

State of Transportation in Hampton Roads 2021



FEBRUARY 2022

T22-01

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THE STATE OF TRANSPORTATION IN HAMPTON ROADS 2021

PREPARED BY:



FEBRUARY 2022

REPORT DOCUMENTATION

TITLE

The State of Transportation in Hampton Roads 2021

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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, tolling, 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.

NON-DISCRIMINATION

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.

REPORT DATE

February 2022

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HIGH RISE BRIDGE CONSTRUCTION



The COVID-19 pandemic continues to affect our lives in so many ways, including where, when, and how we travel. While some facets of the regional transportation system have returned to pre-pandemic levels, other aspects are still being greatly impacted.

The COVID-19 pandemic continues to impact travel more than any other issue in recent memory. Many people continue to work from home on a regular basis, and some may continue to do so permanently. Roadway travel and congestion levels, which decreased during the early months of the pandemic, are returning close to pre-pandemic conditions. Air and rail travel levels continue to rebound as well, and the Port of Virginia is carrying record levels of cargo. Public transportation usage, however, continues to lag pre-pandemic levels.

In spite of the pandemic, work continues on a number of major roadway construction projects in Hampton Roads. Construction is currently underway on two Regional Priority Projects – widening of the Hampton Roads Bridge-Tunnel and adjacent sections of I-64 and widening I-64 in Chesapeake (including the High Rise Bridge).

These are in addition to a number of major projects that have recently been completed throughout the region, including an additional tube at the Midtown Tunnel, the Martin Luther King Freeway Extension, three phases of I-64 widening on the Peninsula, both phases of I-64/I-264 interchange improvements, upgrading the Dominion Boulevard corridor including the new fixed-span Veterans Bridge, the I-564 Intermodal Connector, the replacement of the Lesner Bridge in



Virginia Beach, and the first phase of the I-64 Express Lanes network.

Transportation improvements in Hampton Roads have not been limited to the highway network. The Port of Virginia has recently completed \$700 million in projects to greatly improve and expand Norfolk International Terminals and the Virginia International Gateway facility, and work is underway to widen and deepen the shipping channels to the port. Millions of dollars of improvements have been made in recent years at both Norfolk International and Newport News-Williamsburg International Airports. A new Amtrak station was built in Norfolk, and construction started in 2020 on a new multi-modal station near Bland Boulevard in Newport News. And generational changes to the regional public transportation system, including a new regional transit backbone, will occur over the next few years, largely funded through a new regional funding source dedicated to transit.



Even with all of these projects in Hampton Roads, there continue to be challenges. In spite of increased funding levels in recent years, many important transportation projects have no funding identified. The 2045 Hampton Roads Long-Range Transportation Plan identified \$70 billion in candidate projects, but less than \$14 billion is projected to be available for new projects. Funding for bridge and roadway maintenance will need to increase as infrastructure continues to age. In addition, congestion will likely increase as roadway levels catch up and start exceeding pre-pandemic levels.

NOTABLE HAMPTON ROADS NUMBERS

Population	1,748,769
Licensed Drivers	1,165,437
Registered Vehicles	1,575,532
Centerline-Miles	8,598
Lane-Miles	19,550
Airport Boardings	955,266
Port Cargo Tonnage	21,081,927
Amtrak Passengers	134,900
Transit Passengers	8,304,767
Bridges	1,268
Daily Vehicle-Miles of Travel	36,795,452



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 condition, congestion, commuting characteristics, roadway safety, truck data, transit usage, active transportation, transportation financing, tolling, transportation operations, and air quality.

In addition, this edition of the State of Transportation report includes an analysis of the impacts of the COVID-19 pandemic on the Hampton Roads transportation system where data is available. Impacts of the pandemic on air travel, ports, rail travel, roadway travel, congestion levels, safety, active transportation, and public transportation are all highlighted.



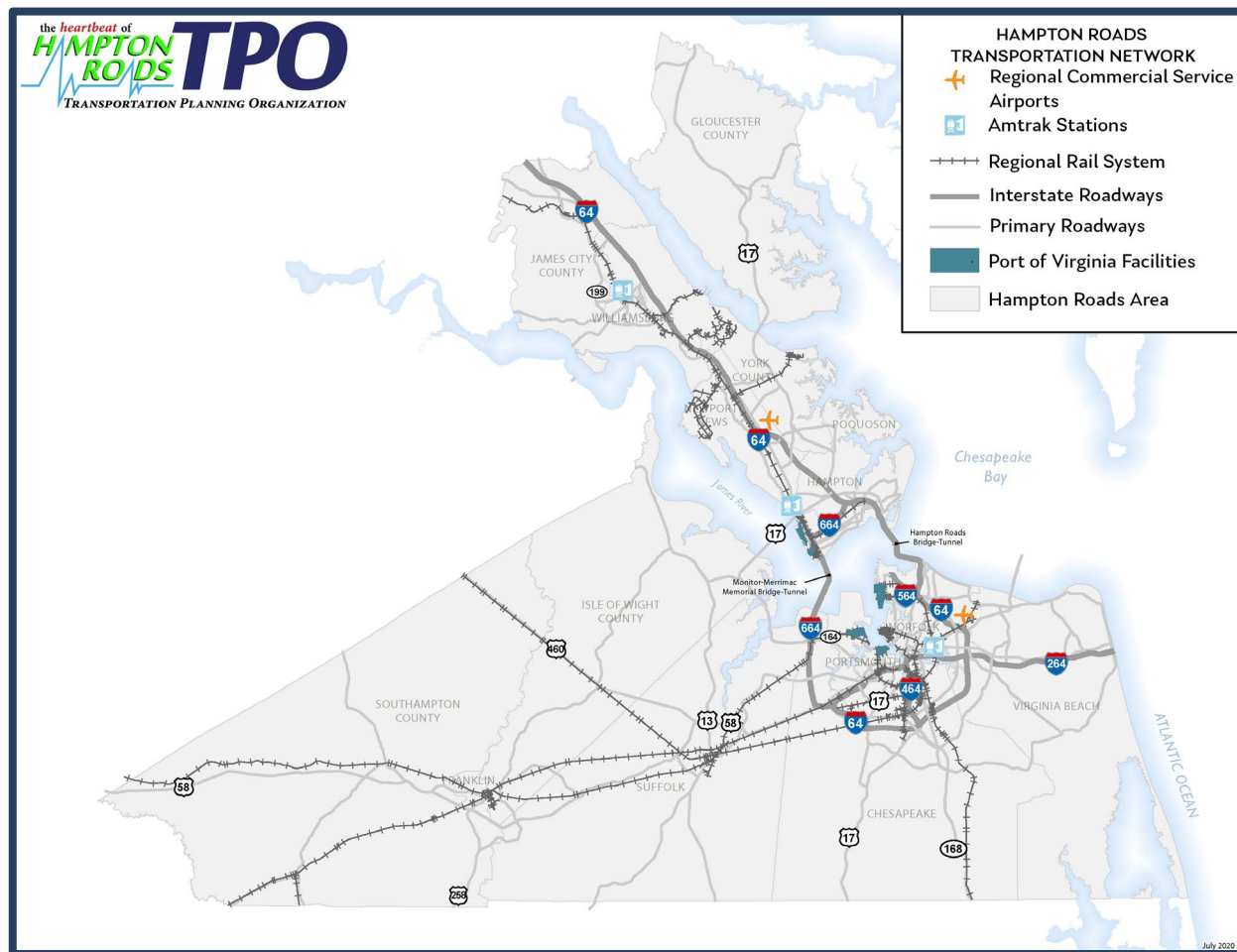
This report is produced as part of the HRTPO's Congestion Management Process (CMP), which is an ongoing program that identifies, develops, evaluates, and implements transportation strategies to enhance mobility regionwide. The Hampton Roads Congestion Management Process report includes a comprehensive 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 HRTPO's website at

<http://www.hrtpo.org/page/congestion-management>.

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. In addition, new federal regulations require states and metropolitan areas to use performance measures and set targets in areas such as pavement and bridge condition, freight, travel time reliability, transit, and safety. More information on HRTPO's Performance Management effort is available on HRTPO's website at

<http://www.hrtpo.org/page/performance-management>.

HAMPTON ROADS TRANSPORTATION NETWORK





The COVID-19 pandemic impacted the airline industry more than any other mode of transportation. Travel levels returned closer to normal throughout 2021, and Hampton Roads airports have fared better than many others.

The number of passengers traveling via commercial air service was increasing in Hampton Roads prior to the pandemic. Over 2.2 million passengers boarded flights at the two commercial service airports in Hampton Roads – Norfolk International (ORF) and Newport News-Williamsburg International (PHF) – in 2019 according to Federal Aviation Administration (FAA) and local airport data. The number of passengers using regional airports had increased 28% from the low seen in 2015, but volumes fell by 57% from 2019 to 2020 due to COVID-19.



The decreases in passenger levels experienced in Hampton Roads during the pandemic are similar to those at other airports. Passenger levels at Richmond International Airport decreased by 61% from 2019 to 2020, and nationally, passenger levels also decreased by 61% during this period.

NOTABLE AIR TRAVEL NUMBERS

57%

The change in the number of passengers that used Hampton Roads airports between 2019 and 2020.

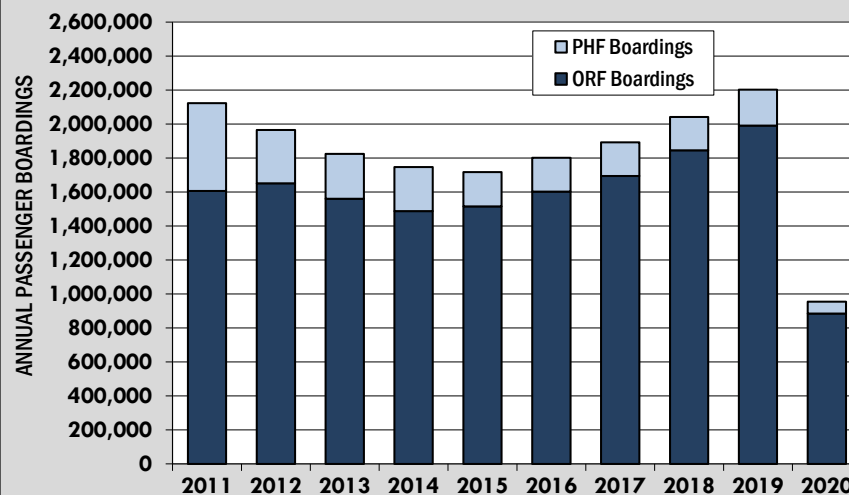
46%

The decrease in capacity (in terms of available seat-miles) at Hampton Roads airports between 2019 and 2020.

23%

The decrease in average fares at Norfolk International Airport between 2019 and 2020. At Newport News-Williamsburg International Airport, the average airfare decrease was 25%.

ANNUAL PASSENGER BOARDINGS AT HAMPTON ROADS AIRPORTS, 2011-2020



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.

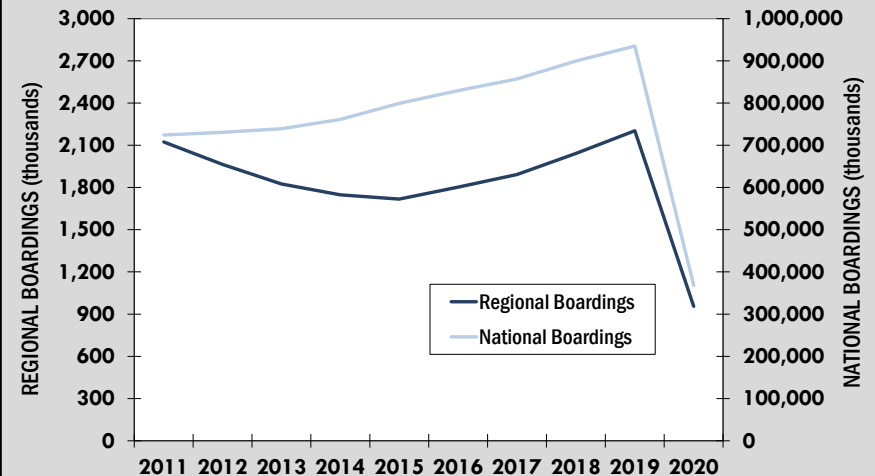


Airfares at Hampton Roads airports have decreased over the last few years, after increasing earlier in the decade. In 2011, average airfares at Norfolk International Airport were \$394, which was about \$25 higher than the national average. At Newport News-Williamsburg International Airport, airfares (\$328) were well below the national average, driven by low-cost carrier service. By the end of 2019, the average airfare at Norfolk International Airport had increased only by 3% to \$409, but by 44% at Newport News-Williamsburg International Airport to \$472. Both were above the national average airfare of \$357. However, average airfares decreased throughout 2020 due to the pandemic, down to \$314 at Norfolk International and \$353 at Newport News-Williamsburg International.



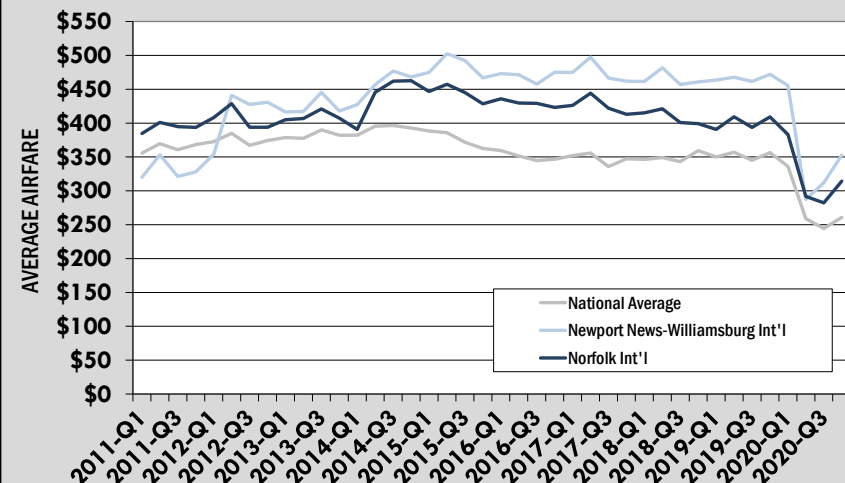
It should be noted that these airfares only reflect the costs associated with ticket fares and do not include additional fees that have expanded in recent years for checked baggage, seat assignments, ticket changes, early check-in, snacks, etc.

ANNUAL PASSENGER BOARDINGS AT HAMPTON ROADS AND NATIONAL AIRPORTS, 2011-2020



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.

AVERAGE AIRFARES FOR HAMPTON ROADS AND NATIONAL AIRPORTS, 2011-2020



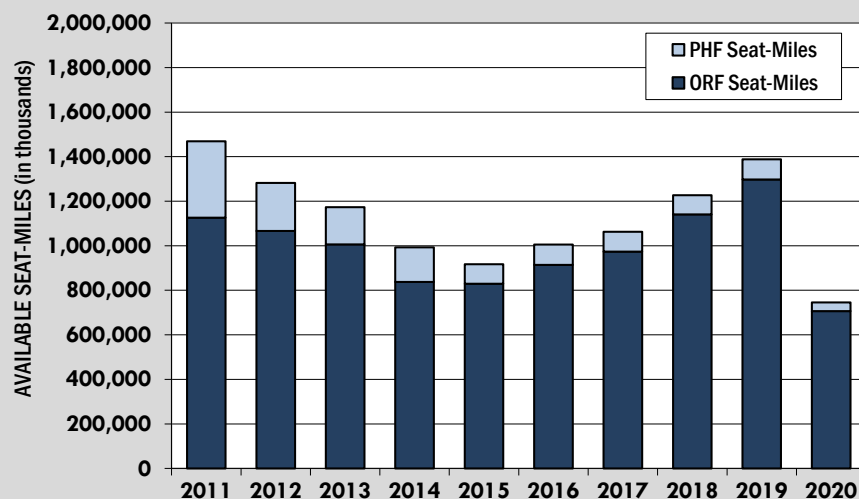
Data source: Bureau of Transportation Statistics. Average fares are based on domestic itinerary fares consisting of round-trip fares unless the customer does not purchase a return trip, in which case the one-way fare is included. Fares are based on the total ticket value (including any additional taxes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



The number of flights departing from Hampton Roads airports decreased early in the last decade but increased over the last few years prior to the pandemic. An average of 74 flights depart Hampton Roads each day in 2021 (although this is greatly impacted by seasonal service on some routes). This compares to 97 commercial flights departing from Hampton Roads airports each day prior to the pandemic in 2019 and 82 flights offered each day in 2018.

The increase in the number of flights from Hampton Roads airports prior to the pandemic has resulted in an increase in the number of available seat-miles, a common method of measuring an airport's person-carrying capacity. There were 745 million seat-miles available on flights departing Hampton Roads in 2020. While the number of seat-miles had been

ANNUAL AVAILABLE SEAT-MILES AT HAMPTON ROADS AIRPORTS, 2011-2020



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

Passenger levels and airline capacity (in terms of nonstop flights and available seat-miles) were rebounding in Hampton Roads prior to the pandemic. Between 2015 and 2019, the increase in passenger levels and capacity in Hampton Roads outpaced many similar-sized airports. Among 112 airports in the United States classified as "small" and "medium" by the FAA, Norfolk International ranked 41st highest in terms of the largest percentage growth in passenger volumes between 2015 and 2019 and 26th highest in terms of capacity growth in available seat-miles.

In spite of the large decrease in passenger volumes during the COVID-19 pandemic, Norfolk International fared better than many comparable airports. Among the 112 airports classified as "small" and "medium" airports, Norfolk International ranked 39th highest in terms of the change in the percentage in passenger volumes between 2019 and 2020 and 69th highest in terms of the change in capacity in available seat-miles.

More information on the impacts of the COVID-19 pandemic on air travel is included at the end of this section.



Image Source: NIA.



rebounding from the low seen in 2015, the number of seat-miles decreased 46% from 2019 to 2020 due to the pandemic. Load factors (which are passenger-miles as a proportion of available seat-miles) were also impacted by the pandemic, decreasing at Norfolk International from 82.7% in 2019 to 64.8% in 2020. The load factor also decreased at Newport News-Williamsburg International, from 82.5% in 2019 to 57.4% in 2020.

As of 2021 there are a total of 35 airports in 27 markets served nonstop from Hampton Roads. Norfolk International Airport has nonstop flights to all of these airports and markets, while 2 markets are served nonstop from Newport News-Williamsburg International Airport. This number includes seasonal service and service that is only provided by airlines on certain days of the week. Nonstop service to some markets, however, continues to be reduced or eliminated due to COVID-19 pandemic, as is Delta Air Lines service at Newport News-Williamsburg International. It is unknown if these reductions are temporary or permanent.

The most popular final destination for passengers using Hampton Roads airports in 2020 was Atlanta, with a total of

NEW DEVELOPMENTS

Breeze Airways – A new airline – Breeze Airways – began service at Norfolk International Airport in June 2021. The airline focuses on providing direct service between underserved, small to midsize airports. Breeze Airways provides nonstop service from Hampton Roads to Charleston (SC), Columbus, Hartford, New Orleans, Pittsburgh, Providence, and Tampa. Breeze Airways has also announced new nonstop service will be provided from Norfolk to Palm Beach and New York Long Island MacArthur airports starting in February 2022.



New Service – In addition to Breeze Airways, a number of new air travel options and non-stop destinations have been added in the region recently, including:

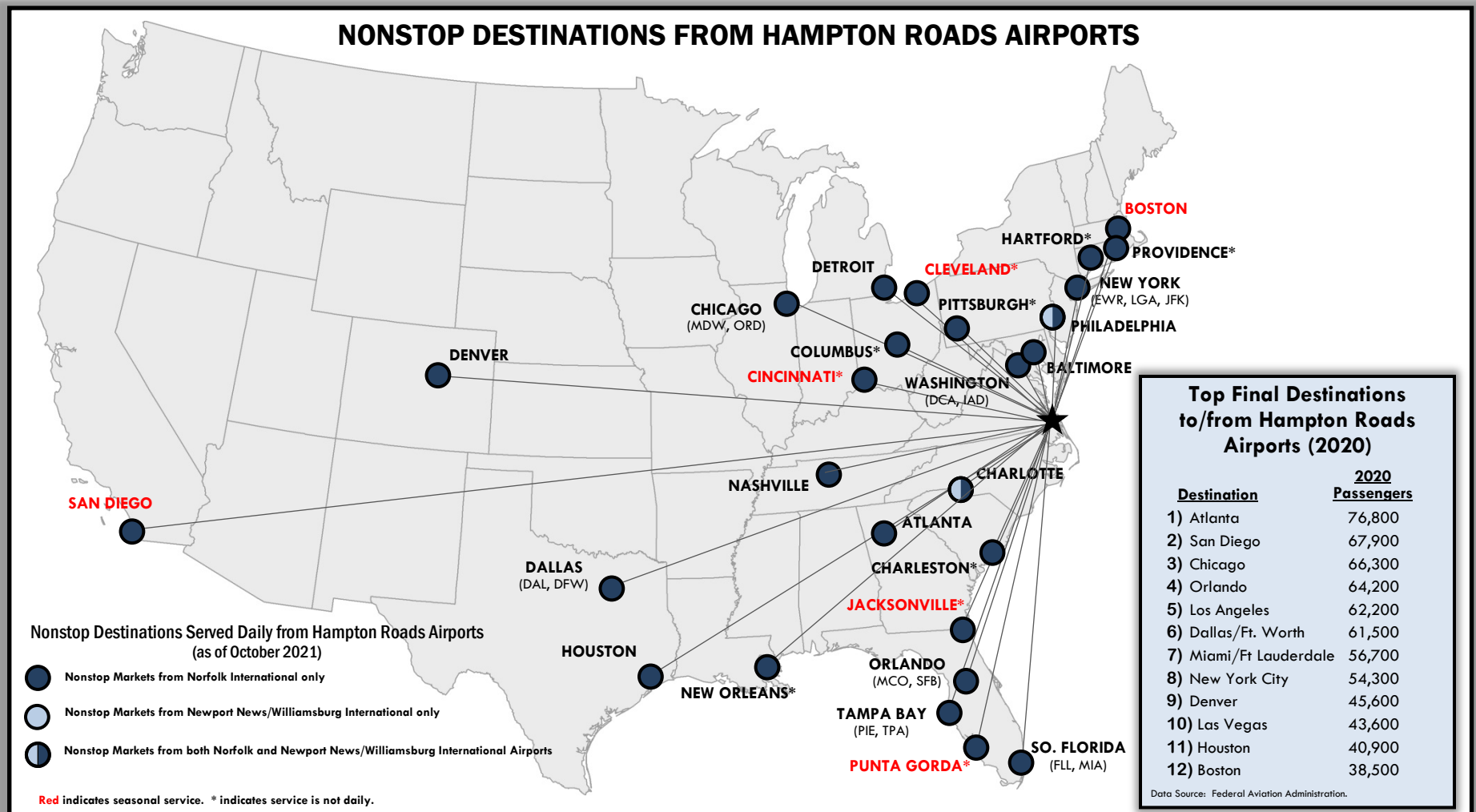
- Allegiant Air started new service from Norfolk to Tampa/St. Petersburg, Orlando/Sanford and Fort Lauderdale (2017); Jacksonville (2018); Cleveland, Cincinnati, and Punta Gorda (2019), and Pittsburgh and Columbus (2020).
- Frontier Airlines began service at Norfolk International in 2018. Frontier currently provides nonstop routes to Denver and Orlando, and nonstop service to Miami began in November 2021.
- Southwest Airlines added nonstop service to Nashville and seasonal service to San Diego in 2019, and weekend service to Dallas Love Field in 2021.





76,800 passengers traveling either to or from Atlanta. The second most popular destination from Hampton Roads in 2020 was San Diego with 67,900 passengers, and the third most popular final destination was Chicago with 66,300 passengers. By comparison, in 2019 the most popular destination was New York, with 212,900 passengers.

Of the top twelve markets for Hampton Roads air travelers in 2020, only Las Vegas and Los Angeles were not served by any nonstop service from Hampton Roads airports. In recent years, the number of the top twelve markets that were not served by nonstop service has been as high as half (6).





COVID-19 IMPACTS

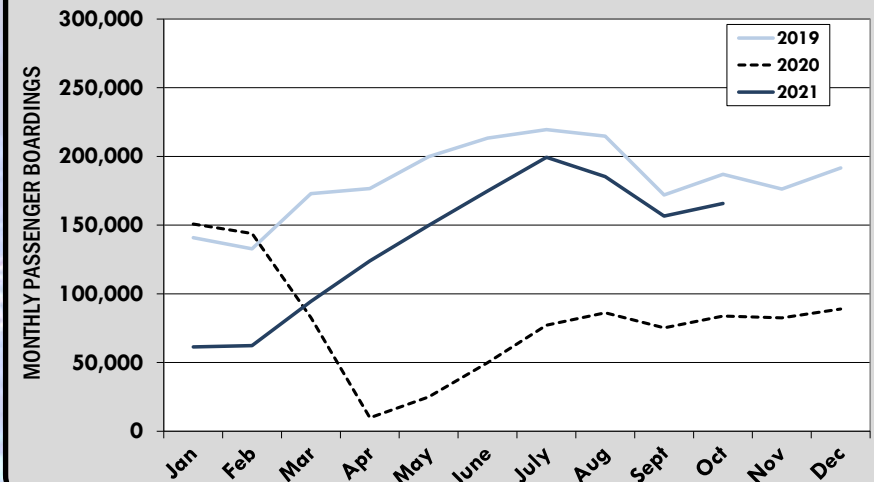
Very few aspects of the economy have been impacted more by the COVID-19 pandemic than the airline industry, but passenger levels are returning to pre-pandemic levels.

The number of passengers using the two commercial service airports in Hampton Roads – Norfolk International Airport and Newport News-Williamsburg International Airport – began to sharply decrease in March 2020 at the start of the pandemic shutdowns and by April the number of passengers boarding planes in Hampton Roads was 94% below the level seen in April 2019. The number of passengers increased throughout late spring and summer of 2020 but were largely flat afterward until February 2021, when passenger levels began to increase. By October 2021 passenger levels at Hampton Roads airports were within 11% of the level experienced prior to the pandemic in October 2019.

Air travel decreases in Hampton Roads have been less than the decreases seen around the nation. National air travel levels were 96% lower at the peak of shutdowns in April 2020 compared to April 2019. National passenger levels have lagged regional levels throughout most months in 2021, and in September 2021 national air travel passenger levels were still 16% below the levels seen in September 2019, which is higher than the 9% decrease in Hampton Roads.

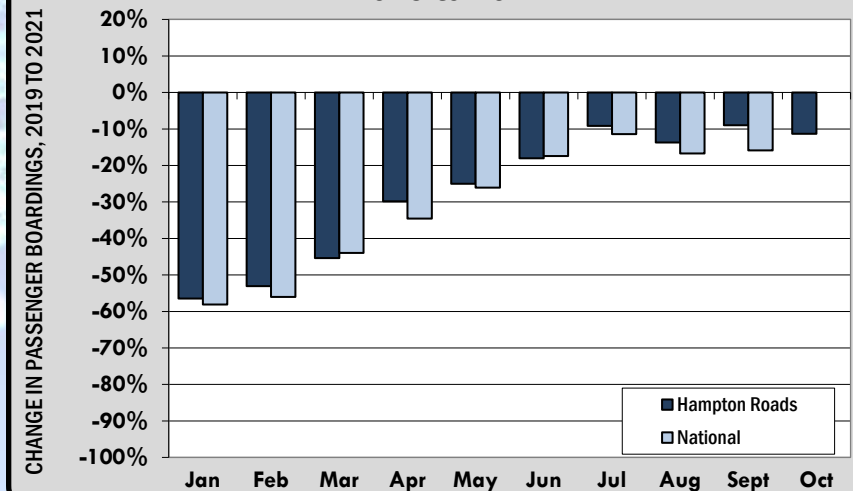
The capacity of the airline industry, in terms of the number of flights and the number of seat-miles, also decreased during the pandemic. In April 2020, there were 680 flights

MONTHLY PASSENGER BOARDINGS AT HAMPTON ROADS AIRPORTS, 2019 - 2021



Data sources: Federal Aviation Administration, Norfolk International Airport (ORF) and Newport News-Williamsburg International Airport (PHF).

MONTHLY CHANGE IN PASSENGER BOARDINGS 2019 to 2021



Data sources: Federal Aviation Administration, Norfolk International Airport (ORF) and Newport News-Williamsburg International Airport (PHF).



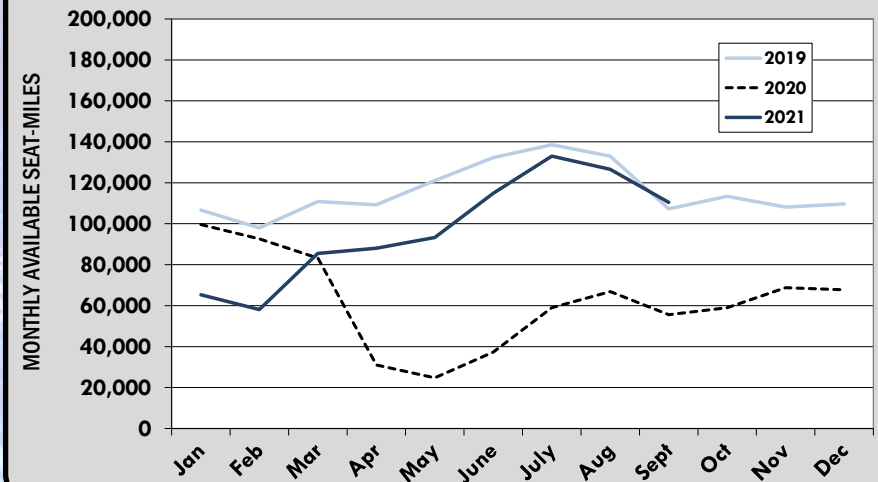
COVID-19 IMPACTS

that departed from Hampton Roads commercial service airports, which is down 72% from the 2,413 flights offered in April 2019. By September 2021, the 1,825 flights departing Hampton Roads airports were down 27% from September 2019. Nationally, the number of flights were down 69% from April 2019 to April 2020 and down 14% from September 2019 to September 2021.

With the number of flights being reduced due to lower travel demand, the number of seat-miles at Hampton Roads airports also decreased. The number of seat-miles began to sharply decrease in Hampton Roads in March 2020 and by April the number of available seat-miles at Hampton Roads airports was 72% below the level seen in April 2019. The number of available seat-miles increased throughout the summer and fall of 2020 and continued through summer 2021. By September 2021 the number of available seat-miles in Hampton Roads was actually 3% above the pre-pandemic level seen in September 2019.

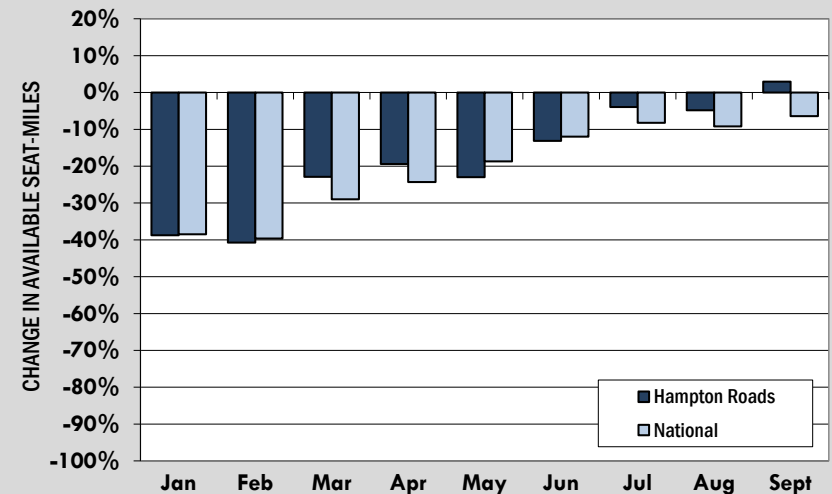
Decreases in available seat-miles at Hampton Roads airports have been similar to the decreases seen around the nation. The number of national available seat-miles were 73% lower in April 2020 compared to April 2019, which was similar to the 72% decrease in Hampton Roads. By September 2021 the number of national available seat-miles were 6% below the levels seen in September 2019, compared to the 3% increase in Hampton Roads.

MONTHLY AVAILABLE SEAT-MILES AT HAMPTON ROADS AIRPORTS, 2019 - 2021



Data source: Bureau of Transportation Statistics.

MONTHLY CHANGE IN AVAILABLE SEAT-MILES 2019 to 2021



Data source: Bureau of Transportation Statistics.



Cargo levels handled by the Port of Virginia slightly decreased at the height of the pandemic but are reaching record levels in 2021, providing a boost to both the regional and statewide economies.

The Port of Virginia is comprised of four facilities in Hampton Roads: Norfolk International Terminals (NIT), Newport News Marine Terminal (NNMT), Portsmouth Marine Terminal (PMT), and the Virginia International Gateway (VIG) 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.



Hampton Roads continues to be the largest exporter of coal in the country. Nearly 27 million tons of coal were shipped through the region in 2020. The amount of coal shipped through Hampton Roads has fluctuated over the last decade between 22 million tons in 2016 and 51 million tons in 2013. This fluctuation is largely due to the cost competitiveness of American coal compared to other countries.

NOTABLE PORT DATA NUMBERS

▲
35%

The increase in general cargo tonnage handled by the Port of Virginia between 2011 and 2020.

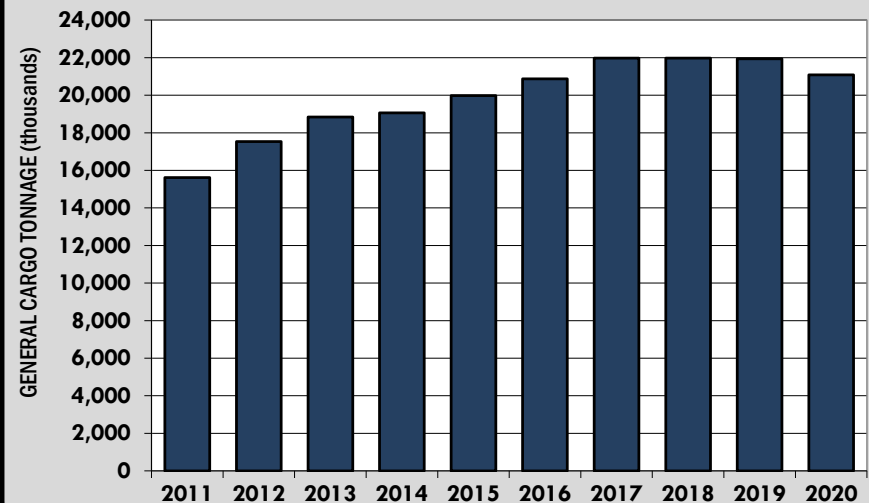
▼
43%

The decrease in the amount of coal shipped through Hampton Roads from 2011 to 2020.

3rd

The rank of the Port of Virginia among East Coast ports in the volume of containerized cargo handled in 2020. Nationally, the Port of Virginia ranked 6th highest.

GENERAL CARGO TONNAGE HANDLED BY THE PORT OF VIRGINIA, 2011-2020



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

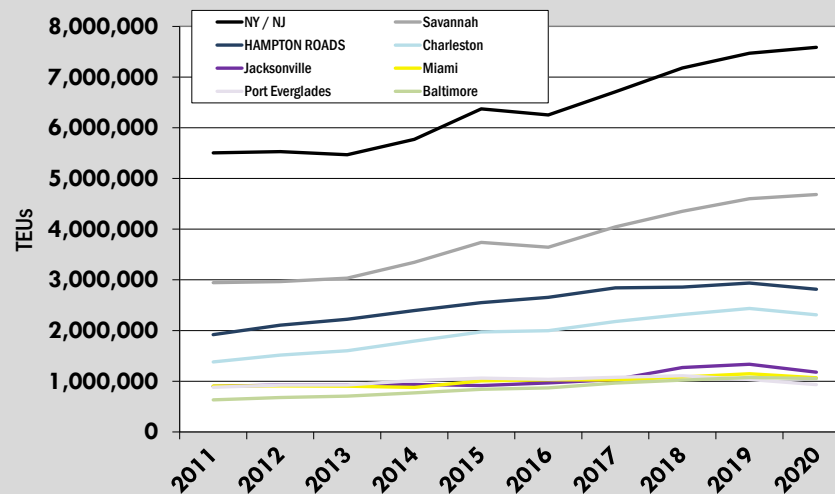


Nearly 21 million tons of general cargo, primarily transported in containers, was handled by the Port of Virginia in 2020. While the amount of general cargo handled by the Port of Virginia decreased slightly in 2020 due to the pandemic, it has increased 35% between the height of the economic downturn in 2011 and 2020.

The maritime industry also measures containerized cargo using a standard called “20-foot container equivalent units”, or TEUs. The Port of Virginia handled 2.8 million TEUs in 2020. This is up 47% from 1.9 million TEUs handled in 2011. The Port of Virginia ranked third highest among East Coast ports in the volume (in terms of TEUs) of containerized cargo handled in 2020, and sixth highest among all U.S. ports.

In 2020, 64% of the general cargo handled by the Port of Virginia arrived or departed by truck, 32% by rail, and 4%

GENERAL CARGO (in TEUs) HANDLED AT TOP EAST COAST PORTS, 2011-2020

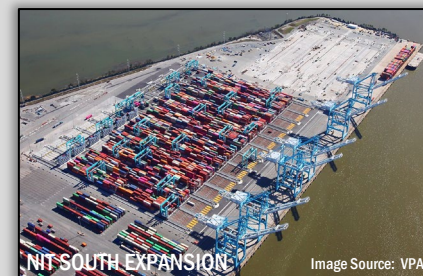


Data sources: American Association of Port Authorities, various port facilities. TEUs are twenty-foot container equivalent units, a common method of measuring freight.

NEW DEVELOPMENTS

Capital Improvements – Work was recently completed on a number of major projects at The Port of Virginia, including:

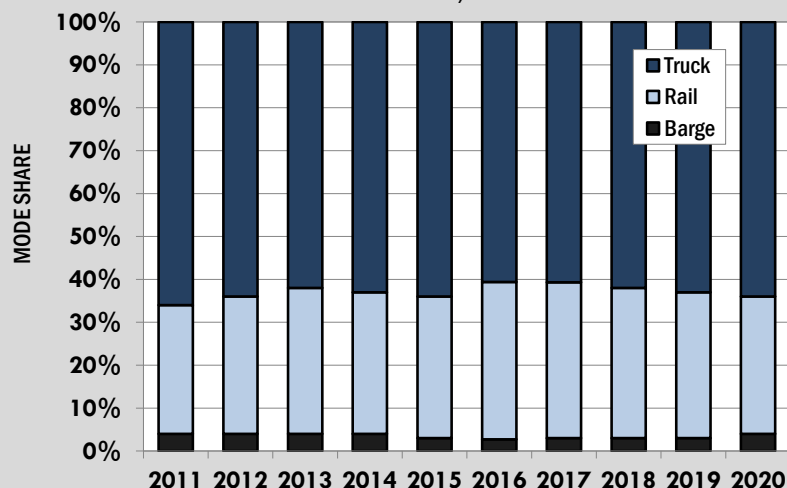
- **NIT** - Rail improvements and converting the South Yard to automated rail-mounted gantry cranes that allow the facility to handle 700,000 more TEUs annually were completed in 2020. The new North Gate semi-automated gate complex that connects NIT directly to the Intermodal Connector was completed in 2017.
- **VIG** – The Phase II Expansion project was completed in 2019, which includes an extended berth with new cranes, additional truck gates, and new container and rail yards. These improvements allow VIG to handle over one million more TEUs annually.



Wider, Deeper, Safer – In order to better accommodate the larger ships that have arrived in recent years, the Port of Virginia has planned the “Wider, Deeper, Safer” project which will deepen the channels from 50 feet to 55 feet and widen the channels to allow for two-way traffic of ultra-large container vessels. Work began on deepening the western side of the Thimble Shoal Channel, which leads into the Norfolk Harbor, in December 2019 and is expected to be complete in 2024.



MODE SPLIT OF GENERAL CARGO HANDLED BY THE PORT OF VIRGINIA, 2011-2020



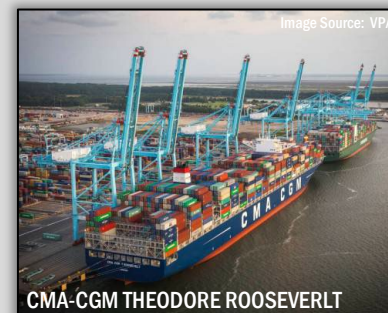
by barge. The share of freight moved by rail through the Port of Virginia has increased, up from 30% in 2011.

HRTPO conducts a number of freight planning efforts, such as the Regional Freight Study. More information is available at <http://www.hrtpo.org/page/freight>.

The cruise industry also has a presence in Hampton Roads, with cruises calling at the Decker Half Moone Cruise Center in Norfolk, although these cruises have been temporarily paused during the pandemic. Carnival Cruise Lines offered cruises from Norfolk as a home port in 2019 with cruises scheduled to the Caribbean. In addition, a number of other cruise lines provide scheduled stops in Norfolk during their itineraries. A total of 34 cruise ships visited Norfolk in 2019, with 19,832 embarking/disembarking passengers and another 24,147 transiting passengers visiting for the day.

BEHIND THE NUMBERS

The ships calling at the Port of Virginia have gotten much larger in recent years, largely due to the widening of the Panama Canal. In July 2016 the first ship with a capacity of 10,000 TEUs arrived at the port, but only ten months later, a 13,000 TEU ultra-large container vessel – The Cosco Development – called at the Port. In August 2017 the 14,400 TEU CMA-CGM Theodore Roosevelt visited VIG, followed by many other 14,000+ TEU ships. In September 2020, a 15,300 TEU ship – the CMA-CGM Brazil – called at the Port.



Hampton Roads and the Port of Virginia are well-positioned to handle these larger ships. 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. In addition, the Port has begun the process to widen and deepen the channels to 55 feet to allow for two-way traffic of ultra-large container vessels, which is deeper than any other East Coast port.

The recently completed improvements to Norfolk International Terminals and the Virginia International Gateway complex will also help the Port of Virginia handle this expected growth. Both NIT and VIG can now each handle over 2 million TEUs annually, which is well above the 2.8 million TEUs that were handled in total by the Port of Virginia in 2020.



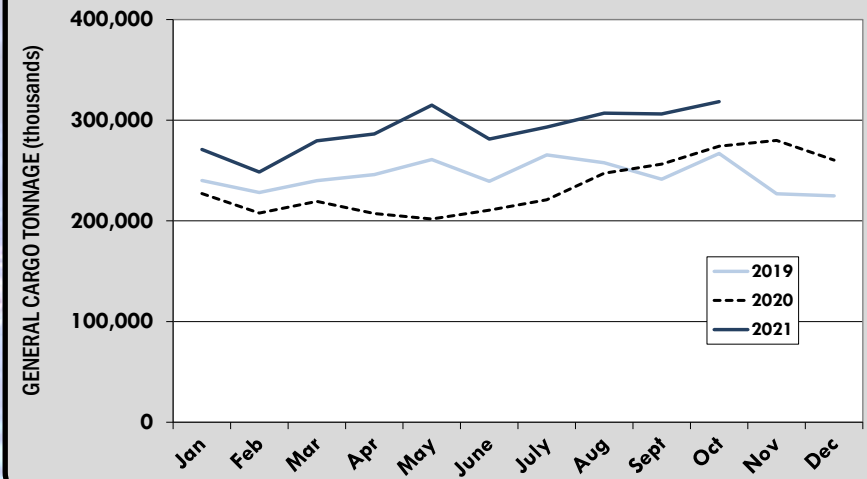
COVID-19 IMPACTS

Although ports, including the Port of Virginia, initially experienced decreases in cargo volumes during the COVID-19 pandemic, volumes have rebounded and are now significantly higher than they were prior to the pandemic.

Cargo volumes (in terms of TEUs) handled by the Port of Virginia decreased slightly at the start of the pandemic but had surpassed the previous year's volumes by September 2020, and have continued to increase throughout 2021. The year 2019 was a record year for the Port, and the number of TEUs handled by the Port of Virginia has been higher each month in 2021. In October 2021, cargo volumes were 19% higher than they were in October 2019.

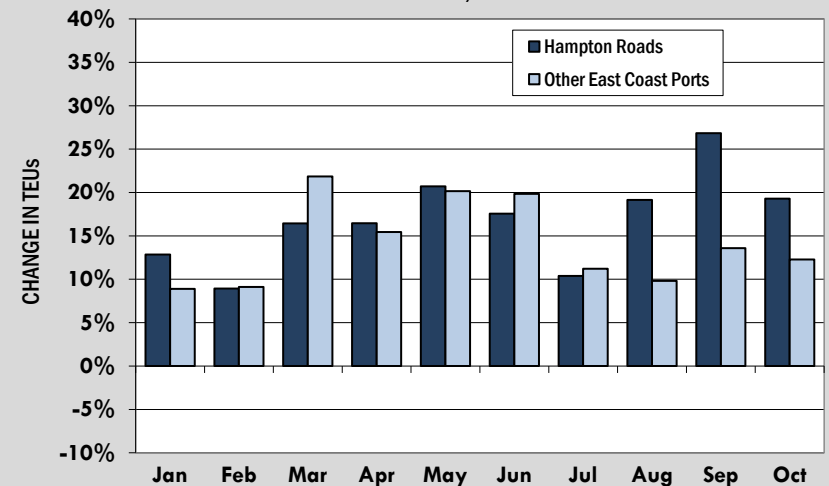
The increase in volumes at the Port of Virginia was larger during the second half of 2021 than those experienced at other East Coast Ports. Both the Port of Virginia and other East Coast Ports experienced a 16% increase in TEUs in the first half of 2021 compared to the same period in 2019. However, while the Port of Virginia had 26% and 19% increases in September and October 2021 respectively compared to the same months in 2021, the change at other East Coast Ports was only 14% and 12% during those same months.

MONTHLY GENERAL CARGO (in TEUs) HANDLED BY THE PORT OF VIRGINIA, 2019 - 2021



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

MONTHLY CHANGE IN GENERAL CARGO (in TEUs) AT TOP EAST COAST PORTS, 2019 to 2021



Data source: Virginia Port Authority, various port facilities.



There are multiple passenger rail travel options in Hampton Roads, with Amtrak service provided to both the Peninsula and the Southside and the Tide light rail line in Norfolk.

A number of passenger rail options are available in Hampton Roads. Amtrak service is available on the Peninsula, and in late 2012 Amtrak began providing direct service to the Southside. A year earlier the Tide, a 7.4-mile light rail 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.)



The number of passengers using Amtrak service in Hampton Roads had increased over the last decade prior to the pandemic. There were a total of 134,900 passengers who boarded or departed Amtrak trains in Hampton Roads in Federal Fiscal Year (FFY) 2020, with 52,200 passengers at the Newport News station, 28,900 passengers at the Williamsburg

NOTABLE RAIL TRAVEL NUMBERS

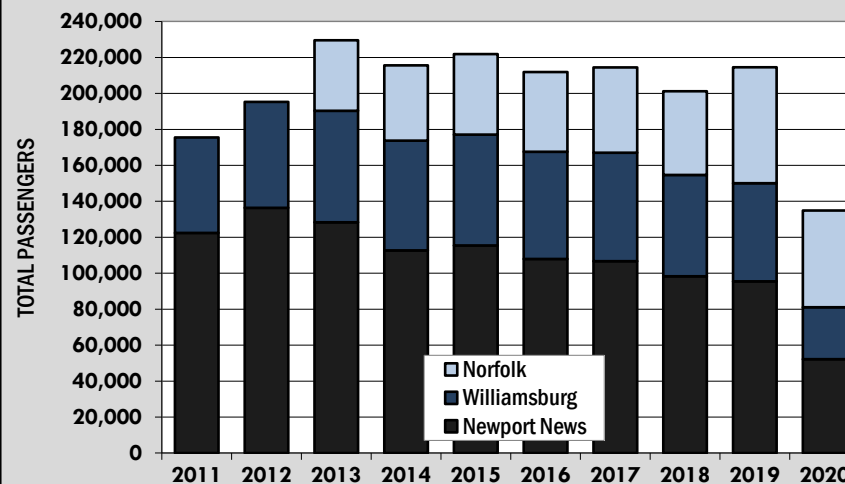
37%

The decrease in the number of passengers that boarded or departed Amtrak trains in Hampton Roads between Federal Fiscal Years 2019 and 2020.

32%

The decrease in the number of crashes at highway-rail crossings in Hampton Roads from the 2001-2010 time period to the 2011-2020 period.

TOTAL PASSENGERS BOARDING OR DEPARTING AMTRAK TRAINS IN HAMPTON ROADS, FFY 2011-2020



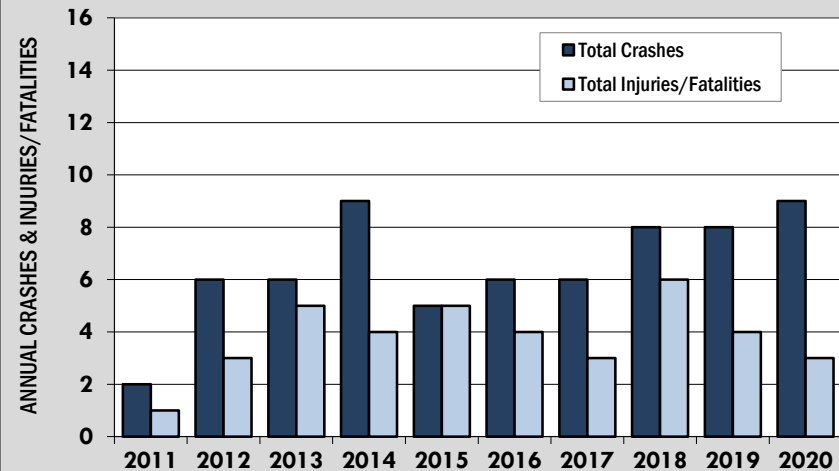
Data source: Amtrak. Federal Fiscal Years run from October to September.



station, and 53,900 passengers at the Norfolk station. The number of passengers boarding or departing Amtrak trains in Hampton Roads increased 22% between FFY 2011 and 2019, but decreased 37% between 2019 and 2020 due to the impacts of the pandemic.

With the number of freight and passenger trains crossing the region each day, ensuring the safety of highway-rail crossings is a necessity. There were nine crashes between trains and vehicles at highway-rail crossings in Hampton Roads in 2020, resulting in three injuries and no fatalities. Between 2011 and 2020, there were 65 crashes at highway-rail crossings in Hampton Roads, resulting in 7 fatalities and 31 injuries. The number of crashes at Hampton Roads highway-rail crossings has greatly decreased, down from 184 crashes in the 1990s and 102 crashes in the 2000s.

TOTAL CRASHES AND INJURIES/FATALITIES AT HIGHWAY-RAIL CROSSINGS IN HAMPTON ROADS, 2011-2020



Data source: Federal Railroad Administration.

NEW DEVELOPMENTS

Passenger Rail Improvements – In 2019 Amtrak expanded passenger rail service to the Southside from one to two trains per day, and plans are in place to expand service from two to three trains each day in 2022. This will be assisted by an agreement signed in 2021 by the Governor where the Commonwealth of Virginia will purchase 223 miles of track and 386 miles of right-of-way from CSX. This agreement will help separate freight and passenger rail traffic to improve service levels, allow the potential to expand rail to all parts of Virginia, double state-supported Amtrak trains to provide nearly hourly service in some sections of the state, increase Virginia Railway Express commuter service by 60%, and lay the foundation for the Southeast High Speed Rail Corridor.



Newport News Multimodal Station – Ground breaking for a new multi-modal station near Bland Boulevard in the City of Newport News occurred on July 21, 2020. The station will 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 \$47 million facility is expected to be complete by the summer of 2022.



COVID-19 IMPACTS

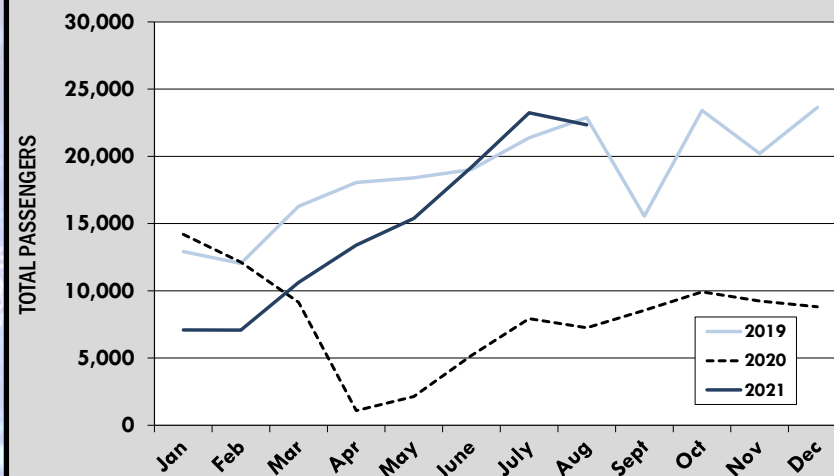
Similar to the airline industry, passenger rail travel was one of the transportation sectors most impacted by COVID-19. However, rail ridership has rebounded in Hampton Roads to the levels seen prior to the pandemic.

At the three Amtrak stations in Hampton Roads – Newport News, Norfolk, and Williamsburg – ridership plummeted throughout the spring of 2020, down to only 1,095 passengers using Amtrak in Hampton Roads in April 2020. This was a 94% decrease from the ridership seen in April 2019. In addition, service was reduced on both lines that serve Hampton Roads from two daily round trips down to one in April 2020. Service was returned to two daily round trips per day on both lines in September 2020.

Ridership increased from those lows throughout 2020 and increased significantly throughout 2021. By June 2021, volumes had returned to the levels seen in the same month in 2019. In the most recent month of data, regional ridership in August 2021 was only down 2% from the same month in 2019.

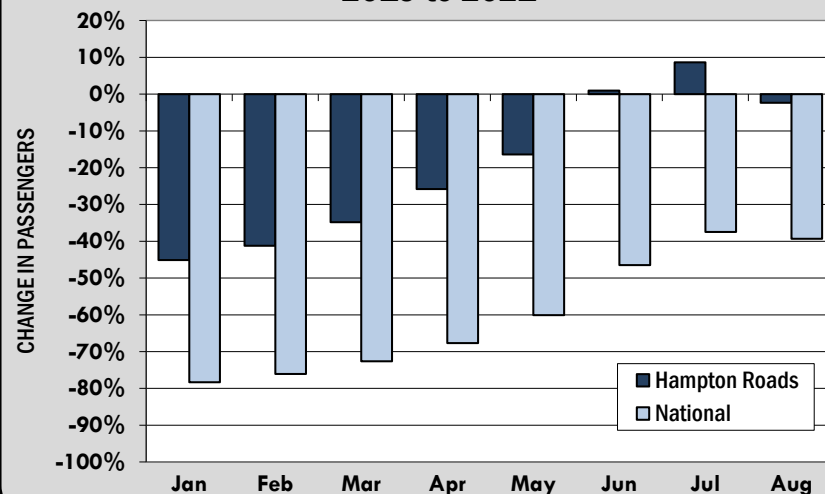
Amtrak ridership decreases in Hampton Roads have been less than the decreases in national ridership. National ridership as of August 2021 was still 39% below the level seen nationwide in August 2019. This compares to the 2% decrease in Amtrak passengers experienced in Hampton Roads from August 2019 to August 2021.

MONTHLY PASSENGERS BOARDING OR DEPARTING AMTRAK TRAINS IN HAMPTON ROADS, 2019 - 2021



Data sources: Amtrak, Virginia DRPT.

MONTHLY CHANGE IN AMTRAK RIDERSHIP 2019 to 2021



Data sources: Amtrak, Virginia DRPT.



The large number of rivers, bays, and streams makes bridges a prominent part of the Hampton Roads transportation network. Adequately funding the maintenance of these structures, however, will be difficult as bridges in Hampton Roads continue to age.

Bridges are a vital component of the Hampton Roads transportation network. Major spans such as the Hampton Roads Bridge-Tunnel, Monitor-Merrimac Memorial Bridge-Tunnel, Coleman Bridge, James River Bridge, and High Rise Bridge provide a connection between distinct areas of the region. Bridges on the Interstate system create a limited-access network designed to improve mobility throughout the region, while smaller structures such as culverts span the myriad of creeks, swamps, and streams in the region.

There are 1,268 bridges* in Hampton Roads. These important components of the roadway network, however, are aging. The median age of bridges in Hampton Roads is currently 42 years old, and 104 bridges (8%) are at least 70 years old.

All bridges in Hampton Roads are inspected regularly by qualified inspectors. Depending on the condition and design of each bridge, these inspections occur at intervals of two years or less. Based on these inspections, bridges may be classified as “structurally deficient”, which 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.

* - 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

3.5%

The percentage of bridges in Hampton Roads that were classified as structurally deficient as of August 2021.

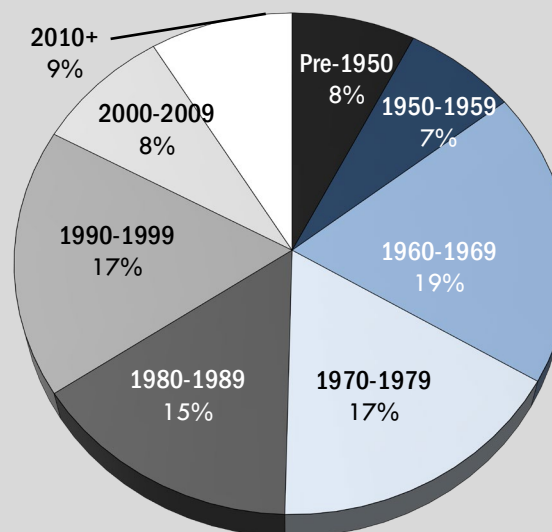
8%

The percentage of bridges in Hampton Roads that are at least 70 years old as of 2021.

26th

Hampton Roads rank among 39 large metropolitan areas with populations between one and four 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 August 2021.

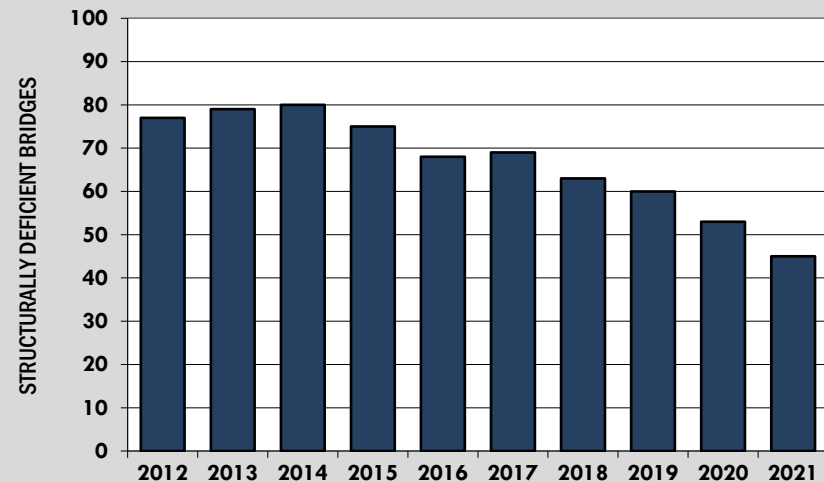


Bridge inspectors will close or impose weight limits on any bridge that is judged to be unsafe.

There were 45 bridges (3.5%) that were classified as structurally deficient in Hampton Roads as of August 2021. Not only is this down from 77 bridges (5.9%) that were classified as structurally deficient in 2012 but the number has decreased nearly every year since 2014 when 80 bridges (6.6%) in the region were classified as structurally deficient.

The percentage of bridges that are classified as structurally deficient in Hampton Roads is better than the average of other comparable metropolitan areas. Hampton Roads ranks 26th highest among 39 large metropolitan areas with populations between one and four million people in the percentage of structurally deficient bridges in each region.

STRUCTURALLY DEFICIENT BRIDGES IN HAMPTON ROADS, 2012-2021



Data sources: VDOT, FHWA. Data as of August 2021.

NEW DEVELOPMENTS

High Rise Bridge – Construction is underway on widening the I-64 corridor in Chesapeake, which will include the High Rise Bridge. The project will include a new 100-foot high fixed span located just to the south of the existing facility, which will remain in use. The project is expected to be complete in 2022.



Image Source: VDOT.



Image Source: VDOT.

Statewide Special Structures – There are many large and unique bridge and tunnel structures located throughout Virginia, and in particular in the Hampton Roads region. VDOT has identified 25 Special Structures throughout the Commonwealth that are tunnels, movable bridges, or large and complex structures. A special fund was created by legislation to rehabilitate/replace, operate, and maintain 17 of these structures that are not currently covered by existing contracts or ongoing projects, of which 7 are located in Hampton Roads. The fund will provide \$480 million to Special Structures for the Fiscal Years 2022 – 2027.

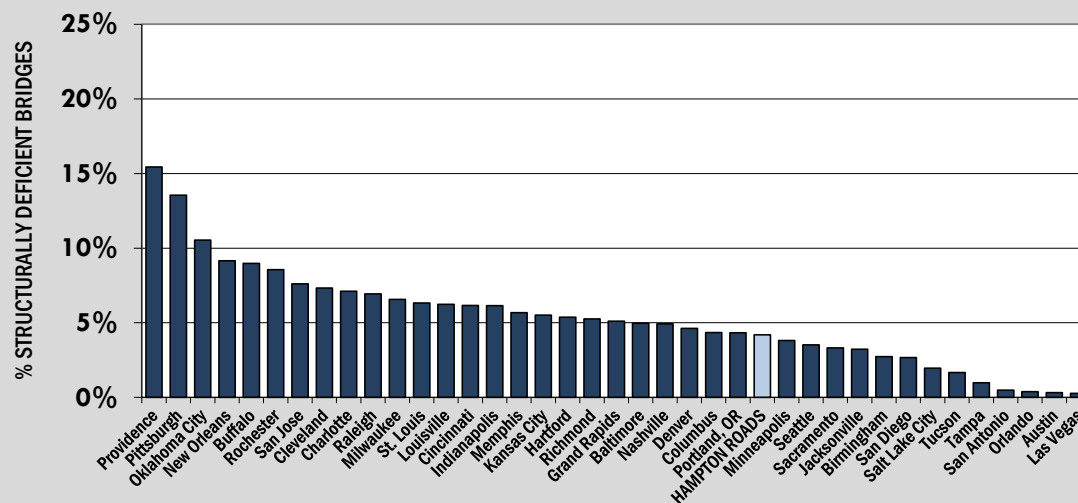


However, Hampton Roads ranks much lower in terms of the percentage of bridges that are classified in “Good” condition using federal standards. At 29.5%, Hampton Roads ranks 4th lowest among the 39 comparable metropolitan areas between one and four million people in terms of the percentage of bridges classified as being in good condition.



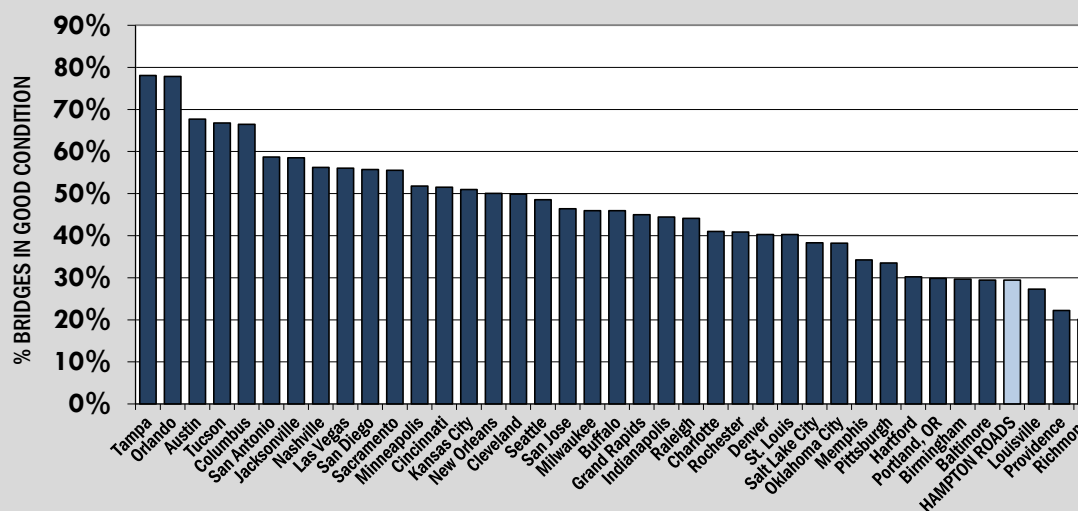
HRTPO released an update to the *Hampton Roads Regional Bridge Study* – which looks at various aspects of the region’s bridges – in 2018. The Hampton Roads Regional Bridge Study is available on HRTPO’s website at <http://www.hrtpo.org>.

STRUCTURALLY DEFICIENT BRIDGES – LARGE METROPOLITAN AREAS



Data sources: FHWA, VDOT. FHWA data as of 2020, Hampton Roads (VDOT) data as of August 2021.

BRIDGES IN GOOD CONDITION – LARGE METROPOLITAN AREAS



Data sources: FHWA, VDOT. FHWA data as of 2020, Hampton Roads (VDOT) data as of August 2021.



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

VDOT annually prepares 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 a sample of Secondary roadways. Based on this data, VDOT categorizes both the pavement condition and ride quality of state-maintained 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 calculated 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 roadway pavement condition be classified as deficient.

The percentage of state-maintained roadways in deficient condition in Hampton Roads has greatly improved in recent years. As recently as 2010, more than one third of state-maintained Interstate and Primary roadways in Hampton Roads had a deficient pavement condition. After extensive repaving efforts throughout the region, only 10% of state-maintained Interstate and Primary roadways in the Hampton Roads TPO had a deficient pavement condition in 2019.

NOTABLE PAVEMENT CONDITION NUMBERS

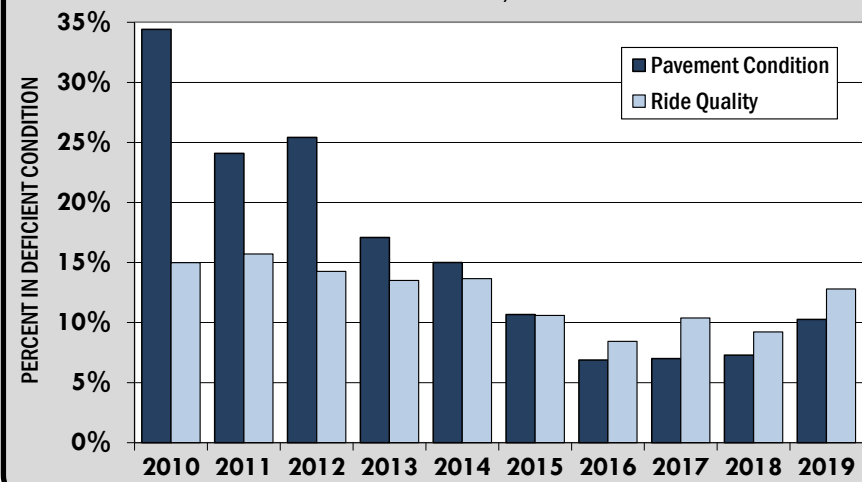
10%

Percent of state-maintained Interstate and Primary roadway lane-miles in Hampton Roads that had a deficient pavement condition in 2019. This is down from 34% in 2010.

14th

Hampton Roads rank among 39 large metropolitan areas with populations between one and four million people in terms of the percentage of roadways with pavement in poor condition in 2016.

PERCENT OF VDOT-MAINTAINED INTERSTATE AND PRIMARY ROADWAY PAVEMENT IN DEFICIENT CONDITION IN HAMPTON ROADS, 2010-2019



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



Interstates in Hampton Roads have particularly improved, with only 6% having a deficient pavement condition in 2019.

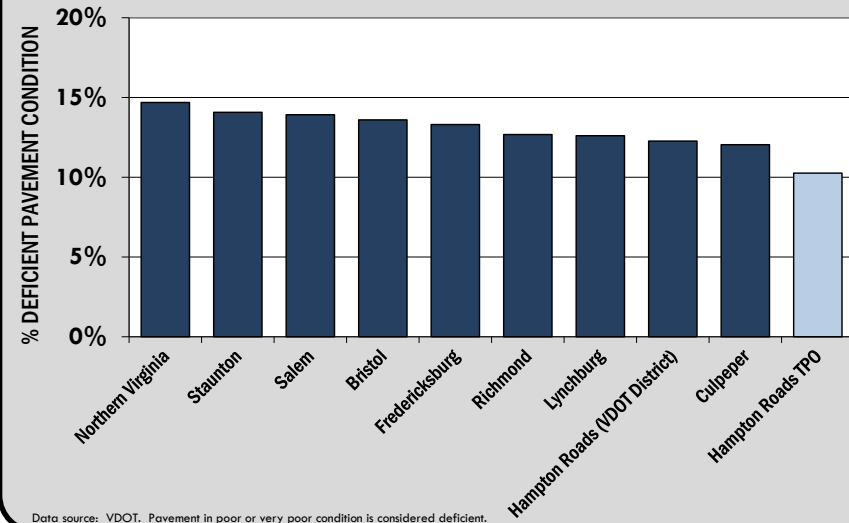
The pavement condition is now better in Hampton Roads than in every other area of the state. Looking only at state-maintained Interstate and Primary roadways, the 10% of lane-miles in Hampton Roads that have a deficient pavement condition is better than in all of the VDOT Districts throughout the state, with the amount of deficient pavement in all of the other districts ranging between 12% and 15% in 2019.

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.

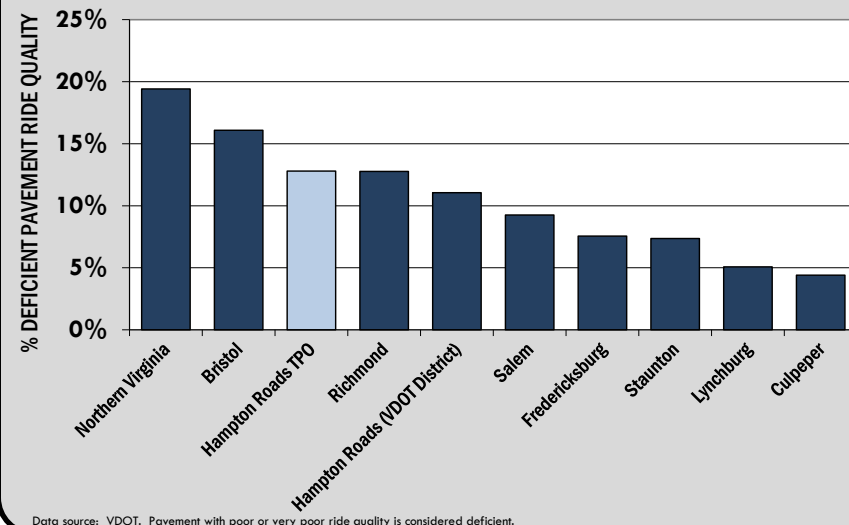
The ride quality of pavement in Hampton Roads had also improved in recent years, but degraded somewhat in 2019. In 2019, 13% of state-maintained Interstate and Primary roadways in Hampton Roads had a deficient ride quality. This is down from 15% in 2010 but is up from 9% in 2018.

The 13% of state-maintained Interstate and Primary lane-miles in Hampton Roads that have a deficient pavement ride quality ranks worse than most other VDOT Districts throughout the state. However, the ride quality in Hampton Roads is better

PERCENT OF VDOT-MAINTAINED ROADWAYS WITH DEFICIENT PAVEMENT CONDITION, 2019



PERCENT OF VDOT-MAINTAINED ROADWAYS WITH DEFICIENT RIDE QUALITY, 2019





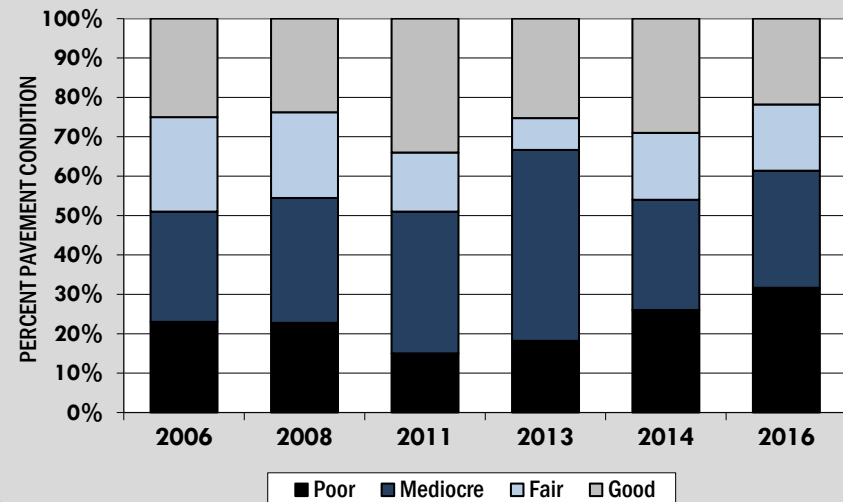
than the Northern Virginia (19%) VDOT District and the same as the Richmond (13%) VDOT District.

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 prepares an analysis of the pavement condition of major roadways in metropolitan areas and the costs that deteriorating roadways have on the public.

According to the most recent analysis from TRIP, 32% of the major roadways in Hampton Roads had pavement that was in poor condition in 2016. Another 30% of Hampton Roads roadways were rated as mediocre, 17% were rated as fair, and 22% were rated as good. The percent of pavement in poor condition in Hampton Roads was higher in 2016 than it was at any point throughout the previous decade according to TRIP.

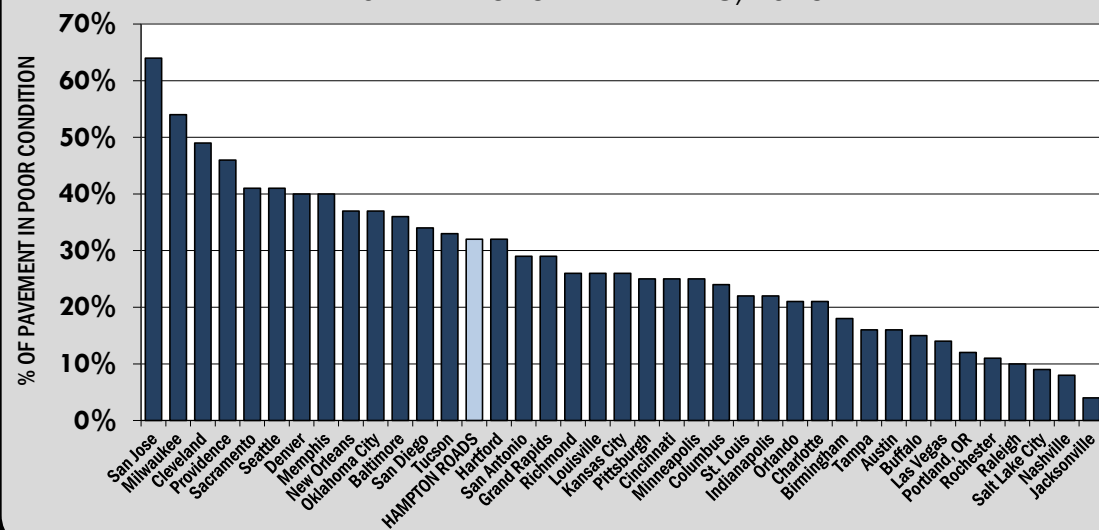
Among the 39 large metropolitan areas with populations between one and four million people, Hampton Roads ranked 14th highest in terms of the percentage of roadways with pavement in poor condition in 2016. San Jose had more than twice the percentage of major roadways in poor condition than Hampton Roads.

PAVEMENT CONDITION IN HAMPTON ROADS, 2006-2016



Data source: TRIP. Data only includes Interstates, freeways, and other principal arterials.

PERCENT OF ROADWAYS WITH PAVEMENT IN POOR CONDITION, LARGE METROPOLITAN AREAS, 2016

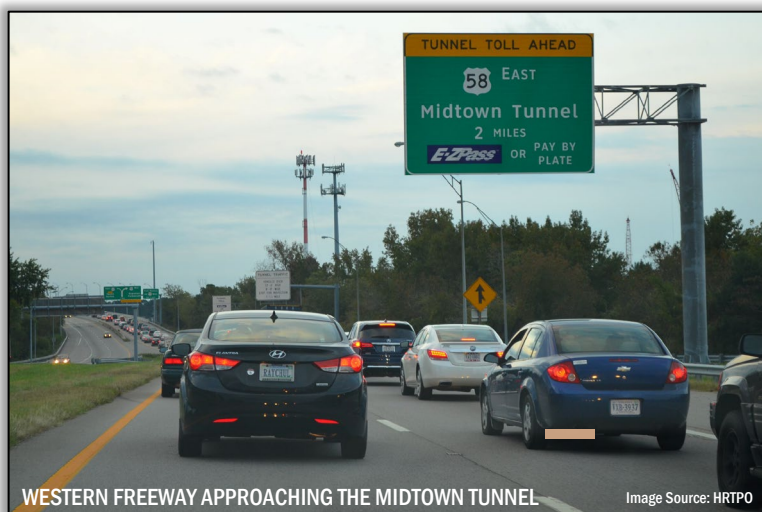


Data source: TRIP. Data only includes Interstates, freeways, and other principal arterials.



After reaching record levels, roadway travel levels in Hampton Roads have been greatly impacted by the COVID-19 pandemic. Roadway travel levels, however, have nearly recovered to pre-pandemic levels.

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 releases estimates of jurisdictional roadway travel levels based on traffic counts collected on a regular basis. VDOT estimates that there were nearly 37 million vehicle-miles of travel (VMT) on the typical day in Hampton Roads in 2020.



WESTERN FREEWAY APPROACHING THE MIDTOWN TUNNEL

Image Source: HRTPO

The amount of roadway travel was increasing in Hampton Roads prior to the pandemic according to VDOT estimates. Between 2014 and 2019, there was a 7% increase in daily vehicular travel in Hampton Roads. However, roadway travel

NOTABLE ROADWAY USAGE NUMBERS

12%

The decrease in daily roadway travel in Hampton Roads between 2019 and 2020 according to VDOT estimates.

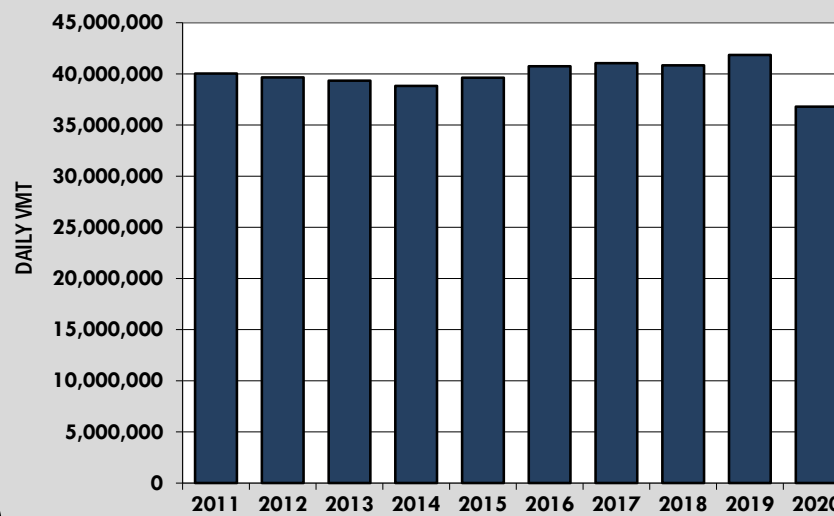
14%

The decrease in the amount of daily roadway travel in Hampton Roads between 2019 and 2020 based on regional continuous count stations.

28th

Hampton Roads rank among 39 large metropolitan areas with populations between one and four million people in terms of vehicular travel per capita in 2019.

DAILY VEHICLE-MILES OF TRAVEL (VMT) IN HAMPTON ROADS, 2011-2020



Data source: VDOT.



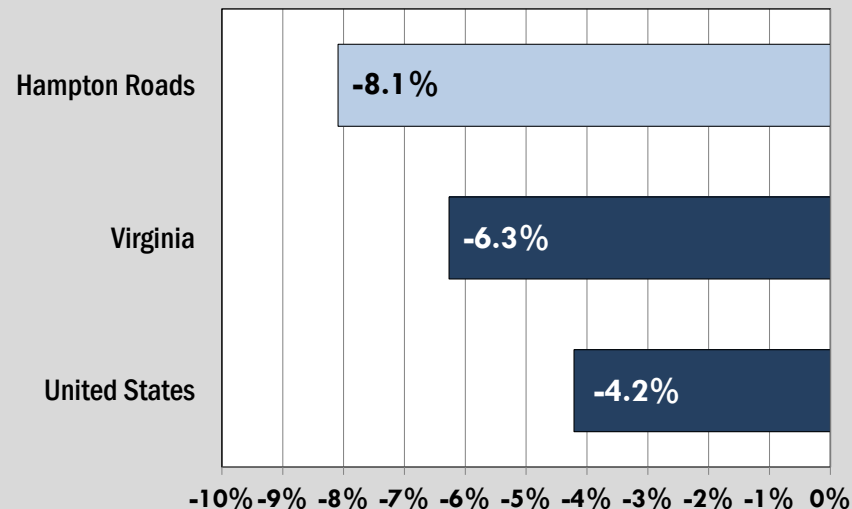
in the region decreased due to the pandemic, with a 12% decrease in regional roadway travel between 2019 and 2020 according to VDOT estimates.

Similar to Hampton Roads, both Virginia and the United States experienced a decrease in roadway travel due to the COVID-19 pandemic. Between 2014 and 2019, roadway travel grew by 5.5% in Virginia and 7.5% across the country. However, roadway travel decreased by 11.2% in Virginia between 2019 and 2020 and decreased by 13.7% in the United States.

The vehicular travel per capita in Hampton Roads was 21.2 vehicle-miles per person per day in 2020, down 12.6% from 24.2 daily vehicle-miles per capita in 2019 and down 11.2% from 23.8 per day in 2011.

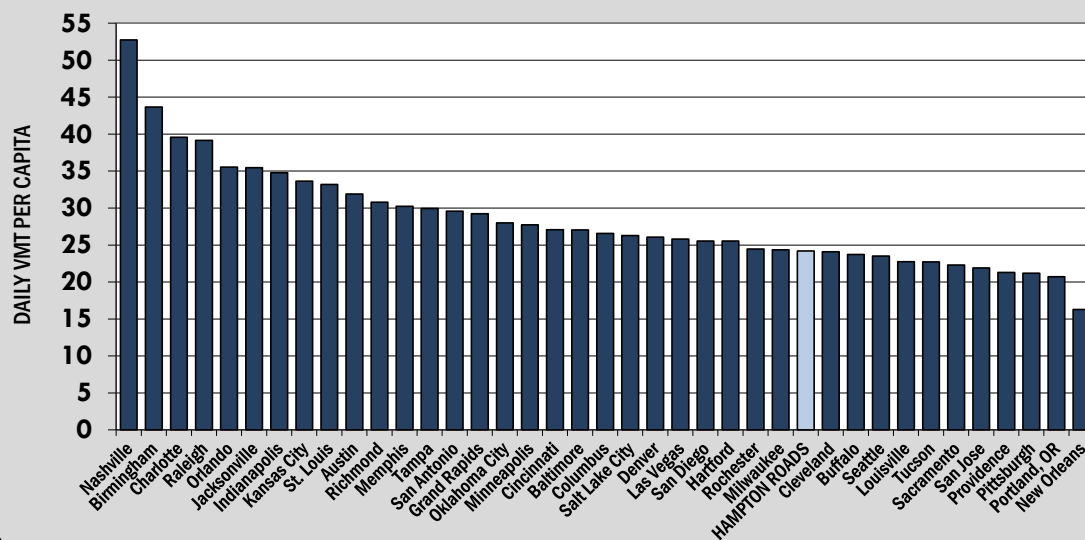
Among 39 large metropolitan areas in the United States with populations between one and four million people, Hampton Roads ranked 28th highest in vehicular travel per capita in 2019. Nashville experienced roadway travel levels that were more than twice the levels seen in Hampton Roads, and areas such as Birmingham and Charlotte had at least 15 more miles of travel daily per capita than Hampton Roads.

CHANGE IN VEHICLE-MILES OF TRAVEL IN HAMPTON ROADS, VIRGINIA, AND THE UNITED STATES, 2011 TO 2020



Data sources: VDOT, FHWA Highway Statistics.

DAILY VEHICLE-MILES OF TRAVEL PER CAPITA IN LARGE METROPOLITAN AREAS, 2019



Data source: FHWA Highway Statistics.

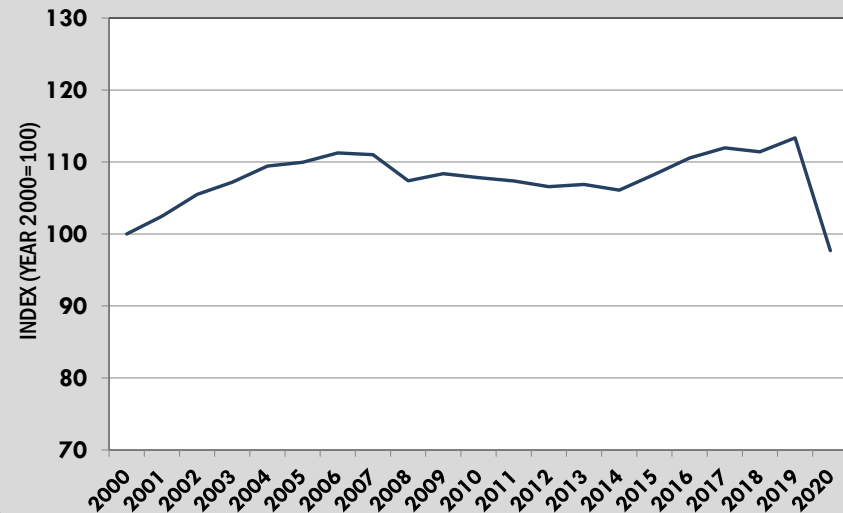


Another method of measuring the change in roadway travel is by using count stations that continuously collect traffic volume data throughout the entire year. In Hampton Roads there are approximately 80 locations equipped with continuous count stations, primarily on major roadways such as freeways and principal arterials. Based on the data collected at these locations, regional traffic volumes grew 13% between 2000 and 2019. However, regional traffic volumes decreased 14% from 2019 to 2020 due to the impacts of the pandemic.



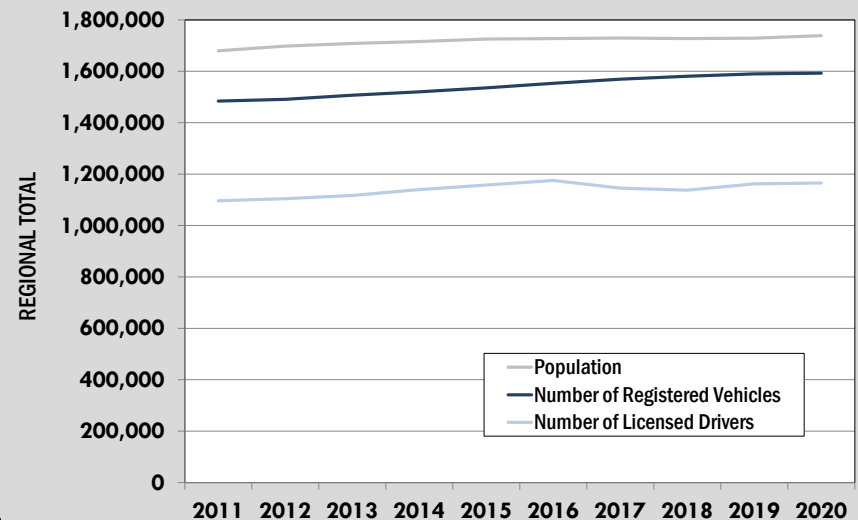
There were 1,590,000 vehicles registered in Hampton Roads in 2020, or 0.92 vehicles for every Hampton Roads resident. The growth in the number of registered vehicles between 2011 and 2020 (+7.3%) was higher than the growth in population (+3.5%) over this period.

CHANGE IN REGIONAL ROADWAY TRAVEL BASED ON CONTINUOUS COUNT STATIONS, 2000-2020



Data sources: VDOT, CBBT, various localities.

POPULATION, REGISTERED VEHICLES, AND LICENSED DRIVERS IN HAMPTON ROADS, 2011-2020



Data sources: HRPDC Hampton Roads Databook, Virginia DMV.

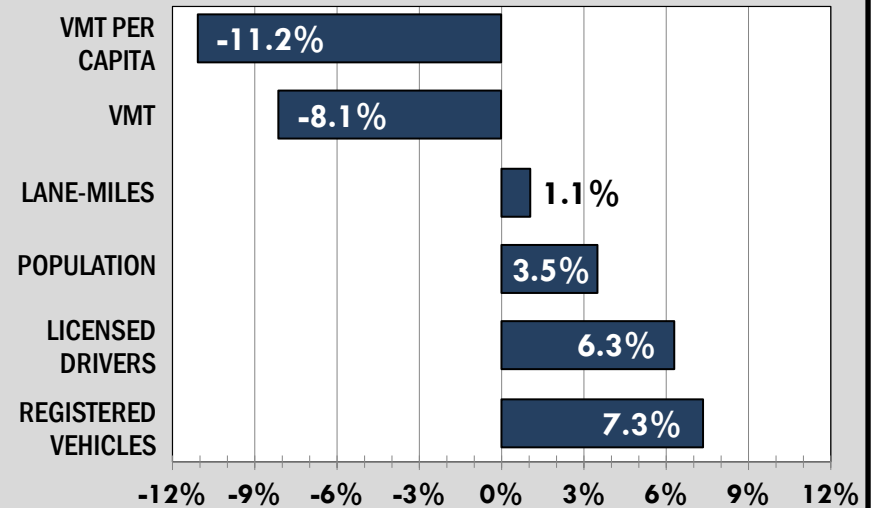


The growth in the number of licensed drivers in Hampton Roads has also outpaced population growth. There were 1,170,000 licensed drivers in Hampton Roads in 2020 – up 6.3% from 2011 – and there were 1.37 registered vehicles for every licensed driver. This is similar to the 1.35 registered vehicles per licensed driver in 2011.

Between 2011 and 2020, the amount of roadway capacity in Hampton Roads in terms of lane mileage* increased by 1.1%. This is lower than both the growth in the regional population (+3.5%) and the change in regional vehicle-miles traveled (-8.1%).

* - 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 IN VMT PER CAPITA, LANE-MILES, VMT, POPULATION, LICENSED DRIVERS, AND REGISTERED VEHICLES IN HAMPTON ROADS, 2011-2020



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



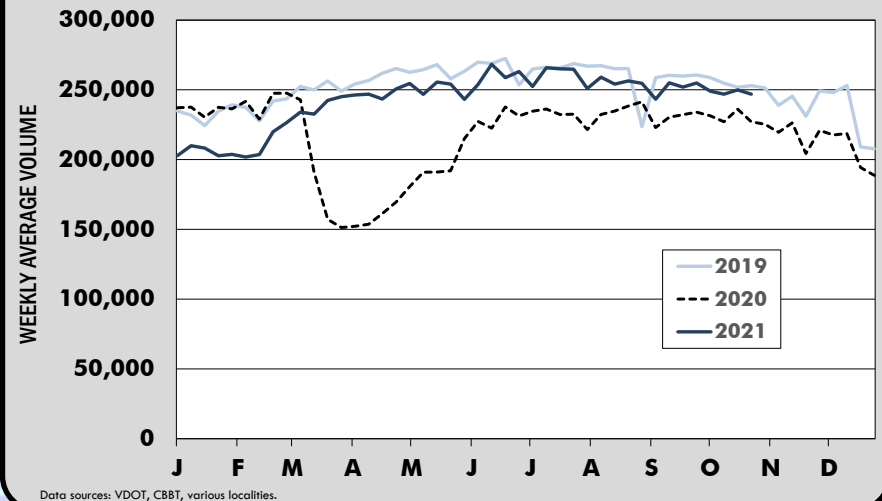
COVID-19 IMPACTS

Roadway travel in Hampton Roads was greatly impacted during the height of the COVID-19 shutdowns, but have returned to near the level seen prior to the pandemic.

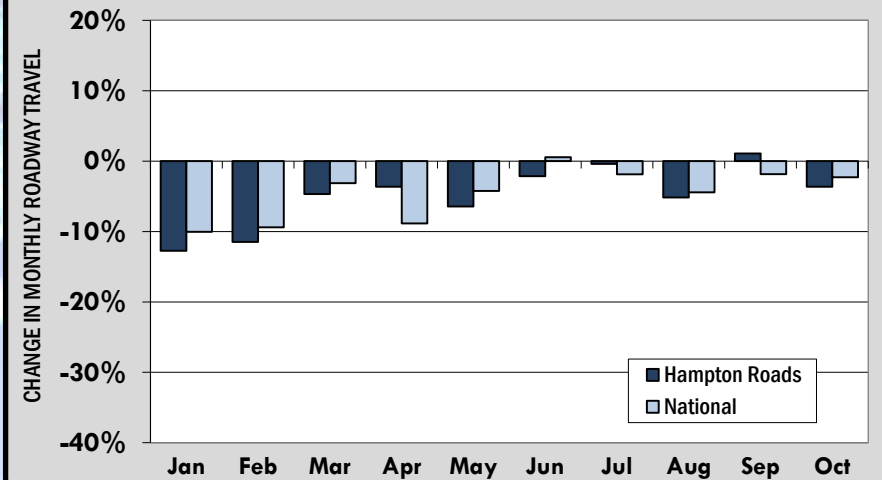
Roadway travel in Hampton Roads began to decrease in March 2020 due to closures related to the pandemic, and these decreases escalated in April, reaching a 39% decrease compared to April 2019. Daily roadway travel increased in Hampton Roads throughout the spring of 2020 and increased again throughout the spring and early summer months of 2021. By October 2021 weekly roadway volumes remained 3.6% lower than the volumes in October 2019.

Roadway usage decreases in Hampton Roads, generally, have been similar to the decreases seen around the nation. National roadway travel levels at the peak of the pandemic shutdowns were 40% lower in April 2020 compared to April 2019, which was similar to the 39% decrease in Hampton Roads. By October 2021 national roadway travel was 2.3% below the levels seen prior to the pandemic in October 2019, as compared to the 3.6% decrease in Hampton Roads.

**WEEKLY AVERAGE VOLUMES AT HAMPTON ROADS
CONTINUOUS COUNT STATION LOCATIONS, 2019 - 2021**



**MONTHLY CHANGE IN ROADWAY TRAVEL IN HAMPTON
ROADS AND NATIONWIDE, 2019 to 2021**



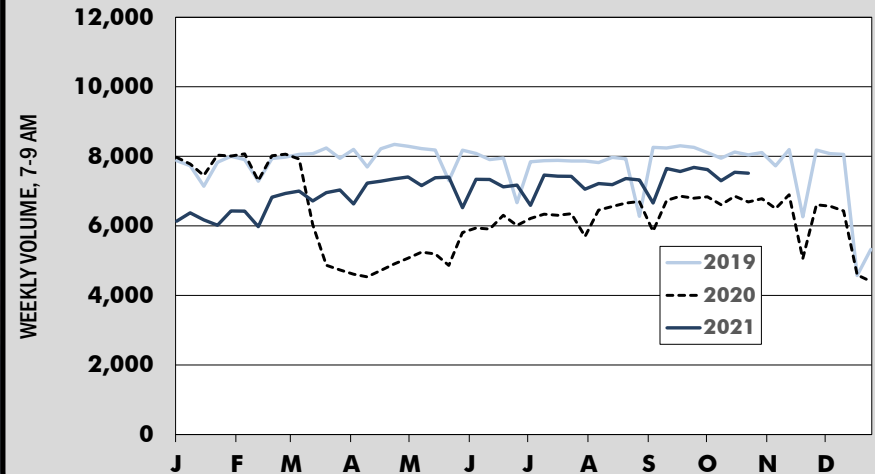


COVID-19 IMPACTS (continued)

While total roadway travel levels have returned to levels just below the pre-pandemic levels in both Hampton Roads and nationwide, morning peak hour volumes have remained further below pre-pandemic levels. Similar to daily volumes, AM Peak (7-9 am) volumes began to decrease in March 2020 and escalated in April, reaching a 42% decrease compared to April 2019. AM Peak roadway travel slowly increased in Hampton Roads throughout most of 2020 and 2021, but by October 2021 AM Peak roadway volumes remained 6-8% lower than the volumes seen in the region in October 2019.

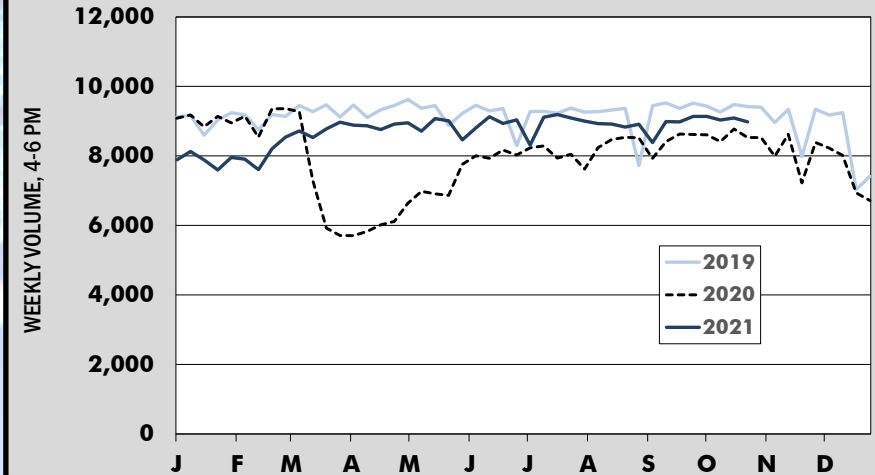
By comparison, PM Peak (4-6 pm) volumes have returned closer to the pre-pandemic levels. PM Peak volumes decreased in March and April of 2020, reaching a 37% decrease compared to April 2019. PM Peak travel increased in Hampton Roads throughout the late spring and summer months of 2020, and increased again in the spring months of 2021. By October 2021, PM Peak roadway volumes were only 3-4% lower in Hampton Roads than the roadway volumes seen in October 2019.

WEEKLY VOLUMES AT HAMPTON ROADS CONTINUOUS COUNT STATION LOCATIONS, AM PEAK, 2019 - 2021



Data sources: HRTPOO analysis of VDOT data.

WEEKLY VOLUMES AT HAMPTON ROADS CONTINUOUS COUNT STATION LOCATIONS, PM PEAK, 2019 - 2021



Data sources: HRTPOO analysis of VDOT data.



Roadway congestion and travel time reliability greatly improved in Hampton Roads during the pandemic, and is similar to other comparable metropolitan areas throughout the country.

TomTom, a consumer electronics and navigation technology company, produces the TomTom Traffic Index, which provides a measure of traffic congestion in 80 metropolitan areas throughout the United States and over 400 areas worldwide. TomTom prepares this analysis using anonymous GPS data that they collect from navigation devices, vehicle in-dash systems, and smartphones applications.

The TomTom Traffic Index is a percentage that represents the amount of extra travel time experienced by drivers across the entire year. TomTom produces this regional index by establishing a baseline of travel times during uncongested, free flow conditions for each road segment in each metropolitan area and then comparing it with travel time data they collect 24 hours a day, 7 days a week throughout the entire year. The TomTom Traffic Index is similar to the travel time index produced by other entities.

A TomTom Traffic Index value of 10% means that the extra travel time during a typical trip during any time of the day is 10% more than an average trip would take during uncongested conditions. In addition to daily figures, TomTom also analyzes their travel time data for individual hours of each day as well as for the morning and evening peak periods.

The Hampton Roads TomTom Traffic Index was 13% in 2020, meaning the typical trip took on average 13% longer than the

NOTABLE CONGESTION NUMBERS

13%

The TomTom Traffic Index in Hampton Roads in 2020, which means that the average trip takes 13% longer during peak periods than during uncongested conditions.

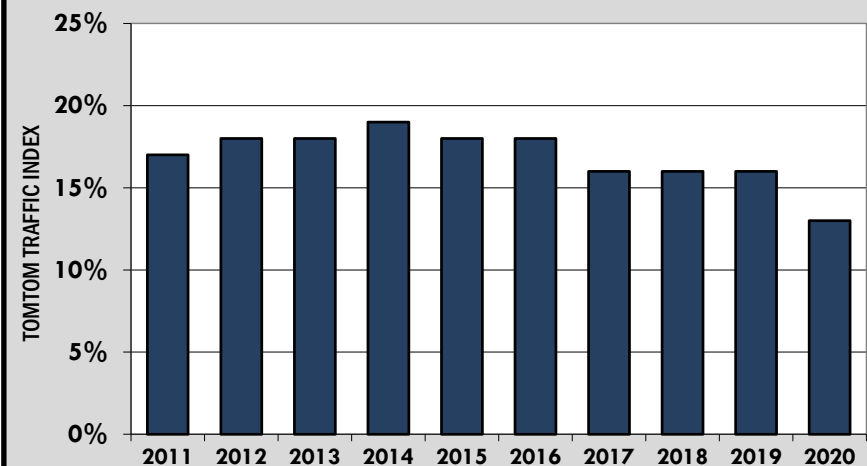
1.86

The planning time index in Hampton Roads in 2019, which means that just over 37 minutes should be allocated during peak periods for an average uncongested 20-minute trip to be on time.

16th

Hampton Roads rank among large areas with populations between one and four million people in terms of the TomTom Traffic Index in 2020.

TOMTOM TRAFFIC INDEX IN HAMPTON ROADS, 2011-2020



Data source: TomTom.



same trip during uncongested conditions. The TomTom Traffic Index varied between 16% and 19% in Hampton Roads prior to the pandemic between 2011 and 2019.

The TomTom Traffic Index in Hampton Roads is similar to the index in many other large metropolitan areas. Among the 39 metropolitan areas with populations between one and four million people, Hampton Roads had the 16th highest TomTom Traffic Index in 2020, which is equal to the comparable area average.

TomTom also looked at factors related to the pandemic, including the number of days with congestion that were at least half the levels from the previous year. In Hampton Roads there were 58 days in 2020 that had congestion levels at least half of the level compared to 2019.

Other agencies also produce reports on congestion levels in metropolitan areas. The Texas A&M Transportation Institute (TTI) publishes the Urban Mobility Report, which looks at traffic conditions in 494 urban areas across the United States. The 2021 report provides information on hours of delay, freeway travel time reliability, wasted fuel, and congestion costs based on INRIX speed data for the year 2020.

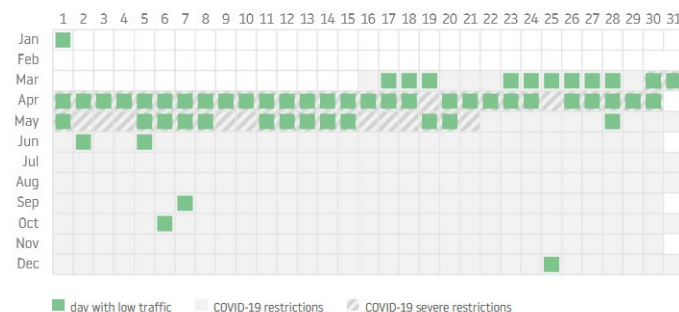
According to TTI, commuters traveling by automobile in Hampton Roads spent an average of 22 hours stuck in congestion during the pandemic in 2020. This resulted in

DAYS WITH LOW TRAFFIC, 2020

DAYS WITH LOW TRAFFIC

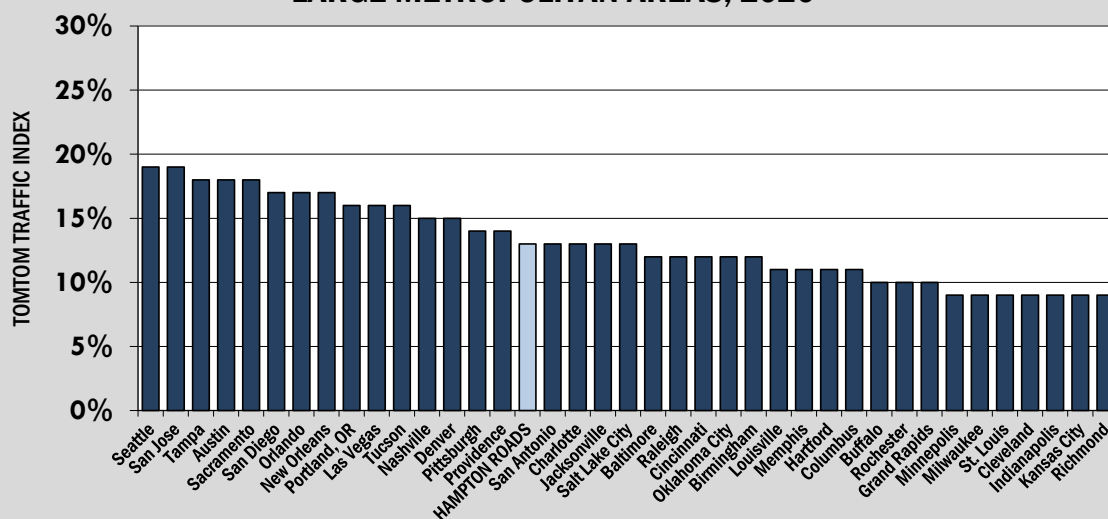
Which days in 2020 were at least 50% less congested than their corresponding day in 2019?

58 days with low traffic in 2020



Source: TomTom.

TOMTOM TRAFFIC INDEX, LARGE METROPOLITAN AREAS, 2020



Data source: TomTom.



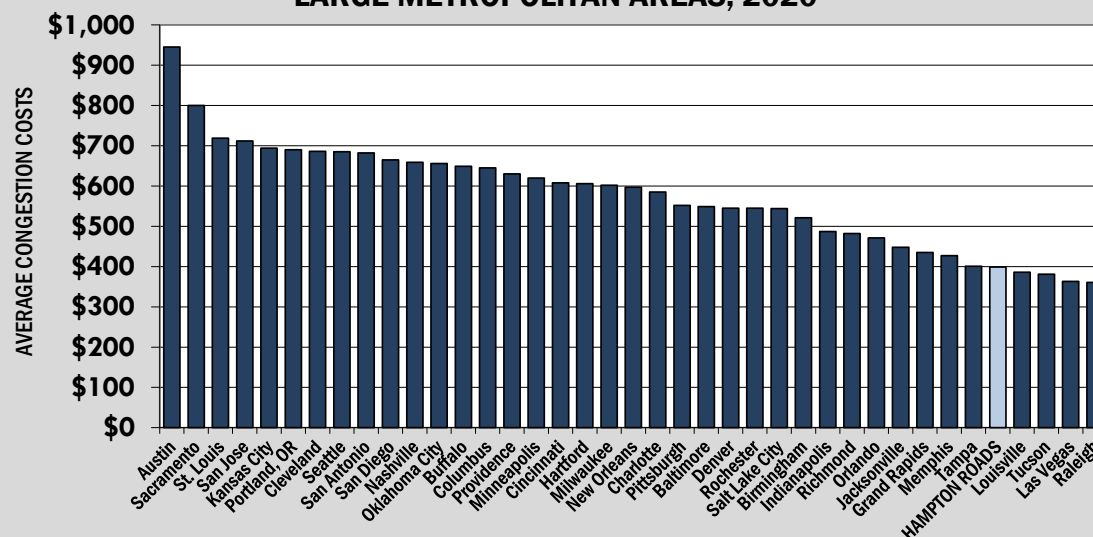
8 million gallons of excess fuel consumed and an average congestion cost of \$399 per auto commuter due to wasted time and fuel. Among the 39 large metropolitan areas with populations between one and four million people, this ranked Hampton Roads 32nd highest in hours of delay and 35th highest in average congestion costs.

Another measure included in both the Urban Mobility Report and FHWA's Urban Congestion Reports is the planning time index. The planning time index is a measure that describes the reliability of travel times. It represents the total time that needs to be allocated for a peak period trip so that the traveler would be on time 95% of the time.

The planning time index was 1.86 in Hampton Roads in 2019 (which is the most recent data available) according to the FHWA reports. This means that for an average uncongested 20-minute trip, just over 37 minutes should be allocated during peak periods to be on time 95% of the time.

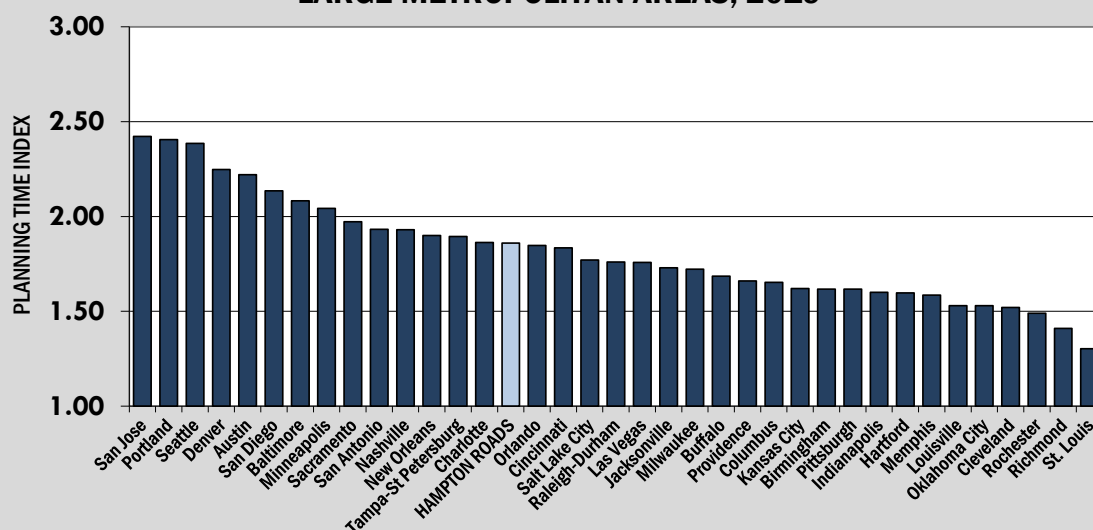
Among the metropolitan areas with populations between one and four million people, Hampton Roads had the 15th highest planning time index in 2019 according to FHWA.

**AVERAGE CONGESTION COSTS PER AUTO COMMUTER
LARGE METROPOLITAN AREAS, 2020**



Data source: Texas Transportation Institute.

**PLANNING TIME INDEX,
LARGE METROPOLITAN AREAS, 2019**



Data source: FHWA Urban Congestion Report.



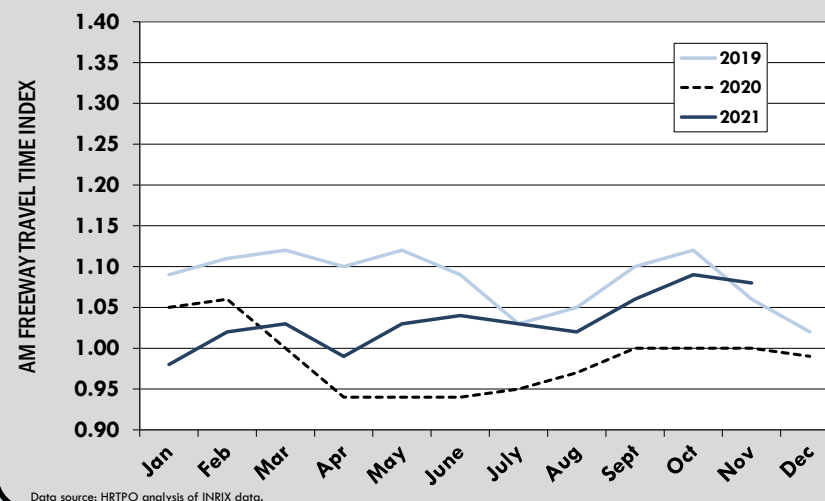
COVID-19 IMPACTS

With roadway peak period travel in Hampton Roads decreasing throughout the pandemic, the amount of peak period congestion in the region decreased as well. However, peak period congestion levels have largely returned to pre-pandemic levels as of mid-2021.

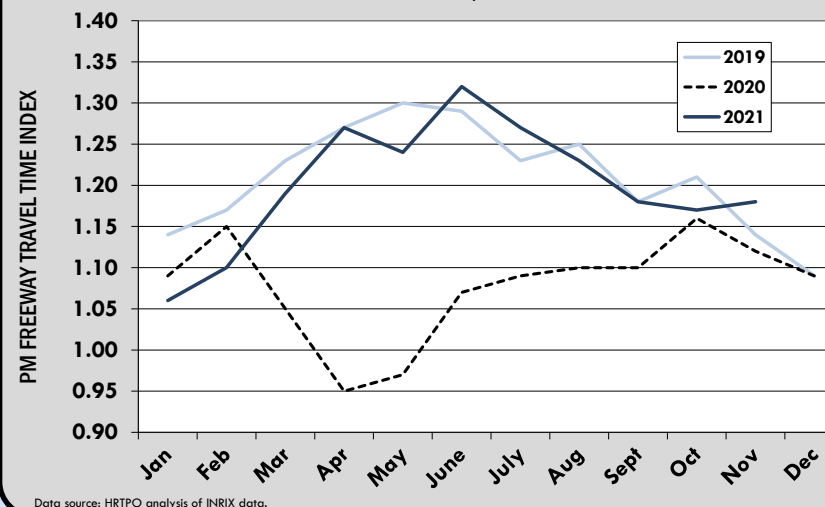
Congestion during the AM Peak Period largely disappeared in Hampton Roads as pandemic-related shutdowns began in March 2020, and by April the travel time index was down to 0.93, meaning that travelers were driving faster during the AM Peak Period than during the overnight uncongested periods. This continued throughout the remainder of 2020 and into 2021, with the regional freeway travel time index not exceeding 1.0 until February 2021. Congestion increased in Hampton Roads throughout 2021, and by November the AM Peak Period freeway travel time index (1.08) exceeded the pre-pandemic value from November 2019 (1.06).

Congestion levels during the PM Peak Period have also returned to pre-pandemic levels. After dropping below 1.0 at the height of the pandemic shutdowns in April 2020, the regional freeway travel time index during the PM Peak Period had returned to pre-pandemic levels by April 2021. PM Peak Period congestion levels continued to increase in Hampton Roads until the summer. In November 2021 the PM Peak Period freeway travel time index (1.18) exceeded the pre-pandemic value from November 2019 (1.14).

MONTHLY AM PEAK FREEWAY TRAVEL TIME INDEX IN HAMPTON ROADS, 2019 - 2021



MONTHLY PM PEAK FREEWAY TRAVEL TIME INDEX IN HAMPTON ROADS, 2019 - 2021





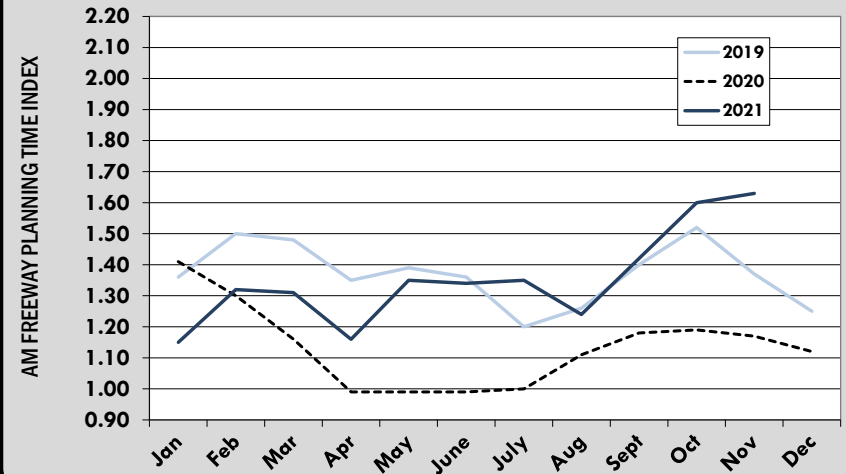
COVID-19 IMPACTS

In addition to congestion, the reliability of peak period travel times in the region improved greatly at the start of the pandemic, but have returned to pre-pandemic conditions.

AM Peak Period travel time reliability levels improved as shutdowns began in March 2020, and by April the planning time index was down to 1.00, indicating that travel times on the freeway system were entirely reliable during the AM Peak Period. This continued throughout the summer of 2020 but travel times on the freeway system become more unreliable during the AM Peak Period throughout late 2020 and most of 2021. By November 2021 the AM Peak Period freeway planning time index was 1.63, which was much more unreliable than the 1.37 that was seen in November 2019.

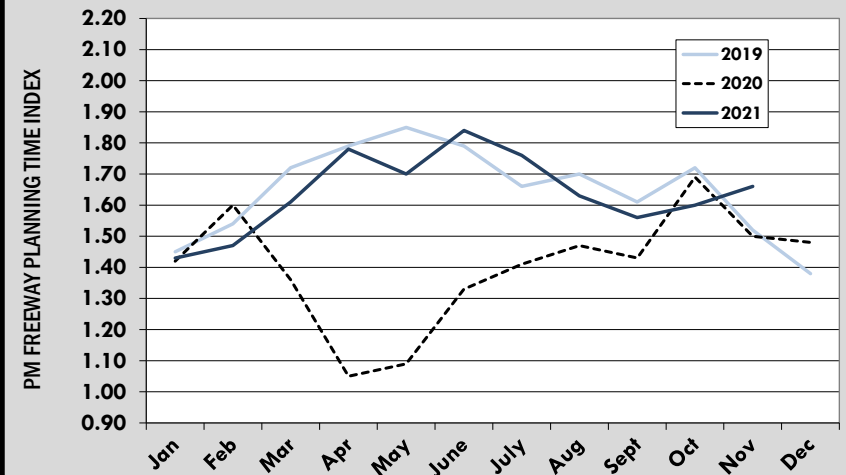
Travel time reliability levels have also returned to pre-pandemic levels in Hampton Roads during the PM Peak Period. After nearly reaching 1.0 at the height of the pandemic in April 2020, the regional freeway planning time index during the PM Peak Period had nearly returned to pre-pandemic levels by October 2020. Freeway system reliability continued to worsen for the PM Peak Period in Hampton Roads through summer 2021. In November 2021 the PM Peak Period freeway planning time index was 1.66, which is more unreliable than the 1.52 figure that was seen in November 2019.

MONTHLY AM PEAK FREEWAY PLANNING TIME INDEX IN HAMPTON ROADS, 2019 - 2021



Data source: HRTPO analysis of INRIX data.

MONTHLY PM PEAK FREEWAY PLANNING TIME INDEX IN HAMPTON ROADS, 2019 - 2021



Data source: HRTPO analysis of INRIX data.



In spite of having one of the highest percentages of commuters that work in a jurisdiction that is different than the one they reside in, the travel time to work in Hampton Roads is lower than in many other metropolitan areas.

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 the localities where commuters work and live, is collected for each metropolitan area. The data shown in this report is from the year 2019 since the Census Bureau decided not to release 2020 data due to the pandemic.

According to the ACS, the mean travel time to work in Hampton Roads was 24.6 minutes in 2019. Although this is down from 25.0 minutes in 2018, the regional mean travel time to work has largely remained between 23 and 25 minutes throughout the 2000s.

Among the 39 large metropolitan areas throughout the United States with a population between one and four million people, Hampton Roads has a relatively low travel time to work, ranking 30th highest in 2019. Since 2008, Hampton Roads has ranked between 23rd highest and 31st highest in terms of travel time to work among the 39 large metropolitan areas.

NOTABLE COMMUTING NUMBERS

81%

The percentage of commuters in Hampton Roads that drove alone to work in 2019.

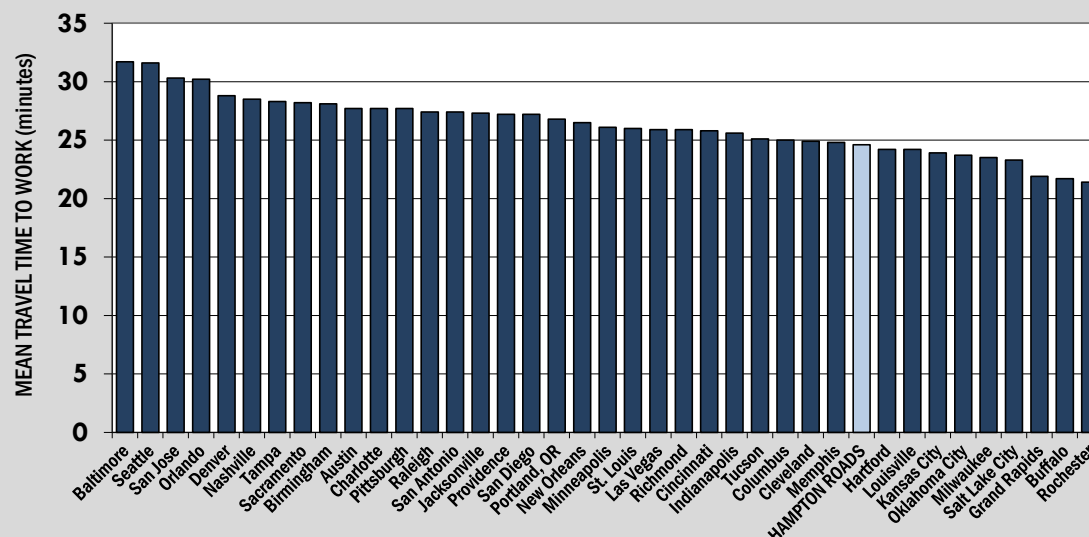
48%

The percentage of workers in Hampton Roads that worked in a jurisdiction that was different from the one they resided in in 2019.

24.6

The mean travel time to work in minutes in Hampton Roads in 2019.

MEAN TRAVEL TIME TO WORK IN LARGE METROPOLITAN AREAS, 2019



Data source: US Census Bureau.

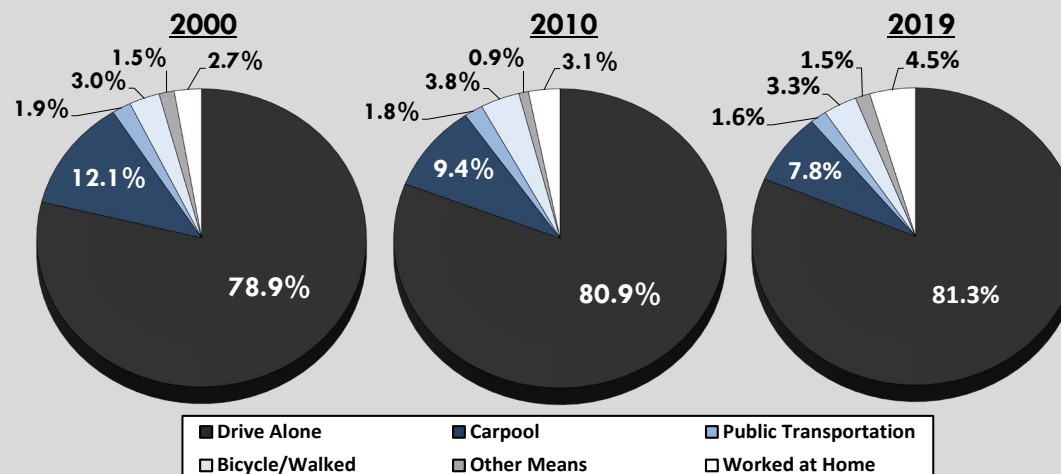


Many Hampton Roads residents, however, have longer commutes. In 2019, more than one out of every three Hampton Roads commuters (35%) traveled 30 minutes or longer to work, and 6% had commutes of an hour or more.



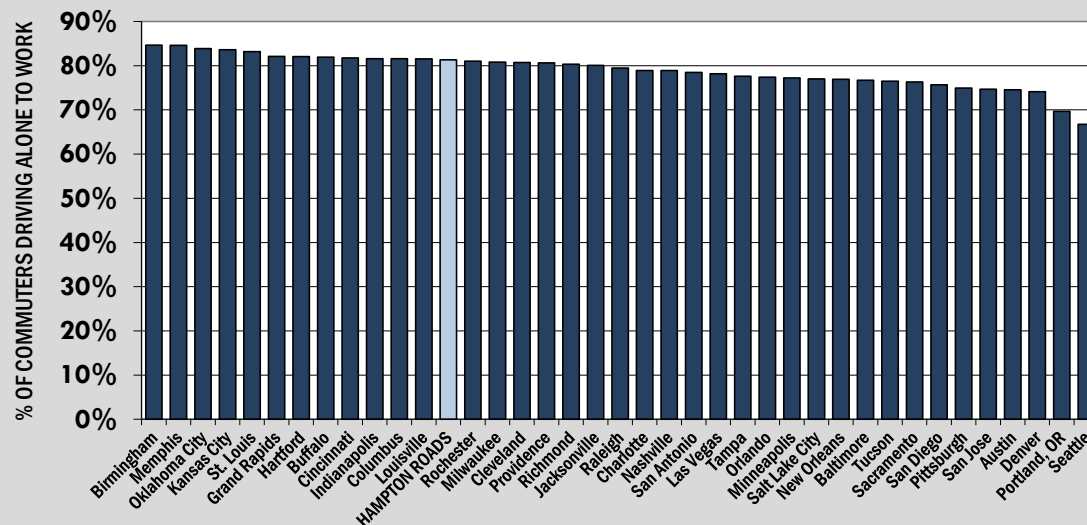
In 2019, 81.3% of commuters in Hampton Roads drove alone to work. While this is up from 73% in 1990 and 79% in 2000, it has varied between 79% and 83% since 2010. In turn, the percentage of commuters in Hampton Roads carpooling to work has decreased from 14% in 1990 to 12% in 2000 and to 8% in 2019. The percentage of commuters using public transportation in Hampton Roads has also decreased, while the percentage that commute via bicycling/walking has slightly increased since 2000.

COMMUTING METHODS IN HAMPTON ROADS - 2000, 2010 & 2019



Data source: US Census Bureau.

PERCENTAGE OF COMMUTERS THAT DROVE ALONE TO WORK LARGE METROPOLITAN AREAS, 2019



Data source: US Census Bureau.

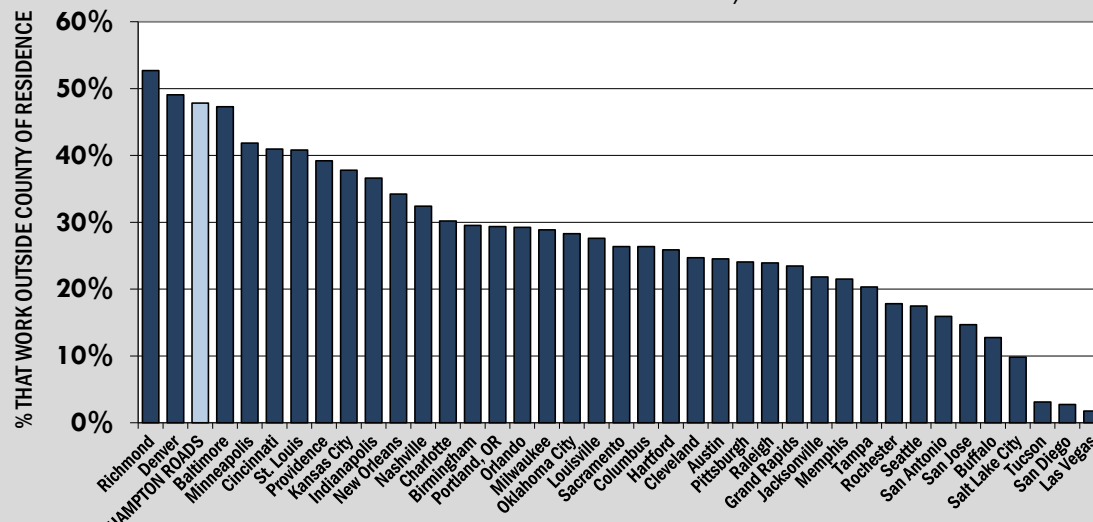


The percentage of commuters driving alone to work in Hampton Roads is slightly higher than in other comparable areas. Hampton Roads ranked 13th highest among the 39 large metropolitan areas in terms of the percentage of commuters that drove alone to work in 2019, above the median of 79.5%.

An area where Hampton Roads ranks particularly high is in the percentage of workers that work outside of their locality of residence. In 2019, 48% of all workers in Hampton Roads worked in a jurisdiction that was different than the one they resided in. This percentage is higher than that seen in 1990 (44%) but slightly lower than the percentage seen in 2000 (49%), and lower than the high that was experienced in 2005 (50%). The percentage in Hampton Roads is higher than the percentage seen in most other areas, ranking 3rd highest among the 39 large metropolitan areas with populations between one and four million people.

An important aspect of commuting is accessibility to jobs. Accessibility is the ease and feasibility of reaching destinations, and it combines mobility with the understanding that travel is driven by a desire to reach destinations. Accessibility can be measured for most transportation

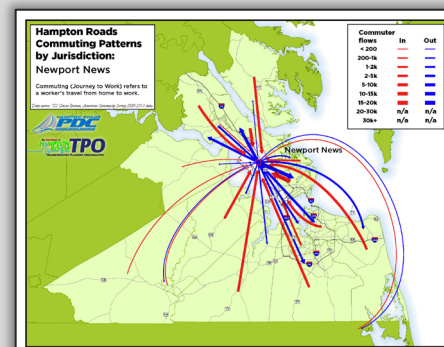
PERCENTAGE OF WORKERS THAT WORKED OUTSIDE COUNTY OF RESIDENCE, LARGE METROPOLITAN AREAS, 2019



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 coordination 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>.



modes to the number of destinations reachable within a certain amount of travel time.

The Accessibility Observatory at the University of Minnesota regularly produces the [Access Across America](#) report. These reports estimate the accessibility to jobs by automobile, walking, biking, and public transportation for each of the 11 million census blocks in the country.

There are 711,400 jobs in Hampton Roads according to the Access Across America report. As shown to the right, nearly half of all jobs (48%) are reachable within 30 minutes by driving, while 1% or less of all jobs are reachable within 30 minutes by public transportation, biking, and walking.

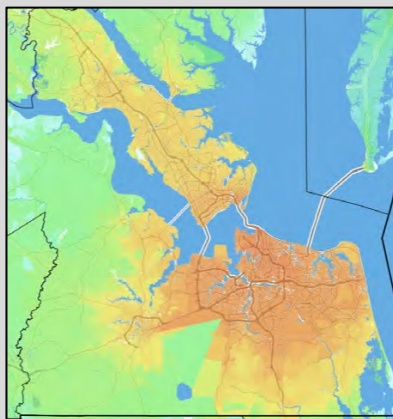
NUMBER OF JOBS IN HAMPTON ROADS REACHABLE BY TRAVEL TIME, 2019

MODE	JOBS REACHABLE BY TRAVEL TIME THRESHOLD (MINUTES)					
	10	20	30	40	50	60
Automobile	36,116 5.1%	186,823 26.3%	344,400 48.4%	480,745 67.6%	585,212 82.3%	672,289 94.5%
Public Transportation	285 0.0%	1,485 0.2%	4,622 0.6%	10,510 1.5%	19,930 2.8%	33,191 4.7%
Biking*	1,932 0.3%	5,328 0.7%	7,555 1.1%	8,738 1.2%	9,580 1.3%	10,057 1.4%
Walking	275 0.0%	1,275 0.2%	3,165 0.4%	5,995 0.8%	9,827 1.4%	14,528 2.0%

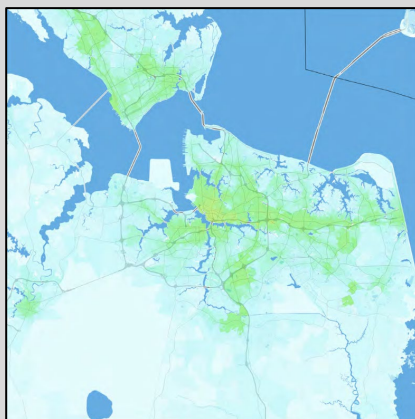
Data source: University of Minnesota Accessibility Observatory. * - Biking reflects medium stress conditions, which reflects using all bike infrastructure including separated bike lanes and paths, on-street unprotected bike lanes, certain shared lanes, and mixing with traffic on some non-arterial streets.

NUMBER OF JOBS IN HAMPTON ROADS REACHABLE WITHIN 30 MINUTES BY MODE, 2019

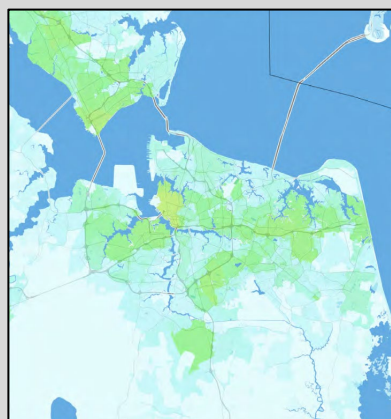
AUTOMOBILE



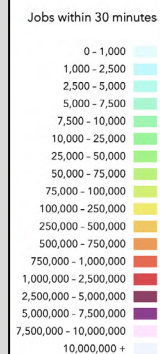
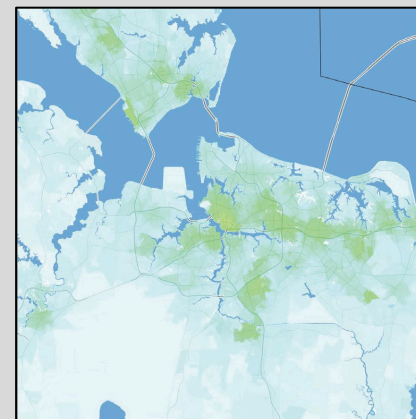
TRANSIT



BIKING*



WALKING



Data source: University of Minnesota Accessibility Observatory. * - Biking reflects medium stress conditions, which reflects using all bike infrastructure including separated bike lanes and paths, on-street unprotected bike lanes, certain shared lanes, and mixing with traffic on some non-arterial streets.



In order to encourage commuting to work via carpool, Hampton Roads has a network of High Occupancy Vehicle (HOV) lanes. The lanes – which are restricted to vehicles with at least two occupants from 6:00 am – 8:00 am and 4:00 pm – 6:00 pm on weekdays – include:

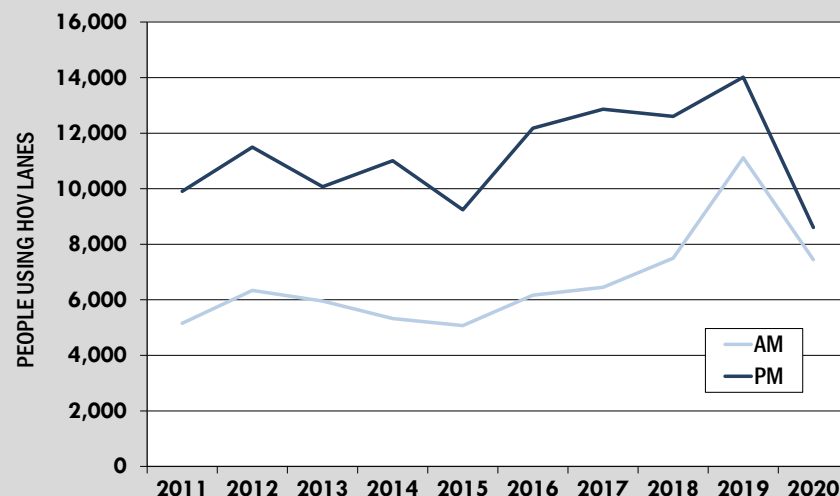
- I-64 Southside - Between Battlefield Boulevard and I-264
- I-64 Peninsula - Between Bland Boulevard and I-664
- I-264 - Between Downtown Norfolk and Rosemont Road in Virginia Beach
- I-564 - Between I-64 and the Naval Base

In addition, the barrier-separated reversible lanes on I-64 between I-564 and I-264 in Norfolk were converted to Express Lanes in 2018, as described in the callout box to the right.

Usage of the HOV lanes has varied over the last decade, but decreased significantly in 2020 due to the pandemic. Only 7,400 people used the regional HOV lanes during the AM restricted hours each weekday in 2020, and 8,600 people used the lanes during the PM restricted hours. This is down from 11,100 people in the AM and 14,000 people in the PM restricted hours in 2019.

Many vehicles in the HOV lanes, however, do not include multiple occupants, which is generally illegal other than in the Express Lanes. The average vehicle occupancy in regional HOV lanes during restricted hours was 1.22 in 2020, indicating that most vehicles only have one occupant.

AVERAGE USAGE OF HOV LANES EACH WEEKDAY IN HAMPTON ROADS, 2011-2020



Data source: VDOT. 2018-2020 data includes the Express Lanes.

NEW DEVELOPMENTS

Express Lanes – As of January 2018 VDOT has converted the I-64 barrier-separated reversible HOV lanes to High Occupancy Toll (HOT) or Express Lanes. During restricted periods (weekdays from 5 am to 9 am and from 2 pm to 6 pm), people driving alone can now use the I-64 Express Lanes by paying a toll that varies based on congestion levels. Vehicles with two or more people can continue to use the lanes for free with an E-ZPass Flex device.



More information on the Express Lanes system, including the upcoming expansion of the system, is included in the Tolling section of this report.



The number of motor vehicle crashes in Hampton Roads decreased during the COVID-19 pandemic. However, the number of fatalities suffered in the region have continued to increase during the pandemic, and have risen even more significantly in 2021.

There were a total of 23,466 crashes in Hampton Roads in 2020 according to data collected by the Virginia Department of Motor Vehicles. The number of crashes in Hampton Roads had been increasing over the last decade but decreased in 2020 due to the impacts of the pandemic. The number of crashes in the region increased 9% from 2011 to 2019, but decreased 11% from 2019 to 2020.

The number of injuries resulting from traffic crashes has followed a similar trend to the number of crashes over the last decade. There were 15,002 injuries that resulted from traffic crashes in Hampton Roads in 2020. The number of injuries in Hampton Roads increased by 20% from 2011 to 2019, but decreased 11% from 2019 to 2020.

The number of fatalities in Hampton Roads largely increased over the last decade, including during the pandemic. There were 150 fatalities resulting from traffic crashes in Hampton Roads in 2020. The number of fatalities increased 10% in the region over the last decade, and increased 2% from 2019 to 2020 in spite of lower travel levels due to the pandemic. The increase in the number of fatalities in Hampton Roads over the last decade was similar to the increase seen across the state (+11%) but was lower than the rate seen throughout the country (+19%).

NOTABLE ROADWAY SAFETY NUMBERS

3%

The decrease in the annual number of crashes in Hampton Roads between 2011 and 2020.

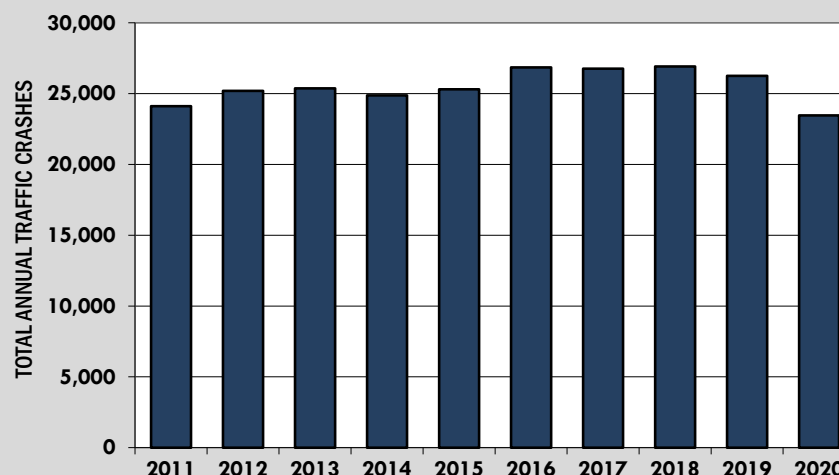
7%

The increase in the annual number of injuries in Hampton Roads between 2011 and 2020.

10%

The increase in the annual number of fatalities in Hampton Roads between 2011 and 2020.

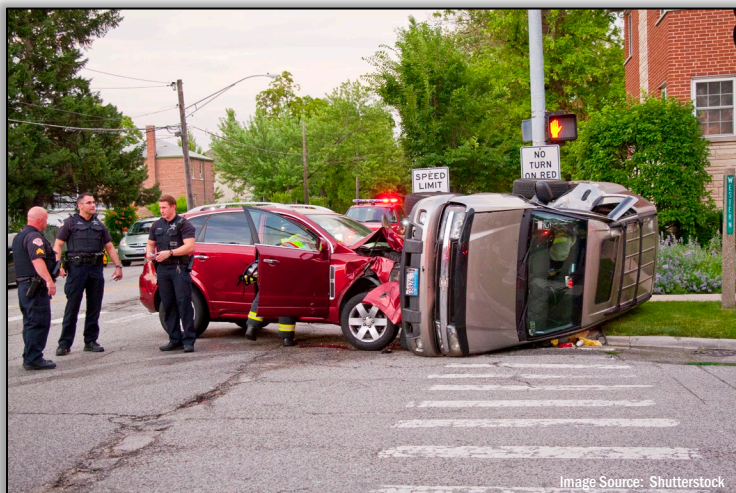
CRASHES IN HAMPTON ROADS, 2011-2020



Data source: Virginia DMV.

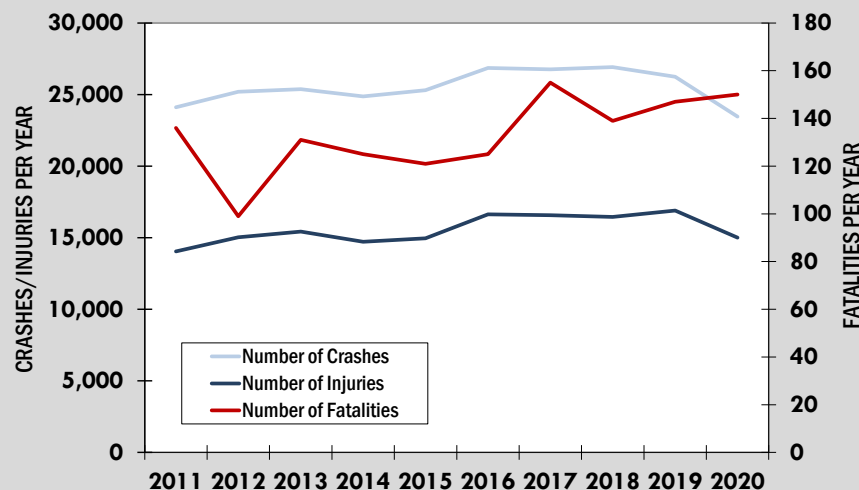


The rate of crashes relative to the amount of travel has increased in Hampton Roads over the last decade. The crash rate in Hampton Roads increased from 1.65 crashes per million vehicle-miles of travel (VMT) in 2011 to 1.74 crashes per million VMT in 2020, a 6% increase. This compares to a decrease in the crash rate seen across Virginia (-7%) during this period.



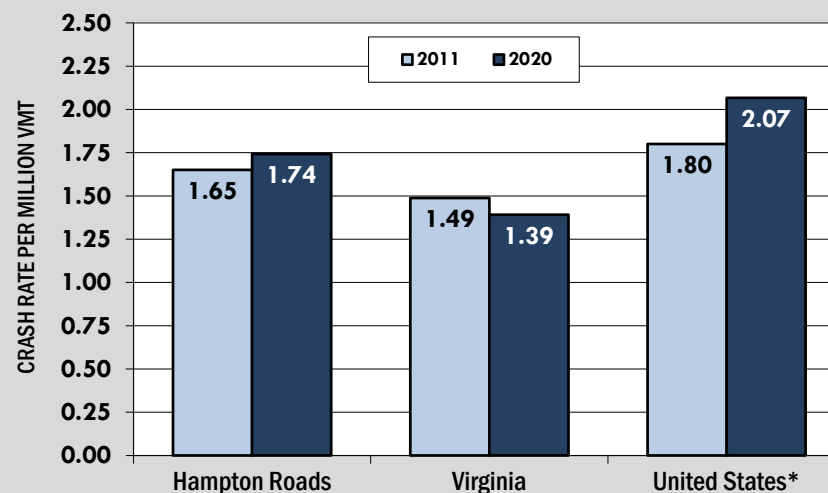
The crash rate in Hampton Roads was higher than the statewide rate in 2020. In addition, the crash rate in Hampton Roads was higher than the crash rate experienced in other metropolitan areas of Virginia including Northern Virginia (1.32 crashes per million VMT), Richmond (1.50) and Roanoke (1.65).

CRASHES, INJURIES, AND FATALITIES IN HAMPTON ROADS, 2011-2020



Data source: Virginia DMV.

TRAFFIC CRASH RATES IN HAMPTON ROADS, VIRGINIA, AND THE UNITED STATES, 2011 and 2020



Data sources: VDOT, Virginia DMV, NHTSA.

* U.S. data reflects 2011 and 2019, and the methodology used by NHTSA to estimate the number of crashes in the U.S. was updated in 2016.

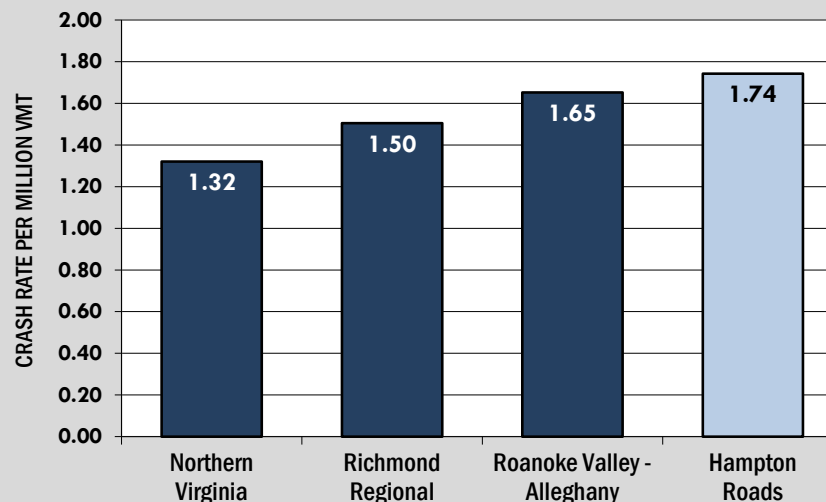


Similar to the crash rate, the fatality rate in Hampton Roads has increased over the last decade. The Hampton Roads crash fatality rate was 1.00 fatalities per 100 million VMT in the three-year period from 2018 to 2020, up 16% from 0.86 fatalities per 100 million VMT in the 2009 to 2011 time period (fatality 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 2018 to 2020 was more than twice the rate experienced in the Northern Virginia area (0.48 fatalities per 100 million VMT). The fatality rate was also higher than the rate in the Richmond area (0.93), but was lower than the fatality rate in the Roanoke area (1.12).



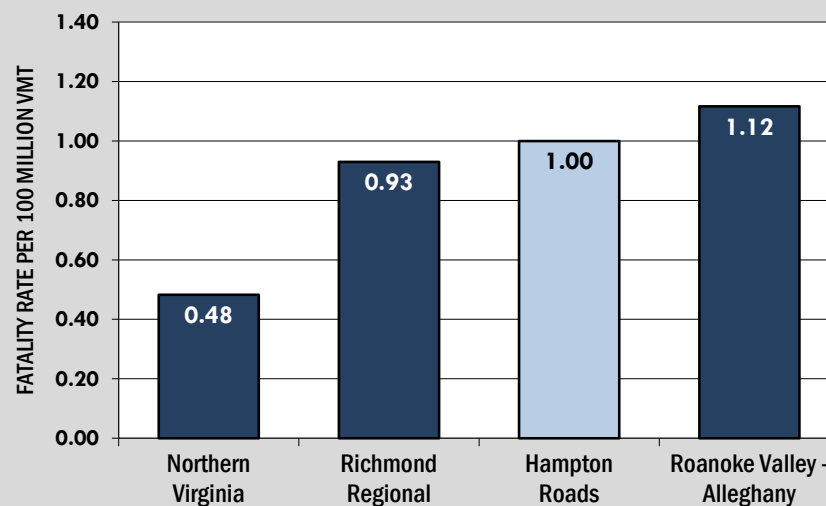
Safety belt use has an impact on the severity of injuries and the number of fatalities resulting from crashes. In 2019, Virginia had an observed safety belt usage rate of 85.4% according to a study done for the DMV by Old Dominion University. Hampton Roads usage rates were lower than the statewide rate, with the cities on the Southside having an observed safety belt usage rate of 83.2% in 2019 and the localities on the

TRAFFIC CRASH RATES IN VIRGINIA METROPOLITAN AREAS, 2020



Data sources: VDOT, Virginia DMV.

TRAFFIC CRASH FATALITY RATES IN VIRGINIA METROPOLITAN AREAS, 2018-2020



Data sources: VDOT, Virginia DMV.



Peninsula having a usage rate of 79.7%. Both the Southside and the Peninsula experienced a decrease in safety belt usage from 2018 to 2019.

Virginia's safety belt usage rate in 2019 was lower than the national rate of 90.7%, and only ten 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 35 states/districts that had primary enforcement safety belt laws in 2019, only four (Arkansas, Kansas, Mississippi, and Oklahoma) had a lower safety belt usage rate than Virginia.

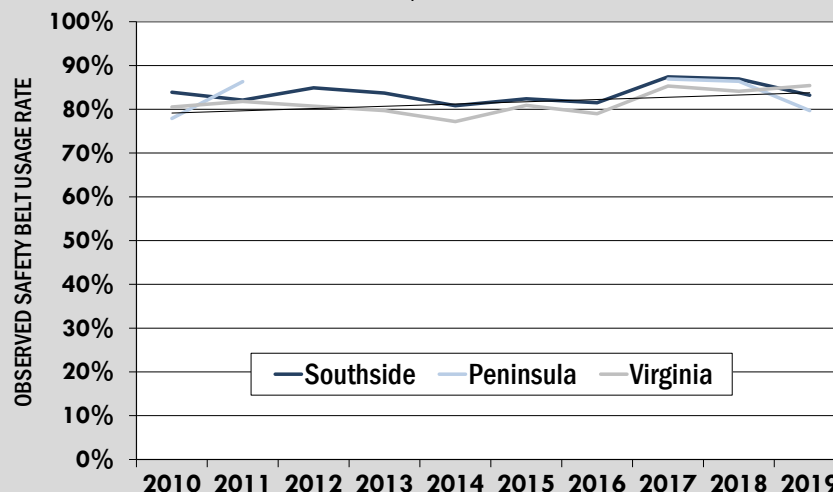


SAFETY BELT USAGE MESSAGING

Image Source: VDOT.

HRTPO prepares an analysis of regional roadway safety through the Hampton Roads Regional Safety Study. This study examines regional crash trends, the location of crashes throughout the region, and safety countermeasures. More information on the Hampton Roads Regional Safety Study is available at <http://www.hrtpo.org/page/roadway-safety>.

SAFETY BELT USAGE RATE IN HAMPTON ROADS AND VIRGINIA, 2010-2019



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. Peninsula includes the area defined in the report as York, which includes Williamsburg, Poquoson, Hampton, Newport News, and York County. Data for the Peninsula was not collected in 2012-2016. 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.



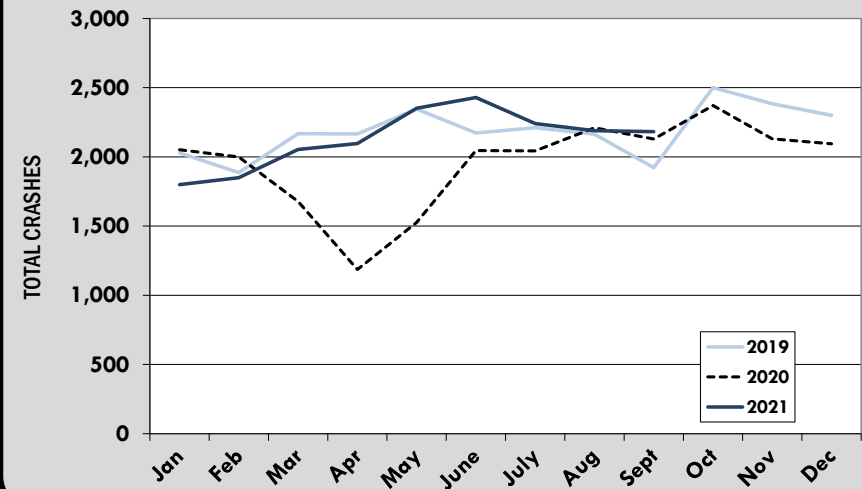
COVID-19 IMPACTS

While roadway safety improved during the height of the COVID-19 shutdowns, the number of crashes, injuries, and fatalities has returned to or in some cases surpassed the number seen prior to the pandemic.

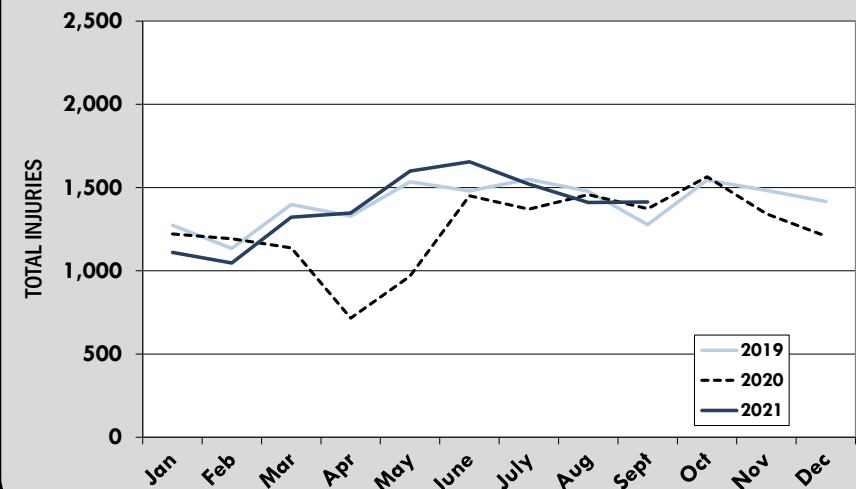
The number of crashes and injuries in Hampton Roads decreased in March and April 2020 as roadway travel decreased during the pandemic shutdowns. At the peak of the shutdowns in April, the number of crashes in Hampton Roads decreased 45% from the year before and the number of injuries decreased 47%.

However, the number of crashes and injuries increased in Hampton Roads throughout the summer months of 2020, in some cases even surpassing the levels from the same months in 2019. This continued in 2021, with the number of crashes and injuries largely being similar to the levels seen prior to the pandemic in 2019. By September 2021, the number of crashes in Hampton Roads was 13% higher than the level seen in September 2019. The number of injuries in the region was 11% higher in September 2021 than was experienced in the region in September 2019.

**MONTHLY CRASHES IN HAMPTON ROADS
2019 - 2021**



**MONTHLY INJURIES IN HAMPTON ROADS
2019 - 2021**





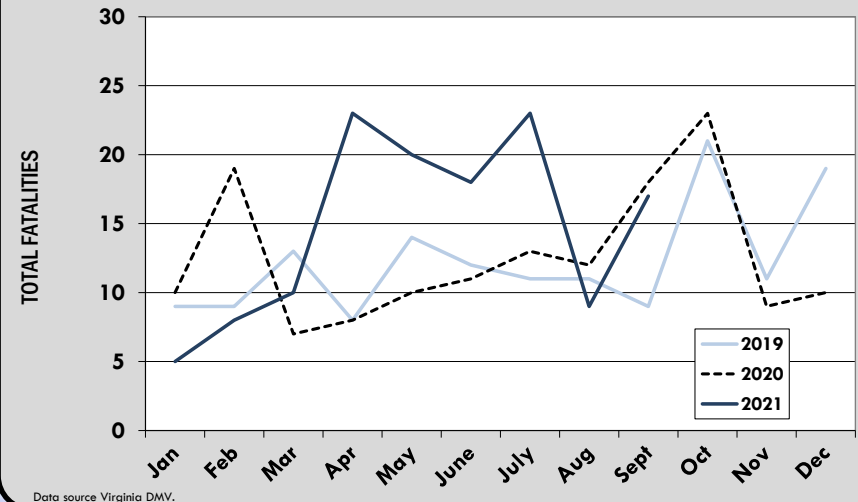
COVID-19 IMPACTS

Similar to the crashes and injuries, the number of fatalities has increased both in Hampton Roads and throughout the country in spite of roadway travel levels remaining below pre-pandemic levels.

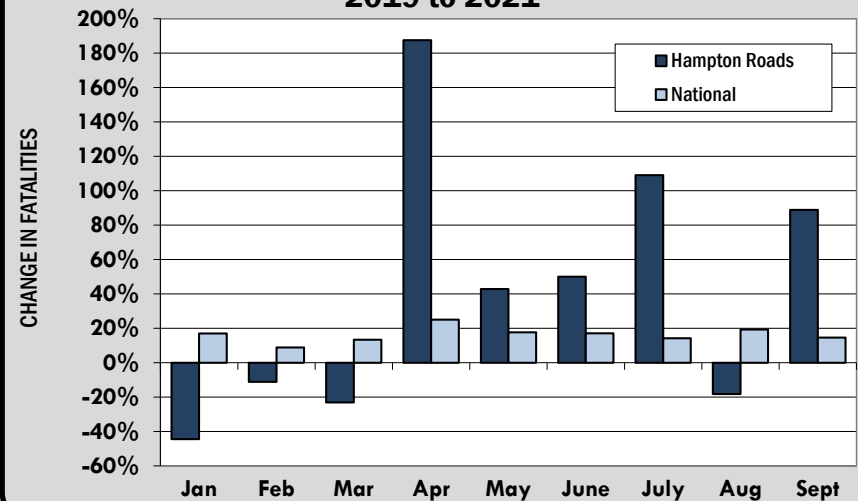
Fatalities briefly decreased in Hampton Roads in the early months of the pandemic as roadway travel levels plummeted, but began increasing throughout the late spring and summer months of 2020. This trend continued into spring and summer of 2021, with monthly fatality levels in Hampton Roads far outpacing the levels seen prior to the pandemic in 2019. From January to September 2021 there were 133 fatalities in Hampton Roads, up 39% from the 96 fatalities that were experienced in the first nine months of 2019.

The increase in fatalities that has been seen in Hampton Roads has exceeded the increases experienced throughout the country. In the first 9 months of 2021, fatalities were 17% higher throughout the country than during the same period in 2019, compared to the 39% increase experienced in Hampton Roads.

**MONTHLY FATALITIES IN HAMPTON ROADS
2019 - 2021**



**MONTHLY CHANGE IN FATALITIES
2019 to 2021**





Nearly 20,000 trucks enter and exit Hampton Roads each weekday, serving not only the third busiest port on the East Coast but also supporting 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. Trucks also supply the goods used by each resident and business in the region.

In 2020, nearly 20,000 trucks entered or exited Hampton Roads through major gateways each weekday. The number of trucks passing through Hampton Roads gateways has increased nearly every year since 2012. In spite of the COVID-19 pandemic, the number of trucks that passed through major regional gateways only decreased by 1% from 2019 to 2020.

The primary gateway for trucks entering or exiting Hampton Roads is I-64. An average of 6,900 trucks used I-64 to enter or exit the region each weekday in 2020, which accounted for 35% of the trucks passing through the region's major gateways. The share of trucks using I-64 as a gateway, however, has decreased, down from 38% in 2011. The next most heavily-used gateways to the region are Route 58 (4,600 trucks each weekday in 2020) and Route 460 (2,400 trucks). Both Route 58 and Route 460 have seen an increasing share of trucks entering and exiting the region over the last decade. Combined, I-64, Route 58, and Route 460 accounted for 71% of all trucks passing through the region's major gateways in 2020.

NOTABLE TRUCK TRAVEL NUMBERS

▲
12%

The increase in the amount of truck travel each day in Hampton Roads between 2011 and 2020.

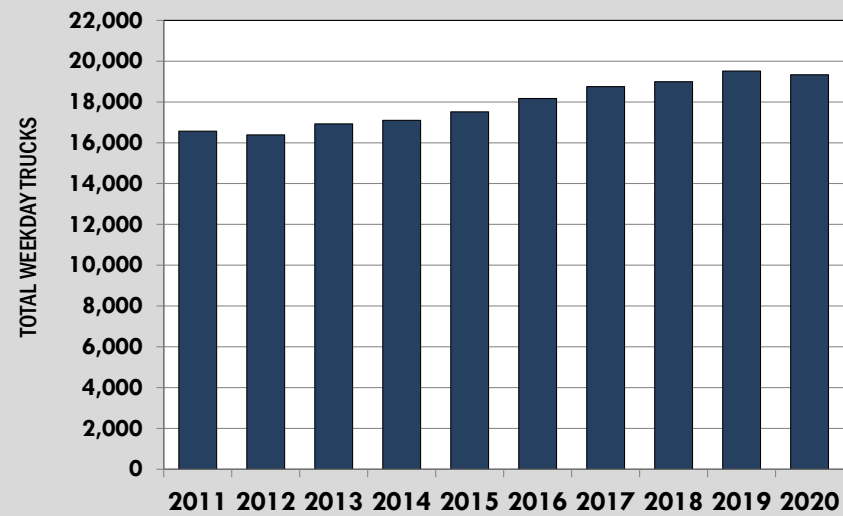
▲
17%

The increase in the number of trucks that entered or exited Hampton Roads each weekday at major gateways between 2011 and 2020.

64%

The percentage of all freight handled by the Port of Virginia that was transported by truck in 2020.

NUMBER OF TRUCKS PASSING THROUGH HAMPTON ROADS GATEWAYS EACH WEEKDAY, 2011-2020



Data sources: VDOT, CBBT.



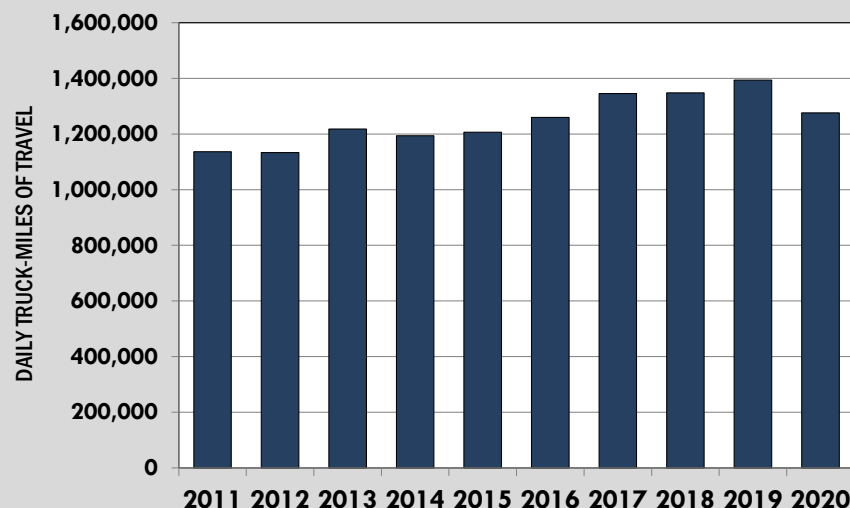
There was nearly 1.3 million miles of truck travel each day in Hampton Roads in 2020 according to VDOT, which accounted for 3.5% of the 37 million vehicle-miles of travel experienced each day throughout the region. Regional truck travel levels have increased 12% between 2011 and 2020, but decreased 8% from 2019 to 2020 due to the impacts of the pandemic.

A major issue involving truck travel in Hampton Roads is overheight trucks at the tunnels. This is especially an issue at the westbound Hampton Roads Bridge-Tunnel (HRBT), which has a lower vertical clearance than other tunnels in the area. A total of 4,300 trucks were stopped, measured, and turned around at tunnels in Hampton Roads in 2020, which is down from 15,400 trucks in 2016 due to improvements at the tunnels. Of these 4,300 trucks, 3,100 occurred at the westbound Hampton Roads Bridge-Tunnel, and 1,032 of these HRBT turnarounds occurred at the tunnel entrance on the South Island, which greatly impacts congestion and safety since traffic is stopped in both directions for the turnaround.



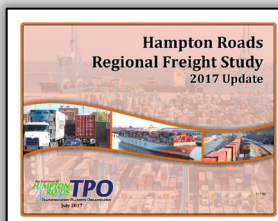
Image Source: HRTPO.

DAILY TRUCK TRAVEL IN HAMPTON ROADS, 2011-2020



Data source: VDOT.

HRTPO REGIONAL FREIGHT STUDY



For the past two decades, the HRTPO has engaged in numerous freight planning activities, including the development of the [Hampton Roads Regional Freight Study](#), which serves as a comprehensive resource document on the multimodal transportation system. This report details the movement of goods across all freight modes – highways, ports, railways, and airports. Special emphasis is placed on freight moving by trucks across highways as they serve as the predominant mover of freight in the region.

As part of this effort, HRTPO also produced a [freight brochure](#). The brochure details why freight is important to Hampton Roads, how freight arrives in the region, the impacts of congestion on the trucking industry, and many key freight-related facts.





Public transportation usage decreased both in Hampton Roads and nationally throughout the 2010s, and this decrease in ridership accelerated during the COVID-19 pandemic.

Public transportation services in Hampton Roads are primarily provided by three agencies. The Williamsburg Area Transit Authority (WATA) provides transit service in James City County, Williamsburg, and northern York County, while Suffolk Transit provides transit service throughout that city. Hampton Roads Transit (HRT) provides service in the remaining urbanized areas on the Peninsula and Southside.

There were 8.3 million unlinked trips* taken on HRT, WATA, and Suffolk Transit public transportation services in Hampton Roads in 2020. This number includes 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 taken on public transportation in Hampton Roads has decreased throughout the last decade, and particularly in the last year due to the pandemic. Annual transit ridership decreased 59% in Hampton Roads from 2011 to 2020, and decreased 45% from 2019 to 2020 due to the impacts of the COVID-19 pandemic.

* - 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

59%
▼

The change in the annual number of passenger trips taken on public transportation in Hampton Roads from 2011 to 2020.

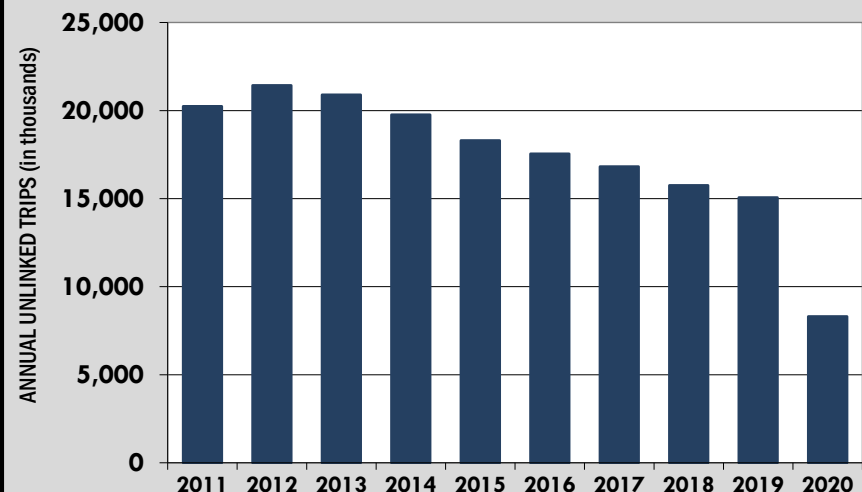
30th

Hampton Roads rank among the 39 large metropolitan areas with populations between one and four million people in terms of public transportation use per capita in 2020.

34th

Hampton Roads rank among the 39 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, 2011-2020



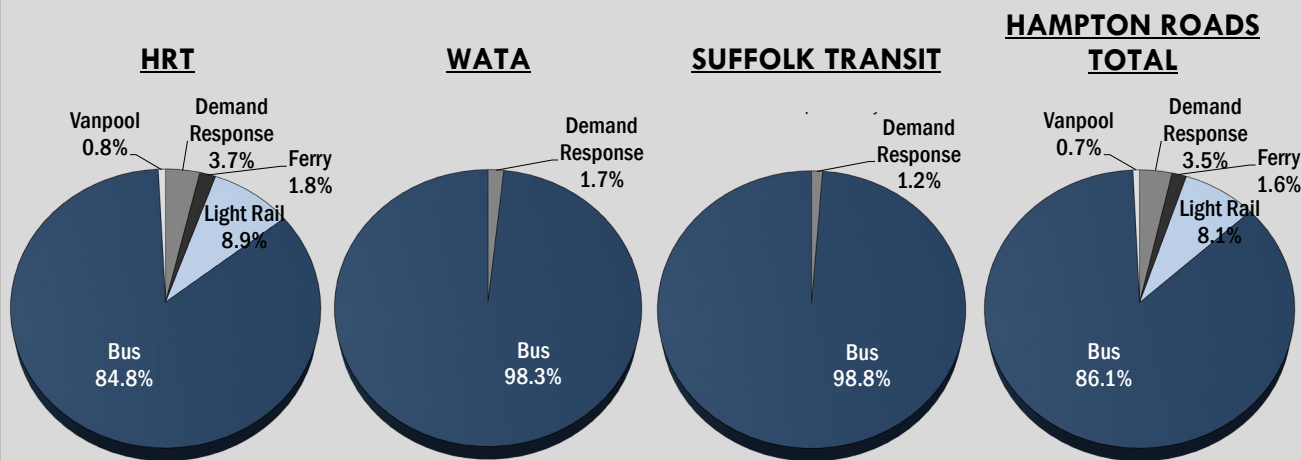
Data sources: HRT, WATA, Suffolk, American Public Transportation Association (APTA).



The vast majority of public transportation trips in Hampton Roads – 86% in 2020 – are 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 services, and vanpools) comprised the remaining 6%.

Public transportation usage in Hampton Roads lags behind other metropolitan areas. At 4.5

TRANSIT USAGE BY MODE AND AGENCY IN HAMPTON ROADS, 2020



Data sources: HRT, WATA, Suffolk, 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 Suffolk Transit.



Express Bus

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



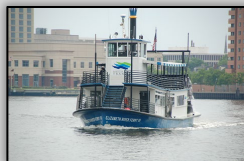
Tourist Oriented Services

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



Light Rail

HRT began operating light rail service on a 7.4-mile 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 Traffic. These alternatives include ridesharing, telecommuting, van leasing, and guaranteed ride programs.



Paratransit

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



passenger trips on public transportation per capita in 2020, Hampton Roads ranked 30th highest among the 39 large metropolitan areas with populations between one and four million people. Metropolitan areas such as Seattle, Portland, and Baltimore have transit usage rates per capita more than four times higher than Hampton Roads.

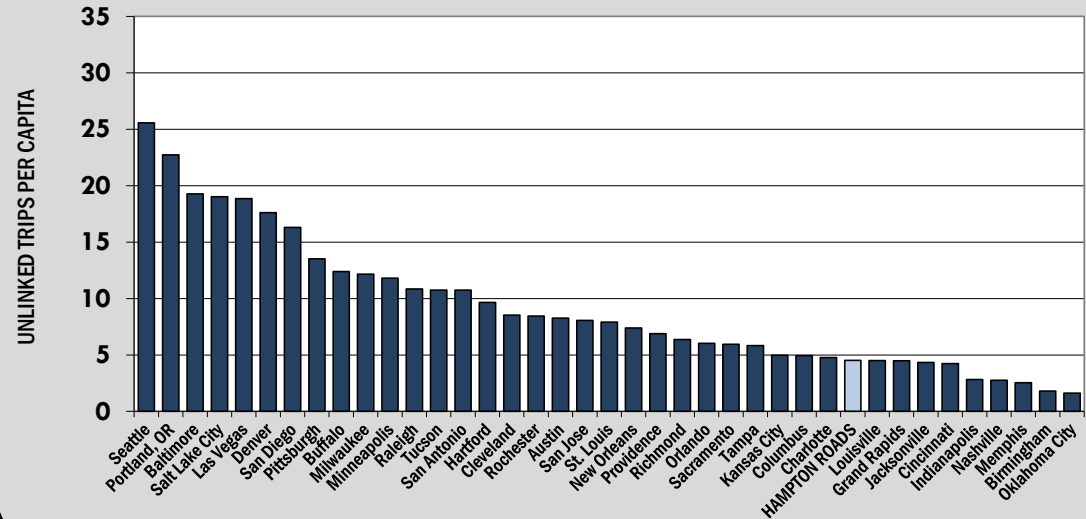


HAMPTON ROADS TRANSIT BUS

Image Source: HRT.

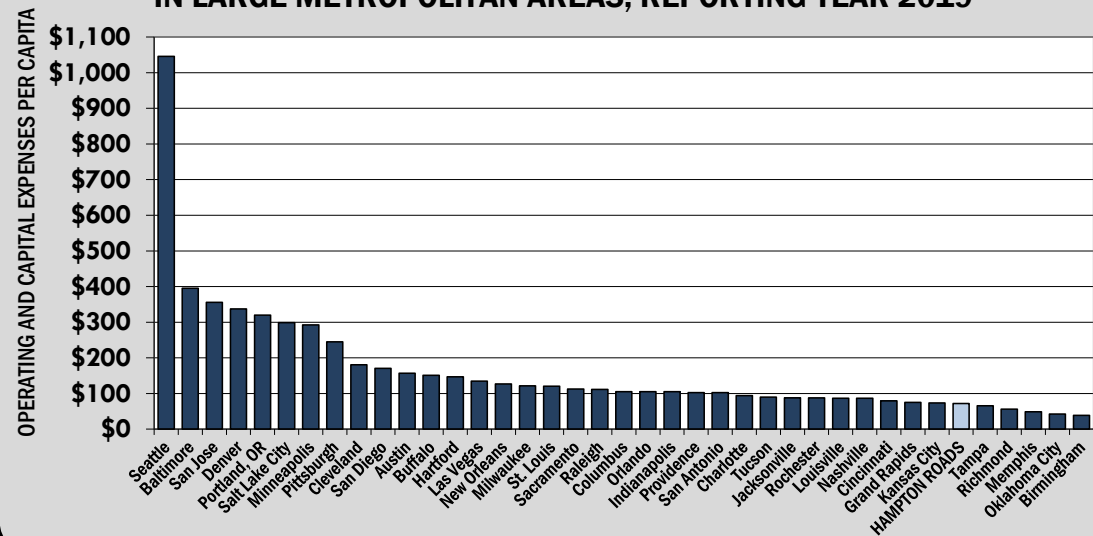
Hampton Roads spends less on public transportation on a per capita basis than many other comparable metropolitan areas. According to an analysis of the National Transit Database, \$72 was spent per capita on transit operating and capital expenses in Hampton Roads in Reporting Year 2019. This ranked the region 34th highest among the 39 large metropolitan areas. Seattle spent more than 14 times

PASSENGER TRIPS PER CAPITA ON PUBLIC TRANSPORTATION IN LARGE METROPOLITAN AREAS, 2020



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

TRANSIT OPERATING AND CAPITAL EXPENSES PER CAPITA IN LARGE METROPOLITAN AREAS, REPORTING YEAR 2019



Data sources: National Transit Database, Census Bureau.



more per capita on public transportation than was spent in Hampton Roads, while areas such as Baltimore and San Jose spent more than five times more per capita.

This level of spending on public transportation in Hampton Roads has contributed to an older fleet of vehicles. The average age of HRT buses is just over 10 years as of 2021, which is four years beyond FTA's recommended average fleet age. However, HRT is in the midst of replacing a large portion of its bus fleet, which should lower the average age of HRT's bus fleet to under 6 years by 2024.

Much of WATA's fleet has been replaced in recent years. This has led to WATA's bus fleet decreasing in age from an average of 10 years in 2015 down to just under 6 years in 2020.

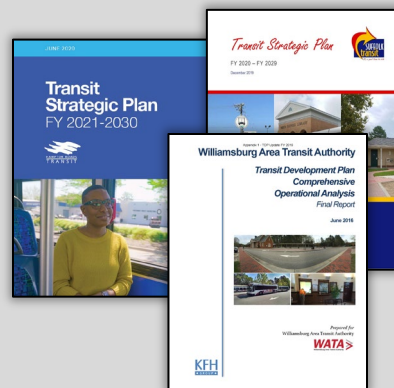
Transit buses are older in Hampton Roads than in other comparable metropolitan areas. Among large metropolitan areas throughout the country with populations between one and four million people, the median age of transit buses was 6.2 years in Reporting Year 2019 according to the National Transit Database. Only Buffalo, San Jose, and Charlotte had an average

NEW DEVELOPMENTS

Hampton Roads Regional Transit Program – On September 18, 2020, Governor Northam signed a new law that provides a dedicated regional public transportation funding source for the first time. The new Hampton Roads Regional Transit Program and Fund, which is administered through the Hampton Roads Transportation Accountability Commission (HRTAC), is expected to generate up to \$31 million annually through an additional grantor's tax of \$0.06 per \$100 real estate value in the six cities served by HRT, a regional transient occupancy tax of 1% of the charge for occupancy in the six cities, and a reallocation of statewide recordation taxes.

The centerpiece of the Hampton Roads Regional Transit Program is a new core and connected bus network, or “regional backbone”, referred to as the 757 Express that will connect the six cities served by HRT with high-frequency, inter-jurisdictional service.

The legislation also called for HRTPO to create a [Regional Transit Advisory Panel](#), which is comprised of representatives of business and industry groups, employers, shopping destinations, institutions of higher education, military installations, health care centers, public transit entities, and other groups. The purpose of the panel is to provide feedback to the regional planning process on the long-term vision for a multimodal regional public transit network in Hampton Roads.



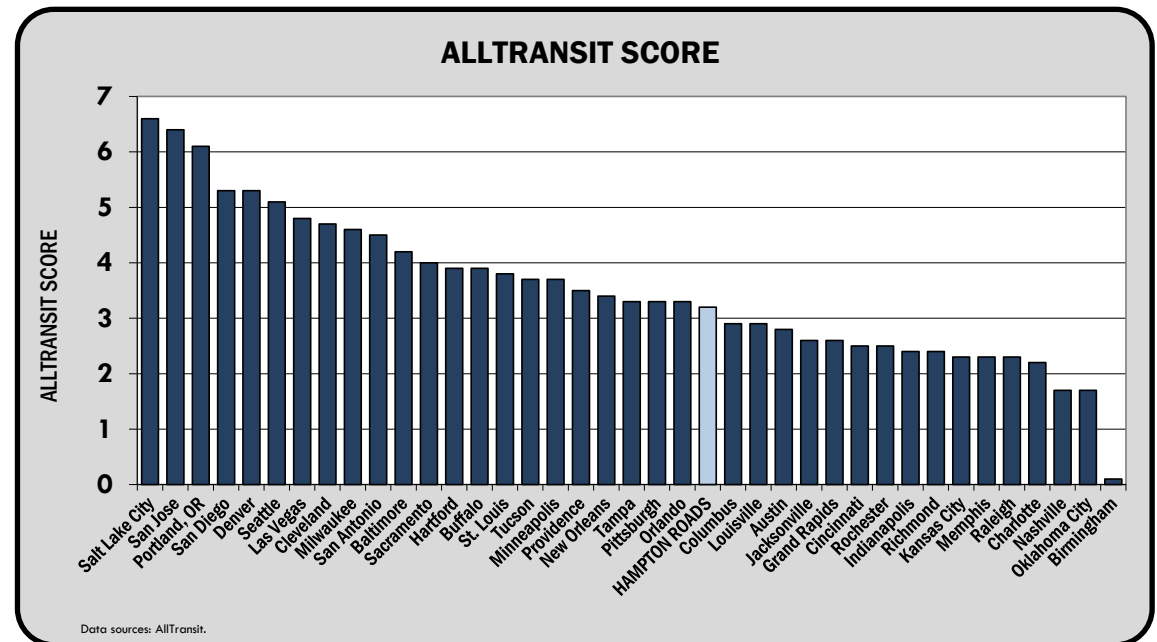
Transit Strategic Plans (TSP) – HRT has recently completed an update to its [Transit Strategic Plan](#). The HRT Transit Strategic Plan is a blueprint that outlines changes that will improve HRT services across the six cities and provides information on service planning, operations, and capital needs for the ten-year period of FY 2021-2030. WATA completed its most recent [Transit Development Plan](#) in 2016 – with a minor update in 2018 – and Suffolk Transit released a [TSP](#) in 2020.



transit bus age that was older than the bus fleet in Hampton Roads.

AllTransit, which is a joint project of the Center for Neighborhood Technology and TransitCenter, has produced an analysis of transit in each area based on data assembled from 900 transit agencies. One measure produced by Alltransit – the AllTransit Performance Score – is an overall regional 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 0 to 10, with higher scores indicating better performance according to AllTransit's analysis. Hampton Roads, with a score of 3.2, ranks 23rd highest among the 39 metropolitan areas with a population between one and four million people. This is higher than the Richmond (2.4), Raleigh (2.3), and Charlotte (2.2) areas.





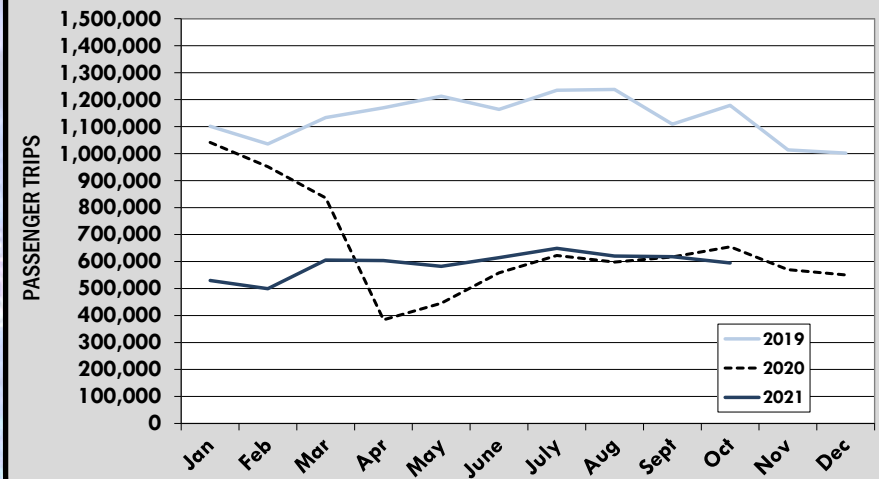
COVID-19 IMPACTS

Public transportation has been one of the modes of transportation most impacted by COVID-19, as trips have decreased due to businesses being closed and more employees being able to work from home.

Transit ridership on the two largest transit providers in Hampton Roads – Hampton Roads Transit (HRT) and Williamsburg Area Transit Authority (WATA) – remains well below the levels seen prior to the pandemic. In the early months of the pandemic, transit ridership levels were as much as 67% below the levels seen prior to the pandemic. Volumes slightly recovered in the spring and summer months of 2020, but ridership levels have largely flattened out since then, and continued to largely remain flat throughout 2021. In October 2021, transit ridership levels in Hampton Roads remained 49% below the levels seen in the region in October 2019.

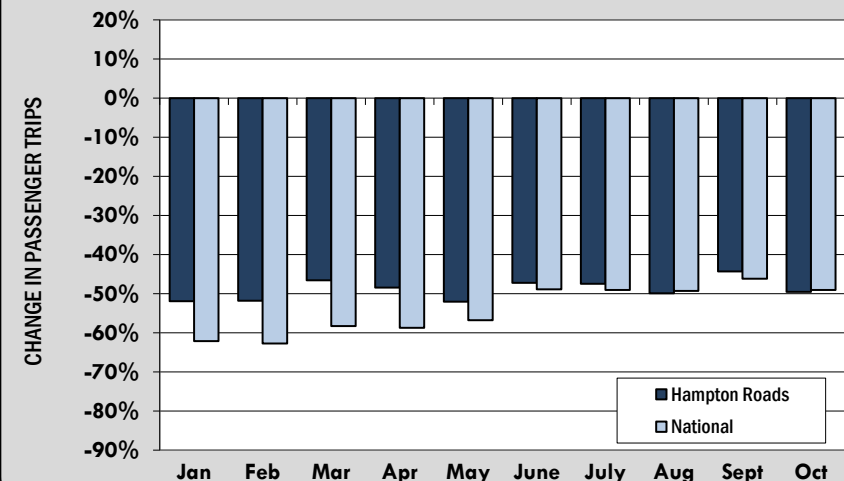
Transit ridership decreases in Hampton Roads, however, have been less than the decreases seen across the nation. Hampton Roads transit ridership levels in 2021 have ranged between 44%-52% below the levels seen prior to the pandemic in the same months of 2019. By comparison, national transit ridership levels have ranged between 46%-63% below the levels seen in 2019. In the most recent data available, national transit ridership levels were 49% lower in October 2021 than the level seen in October 2019, equal to the decrease in Hampton Roads.

MONTHLY PASSENGER TRIPS TAKEN ON PUBLIC TRANSPORTATION IN HAMPTON ROADS, 2019 - 2021



Data sources: HRT, WATA, APTA.

MONTHLY CHANGE IN TRANSIT TRIPS IN HAMPTON ROADS AND NATIONWIDE, 2019 to 2021



Data sources: HRT, WATA, APTA.

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 such as 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.



There are currently over a thousand miles of shared use paths, bike lanes, paved shoulders, wide sidewalks, signed shared roadways, and

ACTIVE TRANSPORTATION FACILITY TYPES

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

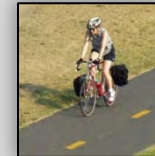
Bike Lanes

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.



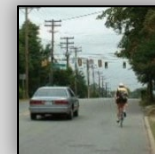
Paved Shoulders

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.



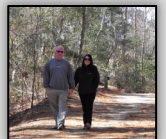
Sidewalks

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.





trails that comprise the bicycle and pedestrian network across Hampton Roads. These non-motorized facilities vary greatly, from secluded park trails to dedicated bike lanes along major roadways to popular multi-use paths such as the 52-mile Virginia Capital Trail.



SHORE DRIVE BIKE LANES

Image Source: HRTPO

In recent years, several Active Transportation facilities have been added throughout Hampton Roads. Examples of these facilities include sections of the Suffolk Seaboard Coastline Trail, road diets on various roadways including Lafayette Boulevard and Ocean View Avenue, and the Bike Loop in the Ghent section of Norfolk.

NEW DEVELOPMENTS



Norfolk Bike Lanes – The City of Norfolk has added significantly to their bike lane network in recent years. In late 2016 the city created a 4-mile dedicated bike loop along 35th Street, Llewellyn Avenue, Olney Road, 26th Street, 27th Street, and Colley Avenue. This has been followed up in recent

years with road diets to create bike lanes on various roadways including Lafayette Boulevard and Ocean View Avenue. In addition, the city is proposing to add bike lanes via a road diet along a 2-mile section of Granby Street between Willow Wood Drive and Admiral Taussig Boulevard

Suffolk Seaboard Coastline Trail – The Suffolk Seaboard Coastline Trail is envisioned as an 11-mile trail that will connect Downtown Suffolk with the City of Chesapeake. The first portion of the trail, a 2.3-mile section near the village of Driver, opened in 2015 and another 1.1-mile section of the trail between Shoulders Hill Road and the Chesapeake City Line was completed in early 2017. The second phase spanning 1.5 miles between Nansemond Parkway and Suburban Drive was completed in 2021. A continuation of the trail into the City of Chesapeake is expected to begin construction in the near future.



Regional Trails – Planning is underway on a number of facilities throughout the region. The South Hampton Roads Trail is planned as a 41-mile trail connecting Suffolk with the Virginia Beach Oceanfront. Five miles of the trail, overlapping the Suffolk Seaboard Coastline Trail, is complete. Plans are also underway for portions of this trail in Chesapeake and Portsmouth. Planning is also underway on the Birthplace of America Trail, which is described later in this section.



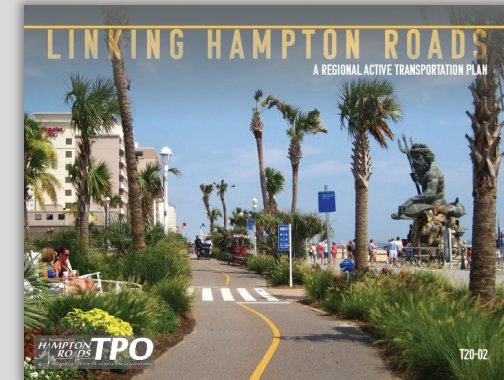
Most jurisdictions in Hampton Roads have created plans that are specifically dedicated to improving active transportation. Examples include:

- A [bicycle advisory committee](#) that helped prepare a Regional Bicycle Facilities Plan and map in the Historic Triangle (James City County, Williamsburg, and York County)
- Virginia Beach's [Active Transportation Plan](#)
- Norfolk's [Strategic Bike and Pedestrian Plan](#)
- Hampton's [Bike Walk Hampton Strategic Bicycle and Pedestrian Plan](#)
- Suffolk's [Bicycle and Pedestrian Master Plan](#)
- Portsmouth's [Bicycle and Pedestrian Plan](#)
- Isle of Wight County's [Pedestrian and Bicycle Facilities Master Plan](#)
- Southampton County's [Active Transportation Plan](#)
- Surry County's [Comprehensive Bicycle and Pedestrian Plan](#)

HRTPO has also developed a regional active transportation plan, as described further in the box to the right.

LINKING HAMPTON ROADS

In the summer of 2017, HRTPO began developing a regional active transportation plan for the Hampton Roads region. The purpose of this regional plan is to provide a clear structure for the development of new facilities, programs, and policies that will link the region by developing greater active transportation facilities and promoting active and healthy lifestyles throughout the region.



The development of the Linking Hampton Roads regional active transportation plan included an open public participation process with residents providing input through online surveys, public events, stakeholders meetings, advocacy group input, and the regional Active Transportation Subcommittee.

The Linking Hampton Roads plan includes a regional analysis of current conditions and existing facilities; a comprehensive, recommended active transportation network; and recommended design guidelines for the development of active transportation facilities. Goals of the plan include:

- Improve safety for all users including people with access and functional needs
- Link the region throughout with active transportation facilities
- Improve health outcomes in the region
- Promote and encourage the growth of the region's economy and tourism

The final version of the Linking Hampton Roads report was approved by the HRTPO Board in 2020. The Linking Hampton Roads report is available at <https://www.hrtpo.org/page/active-transportation>.

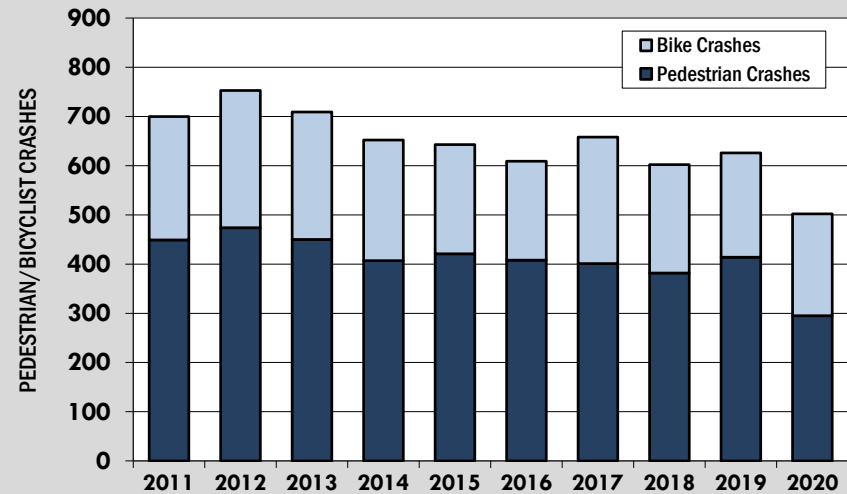


In addition, VDOT has developed statewide active transportation plans. The [State Bicycle Policy Plan](#) includes policy recommendations that will guide the planning, design, construction, operation, and maintenance of bicycle facilities. The [State Pedestrian Policy Plan](#) establishes a vision for the future of walking in Virginia. The plan is a guide for officials, organizations, and individuals to improve pedestrian policy and accommodations. VDOT has also recently developed a [Pedestrian Safety Action Plan](#). Much of the planning for these efforts has been conducted through the Virginia Statewide Bicycle and Pedestrian Advisory Committee (BPAC), and the Hampton Roads Pedestrian and Bicycle Advisory Committee (PABAC).

Although it is difficult to measure the total amount of walking and bicycling, the percentage of people that commute to work by mode is collected by the Census Bureau. In Hampton Roads, 3.3% of workers walked or rode bicycles to commute to work in 2019. This percentage is lower than the percentage seen in the region in 2010 (3.8%), but increased from 3.0% walking or biking to work in 2000.

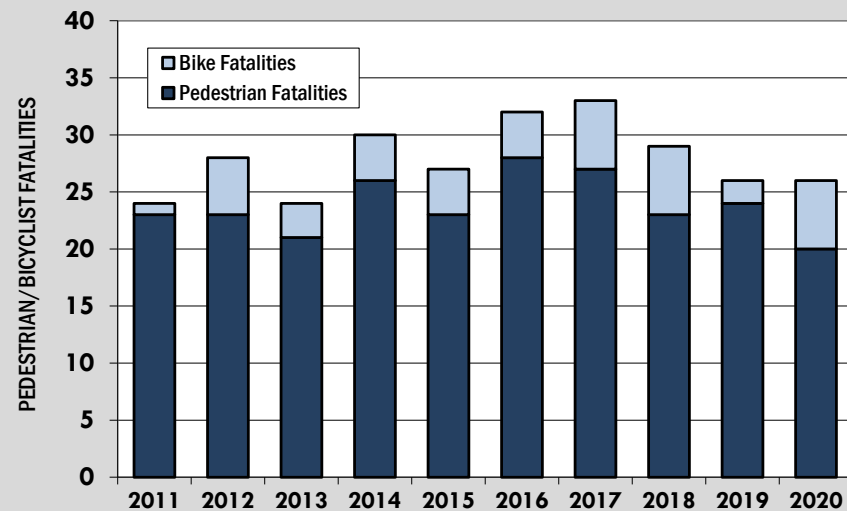
Pedestrians and bicyclists are the most vulnerable users of the transportation system, and ensuring their safety is critical. There were 502 active transportation crashes – 295 involving pedestrians and 207 involving bicyclists – in Hampton Roads in 2020. These crashes resulted in a total of 26 fatalities, 20 of which were pedestrians and 6 of which were bicyclists. The number of crashes involving pedestrians and bicyclists in Hampton Roads has decreased since 2012, and decreased 20% from 2019 to 2020. The number of pedestrian and bicyclist fatalities in Hampton Roads, however, increased 8% from 2011 to 2020. Pedestrian and bicyclist crashes comprised 3% of the total

CRASHES INVOLVING PEDESTRIANS OR BICYCLISTS IN HAMPTON ROADS, 2011-2020



Data source: Virginia DMV.

PEDESTRIAN/BICYCLIST FATALITIES IN HAMPTON ROADS, 2011-2020



Data source: Virginia DMV.

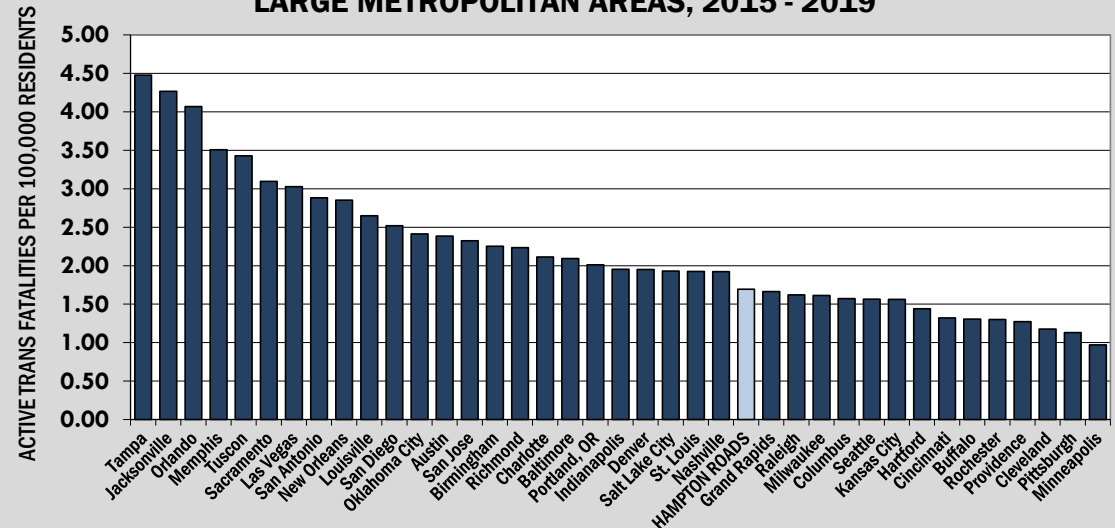


crashes in Hampton Roads between 2011 and 2020, but comprised 21% of all roadway fatalities in the region during this time.

The rate of active transportation fatalities in Hampton Roads is lower than other comparable areas. Hampton Roads ranked 25th highest among the 39 large metropolitan areas between one and four million people in terms of the rate of active transportation fatalities per resident for the years 2015 - 2019.

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

ACTIVE TRANSPORTATION FATALITIES PER 100,000 RESIDENTS, LARGE METROPOLITAN AREAS, 2015 - 2019

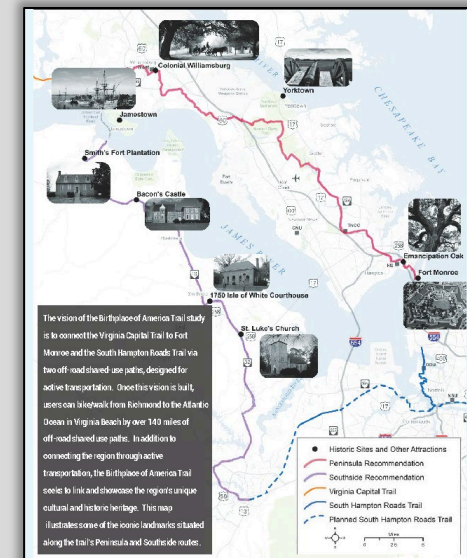


Data sources: US Census Bureau, FARS.

BIRTHPLACE OF AMERICA TRAIL

HRTPO staff, with assistance from VDOT and a subcommittee made up of localities and local agencies, has been involved in studying the Birthplace of America Trail (BOAT). The BOAT is envisioned as an extension of the Virginia Capital Trail from its current terminus at Jamestown to Fort Monroe and the western terminus of the South Hampton Roads Trail, which would provide a connection all the way to the Virginia Beach Oceanfront. Once built, the Virginia Capital Trail, Birthplace of America Trail, and South Hampton Roads Trail will connect Richmond to Coastal Virginia with over 140 miles of separated, paved off-road trails.

The [Birthplace of America Trail study](#) was adopted by the HRTPO Board in July 2017. With the study adopted, HRTPO staff and localities are working towards finding funding for constructing and marketing the trail. This included applying for a federal discretionary Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grant in 2021.





COVID-19 IMPACTS

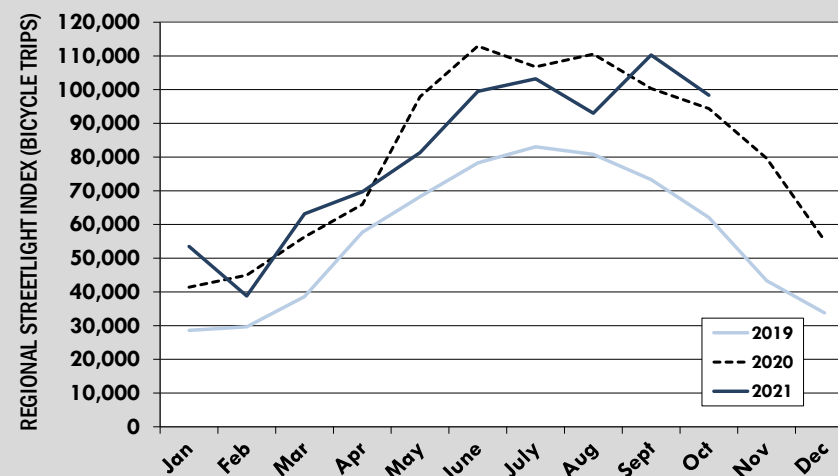
With people spending more time outdoors and practicing social distancing, it isn't a surprise that the amount of walking and bicycling has increased during the COVID-19 pandemic. According to StreetLight Data, which uses smartphones as sensors to measure activity on streets, the amount of biking and walking in Hampton Roads increased during the pandemic and has remained high throughout 2021.

Bicycling levels, while higher in Hampton Roads in 2020 even prior to the pandemic, escalated in the spring of 2020, and by June were 44% higher than in June of 2019 according to Streetlight Data. Bicycling levels remained high throughout the second half of 2020, with ridership up in Hampton Roads by 45% compared to the second half of 2019.

Bicycling levels in the first ten months of 2021, while not as high in Hampton Roads as the levels seen in 2020, remain 35% above the pre-pandemic levels seen during the same period in 2019.

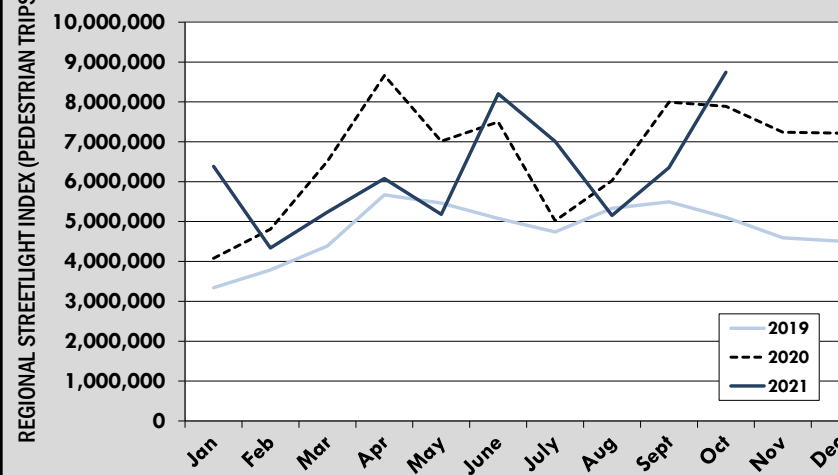
Pedestrian trips have also increased in Hampton Roads during the pandemic. According to Streetlight Data, pedestrian travel increased exponentially early in the pandemic, with April 2020 levels in Hampton Roads being 53% above the April 2019 levels. In the first ten months of 2021, pedestrian travel in Hampton Roads was 29% above the pre-pandemic levels seen during the same period in 2019.

REGIONAL STREETLIGHT INDEX FOR BICYCLE TRIPS, 2019 - 2021



Data source: Streetlight Data.

REGIONAL STREETLIGHT INDEX FOR PEDESTRIAN TRIPS, 2019 - 2021



Data source: Streetlight Data.



In recent years, legislation has been passed by the Virginia General Assembly that comprehensively reformed how transportation projects are funded and selected, increased revenues, and created funding sources specifically devoted to constructing major projects in areas of the state including Hampton Roads.

With statewide transportation funding levels falling well behind needs, the Virginia General Assembly passed House Bill (HB) 2313 in 2013 and HB 1414 in 2020. These bills 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 ports, aviation, rail, public transportation, and space flight. For Fiscal Year 2022, the CTB approved an \$8.2 billion statewide transportation budget, which is significantly larger than the budgets in recent years. As of June 2021, the CTB projects that a total of \$47.2 billion will be available in the statewide transportation budget for FY 2022-2027, which is 21% higher than the budgets from FY 2016-2021.

HB 2313 also created a dedicated regional funding stream for Hampton Roads. Increases in regional sales and fuel taxes have generated \$1.4 billion as of 2021, and is projected to produce an additional \$1.3 billion for use on major regional roadway, bridge, and tunnel projects in FY 2022-2027.

Another \$198 million is expected to be collected in Hampton

NOTABLE TRANSPORTATION FINANCING NUMBERS

▲
21%

The projected change in Virginia's statewide transportation budget from Fiscal Years (FY) 2016-2021 to FY 2022-2027.

▲
18%

The projected increase in funding that will be available for new highway construction statewide from FY 2016-2021 to FY 2022-2027.

20th

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 July 1st, 2021.

HISTORICAL AND PROJECTED STATE TRANSPORTATION BUDGET, FY 2016-2027



Data source: VDOT. State fiscal year runs from July 1 to June 30 of the listed year. Projected budgets as of June 2021. Includes all revenues including regional funds.



Roads in FY 2022-2027 for the new Hampton Roads Regional Transit fund.

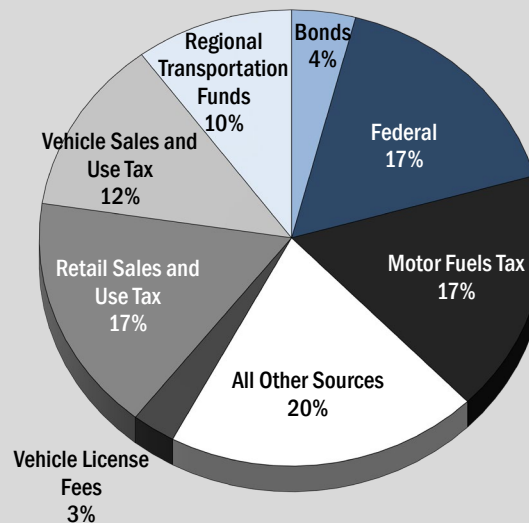
The revenue for Virginia's transportation budget is collected from various sources, which have changed based on the recent legislation. Federal sources, the retail sales and use tax, and the tax on motor fuels each are expected to comprise 17% of Virginia's transportation revenues in FY 2022, while the vehicle sales and use tax comprises another 12%. The regional transportation taxes that are now levied throughout the state comprise another 10% of Virginia's transportation revenue.

The amount of funding needed to operate and maintain Virginia's aging roadways and bridges continues to increase. Between FY 2022-2027, \$14.8 billion will be allocated statewide to maintenance and operations. This is up 15% from the \$12.9 billion allocated between FY 2016-2021.

The amount of funding available for new roadway construction is expected to increase in the short term before decreasing in future years. Including the regional roadway funds, \$19.2 billion is projected to be available for new roadway construction in Virginia between FY 2022-2027. This is up 18% from the \$16.2 billion in funding that was allocated to construction in FY 2016-2021.

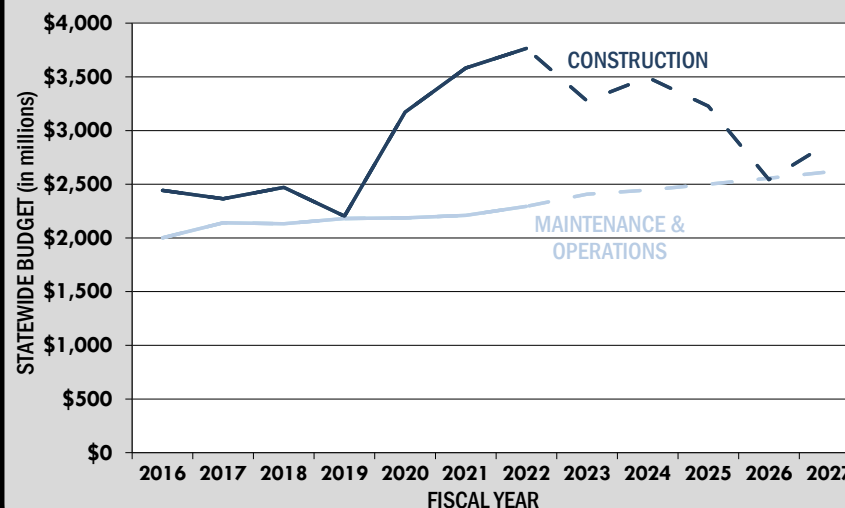
Historically, the amount of funding allocated to roadways in Virginia has lagged behind other states, but that has changed in recent years. Using the most recent data available from the U.S. Census Bureau (2019), Virginia ranked 21st highest among the 50 states and the District of Columbia in highway expenditures per capita. Over the previous decade, however, Virginia ranked as low as 35th highest, which occurred in 2011. This change is largely due to implementing HB 2313 in 2013.

TRANSPORTATION REVENUES IN VIRGINIA BY SOURCE, FISCAL YEAR 2022



Data source: VDOT.

HISTORICAL AND PROJECTED STATEWIDE FUNDING MAINTENANCE VS. CONSTRUCTION, FY 2016-2027



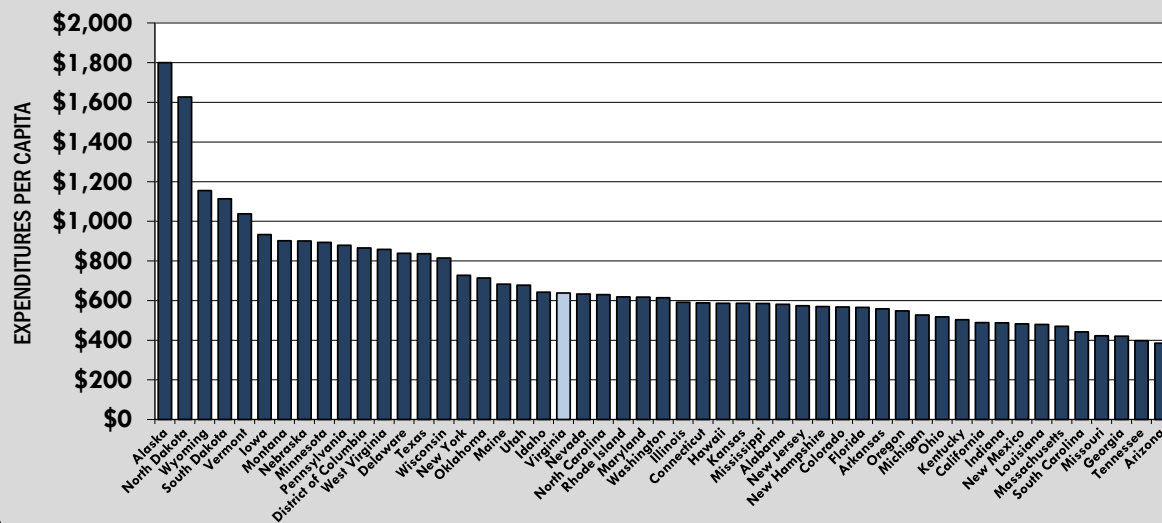
Data source: VDOT. Projected budgets as of June 2021. Construction budgets include regional revenues, and maintenance includes Special Structures.



The level of gasoline taxes and fees collected in Virginia had been lower than in most other states, but that is no longer the case due to recent tax increases. The gasoline tax in Virginia as of July 2021 is 34.4 cents per gallon for unleaded fuel and 35.3 cents for each gallon of diesel fuel. The unleaded fuel rate is comprised of a 26.2 cent per gallon excise tax, 0.6 cent per gallon tax for the petroleum underground storage tank fund, and an additional 7.6 cent per gallon regional tax on gasoline charged in areas throughout the state. As described on the next page, fuel taxes will increase by the rate of inflation starting in 2022 and each year afterward.

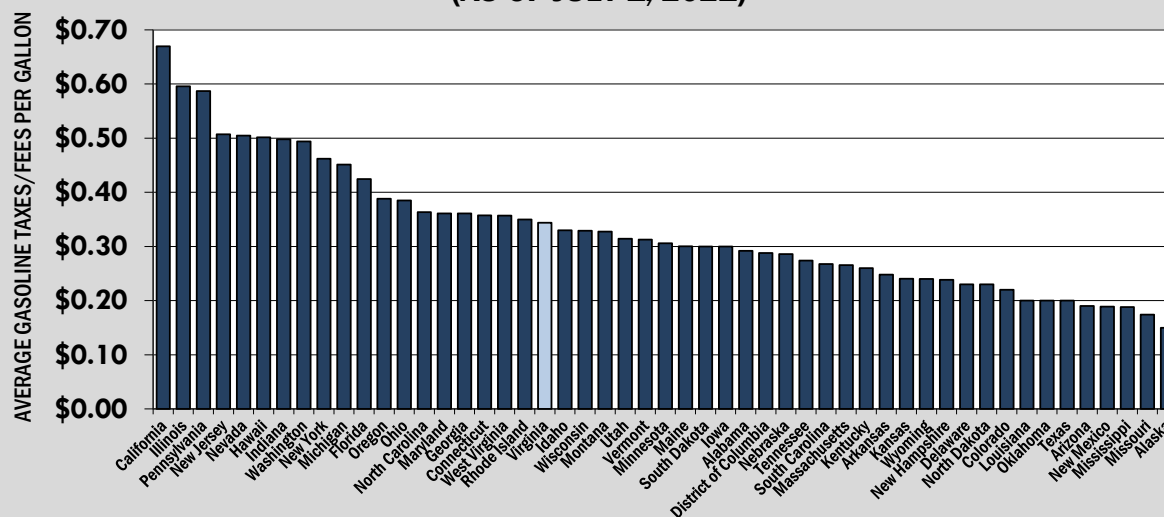
Virginia had the 20th highest statewide average taxes and fees collected on each gallon of unleaded gasoline among the 50 states and D.C. as of July 2021. This is up from 29th highest in July 2020 and 41st highest in July 2019.

**HIGHWAY EXPENDITURES PER CAPITA BY STATE, 2019
(INCLUDES STATE AND LOCAL GOVERNMENT EXPENDITURES)**



Data source: Census Bureau. Data represents fiscal years for each state.

**STATEWIDE AVERAGE GASOLINE TAXES AND FEES
(AS OF JULY 1, 2021)**



Data source: American Petroleum Institute. Statewide average gasoline taxes include base tax rates as well as any additional statewide and local taxes and fees.



NEW DEVELOPMENTS

House Bill 1414 - Signed into law in 2020, HB 1414 increased the revenue dedicated to transportation in Virginia. The legislation made the following changes to transportation funding:

- On July 1, 2020, the statewide gas excise tax increased by 5 cents per gallon, from 16.2 cents per gallon to 21.2 cents per gallon. This was followed on July 1, 2021, by another 5 cent per gallon increase, up to 26.2 cents per gallon.
- In 2022 and the following years, statewide fuel taxes will be adjusted annually based on an index related to inflation levels.
- The regional gas tax that was in place in Hampton Roads, Northern Virginia, and localities along the I-81 corridor was expanded to the remainder of the state. This regional gas tax is 7.6 cents per gallon and will be indexed in future years to inflation levels.
- Imposes a fee on fuel efficient, alternative fuel, and electric vehicles. The fee is based on 85% of the difference between the fuel tax paid on the average vehicle and the fuel tax paid on the fuel-efficient vehicle. The legislation repeals the vehicle license tax that had been in place for electric vehicles.
- Creates the option for owners of fuel efficient, alternative fuel, and electric vehicles to pay a mileage-based user fee in place of the new fee described above.
- Reduces most passenger vehicle registration fees by \$10.
- Creates the Special Structures Fund for the maintenance, rehabilitation, and replacement of large, complex bridges and tunnels throughout the state.
- The bill also establishes a new Virginia Passenger Rail Authority and creates a number of new transportation safety programs.

Infrastructure Investment and Jobs Act – On November 15, 2021, President Biden signed into law the Infrastructure Investment and Jobs Act (IIJA). In addition to providing additional funding for infrastructure in a number of areas, the IIJA serves as the federal surface transportation reauthorization legislation for five years (Federal Fiscal Years 2022-2026). Highlights of the IIJA include:

- Provides \$973 billion over five years for investments in transportation, water, energy, environmental remediation, public lands, broadband, and resilience. Of this total, \$550 billion is new investments.
- \$284 billion is provided for new investments for transportation:
 - Roads and Bridges: \$110 billion
 - Transit: \$39 billion
 - Rail: \$66 billion
 - Safety: \$11 billion
 - Airports: \$25 billion
 - Ports and Waterways: \$17 billion
 - Electric Vehicle Chargers: \$7.5 billion
 - Electric Buses: \$7.5 billion
 - Reconnecting Communities: \$1 billion
- Provides an additional \$1.6 billion in formula-based surface transportation funding for Virginia over the next five years, and an additional \$640 million for Virginia transit agencies.
- Includes numerous discretionary grant opportunities, including new opportunities related to priority projects, bridge replacements, passenger rail expansion, reconnecting communities, and low/no emission buses.



Fuel prices have increased both in Hampton Roads and throughout the country in 2021. However, in spite of increasing statewide and additional regional fuel taxes, fuel prices in Hampton Roads remain lower than in most comparable areas.

The average cost of a gallon of regular unleaded fuel in Hampton Roads was \$2.95 on October 1, 2021. This is 92 cents per gallon higher than one year earlier but is 33 cents per gallon lower than on October 1, 2011. Average fuel prices in Hampton Roads topped \$3.50 per gallon every summer between 2012 and 2014, but bottomed out just below \$1.50 per gallon in February 2016 and \$1.68 per gallon in May 2020.



Fuel prices in Hampton Roads are now lower than in most other metropolitan areas in Virginia, largely due to regional taxes being expanded to all other areas throughout the state in 2020. Fuel prices were on average 3 cents per gallon higher in Richmond, 4 cents per

NOTABLE FUEL PRICES NUMBERS

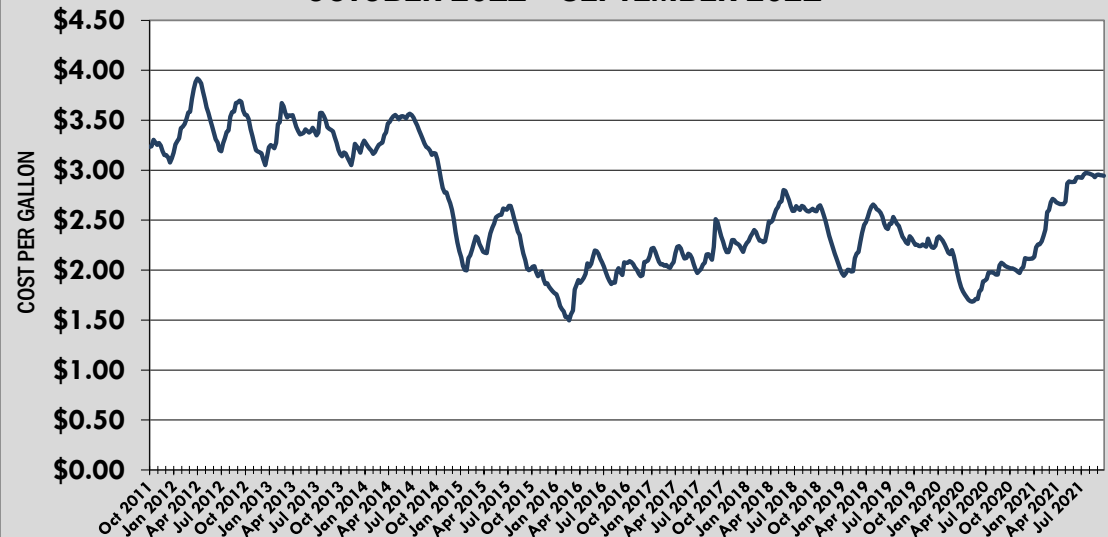
▲
45%

The increase in the cost of a gallon of unleaded fuel in Hampton Roads between October 1, 2020, and October 1, 2021.

28th

Hampton Roads rank, among the 39 large metropolitan areas with populations between one and four million people, in terms of the cost per gallon of regular unleaded fuel as of October 1st, 2021.

AVERAGE FUEL PRICES IN HAMPTON ROADS OCTOBER 2011 - SEPTEMBER 2021



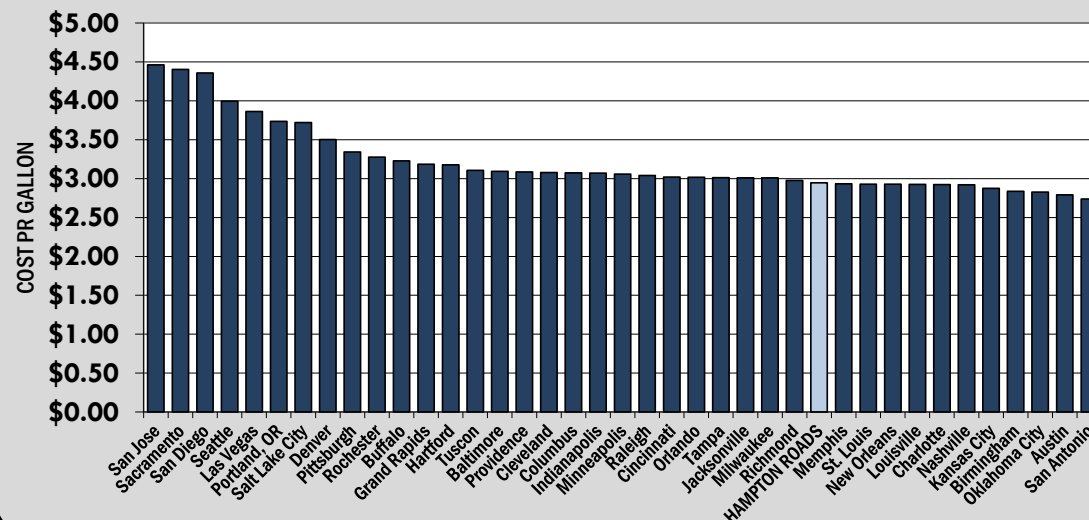
Data source: AAA Fuel Gauge Report. Data reflects one gallon of regular unleaded fuel.



gallon higher in Roanoke, 6 cents per gallon higher in Charlottesville, and 16 cents per gallon higher in Northern Virginia than in Hampton Roads as of October 1st, 2021. Statewide, the average cost of fuel was \$3.01 per gallon on October 1st, 2021, 6 cents higher than the rate in Hampton Roads.

Fuel prices in Hampton Roads are also below national averages. Among the 39 metropolitan areas with a population between one and four million people, Hampton Roads had the 28th highest average fuel price as of October 1st, 2021. Fuel prices in Hampton Roads were 27 cents per gallon lower than the large metropolitan area average.

**AVERAGE FUEL PRICES IN LARGE METROPOLITAN AREAS
(AS OF OCTOBER 1st, 2021)**



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

BEHIND THE NUMBERS

Recent legislation has both increased the revenue provided for transportation and changed the way gasoline is taxed in Virginia. Among other changes, HB 2313 imposed an additional 2.1% regional tax on the gasoline wholesale price in Hampton Roads. This additional tax on fuel, which has raised \$360 million in Hampton Roads as of June 2021, has been converted by recent legislation to a 7.6 cent per gallon fee and has been expanded to each area of the state. In addition, fuel taxes were increased statewide in both 2020 and 2021.

In spite of the additional regional and statewide fuel taxes, fuel prices in Hampton Roads have actually decreased relative to comparable metropolitan areas throughout the country. Prior to HB 2313 in 2013, fuel prices in Hampton Roads were 10 cents per gallon lower than the comparable large metropolitan area average. With the additional and increased regional and statewide fuel taxes in place in Hampton Roads, fuel prices in the region were 27 cents per gallon lower than the comparable large area average as of October 2021.





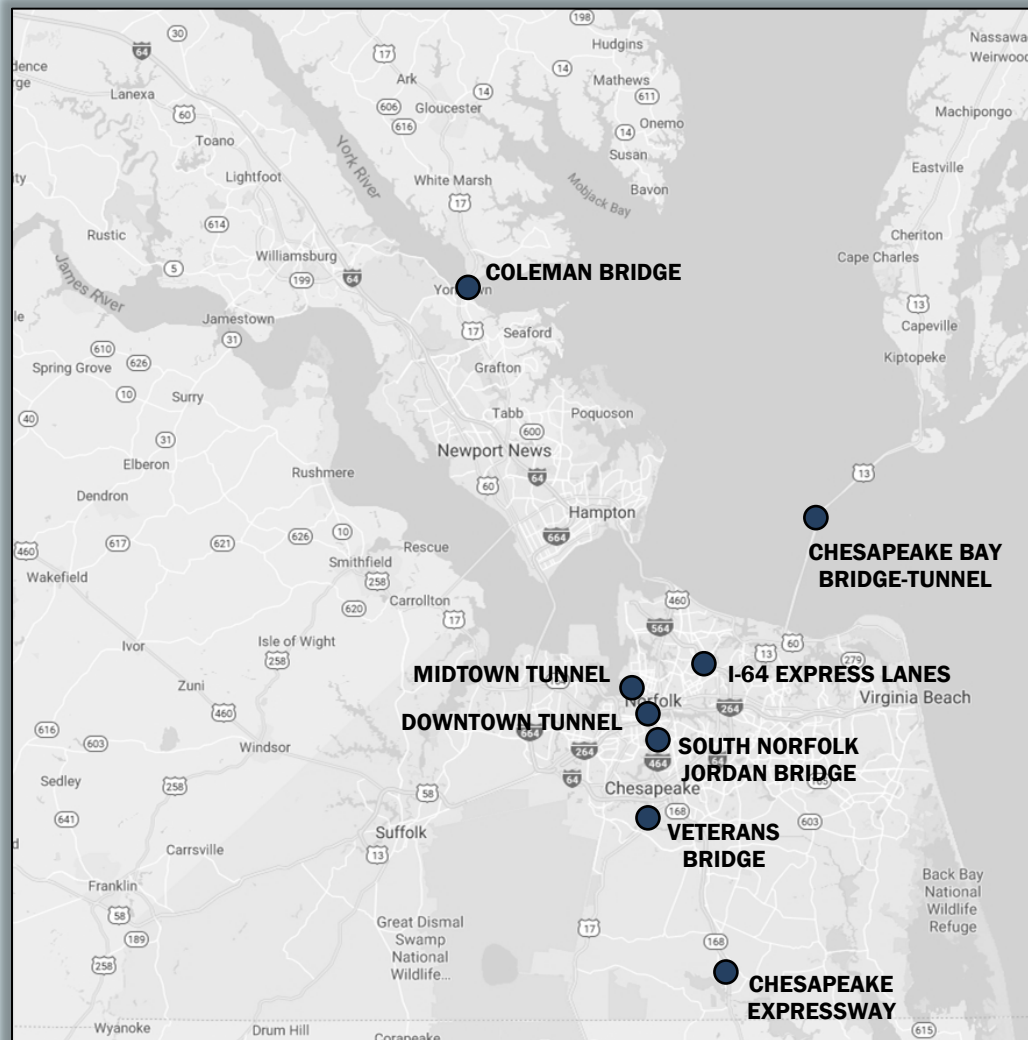
In spite of new funding mechanisms, tolling is an important funding source for many facilities throughout Hampton Roads, and the amount of tolls collected annually in the region has tripled over the last decade.

Although the amount of funding dedicated to transportation improvements in Hampton Roads has increased in recent years with the creation of the Hampton Roads Transportation Fund and additional state funding, tolls are also used as a funding mechanism on some regional roadway facilities.

Eight facilities throughout Hampton Roads currently charge tolls, as shown in the map to the right. Tolls were implemented at the Midtown and Downtown Tunnels in 2014 as part of the Midtown Tunnel Widening/MLK Freeway Extension Project and at the Veterans Bridge in Chesapeake in 2017 when the Steel Bridge was replaced with a widened, fixed span.

In 2018 the reversible HOV lanes on I-64 in the City of Norfolk were converted to Express Lanes. Whereas previously only those traveling with two or more people could legally use the reversible lanes during peak travel periods, the conversion to Express Lanes allows those traveling alone to use the lanes if they pay a toll via E-Z Pass. The tolls for those traveling alone vary based on the amount of congestion on the facility and can change every 10 minutes.

ROADWAY FACILITIES IN HAMPTON ROADS WITH TOLLS (AS OF JULY 2021)







In 2020 nearly \$180 million was collected in tolls at these eight facilities. By comparison, only about \$59 million was collected at toll facilities in Hampton Roads a decade earlier, most of which was collected at the Chesapeake Bay Bridge-Tunnel.



CURRENT TOLL RATES (AS OF JULY 2021)

FACILITY	PASSENGER VEHICLES				HEAVY VEHICLES			
			NON E-Z PASS				NON E-Z PASS	
	PEAK*	NON-PEAK	PEAK*	NON-PEAK	PEAK*	NON-PEAK	PEAK*	NON-PEAK
Midtown Tunnel	\$2.33	\$1.85	\$6.02	\$5.54	\$9.29	\$5.54	\$12.98	\$9.23
Downtown Tunnel	\$2.33	\$1.85	\$6.02	\$5.54	\$9.29	\$5.54	\$12.98	\$9.23
Chesapeake Bay Bridge-Tunnel	\$18.00	\$14.00	\$18.00	\$14.00	\$21.00 - \$52.00		\$21.00 - \$52.00	
Chesapeake Expressway	\$9.00	\$4.00	\$9.00	\$4.00	\$10.00	\$5.00	\$10.00	\$5.00
Coleman Bridge	\$0.85		\$2.00		\$3.00 - \$4.00		\$3.00 - \$4.00	
South Norfolk Jordan Bridge	\$2.65		\$5.75		\$9.75	\$5.75	\$13.50	\$9.50
Veterans Bridge	\$1.28		\$3.28		\$3.20		\$5.20	
I-64 Express Lanes	Variable	-	Variable	-	Not permitted			

Data sources: VDOT, ERC, City of Chesapeake, Chesapeake Bay Bridge-Tunnel, South Norfolk Jordan Bridge.

Peak Times:

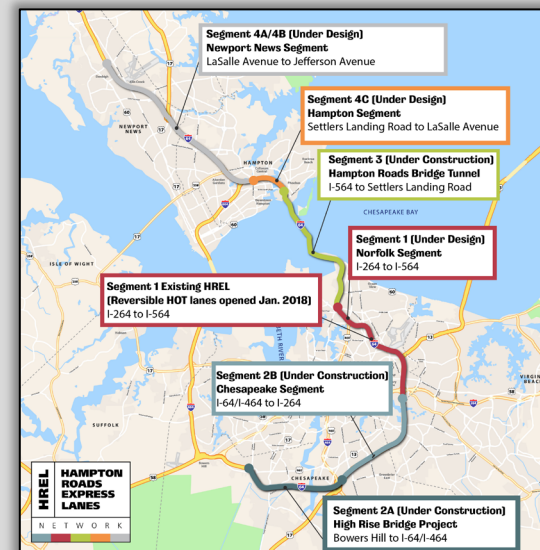
- Downtown and Midtown Tunnel: Monday – Friday from 5:30 am to 9:00 am and 2:30 pm – 7:00 pm.
- Chesapeake Bay Bridge-Tunnel: Friday – Sunday between May 15 and September 15.
- Chesapeake Expressway: Saturday – Sunday between Memorial Day and Labor Day.

EXPRESS LANES NETWORK

In 2019, the HRTPO Board adopted a resolution endorsing the Hampton Roads Express Lanes Network as a continuous HOT-2 network (which means those traveling with two or more people can use the lanes for free and those traveling alone can use the lanes if they pay a toll). The resolution indicates that the Network should begin on I-64 at Jefferson Avenue, proceed along I-64 through Bowers Hill and continue along I-664 to I-64 at the Hampton Coliseum. Funding, operation, and use of toll revenues will be managed by HRTAC.

Segment 1 in the Reversible Lanes of I-64 became operational as Express Lanes in 2018, and Segment 2 is expected to become operational in 2022. Segment 3 will be constructed as part of the HRBT Expansion Project, which is expected to be completed along with Segment 4 and part time shoulders in Segment 1 in late 2025.

Information on the Express Lanes Network is available at <https://www.64expresslanes.org>.





Not only have a number of critical projects been completed throughout the region in recent years, but with additional funding being provided through new federal, statewide and regional sources, several major projects are either underway or will soon begin construction.

The list of recently completed roadway projects in Hampton Roads varies greatly in size and type, including constructing new roadways, widening existing roadways, constructing new tunnels, replacing bridges, and smaller projects such as adding turn lanes and traffic signals.

A total of 47 major roadway projects have been completed throughout Hampton Roads since the beginning of 2012. These projects include constructing a new tube at the Midtown Tunnel; replacing the Gilmerton, Lesner, Steel (Veterans), and South Norfolk Jordan Bridges; constructing a new railroad overpass into Norfolk International Terminals; improving the I-64/I-264 Interchange, and opening new facilities such as the Intermodal Connector, MLK Freeway Extension, City Center Boulevard, Nimmo Parkway, and the completion of Lynnhaven Parkway. Many sections of roadway were widened, including I-64 on the Peninsula, George Washington Highway, Military Highway (including a new continuous-flow intersection at Northampton Boulevard), Princess Anne Road, Saunders Road, and Turnpike Road.

MAJOR ROADWAY PROJECTS COMPLETED IN HAMPTON ROADS, JANUARY 2012 – DECEMBER 2021

FACILITY	LOCATION	IMPROVEMENT TYPE	COMPLETION
			DATE
Atkinson Boulevard	Warwick Blvd to Jefferson Ave	New 4 lane facility	2021
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
Dominion Boulevard	GW Hwy to Cedar Rd	Widen to 4 lanes	2017
Dominion Boulevard	Cedar Rd to Great Bridge Blvd	Widen to 4 lanes	2017
Fort Eustis Boulevard	Jefferson Ave to Route 17	Widen to 4 lanes	2012
George Washington Memorial Highway	Hampton Hwy to Wolf Trap Rd	Widen to 6 lanes	2016
George Washington Memorial Highway	Mill Creek Pkwy to Willowood Dr	Widen to 4 lanes	2012
Hampton Boulevard	Railroad into Norfolk International Terminals	New overpass	2015
Holland Road	Nimmo Pkwy to Dam Neck Rd	Widen to 4 lanes	2018
I-64	Northampton Boulevard	Interchange Improvements	2018
I-64	Norview Ave	Ramp improvement	2013
I-64	Route 199 (Exit 234) to Route 199 (Exit 242)	Widen to 6 lanes	2021
I-64	Route 199 (Exit 242) to Yorktown Rd	Widen to 6 lanes	2019
I-64	Yorktown Road to Bland Boulevard	Widen to 6 lanes	2017
I-64 Express Lanes	Reversible HOV lanes	Conversion to Express Lanes	2018
I-64/I-264 Interchange	Phase I	Interchange Improvements	2019
I-64/I-264 Interchange	Phase II	Interchange Improvements	2021
I-264	London Bridge Rd	New Interchange	2012
I-664 Northbound	Route 13/58/460 to Dock Landing Road	Widening	2019
Indian River Road	Kempsville Rd	Intersection Redesign	2020
Intermodal Connector	I-564 to Naval Station Norfolk/NIT	New 4 lane facility	2018/2021
Ironbound Road	Strawberry Plains Rd to Longhill Connector Rd	Widen to 4 lanes	2013
Longhill Road	Olde Towne Rd to Route 199	Widen to 4 lanes	2021
Lynnhaven Parkway	Centerville Tpke to Indian River Rd	New 4 lane facility	2017
Midtown Tunnel	Between Portsmouth and Norfolk	Widen to 4 lanes	2017
Military Highway	Gilmerton Bridge	Replace Bridge	2013
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
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
Portsmouth Boulevard	Suffolk CL to Jolliff Rd	Widen to 4 lanes	2018
Princess Anne Road	Dam Neck Rd to Nimmo Pkwy	Widen to 4 lanes	2014
Princess Anne Road	General Booth Blvd to Sandbridge Rd	Widen to 4 lanes	2021
Princess Anne Road	Witchduck Rd	Intersection Relocation	2012
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	2018
Skiffes Creek Connector	Route 60 to Route 143	New 2 lane facility	2021
South Norfolk Jordan Bridge	Between Portsmouth and Chesapeake	Replace Bridge	2012
Turnpike Road	Frederick Blvd to Constitution Ave	Widen to 4 lanes	2018
Wesleyan Drive	Northampton Blvd to Baker Rd	Widen to 4 lanes	2013
Witchduck Road	I-264 to Virginia Beach Blvd	Widen to 6 lanes	2021
Witchduck Road	Princess Anne Rd to I-264	Widen to 6 lanes	2012



A number of major roadway projects are currently underway throughout the region. These projects include expanding the Hampton Roads Bridge-Tunnel, widening I-64/High Rise Bridge in Chesapeake, extending the Hampton Roads Express Lanes Network, and adding a parallel tunnel at the Chesapeake Bay Bridge-Tunnel. Many other roadway widening and improvement projects are also underway including Coliseum Drive Extension, First Colonial Road, Laskin Road, Longhill Road, Princess Anne Road, and Route 58/Holland Road.



HOLLAND ROAD (ROUTE 58) WIDENING

Image Source: Suffolk

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 roadway projects that are expected to begin construction over the next

UPCOMING & ONGOING MAJOR ROADWAY PROJECTS IN HAMPTON ROADS

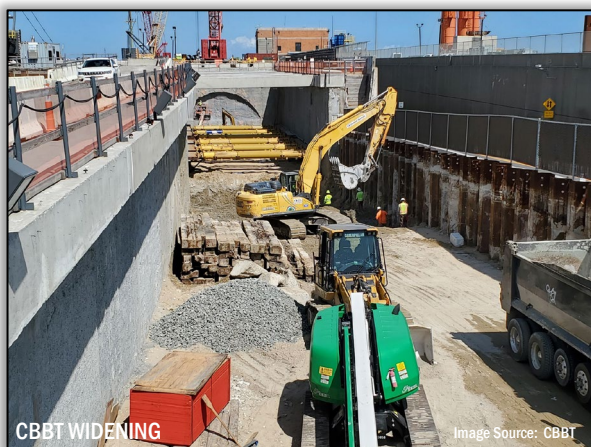
FACILITY	LOCATION	IMPROVEMENT TYPE	PROJECTED COMPLETION
			DATE
Centerville Turnpike	Kempsville Rd to Indian River Rd	Widen to 4 lanes	2027
Centerville Turnpike	Lynnhaven Pkwy to Kempsville Rd	Widen to 4 lanes	2027
Chesapeake Bay Bridge-Tunnel	Thimble Shoal Tunnel	Widen to 4 lanes	2024
Cleveland Street	Witchduck Rd to Independence Blvd	Widen to 4 lanes	2028
Coliseum Drive Extension	Hampton Roads Center Pkwy to Butler Farm Rd	New 4 lane facility	2022
Croaker Road	Route 60 to Rochambeau Dr	Widen to 4 lanes	2025
Dam Neck Road	Salem Rd to Virginia Beach Amphitheater	Widen to 4 lanes	2027
Elbow Road	Indian River Road to Salem Road	Relocated 4 lane facility	2028
First Colonial Road	Laskin Rd to I-264	Widen to 6 lanes	2023
George Washington Highway	Deep Creek Bridge	Widen to 4 lanes	2025
George Washington Highway	Yadkin Rd to Canal Rd	Widen to 4 Lanes	2030
George Washington Memorial Highway	Farmwood Rd to Hook Rd	Widen to 6 lanes	2028
George Washington Memorial Highway	Wolf Trap Rd to Old York-Hampton Hwy	Widen to 6 lanes	2029
Godwin Blvd	Suffolk Bypass to Kings Fork Rd	Widen to 6 Lanes	2029
High Street	Churchland Bridge	Replace/Rehabilitate Bridge	2024
Holland Rd	Independence Blvd to South Plaza Trail	Widen to 6 Lanes	2031
Holland Rd	South Plaza Trail to Rosemont Rd	Improve to Superstreet	2030
I-64/Hampton Roads Bridge-Tunnel	Settlers Landing Rd to I-564	Widen to 6/8 lanes	2025
I-64/High Rise Bridge	I-264/I-664 and I-464/Chesapeake Expressway	Widen to 6 lanes	2022
I-64 Express Lanes	I-264 to I-464	Convert HOV to HOT Lanes	2022
I-64 Express Lanes	I-564 to I-264	New shoulder lanes	2025
I-64 Express Lanes	Jefferson Ave to I-664	Convert HOV to HOT Lanes	2025
Independence Boulevard	Denbigh Blvd to Fort Eustis Blvd	New 2 lane facility	2024
Indian River Road	Lynnhaven Pkwy to Elbow Rd	Relocated 4 lane facility	2027
Laskin Road	Fremac Dr to Oriole Dr	Widen to 6 lanes	2023
Laskin Road	Phillip Ave to Republic Rd	Widen to 6 lanes	2032
Laskin Road	Republic Rd to Fremac Dr	Widen to 8 lanes	2023
Little Back River Road	Clemwood Pkwy to Harris Creek Rd	Widen to 3 lanes	2030
Little Back River Road	King St to Clemwood Pkwy	Widen to 3 lanes	2026
Nansemond Parkway	Commonwealth Railway	New underpass	2025
Nike Park Road Extension	Reynolds Dr to Route 17	New 2 lane facility	2025
Nimmo Parkway	Albuquerque Dr to Sandbridge Rd	New 2 Lane Facility	2031
Oyster Point Road	Operations Dr to Jefferson Ave	Widen to 6 Lanes	2030
Rosemont Road	Dam Neck Rd to Lynnhaven Pkwy	Widen to 4 Lanes	2028
Route 58	West of Manning Bridge Rd to Suffolk Bypass	Widen to 6 lanes	2025
Victory Boulevard	Route 17 to Hampton Hwy	Widen to 6 lanes	2026
Virginia Beach Boulevard	George St to Newtown Rd	Widen to 6 lanes	2029
Wythe Creek Road	Commander Shepard Blvd to Carys Chapel Rd	Widen to 3 lanes	2025

Data sources: VDOT, HRTPO, various localities. Projected completion date as of July 2021.



six years include replacement and widening of the Deep Creek Bridge, constructing the Nike Park Road Extension, and widening sections of Centerville Turnpike, George Washington Memorial Highway, Indian River Road, Victory Boulevard, 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.virginiaidot.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 – 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 FY 2017 SYIP, transportation projects are scored using a prioritization process – 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 when selecting projects for inclusion in the Six-Year Improvement Program.



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

Hampton Roads Bridge-Tunnel (HRBT) – After decades of looking at ways to increase roadway capacity across the Hampton Roads Harbor, ground breaking for the widening of the Hampton Roads Bridge-Tunnel took place on October 29, 2020. The project will include the addition of twin 2-lane bored tunnels to the west of the existing tunnels and the widening of the adjacent 4-lane segments of the I-64 corridor. The project is expected to be complete by November 2025.

More information on the project is available at <http://www.hrbtexpansion.org>.



Hampton Roads continues to be a leader in managing the regional transportation system through transportation operations, which is a cost-effective method of maximizing the safety and capacity of the existing network.

The safety, security, and mobility of roadway users are enhanced by the active management of the regional transportation system. Transportation operations is a cost-effective strategy for improving the transportation network as funding for new roadway construction becomes more competitive and constructing major roadway projects becomes more challenging. Transportation operations involves trained and coordinated personnel managing the system with Intelligent Transportation Systems (ITS) technologies. Examples of transportation operations include incident management (such as VDOT's Safety Service Patrol), traffic signal coordination, E-Z Pass electronic toll collection, changeable message signs, and traveler information.

In Hampton Roads, the freeway system is managed by the VDOT Eastern Region Transportation Operations Center (TOC). The Eastern Region 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 changeable message signs, highway advisory radio, and the 511 Virginia phone, smartphone app, social media, and other online services.

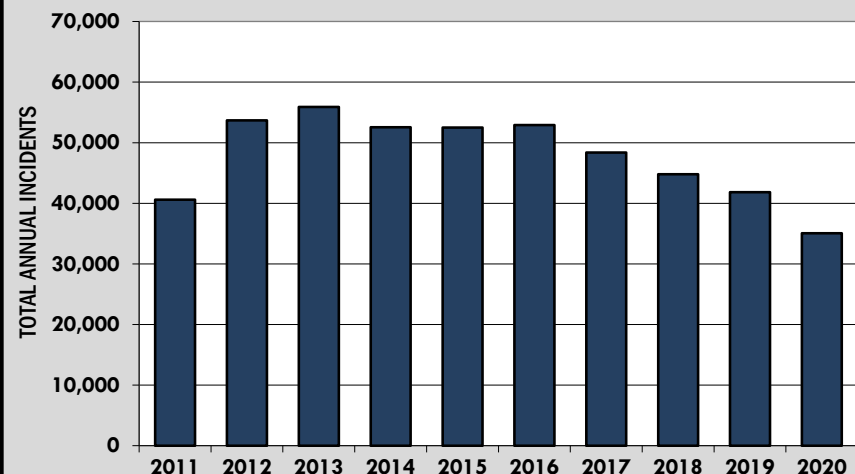
VDOT EASTERN REGION TOC

The VDOT Eastern Region (Hampton Roads) Transportation Operations Center 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**, 5 reversible roadway gate entrances, and hundreds of vehicle detection devices, all linked together by fiber optic cable.
- Responded to over **35,000 incidents** throughout the region in 2020.

TOTAL INCIDENTS RESPONDED TO BY THE HAMPTON ROADS TOC SAFETY SERVICE PATROL, 2011-2020



Data source: VDOT.



In addition to VDOT's Hampton Roads Transportation Operations Center, most cities in the region maintain their own traffic management centers. These centers operate local traffic signal systems, changeable message signs, and cameras. Data and video can also be shared from these centers.

Another service provided by VDOT to improve mobility is 511 Virginia. 511 Virginia provides real-time traveler information via phone, email, Twitter, text message, smartphone app, and the <http://www.511virginia.org> website. 511 Virginia includes information on road conditions, traffic speeds, work zones, camera images, changeable sign messages, weather closures, truck parking, and incidents. Information is also provided on tourist destinations, rest areas, airports, ridesharing, and transit throughout Virginia. Customizable route information is also available.

Traveler information is also provided on many platforms by private sector companies. Examples

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 cities throughout the region maintain ITS infrastructure as well. The following are examples of ITS technologies in use throughout Hampton Roads:



Transportation Operations Centers (TOCs)

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.

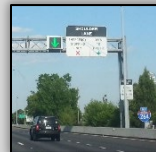
Emergency Vehicle Signal Preemption

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.



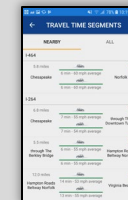
CCTV Cameras

Provides roadway images to transportation operations centers and the public.



Electronic Toll Collection

Allows travelers to pass quickly through toll gantries, avoiding backups due to paying tolls.



511 Virginia

Provides up-to-date traveler information via smart phones, 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

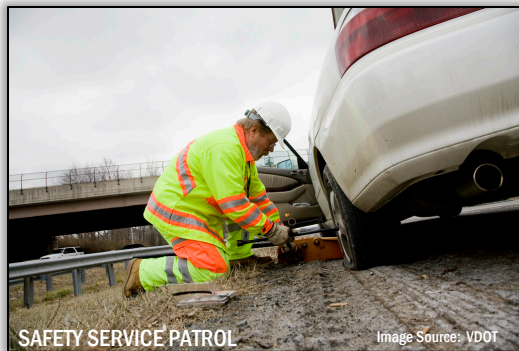
Provides up-to-date traveler information through radio broadcasts on 1680 AM.



Overheight Detection

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

include Google and Bing Maps, INRIX, Waze (which is also available through the 511 Virginia website), and local television and radio stations.



Regional transportation operations planning and coordination is conducted through multiple committees including the Hampton Roads Transportation Operations (HRTTO) Subcommittee. The HRTTO Subcommittee facilitates peer-to-peer information sharing and advises the HRTPO Transportation Technical Advisory Committee on transportation operations issues. HRTTO 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 regional operations efforts is available at <http://www.hrtpo.org/page/operations-and-its>.

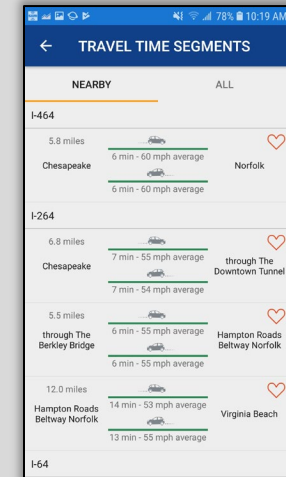
NEW DEVELOPMENTS

511 Virginia – In late 2017 VDOT released a major update to its 511 Virginia traveler information smartphone app. The app includes a list of travel times, maps, camera images, Reach the Beach information, weather information, truck parking availability, and the 511 Virginia Twitter feed. The update also includes turn-by-turn navigation via Waze as well as push notifications of traffic alerts.

VDOT SmarterRoads Data Portal – VDOT launched “[SmarterRoads](#)”, a cloud-based data portal that provides free, widespread access to a wealth of VDOT roadway and transportation information. Current datasets that are available include traffic volumes, crashes, sensors, incidents, sign messages and locations, tolling and trip pricing, weather events, and signal phasing and timing data.

Through the creation of the SmarterRoads portal, VDOT is assisting Connected and Automated Vehicle technology development by sharing operations data with third-party sector business, application developers and university partners.

Crash Reconstruction – In May 2021 VDOT purchased 3 Trimble Global Navigation Satellite System (GNSS) units to assist with fatal motor vehicle crash investigations in Hampton Roads. These units, which are included on VDOT Incident Management Coordinator trucks, greatly improve incident clearance times by reducing the setup time and the number of people required to operate the crash reconstruction equipment. In 2021, the average on-scene time while using the GNSS equipment was 1.6 hours per incident less than using the previous equipment, resulting in improved safety at the crash scene and reduced congestion.





Through a number of national, statewide, and regional efforts, the air quality of Hampton Roads has improved over the last decade, and is better than the air in all other comparable 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

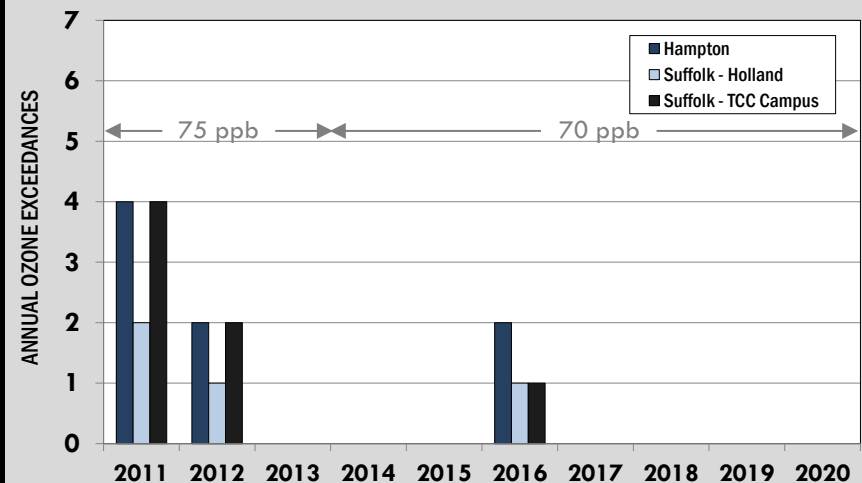
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The number of eight hour ozone exceedances at Hampton Roads air quality monitoring stations in 2020.

1st

Hampton Roads rank, among the 39 large metropolitan areas with populations between one and four million people, in terms of the best fourth-highest daily maximum 8-hour ozone averages in 2020.

EIGHT HOUR OZONE EXCEEDANCES AT REGIONAL AIR QUALITY MONITORING STATIONS, 2011-2020



Data source: Virginia DEQ. The EPA has lowered the ozone exceedance standard level from 75 ppb to 70 ppb starting with the 2014 data.

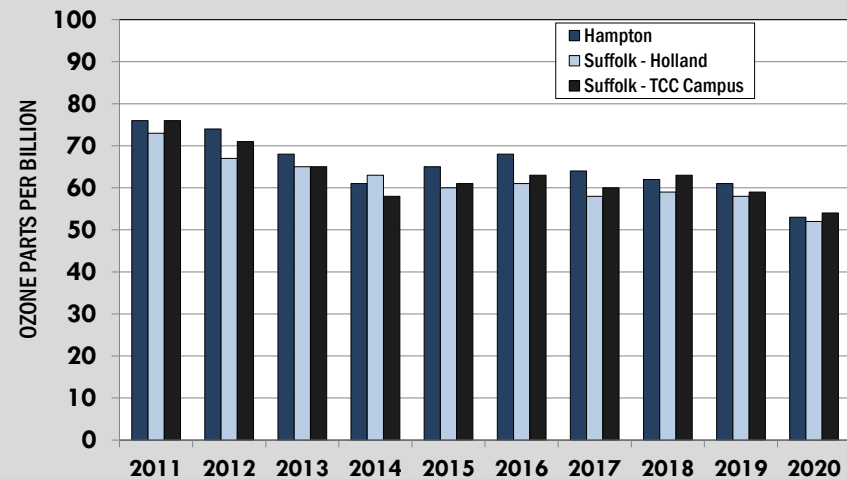


Prior to 2008, regions were classified as non-attainment if the fourth-highest eight-hour ozone averages were greater than 84 parts per billion (ppb) at any of the regional monitoring stations over a three-year period. This standard was lowered to 75 ppb in 2008. In 2015, EPA revised ozone standard levels down to 70 ppb, based on a review of scientific research on ozone's effects on public health. The lower standards took effect in 2017, using the previous three-year (2014-2016) ozone data.

In Hampton Roads, the 2018-2020 three-year ozone averages at the three monitoring stations were between 56 and 58 ppb, all below the 70 ppb threshold. Based on these readings, Hampton Roads is currently designated as an ozone attainment/maintenance area.

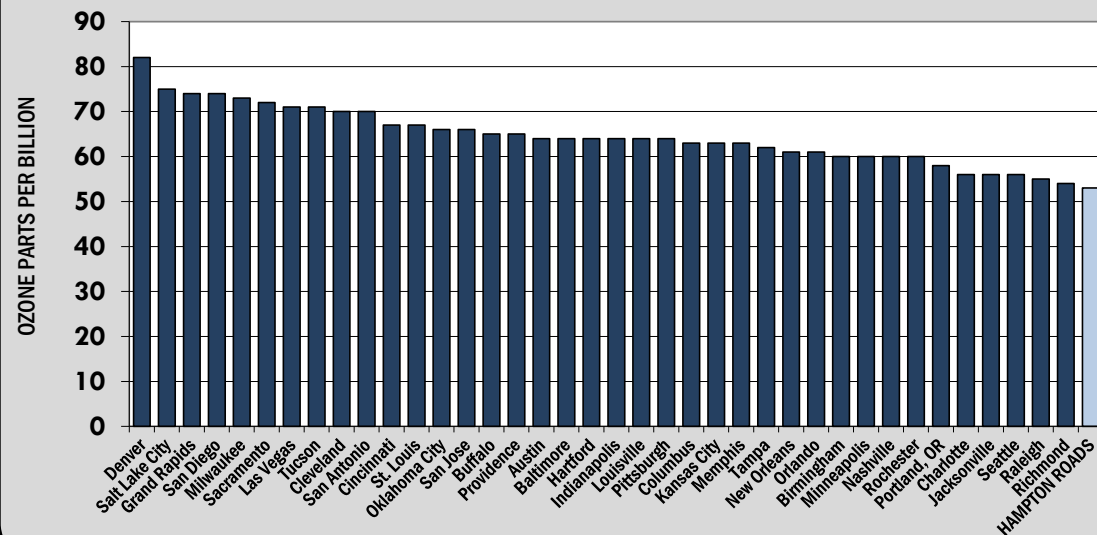
The air quality in Hampton Roads is better than the air quality in all other comparable metropolitan areas based on the eight-hour ozone standard. The fourth-highest eight-hour ozone level was 53 ppb in Hampton Roads in 2020 according to EPA data, which ranked the region best among the 39 large metropolitan areas with populations between one and four million people.

FOURTH-HIGHEST DAILY MAXIMUM 8-HOUR OZONE AVERAGES IN HAMPTON ROADS, 2011-2020



Data source: Virginia DEQ.

FOURTH-HIGHEST DAILY MAXIMUM 8-HOUR OZONE AVERAGES IN LARGE METROPOLITAN AREAS, 2020



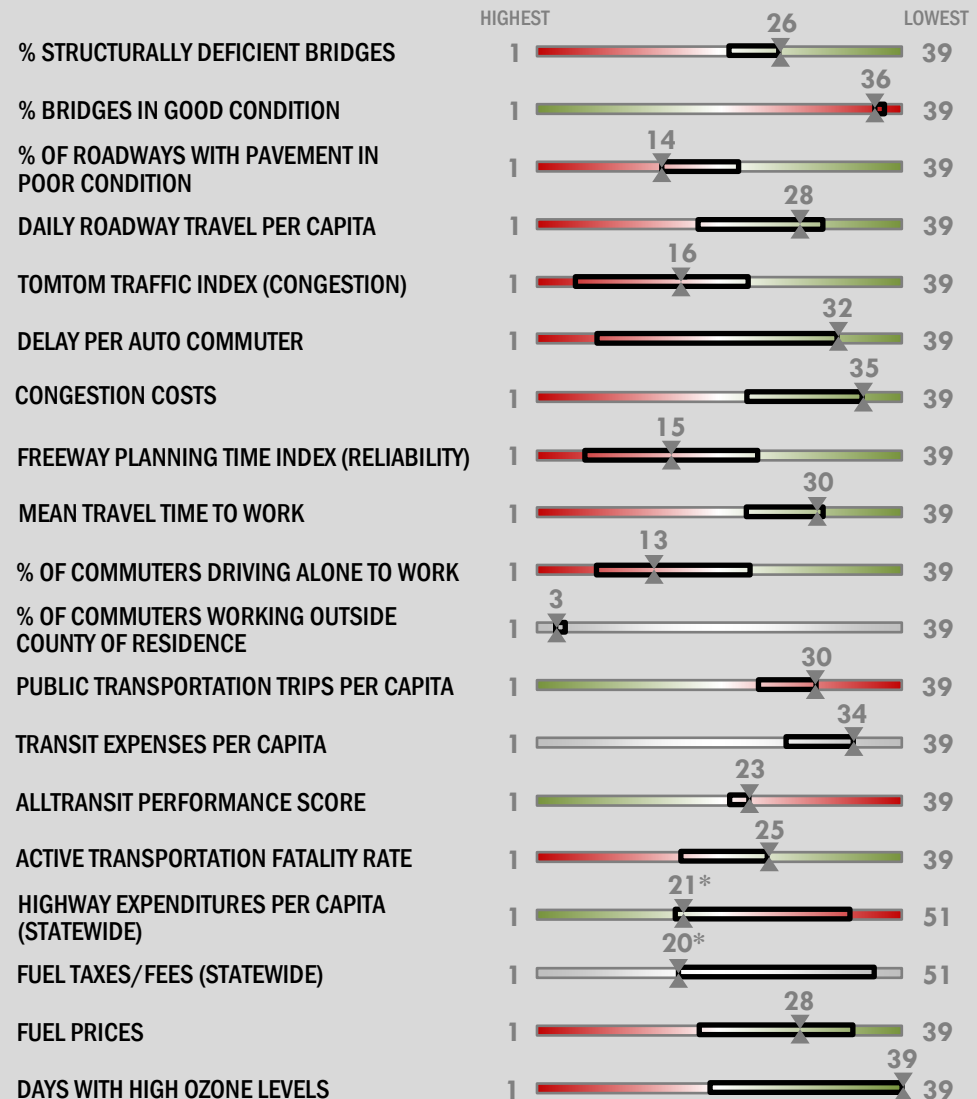
Data source: US Environmental Protection Agency.

In many sections of this report, Hampton Roads is compared to other large metropolitan areas throughout the United States with populations between one and four million people. Many of these 38 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. In addition, the range in Hampton Roads rank over the last decade is indicated by black boxes for each measure.

Measures for which Hampton Roads ranks in the “green” indicate the region fares better than most of the comparable large metropolitan areas, whereas measures for which Hampton Roads is in the “red” indicate the region fares worse than the comparable areas.

HAMPTON ROADS CURRENT RANK AMONG LARGE METROPOLITAN AREAS



*Statewide Ranking

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 maintains extensive information regarding all aspects of the port. Their website is <http://www.vamaritime.com>. National port activity information is collected by the American Association of Port Authorities and is available at <http://www.aapa-ports.org>.

Rail Travel – Amtrak maintains a list of passenger volumes by station at their website <https://www.amtrak.com/state-fact-sheets>. Information regarding Virginia ridership and rail improvements 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 <https://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 – TomTom prepares a measure called the TomTom Traffic Index to describe regional congestion levels. More information is located at https://www.tomtom.com/en_us/traffic-index.

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

FHWA publishes the Urban Congestion Report, which details mobility and traffic congestion levels in urbanized areas throughout the country. The report is located at http://www.ops.fhwa.dot.gov/perf_measurement/ucr.

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>.

The Accessibility Observatory at the University of Minnesota regularly produces the Access Across America report. These reports estimate the accessibility to jobs by automobile, walking, biking, and public transportation for each of the 11 million census blocks in the country. The Access Across America reports are available at <http://access.umn.edu>.

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 crash query and mapping tools on their website. These documents and crash tools are located at https://www.dmv.virginia.gov/safety/#crash_data/index.asp.

Truck Travel – VDOT releases truck travel data on an annual basis for every Virginia jurisdiction. This data is available at <http://www.virginiadot.org/info/ct-TrafficCounts.asp>.

Public Transportation – The Federal Transit Administration releases data on public transportation via the National Transit Database (NTD) program. The NTD is located at <https://www.transit.dot.gov/ntd>. 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>.

AllTransit provides information on the performance of transit for each metropolitan area. More information on AllTransit is available at <http://alltransit.cnt.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 https://www.dmv.virginia.gov/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 <https://www.deq.virginia.gov>. National air quality information is available from the Environmental Protection Agency's website at <http://www.epa.gov>.

For additional information regarding this report, Congestion Management Process studies, or other transportation questions or concerns, please contact:

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PUBLIC REVIEW AND COMMENTS

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 January 5, 2022, through January 21, 2022. No public comments were received.