements.

County Comprehensive Plans and MPO Plans identify the need to address highcrash rate areas and make safety improvements along the Heartland Corridor. In addition, this concern was brought up repeatedly at the public meetings. One reason for the high-crash rate along U.S. 460 is due to the sections of roadway that are fourlane undivided sections. Many of these locations do not have turn lanes and have limited access management with multiple driveways on both sides of the roadway. The specific problem areas should be further identified along the Heartland Corridor, and roadway safety audits should be completed for these areas. Improvements should be recommended and implemented to ensure better safety. Improved safety



will enhance travel for both passengers and freight, helping all functions of the corridor.

#### Strategy: Improve access management along the Heartland Corridor.

Poor access management along some areas of U.S. 460 has been identified through the Regional Planning Forum and public meetings, as being an issue along the corridor. These areas are primarily west of Petersburg along stretches of highway that are not limited-access or bypasses. Access management standards should be applied to any new development along the corridor, and where possible, entrances and driveways should be consolidated using inter-parcel access. The number of median crossovers should be reduced to improve safety and capacity for freight and vehicle traffic. Better access management will improve safety, which will assist all functions of the corridor.

<u>Strategy: Encourage commercial and industrial development along the Heartland Corridor;</u> <u>encourage concentrated development centers to avoid strip development; and coordinate land</u> <u>use and transportation decisions</u>.

Portions of the Heartland Corridor are through more rural areas that have potential for economic development, particularly of an industrial nature in areas close to Hampton Roads, such as distribution centers because of proximity to the Port of Virginia. Multiple Town Plans and Comprehensive Plans state that commercial and/or industrial development should be encouraged; however, this development should be clustered and strip development directly along U.S. 460 should be discouraged. Encouraging this type of development assists with capacity for both freight and vehicle movement and prevents further access management and safety issues.

#### 3.2 Strategies vs. VTrans2035 Goals

The above strategies relate to the seven goals of VTrans2035, and Figure 22 illustrates a matrix showing this relationship. A discussion of each of the goals is below.

- Goal 1: Safety and Security Provide a safe and secure transportation system. Many of the strategies relate to the safety and security of U.S. 460, especially the strategy that deals directly with improving safety throughout the corridor. Also, better access management directly leads to safer roadways, especially for turning vehicles. Increasing rail capacity will lessen the truck load along the Heartland Corridor, which can improve safety. More demand response transit service for the elderly and disabled improves their safety and security as well.
- Goal 2: System Maintenance and Preservation Preserve and maintain the condition of the existing transportation system. All of the strategies help to achieve this goal, as the existing transportation system is maintained and preserved, and in many cases, improved. While capacity may be increased along the rail lines or along the highway facilities, or safety improved, the existing transportation facilities are maintained and preserved along the Heartland



Corridor. The realignment of the highway west of Suffolk may replace the existing roadway and provide a safer, faster alternative, but the connection will still exist and will be an improvement over the existing facility, both in terms of capacity and safety.

- Goal 3: Mobility, Connectivity, and Accessibility Facilitate the easy movement of people and goods, improve interconnectivity of regions and activity centers, and provide access to different modes of transportation. All of the strategies promote increased mobility, connectivity, and accessibility. Any increase in capacity along the roadway, whether it be along the highway facilities, the rail facilities, or an increase in transit capacity assists in achieving this goal. Multimodal coordination at Craney Island and at the Port of Virginia also helps to achieve this goal for freight movement from the Port of Virginia to all markets it serves.
- Goal 4: Environmental Stewardship Protect the environment and improve the quality of life for Virginians. Increases in rail capacity, including at Craney Island, which will remove large trucks from the roadway. Any increase in transit capacity helps to achieve the goal of environmental stewardship. In addition, any increase in roadway capacity that minimizes the amount of time vehicles are on the roadway, leading to fewer emissions, assists in achieving this goal.
- Goal 5: Economic Vitality Provide a transportation system that supports economic prosperity. The Port of Virginia is one of the major economic engines in Virginia, and the expansion of the Port through the Craney Island project will increase the amount of freight that is shipped through the Commonwealth. Additional freight rail shipment and development could also potentially lead to an increase in freight movement along the corridor and an increase in distribution centers and warehouses. In addition, there is the potential for further economic development along the Heartland Corridor, and an increase in rail service as well as increases in rural transit could potentially spur development along the rural areas of the corridor. Finally, encouraging clustered development and practicing better access management will prove to be more economically sound in these developing areas.
- Goal 6: Coordination of Transportation and Land Use Facilitate the effective coordination of transportation and land use to promote livable communities. One strategy deals directly with this goal, as it calls for better development practices, including less strip development and more clustered development. In addition, better access management along U.S. 460 is also suggested, which will aid in this goal. Also, any projects that increase capacity along the highway facilities should be accomplished in coordination with land use decisions in the areas they are constructed. Any increase in transit, including demand-response services, should also be coordinated with land use. In addition, local planning efforts should protect airspace and ensure that airports are not compromised by encroachment of incompatible land uses.

#### Figure 22 - Heartland Corridor Strategies vs. Goals Matrix

	Goals					
Strategies	Safety and Security	System Maintenance and Preservation	Mobility, Connectivity, and Accessibility	Environmental Stewardship	Economic Vitality	Coordination of Transportation and Land Use
Increase capacity of Heartland Corridor for both passengers and freight by expanding freight rail service and adding capacity to allow for higher-speed rail.	0	٠	٠	٠	•	$\odot$
Ensure multimodal freight movement coordination with the proposed Craney Island expansion and divert more freight to rail.	0	٠	٠	•	•	0
Support expanded freight capacity by expanding intermodal facilities.	0	٠	•	•	•	$\odot$
Improve transit along the Heartland Corridor in the Hampton Roads area and in rural areas by offering increased demand response services and services for the elderly and disabled.	0	0	٠	٠	$\odot$	$\odot$
Complete construction of the U.S. 460 realignment west of Suffolk and increase the highway capacity of U.S. 460 in strategic locations.	0	٠	•	0	$\odot$	•
Improve safety along the Heartland Corridor by addressing high crash rate areas and making necessary improvements.	٠	٠	0			
Improve access management along the Heartland Corridor.	٠	•	0		0	•
Encourage commercial and industrial development along the Heartland Corridor, encourage concentrated development centers to avoid strip development, and coordinate land use and transportation decisions.	٠	٠	•		•	٠
Strong Correlation OMedium Co	orrelation	Some Corr	elation			