The State of Transportation in Hampton Roads 2016

the *heartbeat* of HAMPTON ROADS TPO
TRANSPORTATION PLANNING ORGANIZATION

T16-08

SEPTEMBER 2016

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THE STATE OF TRANSPORTATION IN HAMPTON ROADS 2016

PREPARED BY:

the heartbeat of HAMPTON ROADS TPO
TRANSPORTATION PLANNING ORGANIZATION

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ABSTRACT

This annual report details the current status of all facets of the transportation system in Hampton Roads, including air, rail, water, and highways. Many aspects of the highway system are highlighted, including roadway usage, bridge conditions, costs of congestion, commuting characteristics, roadway safety, truck data, transit usage, bicycle and pedestrian facilities, highway funding, and operations.

This report is produced as part of the region's Congestion Management Process (CMP). The Congestion Management Process is an on-going process that identifies, develops, evaluates, and implements transportation strategies to enhance mobility regionwide. This report is also produced as part of the HRTPO's Performance Management effort.

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The HRTPO assures that no person shall, on the ground of race, color, national origin, handicap, sex, age, or income status as provided by Title VI of the Civil Rights Act of 1964 and subsequent authorities, be excluded from participation in, be denied the benefits of, or be otherwise subject to discrimination under any program or activity. The HRTPO Title VI Plan provides this assurance, information about HRTPO responsibilities, and a Discrimination Complaint Form.

ACKNOWLEDGMENTS

This document was prepared by the Hampton Roads Transportation Planning Organization (HRTPO) in cooperation with the U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Virginia Department of Transportation (VDOT), Virginia Department of Rail and Public Transportation (DRPT), Transportation District Commission of Hampton Roads (TDCHR), and Williamsburg Area Transit Authority (WATA). The contents of this report reflect the views of the HRTPO. The HRTPO staff is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the FHWA, FTA, VDOT or DRPT. This report does not constitute a standard, specification, or regulation. FHWA, FTA, VDOT or DRPT acceptance of this report as evidence of fulfillment of the objectives of this program does not constitute endorsement/approval of the need for any recommended improvements nor does it constitute approval of their location and design or a commitment to fund any such improvements. Additional project level environmental impact assessments and/or studies of alternatives may be necessary.

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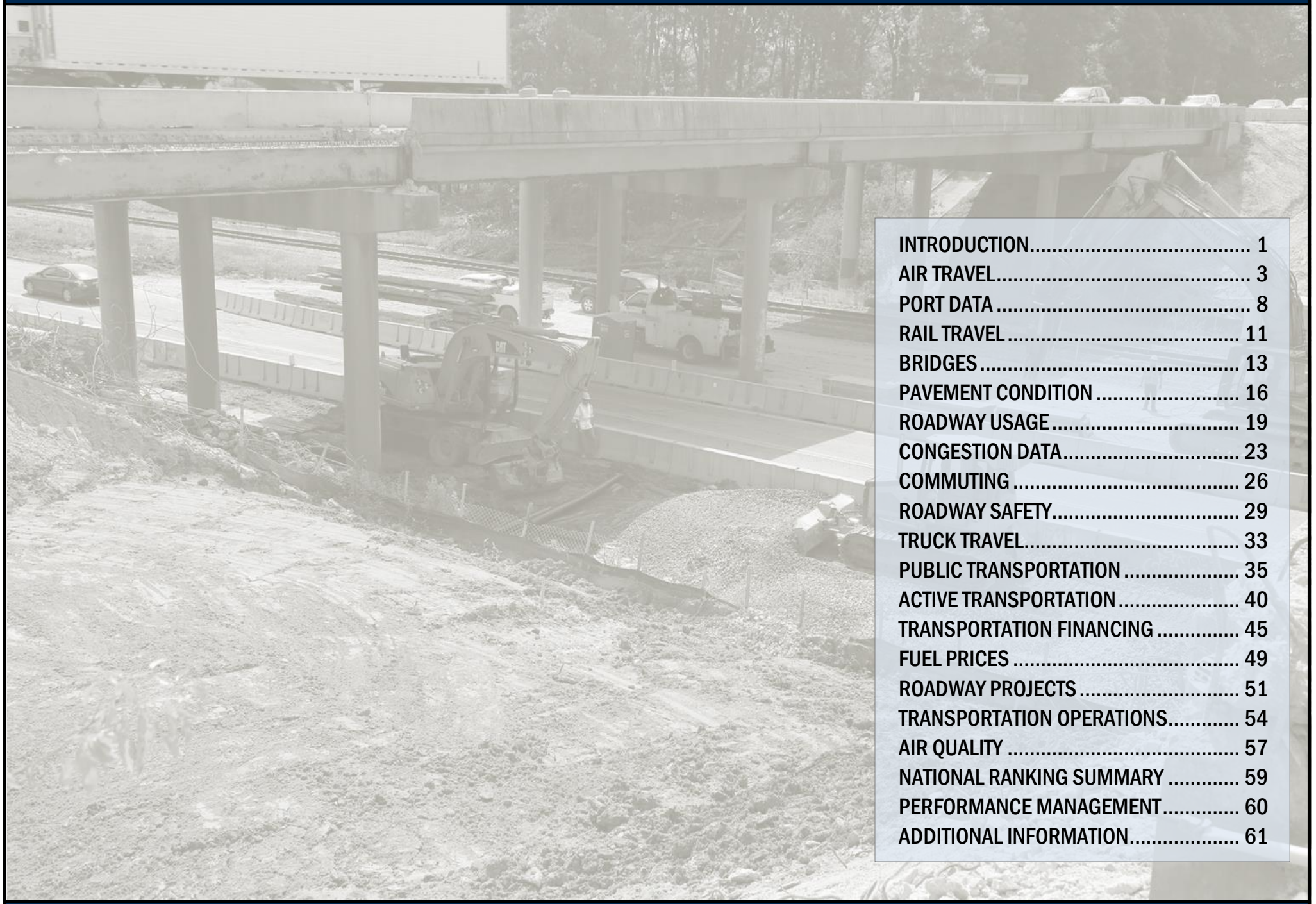


INTRODUCTION

Largely due to legislation that was passed by the General Assembly in recent years, a number of improvements to the Hampton Roads transportation system are underway or will be under construction in the near future.

Landmark legislation has been passed by the Virginia General Assembly in recent years that will greatly impact the Hampton Roads transportation network. SMART SCALE (formerly referred to as House Bill 2) prioritizes candidate transportation projects throughout the state using an objective scoring system, and HB 2313 comprehensively overhauls the way Virginia funds its transportation system. In addition to many statewide changes, HB 2313 created a regional transportation funding mechanism – the Hampton Roads Transportation Fund (HRTF) – for the construction of major roadway and bridge projects.

The Virginia General Assembly created the Hampton Roads Transportation Accountability Commission (HRTAC) to manage HRTF funds. HRTAC has endorsed a list of roadway projects, and the HRTPO Board recently approved sequencing based on project readiness. Construction has begun on Phase I of the I-64 widening on the Peninsula, and by 2022 the remaining two phases of widening I-64 on the Peninsula, Phases I and II of improving the I-64/I-264 interchange in Norfolk and Virginia Beach, and widening I-64 in Chesapeake (including the High Rise Bridge) to six lanes should be complete. Other priority projects include further widening of I-64 in Chesapeake, improving Route 460/58/13 to interstate standards, and constructing additional capacity across the Hampton Roads harbor.

MIDTOWN TUNNEL OPENING

Image Source: VDOT.

Construction also continues on the Midtown Tunnel/Downtown Tunnel/MLK Freeway Extension project. On June 17th, 2016, the new westbound Midtown Tunnel tube partially opened to traffic, with both westbound lanes expected to open by August. Rehabilitation has begun on the old Midtown Tunnel tube, and completion of the entire project is expected in 2017.

There are a number of other major roadway projects that are currently under construction across the region, such as Dominion Boulevard in the City of Chesapeake and the Intermodal Connector in Norfolk. Changes are not limited to the highway network, as improvements are happening at the region's airports, multi-modal stations, and marine terminals. Planning also continues on fixed-guideway transit extension projects in Norfolk, Virginia Beach, and on the Peninsula.

INTRODUCTION (continued)

However, even with all of the ongoing and upcoming construction in Hampton Roads, there continue to be challenges. Funding levels – particularly HRTF funds – have been lower than anticipated in recent years due to lower fuel prices. In spite of the HRTF funds, many important transportation projects have no funding identified. Maintenance needs will further increase as transportation infrastructure, and in particular the region's many bridges, continues to age. And roadway congestion will continue to be prevalent in many areas of the region.

This State of Transportation report details the current status of all facets of the transportation system in Hampton Roads, including air, rail, water, and highways. Many aspects of the highway system are highlighted, including roadway usage, pavement condition, bridge conditions, costs of congestion, commuting characteristics, roadway safety, truck data, transit usage, active transportation, transportation financing, transportation operations, and air quality.

This report is produced as part of the region's Congestion Management Process (CMP), which is an ongoing program that identifies, develops, evaluates, and implements transportation strategies to enhance mobility regionwide. The Hampton Roads Congestion Management Process report includes a comprehensive congestion analysis of the region's highway system, identification of the most congested corridors and areas of Hampton Roads, and congestion management strategies. This report and all other CMP documents are available on the Hampton Roads Transportation Planning Organization's website at http://www.hrtpo.org/page/congestion-management.

I-64 CONSTRUCTION

Image Source: VDOT

This report is also produced as part of HRTPO's Performance Management effort. In 2009, the Virginia General Assembly passed legislation codifying regional transportation performance measurement and in response, HRTPO staff developed a list of regional performance measures including those it was already publishing in State of Transportation reports. New federal requirements also mandate that states and metropolitan areas use performance measures and set targets in areas such as pavement and bridge condition, congestion levels, and safety. More information on HRTPO's Performance Management effort is available at the end of this report and on HRTPO's website at http://www.hrtpo.org/page/performance-management.

AIR TRAVEL

Passenger levels and airline capacity continued to decrease at Hampton Roads airports in 2015. However, airfares began decreasing at Hampton Roads airports late in 2015, and the number of flights accessing the region is increasing in 2016.

The number of passengers using commercial air service in Hampton Roads has decreased greatly in recently years. A total of 1.7 million passengers boarded flights at the two commercial service airports in Hampton Roads, Norfolk International Airport and Newport News-Williamsburg International Airport, in 2015. The number of passengers using the region's airports annually is down by 660,000 passengers (-28%) over the last decade.

NEWPORT NEWS-WILLIAMSBURG INTERNATIONAL AIRPORT

Image Source: NNWIA.

The decrease in passenger levels over the last decade was much larger at Newport News-Williamsburg International Airport (-61%) than at Norfolk International (-19%). This is primarily due to the departure of the dominant carrier, Airtran Airways, from the airport in 2012. In addition, Allegiant Airlines, Frontier Airlines, and People Express have discontinued service from Newport News-Williamsburg in recent years.

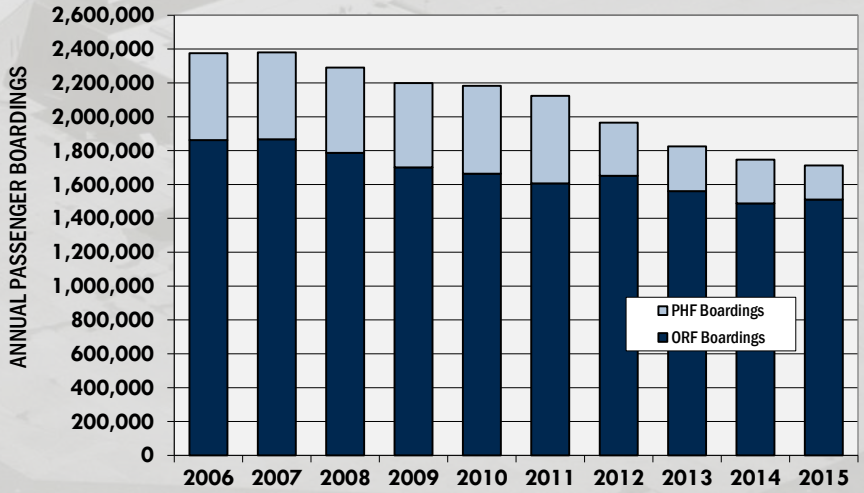
NOTABLE AIR TRAVEL NUMBERS

-28% The decrease in the number of passengers that used Hampton Roads airports between 2006 and 2015.

-43% The decrease in capacity (in terms of available seat-miles) at Hampton Roads airports between 2006 and 2015.

26% The increase in average airfare at Norfolk International Airport between 2006 and 2015. At Newport News-Williamsburg International Airport, the average airfare increase was 75%.

ANNUAL PASSENGER BOARDINGS AT HAMPTON ROADS AIRPORTS, 2006-2015



Data sources: Federal Aviation Administration, Norfolk International Airport (ORF) and Newport News-Williamsburg International Airport (PHF). Boardings represent only those passengers that board airplanes at each airport. 2015 data is preliminary.

While passenger levels at Hampton Roads airports decreased by 28% over the last decade, passenger levels at Richmond International Airport increased by 5%. Nationally, passenger levels increased by 8% between 2006 and 2015.

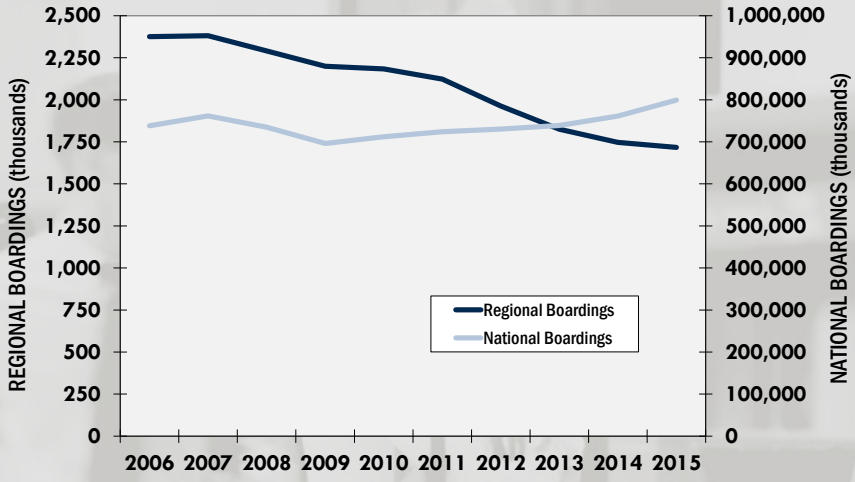

NORFOLK INTERNATIONAL AIRPORT

Image Source: NIA.

There are many factors contributing to the decrease in the number of passengers using airports in Hampton Roads. One of the primary factors is that average airfares in the region have increased. Early in 2006, average airfares at Norfolk International Airport were $340, which was slightly higher than the national average. Airfares at Newport News-Williamsburg International Airport ($266) were well below the national average at that time, driven by low-cost carrier Airtran Airways. By the end of 2015, the average airfare at Norfolk International Airport had increased 26% to $429, and 75% at Newport News-Williamsburg International Airport to $467. Both were well above the national average airfare of $363.

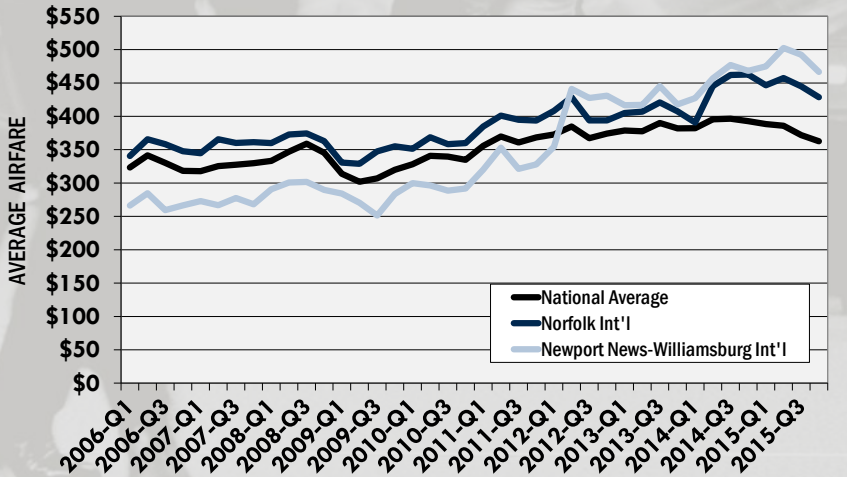
It should be noted that these airfares only reflect the costs associated with ticket fares and do not include additional fees

ANNUAL PASSENGER BOARDINGS AT HAMPTON ROADS AND NATIONAL AIRPORTS, 2006-2015



Data sources: Federal Aviation Administration, Norfolk International Airport (ORF) and Newport News-Williamsburg International Airport (PHF). Boardings represent only those passengers that board airplanes at each airport. 2015 data is preliminary.

AVERAGE AIRFARES FOR HAMPTON ROADS AND NATIONAL AIRPORTS, 2006-2015



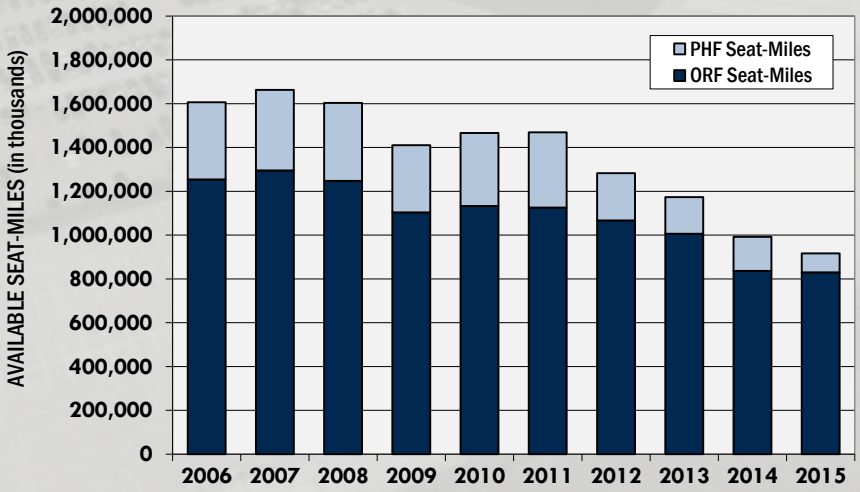
Data source: Bureau of Transportation Statistics. Average fares are based on domestic itinerary fares consisting of round-trip fares unless the customer does not purchase a return trip, in which case the one-way fare is included. Fares are based on the total ticket value (including any additional taxes and fees) and do not include other fees (such as baggage fees) paid at the airport or onboard the aircraft.

that have expanded in recent years for checked baggage, seat assignments, ticket changes, early check-in, etc.

The number of flights departing from Hampton Roads airports has greatly decreased over the last decade. As of March 2016, a total of 77 commercial flights depart Hampton Roads airports each day. This compares to 76 flights departing each day in March 2015, 83 flights each day in March 2014, 110 flights each day in 2010, and 130 flights each day in 2006.

This decrease in the number of flights from Hampton Roads airports has resulted in a decrease in the number of available seat-miles, a common method of measuring an airport's person-carrying capacity. There were just over 900 million seat-miles available on flights departing Hampton Roads in 2015, down over 40% from 1.6 billion in 2006. However, both Norfolk

ANNUAL AVAILABLE SEAT-MILES AT HAMPTON ROADS AIRPORTS, 2006-2015



Data source: Bureau of Transportation Statistics. Available seat-miles is a common method of measuring an airport's person-carrying capacity and is equal to the number of seats available multiplied by the number of miles flown.

BEHIND THE NUMBERS

There are a number of factors that are causing the decrease in passenger levels at Hampton Roads airports. Many are region-specific (such as government sequestration), while others are a symptom of the state of the airline industry, particularly resulting from consolidation. Ten years ago there were eight major airlines serving Hampton Roads airports. With the recent merger involving American Airlines and U.S. Airways, there are now only four major airlines serving the region.

These consolidations have greatly impacted air travel in Hampton Roads. For example, the departure of Airtran Airways contributed to a 38% drop in passenger levels at Newport News-Williamsburg International Airport between 2011 and 2012. There were 53 fewer daily flights offered from Hampton Roads airports in 2015 compared to 2006 and many fewer markets are served with nonstop flights.

However, these decreasing passenger and service levels in Hampton Roads are typical of the experience seen in other similar areas. While the number of U.S. domestic passengers increased 4% between 2005 and 2014, passenger levels decreased by 11% at the 103 airports classified as "small" or "medium" by the FAA (which includes Norfolk International). One in five small and medium airports (21%) experienced a decrease of more than 20%.

Capacity has also decreased at non-hub airports. The number of available domestic seat-miles increased 2% nationwide between 2006 and 2015, but when large hub airports are removed, capacity actually decreased by 6%.

International (84.3%) and Newport News-Williamsburg International (82.3%) both experienced record high load factors (passenger-miles as a proportion of available seat-miles) in 2015.

The 77 flights that depart Hampton Roads airports each day serve a total of 17 airports in 13 markets. Norfolk International Airport has nonstop flights serving those 17 airports in 13 markets, while 3 airports/markets are served nonstop from Newport News-Williamsburg International Airport.

Since 2010, a number of markets have lost nonstop service from Hampton Roads airports. These markets include Boston, Cincinnati, Cleveland, Denver, Jacksonville, Las Vegas, Nashville, and Tampa. Many of these markets served as hubs for airlines that have reduced service through consolidation in the airline industry.

The most popular final destination for passengers using Hampton Roads airports in 2015 was Orlando, with a total of 137,800 passengers traveling either to or from Orlando. The second most popular final destination from Hampton Roads airports was Chicago with 135,600 passengers, and the third most popular final destination was Atlanta with

NEW DEVELOPMENTS

Airport Improvements – Major terminal renovations continue at Norfolk International Airport. In 2014, renovations to the main lobby atrium area, concourses, and Concourse B security checkpoint were completed. Renovations currently underway include a new security checkpoint in Concourse A, expanded restrooms, and upgraded interior facilities in all areas of the airport. These renovations will be completed in 2016.

The airport authority board approved revamped dining options, with more emphasis on healthy and local selections. These new dining options – including a gastropub and a military-themed restaurant – will be available in 2016 and 2017. The board also approved an extension to the retail operations contract that will lead to refreshed and upgraded branding for retail storefronts in coming years.

RENOVATED NORFOLK INTERNATIONAL AIRPORT AREA

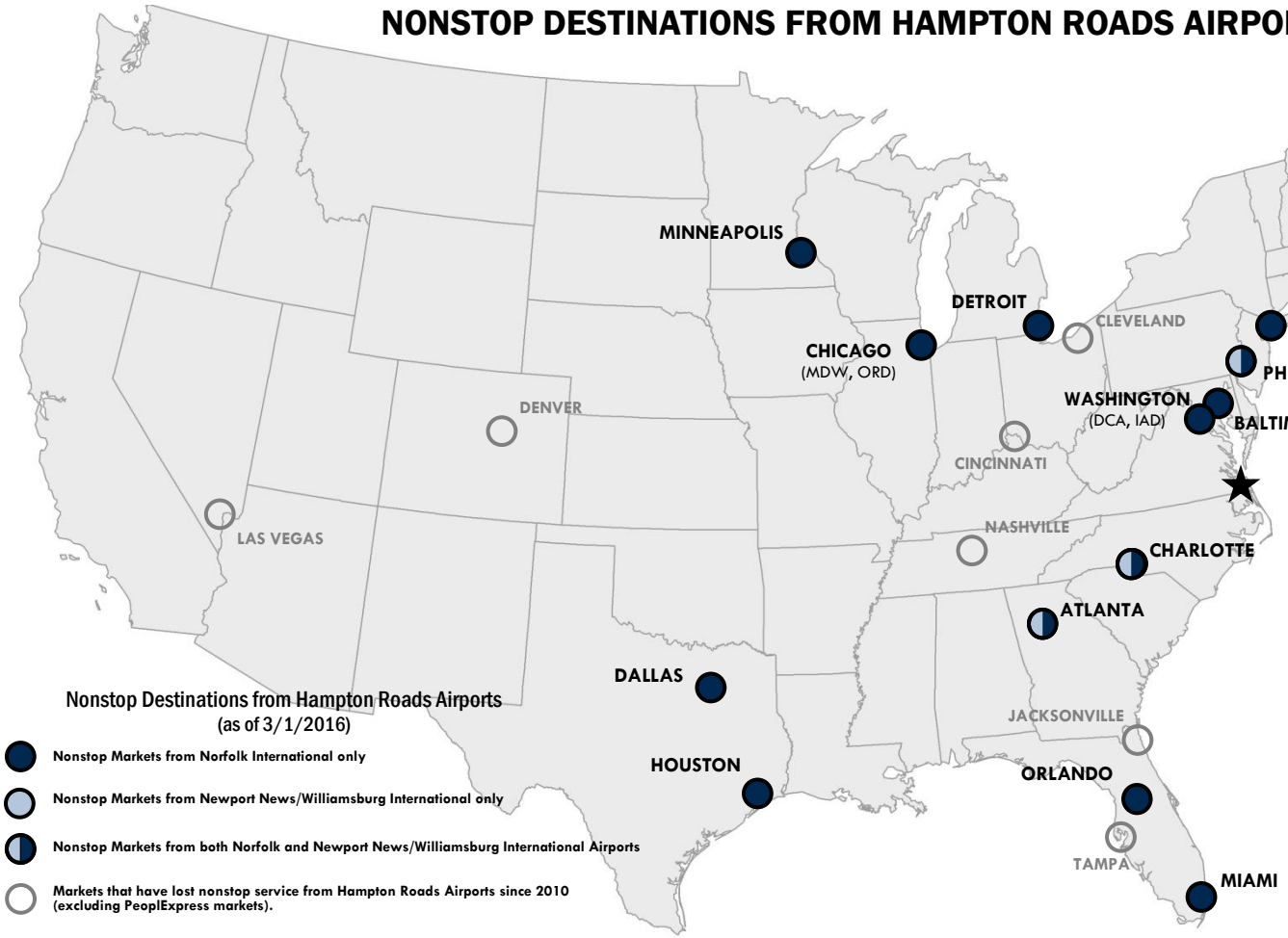
Image Source: NIA.

Increased Service – The number of flights departing Hampton Roads airports is expected to increase in 2016. Each of the four airlines serving Norfolk International has scheduled an increase in their number of flights as compared to 2015. American Airlines has recently expanded service from Norfolk to Chicago O'Hare, Delta increased daily service to New York JFK and added seasonal service to Minneapolis, and Southwest instituted once a week service during the summer to Tampa and Denver.

133,400 passengers. New York City, which had been the most popular final destination from Hampton Roads as recently as 2011, dropped to eighth-highest in 2015 with 107,100 passengers. More than 100,000 fewer passengers traveled this route in 2015 than in 2011.

Of the top twelve markets for Hampton Roads air travelers, five (San Diego, Los Angeles, Boston, San Francisco, and Las Vegas) were not served by nonstop service from Hampton Roads airports as of March 2016.

NONSTOP DESTINATIONS FROM HAMPTON ROADS AIRPORTS



Top Final Destinations to/from Hampton Roads Airports (2015)

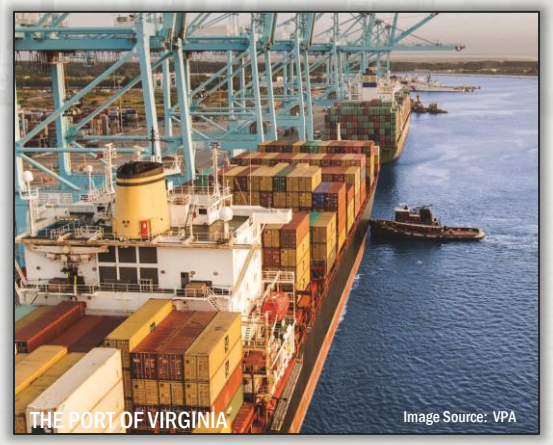
	Destination	2015 Passengers
1)	Orlando	137,800
2)	Chicago	135,600
3)	Atlanta	133,400
4)	San Diego	110,300
5)	Miami/Ft Lauderdale	109,500
6)	Los Angeles	108,700
7)	Boston/Providence	107,400
8)	New York	107,100
9)	Dallas/Ft. Worth	87,600
10)	San Francisco	66,300
11)	Las Vegas	66,100
12)	Houston	64,300

Data Source: Federal Aviation Administration.

PORT DATA

Although coal exports continue to decrease, general cargo levels handled by the Port of Virginia reached record levels again in 2015. This growth provides a boost to both the Hampton Roads and Virginia economies.

The Port of Virginia is comprised of four facilities in Hampton Roads: Norfolk International Terminals, Newport News Marine Terminal, Portsmouth Marine Terminal, and – through a lease agreement – the Virginia International Gateway facility. The Virginia Port Authority also manages the Port of Richmond and operates an inland port facility near Front Royal. In addition, there are a number of private terminals in the region, such as Lambert's Point Docks and Elizabeth River Terminals.



Over 27 million tons of coal was shipped through the region in 2015. Although this makes Hampton Roads the largest exporter of coal in the country, the amount of coal shipped through Hampton Roads has greatly decreased in recent years, down from 42 million tons in 2014 and 51 million tons in 2013.

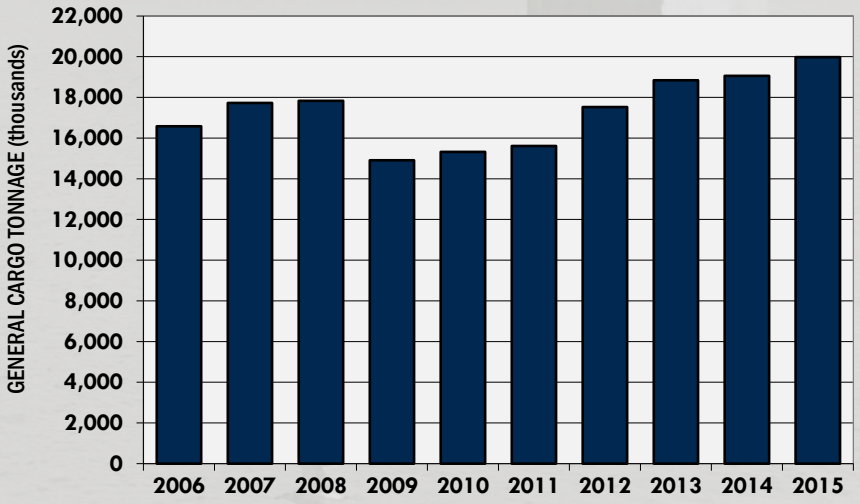
NOTABLE PORT DATA NUMBERS

20% The increase in general cargo tonnage handled by the Port of Virginia between 2006 and 2015.

-46% The decrease in the amount of coal shipped through Hampton Roads from 2013 to 2015.

3rd The rank of the Port of Virginia among East Coast ports in the volume of containerized cargo handled in 2015. Nationally, the Port of Virginia ranked 6th highest.

GENERAL CARGO TONNAGE HANDLED BY THE PORT OF VIRGINIA, 2006-2015



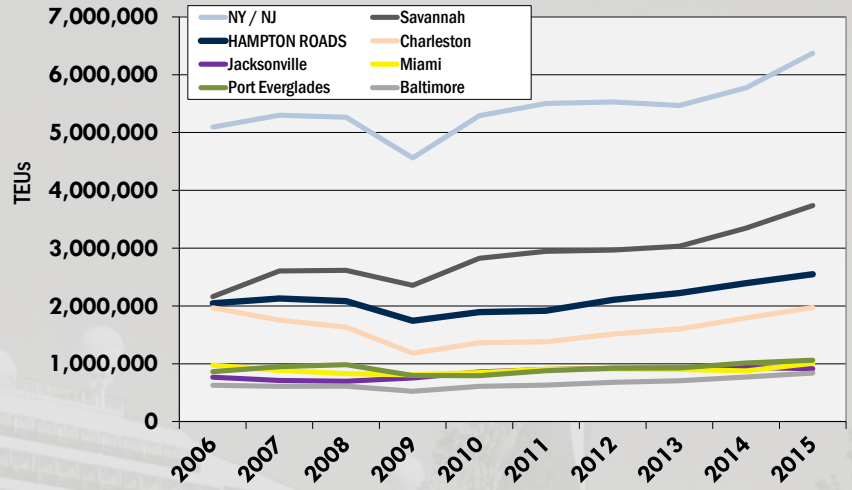
Data source: Virginia Port Authority. Data does not include Virginia Inland Port tonnage.

PORT DATA (continued)

Nearly 20 million tons of general cargo, primarily transported in containers, was handled by the Port of Virginia in 2015, a record for the Port. The amount of general cargo handled by the Port of Virginia increased 20% between 2006 and 2015, with a 34% increase occurring from the levels seen during the peak of the recession in 2009.

The maritime industry also measures containerized cargo using a standard called "20-foot container equivalent units", or TEUs. The Port of Virginia handled 2.55 million TEUs in 2015. This is up 25% from 2.05 million TEUs handled in 2006. The Port of Virginia ranked third highest among East Coast ports in the volume (in terms of TEUs) of containerized cargo handled in 2015, and sixth highest among all U.S. ports.

GENERAL CARGO (in TEUs) HANDLED AT TOP EAST COAST PORTS, 2006-2015



Data sources: American Association of Port Authorities, various port facilities. TEUs are twenty-foot container equivalent units, a common method of measuring freight.

NEW DEVELOPMENTS

NIT North Gate Improvements – The Virginia Port Authority was awarded a $15 million Transportation Investment Generating Economic Recovery (TIGER) grant for a new gate complex at Norfolk International Terminals. Construction is underway on the new 22-lane semi-automated complex, which will ultimately connect with the planned Intermodal Connector. The gate is expected to be completed in late 2016.

Norfolk International Terminals Overpass – Construction was recently completed on a railroad overpass crossing Hampton Boulevard into Norfolk International Terminals (NIT). The project greatly reduces the number of conflicts between trains entering and exiting NIT and Hampton Boulevard traffic.

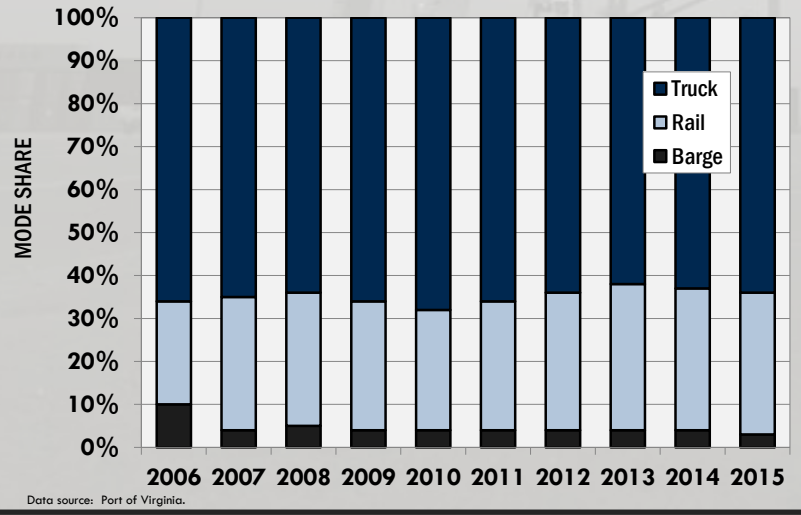
Other Capital Improvements – The Virginia Port Authority Board of Commissioners approved $739 million in capital improvements at its June 2016 meeting. These improvements include improving Norfolk International Terminals (NIT) to handle 696,000 more TEUs annually, and the Phase II Expansion of Virginia International Gateway (VIG), which will allow it to handle over one million more TEUs annually. Once these projects are complete, NIT will be able to handle 2.1 million TEUs annually and VIG will be able to handle 2.2 million TEUs.

In 2015, 64% of the general cargo handled by the Port of Virginia arrived or departed by truck, 33% by rail, and 3% by barge. The share of freight moved by rail through the Port of Virginia has increased, up from 24% in 2006.

The cruise industry also has a presence in the region. Over 50,000 passengers on 19 vessels called in Norfolk in 2015, and Carnival Cruise Lines resumed service in Norfolk. Although passenger levels are down from a high of 105,000 cruise passengers in 2005, passenger levels will increase in 2016 with more cruises scheduled to sail out of Norfolk, in addition to more than a dozen other lines scheduling a stop in Norfolk.

HRTPO conducts a number of freight planning efforts, such as the Freight Transportation Advisory Committee (FTAC) and the Regional Freight Study, which will be updated in 2016. More information is available at **http://www.hrtpo.org/page/freight**.

MODE SPLIT OF GENERAL CARGO HANDLED BY THE PORT OF VIRGINIA, 2006-2015



Data source: Port of Virginia.

BEHIND THE NUMBERS

The amount of freight handled by the Port of Virginia is impacted by a number of factors. These factors include the condition of the national and global economy, business decisions by global shipping lines, labor issues, and competition from other East Coast facilities such as Savannah and Charleston.

The Port of Virginia is well-positioned for growth in future years. After years of delays, the widened Panama Canal was finally completed in June 2016. The widened canal is expected to shift about 10% of the Asia-to-U.S. freight from the West Coast to East Coast ports by 2020, according to a recent report by Boston Consulting Group and C.H. Robinson Worldwide. This is in addition to a shift towards the East Coast that has already occurred in recent years, largely due to labor issues at West Coast ports.

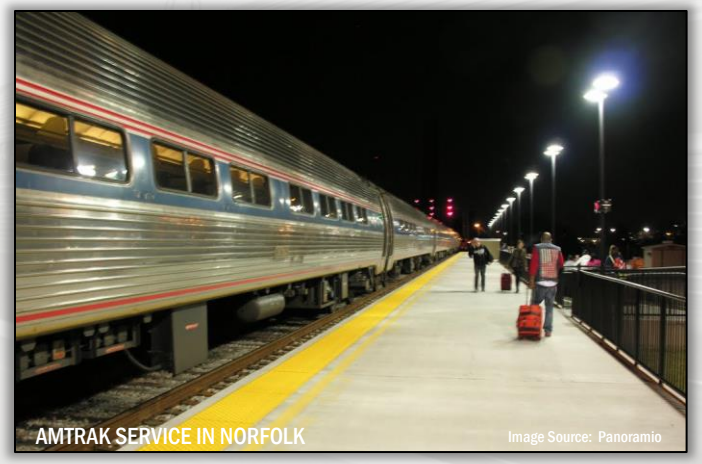
The Port of Virginia is currently among the few East Coast ports that can serve the largest ships that can pass through the widened canal. Shipping channels in the Hampton Roads harbor are currently dredged to a depth of 50 feet, which, along with no overhead restrictions, currently allows for the largest ships in the world to use the Port of Virginia. The Army Corps of Engineers has authorized a depth of 55 feet for the Hampton Roads harbor – deeper than any other East Coast port – and the Port hopes the dredging will be completed in three to five years.

Improvements to Norfolk International Terminals and the Phase II Expansion of Virginia International Gateway will also help the Port of Virginia handle this expected growth.

RAIL TRAVEL

Passenger rail travel options have expanded in Hampton Roads this decade, with direct Amtrak service resuming to the Southside and the Tide light rail starter line opening in Norfolk.

A number of passenger rail options are available in Hampton Roads. Amtrak service is available on the Peninsula, and in December 2012 Amtrak began providing service to the Southside of Hampton Roads. A year earlier the Tide, a 7.4-mile light rail starter line operated by Hampton Roads Transit (HRT), began operation in the City of Norfolk (the Tide is addressed in the Public Transportation section of this report.)



AMTRAK SERVICE IN NORFOLK Image Source: Panoramio

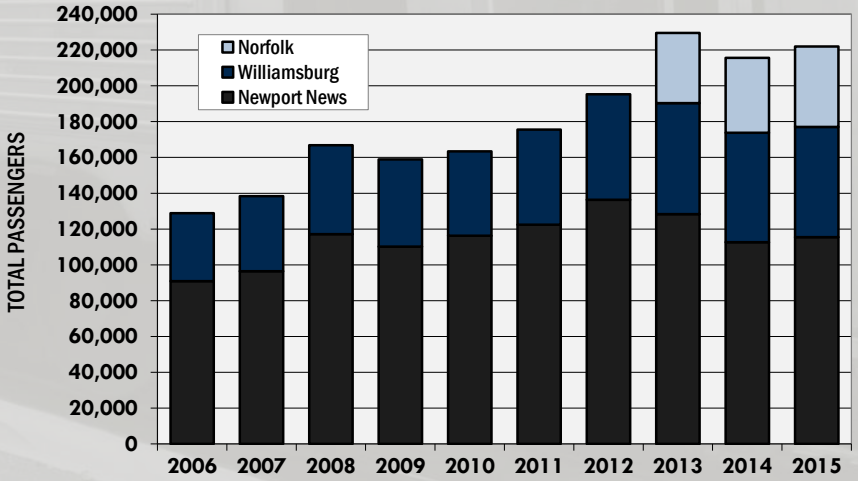
The number of passengers using Amtrak service in Hampton Roads has greatly increased over the last decade, led by the new service to the Southside. There were a total of 221,900 passengers who boarded or departed Amtrak trains in Hampton Roads in Federal Fiscal Year (FFY) 2015, with 115,400 passengers at the Newport News station, 61,600

NOTABLE RAIL TRAVEL NUMBERS

72% The increase in the number of passengers that boarded or departed Amtrak trains in Hampton Roads between Federal Fiscal Years 2006 and 2015.

-53% The decrease in the number of crashes at highway-rail crossings in Hampton Roads from the 1996-2005 period to 2006-2015.

TOTAL PASSENGERS BOARDING OR DEPARTING AMTRAK TRAINS IN HAMPTON ROADS, FFY 2006-2015

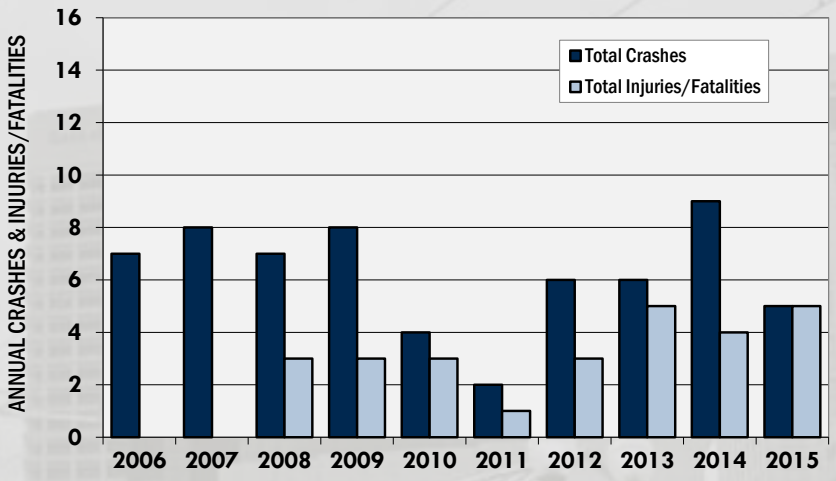


Data source: Amtrak. Federal Fiscal Years run from October to September.

passengers at the Williamsburg station, and 44,900 passengers at the Norfolk station. The number of passengers boarding or departing Amtrak trains in Hampton Roads increased 72% between FFY 2006 and 2015, and increased 13% since service resumed to the Southside in late 2012.

With the number of freight and passenger trains crossing the region each day, safety at highway-rail crossings is a concern. There were five crashes between trains and vehicles at highway-rail crossings in Hampton Roads in 2015, resulting in four injuries and one fatality. Between 2006 and 2015, there were a total of 62 crashes at highway-rail crossings in Hampton Roads, resulting in 6 fatalities and 21 injuries. The number of crashes at Hampton Roads crossings has decreased significantly from the 1990s, when there were a total of 184 crashes that resulted in 9 fatalities and 106 injuries.

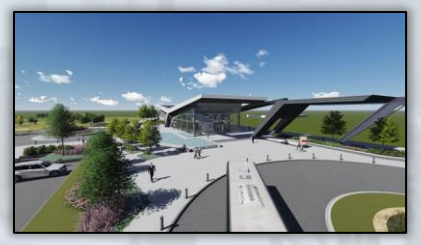
TOTAL CRASHES AND INJURIES/FATALITIES AT HIGHWAY-RAIL CROSSINGS IN HAMPTON ROADS, 2006-2015



Data source: Federal Railroad Administration.

NEW DEVELOPMENTS

Multi-modal Stations – In December 2013, the Norfolk Passenger Rail Station opened at Harbor Park. The multi-modal station provides connectivity between Amtrak and the Tide light rail line, as well as HRT bus service.



On the Peninsula, plans are underway for a new multi-modal station near Bland Boulevard in Newport News. The station would replace the current Amtrak station near Mercury Boulevard and include new inter-city bus service, additional parking, and improved connections including HRT, shuttles to the Newport-News Williamsburg airport, and taxi service. Construction on the $41 million facility is anticipated to begin in 2017, with completion in 2018.

Increased Funding – More than $758 million has been made available for passenger rail projects in the Virginia Department of Rail and Public Transportation's Fiscal Year 2017-2022 Six-Year Improvement Program. In Hampton Roads, funds are allocated to building the Bland Boulevard multi-modal station and expanding Amtrak service in Norfolk to a second and third train each day.

BRIDGES

The large number of bays, rivers, and streams makes bridges a prominent part of the Hampton Roads landscape. As bridges in Hampton Roads age, however, maintaining these structures will be financially difficult.

There are 1,235 bridges* in Hampton Roads, ranging in size from small culverts to some of the longest structures in the world. The median age of bridges in Hampton Roads is over 40 years old, and 346 bridges in Hampton Roads (28%) are at least 50 years old. While many of these older bridges are periodically rehabilitated in order to remain in service, two high profile structures in Hampton Roads – the Kings Highway Bridge and the Jordan Bridge – have been closed in recent years due to their deteriorating condition, although the Jordan Bridge was reconstructed and reopened as the South Norfolk Jordan Bridge in 2012.

All bridges in Hampton Roads are inspected regularly by qualified inspectors. Depending on the condition and design of each bridge, these inspections occur every one or two years. Based on these inspections, deficient bridges may be classified as "structurally deficient" or "functionally obsolete".

Structurally deficient bridges are structures with elements that need to be monitored and/or repaired. Structurally deficient bridges typically need to be rehabilitated or replaced to address deficiencies. It must be noted, however, that structurally deficient bridges are not necessarily unsafe, and bridge inspectors will close or impose weight limits on any bridge that is judged to be unsafe.

* - Bridges are defined by the National Bridge Inventory as any structure that carries or spans vehicular traffic on a public roadway and has a length of more than 20 feet. Bridges less than or equal to 20 feet in length are not included in these statistics, nor are bridges on military bases and private property.

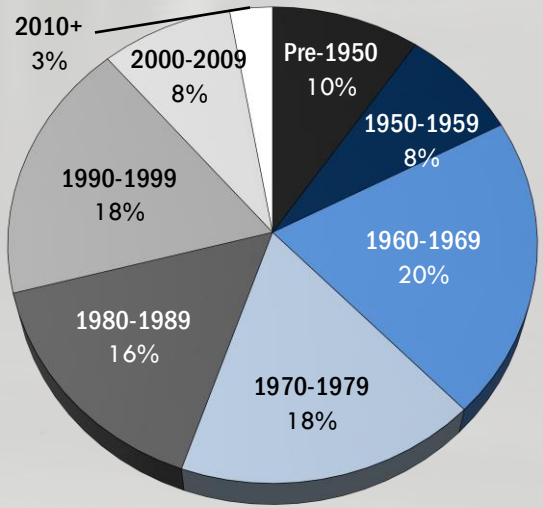
NOTABLE BRIDGE NUMBERS

5.9% The percentage of bridges in Hampton Roads that are classified as structurally deficient as of February 2016.

28% The percentage of bridges in Hampton Roads that are at least 50 years old.

22nd Hampton Roads rank among 36 large metropolitan areas with populations between one and three million people in terms of the percentage of structurally deficient bridges.

BRIDGES IN HAMPTON ROADS BY YEAR BUILT



Data sources: VDOT, FHWA. Data as of February 2016.

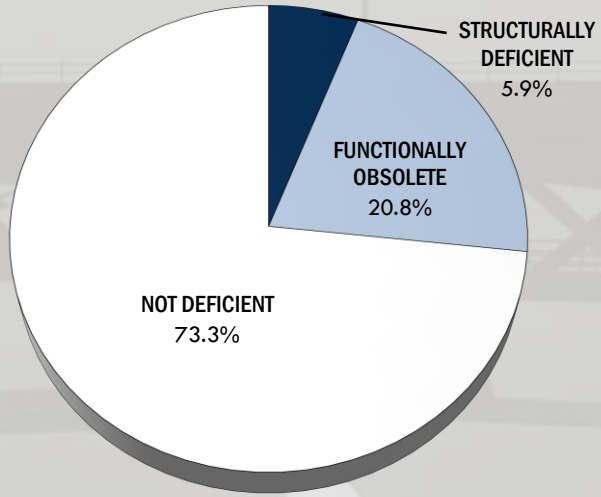
BRIDGES (continued)

Functionally obsolete bridges are structures that were built to standards that are no longer used today. These bridges have narrow lanes, no shoulders, low vertical clearances, difficult approaches, or may occasionally be flooded.

It should be noted that bridges cannot be classified as both structurally deficient and functionally obsolete. Structures that qualify as both structurally deficient and functionally obsolete are classified as structurally deficient.

Of the 1,235 bridges in Hampton Roads, 73 bridges (5.9%) are classified as structurally deficient as of February 2016. This is up from 54 bridges (4.4%) that were classified as structurally deficient in Hampton Roads in 2007, but down from 81 bridges in February 2015. Another 257 bridges (20.8%)

STRUCTURALLY DEFICIENT AND FUNCTIONALLY OBSOLETE BRIDGES IN HAMPTON ROADS, 2016



Data sources: VDOT, FHWA. Data as of February 2016.

NEW DEVELOPMENTS

Veterans Bridge – Construction continues on a replacement of the Dominion Boulevard Steel Bridge in Chesapeake, now known as the Veterans Bridge. The new parallel 95-foot high fixed spans replace the original drawbridge that was opened in 1962. The more southerly of the two spans opened to traffic in December 2014, and the parallel span is expected to open to traffic in early 2017. When complete, Dominion Boulevard will be improved to a tolled, 4-lane limited access facility between the Chesapeake Expressway and Grassfield Parkway.

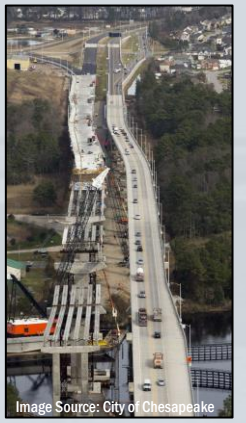


Image Source: City of Chesapeake


Image Source: City of Virginia Beach

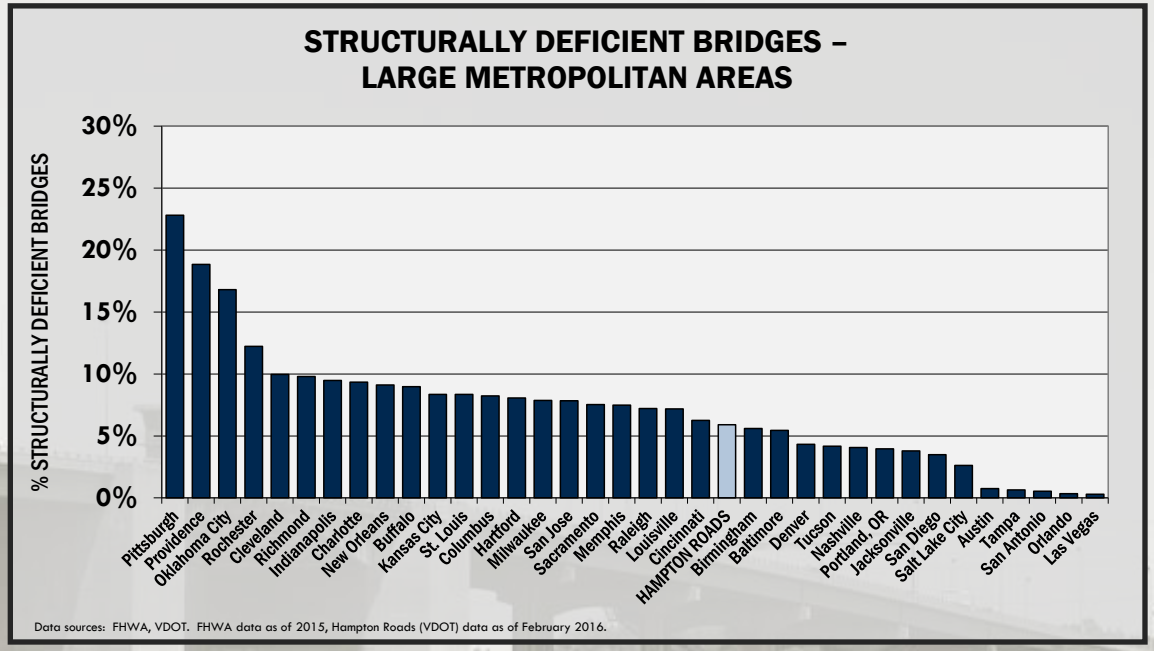
Lesner Bridge – Construction continues on a replacement for the Lesner Bridge, which spans Shore Drive across the Lynnhaven Inlet in Virginia Beach. The new facility is being built to accommodate the possibility of 6 lanes in the future, provide an increased vertical clearance from 35 feet to 45 feet, provide a wider distance between bridge piers, and include new multi-use paths for pedestrians and cyclists. The $117 million structure is expected to be complete by Summer 2017.

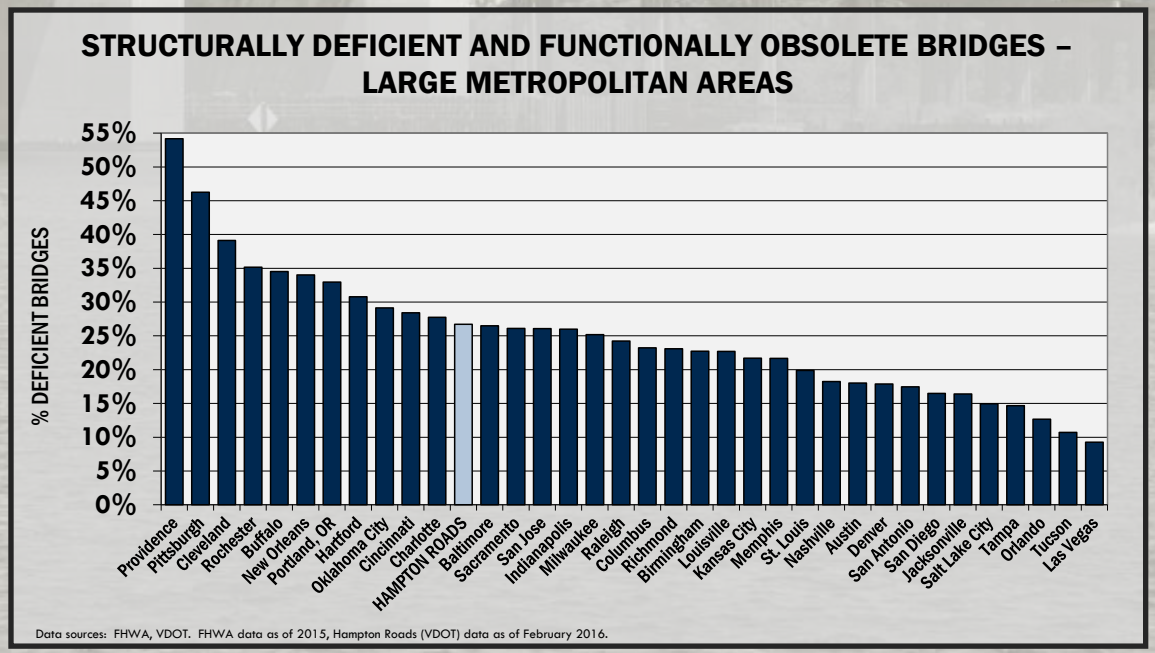
in Hampton Roads are classified as functionally obsolete. Combining structurally deficient and functionally obsolete bridges, 330 bridges (26.7%) in Hampton Roads are deficient as of February 2016.

The percentage of bridges that are classified as structurally deficient in Hampton Roads is below the average of other comparable metropolitan areas. Hampton Roads ranks 22nd highest among 36 large metropolitan areas with populations between one and three million people in terms of the percentage of structurally deficient bridges in each region.

When structurally deficient and functionally obsolete bridges are combined, however, Hampton Roads ranks higher. At 26.7%, Hampton Roads ranks 12th highest among the 36 comparable metropolitan areas between one and three million people in terms of the percentage of deficient bridges.

HRTPO regularly prepares the *Hampton Roads Regional Bridge Study*, which looks at many aspects of the region's bridges. The Regional Bridge Study is available on HRTPO's website at **http://www.hrtpo.org**.





PAVEMENT CONDITION

VDOT's recent Interstate pavement rehabilitation efforts have greatly improved the condition of state-maintained roadways in Hampton Roads, and pavement in Hampton Roads is generally in better condition than in other metropolitan areas.

VDOT annually releases the State of the Pavement report, which details the condition and ride quality of state-maintained roadways. VDOT produces this report using data collected annually on each mile of Interstate and Primary roadway throughout the state and on a nearly 20% sample of Secondary roadways. Based on this data, VDOT categorizes both the pavement condition and ride quality of roadways.

Pavement condition describes the amount of pavement distresses – such as cracking, patching, and rutting – on each roadway. The Critical Condition Index (CCI) is a measure that is determined based on these distresses, and pavement condition is rated as excellent, good, fair, poor, or very poor based on the CCI. Roadways that are in poor or very poor condition are considered to be deficient, and VDOT has a goal that no more than 18% of Interstate and Primary roadways be classified as deficient.

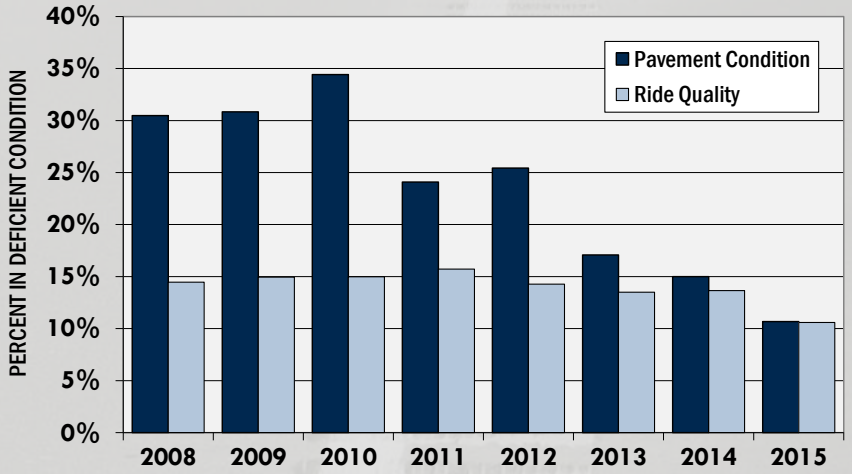
The percentage of state-maintained roadways in deficient condition in Hampton Roads has decreased in recent years. As recently as 2010, more than a third of state-maintained Interstate and Primary roadways in Hampton Roads had a deficient pavement condition. After extensive repaving efforts throughout the region, only 11% of state-maintained Interstates and Primary roadways in Hampton Roads had a deficient

NOTABLE PAVEMENT CONDITION NUMBERS

11% Percent of state-maintained Interstate and Primary roadway lane-miles in Hampton Roads that had a deficient pavement condition in 2015. This is down from 34% as recently as 2010.

15th Hampton Roads rank among 36 large metropolitan areas with populations between one and three million people in terms of the percentage of roadways with pavement in poor condition in 2013.

PERCENT OF VDOT-MAINTAINED INTERSTATE AND PRIMARY ROADWAY PAVEMENT IN DEFICIENT CONDITION IN HAMPTON ROADS, 2008-2015



Data source: VDOT. Pavement with poor or very poor pavement condition or ride quality is considered deficient.

PAVEMENT CONDITION (continued)

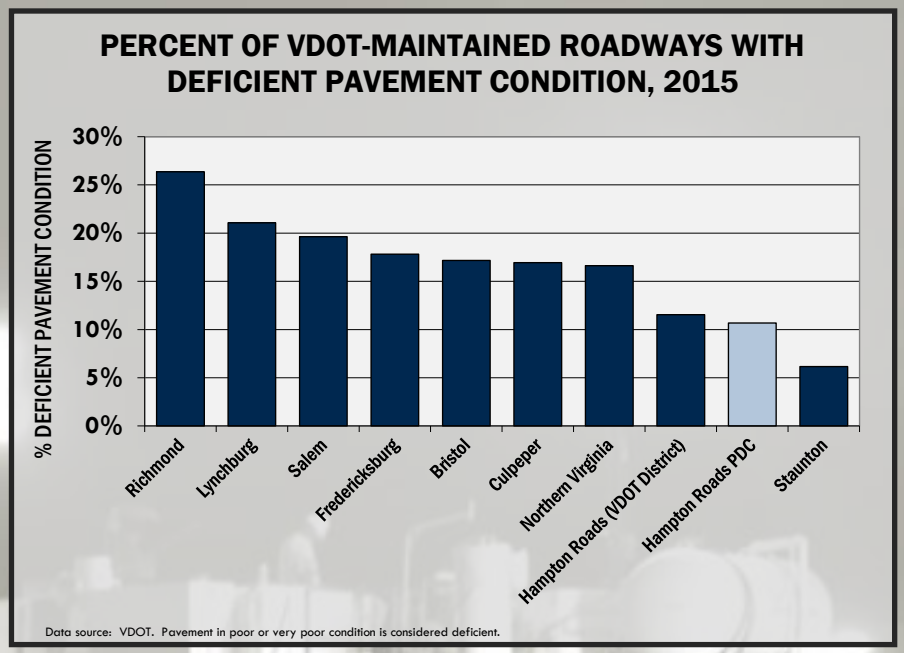
pavement condition in 2015. Interstates in Hampton Roads have particularly improved, with less than 4% having a deficient pavement condition in 2015.

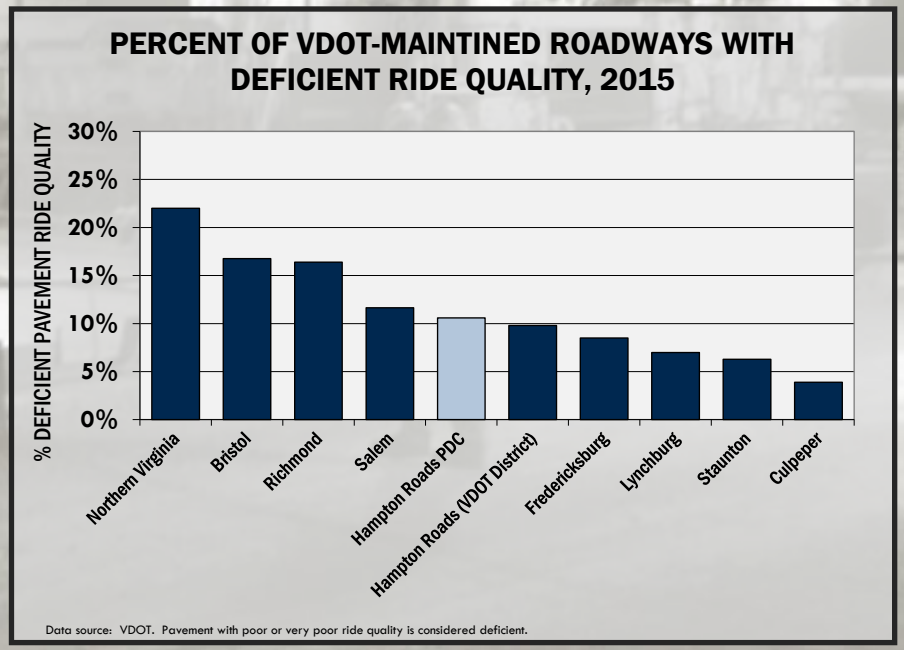
The pavement condition is better in Hampton Roads than in most other areas of the state. Looking only at state-maintained Interstate and Primary roadways, the 11% of lane-miles in Hampton Roads that have a deficient pavement condition is better than all of the other VDOT Districts except for Staunton, and is much better than other urban areas like the Richmond (26%) and Northern Virginia (17%) VDOT Districts.

VDOT also collects data regarding the ride quality of roadway pavement. Ride quality describes the roughness of pavement based on a sum of the irregularities in the pavement surface. The International Roughness Index (IRI) is a measure that describes these irregularities, and ride quality is rated as excellent, good, fair, poor, or very poor based on the IRI. Roadways with a poor or very poor ride quality are considered to be deficient, and VDOT has a goal that no more than 15% of Interstate and Primary roadways be classified as deficient in terms of ride quality.

The ride quality of pavement in Hampton Roads has slightly improved in recent years. In 2014, 11% of state-maintained Interstate and Primary roadways in Hampton Roads had a deficient ride quality, down from 16% in 2011 and 14% in 2014.

The pavement ride quality is better in Hampton Roads than in other large metropolitan areas of the state. The 11% of state-maintained Interstate and Primary lane-miles in Hampton Roads that have a deficient pavement ride quality ranks in the





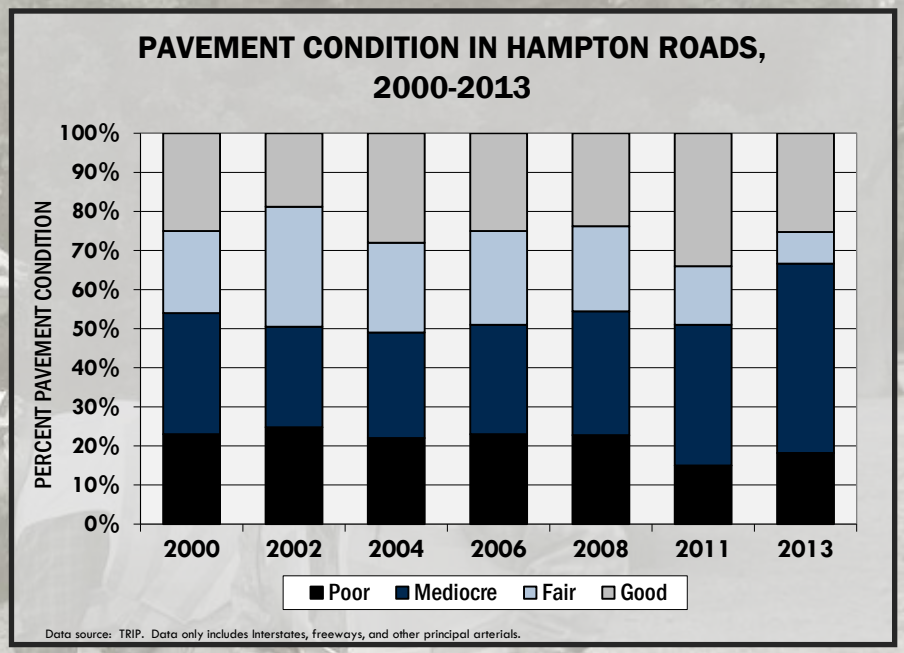
PAVEMENT CONDITION (continued)

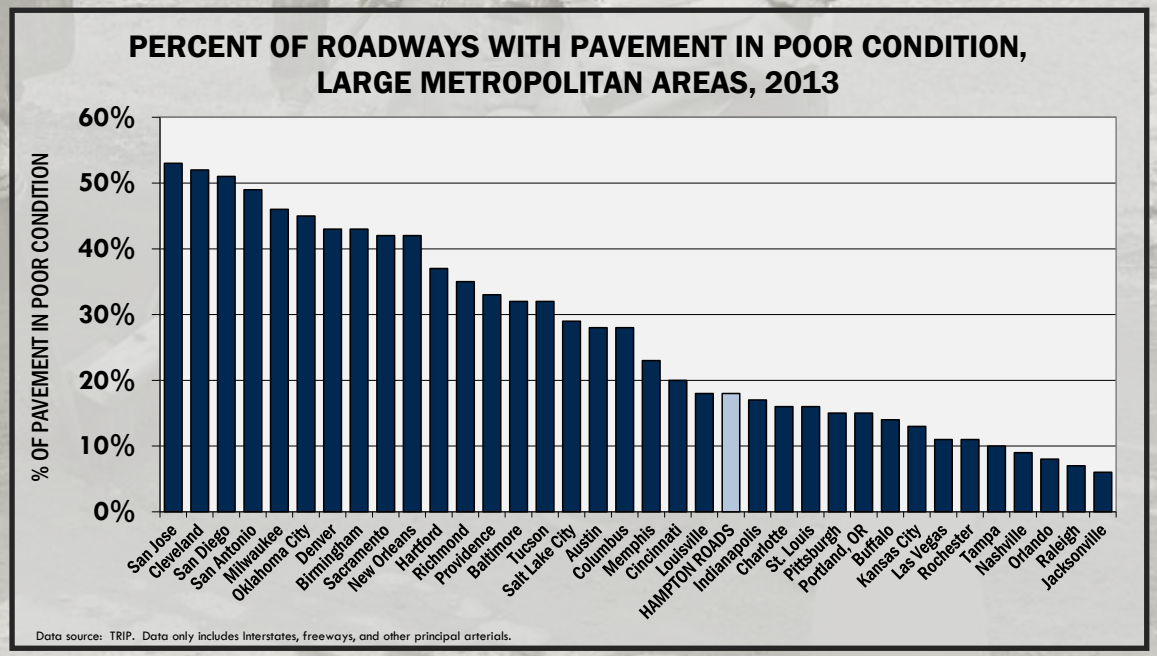
middle compared to VDOT Districts throughout the state but is better than the Northern Virginia (22%) and Richmond (16%) VDOT Districts.

Another source of pavement condition data is produced by TRIP, which is an organization that researches, evaluates and distributes economic and technical data on surface transportation issues. TRIP regularly releases an analysis of the condition of major roadways in metropolitan areas and the costs that deteriorating roadways have on the public.

According to TRIP, 18% of the major roadways in Hampton Roads had pavement that was in poor condition in 2013, the most recent data available. Another 48% of Hampton Roads roadways were rated as mediocre, 8% were rated as fair, and only 25% were rated as good. The percent of pavement in poor condition has decreased in recent years according to TRIP, down from 22%-25% throughout the last decade.

Among the 36 large metropolitan areas with populations between one and three million people, Hampton Roads ranked 15th best in terms of the percentage of roadways with pavement in poor condition in 2013. Some metropolitan areas such as San Jose, Cleveland, and San Diego had three times the percentage of major roadways in poor condition than Hampton Roads did.

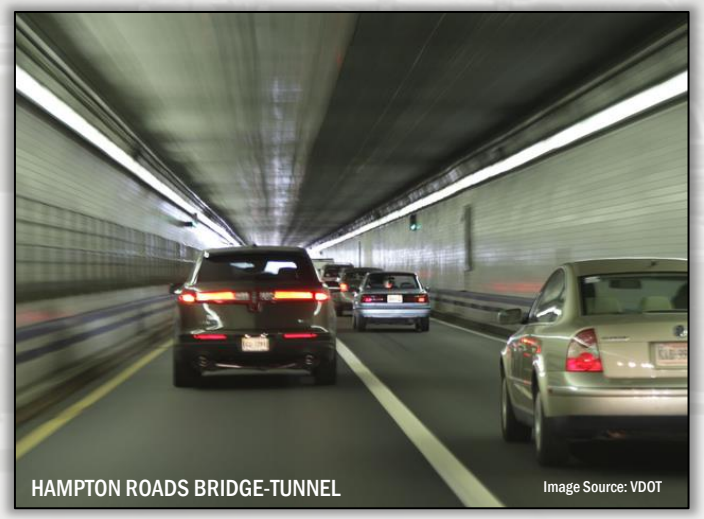




ROADWAY USAGE

After years of flat or decreasing roadway travel levels in Hampton Roads, traffic volumes grew in the region in 2015. This is similar to the trend seen throughout Virginia and the United States.

The amount of roadway travel is measured in terms of vehicle-miles of travel, which is the total number of miles every vehicle in the region travels over a period of time. VDOT annually estimates jurisdictional roadway travel levels based on traffic counts collected on a regular basis. VDOT estimates that there were nearly 39 million vehicle-miles of travel (VMT) on the average day in Hampton Roads in 2014.



HAMPTON ROADS BRIDGE-TUNNEL

Image Source: VDOT

The amount of roadway travel in Hampton Roads has decreased over the last decade according to VDOT estimates. Between 2005 and 2014, there was a 3.6% decline in vehicular travel in Hampton Roads. This is a variation from

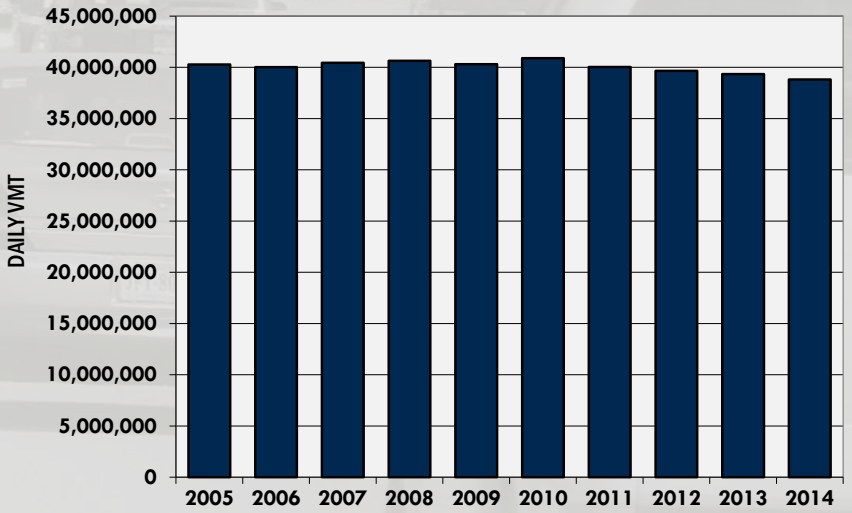
NOTABLE ROADWAY USAGE NUMBERS

-4% The decline in daily roadway travel in Hampton Roads between 2005 to 2014.

2% The increase in the amount of daily roadway travel in Hampton Roads between 2014 and 2015 based on regional continuous count stations.

31st Hampton Roads rank among 36 large metropolitan areas with populations between one and three million people in terms of vehicular travel per capita in 2014.

DAILY VEHICLE-MILES OF TRAVEL (VMT) IN HAMPTON ROADS, 2005-2014



Data source: VDOT.

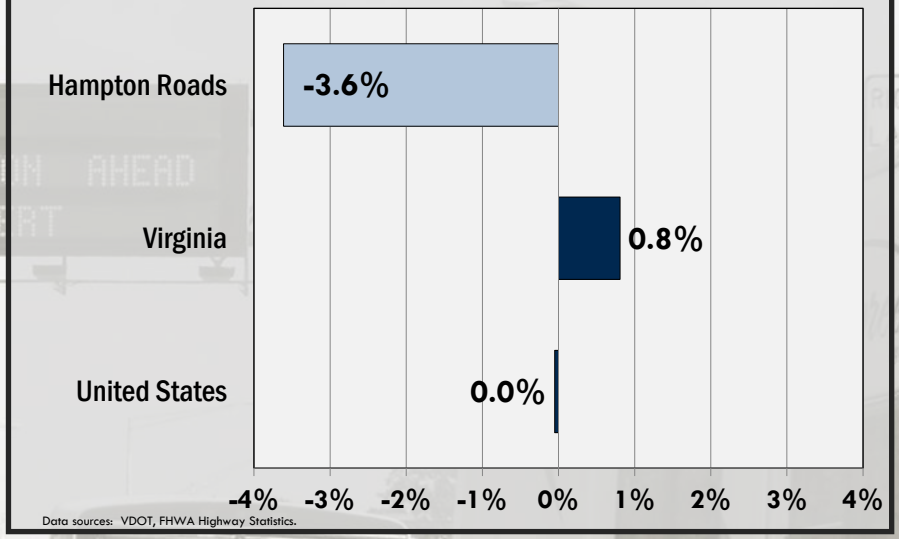
historical trends, as regional traffic volumes typically grew at about a 2% rate annually until early in the 2000s.

Similar to Hampton Roads, both Virginia and the United States have seen the amount of roadway travel level off. Between 2005 and 2014, roadway travel only grew by 0.8% in the Commonwealth and was flat across the country. However, preliminary data indicates that roadway travel increased by 3.5% in the United States between 2014 and 2015, reaching record high levels.

The decrease in roadway travel in Hampton Roads occurred as the regional population continued to increase. This combination produced a decrease in vehicular travel per capita. The vehicular travel per capita in Hampton Roads was 22.7 vehicle-miles per person per day in 2014, down 7.9% from 24.7 daily vehicle-miles per capita in 2005.

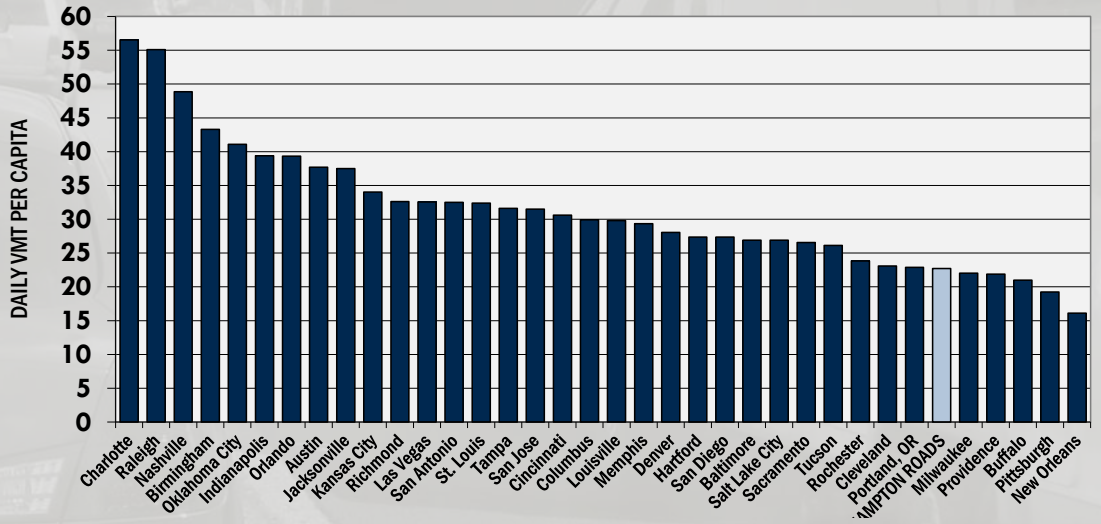
Among 36 large metropolitan areas in the United States with populations between one and three million people, Hampton Roads ranked 31st highest in vehicular travel per capita in 2014. Areas such as Charlotte, Raleigh, and Nashville have travel levels more than twice the levels seen in Hampton Roads. By comparison, Hampton Roads ranked 27th highest among these 36 areas back in 2005.

CHANGE IN VEHICLE-MILES OF TRAVEL IN HAMPTON ROADS, VIRGINIA, AND THE UNITED STATES, 2005 TO 2014



Data sources: VDOT, FHWA Highway Statistics.

DAILY VEHICLE-MILES OF TRAVEL PER CAPITA IN LARGE METROPOLITAN AREAS, 2014



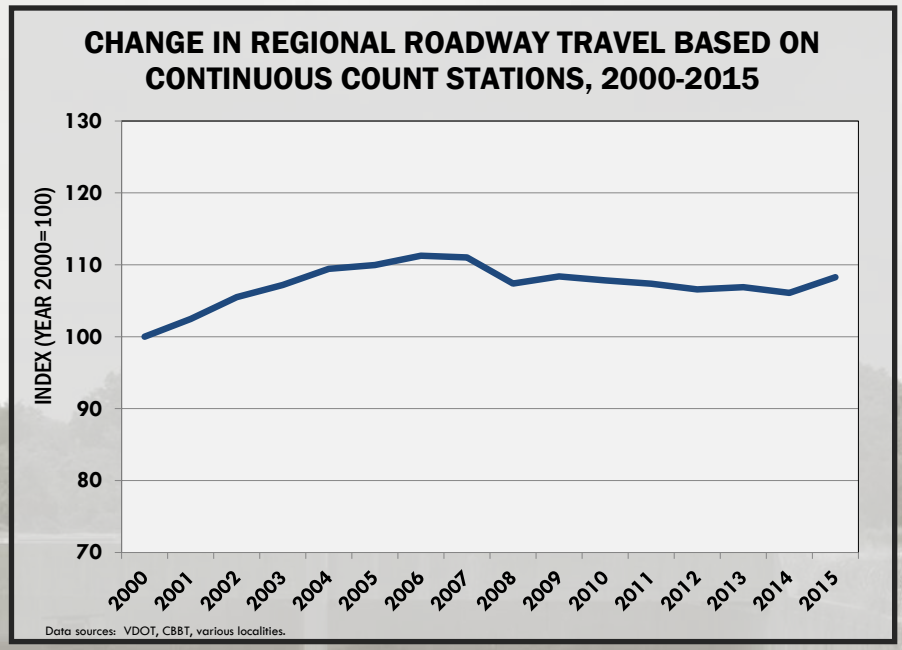
Data source: FHWA Highway Statistics.

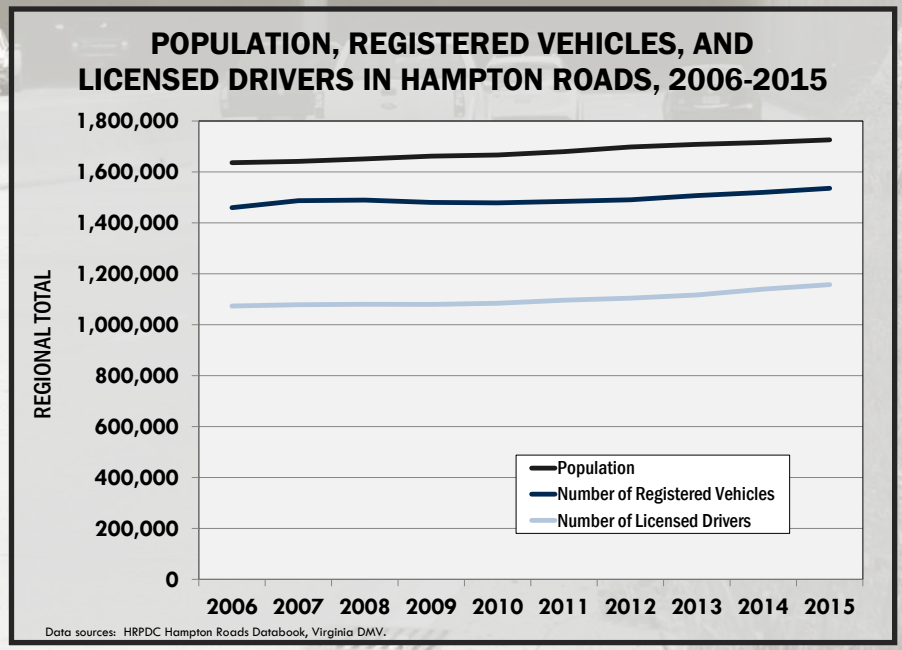
ROADWAY USAGE (continued)

Another method of measuring the change in roadway travel is by using count stations that continuously collect traffic volume data throughout the entire year. In Hampton Roads there are approximately 60 locations equipped with continuous count stations, primarily on major roadways such as freeways and principal arterials. Based on the data collected at these locations, regional traffic volumes grew 8.3% between 2000 and 2015. However, it is notable that regional traffic volumes increased from 2014 to 2015. The 2.0% increase in volumes from 2014 to 2015 is the largest year-to-year increase in regional roadway travel since 2004, and follows decreases in roadway travel in six out of the last eight years.

There were 1,535,000 vehicles registered in Hampton Roads in 2015. This equates to 0.89 vehicles for every Hampton Roads resident. The growth in the number of registered vehicles between 2006 and 2015 (+5.2%) was only slightly lower than the growth in population (+5.5%) over this period.

The growth in the number of licensed drivers in Hampton Roads, however, outpaced population growth. There were 1,157,000 licensed drivers in Hampton Roads in 2015, up 7.9% from 2006. With the growth in licensed drivers outpacing the growth in registered vehicles, the number of vehicles per licensed driver has decreased. There were 1.33 registered vehicles for every licensed driver in Hampton Roads in 2015, down from 1.36 registered vehicles per licensed driver in 2006.





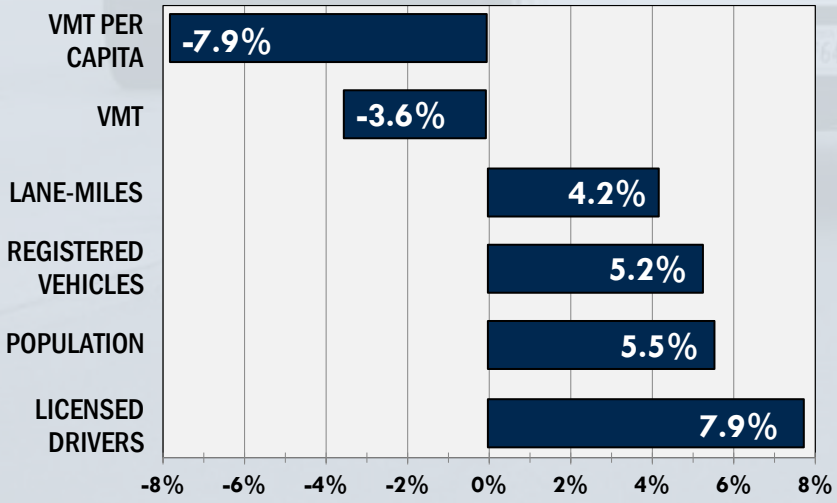
ROADWAY USAGE (continued)

Between 2005 and 2014, the amount of roadway capacity in Hampton Roads in terms of lane mileage* increased by 4.2%. This is lower than the growth in regional population (+5.5%) but is much higher than the change in regional vehicle-miles traveled (-3.6%).

It should be noted, however, that the majority of the growth in regional roadway lane mileage was in local roadways. These local roadways typically serve neighborhoods and carry low traffic volumes. Despite comprising around 65% of the lane mileage of the regional roadway network, local roadways only carried 12% of the total vehicular travel in Hampton Roads in 2014.

* - A lane-mile is defined as the length of a roadway times the number of lanes and is commonly used to describe the amount of roadway capacity. A one mile section of a roadway that is 6 lanes wide comprises 6 lane-miles.

CHANGE OVER THE LAST DECADE IN VMT PER CAPITA, VMT, LANE-MILES, POPULATION, REGISTERED VEHICLES, AND LICENSED DRIVERS IN HAMPTON ROADS



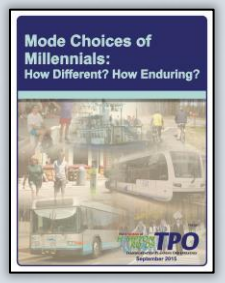
Data sources: HRPDC Hampton Roads Databook, Virginia DMV, VDOT.

BEHIND THE NUMBERS

As stated in this section, roadway travel in Hampton Roads and throughout the country has leveled off in recent years, before increasing over the last year. A variety of factors likely caused this decrease, first and foremost being the condition of the regional and national economy. Changing land use patterns, increased use of public transportation, and the retirement of Baby Boomers also contributed to the decrease in travel over the last decade.

Another factor that contributed to this decrease was the travel patterns of Millennials – those currently aged roughly between 18 and 34 years old. National data has shown that Millennials drive less than previous generations at the same age. For example, according to the U.S. Public Interest Research Group, Millennials drove almost one-quarter less than their counterparts eight years earlier, while their number of miles traveled per capita on public transportation rose 40%.

Last year, HRTPO prepared an analysis of the travel habits of Millennials. This report – *Mode Choices of Millennials: How Different? How Enduring?* – determined the impact that demographic characteristics such as income, time period, age, era, and generation have on mode choice. The analysis revealed that being a Millennial is a positive factor concerning usage of alternative transportation, and if everything else is kept equal, the usage of alternative transportation for commuting in Hampton Roads would increase from 5.3% in 2010 to 6.9% in 2050 because of Millennials.



CONGESTION DATA

Local commuters spent an average of 45 hours stuck in congestion in 2014, and this congestion directly and indirectly cost local residents hundreds of millions of dollars.

The Texas Transportation Institute (TTI) at Texas A&M University publishes the Urban Mobility Scorecard on a regular basis. The most recent version of this report – which includes data through 2014 – provides a comprehensive analysis of traffic conditions in all 471 metropolitan areas throughout the United States. This analysis is largely based on data collected by INRIX, which uses actual travel times and speeds from millions of probe vehicles, including taxis, delivery vans, trucks, and smartphone users.

As part of the Urban Mobility Scorecard, (TTI) determines the amount of congestion in each metropolitan area using a measure called the travel time index. The travel time index is the percentage of extra travel time the average trip takes during the peak period as compared to uncongested conditions in each region. The Hampton Roads Travel Time Index was 1.19 in 2014 according to TTI. This regional congestion measure ranks Hampton Roads 19th highest among the 36 metropolitan areas with populations between one and three million people.

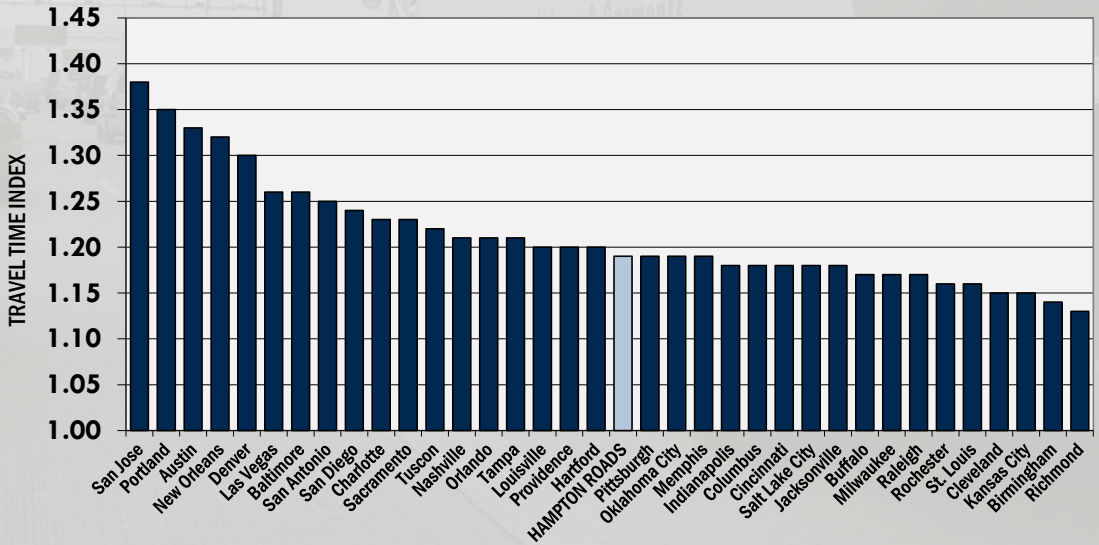
NOTABLE CONGESTION NUMBERS

1.19 The Travel Time Index in Hampton Roads in 2014, which means the average trip takes 19% longer during the peak travel period as compared to uncongested conditions.

45 The average amount of time stuck in congestion by peak period commuters traveling by automobile in Hampton Roads in 2014.

$953 The average cost of being stuck in congestion for each Hampton Roads peak period auto commuter in 2014 according to TTI.

TRAVEL TIME INDEX, LARGE METROPOLITAN AREAS, 2014

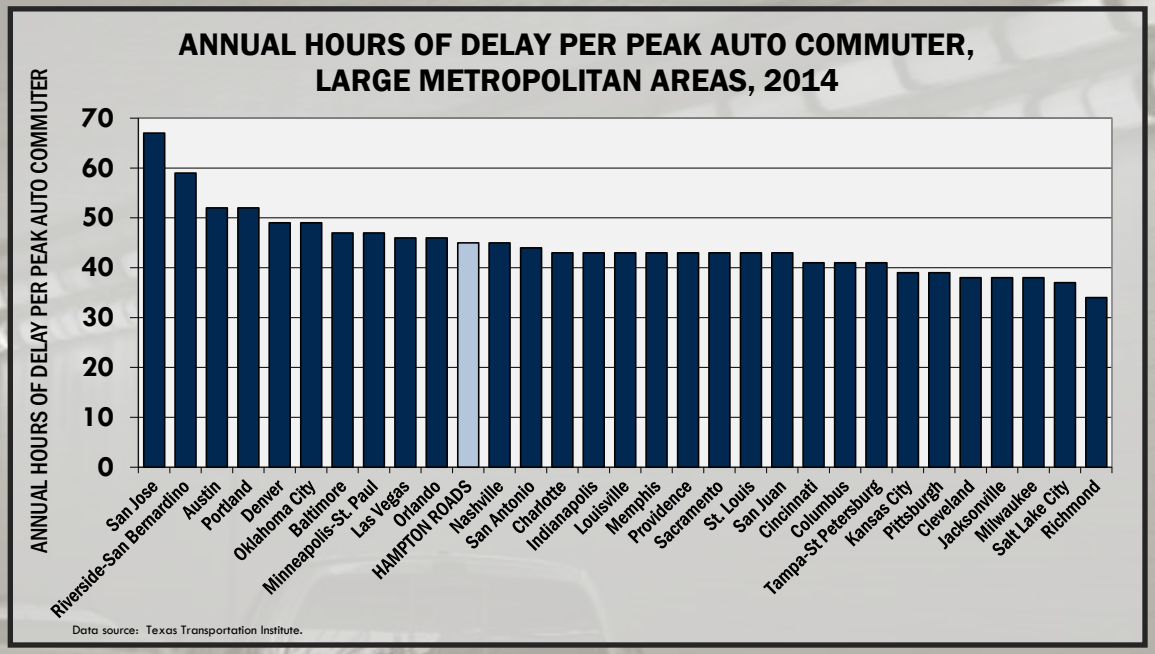


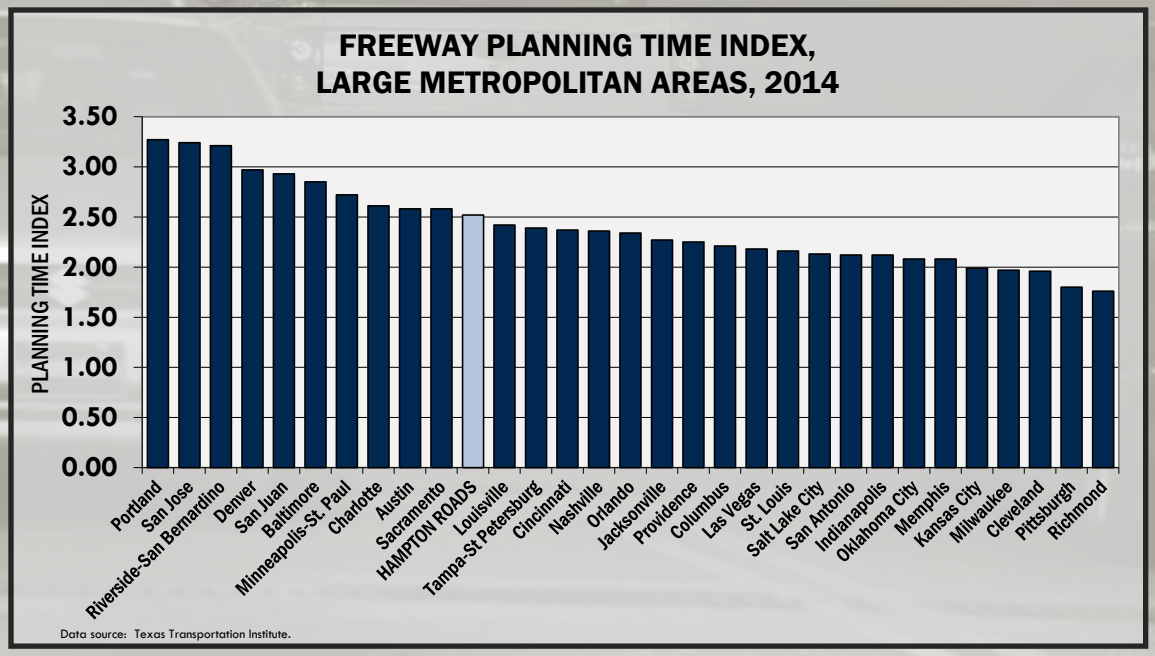
Data source: TTI. The Travel Time Index is the percentage of extra travel time the average trip takes during the peak period as compared to uncongested conditions in each region.

CONGESTION DATA (continued)

In the Urban Mobility Scorecard, TTI also publishes the amount of time that travelers spend in congestion, and the costs related to this congestion. According to the most recent report, peak period commuters traveling by automobile in Hampton Roads spent an average of 45 hours stuck in congestion in 2014. This ranked the region 11th highest among the 36 comparable large metropolitan areas. Since TTI began using INRIX speed data in its analysis in 2008, the annual hours of delay per peak auto commuter in Hampton Roads has increased slightly, up from 43 hours.

TTI also publishes a measure in the Urban Mobility Scorecard called the Planning Time Index, which details the travel time reliability of the freeway network. The Planning Time Index represents the total time that should be planned for a trip so that the driver would only be late 5% of the time. The Freeway Planning Time Index in Hampton Roads in 2014 was 2.52, meaning that for an average uncongested 20-minute trip, just over 50 minutes should be allocated during peak periods to be on time 95% of the time. At 2.52, the Hampton Roads Planning Time Index ranked 11th highest among the 36 large metropolitan areas in 2014.



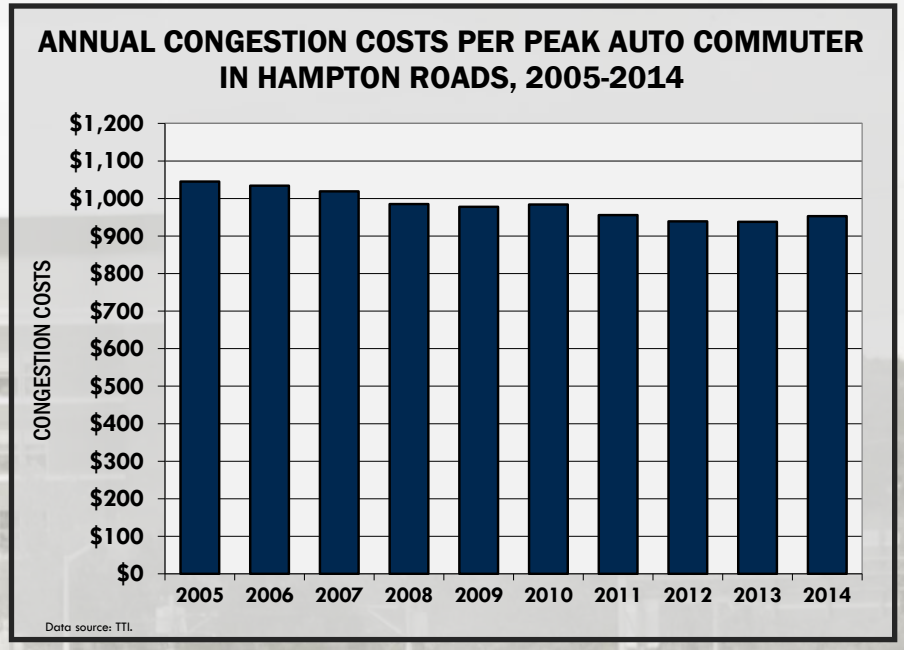


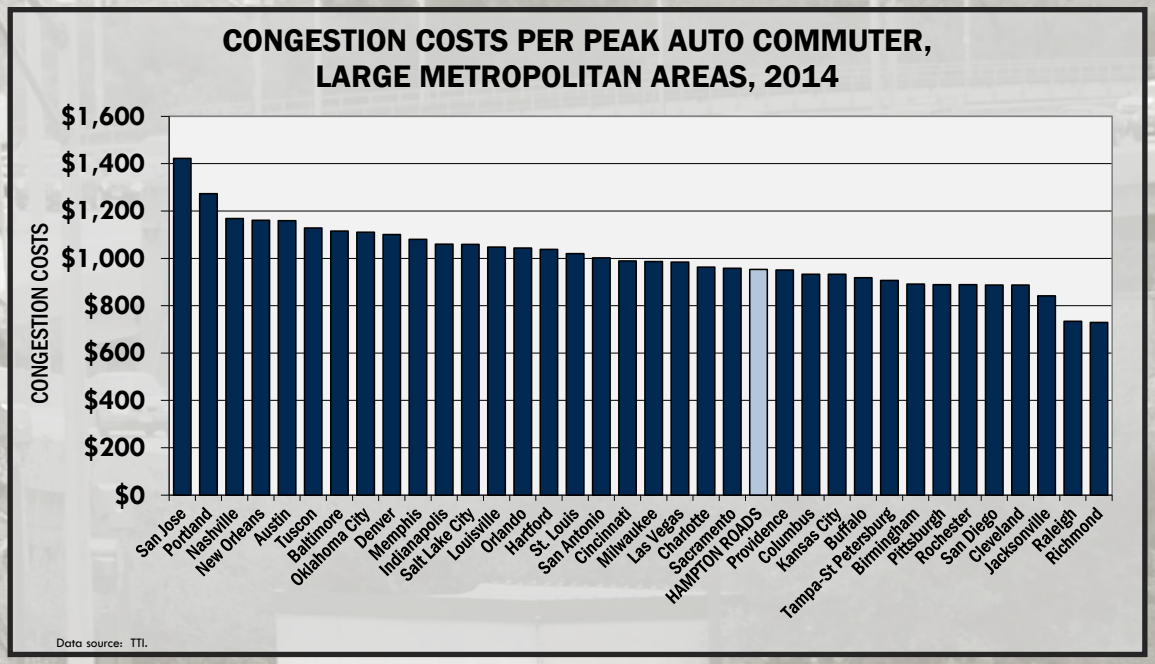
CONGESTION DATA (continued)

TTI uses these congestion measures to estimate the costs of being stuck in congestion. TTI estimates that being stuck in congestion cost each Hampton Roads peak period auto commuter an average of $953 in 2014, which amounts to just over one billion dollars for all regional commuters. These values take into account the costs associated with wasted fuel (TTI estimates that over 20 million gallons were wasted in Hampton Roads in 2014), the value of a person's time, and the costs associated with operating commercial vehicles. Congestion costs in Hampton Roads have decreased slightly over the last decade and are lower than in comparable metropolitan areas, ranking 23rd highest of the 36 areas with populations between one and three million people. This is largely due to lower gasoline costs in Hampton Roads.

In addition to TTI, other agencies produce reports on congestion levels in metropolitan areas. TomTom produces the TomTom Traffic Index, which is similar to the travel time index. According to TomTom, the TomTom Traffic Index in Hampton Roads was 18% in 2015, similar to TTI's Travel Time Index from the year before. Among the 36 large metropolitan areas, Hampton Roads had the 13th highest congestion level based on the TomTom Traffic Index.

FHWA has also begun releasing the Urban Congestion Report, which includes another measurement of the travel time index. However, a full year of data is not yet available in this report.





COMMUTING

Hampton Roads has a lower commuting time than comparable metropolitan areas, even though nearly half of all workers in the region work in a jurisdiction that is different than the one they reside in.

The United States Census Bureau annually collects and releases socioeconomic data through the American Community Survey (ACS). As part of the ACS, information regarding the commuting characteristics of residents, including commuting modes, travel time to work, and where commuters work and live, is collected for each metropolitan area.

According to the ACS, the mean travel time to work in Hampton Roads was 24.1 minutes in 2014. This number has increased from 1990, when the mean travel time to work was 21.8 minutes, but has largely remained unchanged throughout the 2000s, remaining between 23 and 24 minutes.

Among the 36 large metropolitan areas throughout the United States with a population between one and three million people, Hampton Roads has a relatively low travel time to work, ranking 26th highest in 2014. Since 2005, Hampton Roads has ranked between 24th highest and 29th highest in terms of travel time to work among the 36 large metropolitan areas.

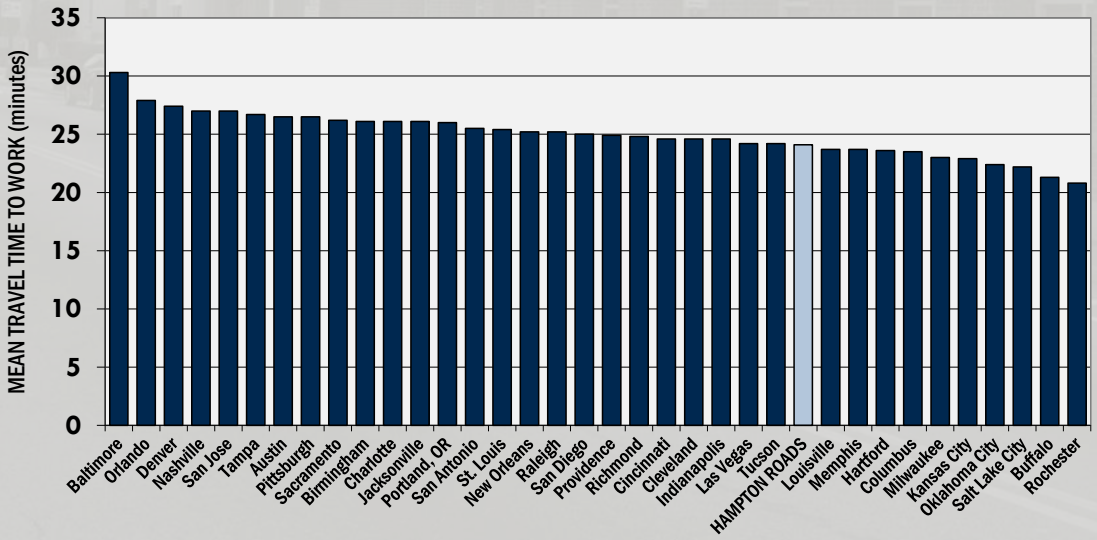
NOTABLE COMMUTING NUMBERS

82% The percentage of commuters in Hampton Roads that drove alone to work in 2014.

47% The percentage of all workers in Hampton Roads that worked in a jurisdiction that was different from the one they resided in in 2014.

24 The mean travel time to work in minutes in Hampton Roads in 2014.

MEAN TRAVEL TIME TO WORK IN LARGE METROPOLITAN AREAS, 2014

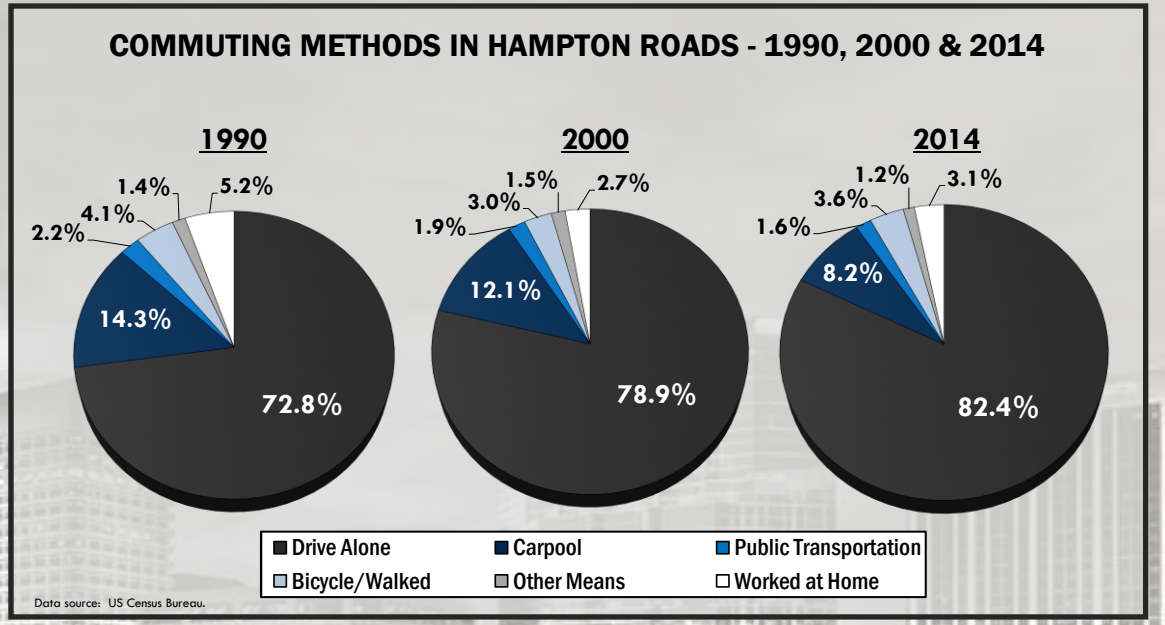


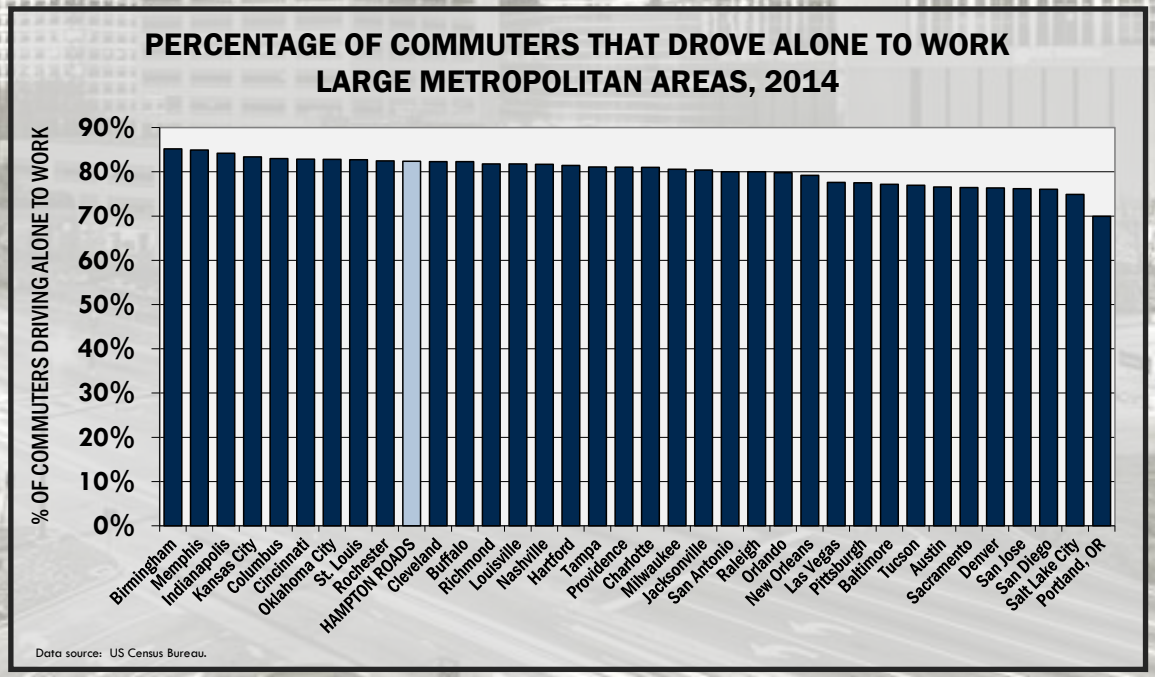
Data source: US Census Bureau.

COMMUTING (continued)

Many Hampton Roads residents, however, have much longer commutes. In 2014, nearly one out of every three Hampton Roads commuters (33%) traveled 30 minutes or longer to work, and over 5% had commutes of an hour or more.

The percentage of commuters in Hampton Roads who drive alone to work has increased through the years. In 2014, 82% of commuters in Hampton Roads drove alone to work. This is up from 73% in 1990 and 79% in 2000, but has varied between 79% and 83% since 2000. In turn, the percentage of commuters in Hampton Roads carpooling to work decreased from 14% in 1990 to 12% in 2000 and to 8% in 2014. The percentage of commuters in Hampton Roads using public transportation has also decreased, while those bicycling/walking remained nearly the same.

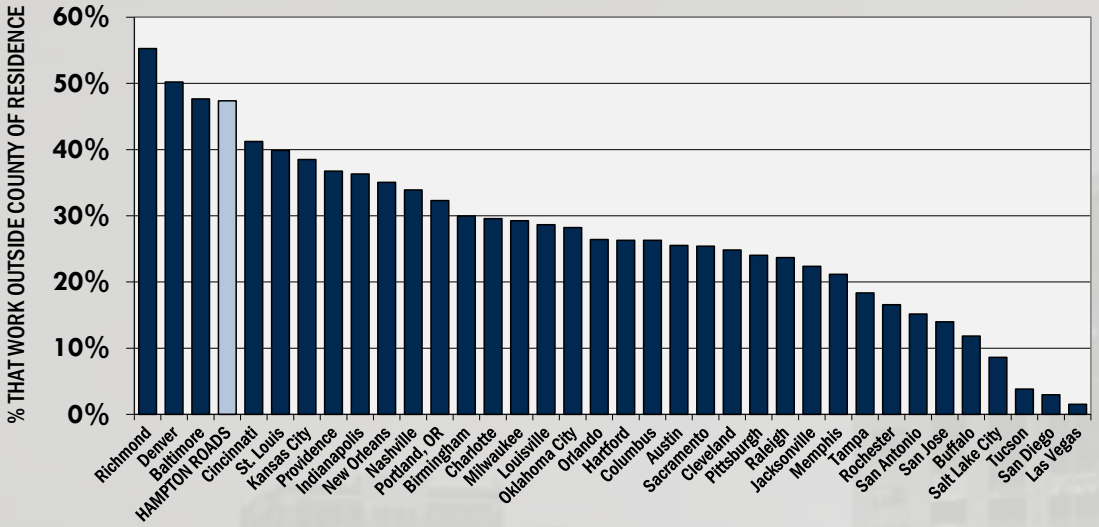




The percentage of commuters driving alone to work in Hampton Roads is slightly higher than in other comparable areas. Hampton Roads ranked 10th highest among the 36 large metropolitan areas in terms of the percentage of commuters that drove alone to work in 2014, although it is only slightly above the median of 81.0%.

An area where Hampton Roads isn't typical, however, is in the percentage of workers that work outside of their locality of residence. In 2014, 47% of all workers in Hampton Roads worked in a jurisdiction that was different than the one they resided in. Although this percentage is higher than that seen in 1990 (44%), it is lower than the percentage seen in 2000 (49%), and the high that was experienced in 2005 (50%). It is higher than the percentage seen in many other areas, ranking 4th highest among the 36 large metropolitan areas with populations between one and three million people, and 13th highest among all 381 metropolitan areas nationwide.

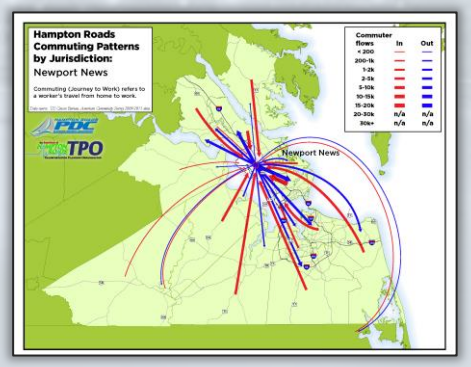
PERCENTAGE OF WORKERS THAT WORKED OUTSIDE COUNTY OF RESIDENCE, LARGE METROPOLITAN AREAS, 2014



Data source: US Census Bureau. Virginia cities are regarded as counties in Census data.

COMMUTING MAPS

Nearly half of all Hampton Roads commuters work in a jurisdiction that is different than the one they reside in. Because of this interconnectedness between the localities that constitute Hampton Roads, HRTPO staff – in conjunction with Hampton Roads Planning District Commission (HRPDC) staff – prepared individual jurisdiction maps showing these commuting patterns that illustrate the journeys residents take each day to their place of work.



These maps are available at http://www.hrtpo.org/page/hampton-roads-journey-to-work-maps.

ROADWAY SAFETY

The number of motor vehicle crashes in Hampton Roads decreased significantly at the end of the last decade. However, since the start of this decade, the number of crashes and injuries suffered throughout the region has increased.

There were a total of 25,310 crashes in Hampton Roads in 2015 according to data provided by the Virginia Department of Motor Vehicles. This is much lower than the 32,000 crashes that occurred yearly in the middle of last decade, and between 2006 and 2015 the number of crashes in Hampton Roads decreased 21%. However, the number of crashes experienced in the region has increased by 9% since 2010, but has largely remained unchanged since 2012.

As the number of crashes decreased in Hampton Roads during the latter half of the last decade, the number of injuries resulting from traffic crashes decreased as well. There were 14,955 injuries that resulted from traffic crashes in Hampton Roads in 2015. This is down 7% from the 16,000 injuries that occurred in 2006, but is 11% higher than the 13,449 injuries in the region in 2010. The decrease in the number of injuries in Hampton Roads over the last decade is less than the decrease that was experienced across the Commonwealth (-11%) during this time.

The number of fatalities in Hampton Roads has fluctuated over the last decade. There were 121 fatalities resulting from traffic crashes in Hampton Roads in 2015, or one fatality every three days. This is down 14% from 141 fatalities in 2006, and 22% from the high of 155 fatalities in 2007. However, the

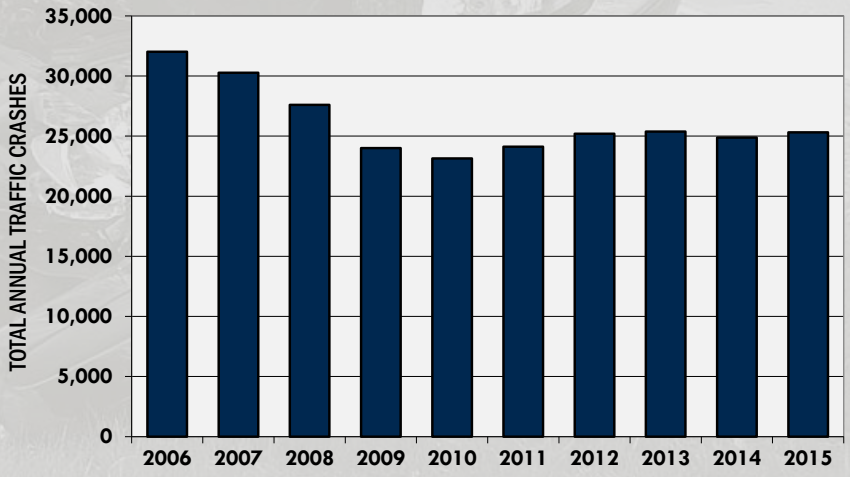
NOTABLE ROADWAY SAFETY NUMBERS

-21% The decrease in the number of crashes in Hampton Roads between 2006 and 2015.

-7% The decrease in the number of injuries in Hampton Roads between 2006 and 2015.

-14% The decrease in the number of fatalities in Hampton Roads between 2006 and 2015.

CRASHES IN HAMPTON ROADS, 2006-2015



Data source: Virginia DMV.

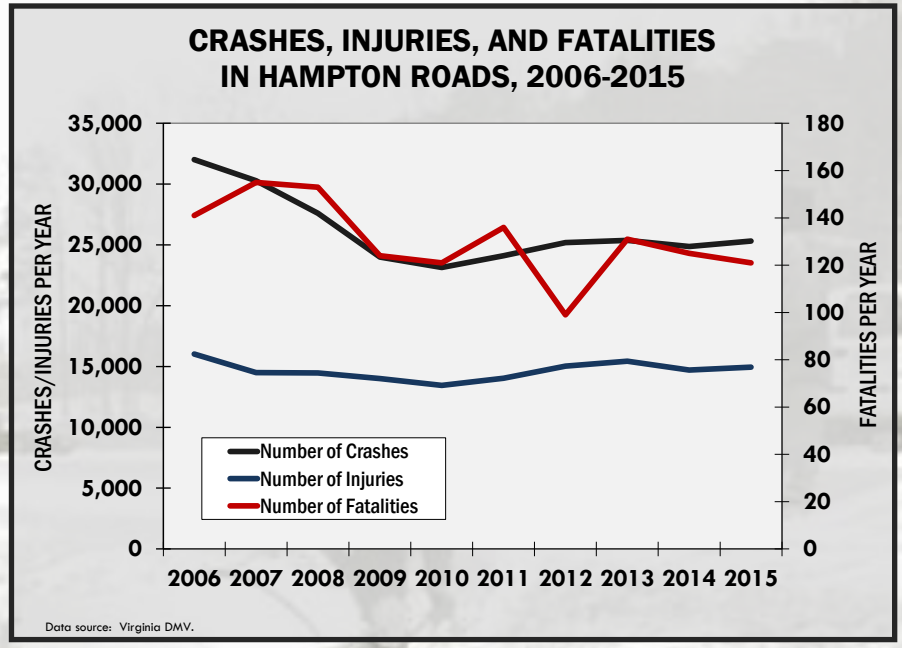
decrease in the number of fatalities in Hampton Roads over the last decade was less than the decrease seen across the state (-22%) and the country (-17%).

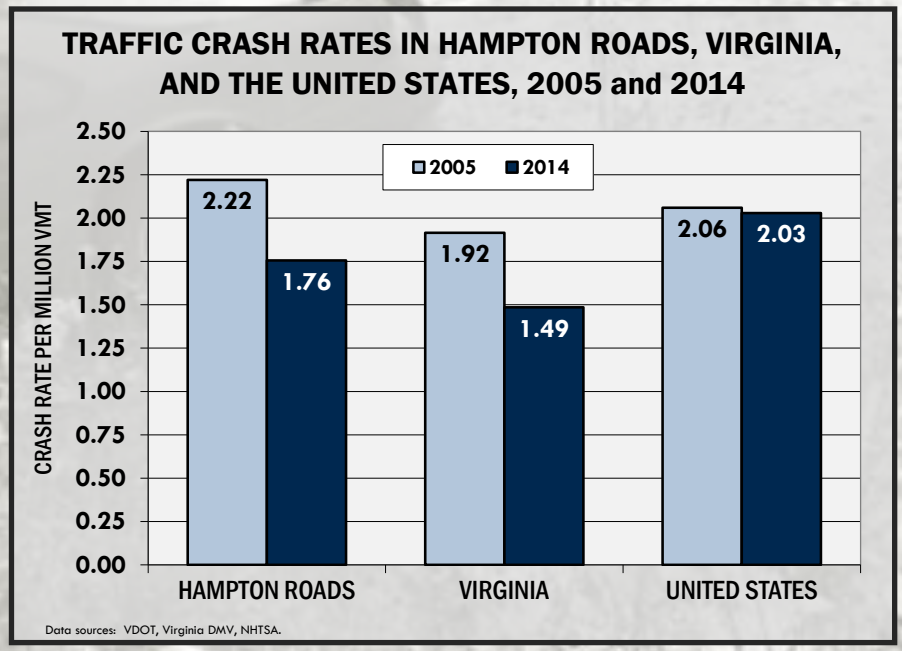
With the number of crashes largely decreasing in Hampton Roads over the last decade, the rate of crashes relative to the amount of travel has decreased as well. The crash rate in Hampton Roads decreased from 2.22 crashes per million vehicle-miles of travel (VMT) in 2005 to 1.76 crashes per million VMT in 2014, a 21% decrease. This decrease in the crash rate is nearly the same as the decrease seen across Virginia (-22%) and much higher than the decrease seen across the United States (-1%) during this period.


SAFETY SERVICE PATROL

Image Source: VDOT

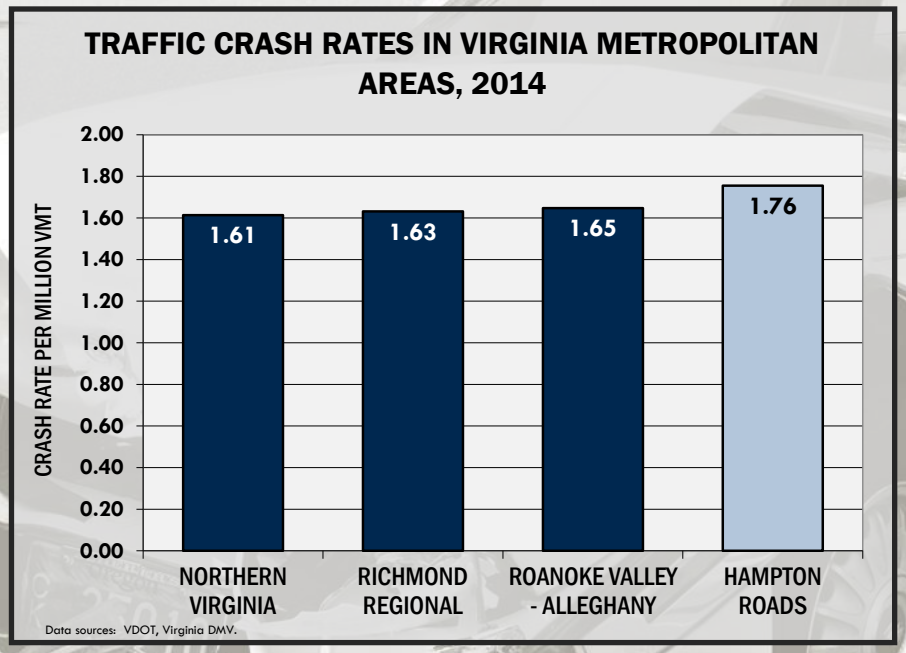
Despite the decrease, the crash rate in Hampton Roads was higher than the statewide rate in 2014, and was higher than the crash rate experienced in other metropolitan areas of Virginia including Northern Virginia (1.61 crashes per million VMT), Richmond (1.63) and Roanoke (1.65).

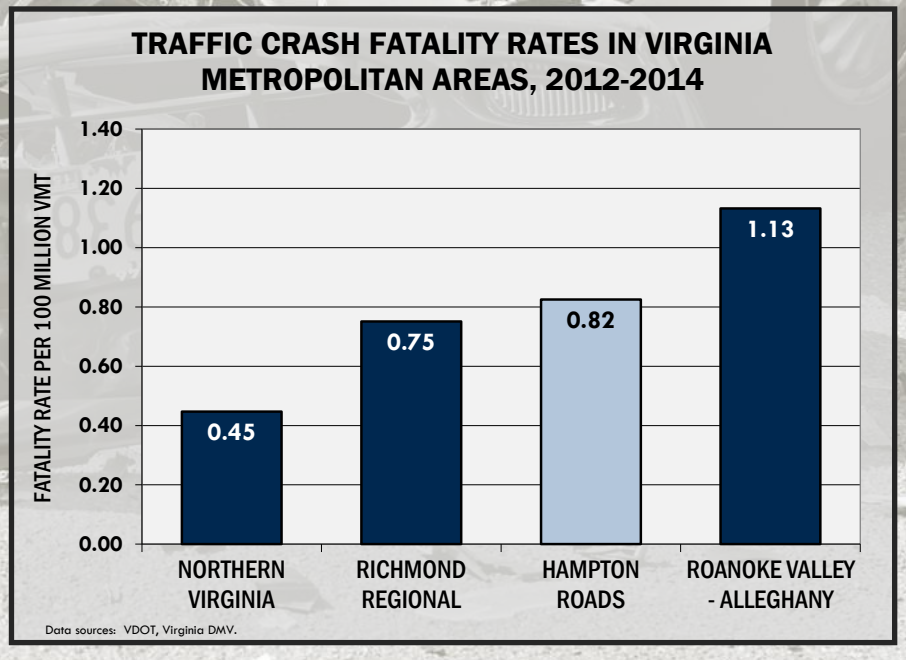




The fatality rate in Hampton Roads has also decreased over the last decade. The Hampton Roads crash fatality rate was 0.82 fatalities per 100 million VMT in the three-year period from 2012 to 2014, down 9% from 0.91 fatalities per 100 million VMT in the 2003 to 2005 time period (fatality rates are often reported over three year periods due to the number of fatalities that occur in any given year). The fatality rate in Hampton Roads from 2012 to 2014 was nearly twice the rate experienced in the Northern Virginia area (0.45 fatalities per 100 million VMT). The fatality rate was also slightly higher than the rate in the Richmond area (0.75), but was much lower than the fatality rate in the Roanoke area (1.13).

Safety belt use has an impact on the number of injuries and fatalities resulting from crashes. In 2015, Virginia had an observed safety belt usage rate of 80.9% according to a study done for the DMV by Old Dominion University. Hampton Roads usage rates were higher than the statewide rate, with the cities on the Southside having an observed safety belt usage rate of 82.4% in 2015. This rate is lower than the



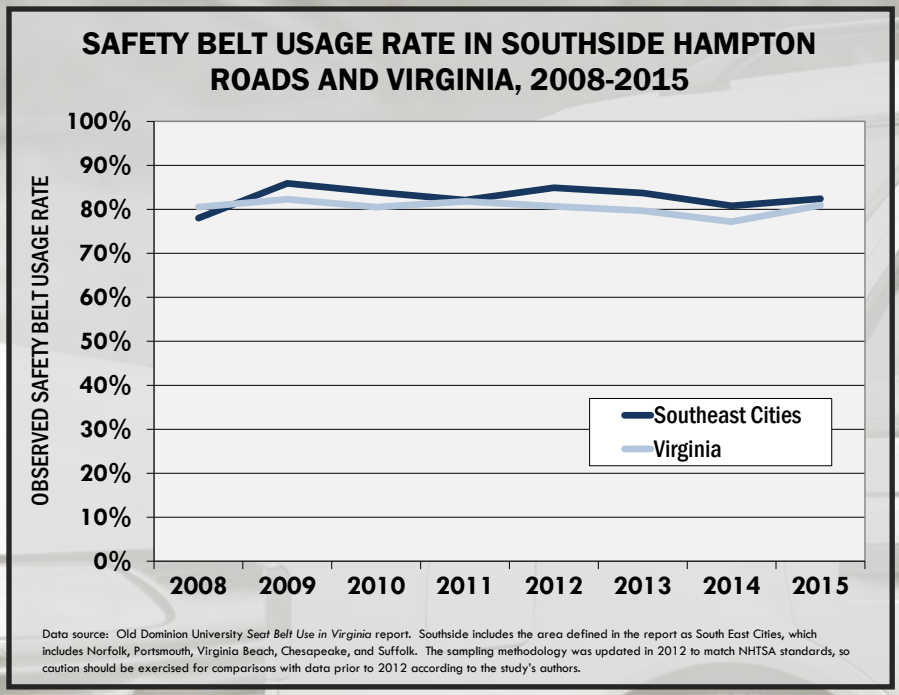


85.9% rate seen in 2009 but higher than the 78.0% usage rate seen on the Southside in 2008.

Virginia's safety belt usage rate in 2014 (77.2%) was lower than the national rate of 87.0%, and only five states had a lower statewide usage rate than Virginia. This is largely due to Virginia not having a primary enforcement safety belt law, which allows law enforcement officers to ticket a driver for not wearing a safety belt without any other traffic offense occurring. Of the 33 states/districts that had primary enforcement safety belt laws in 2014, only one (Arkansas) had a lower safety belt usage rate than Virginia.


Image Source: Shutterstock

HRTPO recently produced an update to the Hampton Roads Regional Safety Study. This update examines regional crash trends, the location of crashes throughout the region, and countermeasures to improve roadway safety. More information on the Hampton Roads Regional Safety Study is available at **http://www.hrtpo.org/page/roadway-safety**.



Data source: Old Dominion University *Seat Belt Use in Virginia* report. Southside includes the area defined in the report as South East Cities, which includes Norfolk, Portsmouth, Virginia Beach, Chesapeake, and Suffolk. The sampling methodology was updated in 2012 to match NHTSA standards, so caution should be exercised for comparisons with data prior to 2012 according to the study's authors.

TRUCK TRAVEL

Although still below pre-recession levels, nearly 18,000 trucks enter and exit Hampton Roads each weekday, serving not only the third busiest port on the East Coast but also serving the commerce and economic vitality of the region.

Freight movement is a critical component of the Hampton Roads economy, and trucks are the primary mode for moving freight to and from the Port of Virginia. They also supply the goods used by each resident and business in the region.

In 2015, nearly 18,000 trucks entered or exited Hampton Roads through major gateways each weekday. This number of trucks passing through Hampton Roads gateways has increased each year since 2012, but the number of trucks is still lower than the levels seen before the economic downturn started. Over 20,000 trucks passed through major regional gateways each weekday in 2007, prior to the recession.

The primary gateway for trucks entering or exiting Hampton Roads is I-64. An average of 6,100 trucks used I-64 to enter or exit the region each weekday in 2015, which accounted for 35% of the trucks passing through the region's major gateways. The number of trucks using I-64, however, has decreased nearly every year since 2007. The next most used gateways to the region are Route 58 (4,100 trucks each weekday in 2015) and Route 460 (2,100 trucks). Combined, I-64, Route 58, and Route 460 accounted for 70% of all trucks passing through the region's major gateways in 2015.

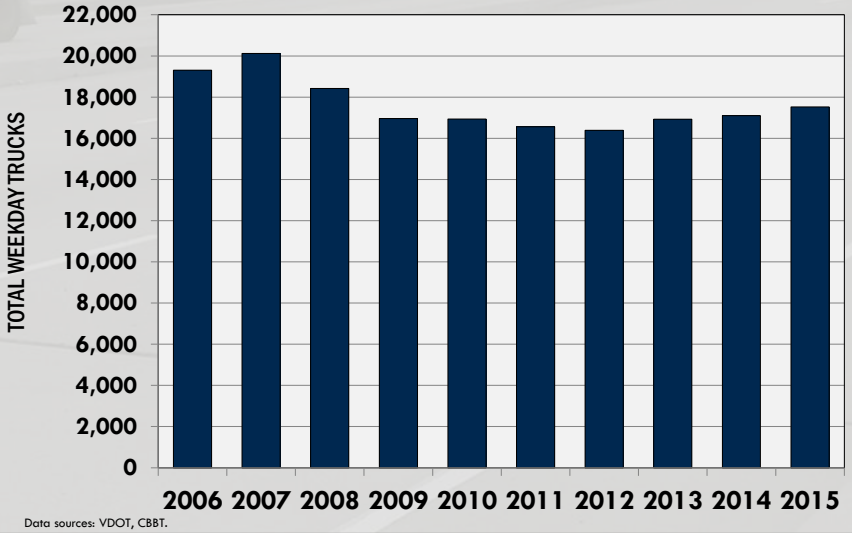
NOTABLE TRUCK TRAVEL NUMBERS

-16% The decrease in the amount of truck travel each day in Hampton Roads between 2007, before the downturn in the economy began, and 2014.

-9% The decrease in the number of trucks that entered or exited Hampton Roads each weekday at major gateways between 2006 and 2015.

64% The percentage of all freight handled by the Port of Virginia that was transported by truck in 2015.

NUMBER OF TRUCKS PASSING THROUGH HAMPTON ROADS GATEWAYS EACH WEEKDAY, 2006-2015



Data sources: VDOT, CBBT.

TRUCK TRAVEL (continued)

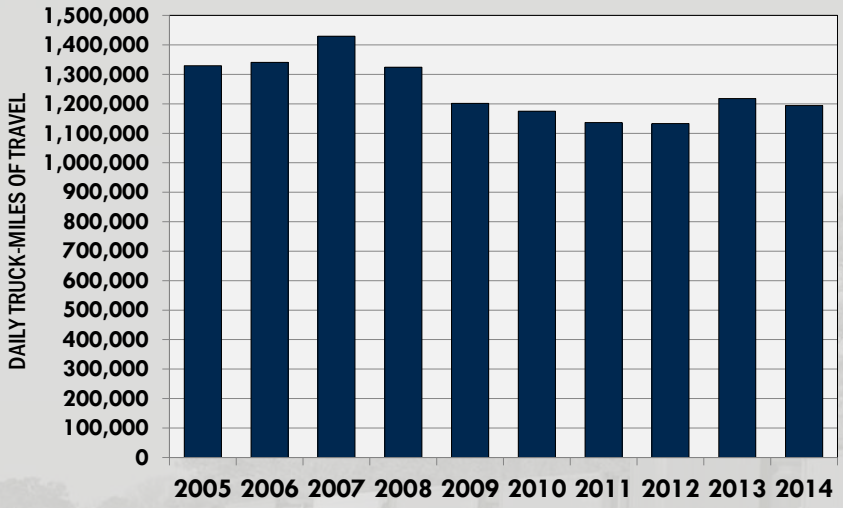
There was a total of 1.19 million miles of truck travel each day in Hampton Roads in 2014 according to VDOT estimates, which accounted for 3.1% of the 39 million vehicle-miles of travel experienced each day throughout the region. Although regional truck travel levels have increased from the lows seen in 2012, it is still 16% lower than the level seen in 2007.

A major issue involving truck travel in Hampton Roads is overheight trucks at the tunnels. This is especially an issue at the Downtown Tunnel and at the westbound Hampton Roads Bridge-Tunnel (HRBT), an older tunnel with a lower vertical clearance than other tunnels in the area. A total of 12,600 trucks were stopped, measured, and turned around at tunnels in Hampton Roads in 2015, 5,900 of which occurred at the Downtown Tunnel and 5,500 of which occurred at the westbound Hampton Roads Bridge-Tunnel. A total of 1,655 of these HRBT turnarounds occurred at the tunnel entrance on the south island, which greatly impacts congestion and safety since traffic has to be stopped in both directions to complete the turnaround.

TRUCKS AT THE MIDTOWN TUNNEL

Image Source: VDOT.

DAILY TRUCK TRAVEL IN HAMPTON ROADS, 2005-2014



Data source: VDOT.

BEHIND THE NUMBERS

Although the amount of freight handled by the Port of Virginia far exceeds the levels prior to the economic downturn, the amount of truck travel in Hampton Roads is still below pre-recession levels. One reason is that while a large number of trucks enter and exit the Port's marine terminals each day, they represent a small percentage of overall regional truck travel. Around 10% of all regional truck travel is originating from or destined to the Port according to an HRTPO analysis.

Port officials anticipate that the share of freight transported by truck at the Port of Virginia will continue to decrease in the future. In 2015, 64% of all freight handled by the Port of Virginia was transported by truck, down from 67% a decade earlier. The share of freight handled by rail increased from 24% in 2006 to 33% in 2015. Port officials have estimated that 40% to 50% of all general cargo handled by the Port could eventually be transported by rail if a number of marine terminal improvements and rail service constraints are addressed.

PUBLIC TRANSPORTATION

Public transportation usage increased sharply in Hampton Roads at the height of the economic downturn, fueled by new travel modes and payment options. Transit ridership levels, however, have decreased in the region over the last three years.

Public transportation services in Hampton Roads are primarily provided by two agencies. The Williamsburg Area Transit Authority (WATA) provides transit service in James City County, Williamsburg, and northern York County, while Hampton Roads Transit (HRT) provides service in urbanized areas on the Peninsula and Southside. Other smaller transit agencies also provide service in the area, including Virginia Regional Transit in Suffolk.

There were 18 million unlinked trips* taken on public transportation in Hampton Roads in 2015. This number includes HRT and WATA ridership on regular and express buses, tourist oriented services, light rail, demand response/paratransit, vanpools, and the passenger ferry. These public transportation trips help reduce congestion in the region, resulting in 45 million fewer vehicle-miles traveled and $13.5 million saved in vehicle operating costs in 2015 according to estimates from a study prepared by the Economic Development Research Group.

The number of trips on public transportation in Hampton Roads increased significantly during the economic downturn, with a 32% increase in annual ridership levels from 2007 to 2012. However, ridership levels peaked in 2012 and have decreased

* - An unlinked trip is a passenger trip made on one transit vehicle. If a passenger boards two buses to get from origin to destination that is considered to be two unlinked trips.

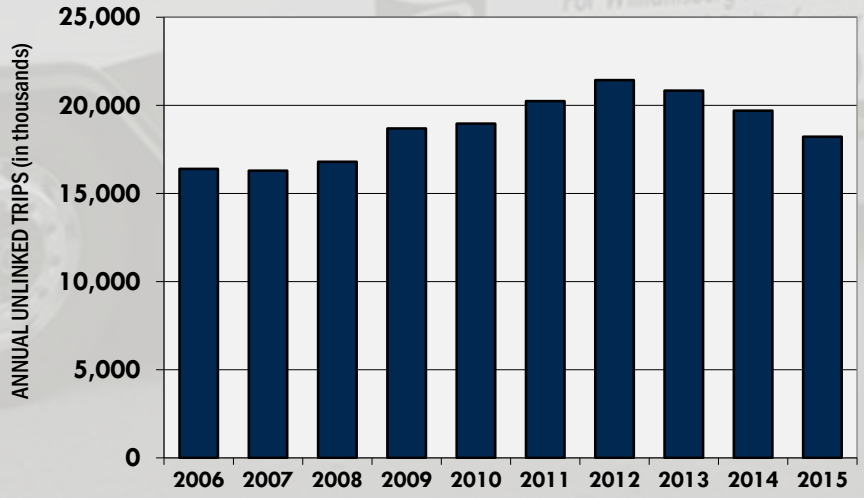
NOTABLE PUBLIC TRANSPORTATION NUMBERS

11% The increase in the annual number of passenger trips taken on public transportation in Hampton Roads from 2006 to 2015.

25th Hampton Roads rank among the 36 large metropolitan areas with populations between one and three million people in terms of public transportation use per capita in 2015.

27th Hampton Roads rank among the 36 large metropolitan areas in terms of transit operating and capital expenses per capita in the most recent National Transit Database data.

PASSENGER TRIPS TAKEN ON PUBLIC TRANSPORTATION IN HAMPTON ROADS, 2006-2015



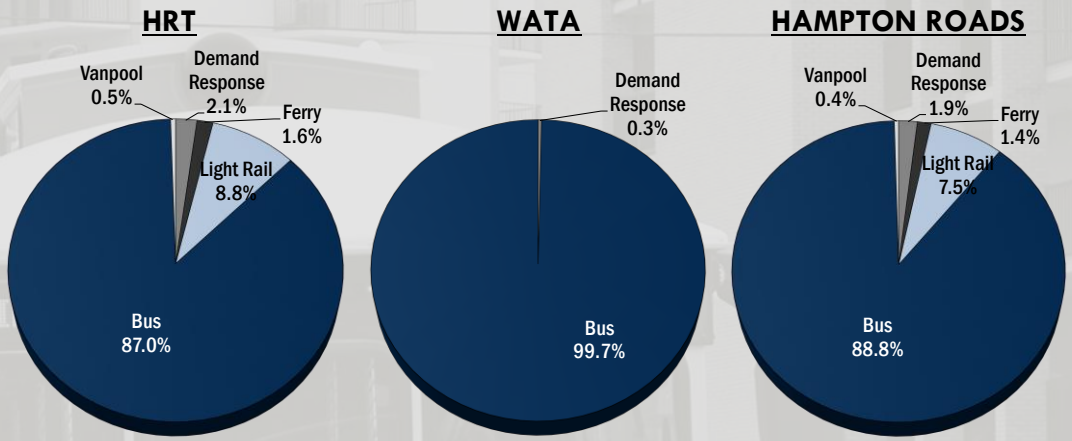
Data sources: HRT, WATA, American Public Transportation Association (APTA).

PUBLIC TRANSPORTATION (continued)

each of the last three years. Ridership levels in 2015, while 15% below the peak seen in 2012, were still 11% above the levels seen in 2006.

The majority of public transportation trips in Hampton Roads are taken on regular or express bus service. In 2015, 89% of the public transportation trips in Hampton Roads were taken on regular or express bus service. Light rail comprised 9% of all HRT transit trips and 8% of all regional transit trips, and all other modes (including ferry, demand response/paratransit, and vanpools) comprised the remaining 4%.

TRANSIT USAGE BY MODE AND AGENCY IN HAMPTON ROADS, 2015



Data sources: HRT, WATA, and APTA.

PUBLIC TRANSPORTATION OPTIONS IN HAMPTON ROADS

A variety of public transportation options are available in Hampton Roads. These options include:

Conventional Bus

Conventional bus service is provided on an extensive regional network by HRT, WATA and Virginia Regional Transit.

Express Bus

Regional express bus service, known as the MAX, is provided by HRT between various locations on the Peninsula and Southside.

Tourist Oriented Services

Tourist-oriented service in Hampton Roads includes the VB WAVE at the Oceanfront, Colonial Williamsburg shuttle services, and the Williamsburg and Yorktown Trollies.

Light Rail

HRT began operating light rail service on a 7.4 mile starter line in Norfolk in 2011.

Ferries

Passenger ferry service is provided by HRT between Downtown Norfolk and Portsmouth, and vehicular ferry service is provided by VDOT across the James River between Surry Co. and Jamestown.

Commuting Alternatives

Commuting alternatives are provided by Traffix. These alternatives include ridesharing, telecommuting, van leasing, and guaranteed ride programs.

Paratransit

HRT, WATA, and VRT offer demand response/ paratransit services using a variety of vehicles, including lift-equipped vans.

PUBLIC TRANSPORTATION (continued)

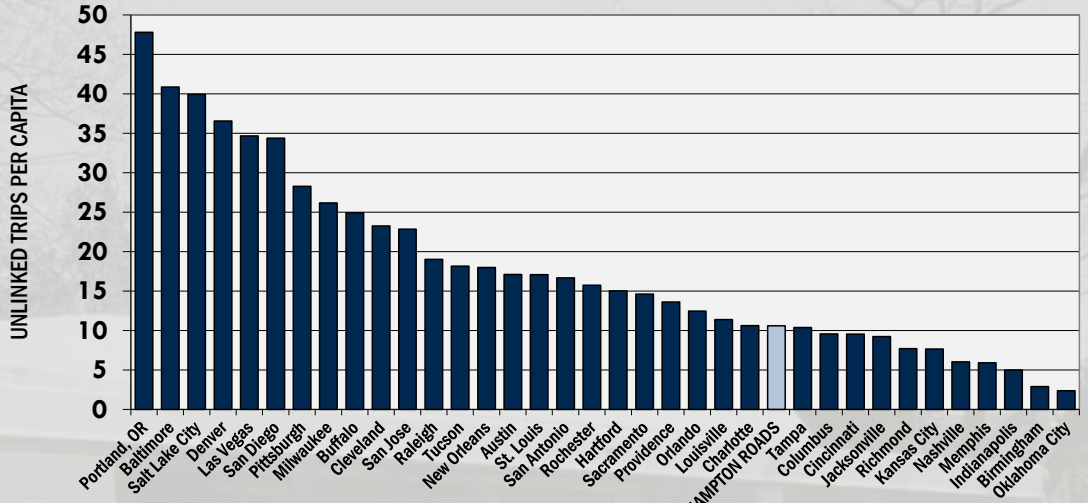
Public transportation usage in Hampton Roads lags behind other metropolitan areas. At 10.6 passenger trips on public transportation per capita in 2015, Hampton Roads ranked 25th highest among the 36 large metropolitan areas with populations between one and three million people. Metropolitan areas such as Portland, Baltimore, Salt Lake City, Denver, and Las Vegas have transit usage rates three to four times higher than Hampton Roads.

YORKTOWN TROLLEY

Image Source: York County.

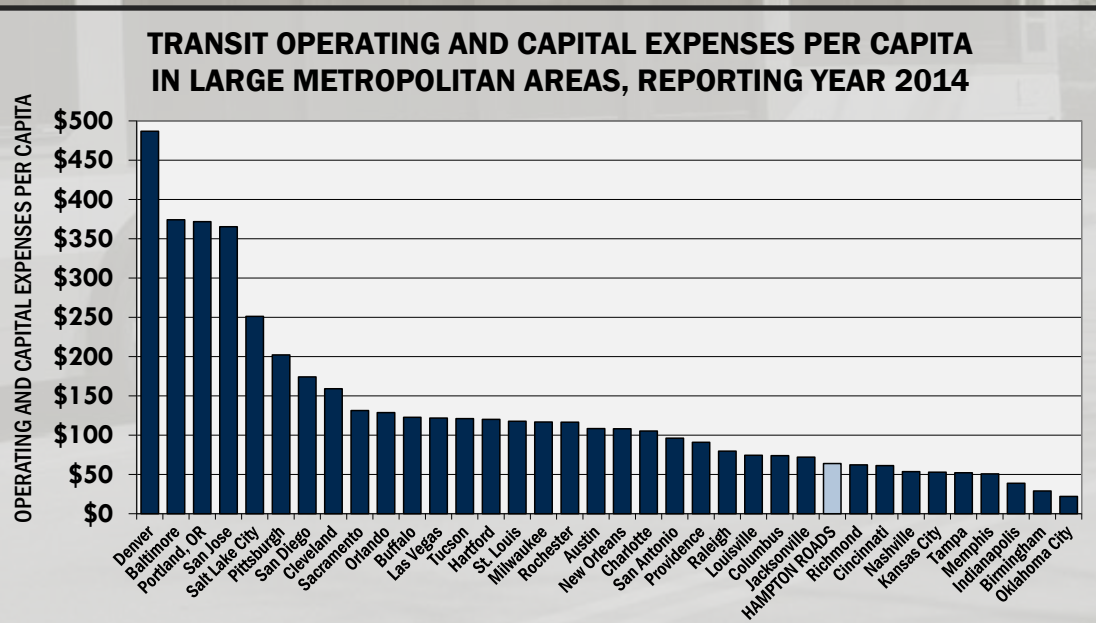
Hampton Roads spends less on public transportation on a per capita basis than many other comparable metropolitan areas. According to an analysis of data included in the National Transit Database, $64 was spent per capita on transit operating and capital expenses in Hampton Roads in Reporting Year 2014.

PASSENGER TRIPS PER CAPITA ON PUBLIC TRANSPORTATION IN LARGE METROPOLITAN AREAS, 2015



Data sources: HRT, WATA, American Public Transportation Association (APTA), Census Bureau.

TRANSIT OPERATING AND CAPITAL EXPENSES PER CAPITA IN LARGE METROPOLITAN AREAS, REPORTING YEAR 2014



Data source: National Transit Database, Census Bureau.

This ranked Hampton Roads 27th highest among the 36 large metropolitan areas. Denver, Baltimore, Portland, and San Jose spent six to seven times more per capita on public transportation than was spent in Hampton Roads.


TIDE LIGHT RAIL

Image Source: HRT.

This level of spending on public transportation in Hampton Roads is contributing to an aging vehicle fleet. The average age of HRT buses is 9.9 years in 2016, and HRT buses have traveled on average over 400,000 miles. Many buses used by HRT are up to 15 years old. WATA also has an aging fleet; the average age of WATA buses was 9.5 years in 2015.

NEW DEVELOPMENTS

Downtown Norfolk Transit Center – HRT's new Downtown Norfolk Transit Center opened in January 2016. The new center – which serves 14 routes – has interior waiting spaces, restrooms, improved security, and a customer service desk.

WATA – The Williamsburg Area Transit Authority is proposing a number of changes to their services and fees, including:

- Introducing a demonstration route called the Jamestown Line.
- Extending service hours for the Blue and Gray lines.
- Changing travel routes, stops and frequency on numerous lines.
- Increasing one-way bus fares by 25 cents, eliminating the 25-cent transfer fee, and increasing the one-way trolley fare by 50 cents.
- Increasing 7 and 30-day bus and trolley pass fares.

Trolleys Return – Trolley-style buses returned to the Virginia Beach Oceanfront in 2015 after a seven year absence. The new fleet of 14 open-air trolleys replaced the VB Wave buses.

Transit Extension Studies – HRT is conducting the Virginia Beach Transit Extension Study, which is currently in preliminary engineering for a 3.5-mile extension of The Tide light rail to Town Center. This work includes developing engineering plans to a 30 percent level, which will allow for soliciting a design-build contract for the project. Completion of preliminary engineering is expected in September 2016.

HRT completed the Naval Station Norfolk Transit Extension Study in 2015. Based on the results, there will be two environmental impact studies completed – one for a western route through Ghent and ODU and another for an eastern route through Military Circle and Norfolk International Airport. These studies will likely begin in Fall 2016.

More information is available at **http://gohrt.com/about/development**.

Transit buses are much older in Hampton Roads than in other comparable metropolitan areas. Among large metropolitan areas throughout the country with populations between one and three million people, the median age of transit buses was 6.9 years in Reporting Year 2014 according to the most recent data in the National Transit Database. Only two metropolitan areas – Indianapolis and San Jose – had an average transit bus age of greater than 10 years in Reporting Year 2014.

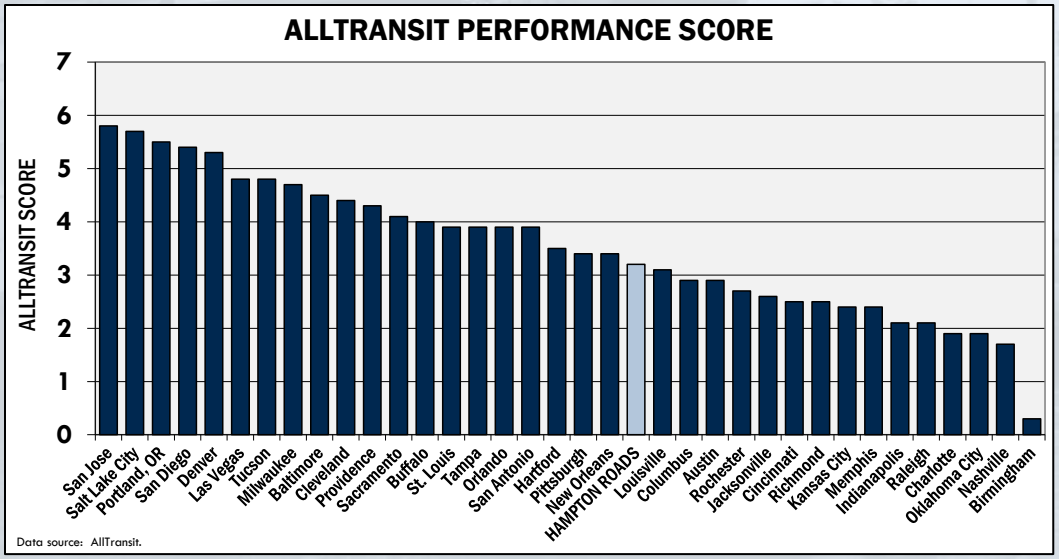
ALLTRANSIT REPORT

AllTransit, which is a joint project of the Center for Neighborhood Technology and TransitCenter, was released in April 2016. The project assembles the largest collection of transit data anywhere – 543,000 transit stops, 800 transit agencies, and 15,000 routes – and analyzes the data in a number of unique ways.

One measure produced by Alltransit – the AllTransit Performance Score – is an overall transit score that looks at connectivity, access to land area and jobs, and frequency of service. Examples of factors included in the score are connections to other routes, the number of workers using transit to travel, jobs accessible in a 30-minute transit ride, and jobs, workers, and households within ½ mile of transit.

Areas are given a score from 1 to 10, with higher scores indicating better performance according to AllTransit's analysis. Hampton Roads, at a score of 3.2, ranks 21st highest among the 36 metropolitan areas with a population between one and three million people.

More information on AllTransit is available at **http://alltransit.cnt.org**.



ACTIVE TRANSPORTATION

Active Transportation Planning, which aims to improve the safety and mobility of all types of non-motorized transportation options, has expanded both in Hampton Roads and across the country in recent years.

Active transportation is defined as including all forms of human-powered transportation. The most common forms of active transportation are bicycling and walking, but it also includes using a wheelchair and activities like in-line skating or skateboarding. Bicycle lanes, multi-use paths, sidewalks, crosswalks, and trails are all non-motorized transportation facilities designed to improve the mobility and safety of active transportation users.

DISMAL SWAMP CANAL TRAIL

Image Source: City of Chesapeake.

There are currently over 1,300 miles of shared use paths, bike lanes, paved shoulders, wide sidewalks, signed shared roadways, shared

TYPES OF ACTIVE TRANSPORTATION FACILITIES

There are various types of non-motorized facilities in place in Hampton Roads. Examples of these non-motorized facilities include:

Bike Lanes
A portion of the roadway is designated by signs and pavement markings for the preferential or exclusive use of bicycles.

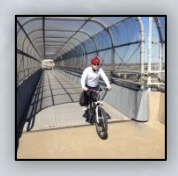
Shared Use Paths
A facility physically separated from motorized vehicular traffic intended for the use of bicycles, pedestrians, and other active transportation users.

Paved Shoulders
A paved portion of a roadway to the right of the edge stripe on which bicyclists may ride. These areas are not to be marked as bike lanes.

Wide Outside Lanes
An outside travel lane with a width of at least 14 feet.

Signed Shared Roadway
A roadway designated by bike route signs that serve to provide continuity to other bicycle facilities.

Grade Separated Crossing
Facilities that are designed to continue non-motorized facilities through high volume roadways, railroads, or natural barriers.



Sidewalks
Non-motorized facilities between the curb line and adjacent property line that are designed primarily for foot traffic and users with smaller wheeled devices.

Trails
Routes developed primarily for outdoor recreational purposes.

roadways and trails that comprise the bicycle and pedestrian network across Hampton Roads. These non-motorized facilities vary greatly in type and length, from secluded paths in city and state parks to dedicated lanes along major thoroughfares to popular facilities at the Virginia Beach Oceanfront.


VA BEACH OCEANFRONT Image Source: HRTPO.

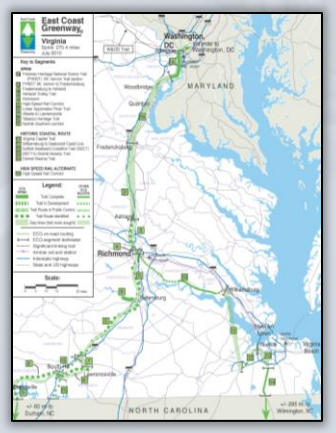
In recent years, several major non-motorized facilities have been added in Hampton Roads. Examples of these facilities include the conversion of the old section of Route 17 in Chesapeake into the Great Dismal Swamp Trail, the addition of bike lanes along a hazardous section of Shore Drive in Virginia Beach,

NEW DEVELOPMENTS

Virginia Capital Trail – Construction on the Virginia Capital Trail was completed in October 2015. The 52-mile off-road, multi-use path connects Williamsburg with Downtown Richmond. The Hampton Roads portion of the trail in James City County was completed in 2007.

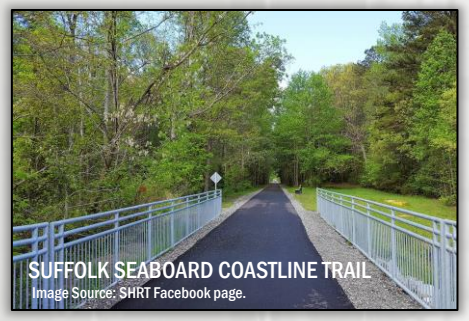
Regional Trails – Planning is underway on a number of facilities. The South Hampton Roads Trail is planned as a 41 mile trail connecting Suffolk with the Virginia Beach Oceanfront. The first portion of the trail, a 2.3-mile section of the Suffolk Seaboard Coastline trail near Driver, opened in October 2015. Another mile of the trail between Shoulders Hill Road and the Chesapeake City Line is currently under construction, with completion expected in Fall 2016.

There is also an effort to complete the Dismal Swamp Canal Trail, which would create a 15-mile multi-use path between South Mills, NC and Deep Creek in Chesapeake. Planning for the final 3-mile connector segment across the VA/NC line is underway.



The East Coast Greenway is a 3,000 mile trail network, of which 81 miles is slated to run through Hampton Roads on the Historic Coastal Route. The Hampton Roads alignment, which includes sections of the Virginia Capital Trail and Dismal Swamp Canal Trail, aims to provide an off-road trail incorporating waterfront esplanades, park paths, abandoned railroad corridors, canal towpaths, and pathways along highway corridors wherever possible. As of 2016, 30% of the East Coast Greenway is complete.

and the construction of the Virginia Capital Trail, which connects Williamsburg and Downtown Richmond with a 52-mile facility.



Most jurisdictions in Hampton Roads incorporate active transportation in their planning efforts. Examples include a bicycle advisory committee that helped prepare a Regional Bicycle Facilities Plan and Bikeway Map in the Historic Triangle, the City of Virginia Beach produced an update to their Bikeways and Trails Plan, the City of Norfolk produced a Bicycle and Pedestrian Strategic Plan, and Isle of Wight County produced a Pedestrian and Bicycle Facilities Master Plan. Hampton and Southampton County are also in the process of producing their own plans.

HRTPO ACTIVE TRANSPORTATION EFFORTS

HRTPO has expanded incorporating active transportation into its planning process in recent years beginning with a Regional Active Transportation Scan in 2012. Recent HRTPO active transportation efforts have included:

Long-Range Planning – HRTPO evaluated active transportation projects in the 2040 Long-Range Transportation Plan for the first time. A total of 29 candidate active transportation projects were evaluated, with 13 projects included in the approved plan.

Active Transportation Map – The HRTPO has developed an **interactive regional active transportation map**, which will be the basis for identifying gaps in the system and ultimately become a part of developing a regional active transportation plan.

Signature Paths Study – The purpose of **this study** – which was completed in March 2016 – was to locate inactive railroad right-of-ways in the region and analyze the costs and benefits of converting them to multi-use bike/pedestrian paths.

Active Transportation Safety Study – For the first time, HRTPO is analyzing active transportation safety on a regional level. The study will assess the state of active transportation safety in the region, determine locations throughout the region where active transportation safety is an issue, and document methods of improving active transportation safety. The study should be released in late 2016.

Connecting to Virginia Capital Trail Committee – In 2016, HRTPO created an ad-hoc subcommittee to discuss extending the Virginia Capital Trail southeastward from its current Jamestown terminus.

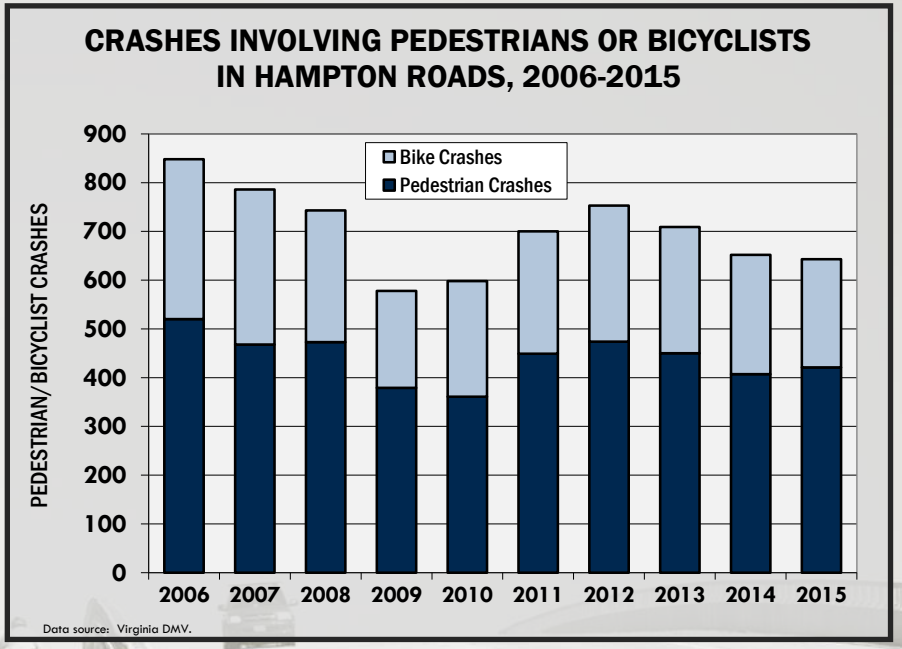
Regional Active Transportation Plan – HRTPO staff is beginning to undertake a multi-year effort to create the region's first stand-alone Active Transportation Plan. The plan will identify the region's Principal Regional Active Transportation Network, develop guiding principles and criteria for evaluating network alternatives, prioritize projects, and develop regional policies, performance targets, and design standards.

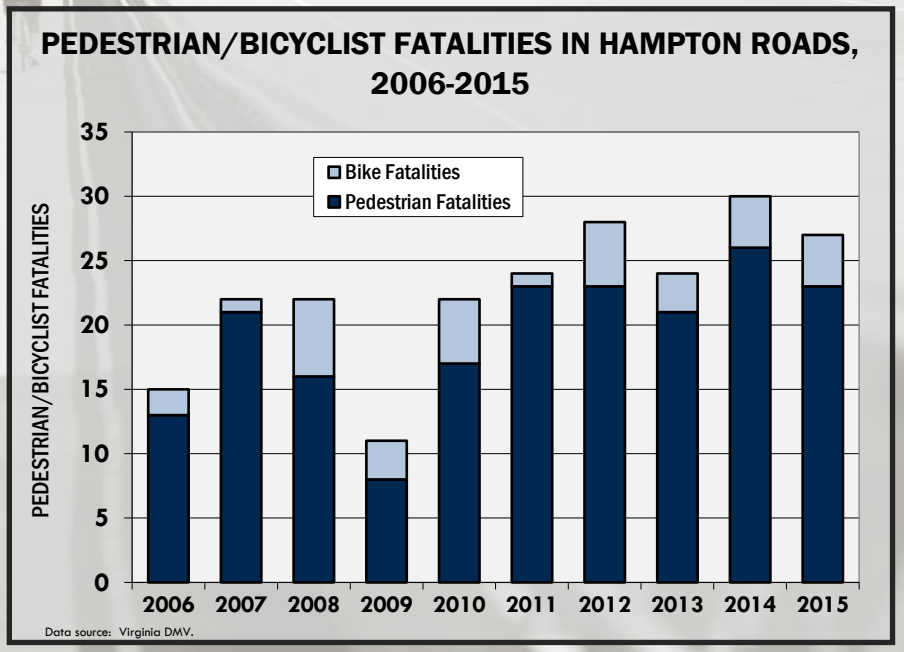
ACTIVE TRANSPORTATION (continued)

In addition, VDOT has developed statewide active transportation plans. The State Bicycle Policy Plan – adopted in 2011 – includes policy recommendations that will guide the planning, design, construction, operation and maintenance of bicycle facilities. The State Pedestrian Policy Plan – adopted in 2014 – establishes a vision for the future of walking in Virginia. The plan is a guide for officials, organizations, and individuals to improve pedestrian policy and accommodations.

Although it is difficult to obtain data on the amount of walking and bicycling, the percentage of people that commute to work by mode is measured by the Census Bureau. In Hampton Roads, 3.1% of workers walked to work in 2014, while 0.5% rode bicycles to commute to work. This percentage has decreased since 2010, when 3.8% walked or biked to work, but increased from 3.0% in 2000.

With the emphasis on providing facilities for active transportation users, improving the safety of pedestrians and bicyclists is critical. There were 643 active transportation crashes – 421 involving pedestrians and 222 involving bicyclists – in Hampton Roads in 2015. These crashes resulted in a total of 27 fatalities, 23 of which were pedestrians and 4 of which were bicyclists. The number of crashes involving pedestrians and bicyclists in Hampton Roads has decreased each year since 2012, and is 24% lower than the number seen in 2006. The number of pedestrian or bicyclist fatalities in Hampton Roads, however, has increased over the last decade. Pedestrian and bicyclist crashes comprised 3% of the total crashes in Hampton Roads between 2006 and 2015, but comprised over 17% of all roadway fatalities in the region during this time.

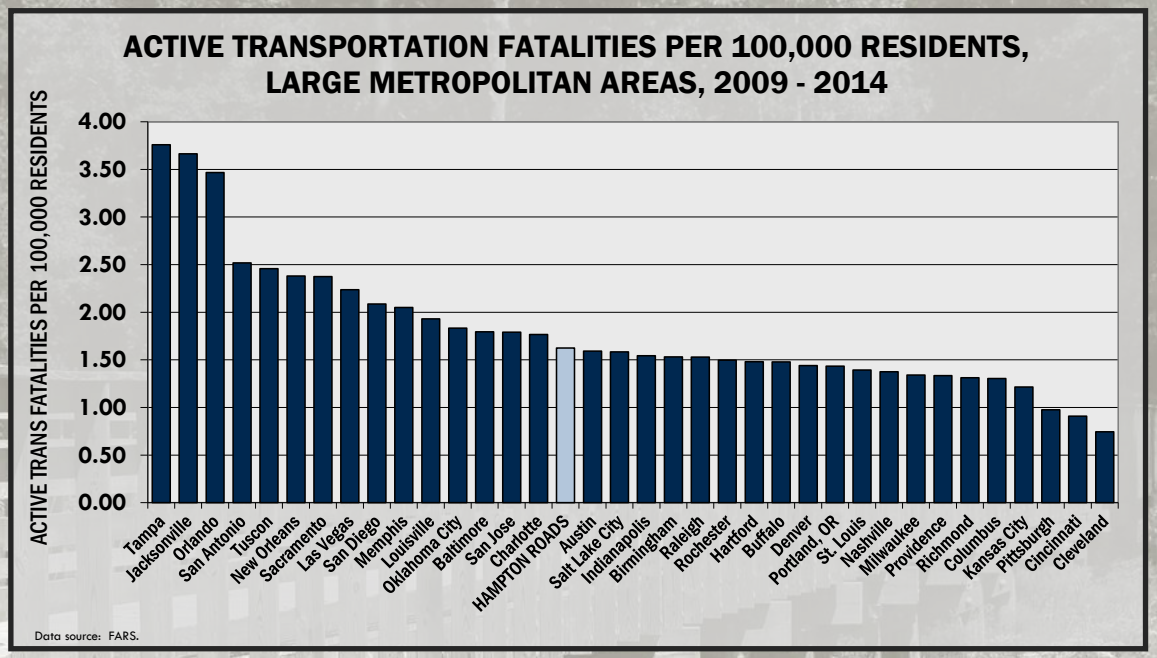




ACTIVE TRANSPORTATION (continued)

The rate of active transportation fatalities in Hampton Roads is typical of other comparable areas. Hampton Roads ranked 16th highest among the 36 large metropolitan areas between one and three million people in terms of the rate of active transportation fatalities per resident for the years 2009 - 2014.

More information on HRTPO's expanding Active Transportation planning efforts is available at **http://www.hrtpo.org/page/active-transportation**.



TRANSPORTATION FINANCING

In recent years, legislation has been passed by the Virginia General Assembly that comprehensively reforms how transportation projects are funded and selected, and created a funding source and agency specifically devoted to constructing major projects in Hampton Roads.

With statewide transportation funding levels falling well behind needs, the Virginia General Assembly passed House Bill (HB) 2313 in 2013. HB 2313 comprehensively reformed how transportation is funded throughout the Commonwealth and increased funding levels.

Funding for many aspects of the statewide transportation system is allocated by the Commonwealth Transportation Board (CTB), including the construction and maintenance of Virginia's highway system, transportation operations, debt payments, administration, and support for the ports, aviation, public transportation, and rail. For Fiscal Year 2017, the CTB approved a $6.0 billion transportation budget for the State of Virginia. This is the largest annual transportation budget in Virginia's history, largely due to the infusion of funding from HB 2313. The CTB projects that a total of $35.2 billion will be available in the statewide transportation budget for FY 2017-2022, which is 18% higher than the budgets from Fiscal Years 2011-2016.

HB 2313 also created a dedicated regional funding stream for Hampton Roads. Increases in regional sales and fuel wholesale taxes has generated $442 million as of April 2016, and is projected to produce $1.1 billion from FY 2017-2022 for use on major regional roadway, bridge, or tunnel projects.

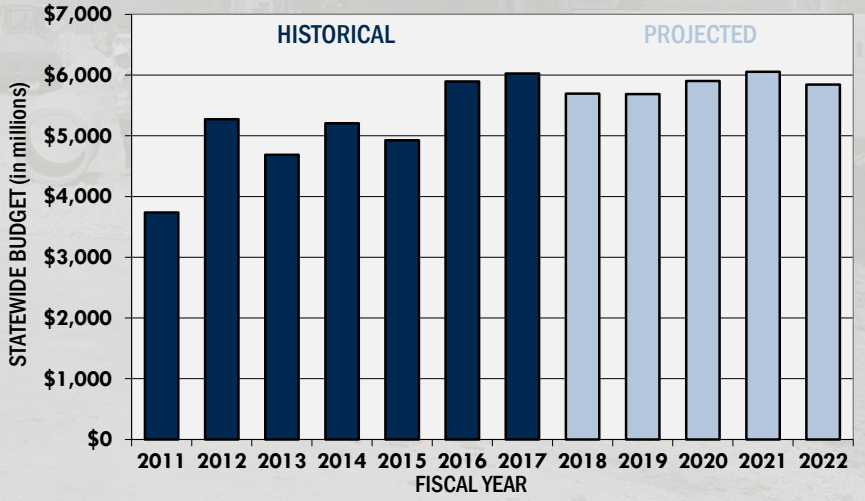
NOTABLE TRANSPORTATION FINANCING NUMBERS

18% The projected increase in Virginia's statewide transportation budget from Fiscal Years (FY) 2011-2016 to FY 2017-2022.

19% The projected increase in funding that will be available for new highway construction statewide from FY 2011-2016 to FY 2017-2022.

37th Virginia's rank among the 50 states and D.C. in terms of average taxes and fees collected on each gallon of unleaded gasoline as of April 1st, 2016.

HISTORICAL AND PROJECTED STATE TRANSPORTATION BUDGET, FY 2011-2022



Data source: VDOT. State fiscal year runs from July 1 to June 30 of the listed year. Projected budgets as of July 1, 2016. Includes all revenues from HB2313, including regional revenues.

TRANSPORTATION FINANCING (continued)

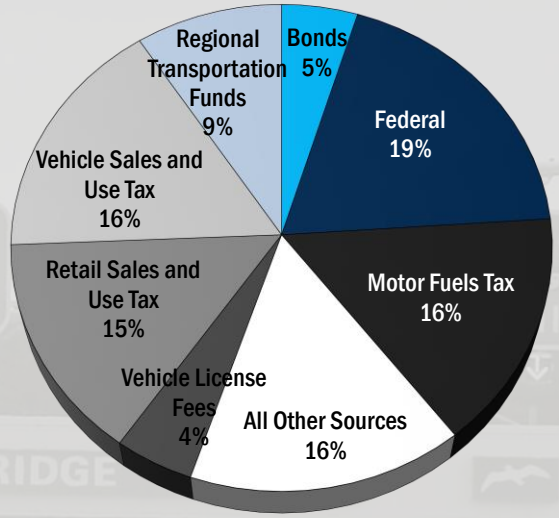
The amount of revenue by source for Virginia's transportation budget was changed by HB 2313. The motor fuel tax was the most impacted source, decreasing from 20% of transportation revenues in FY 2013 to 16% in FY 2017. Federal sources, the vehicle sales and use tax, the retail sales and use tax, and the tax on motor fuels all comprise between 15%-19% of Virginia's transportation revenues in FY 2017. The regional transportation taxes levied in Hampton Roads and Northern Virginia comprise another 9% of Virginia's transportation revenue.

The amount of money necessary to operate and maintain Virginia's aging roadways and bridges continues to increase. Between FY 2017-2022, $13.1 billion will be allocated statewide to maintenance and operations. This is up 18% from the $11.2 billion allocated between FY 2011-2016.

The amount of funding available for roadway construction is mostly higher than in past years. Including the regional roadway funds, $12.8 billion is projected to be available for new roadway construction in Virginia between FY 2017-FY 2022. This is up 19% over the $10.7 billion in funding that was allocated to construction in FY 2011-2016.

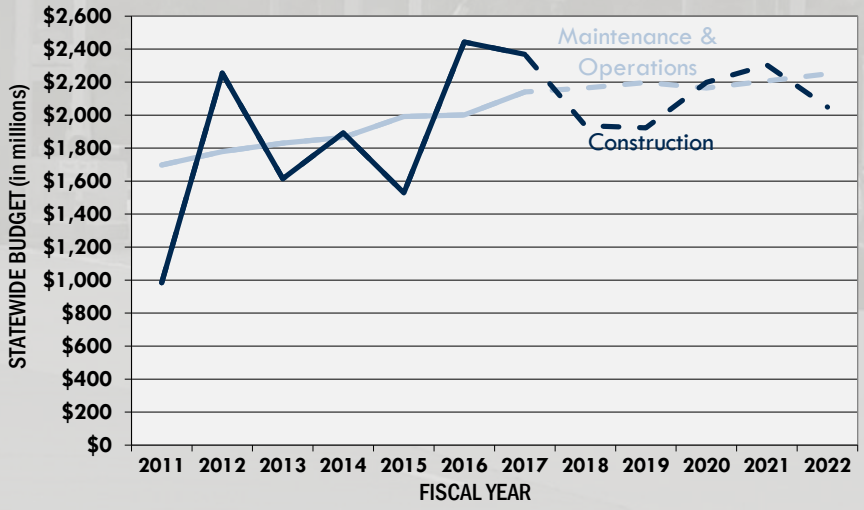
Historically, the amount of funding allocated to roadways in Virginia has lagged behind other states. Using the most recent data available from the Bureau of Transportation Statistics (2012), Virginia ranked 29th highest among the 50 states and the District of Columbia in highway expenditures per capita. This is the highest that Virginia has ranked over the previous decade, and Virginia likely ranks even higher with the implementation of HB 2313 in 2013, although national

TRANSPORTATION REVENUES IN VIRGINIA BY SOURCE, FISCAL YEAR 2017



Data source: VDOT.

HISTORICAL AND PROJECTED STATEWIDE FUNDING MAINTENANCE VS. CONSTRUCTION, FY 2011-2022

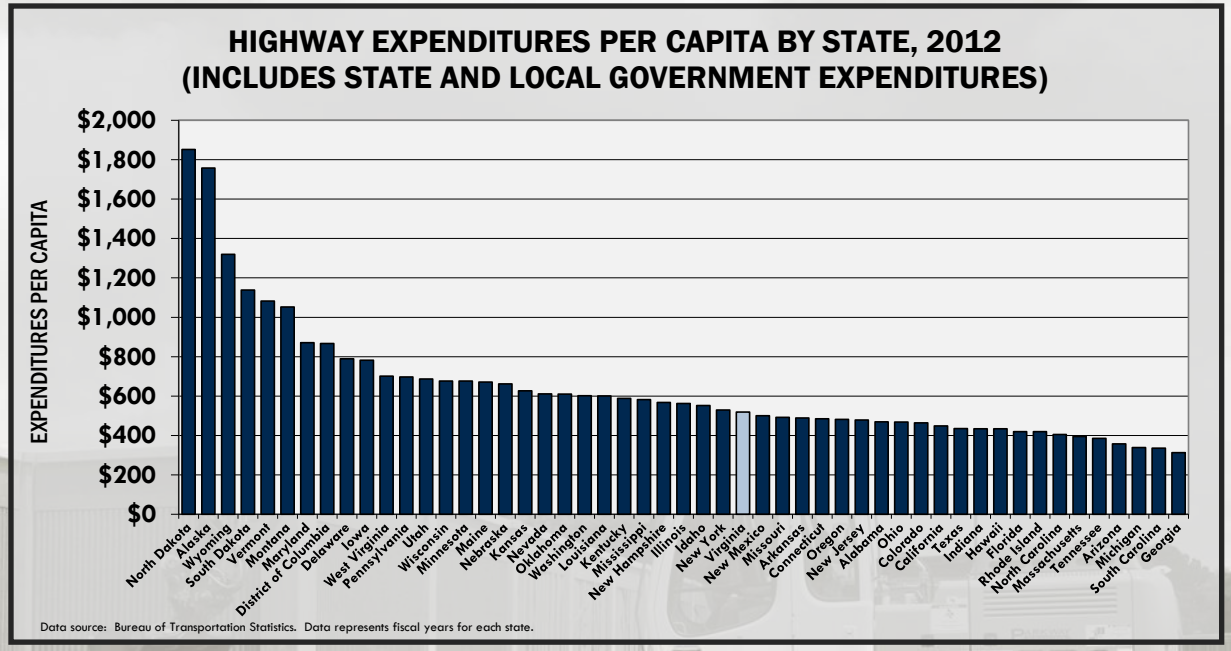


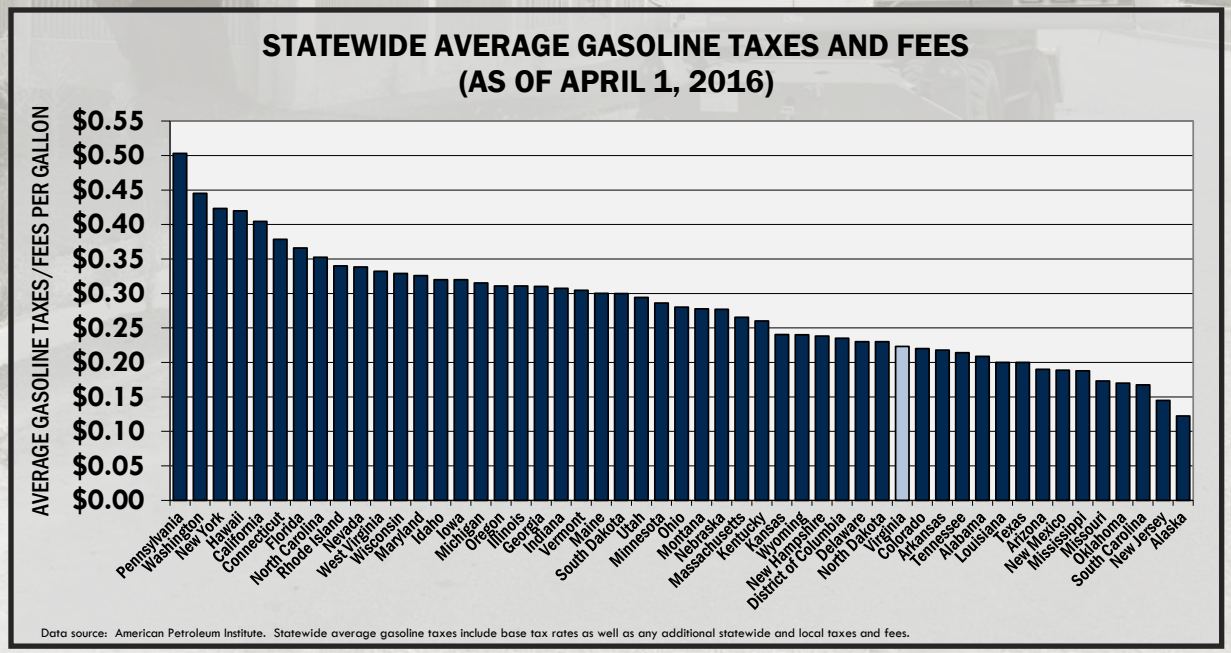
Data source: VDOT. FY 2018-2022 data is projected as of July 1, 2016. Includes all revenues from HB 2313, including regional revenues.

expenditure data post-HB 2313 implementation is not available yet.

Virginia has ranked even lower when only transportation funds used for new highway construction are considered. Virginia ranked 50th among the 50 states and District of Columbia in the percentage of transportation funds used for new highway construction in 2009 according to the most recent FHWA statistics. Virginia ranked 51st in 2006, and 48th in 2008.

Historically, the level of gasoline taxes and fees collected in Virginia was lower than in most other states, and this continues under HB 2313. The current gasoline tax is comprised of 5.1% of the statewide average wholesale price of gasoline, 0.6 cents per gallon statewide for the petroleum underground storage tank fund, and an additional 2.1% regional tax on the gasoline wholesale price in Hampton Roads and Northern Virginia. The tax increased by just over 5 cents per gallon on January 1st, 2015, due to language in HB 2313 that took effect when Congress did not pass legislation permitting Virginia to require internet





businesses to collect state and local taxes.

As of April 2016 the average statewide tax on each gallon of unleaded gasoline in Virginia was 22.3 cents. Even with the tax changes under HB 2313, Virginia's tax rate on fuel is lower than many other states. Virginia had the 37th highest statewide average taxes and fees collected on each gallon of unleaded gasoline among the 50 states and the District of Columbia as of April 2016.

NEW DEVELOPMENTS

House Bill 2313 – The Virginia General Assembly passed House Bill (HB) 2313, a comprehensive long-term transportation funding and reform package, in 2013. HB 2313 was designed to raise additional statewide revenue for transportation and also includes a regional component that increases funding for roads, bridges, and tunnels in Hampton Roads. Key components of HB 2313 include:

- Replacing the 17.5 cents per gallon gasoline tax with a 3.5% tax on motor fuel at the wholesale level. This tax was raised to 5.1% on January 1st, 2015, due to a lack of federal legislation permitting Virginia to require internet businesses to collect state and local taxes.
- Implementing a 6% tax on diesel at the wholesale level.
- Increasing the statewide sales and use tax from 5% to 5.3%.
- Increasing the motor vehicle titling tax from 3% to 4.15%.
- Increasing the share of the sales tax dedicated to transportation from 0.5% to 0.675%.
- Providing a dedicated funding source for the Mass Transit and Intercity Passenger Rail Fund.
- Implementing a 2.1% regional tax in Hampton Roads on the gasoline wholesale price.
- Providing for a 0.7% regional sales tax increase in Hampton Roads.

House Bill 1887 – HB 1887, which was passed by the General Assembly in 2015, replaces the formula for the way transportation funds in the Commonwealth are allocated. Previously, funds were allocated to primary (40%), secondary (30%), and urban highways (30%) on a discretionary basis. Under HB 1887, the current allocation is 45% to rebuild deteriorated pavement and bridges (State of Good Repair), 27.5% for high priority projects along statewide corridors and within regional networks, and 27.5% to the district highway construction grant programs. The new formula takes effect in Fiscal Year 2021, but unallocated dollars will use the new formula during a transition period prior to FY 2021. HB 1887 also requires that funds for State of Good Repair projects will be distributed based on a priority ranking system for bridges and pavement.

HRTAC – The General Assembly passed legislation in 2014 that created the Hampton Roads Transportation Accountability Commission (HRTAC) to allocate Hampton Roads Transportation Fund (HRTF) revenues. HRTAC – which became effective on July 1st, 2014 – also has the authority to issue bonds and other debts as well as to set toll rates on regional projects. HRTAC voting members include the chief elected officers from each of the 14 HRTAC jurisdictions and five General Assembly members.

FUEL PRICES

Fuel prices have decreased both in Hampton Roads and throughout the country since the summer of 2014. In spite of new regional fuel taxes implemented in 2013, fuel prices in Hampton Roads remain lower than in most comparable areas.

The cost of fuel has decreased since the middle of summer in 2014, both in Hampton Roads and throughout the country. The average cost of a gallon of regular unleaded fuel in Hampton Roads was $2.19 on June 1, 2016, down 35 cents per gallon from one year earlier and $1.35 per gallon from two years earlier. Average fuel prices in Hampton Roads topped $3.50 per gallon every summer between 2011 and 2014, but bottomed out just below $1.50 per gallon in February 2016.

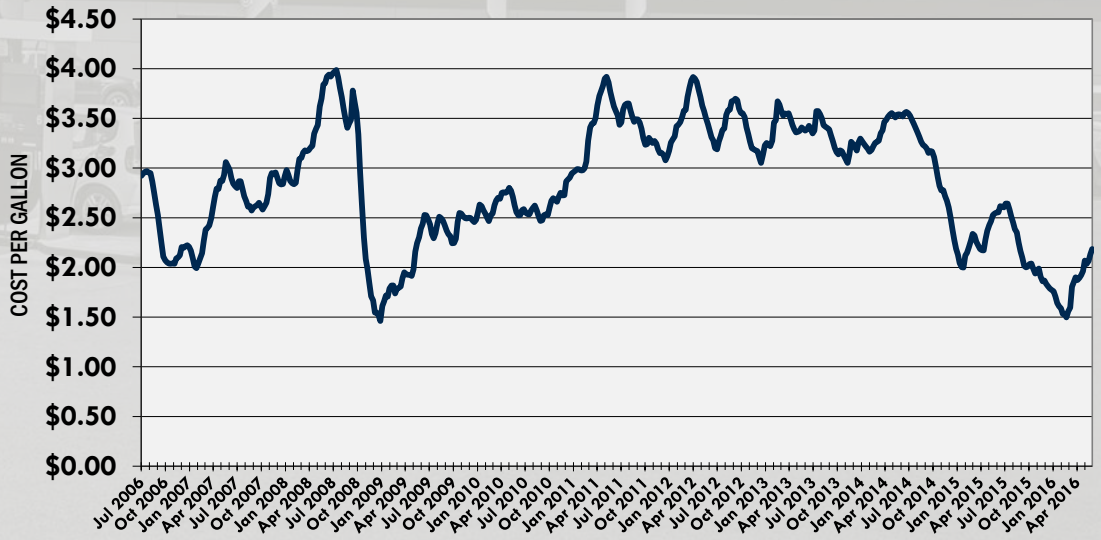
Fuel prices are slightly higher in Hampton Roads than in other Virginia metropolitan areas, largely due to the higher regional taxes imposed on fuel in the region under HB 2313. As of June 1st, 2016, fuel prices were on average four cents per gallon

NOTABLE FUEL PRICES NUMBERS

-14% The decrease in the cost of a gallon of unleaded fuel in Hampton Roads between June 1st, 2015, and June 1st, 2016.

23rd Hampton Roads rank, among the 36 large metropolitan areas with populations between one and three million people, in terms of the cost per gallon of regular unleaded fuel as of June 1st, 2016.

AVERAGE FUEL PRICES IN HAMPTON ROADS, JULY 2006-JUNE 2016

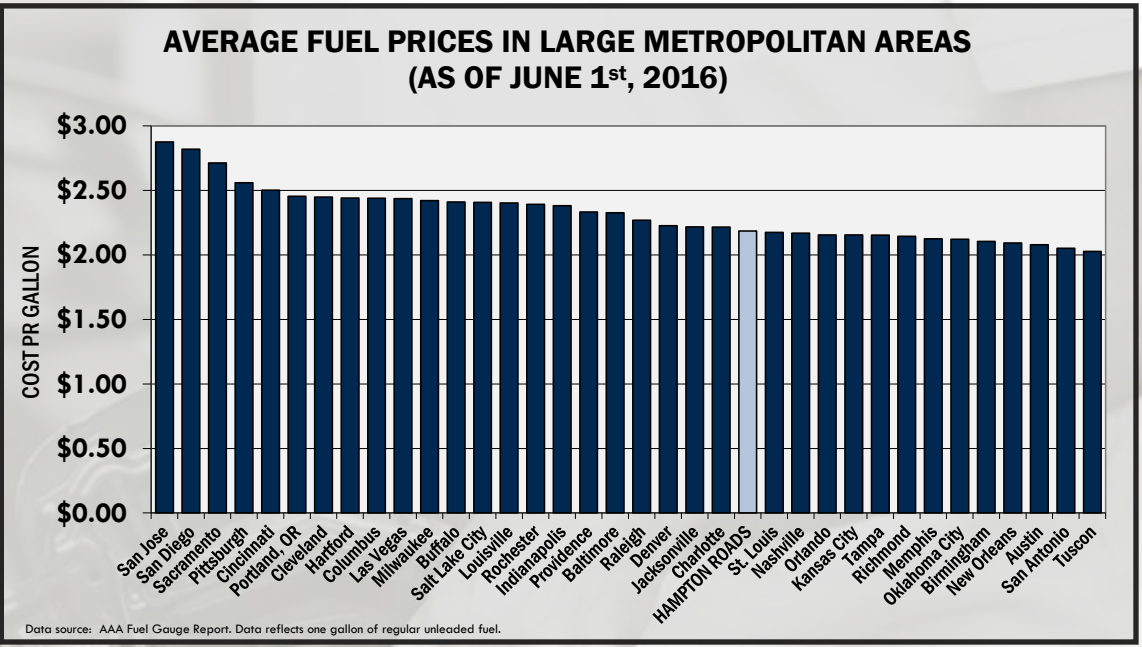


Data source: AAA Fuel Gauge Report. Data reflects one gallon of regular unleaded fuel.

FUEL PRICES (continued)

lower in Richmond and Roanoke, and three cents per gallon lower in Charlottesville. Statewide, the average cost of fuel was $2.18 per gallon on June 1st, 2016, slightly lower than the rate in Hampton Roads.

In spite of the regional fuel taxes, fuel prices in Hampton Roads remain below national averages. Among the 36 metropolitan areas with a population between one and three million people, Hampton Roads ranked 23rd highest in terms of average fuel prices as of June 1st, 2016. Fuel prices in Hampton Roads were 14 cents per gallon lower than the large metropolitan area average.



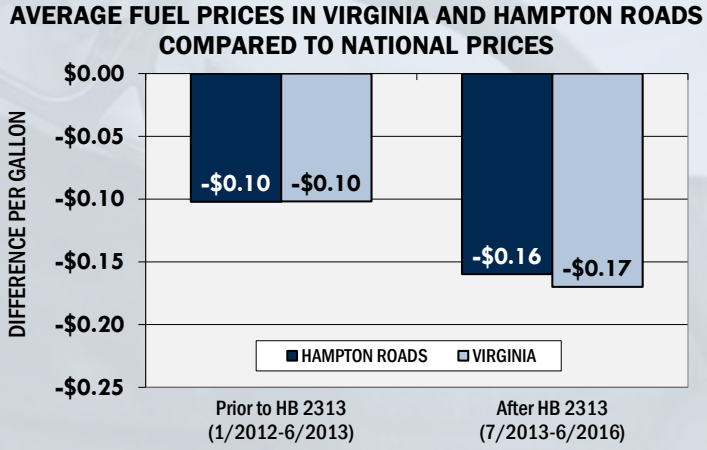
Data source: AAA Fuel Gauge Report. Data reflects one gallon of regular unleaded fuel.

BEHIND THE NUMBERS

House Bill 2313 changed the way gasoline is taxed in Virginia by replacing the previous statewide gasoline tax with a smaller fuel wholesale tax, and by imposing an additional 2.1% regional tax on the gasoline wholesale price in Hampton Roads and Northern Virginia.

Fuel prices decreased relative to the rest of the country after the changes to the gasoline tax occurred. Prior to HB 2313, statewide gasoline prices were 10 cents per gallon lower than the national average. After HB 2313, statewide fuel prices have been an average of 17 cents per gallon lower.

In spite of additional regional taxes being imposed in Hampton Roads under HB 2313, fuel prices in Hampton Roads have decreased relative to metro areas in the rest of the country, from 10 cents per gallon lower to 16 cents lower.



Data source: AAA Fuel Gauge Report. Data reflects one gallon of regular unleaded fuel.
The Hampton Roads data refers to the difference between Hampton Roads and the 36 metropolitan areas between one and three million people. The Virginia data refers to the difference between Virginia and national averages.

ROADWAY PROJECTS

A number of important projects have been completed throughout Hampton Roads in recent years. With the creation of the Hampton Roads Transportation Fund, many major roadway projects are currently underway or will be constructed throughout the region in the next few years.

The recently completed roadway projects vary greatly in size and type, including constructing new roadways, widening existing roadways, replacing bridges, and smaller projects such as constructing turn lanes or adding traffic signals.

A total of 24 major roadway projects have been completed throughout Hampton Roads since the beginning of 2010. These projects include replacing the Gilmerton and South Norfolk Jordan Bridges, constructing a new railroad overpass into Norfolk International Terminals, opening new facilities such as City Center Boulevard and Nimmo Parkway, and widening many roadways including sections of Fort Eustis Boulevard, Jefferson Avenue, Lynnhaven Parkway, Virginia Beach Boulevard, Warwick Boulevard, Wesleyan Drive, and Witchduck Road.

A number of major roadway projects are currently underway throughout the region. These projects include completing work on a second tube at the Midtown Tunnel,

GEORGE WASHINGTON HIGHWAY WIDENING

Image Source: VDOT

MAJOR ROADWAY PROJECTS COMPLETED IN HAMPTON ROADS, JANUARY 2010 – JUNE 2016

FACILITY	LOCATION	IMPROVEMENT TYPE	COMPLETION DATE
Birdneck Road	General Booth Blvd to Norfolk Ave	Widen to 4 lanes	2010
Buckner Boulevard	Rosemont Rd and Holland Rd	New 2 lane facility	2010
City Center Boulevard	Warwick Blvd to Jefferson Ave	New 4 lane facility	2015
Commander Shepard Boulevard	Big Bethel Rd to North Campus Pkwy	New 4 lane facility	2014
Commander Shepard Boulevard	North Campus Pkwy to Magruder Blvd	New 4 lane facility	2010
Constitution Drive	Bonney Rd to Columbus St	New 4 lane facility	2010
Fort Eustis Boulevard	Jefferson Ave to Route 17	Widen to 4 lanes	2012
George Washington Highway	Mill Creek Pkwy to Willowood Dr	Widen to 4 lanes	2012
Hampton Boulevard	Railroad into Norfolk International Terminals	New overpass	2015
I-64	Norview Ave	Ramp improvement	2013
I-264	London Bridge Rd	New Interchange	2012
Ironbound Road	Strawberry Plains Rd to Longhill Connector Rd	Widen to 4 lanes	2013
Jefferson Avenue	Buchanan Dr to Green Grove Ln	Widen to 6 lanes	2010
Lynnhaven Pkwy	Holland Rd to South Lynnhaven Rd	Widen to 6 lanes	2010
Military Highway	Gilmerton Bridge	Replace Bridge	2013
Nimmo Parkway	Princess Anne Rd to Holland Rd	New 4 lane facility	2012
Nimmo Parkway	Holland Rd to General Booth Blvd	New 4 lane facility	2014
Princess Anne Road	Dam Neck Rd to Nimmo Pkwy	Widen to 4 lanes	2014
Princess Anne Road	Witchduck Rd	Intersection Relocation	2012
South Norfolk Jordan Bridge	Between Portsmouth and Chesapeake	Replace Bridge	2012
Virginia Beach Boulevard	Jett St to Military Hwy	Widen to 6 lanes	2010
Warwick Boulevard	J Clyde Morris Blvd to Nettles Dr	Widen to 6 lanes	2010
Wesleyan Drive	Northampton Blvd to Baker Rd	Widen to 4 lanes	2013
Witchduck Road	Princess Anne Rd to I-264	Widen to 6 lanes	2012

Data obtained from various sources.

constructing an extension to the MLK Freeway, widening of Phase I of I-64 on the Peninsula, constructing the Intermodal Connector between I-564 and Naval Station Norfolk/Norfolk International Terminals, widening Route 17 in York County, upgrading Dominion Boulevard, replacing the Lesner Bridge, and extending Lynnhaven Parkway.

I-64 WIDENING Image Source: VDOT

Upcoming roadway projects throughout Hampton Roads are programmed in VDOT's Six-Year Improvement Program (SYIP) and HRTPO's Transportation Improvement Program (TIP). Examples of major roadway projects that are expected to begin construction over the next six years include Phases II and III of widening I-64 on the Peninsula, improving the I-64/I-264 interchange in Norfolk, Phase I of widening I-64 on the Southside (including widening the High

PROGRAMMED MAJOR ROADWAY PROJECTS IN HAMPTON ROADS

FACILITY	LOCATION	IMPROVEMENT TYPE	PROJECTED COMPLETION DATE
Atkinson Boulevard	Warwick Blvd to Jefferson Ave	New 4 lane facility	2019
Centerville Turnpike	Kempsville Rd to Indian River Rd	Widen to 4 lanes	2020
Dominion Boulevard	Cedar Rd to Great Bridge Blvd	Widen to 4 lanes	2017
Dominion Boulevard	GW Highway to Cedar Rd	Widen to 4 lanes	2020
George Washington Highway	Hampton Hwy to Wolf Trap Rd	Widen to 6 lanes	2016
George Washington Highway	Deep Creek Bridge	Widen to 4 lanes	2021
High Street	Churchland Bridge	Replace Bridge	2019
Holland Road	Nimmo Pkwy to Dam Neck Rd	Widen to 4 lanes	2017
I-64	Yorktown Rd to Bland Blvd	Widen to 6+ lanes	2018
I-64	Route 199 (Exit 242) to Yorktown Rd	Widen to 6 lanes	2019
I-64	Route 199 (Exit 234) to Route 199 (Exit 242)	Widen to 6 lanes	2022
I-64	I-264/I-664 and I-464/Chesapeake Exp (Phase 1)	Widen to 6 lanes	2020
I-264 Eastbound	I-64 off ramp to East of Witchduck Road	Widening	2019/2021
Indian River Road	Kempsville Rd	Intersection Redesign	2018
Intermodal Connector	I-564 to Naval Station Norfolk/NIT	New 4 lane facility	2018
Lynnhaven Pkwy	Centerville Tpke to Indian River Rd	New 4 lane facility	2017
Midtown Tunnel	Between Portsmouth and Norfolk	Widen to 4 lanes	2018
Military Highway	Lowery Rd to Northampton Blvd	Widen to 8 lanes	2018
Military Highway	Northampton Blvd/Princess Anne Rd	Intersection Redesign	2018
Military Highway	Northampton Blvd to Robin Hood Rd	Widen to 6 lanes	2018
MLK Freeway	I-264 to High St	New 4 lane facility	2016
Nansemond Parkway	Shoulders Hill Rd to Chesapeake CL	Widen to 4 lanes	2018
Portsmouth Boulevard	Suffolk CL to Jolliff Rd	Widen to 4 lanes	2018
Princess Anne Road	General Booth Blvd to Upton Dr	Widen to 4 lanes	2019
Route 58	Business Route 58 East of Courtland	New interchange	2018
Saunders Road	Newport News CL to Big Bethel Rd	Widen to 4 lanes	2016
Shore Drive	Lesner Bridge	Replace Bridge	2017
Turnpike Road	Frederick Blvd to Constitution Ave	Widen to 4 lanes	2018
Witchduck Road	I-264 to Virginia Beach Blvd	Widen to 6 lanes	2018
Wythe Creek Road	Commander Sheppard Blvd to Alphus St	Widen to 4 lanes	2021

Data sources: VDOT, HRTPO, various localities.

Rise Bridge), and widening sections of Military Highway, Nansemond Parkway/Portsmouth Boulevard, Witchduck Road, and Wythe Creek Road.

More information on programmed roadway improvement projects is included in the SYIP and TIP. VDOT's SYIP can be accessed at http://syip.virginiadot.org. HRTPO has developed a website devoted to the TIP (http://www.hrtpotip.org) that includes the TIP document, details on programmed roadway projects, an overview of the TIP development process, and an Interactive Project Map.

NEW DEVELOPMENTS

Smart Scale/HB 2 – Signed into law in 2014, House Bill (HB) 2 was created to ensure that limited tax dollars are invested in the projects that meet the most critical transportation needs in Virginia. Starting with the recently-approved FY 2017 SYIP, transportation projects are being scored using a prioritization process – now referred to as SMART SCALE – that is based on an objective analysis of congestion mitigation, economic development, safety, environmental quality, accessibility, and land use. Each eligible candidate project is scored and ranked, and the Commonwealth Transportation Board (CTB) uses this information as guidance when selecting projects for inclusion in the Six-Year Improvement Program.

More information on SMART SCALE is available at http://vasmartscale.org.

Regional Priority Projects – The list of Regional Priority Projects was identified by the HRTPO Board in October 2013. In February 2016, the HRTPO Board approved project sequencing of the Regional Priority Projects based on project readiness. The Funding Plan for these priority Projects was developed by HRTAC, in coordination with the HRTPO. The sequencing of these projects in the 2040 LRTP is shown in the table below:

Group	Project	Estimated Completion
I	**I-64 Peninsula Widening**	
	Segment 1	2018
	Segment 2	2019
	Segment 3	2022
	I-64/I-264 (including Witchduck Rd Interchange)	
	Phase 1	2019
	Phase 2	2021
II	**I-64 Southside Widening (including High Rise Bridge)**	
	Phase 1	2020

Group	Project	Estimated Completion
III	**Hampton Roads Crossing**	
	HRCS SEIS	2018
	Phase 1 Construction - Harbor Crossing	2028
IV	**I-64 Southside Widening (including High-Rise Bridge)**	
	Phase 2	2029
V	**I-64 Peninsula Widening**	
	Fort Eustis Blvd Interchange	2031
	US 460/58/13 Connector (including Interchanges)	
	US 460/58/13 Connector	2032

TRANSPORTATION OPERATIONS

Hampton Roads has been a leader in managing transportation infrastructure through transportation operations, which is a cost-effective method of maximizing the safety and capacity of the existing roadway network.

The safety, security, and mobility of roadway users are enhanced by the active management of the regional transportation system through transportation operations. Transportation operations become more valuable as funding for new roadway construction becomes more competitive and constructing major roadway projects becomes more challenging. Trained and coordinated personnel manage the system with Intelligent Transportation Systems (ITS) technologies. Examples of transportation operations include incident management, coordinating traffic signals, electronic toll collection, and providing traveler information.

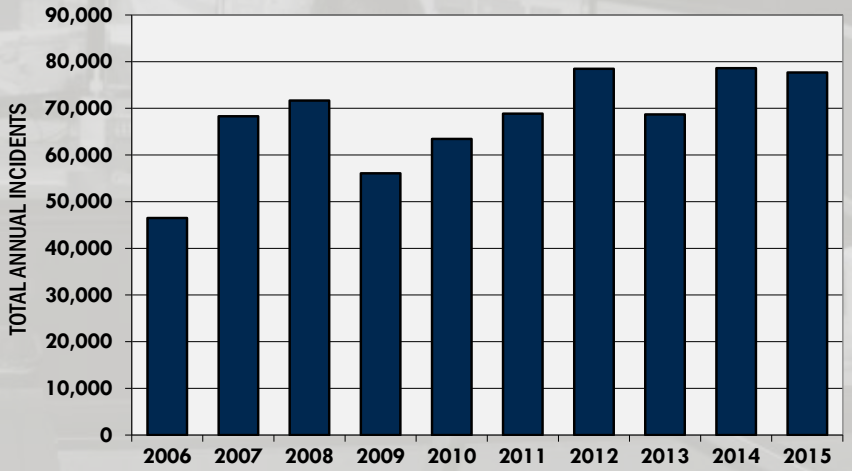
In Hampton Roads, the freeway system is managed by the VDOT Hampton Roads Transportation Operations Center (HRTOC). The Hampton Roads TOC monitors traffic conditions throughout the region, maintains and operates ITS infrastructure on the regional Interstate system, responds to and clears crashes and other types of incidents with the Safety Service Patrol, and informs travelers of roadway conditions via a number of mechanisms including changeable message signs, highway advisory radio, and the 511 Virginia phone, smartphone app, and online services.

HAMPTON ROADS TOC

The VDOT Hampton Roads Transportation Operations Center (TOC) serves as the backbone for transportation operations in the region. Some facts about the TOC and its Safety Service Patrol:

- Covers **141 miles**, nearly the entire regional Interstate system.
- Includes over **300 closed-circuit cameras**, **200 dynamic message signs**, 13 highway advisory radio transmitters, 5 reversible roadway gate entrances, and hundreds of vehicle detection devices, all linked together by fiber optic cable.
- Drove over 5 million miles and responded to nearly **80,000 incidents** in 2015.

TOTAL INCIDENTS RESPONDED TO BY THE HAMPTON ROADS TOC SAFETY SERVICE PATROL, 2006-2015



Data source: VDOT.

In addition to VDOT's Hampton Roads Transportation Operations Center, most Hampton Roads localities maintain their own traffic management centers. These centers operate local traffic signal systems, changeable message signs, and cameras. In some cases, these centers allow for data and video sharing.

Another service provided to improve roadway mobility is 511 Virginia. 511 Virginia provides real-time traveler information via mobile or landline phones, email, Twitter, text message, smartphone app, and the http://www.511virginia.org website. The 511 Virginia phone service is an interactive, voice-activated system that provides traffic information by route or locality. Information is also provided on tourist destinations, rest areas, and transit. The smartphone app and website provide information on speeds, work zones, camera images, changeable sign messages, weather closures, and incidents. Customizable route information is also available.

ITS TECHNOLOGIES IN HAMPTON ROADS

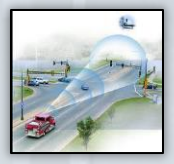
Hampton Roads has been a national leader in the use of Intelligent Transportation Systems (ITS). Nearly every mile of Interstate in the region is instrumented with ITS technologies, and various cities throughout the region maintain ITS infrastructure as well. The following are examples of ITS technologies in use throughout Hampton Roads:

Transportation Operations Centers
Centers that incorporate various ITS technologies to assist staff with traffic monitoring, incident response, and information dissemination.

Vehicle Detection Devices
Records traffic volumes and speeds. Also notifies TOC staff of congestion and incidents.

Reversible Roadway Gates
Allows traffic on limited access roadways to be reversed based on commuting patterns, maximizing the use of the existing roadway.

Emergency Vehicle Signal Preemption
Changes the traffic signal when emergency vehicles approach, improving safety and response time.

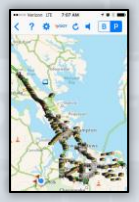


Advanced Signal Systems
Improves the coordination and timing of traffic signals in a corridor or throughout an entire city, reducing the number of stops and delays.

Shoulder/Lane Control
Allows the shoulder to be opened to vehicles during peak travel periods.

CCTV Cameras
Provides roadway images to transportation operations centers and the public.

Electronic Toll Collection
Allows travelers to pass quickly through special lanes, avoiding backups due to paying tolls.



511 Virginia
Provides up-to-date traveler information via telephone, the internet, and other methods.

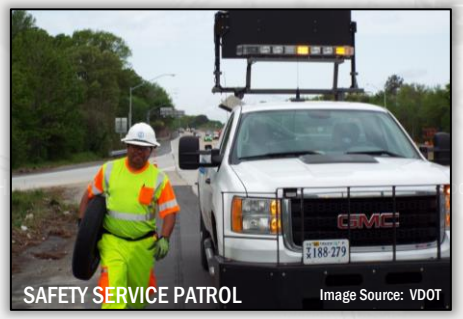
Changeable Message Signs
Provides up-to-date information to the traveling public.

Transit Automatic Vehicle Location (AVL)
Provides the location of transit vehicles, aiding on-time performance.

Highway Advisory Radio
Provides up-to-date traveler information through radio broadcasts on 1680 AM.

Overheight Detection
Detects overheight vehicles to prevent damage to the region's tunnels and bridges.

Traveler information is also provided on many platforms by private sector companies. Examples include Google Maps, INRIX, Waze, and local radio and television stations.



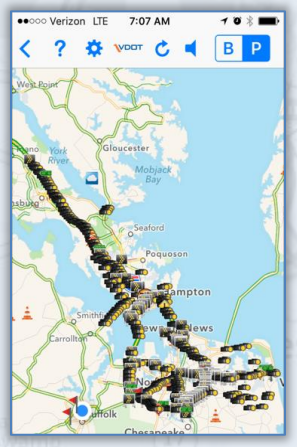
Regional transportation operations planning and coordination is conducted through multiple committees including the Hampton Roads Transportation Operations (HRTO) Subcommittee. The HRTO Subcommittee facilitates peer-to-peer information sharing and advises the HRTPO Transportation Technical Advisory Committee on transportation operations issues. HRTO is comprised of professionals from each city, VDOT, transit agencies, Virginia Port Authority, and other invited participants such as local police and fire/EMS personnel. More information on transportation operations efforts is available at http://www.hrtpo.org/page/operations-and-its.

NEW DEVELOPMENTS

Travel Time Information – VDOT created the "Reach the Beach" initiative to provide information on the fastest routes to the Virginia Beach Oceanfront and to the Chesapeake Expressway for Outer Banks traffic. Real-time travel time information is provided for two routes on each sign so travelers have the option of choosing the quicker route.

In 2012, VDOT installed and activated six signs in the region, and installed monitors with travel time information at Welcome Centers. Additional signs were installed in 2015, detailing travel times on I-64 and alternate routes to I-295 near Richmond from locations in Chesapeake, James City County, and Virginia Beach. Currently there are 13 permanent signs installed, with 9 in Hampton Roads and 4 in the Richmond area.

In addition to its Reach the Beach efforts, VDOT displays travel time information on changeable message signs. In February 2014, VDOT began posting current travel times on six existing changeable message signs, and more signs were added in 2015. Travel times are displayed on weekdays from 5 am to 9 pm.



511 Virginia Updates – VDOT is updating the 511 traveler information program. The smartphone app has been updated to include a list of travel times, maps, camera images, Reach the Beach information, and the 511 Virginia Twitter feed. Customizable route information is also now available on the 511 Virginia website.

AIR QUALITY

Air quality in Hampton Roads is impacted by the automobiles, trucks, trains, and ships that travel around the region. Through a number of national, statewide, and regional efforts, the air quality of Hampton Roads has improved, and is better than in many other areas.

The Environmental Protection Agency (EPA) regulates the amount of airborne pollutants in each region. These airborne pollutants come from a variety of stationary sources such as factories and power plants, and mobile sources such as passenger cars, trucks, trains, and ships.

Ground-level ozone and other pollutants are measured in Hampton Roads at three ambient air quality stations maintained and monitored by the Virginia Department of Environmental Quality (DEQ). These stations are located in Downtown Hampton, the Holland community in Suffolk, and the Tidewater Community College campus site in Northern Suffolk.

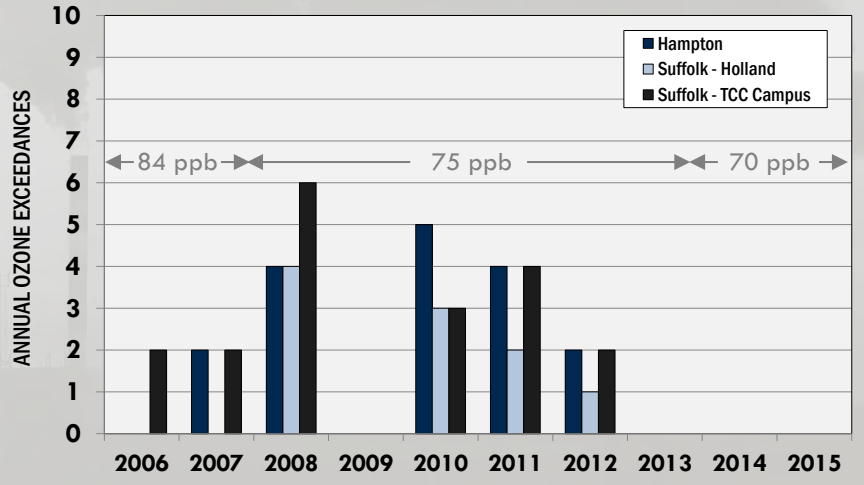
Each metropolitan area is designated as being in attainment or non-attainment of federal ozone air quality standards based on the amount of ground-level ozone recorded at monitoring stations and the National Ambient Air Quality Standards. EPA determines these designations based on an eight-hour standard, under which violations are determined using the fourth-highest daily maximum eight-hour average ozone concentration over the course of the year, averaged over a three-year period. According to EPA regulations, if an area is in non-attainment, the area's Long-Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP) must be tested for conformity with the state's air quality plan.

NOTABLE AIR QUALITY NUMBERS

0 The number of eight hour ozone exceedances at Hampton Roads air quality monitoring stations in 2015.

3rd Hampton Roads rank, among the 36 large metropolitan areas with populations between one and three million people, in terms of the best fourth-highest daily maximum 8-hour ozone averages in 2014.

EIGHT HOUR OZONE EXCEEDANCES AT REGIONAL AIR QUALITY MONITORING STATIONS, 2006-2015



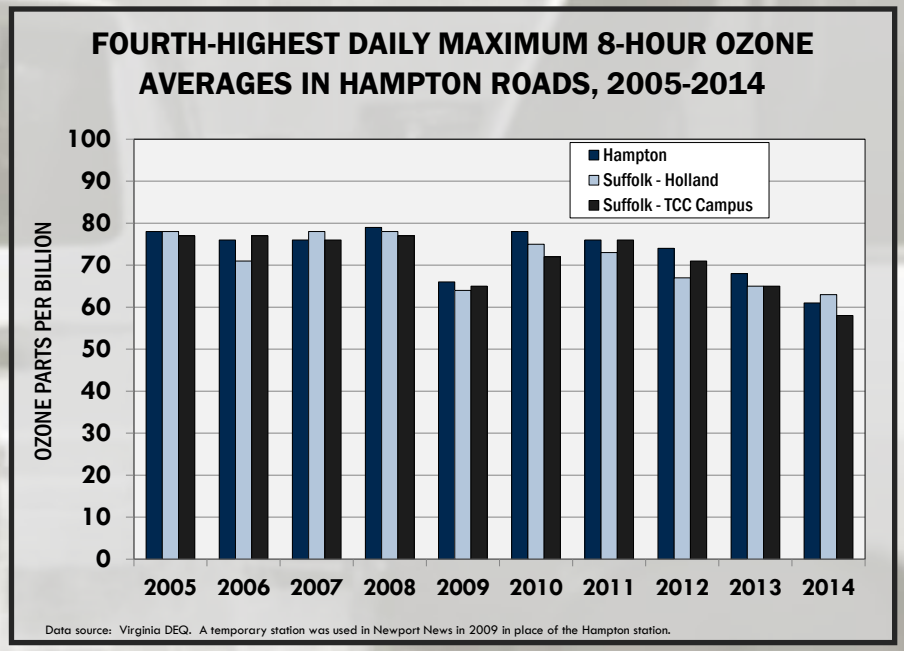
Data source: Virginia DEQ. In 2008, the ozone exceedance standard was reduced from greater than 84 parts per billion to greater than 75 parts per billion. The EPA is currently attempting to lower the ozone standard level from 75 ppb to 70 ppb starting with the 2014 data.

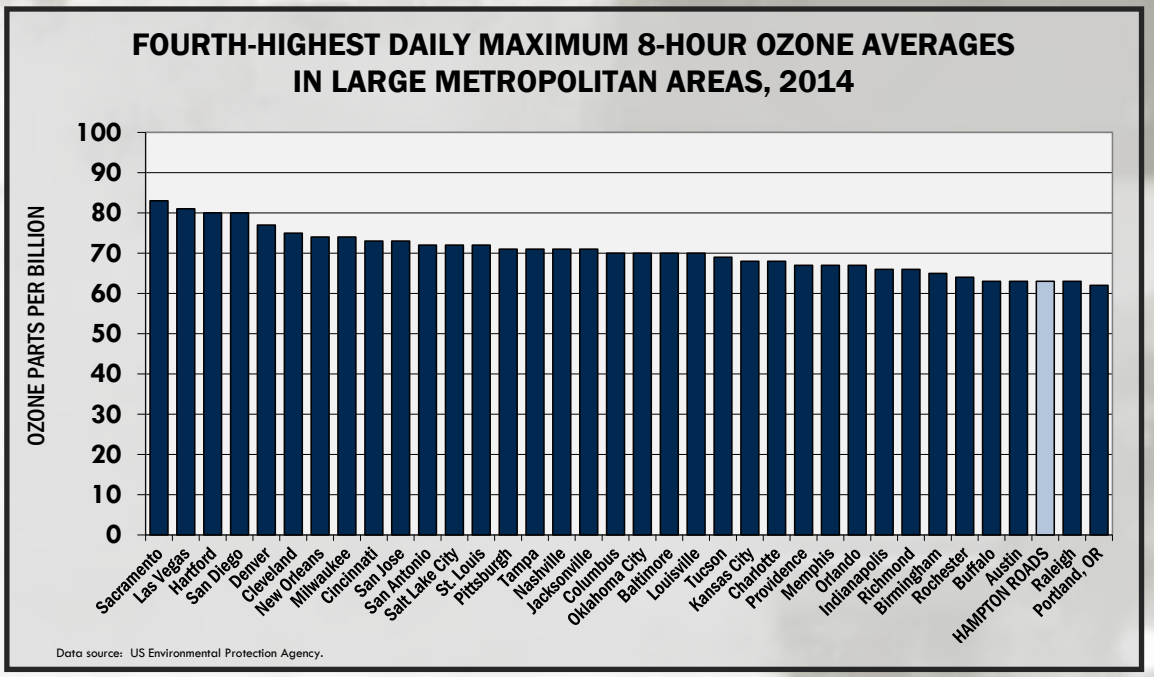
AIR QUALITY (continued)

Prior to 2008, regions were classified as non-attainment if the fourth-highest eight-hour ozone averages were greater than 84 parts per billion (ppb) at any of the regional monitoring stations over a three-year period. This standard was lowered to 75 ppb in 2008. The EPA is currently attempting to lower the ozone standard level from 75 ppb to 70 ppb, based on scientific research on ozone's effects on public health. The lower standards would take effect in late 2017, using the 2014-2016 ozone data.

In Hampton Roads, the 2012-2014 three-year ozone averages at the three monitoring stations were between 64 and 67 ppb, all below the 75 ppb threshold. Based on this, Hampton Roads is currently designated as an ozone attainment/maintenance area, and this designation means VDOT and the HRTPO currently do not have to test for air quality conformity in the LRTP and TIP. Based on this data, it is likely that Hampton Roads will continue to be an ozone attainment area based on the updated 70 ppb standard.

The air quality in Hampton Roads is better than the air quality in many other comparable metropolitan areas based on the eight-hour ozone standard. The fourth-highest eight-hour ozone level was 63 ppb in Hampton Roads in 2014, which ranked the region 3rd best among the 36 large metropolitan areas with populations between one and three million people.



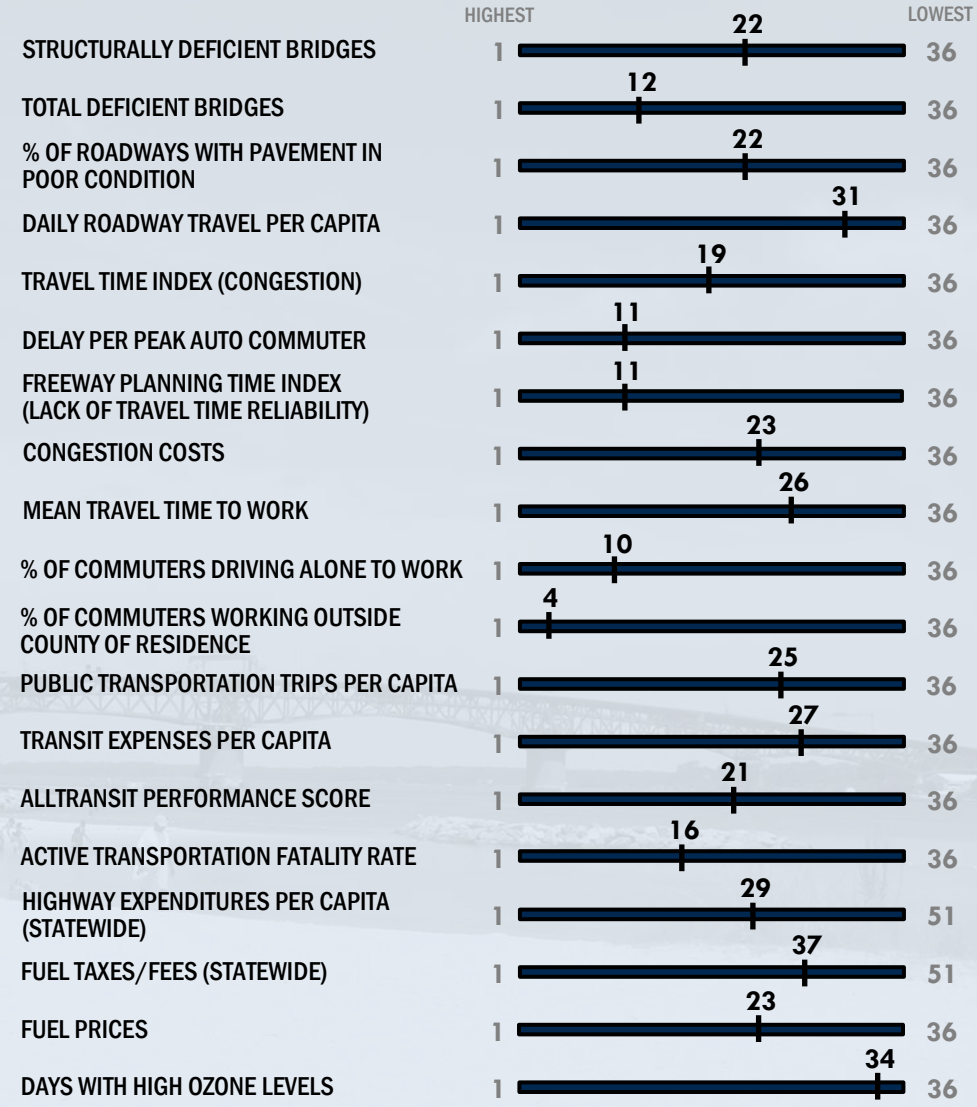


NATIONAL RANKING SUMMARY

In many sections of this report, Hampton Roads is compared to other large metropolitan areas throughout the United States with populations between one and three million people. Many of these 35 other metropolitan areas have similar transportation issues to the Hampton Roads area, from congestion to funding shortfalls.

The figure to the right summarizes where Hampton Roads ranks in various transportation measures compared to the other large metropolitan areas, or in some cases where Virginia ranks compared to other states, based on the most recent data available.

HAMPTON ROADS CURRENT RANK AMONG LARGE METROPOLITAN AREAS

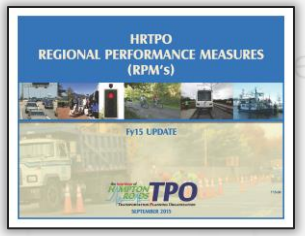


PERFORMANCE MANAGEMENT

Performance management is a cyclical process where:

1. The HRTPO measures the performance of the transportation network to identify needs.
2. The HRTPO estimates the impact of candidate transportation projects, then a) plans transportation projects (via its Long-Range Transportation Plan, or LRTP), b) allocates funds under its purview to transportation projects, and c) programs transportation projects (via its Transportation Improvement Program) to improve the performance of the transportation network.
3. The HRTPO measures the performance of the transportation network to determine the impact of projects implemented in step 2; then the HRTPO repeats these 3 steps.

Although the HRTPO has been measuring the performance of the regional transportation system for years via the State of Transportation reports, the HRTPO now annually prepares a standard set of regional performance measures according to a process led by the state. HRTPO will also soon be preparing a new set of regional performance measures and targets based on federal legislation.



In 2009, the General Assembly of Virginia passed legislation codifying regional transportation performance measurement. In response to the legislation, HRTPO staff, in cooperation with other Virginia metropolitan areas and Virginia's Office of Intermodal Planning and Investment (OIPI), developed a list of regional performance measures. The HRPTO Board approved this list in January 2011 and the Commonwealth Transportation Board (CTB) approved it in June 2011.

The HRTPO list contains the following categories of measures:

- Congestion reduction
- Safety
- Transit usage
- HOV usage
- Jobs-to-housing balance
- Access to transit
- Access to pedestrian facilities
- Air quality
- Movement of freight
- Vehicle Miles of Travel (VMT)
- Maintenance
- Financial system

In April 2012, the HRTPO Board approved a set of targets for its regional performance measures (RPMs). Lacking a basis for setting numerical targets, the HRTPO, with the approval of the Transportation Technical Advisory Committee's RPM Task Force, decided to set trend targets – increasing a particular value, decreasing a particular value, or maintaining that particular value.

Recent federal legislation established that states and metropolitan areas will be required to prepare and use a set of federally-established performance measures and set targets. These measures and targets will be required in the following areas:

- Pavement and bridge condition
- Roadway performance, in terms of congestion and reliability
- Fatalities and serious injuries – both number and rate per vehicle-miles traveled – on all public roads
- Non-motorized fatalities and serious injuries
- On-road mobile source emissions
- Freight movement on the Interstate System

More information on HRTPO's Performance Management effort, including the annual Regional Performance Measures report, is available at **http://hrtpo.org/page/performance-management**.

ADDITIONAL INFORMATION

The information provided in this report was compiled from a variety of sources. Data from each section of the report can be accessed from the locations described below for additional information:

Air Travel – The Federal Aviation Administration (FAA) updates air passenger data for both the nation and individual airports at http://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger. Further information on airfares and capacity is available at http://www.transtats.bts.gov. Passenger data is also provided by each of the Hampton Roads airports at http://www.norfolkairport.com and http://www.flyphf.com.

Port Data – The Virginia Port Authority maintains up-to-date statistics regarding the Port of Virginia on their website http://www.portofvirginia.com. The Virginia Maritime Association also releases the Port of Hampton Roads Annual Report, which contains extensive information regarding all aspects of the port. Their website is http://www.vamaritime.com.

Rail Travel – Amtrak maintains a list of passenger volumes by station at their website https://www.amtrak.com/state-fact-sheets. Information regarding high speed rail and other rail improvements throughout Virginia is available from the Virginia Department of Rail and Public Transportation at http://www.drpt.virginia.gov.

Bridges – VDOT maintains information on their website regarding most bridges throughout Virginia. This information is available at http://www.virginiadot.org/info/Bridge.asp.

Pavement Condition – VDOT releases pavement condition data on an annual basis as part of the State of the Pavement report. This report is available at http://www.virginiadot.org/info/state_of_the_pavement.asp.

TRIP is an organization that researches, evaluates and distributes economic and technical data on surface transportation issues. TRIP regularly releases an analysis of the condition of major roadways in metropolitan areas and the costs that deteriorating roadways have on the public. This analysis is available at http://www.tripnet.org.

Roadway Usage – The Highway Statistics Series contains data on motor fuel, motor vehicles, driver licensing, highway finance, highway mileage, and federal aid for highways. The reports are released annually by the Federal Highway Administration and are located at http://www.fhwa.dot.gov/policyinformation/statistics.cfm.

VDOT also releases roadway usage data on an annual basis for every Virginia jurisdiction. This data is available at http://www.virginiadot.org/info/ct-TrafficCounts.asp.

Congestion – The Texas Transportation Institute (TTI) at Texas A&M University releases the Urban Mobility Scorecard, a study of mobility and traffic congestion on freeways and major streets in urbanized areas. The report is located at http://mobility.tamu.edu.

TomTom also prepares a measure called the TomTom Traffic Index to describe congestion levels. More information is located at http://www.tomtom.com/en_us/trafficindex.

Commuting – The Bureau of the Census annually collects and distributes socioeconomic data via the American Community Survey (ACS). The ACS includes commuting characteristics data for each city and region. Data from the American Community Survey is available at http://www.census.gov/acs.

ADDITIONAL INFORMATION (continued)

Roadway Safety – The Virginia Department of Motor Vehicles (DMV) annually releases the Virginia Traffic Crash Facts document, which is a comprehensive overview of traffic crashes occurring throughout Virginia. The DMV also maintains a crash query tool on their website. The document and crash query tool are located at http://dmvnow.com/safety/#crash_data/index.asp.

Public Transportation – The Federal Transit Administration releases data on public transportation via the National Transit Database (NTD) program. The NTD is located at http://www.ntdprogram.gov. The American Public Transportation Association also includes transit data on their website at http://www.apta.com. HRT and WATA also include public transportation statistics on their websites at http://www.gohrt.com and http://www.gowata.org.

Bike and Pedestrian Facilities – A wide variety of information regarding bicycling and walking in Virginia is provided by VDOT at http://www.virginiadot.org/programs/bikeped/default.asp. The DMV also maintains bicyclist and pedestrian crash data at http://dmvnow.com/safety/#crash_data/index.asp.

Transportation Financing – Information regarding transportation financing in Virginia is available at http://www.virginiadot.org and http://www.ctb.virginia.gov. A list of fuel taxes and fees by state is available on the American Petroleum Institute website http://www.api.org.

Fuel Prices – National, statewide, and regional fuel prices are available via AAA at http://gasprices.aaa.com.

Roadway Projects – Information regarding transportation projects in Virginia's Six-Year Improvement Program is available at http://syip.virginiadot.org. HRTPO maintains the regional Transportation Improvement Program, which can be accessed at http://www.hrtpotip.org.

Transportation Operations – VDOT maintains ITS infrastructure and manages traffic on the regional freeway system. More information is available at http://www.virginiadot.org.

Air Quality – Virginia's Department of Environmental Quality maintains information regarding national air quality standards and regional air quality data. Their website is http://www.deq.state.va.us. National air quality information is available from the Environmental Protection Agency's website at http://www.epa.gov.

For additional information regarding this report, previous Congestion Management Process studies, or other transportation questions or concerns, please contact the Hampton Roads Transportation Planning Organization (TPO):

Hampton Roads Transportation Planning Organization
723 Woodlake Drive
Chesapeake, Virginia 23320
757.420.8300
http://www.hrtpo.org

As part of the Hampton Roads Transportation Planning Organization's (HRTPO) efforts to provide opportunities for the public and stakeholders to review and comment on this draft report prior to the final product being published, a public review period was conducted from July 6, 2016, through August 3, 2016. Public/stakeholder comments and HRTPO staff responses are included below:

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HRTPO Comment (via email)

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From: Larry Hazelwood
Sent: Sunday, July 10, 2016 11:34 AM
Subject: COMMENTS: The State of Transportation in Hampton Roads 2016

While the report seems very comprehensive with facts and figures; I could not find any data relating to HOV usage. It's my opinion the HOV's along the Greenbrier corridor and on the Peninsula are under utilized. During rush hours I try to count the vehicles with only one person visible using the restricted lane, and sometimes my informal count averages as high as 50%. I believe the investment to convert the HOV lanes to HOT lanes would serve the motoring public by helping to reduce existing congestion by the number of motorists that choose to use the HOT lane.

It is my belief that your report should address Hampton Roads HOV lane usage.

Sincerely,
Larry Hazelwood

HRTPO Staff Response:

Thank you for taking the time to review the State of Transportation report and providing us with your comments. We have included information on HOV usage in previous editions of the report, but discontinued the practice years ago due to issues we had with data quality. However, these issues have largely been resolved. We will incorporate HOV usage information back into the report, either in this year's edition or definitely within next year's update.

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HRTPO Comment (via email)

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From: Charles Braden
Sent: Wednesday, July 27, 2016 12:59 PM
Subject: The State of Transportation in Hampton Roads 2016 - Comments

We have had a chance to review the draft report The State of Transportation in Hampton Roads 2016 and have a couple of comments and observations about the air service section.

- Minor point about Newport News/Williamsburg International Airport's losses – You reflect the losses of AirTran Airways and Frontier Airlines at PHF. You can also add Allegiant Airlines and People Express Airlines to the list. They both departed PHF in 2014.

• Just FYI - The use of Bureau of Transportation (BTS) average fare statistics is a source of debate in the aviation community. While they seem to be a convenient tool to compare communities, they provide no context as to why a community has such a fare level. While a reader may think their community has unfairly high fares, there may be very good economic reasons for the fare level, such as average length of haul, airline competition, whether a community is more business-oriented than leisure, etc. We're not saying that BTS data is wrong, but it can be misleading and/or misconstrued.

• Behind the Numbers – One very important factor not mentioned is government sequestration. When the defense budget was hit with sequestration it affected travel budgets which affected air travel. Both ORF and PHF, serving military/government-heavy communities were inordinately impacted after sequestration began and saw declines in passengers while markets like Richmond (not as government-heavy) weren't as impacted. After several years of passenger decline, for many of the reasons you cite, ORF saw an increase in 2012 versus 2011. However, ORF began declining again in February 2013 just as sequestration was taking effect. Thankfully, airline capacity began to increase in June 2015 and each month thereafter. Through June of 2016 ORF has had 13 consecutive months of year-over-year growth. Through the rest of calendar year 2016 we see capacity availability increases which presage passenger increases.

• An excellent paper detailing what has happened to airports and the reasons behind it can be found here:

http://dspace.mit.edu/bitstream/handle/1721.1/78844/Trends%20and%20Market%20Forces%20Small%20Community.pdf?sequence=1

It's slightly dated but provides an excellent review of airline changes during the tumultuous period between 2007 and 2012 and how it affected different classes of airports. It was not just airline consolidation, but a litany of metric changes such as capacity discipline, retirement of small jets, intolerance of underperforming routes and a philosophical shift from the pursuit of market share to the quest for profitability.

• New Developments – An addendum for this section. Our board just approved a 10-year contract extension for Hudson Group, who manages our retail operations. Their intent is to add a new confectionary shop, Sweet Indulgences, in 2017 and to refresh and upgrade the branding for their other storefronts over the next few years.

Thank you for accepting comments on this report. If you need further information please let me know.

Charlie Braden
Director of Market Development
Norfolk Airport Authority

HRTPO Staff Response:

Thank you for taking the time to review the draft State of Transportation in Hampton Roads 2016 Report and providing us with your detailed comments. We will definitely incorporate each of these comments into the final report that will be released in September.

We prepare an update to this report on an annual basis, and we would gladly provide you with a copy of the Air Data section prior to the release of the draft report for your review in the future. Also if there are any other types or sources of information that you think would be valuable to include in the report, please let us know and we'd be happy to incorporate them.