CMS Congestion Management System

The State of Transportation In Hampton Roads

Part 1

HAMPTON ROADS
PLANNING DISTRICT COMMISSION

DECEMBER 2004

T04-12

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HAMPTON ROADS
CONGESTION MANAGEMENT SYSTEM

PART I - THE STATE OF TRANSPORTATION IN HAMPTON ROADS

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ABSTRACT

This report details the State of Transportation in Hampton Roads. Included in this report is a multitude of data on all facets of the region's transportation system, including rail, water, air, and highways. Many aspects of the highway system are highlighted, including roadway usage, commuting patterns, vehicle occupancy and HOV lane data, safety data, truck data, transit usage, bicycle and pedestrian facilities, and highway funding.

This report is the first part of an update to the Congestion Management System (CMS) study for Hampton Roads. The CMS program is an on-going process that identifies, develops, evaluates, and implements transportation strategies to reduce traffic congestion and enhance mobility regionwide.

ACKNOWLEDGMENTS

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

Transportation is always a prominent issue in Hampton Roads, a region named after the body of water that provides both the greatest benefit and hindrance to its transportation system. As the title indicates, this report details the *State of Transportation in Hampton Roads*, and provides a multitude of data on all facets of the region's transportation system, including rail, water, air, and highway modes.

This report was conducted in coordination with the Congestion Management System program, which identifies, develops, evaluates, and implements transportation strategies to reduce traffic congestion and enhance mobility regionwide.

James River Bridge

Downtown Tunnel

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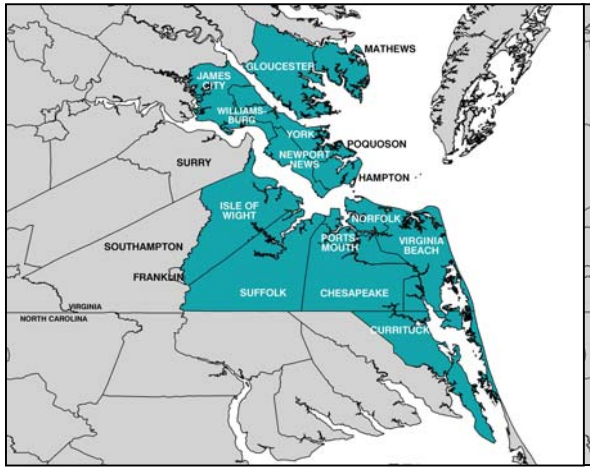
INTRODUCTION

As the title indicates, this report details the State of Transportation in Hampton Roads. Included in this report is a multitude of data on all facets of the region's transportation system, including rail, water, air, and highways. Many aspects of the highway system are highlighted, including roadway usage, commuting patterns, vehicle occupancy and HOV data, safety data, truck data, transit usage, bicycle and pedestrian facilities, and highway funding.

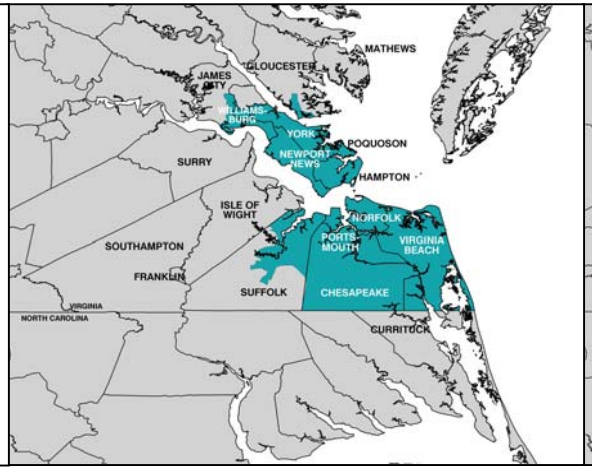
This report examines the state of transportation in the region by highlighting current transportation data, analyzing historical trends, and comparing the region with similar metropolitan areas. In most cases, Hampton Roads is compared with other "large" metropolitan areas, which are generally defined as those with populations between one and three million people.

Since various data sources are used in this report, there are various definitions of what composes each metropolitan area and therefore which metropolitan areas are considered "large". The primary metropolitan area definitions used in this report are the metropolitan statistical area (MSA) and the federal-aid urbanized area. As an example, the jurisdictions included in the Hampton Roads Metropolitan Statistical Area, the Hampton Roads Federal-Aid Urbanized Area, and the Hampton Roads Planning District Commission are shown below.

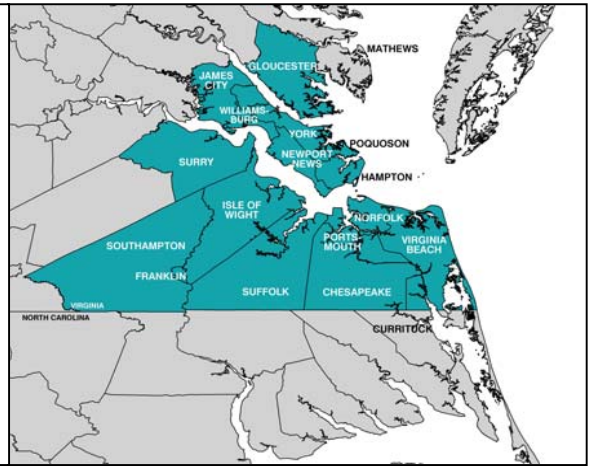
Hampton Roads Metropolitan Statistical Area



Hampton Roads Federal-Aid Urbanized Area



Hampton Roads Planning District Commission



Map Source: BTS National Transportation Atlas Databases (NTAD) 2002.

This report is the first part of an update to the Congestion Management System (CMS) for Hampton Roads. The CMS program is an on-going process that identifies, develops, evaluates, and implements transportation strategies to reduce traffic congestion and enhance mobility regionwide. Federal regulations require that a Congestion Management System be in place in all metropolitan areas with populations over 200,000 people. The Hampton Roads Planning District Commission (HRPDC) began developing a Congestion Management System for the region in the early 1990s, and released the region's first CMS report in 1995. Other previous updates to the CMS were released in 1997 and 2001.

Future parts of this Congestion Management System update will include an analysis of the traffic trends at the major regional bridges and tunnels, a comprehensive congestion analysis of the region's highway system, development of additional congestion management strategies with an analysis of their impacts, and identification of the most congested corridors and areas throughout the region that require further analysis.

Midtown Tunnel

AIR TRAVEL

Air travel has increased substantially in Hampton Roads over the last few years. While air travel dropped nationally due to a depressed economy and the September 11th terrorist attacks, air travel in Hampton Roads countered the trend. Norfolk International Airport handled over 1,700,000 passenger boardings during 2002, a 15% jump over 2001 boardings. Passenger boardings at Newport News-Williamsburg International Airport increased by 30% to nearly 300,000 boardings in 2002.

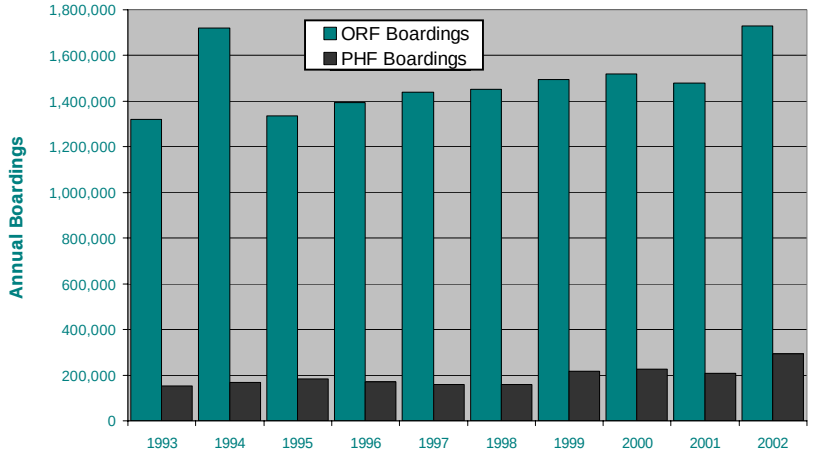
Many factors contributed to these increases in local air travel, most notable of which was increased low-fare airline service. Southwest Airlines began serving Hampton Roads in October 2001 and has since captured over 20% of the market at Norfolk International Airport while forcing competitors to reduce fares on similar routes. Another low-fare airline, Airtran, increased air service at Newport News-Williamsburg International Airport in 2002.

Norfolk International and Newport News-Williamsburg International Airport Characteristics, 2002

	Norfolk International (ORF)	NN-Williamsburg International (PHF)
Total Passengers	3,464,246	592,092
Boardings	1,731,105	293,181
National Rank	66	143
Growth in Boardings (between 2001-2002)	17.1%	41.8%
Airport Operations	125,622	232,475

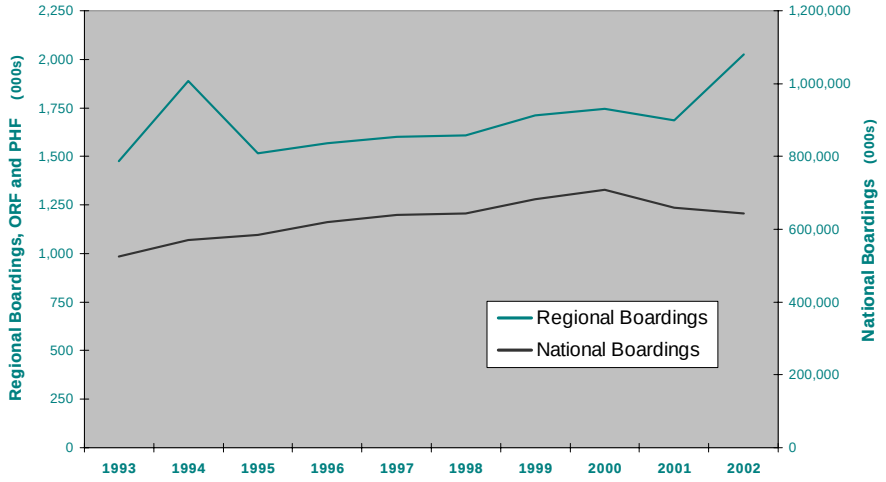
Total passengers refers to passengers that either board or disembark airplanes at that airport. Boardings represent only those passengers that board airplanes at that airport. Airport operations refers to all takeoffs and landings. Data Sources: Federal Aviation Administration, Norfolk International Airport, and Newport News-Williamsburg International Airport.

Annual Boardings at Norfolk International (ORF) and Newport News-Williamsburg International (PHF) Airports, 1993 to 2002



Data Source: Federal Aviation Administration.

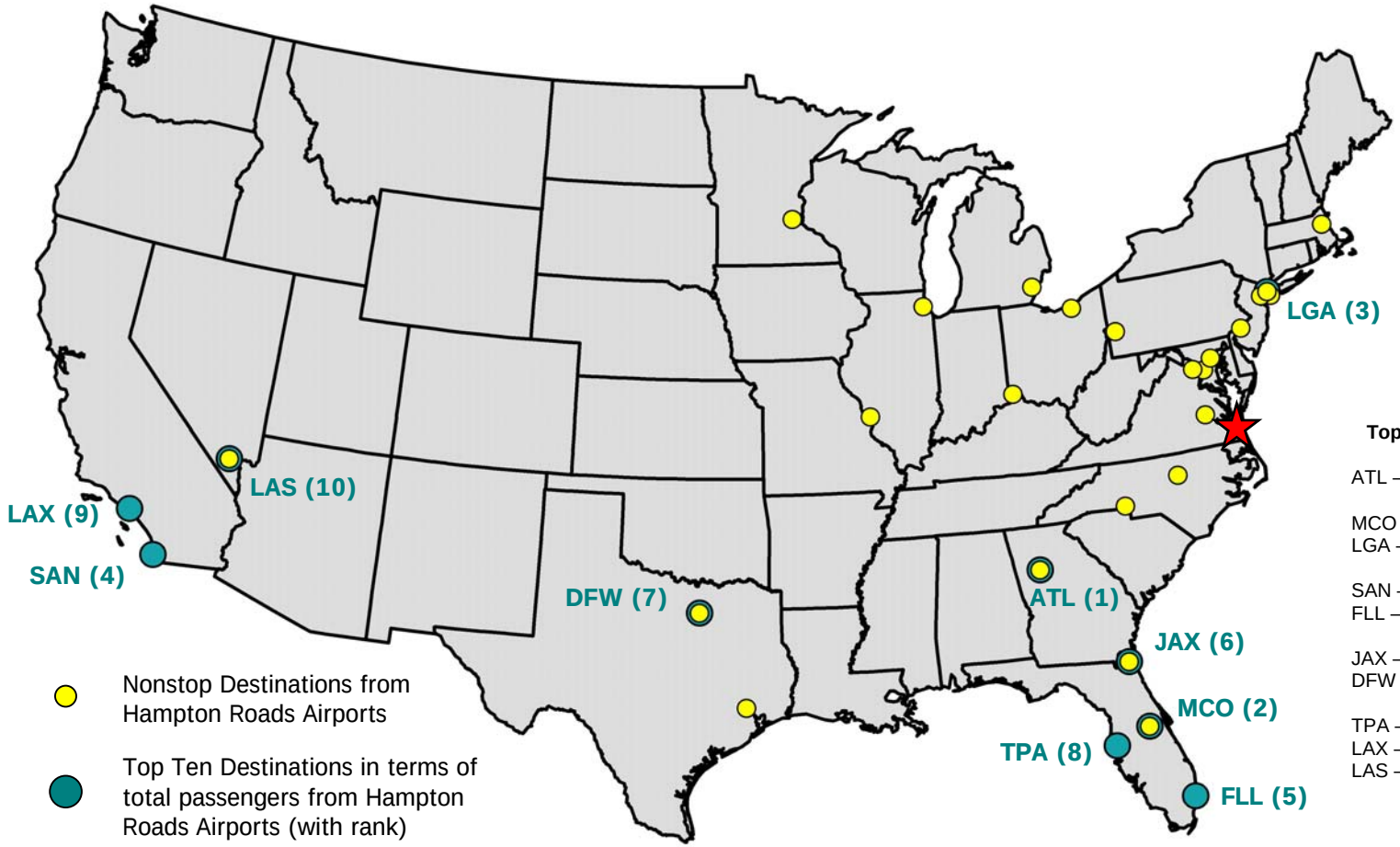
Annual Passenger Boardings at Airports in Hampton Roads versus National Boardings, 1993 to 2002



Data Source: Federal Aviation Administration.

There are currently 25 airports that are served nonstop by airlines at Norfolk International Airport, with nonstop service to 7 airports from Newport News-Williamsburg International Airport. The most popular destination of air travelers in Hampton Roads in 2002 was Atlanta Hartsfield-Jackson, with 6.7% of all regional air travelers going there for their final destination. Of the top ten destinations from Hampton Roads, four are not served by nonstop service: San Diego (SAN), Fort Lauderdale (FLL), Tampa (TPA), and Los Angeles International (LAX).

Top Ten Destinations and Nonstop Destinations from Hampton Roads Airports, 2002



Top Ten Airport Codes

ATL – Atlanta Hartsfield-Jackson Int'l
MCO - Orlando Int'l
LGA – New York LaGuardia Int'l
SAN – San Diego Int'l
FLL – Fort Lauderdale/ Hollywood Int'l
JAX – Jacksonville In'tl
DFW – Dallas-Fort Worth Int'l
TPA – Tampa Int'l
LAX – Los Angeles Int'l
LAS – Las Vegas McCarran Int'l

Data Sources: Federal Aviation Administration, Norfolk International Airport, and Newport News-Williamsburg International Airport.

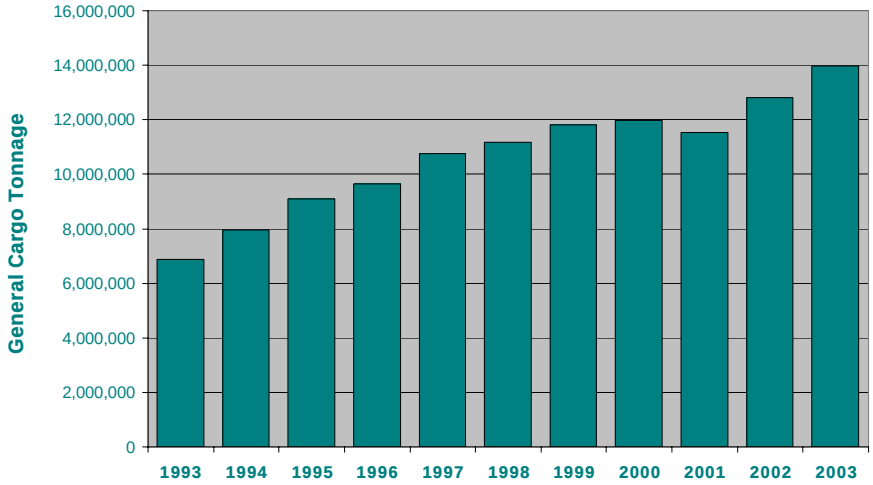
MARINE DATA

Hampton Roads ultimate asset and natural resource – water – provides both the greatest benefits as well as the greatest challenges to the regional transportation system. Many facets of the Hampton Roads economy, such as the military, the ports, shipbuilding and repair, and tourism, rely on the water. The regional roadway and rail systems, meanwhile, are hindered by the water. Bridges and tunnels across the region are often congested, and constructing facilities to relieve the congestion are prohibitively expensive. Openings at the region's eleven roadway drawbridges, particularly during the peak travel periods, also affect traffic flow.

The ports help drive the economy of Virginia, with over 165,000 jobs statewide and $4.8 billion in payroll impacted by the Port of Hampton Roads according to the Virginia Port Authority. In recent years, development has occurred throughout the region due to the presence of the Port, including the addition of the Wal-Mart distribution center in James City County and the Target distribution center in Suffolk. The addition of the Maersk Sealand terminal in Portsmouth should guarantee that growth at the ports will continue into the future.

The addition of these facilities has contributed to the significant growth in the amount of general cargo handled at

Historical General Cargo Tonnage Port of Virginia



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

Imports and Exports Through Principal Atlantic Coast Ports, 2002

	Imports Short Tons (000s)	Exports Short Tons (000s)	Total Short Tons (000s)
New York	64,669.1	11,483.1	76,152.2
Philadelphia	32,413.3	484.0	32,897.3
Hampton Roads	11,640.5	18,435.6	30,076.1
Baltimore	17,928.5	5,711.0	23,639.5
Savannah	11,160.9	8,173.8	19,334.7
Charleston	13,166.6	5,990.5	19,157.1

Data Source: Hampton Roads Maritime Association.

NORFOLK CVB

Cruise Terminal at Nauticus

Portsmouth Marine Terminal

VDOT

VDOT Jamestown-Scotland Ferry

the port. While the Port of Hampton Roads remains the largest coal port in the world, the amount of coal exported from the Port has decreased significantly over the last few years. The amount of general cargo handled by the Port, however, has more than doubled over the last ten years to nearly 14 million short tons in 2003. This growth has enabled the Port of Hampton Roads to rank third among the principal Atlantic Coast ports, with over 30 million short tons of goods imported and exported in 2002.

The ports are not the only marine industry in Hampton Roads to experience significant growth. The cruise industry has also grown exponentially over the last few years, with cruise lines such as Carnival Cruise Lines, Celebrity Cruises, and Holland America Lines embarking cruises from the pier at Nauticus in Downtown Norfolk. In 2004, more than 60 ship calls and 115,000 passengers are expected at the cruise terminal, up from 35,000 passengers only two years before.

One advantage of the water is that it allows for another mode of public transportation: ferry service. Hampton Roads Transit (HRT) provides ferry service between Waterside in Downtown Norfolk and the High Street Landing in Downtown Portsmouth. Over 350,000 riders used the Elizabeth River Ferry in 2003, which is approximately 6% of the total transit ridership in Norfolk and Portsmouth.

VDOT also provides ferry service in Hampton Roads with vehicular ferry service provided between Jamestown and Scotland in Surry County. The free service carried over 935,000 vehicles across the James River in 2002, up from 890,000 vehicles in 2000.

RAIL TRAVEL

With the amount of goods that need to be transported to and from the regional port facilities, an active rail system is essential. Transporting goods by rail is one of the primary methods of getting goods to and from the regional port facilities. Including coal, 69% of all inbound freight to Hampton Roads and 11% of all outbound freight from Hampton Roads by tonnage was transported by rail in 1998 according to Reebie Associates. The amount of inbound freight transported by rail decreases to 26% when coal is excluded.

Passenger rail service is also provided in Hampton Roads by Amtrak with two trains arriving and departing daily. Stations are located in Williamsburg and Newport News, with connecting bus service provided from the Newport News station to Norfolk and Virginia Beach. In 2003, 100,300 riders boarded Amtrak trains at the Newport News station, and 37,600 riders boarded Amtrak trains at the Williamsburg station.

Crashes, Fatalities, and Injuries at Public Highway-Rail Crossings in Hampton Roads, 1997 - 2003

Year	Crashes	Fatalities	Injuries
1997	11	1	1
1998	9	0	9
1999	7	0	4
2000	8	1	2
2001	10	0	4
2002	7	0	1
2003	9	0	0

Data Source: Federal Railroad Administration Office of Safety Analysis.

With the number of trains that transverse the region each day, safety at highway-rail crossings is a concern. Since 1997, an average of almost nine crashes per year have occurred at public highway-rail crossings in Hampton Roads, with two fatalities and 21 injuries.

The Virginia Department of Rail and Public Transportation is currently conducting a study regarding plans to connect Hampton Roads to the proposed Southeast High Speed Rail Corridor in the Richmond area. More details on this study can be found at http://www.rich2hrrail.info.

Amtrak train in Newport News

ROADWAY TRAVEL

I-64 in Norfolk

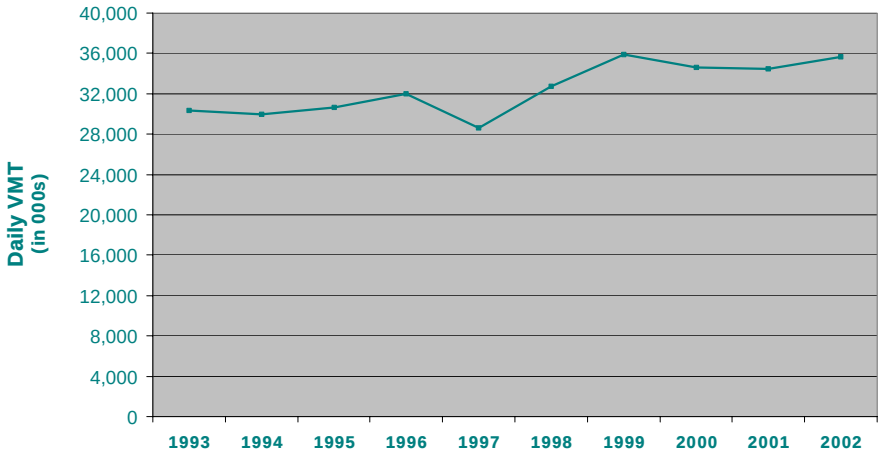
ROADWAY USAGE

The amount of travel occurring on regional roadways is higher than ever before, outpacing both regional population growth and roadway capacity growth. The amount of roadway travel is measured in terms of vehicle-miles of travel (VMT), which is the sum of the number of miles every vehicle throughout the region travels. In 2002, there were nearly 36 million vehicle-miles of travel on the average day in the Hampton Roads federal-aid urbanized area. Over the course of the year that amounts to over 13 billion miles of vehicular travel in Hampton Roads. That's the equivalent of traveling from the Earth to the sun 140 times!

The amount of vehicular travel increased by over 5 million miles daily in Hampton Roads between 1993 and 2002. Although this 18% growth in regional travel

Greenbrier Pkwy in Chesapeake

Daily Vehicle-Miles of Travel (VMT) in Hampton Roads, 1993 - 2002



Data Source: FHWA Highway Statistics Series.

Growth in Vehicle-Miles of Travel (VMT) in Hampton Roads, Large Urbanized Areas, Virginia, and the United States, 1993 - 2002

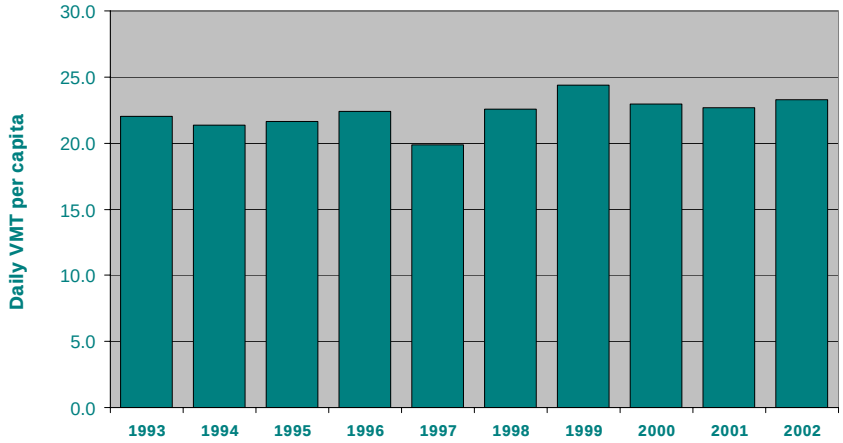
	Growth in VMT 1993-2002
Hampton Roads	**18%**
Large Urbanized Areas	**29%**
Virginia	**21%**
United States	**24%**

Data Source: FHWA Highway Statistics Series.

is significant, the growth in daily travel in large urbanized areas (29%), the state of Virginia (21%), and the United States (24%) were all higher during the same time period.

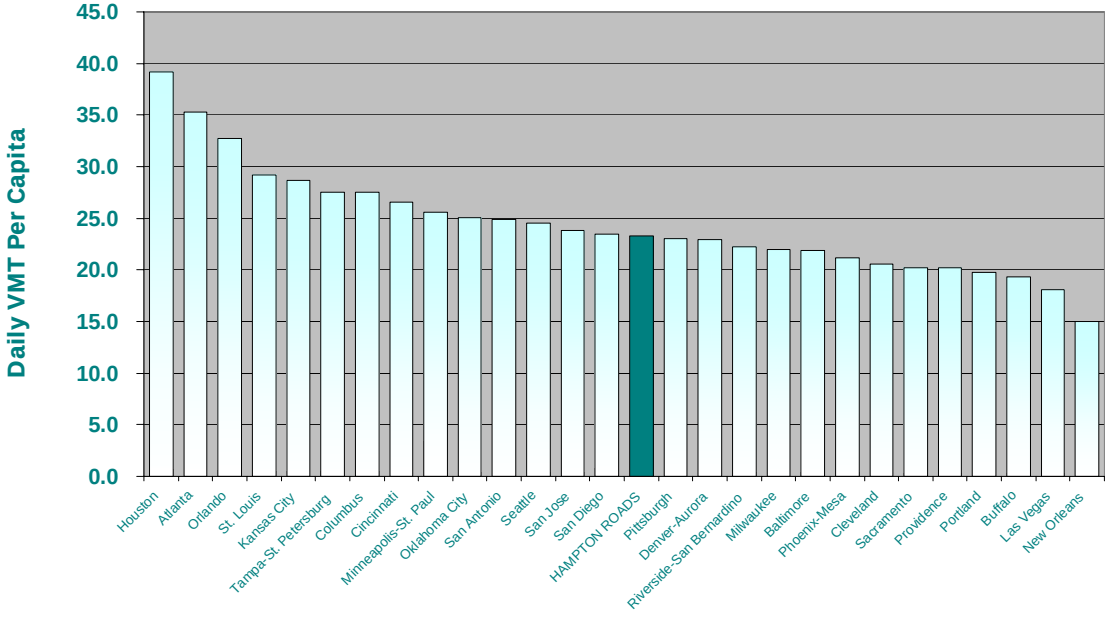
While the total amount of vehicular travel in Hampton Roads increased, the amount of travel each person in Hampton Roads made also increased. This means that the growth in regional travel outpaced the region's population growth. The amount of vehicular travel per capita in Hampton Roads was 23.3 miles per person per day in 2002. This number increased 6% from 1993, when the amount of daily vehicular travel was 22.0 miles per person.

Daily Vehicle-Miles of Travel (VMT) Per Capita in Hampton Roads, 1993 - 2002



Data Source: FHWA Highway Statistics Series.

Daily Vehicle-Miles of Travel (VMT) Per Capita in Large Urbanized Areas Between 1 and 3 Million People, 2002



Data Source: FHWA Highway Statistics Series.

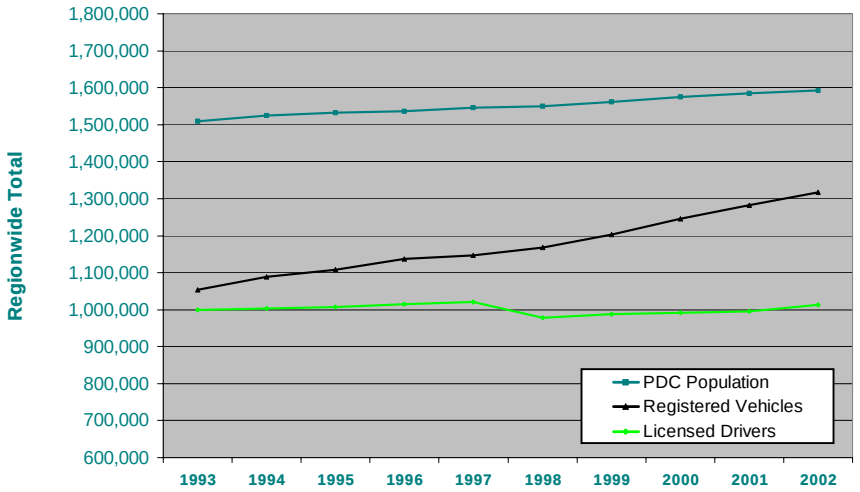
Among all 28 large federal-aid urbanized areas (defined as those areas with populations between one and three million people), Hampton Roads ranked 15th in terms of daily VMT per capita in 2002. Population did not seem to affect personal travel much since there are smaller and larger metropolitan areas with more and less travel than Hampton Roads. Of the eight urbanized areas that had slower population growth during the 1990s than Hampton Roads, only Saint Louis had a higher amount of daily VMT per capita than Hampton Roads.

While the growth in vehicular travel has outpaced population growth in Hampton Roads, the growth in the number of registered vehicles regionwide has outpaced both. There were 1,320,000 registered vehicles in Hampton Roads in 2002. This number increased 25% between 1993 and 2002, easily outpacing the 18% growth in regional vehicle-miles of travel and 6% growth in regional population.

Conversely, the number of licensed drivers in Hampton Roads has changed very little since 1993. There were 1,010,000 licensed drivers in Hampton Roads in 2002, meaning that for every licensed driver in Hampton Roads there were 1.3 registered vehicles. In fact, regional population growth was three times faster than the growth in licensed drivers between 1993 and 2002.

Berkley Bridge

Population, Registered Vehicles, and Licensed Drivers in Hampton Roads, 1993 - 2002



Data Sources: Hampton Roads Databook, Virginia DMV.

Annual Growth Rate in Population, Registered Vehicles, Licensed Drivers, and VMT in Hampton Roads, 1993 - 2002

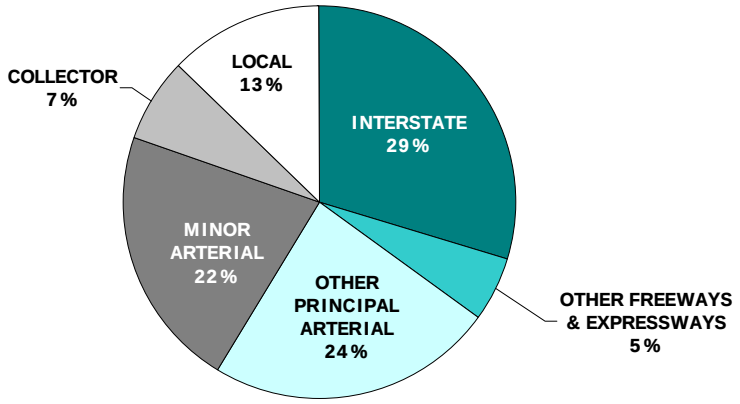
	Annual Growth Rate 1993-2002
Population	0.6%
Registered Vehicles	2.5%
Licensed Drivers	0.2%
Vehicle-Miles of Travel (VMT)	**1.8%**

Data Sources: Hampton Roads Databook, Virginia DMV, FHWA Highway Statistics Series.

Most of the growth in vehicular travel in Hampton Roads between 1993 and 2002 occurred on the interstate system. While composing only 5% of the total roadway lane mileage in the Hampton Roads urbanized area, interstates carried 29% of the daily traffic volumes in 2002. (Lane mileage is defined as the centerline mileage multiplied by the number of travel lanes. A section of freeway one mile in length with two lanes in each direction equals four lane miles.) The amount of travel on interstates increased sharply from 1993 when the interstate system carried 20% of the total VMT in Hampton Roads. By comparison, local roadways (i.e. neighborhood streets) comprised 63% of the total roadway lane mileage in Hampton Roads in 2002 but only 13% of the total traffic volumes.

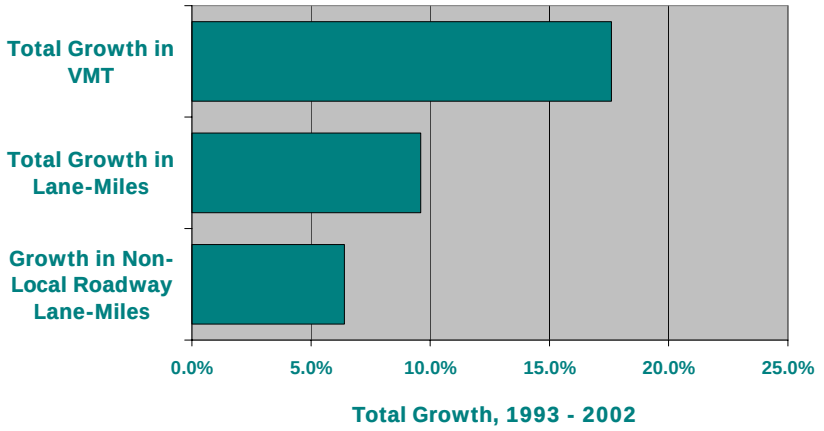
For many travelers of the Hampton Roads roadway system, it's not surprising that roadway capacity improvements have not kept pace with the growth in travel. Although the amount of travel increased 18% in Hampton Roads between 1993 and 2002, the total growth in the amount of roadway capacity (in terms of the total number of lane miles) increased 9.6%. If local roads are removed, the total growth in roadway capacity was only 6.4%. In other words, **if local roadways are excluded, the amount of travel in Hampton Roads grew nearly three times faster than the amount of roadway capacity between 1993 and 2002.** With this trend expected to continue into the future (as is described in further detail in the Highway Financing section of this report), traffic congestion will worsen across the region.

Vehicle-Miles of Travel (VMT) by Roadway Functional Class in Hampton Roads, 2002



Data Source: FHWA Highway Statistics Series.

Growth in VMT, Total Lane Miles, and Non-Local Roadway Lane Miles in Hampton Roads, 1993 - 2002



Data Sources: FHWA Highway Statistics Series, VDOT.

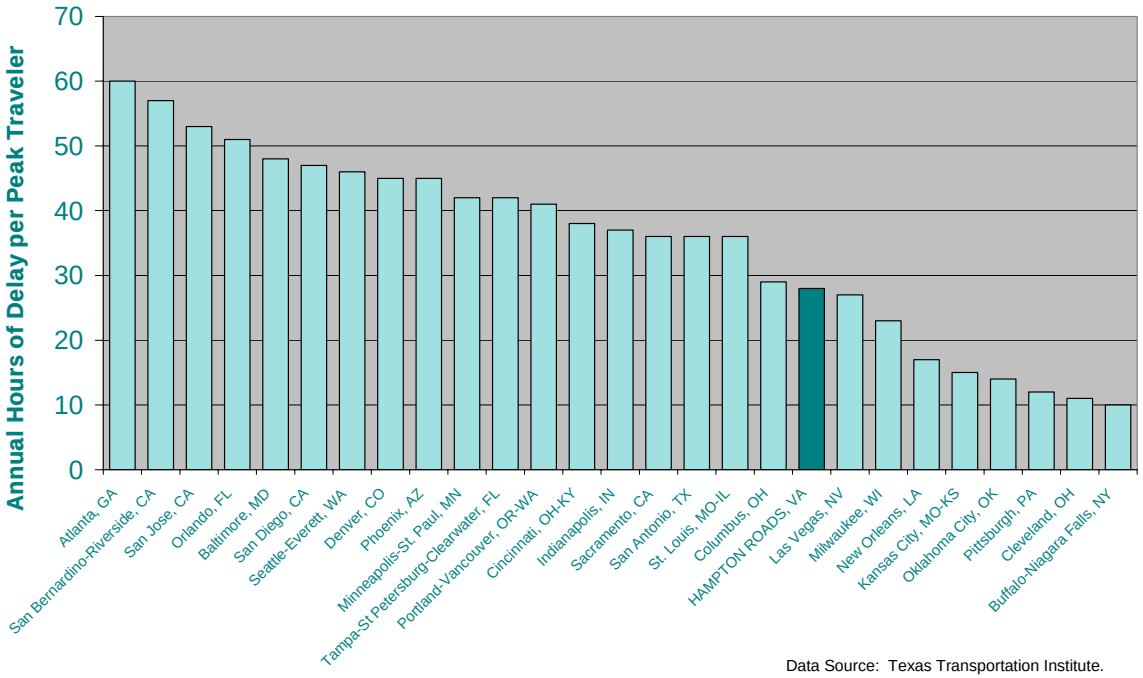
TTI URBAN MOBILITY REPORT DATA

Drivers in Hampton Roads experience over 23 million hours of delay annually, at an annual cost of over $400 million to the region. These numbers come from the Urban Mobility Report, which is released annually by the Texas Transportation Institute at Texas A&M University (TTI). The study, which is the only widely distributed analysis of the performance of urban highway systems, details congestion levels and characteristics in 85 metropolitan areas throughout the United States. Improvements to recent reports include an analysis of the effects of certain operational improvements (such as traffic signal coordination, public transportation, and incident management programs), additional information regarding travel time reliability, and updated speed estimation and incident delay equations.

Hampton Roads was grouped with 26 other areas defined by TTI as large urbanized areas (those with populations between one and three million people) in the 2004 Urban Mobility Report, which is actually comprised of 2002 traffic data. Data from the year 2000 for Hampton Roads was estimated due to inaccurate data that was submitted to TTI; the problems were corrected in the 2001 data set.

To illustrate the effects of congestion, TTI estimates the amount of time each person in various metropolitan areas spends annually in traffic congestion. This delay estimation includes both recurring congestion, which is delay that occurs regularly due to high traffic volumes relative to the capacity of roadways, as well as incidental congestion, which is due to factors such as traffic crashes and disabled vehicles.

Annual Hours of Delay Per Peak Period Traveler
Large Urban Areas, 2002

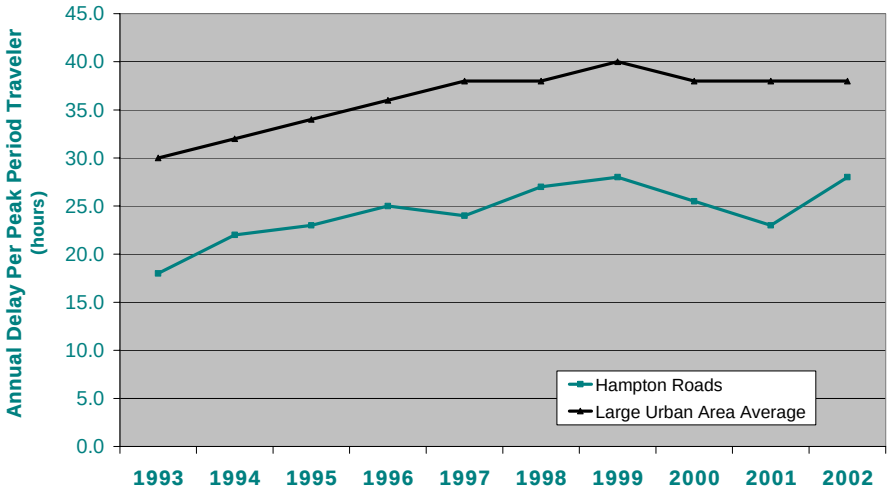


Data Source: Texas Transportation Institute.

Peak period travelers in Hampton Roads spent an average of 28 hours stuck in traffic in 2002 according to TTI. This placed Hampton Roads 19th among the 27 large metropolitan areas in terms of annual hours of delay per peak period traveler. Although this amount of delay has increased from 18 hours per peak period traveler in Hampton Roads in 1993, it is considerably lower than the average delay experienced in other large urban areas. It should be noted, however, that TTI's delay-estimation procedures do not account for delay due to factors that lower the capacity at certain facilities such bridges and tunnels, nor does it account for delay due to chokepoints such as dropped lanes or at ramp termini.

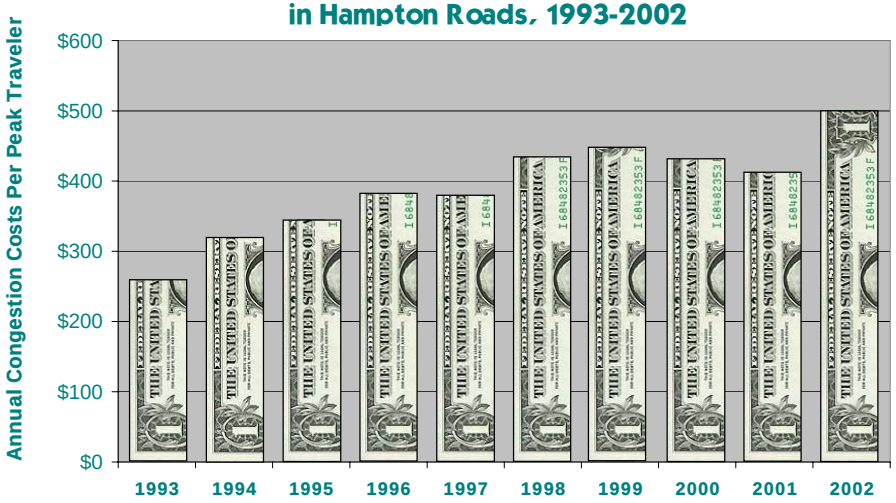
The time stuck in traffic costs drivers both directly and indirectly. TTI uses many variables to estimate the costs of congestion, including the value of a person's time, wasted fuel, and commercial vehicle operation costs. With over 23 million person-hours and 39 million gallons of fuel being wasted each year in Hampton Roads as a result of congestion, these congestion-related costs are vast. TTI estimates that being stuck in traffic cost each peak period traveler of Hampton Roads $501 in 2002, which amounts to $412 million for the entire region. This is up from congestion costs of $259 per Hampton Roads peak period traveler back in 1993, primarily due to increased congestion as well as increased fuel costs.

Annual Hours of Delay Per Peak Period Traveler
Hampton Roads and Large Urban Areas, 1993-2002

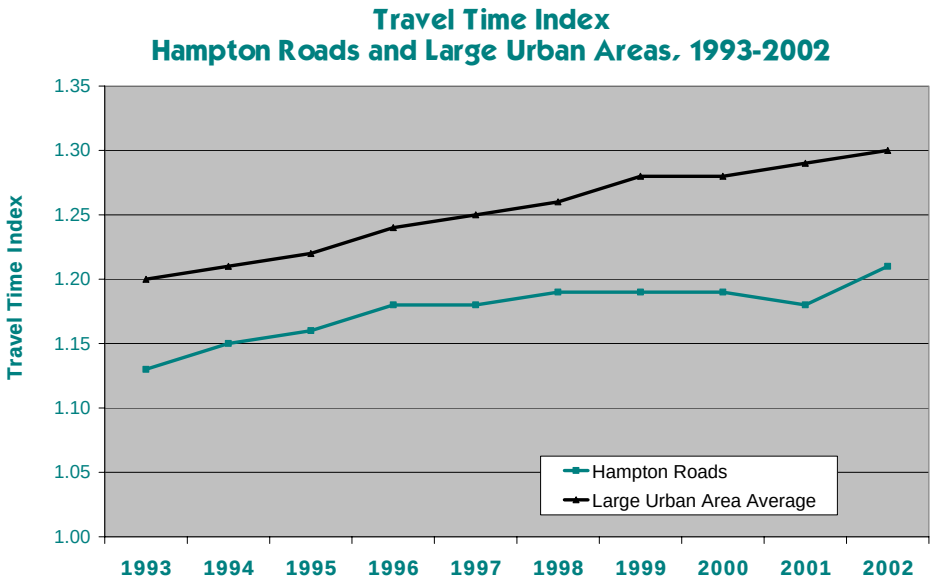


Note: 2000 data is estimated. Data Source: Texas Transportation Institute.

Annual Congestion Costs Per Peak Period Traveler
in Hampton Roads, 1993-2002



Note: 2000 data is estimated. Data Source: Texas Transportation Institute.



Note: 2000 data is estimated. Data Source: Texas Transportation Institute.

TTI also calculates a delay factor called the Travel Time Index, which measures the additional time that is required to make a trip during the peak travel period compared to the same trip during free flow periods. The Travel Time Index was 1.21 in Hampton Roads in 2002, meaning that the average peak period trip takes 21% longer than the same trip takes during free flow periods of the day. A trip that takes 20 minutes during free flow travel periods takes over 24 minutes during peak travel periods in Hampton Roads. In large urbanized areas, the average Travel Time Index was 1.30 in 2002, which is higher than in Hampton Roads. A trip that would take 20 minutes during free flow travel periods would take on average 26 minutes in other large urbanized areas.

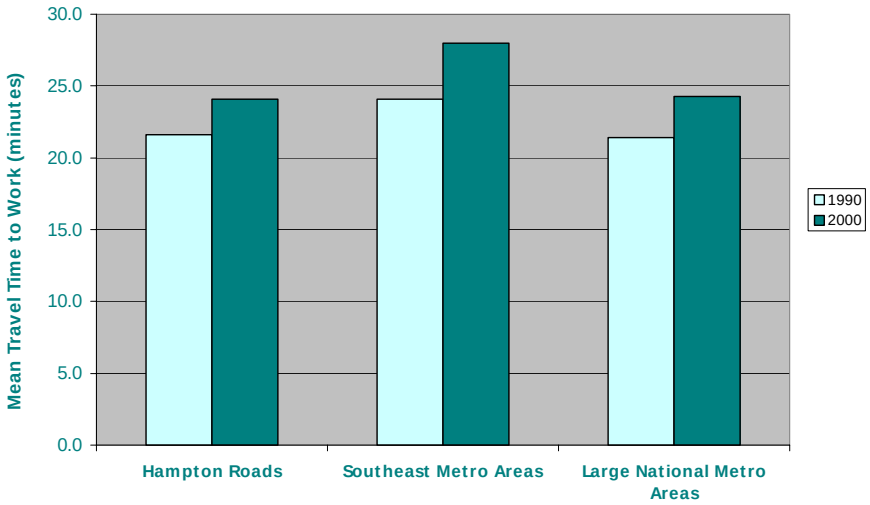
Hampton Boulevard approaching the Midtown Tunnel

COMMUTING DATA

Commuters in Hampton Roads are increasingly driving alone to work…and taking longer to get there than ever before. In Hampton Roads **the average trip to work took over 24 minutes in 2000, up from 21.6 minutes in 1990**. This upward trend in commuting times in Hampton Roads is similar to that of comparable metropolitan areas. In large Southeastern metropolitan areas (all metropolitan areas in the Southeast with populations of one million or more), the travel time to work was higher than that in Hampton Roads at an average of 28.0 minutes in 2000, up from 24.2 minutes in 1990. Large metropolitan areas nationwide (those areas with populations between one million and three million people) were very comparable to Hampton Roads, both in the mean travel time to work and its growth.

The reasons for increases in travel times to work include more congested routes and longer trips to work due to new outlying suburbs and commuting patterns. By looking at travel time intervals, the increase in the average commuting time appears to be due to both a decrease in the number of people working at home and an increase in workers that commuted extremely long distances. The percentage of people that worked at home in Hampton Roads in 2000 is half the percentage that did so in 1990 (which appears due to decreases in military employment), while the percentage of people that drove 90 or more

Mean Travel Time to Work, 1990 and 2000



Data Source: Bureau of the Census.

Length of Trip to Work in Hampton Roads by Percentage, 1990 and 2000

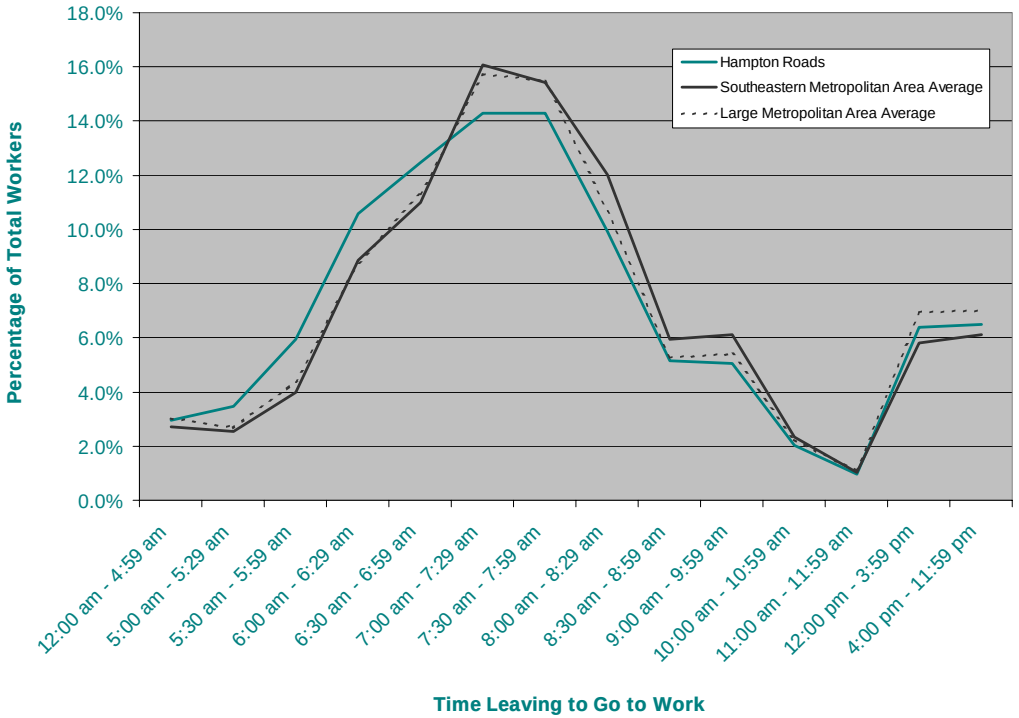
	1990	2000
Worked at Home	5.3%	2.7%
Less than 5 minutes	2.4%	2.4%
5 to 9 minutes	9.5%	8.8%
10 to 14 minutes	14.0%	14.1%
15 to 19 minutes	18.0%	17.6%
20 to 24 minutes	16.5%	17.4%
25 to 29 minutes	6.4%	6.8%
30 to 34 minutes	14.1%	14.5%
35 to 39 minutes	2.3%	2.5%
40 to 44 minutes	2.5%	2.7%
45 to 59 minutes	5.5%	5.7%
60 to 89 minutes	2.7%	2.8%
90 or more minutes	0.6%	2.0%

Data Source: Bureau of the Census.

minutes to work more than tripled between 1990 and 2000, up to 2.0% of all workers in 2000.

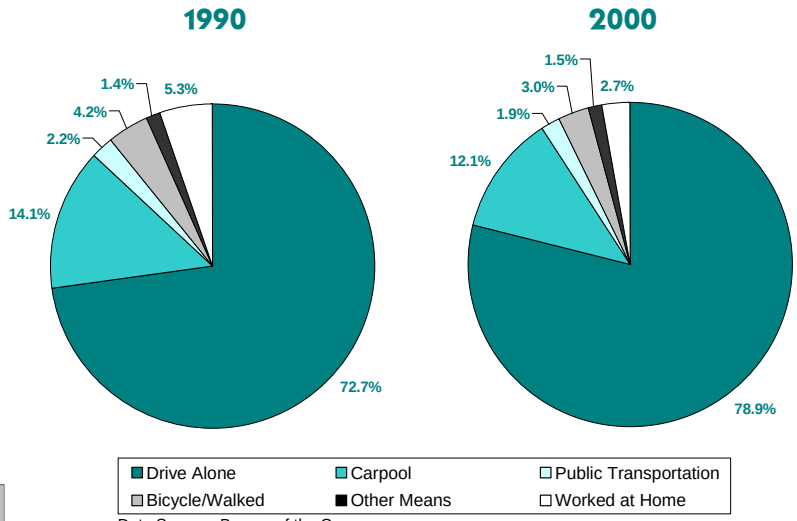
The number of commuters that drove to work alone also increased substantially between 1990 and 2000. In 1990, nearly 73% of all commuters in Hampton Roads drove to work alone; this rate increased to nearly 79% in 2000. In absolute terms, **there are 73,600 more commuters driving alone to work in Hampton Roads in 2000 than there were in 1990**. All other commuting methods (carpooling, public transportation, worked at home, and bicycling/walking) had lower percentages in 2000 than in 1990.

Time Leaving to Go to Work, 2000



Data Source: Bureau of the Census.

Commuting Methods in Hampton Roads, 1990 and 2000



Data Source: Bureau of the Census.

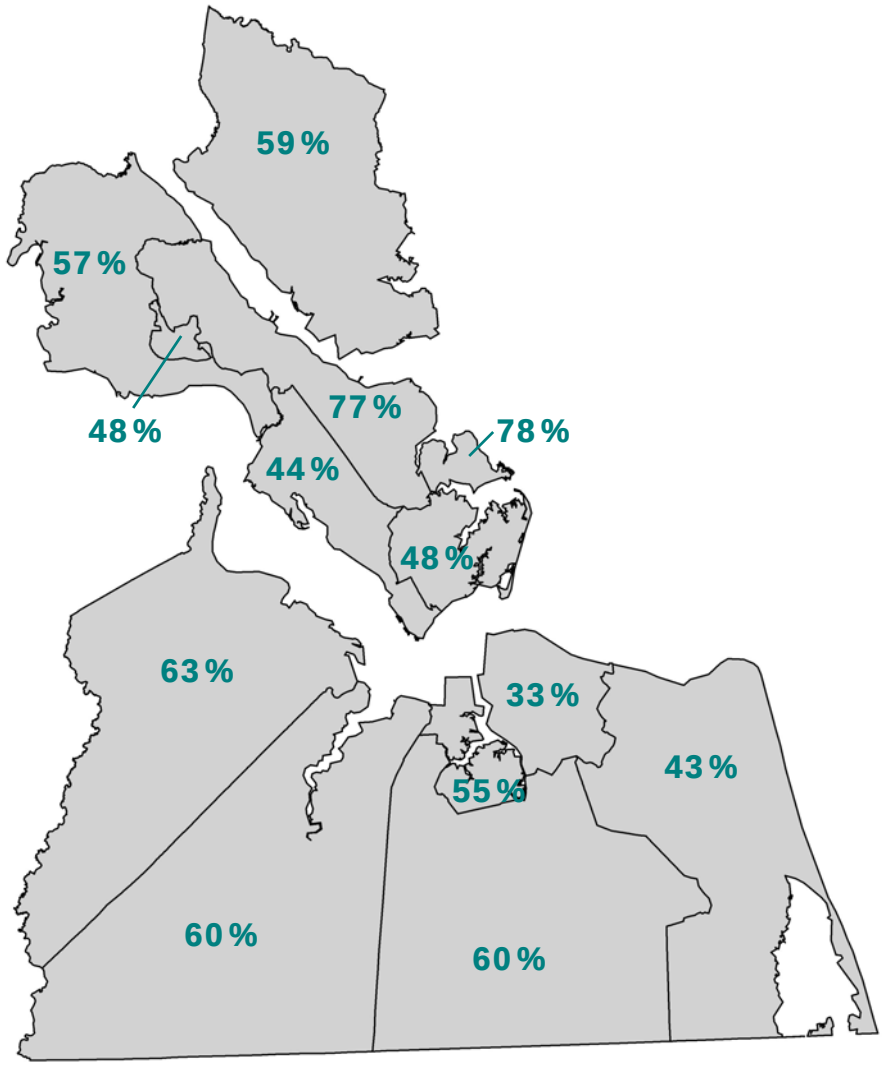
Due primarily to military work schedules, more people in Hampton Roads leave earlier for work than in other metropolitan areas. Nearly 33% of all workers in Hampton Roads leave for work between 5 am and 7 am, compared to only 26% and 27% in comparable Southeastern and national metropolitan areas respectively. Accordingly, only 28% of all commuters in Hampton Roads leave for work during the peak travel hour between 7 am and 8 am, whereas in Southeastern and national metropolitan areas this percentage is higher, between 31% and 32%. With commuting times more spread out in Hampton Roads, lower congestion levels should result than if there was a similar spike in traffic volumes.

In addition to driving alone, more commuters also work in a jurisdiction that is not the same as their place of residence. In 1990, 312,900 Hampton Roads citizens (and 44% of all workers) worked in a jurisdiction other than the one in which they resided in. In 2000, this number increased to 361,200 people (48% of all workers). Not surprisingly, most of this growth occurred in jurisdictions on the periphery of the region.

With a limited number of water crossings available, additional growth in commuting patterns between the Peninsula and Southside areas of Hampton Roads leads to further congestion. Of the 229,800 commuters that resided on the Peninsula in 2000, 21,700 (9.5%) worked on the Southside. Of the 518,000 commuters that resided on the Southside in 2000, 21,000 (4.1%) worked on the Peninsula. The number of workers commuting from the Peninsula to the Southside increased by over 9,000 people between 1990 and 2000; the number commuting from the Southside to the Peninsula increased by nearly 6,000 people.

As the number of commuters increased, so did the amount of traffic crossing between the Peninsula and the Southside. The number of vehicles crossing the harbor on the average weekday increased from 107,900 in 1990 to 157,100 in 2000. Most of this growth occurred at the Monitor-Merrimac Memorial Bridge-Tunnel, which was completed during this period.

Percentage of Commuters that Reside in Each Jurisdiction but Work in a Different Jurisdiction, 2000



Data Source: Bureau of the Census.

VEHICLE OCCUPANCY & HOV DATA

As congestion increases, vehicle occupancy rates continue to decline across the region. Vehicle occupancy reflects the efficiency of the roadway system since it measures the number of people using the roadway network rather than the number of vehicles. A decrease in vehicle occupancy rates means that more vehicles are needed to move the same number of people, thus further increasing congestion. By increasing the number of people per vehicle, person movement is increased without the monetary and environmental costs associated with increasing the capacity of the roadway system.

Vehicle occupancy rates were analyzed at twelve locations on the Hampton Roads Interstate system in 1999 and 2003 for both the morning and afternoon peak travel periods. In both peak periods, the average vehicle occupancy rate dropped over the four-year period. During the morning peak period, the average Interstate vehicle occupancy rate dropped from 1.15 persons per vehicle down to 1.13 persons per vehicle. During the afternoon peak period, the rate dropped from 1.20 to 1.18.

Vehicle occupancy rates were also analyzed at ten locations on the arterial system during the same time period. Similar to the interstates, the average vehicle occupancy rate also dropped during both the morning and afternoon peak travel periods on the regional arterial system.

Average Vehicle Occupancy Rates for Regional Interstates and Arterials, 1999 and 2003

Regional Interstates (12 locations)

	1999 Vehicle Occupancy Rate	2003 Vehicle Occupancy Rate
Morning Peak Period	1.15	1.13
Afternoon Peak Period	1.20	1.18

Regional Arterials (10 locations)

	1999 Vehicle Occupancy Rate	2003 Vehicle Occupancy Rate
Morning Peak Period	1.20	1.19
Afternoon Peak Period	1.24	1.19

Data Source: VDOT.

National Historical Average Vehicle Occupancy Rates for Selected Trip Purposes

	1990	1995	2001
To or From Work	1.14	1.14	1.14
Social and Recreational	2.08	2.04	2.05
All Purposes	1.64	1.59	1.63

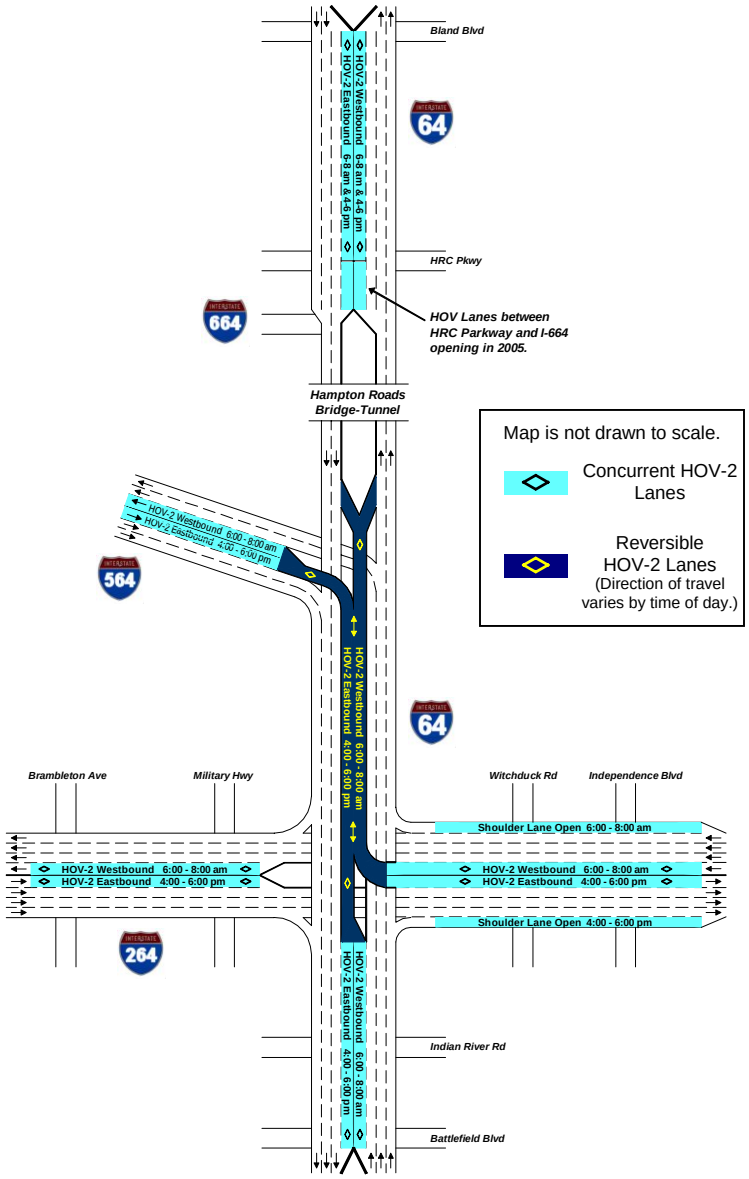
Data Source: USDOT Bureau of Transportation Statistics, NHTS 2001 Highlights Report, 2003.

According to the National Household Travel Survey, vehicle occupancies nationwide, which decreased steadily over the last twenty years, have stabilized. For trips to or from work, the average vehicle occupancy rate is 1.14 persons per vehicle, which is unchanged over the past decade. This is similar to occupancy rates found throughout Hampton Roads during the morning peak period, when most roadway users are traveling to work.

As part of an effort to increase vehicle occupancy rates as well as provide a thoroughfare for express bus service, high occupancy vehicle (HOV) lanes were constructed on interstate facilities throughout the region. The first HOV lanes were introduced to Hampton Roads in September 1986. With the addition of HOV lanes on I-64 on the Peninsula in late 2001, there are currently 34 centerline-miles of HOV facilities in Hampton Roads. The system will be further expanded in 2005, when a three-mile extension between the Hampton Roads Center Parkway and I-664 will be completed. HOV facilities are also included in the long range transportation plan on I-64 on the Peninsula and on the Southeastern Parkway and Greenbelt.

I-64 in Chesapeake

Hampton Roads HOV Network

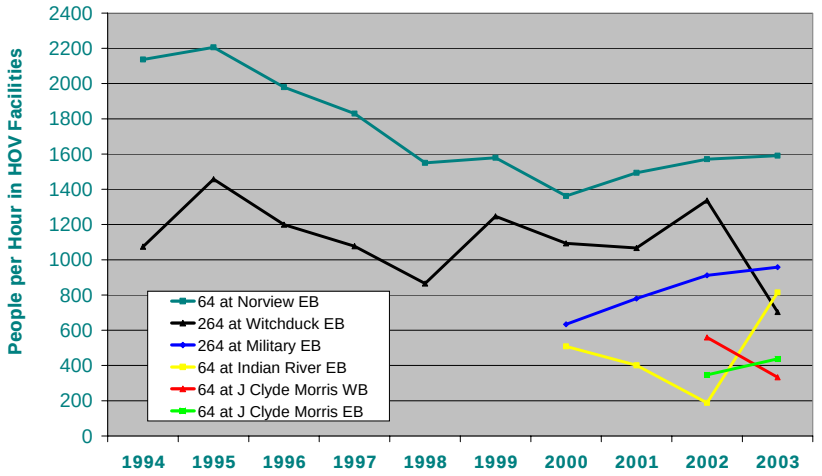


HOV facilities in Hampton Roads require at least two persons per vehicle (with exceptions for motorcycles and licensed low emission vehicles) from 6:00 am – 8:00 am and 4:00 pm – 6:00 pm, depending on the direction of peak travel flow. Outside of these hours, HOV lanes may be used by single occupancy vehicles as well. The hours of operation for HOV facilities were decreased from 5:00 am – 8:30 am and 3:00 pm – 6:00 pm in May 2000.

HOV traffic counts are collected multiple times yearly at five locations: I-64 between I-564 and I-264, I-64 near Indian River Road, I-64 near J Clyde Morris Blvd on the Peninsula, I-264 west of Military Highway, and I-264 east of Witchduck Road. An important measurement of the effectiveness of HOV facilities, the number of people moved, has generally been decreasing at these locations during both the morning and afternoon peak travel periods. Although the reversible HOV facility on I-64 is still the most-used in the region, the number of users of the facility has dropped significantly since 1994.

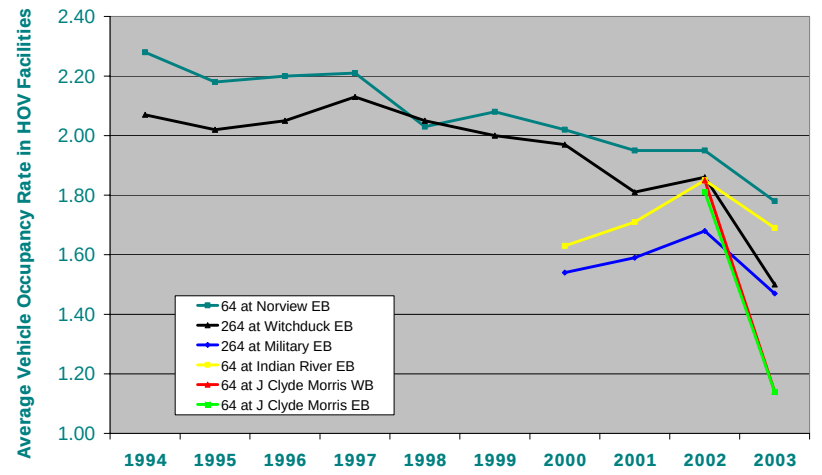
Most of the gains on the newer HOV facilities, however, were due to more single occupancy vehicles illegally using the HOV lanes. An average of 1.48 persons per vehicle use the HOV lanes during both the morning and afternoon peak travel periods, and none of the facilities averages more than two persons per vehicle. As these numbers indicate, violators are a pervasive problem on the region's HOV system. Without additional enforcement and fines, the number of violators will continue to increase on the region's HOV system.

People per Hour in HOV Facilities Throughout Hampton Roads, PM Peak Period, 1994 - 2003



Data Source: VDOT.

Average Vehicle Occupancy Rates in HOV Facilities Throughout Hampton Roads, PM Peak Period, 1994 - 2003



Data Source: VDOT.

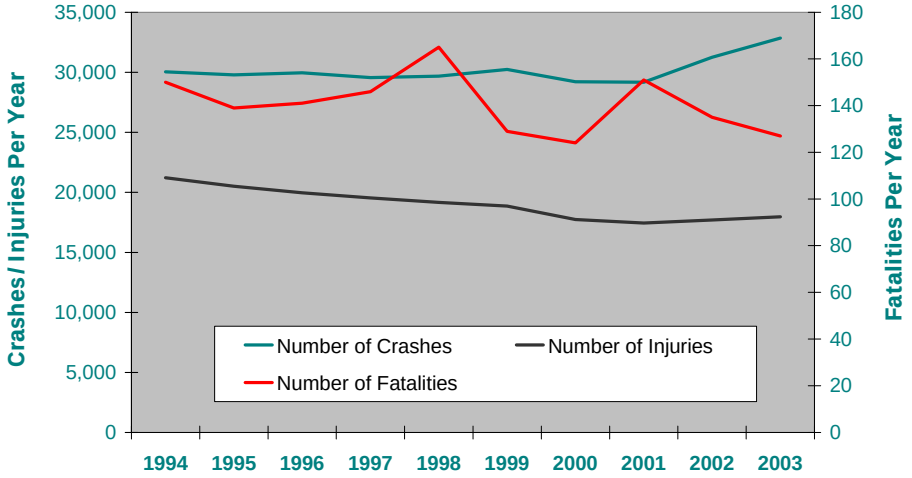
SAFETY

There were nearly 33,000 crashes on Hampton Roads roadways in 2003, with 18,000 injuries and 127 fatalities. The number of crashes grew by 9.4% in Hampton Roads between 1994 and 2003, while the number of injuries and fatalities resulting from traffic crashes actually both decreased by 15%. During this time period, the number of vehicle-miles of travel in Hampton Roads increased 18%. So despite an increase in crashes, **the crash rate per million vehicle-miles of travel decreased 7%** in Hampton Roads between 1994 and 2003.

The change in the number of crashes, injuries, and fatalities between 1994 and 2003 was much better in Hampton Roads than across the state of Virginia. The crash rate per million vehicle-miles of travel also grew by 8% statewide between 1994 and 2003, countering the trend in Hampton Roads.

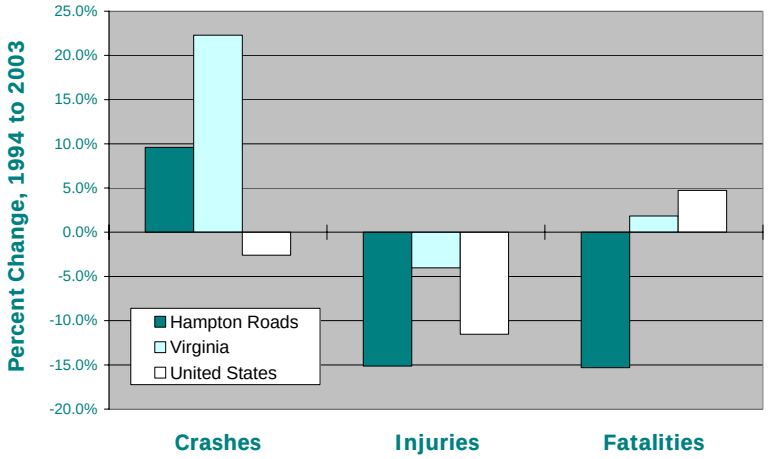
Although the number of fatalities as a result of traffic crashes decreased in Hampton Roads between 1994 and 2003, 127 fatalities per year is still significant. Particularly concerning is the dominance alcohol use has on roadway fatalities. Driving after consuming alcohol was by far the biggest factor influencing fatalities, with 66 crash-related fatalities (52%) in Hampton Roads involving alcohol consumption in 2003.

Crashes, Injuries, and Fatalities in Hampton Roads 1994 to 2003



Data Source: Virginia Traffic Crash Facts, Virginia DMV.

Percent Change in Crashes, Injuries, and Fatalities 1994 to 2003



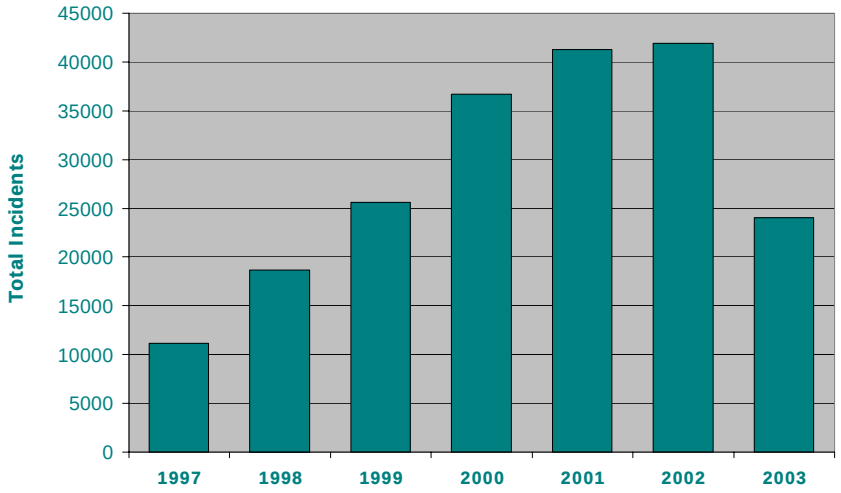
Data Sources: Virginia Traffic Crash Facts, Virginia DMV, NHTSA.

While crashes are the most substantial type of incident, other types of incidents can affect congestion levels as well. Disabled vehicles, flat tires, and debris all compromise both the capacity as well as the safety of the facility. To respond to these incidents as quickly and as safely as possible, the VDOT Smart Traffic Center of Hampton Roads maintains a Freeway Incident Response Team. In addition, the major bridges and tunnels throughout the region also maintain safety service patrols at their respective facilities.

The Freeway Incident Response Team responded to over 24,000 incidents in 2003, with an average incident clearance time of about 15 minutes. Although this amounts to over 65 incidents each and every day, the number of incidents responded to by the Freeway Incident Response Team decreased significantly in 2003. This is due to funding cutbacks that occurred early in the year, which resulted in fewer hours of the day and miles of freeway served by the Incident Response team. Before the cutbacks, service was provided 24 hours a day, 7 days a week on 90 miles of freeway in Hampton Roads. Currently, the service is provided between 5 am and 8 pm, Monday through Friday on 56 miles of freeway throughout the region.

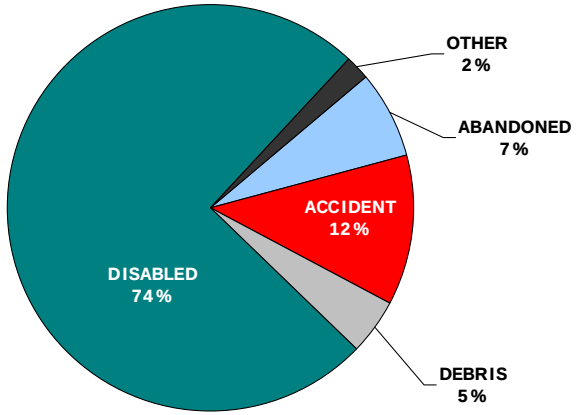
As part of the Congestion Management System, HRPDC completed the Hampton Roads Regional Safety Study in early 2004. This report, which includes an in-depth analysis of regional safety issues, can be found at http://www.hrpdc.org/publications/techreports/transportation.html.

Total Incidents Responded to by the Smart Traffic Center of Hampton Roads, 1997-2003



Data Source: Smart Traffic Center of Hampton Roads.

Types of Incidents Responded to by the Smart Traffic Center of Hampton Roads, 2003



Data Source: Smart Traffic Center of Hampton Roads.

TRUCK DATA

Being home to one of the largest port facilities on the East Coast, truck traffic is prevalent throughout Hampton Roads. In fact, nearly 75% of all containers shipped through the Port of Hampton Roads arrive via trucks. This leads to about 15,000 trucks entering or exiting each day at the ten most-used gateways of Hampton Roads.

Despite the large number of trucks operating throughout Hampton Roads, trucks are primarily on the roadways during non-peak travel periods. Nearly 55% of truck travel in Hampton Roads occurs between the hours of 8:00 am and 3:00 pm. During the morning and afternoon peak travel periods, the number of trucks on regional roadways decreases significantly.

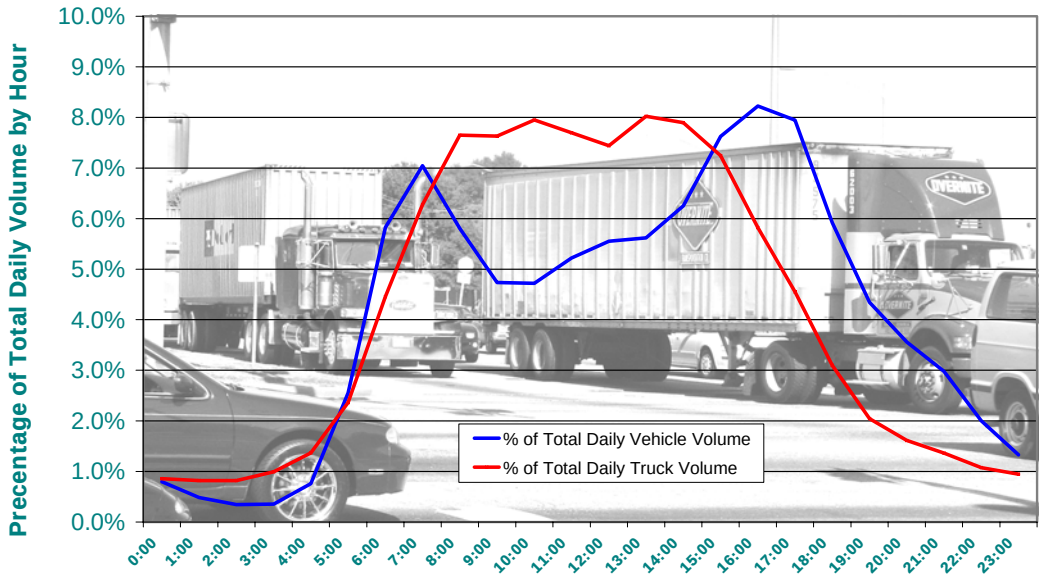
HRPDC released an update to the Intermodal Management System report in 2001. This report summarizes the movement of air, rail, truck, and marine freight to, from, and within the region. Another update to the Intermodal Management System will be released by HRPDC in 2005.

Existing Truck Volumes and Percentages at Ten Major Gateways to Hampton Roads

	Daily Volume	Daily Truck Volume	Daily % of Trucks
Route 58 west of Franklin	19,245	3,839	19.9%
Route 460 west of Windsor	13,972	2,791	20.0%
I-64 at the James City/New Kent CL[1]	44,192	2,652	6.0%
Route 17 north of the Coleman Bridge	34,070	1,257	3.7%
Chesapeake Bay Bridge-Tunnel	9,890	1,017	10.3%
Route 168 at the NC State Line	19,244	912	4.7%
Route 17 at the NC State Line	9,885	873	8.8%
Route 13 at the NC State Line	5,150	807	15.7%
Route 10	7,222	397	5.5%
Route 30	7,887	379	4.8%

1 – Truck data for this segment is based on VDOT estimates.
Data Source: VDOT.

Percentage of Total Daily Traffic Volumes and Truck Volumes by Hour, 2003



Data Source: VDOT classification count stations.

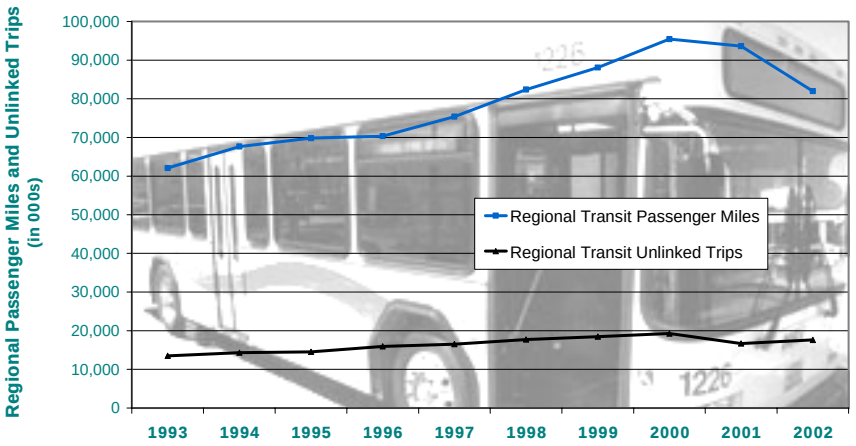
PUBLIC TRANSPORTATION

Regional public transportation usage has increased over the last eight years, outpacing other metropolitan areas. Hampton Roads has a variety of transit options, from conventional bus service provided by Hampton Roads Transit (HRT) and Williamsburg Area Transport (WAT), to passenger and vehicular ferry services provided by HRT and VDOT, to commuting options provided by TRAFFIX, to tourist oriented services such as HRT's VB WAVE service. In the near future, both light rail transit and bus rapid transit service may also be available in the region.

There were 82 million passenger miles taken on public transportation in Hampton Roads in 2002. While that is a decrease over the previous year, the number has increased 32% since 1993. This growth is comparable to national transit systems, which experienced a 34% growth in passenger miles between 1993 and 2002, and higher than transit systems in comparable large metropolitan areas with populations between one and three million people, which experienced a 26% growth.

Those 82 million transit passenger miles regionwide were taken on 17.6 million unlinked trips in 2002. (An unlinked trip is a trip made on one transit vehicle regardless

Transit Passenger Miles and Unlinked Trips in Hampton Roads, 1993-2002



Data Source: National Transit Database.

Regional and National Transit Usage and Growth, 1993-2002

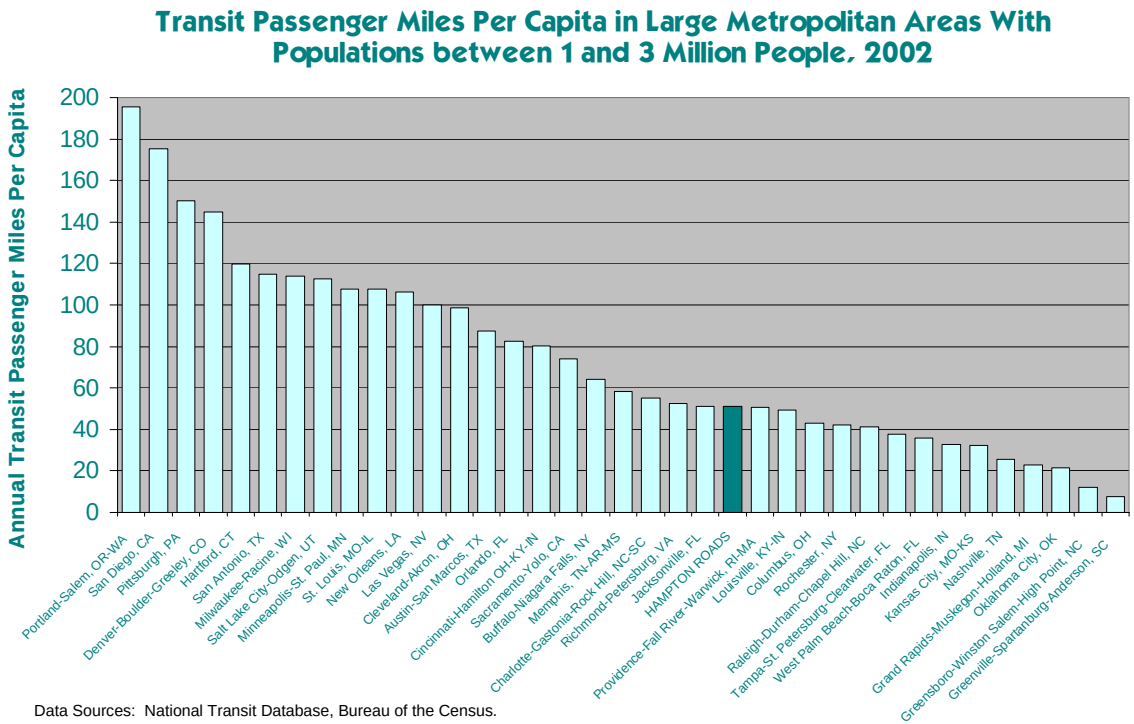
	Passenger Miles	Unlinked Trips
Hampton Roads Total Transit Usage (includes HRT and WAT)	81,970,000	17,626,300
Hampton Roads Transit Growth, 1993 - 2002	32.1%	30.4%
Large Metropolitan Area Transit Growth, 1993 - 2002	25.5%	15.5%
National Transit Growth, 1993 - 2002	33.9%	21.3%

Data Source: National Transit Database.



of the fare paid. If a passenger boards two buses to get from origin to destination, that counts as two unlinked trips.) The number of unlinked trips in Hampton Roads increased 30% between 1993 and 2002, which is higher than the growth that occurred both nationwide and in other large metropolitan areas.

In spite of the growth over the last ten years, transit use in Hampton Roads still lags behind other metropolitan areas in terms of usage per capita. With approximately 51 transit passenger miles per capita in 2002, Hampton Roads ranked 23rd among the 37 large metropolitan areas with populations between one and three million people. Of those 22 metropolitan areas with higher transit use per capita than Hampton Roads, 13 had some type of transit rail system in place in 2002.



Data Sources: National Transit Database, Bureau of the Census.

HRT ferry

BICYCLE AND PEDESTRIAN FACILITIES

There are currently 457 centerline miles of various types of bicycle and pedestrian facilities throughout the region. These facilities range from remote park and refuge paths to the oceanfront boardwalk to shoulder facilities on major thoroughfares. The primary types of bicycle and pedestrian facilities in Hampton Roads are shared use paths (178 miles) and signed shared roadways (177 miles).

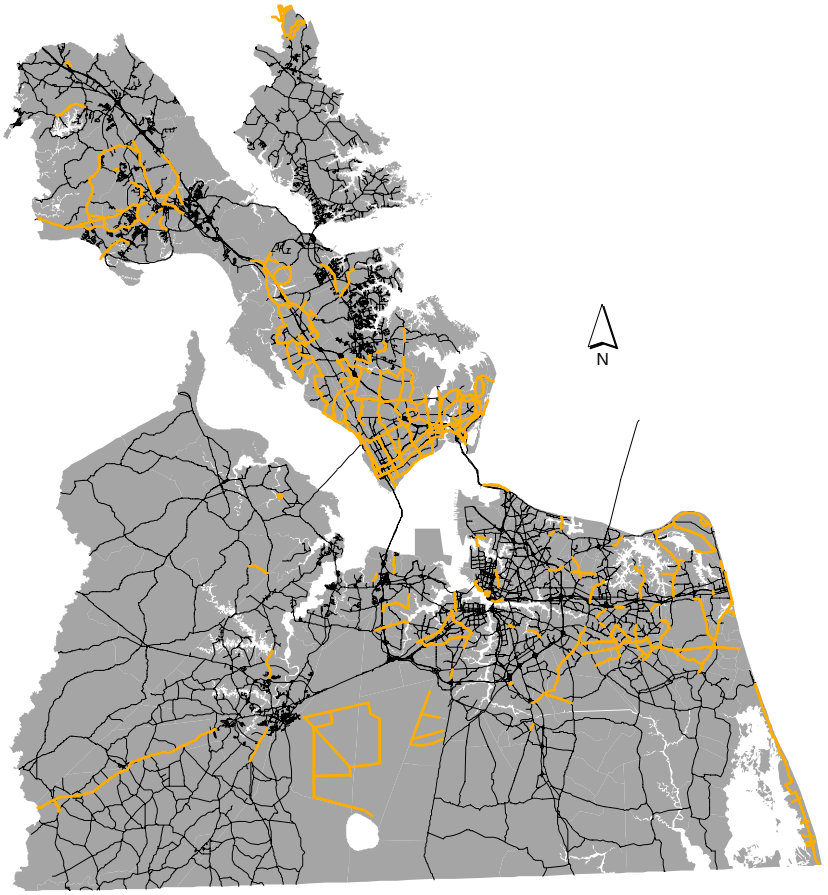
The next two pages reflect programmed and planned bicycle facilities from VDOT's Hampton Roads District Bicycle Plan. Although there are plans for over 1,400 additional centerline miles of bicycle facilities, with current policies and funding levels it is expected that 230 miles of additional bicycle or pedestrian facilities will be constructed throughout the region by 2026.

Existing Centerline Miles of Bikeway by Type in Hampton Roads

Shared Use Path	Bicycle Lane	Signed Shared Roadway	Shoulder Facilities
178 miles	35 miles	177 miles	67 miles

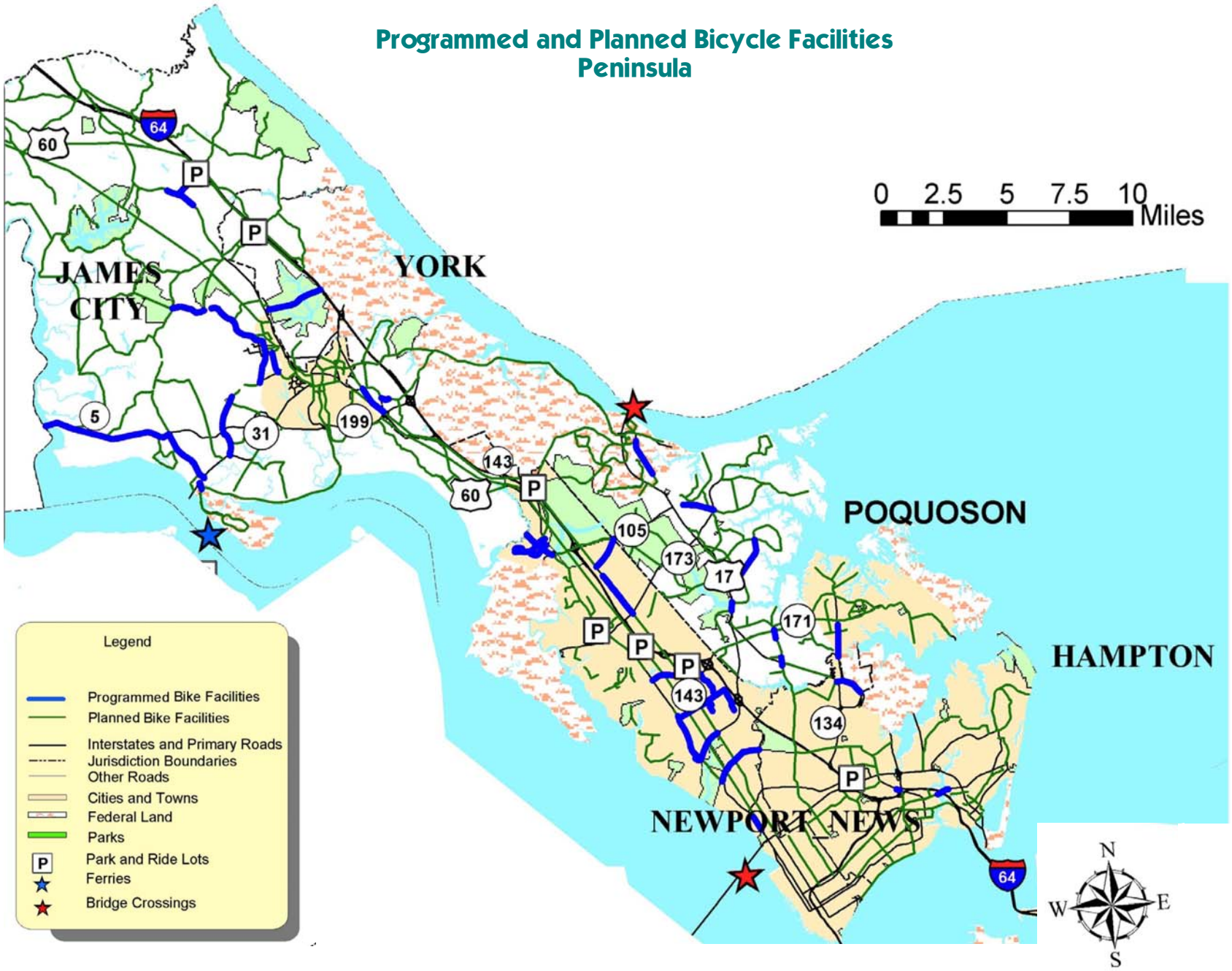
Data Source: VDOT, "VDOT Hampton Roads District Bicycle Plan", August 2003.

Bicycle Facilities in Hampton Roads, 2003



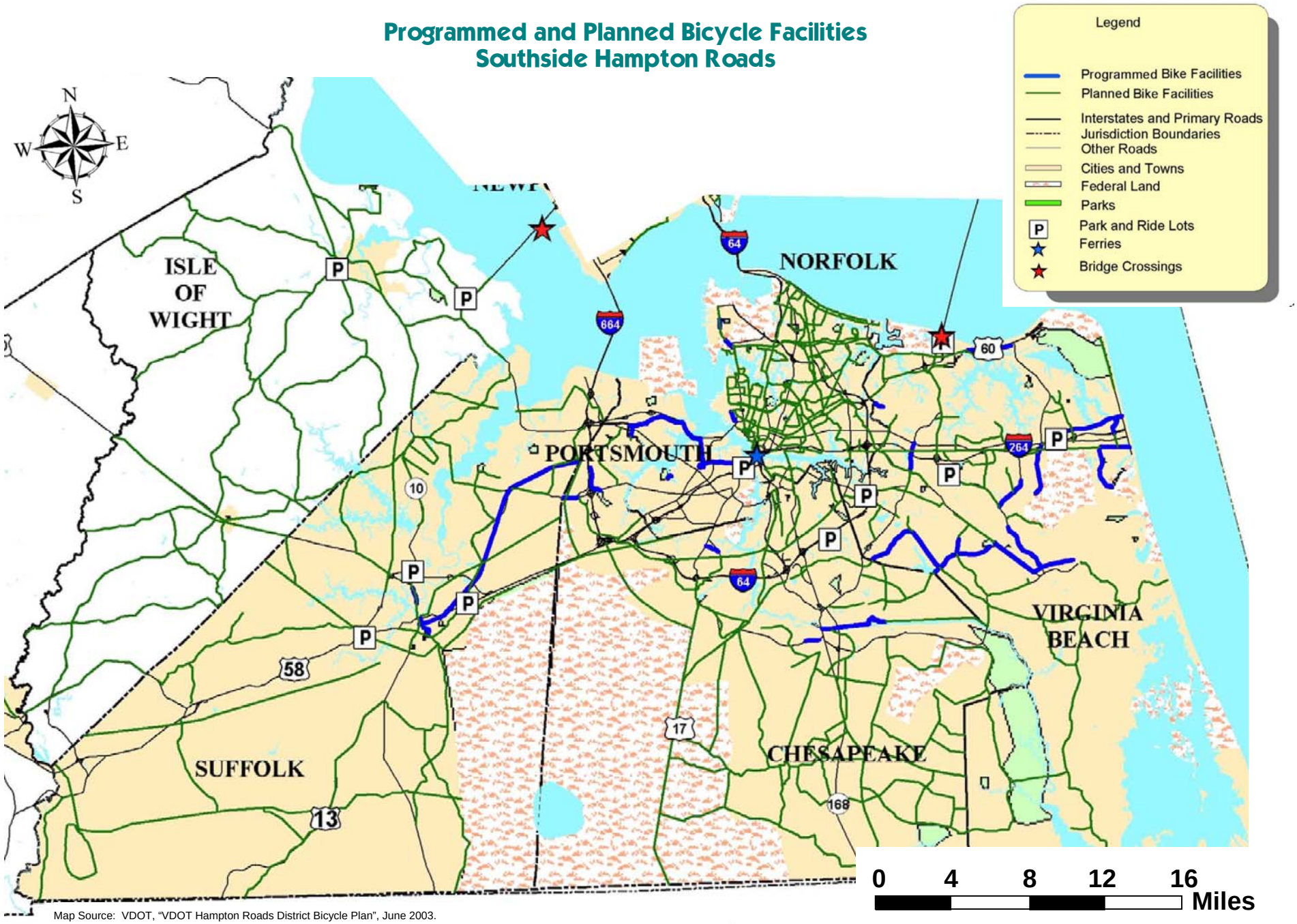
Data Source: VDOT, "VDOT Hampton Roads District Bicycle Plan", August 2003.

Programmed and Planned Bicycle Facilities
Peninsula



Map Source: VDOT, "VDOT Hampton Roads District Bicycle Plan", June 2003.

Programmed and Planned Bicycle Facilities
Southside Hampton Roads



Map Source: VDOT, "VDOT Hampton Roads District Bicycle Plan", June 2003.

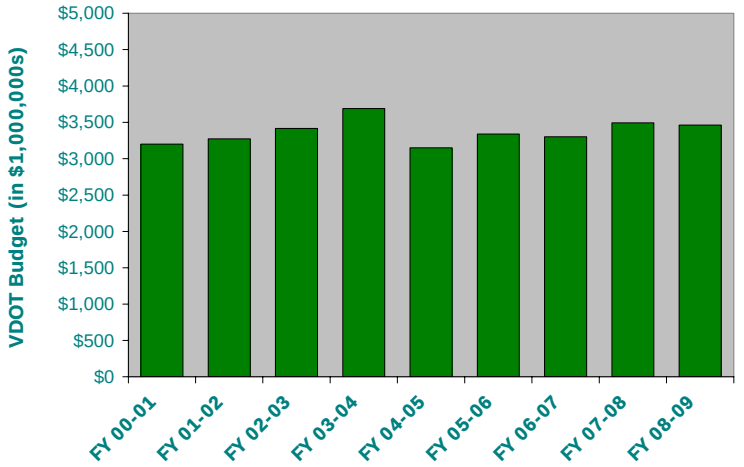
TRANSPORTATION FINANCING

As the amount of travel and congestion has increased in Hampton Roads in recent years, transportation funding has had trouble keeping pace. There are various reasons for this, including higher project construction costs, increasing infrastructure maintenance costs, and lower than average state fuel taxes.

The final transportation budget for the state of Virginia in Fiscal Year 2005 is $3.1 billion, down from $3.6 billion in Fiscal Year 2004. This amount includes construction and maintenance of Virginia's highway system, operations and administration, debt payments, and support to ports, aviation, and public transportation. Although the statewide transportation budget increased considerably during the late 1990s due to increased debt, it has remained generally constant over the early part of this decade. Furthermore, the statewide transportation budget is not expected to grow significantly over the rest of this decade.

Not surprisingly, the largest items in VDOT's budget are highway system construction and maintenance. Over 78% of the VDOT's Fiscal Year 2005 budget is devoted to highway construction and maintenance. By comparison, state support for mass transit, ports, and the airports amounts to one-tenth of the highway allocations.

Historical and Projected Transportation Budget for the State of Virginia, Fiscal Years 2001 - 2009



Data Source: VDOT

Allocation of VDOT Revenues, Fiscal Year 2005

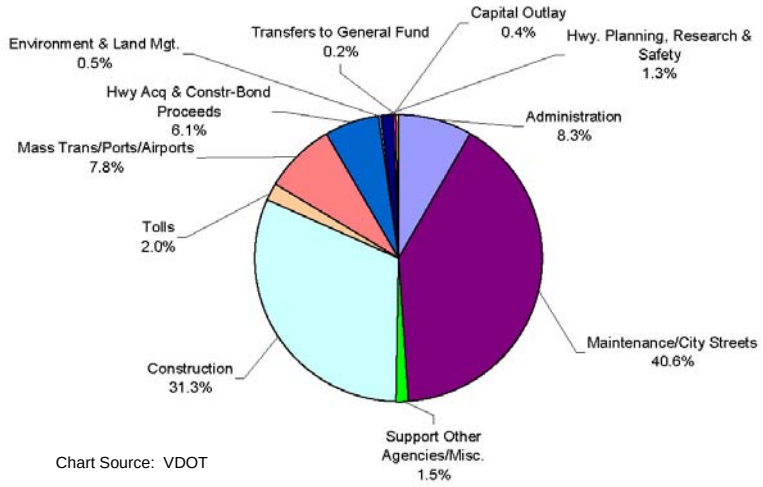
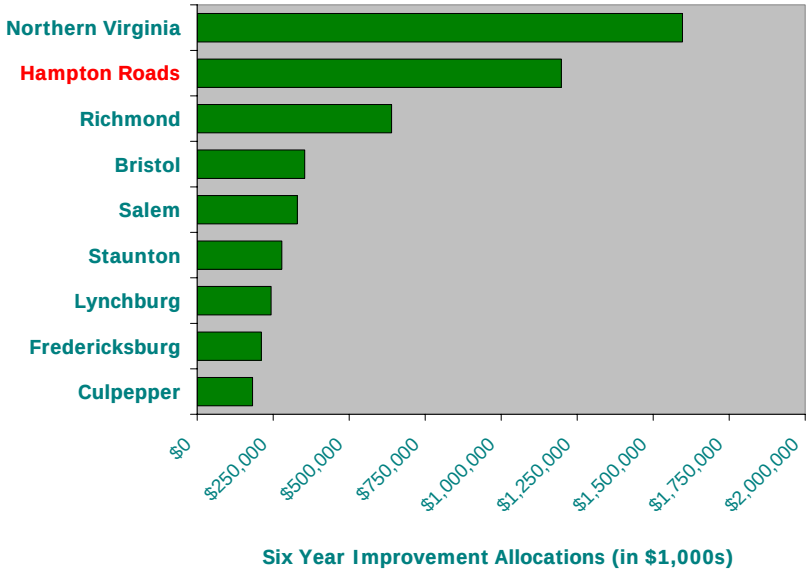


Chart Source: VDOT

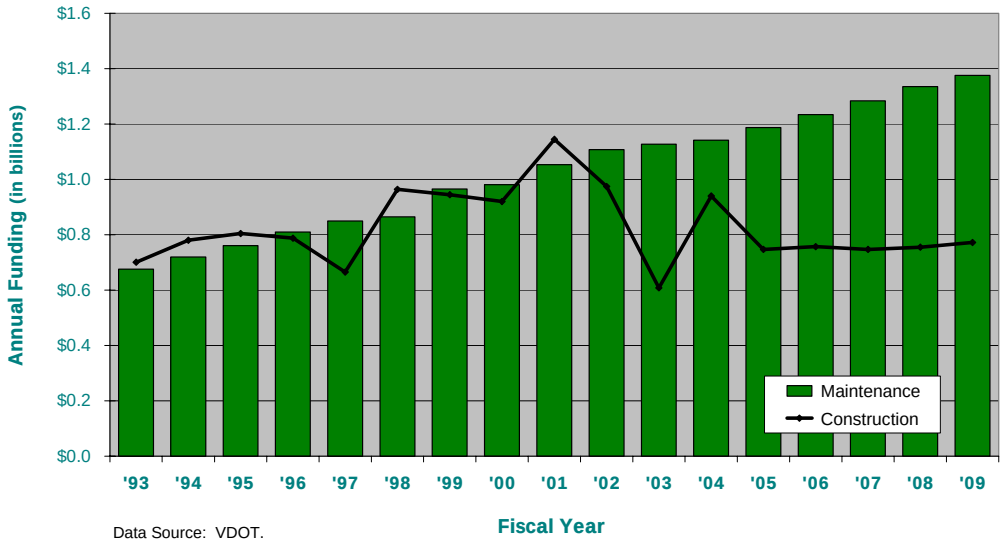
Once maintenance, debt service, and other priorities are funded, the remaining revenues are allocated toward studies, design, and construction of transit, rail, and interstate and primary highway construction projects included in the six-year improvement program. The six-year improvement program for VDOT Fiscal Years 2005 - 2010 includes $1.2 billion for projects in the Hampton Roads construction district (which includes rural areas to the west of the region as well as the Eastern Shore), which is 24% of the total that was allocated to construction districts statewide. Only the Northern Virginia district, with 32% of the total statewide allocation, received more six-year improvement program allocations than the Hampton Roads district.

Six-Year Improvement Program Allocations by VDOT District, Fiscal Years 2005 - 2010



Data Source: VDOT

Statewide Highway Funding by Fiscal Year Maintenance vs. Construction, FY 1993 - FY 2009



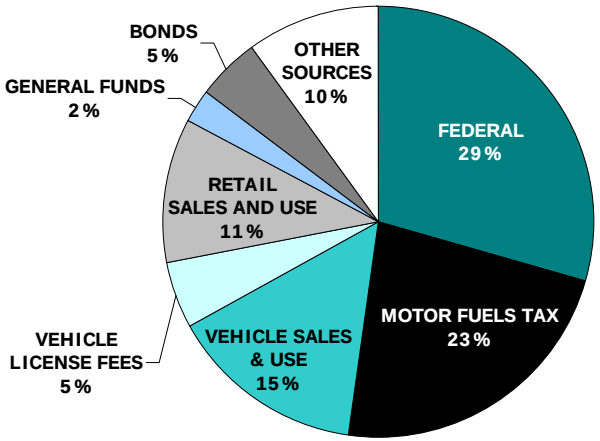
Data Source: VDOT.

Also affecting VDOT's financial welfare is the additional funding that must be devoted to maintaining existing transportation infrastructure. As these maintenance costs increase, less funding can be budgeted for transportation improvements. During VDOT's Fiscal Year 1993, $676 million was devoted to highway maintenance in Virginia. This number increased to $1.14 billion in FY 2004, and by FY 2009 statewide maintenance funding is expected to increase to $1.38 billion.

Although highway maintenance and construction funding levels were similar in FY 1993, in FY 2004 $200 million more was spent on highway maintenance than on construction of new facilities statewide. By FY 2009, for every dollar spent on maintaining highway infrastructure, it is expected that only 56 cents will be spent on constructing new highway infrastructure.

There are many revenue streams that fund transportation improvements. Over half of all statewide transportation revenues are provided by two methods, federal funds and the state motor fuels tax. In fact, since 2002 federal revenues have been the largest single source of funding for Virginia's highway construction program. It's possible that without additional state revenue, Virginia may not be able to fully match available federal construction funds in the future.

Statewide Transportation Revenues by Source FY 2004



Data Source: VDOT

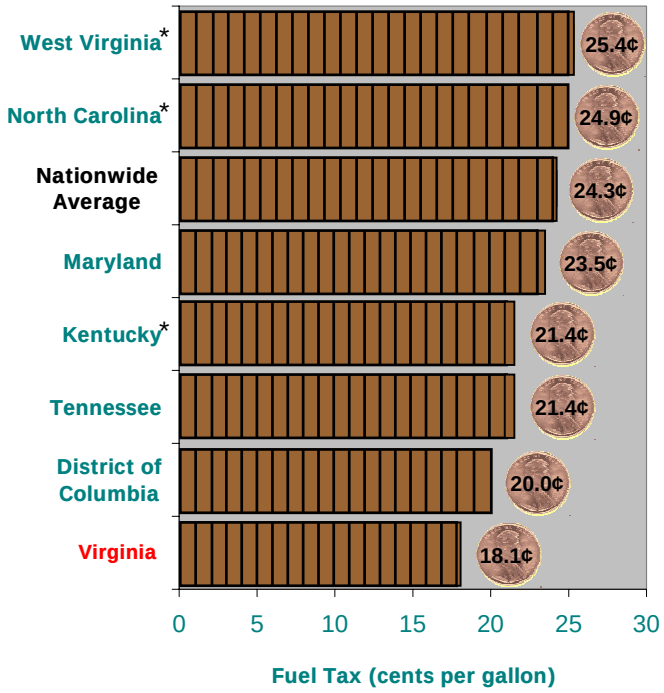
Pinners Point Interchange

Although the motor fuels tax comprises the second highest portion of transportation revenues statewide, Virginia only ranks 41st in terms of the state taxes imposed on gasoline at 18.1 cents per gallon (which is comprised of 17.5 cents per gallon base tax rate plus 0.6 cents per gallon petroleum storage tank fee). Every neighboring state and the District of Columbia has a higher fuel tax rate than the state of Virginia, with West Virginia being even more than seven cents a gallon higher.

The state motor fuel tax has remained generally unchanged since it was raised in 1986. When inflation is taken into account, **the buying power of the gas tax has actually decreased 40%** over the last 18 years. This figure also does not take into account the additional maintenance burdens on the state gas tax, nor does it include construction cost increases that have greatly exceeded inflation. While the fuel tax rate has remained unchanged, according to the Virginia Department of Accounts state revenues from the fuel tax grew at 2.8% annually over the last nine years due to increased fuel sales resulting from increased travel and decreasing fleet-average fuel economy.

I-64 in Hampton

Statewide Gasoline Taxes and Fees for Virginia, Neighboring States, and the U.S. (as of July 2004)



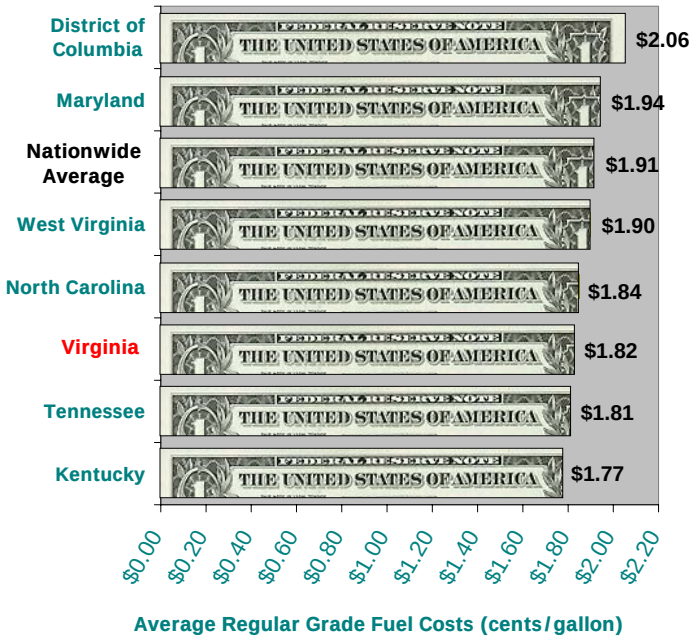
Statewide fuel taxes include base tax rates as well as any additional state taxes and fees. In Virginia, the statewide gasoline tax includes a 17.5¢ per gallon base rate and 0.6¢ per gallon petroleum storage tank fee.
* Fuel taxes are variable in Kentucky, North Carolina, and West Virginia.
Data Source: American Petroleum Institute.

The level of fuel taxation affects the total cost of gasoline at the pump. The average cost per gallon of regular unleaded gasoline in Virginia was $1.822 as of July 1, 2004 according to the AAA Fuel Gauge Report. This cost, while significantly higher than the year before, ranked 36th among the 50 states and the District of Columbia. Among neighboring states, only Kentucky and Tennessee had lower fuel costs, in spite of higher state fuel taxes in those states.

Hampton Roads, with an average cost of $1.819 per gallon for regular unleaded gasoline as of July 1, 2004, was slightly lower than the statewide average. The cost was, however, more than two cents a gallon higher in Hampton Roads than in the Richmond-Petersburg metropolitan area ($1.794 per gallon) and seven cents a gallon higher than in the Roanoke area ($1.747). Of the 37 large metropolitan areas with populations between one and three million people, the average cost of fuel was $1.88, with Hampton Roads ranking 22nd of those 37 areas.

The effects of the current and future levels of construction funding are evident in the regional long-range transportation plan. The Hampton Roads 2026 Regional Transportation Plan included nearly 300 candidate projects, at a total cost of over $30 billion. Only 150 of those projects, at a total cost of $9 billion, were included in the final plan due to a lack of funding. The list of unfunded projects is extensive, including most of the Hampton Roads Third Crossing project, widening I-64 west of Newport News, widening I-64 in Chesapeake, widening Dominion Boulevard, and the Midtown Tunnel widening/Martin Luther

Average Regular Grade Fuel Costs Per Gallon for Virginia, Neighboring States, and the U.S. (as of July 1, 2004)



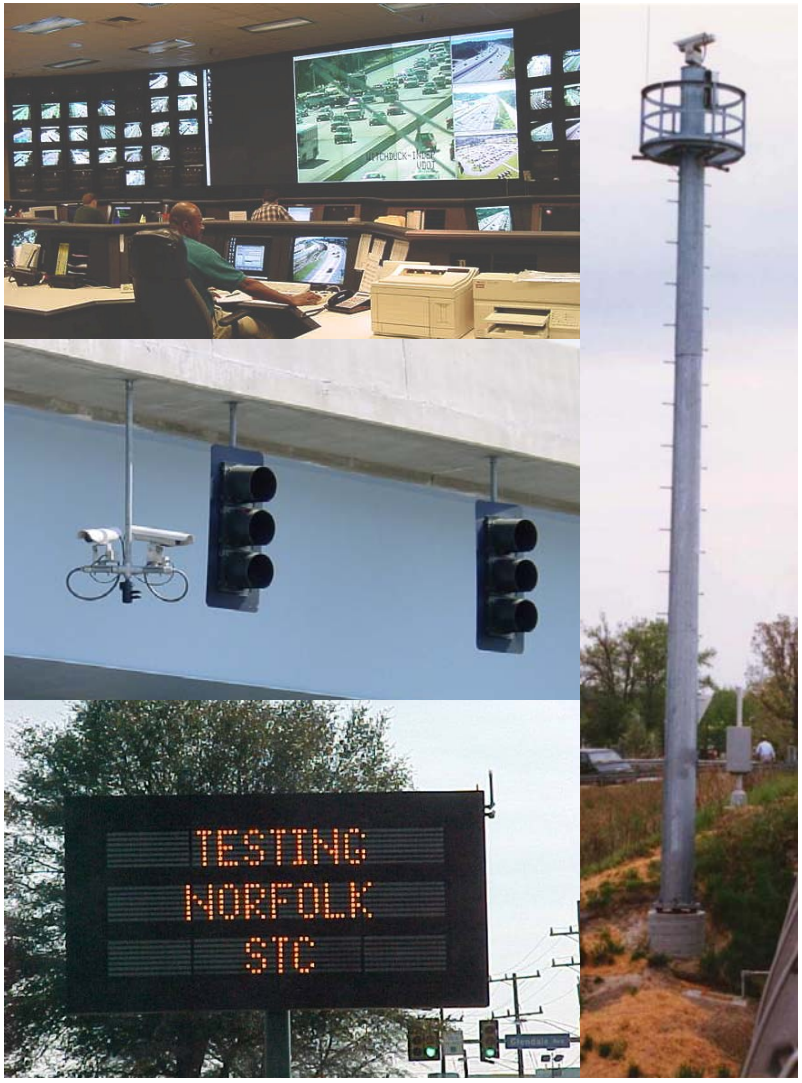
Data Source: AAA Fuel Gauge Report.

King Freeway extension project. Of the regional roadways that currently experience severe congestion, 66% have no improvements planned over the next 20 years due to a lack of funding. Even after spending $7 billion on transportation improvements over the next 20 years, **over half of all lane miles in Hampton Roads are expected to be moderately or severely congested during the peak travel periods in 2026**.

ITS

As major roadway projects become more difficult to complete, Intelligent Transportation Systems serve as an economical method of improving the operation and performance of existing facilities. Intelligent Transportation Systems (ITS) apply advanced technologies to help ensure the mobility of people and goods, provide for their safety and security, improve overall transportation system operations, and inform travelers of real-time weather and road conditions. There is a wide range of ITS technologies available, including highway message signs, video cameras, transit vehicle location devices, on-line communications, traffic signal systems, automated toll booths, etc.

In Hampton Roads, VDOT operates a Traffic Management System (TMS) that provides freeway surveillance, incident detection, traffic information dissemination, and a communications backbone for the region. The TMS is controlled and monitored by the Smart Traffic Center of Hampton Roads. With the completion of Phase I of the Traffic Management System in 1996, 19 centerline miles of freeway were monitored by the Smart Traffic Center. The completion of Phase II in 2004 brought the existing coverage up to 50 miles. Once Phase III is



Various ITS Infrastructure in Hampton Roads

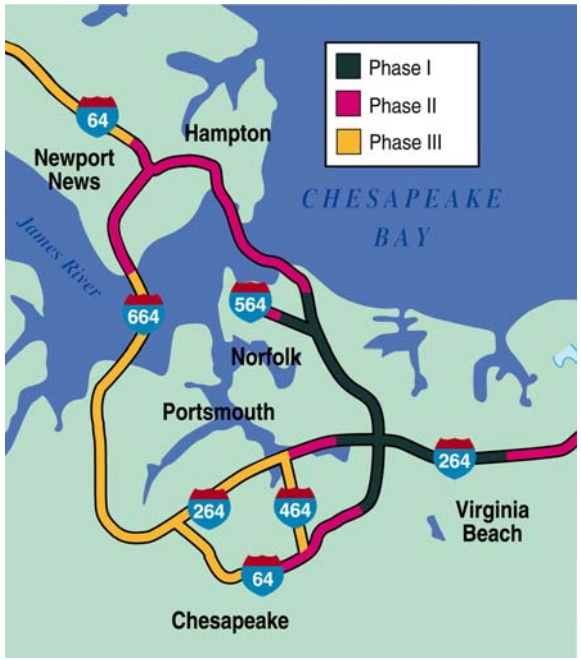
completed late in 2005, 113 miles of freeway, nearly the entire Hampton Roads interstate system, will be covered. The completed system will include 288 closed-circuit cameras, 2,330 vehicle detectors and sensors, and 244 variable message signs.

Local jurisdictions have also planned and implemented various ITS improvements. Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, and Virginia Beach all have planned or implemented Advanced Traffic Management Systems, and Chesapeake, Hampton, Norfolk, and Virginia Beach will also have their own Smart Traffic Centers. These municipal Smart Traffic Centers will be connected with the Smart Traffic Center of Hampton Roads, allowing for further data collection and sharing.

Regional ITS improvements are often planned through the Hampton Roads ITS Committee, which was one of the first cooperative, inter-agency, multi-jurisdictional transportation groups in the nation. One of the committee's accomplishments is the Hampton Roads ITS Strategic Plan, which serves as a road map for the effective use of ITS throughout the region. An update to the ITS Strategic Plan was released in 2004, revising previous plans from 1995 and 2000. The Hampton Roads ITS Strategic Plan can be found at http://www.hrpdc.org/publications/techreports/transportation.html.

There are various funding mechanisms used to finance ITS projects throughout the region, which is critical since the estimated cost of infrastructure included in the project inventory of the ITS Strategic Plan is over $200 million. Congestion Mitigation and Air Quality (CMAQ) funding is often used to fund regional ITS improvements. Between 1993 and 2008, 56% of all CMAQ allocations have been devoted to either ITS or signal system infrastructure improvements. Statewide funding and federal grants are often used to fund ITS initiatives as well, and recently ITS technology has been incorporated into highway construction projects.

Hampton Roads Smart Traffic Center Coverage Area



Map Source: VDOT

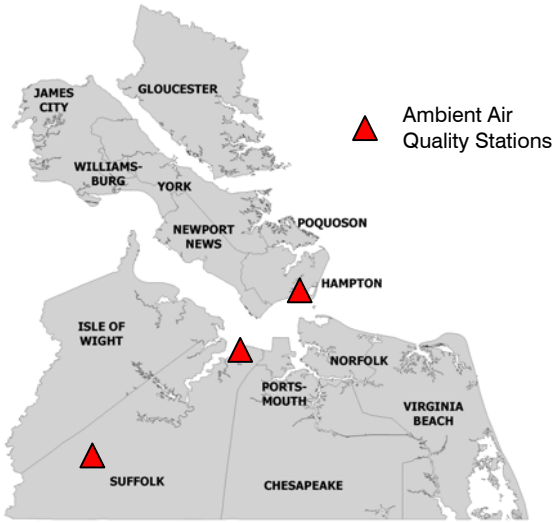
AIR QUALITY

Hampton Roads air quality is greatly affected by the region's transportation system, with nearly half of all pollutants coming from mobile sources. These mobile sources encompass every mode of transportation, including cars, trucks, airplanes, locomotives, and ships. As such, the Transportation Equity Act of the 21st Century (TEA-21) requires that the metropolitan transportation planning process be coordinated with the mandates of the Clean Air Act in the development of transportation plans and programs. This means that the regional Transportation Improvement Program and Long Range Transportation Plan must meet air quality conformity standards. VDOT is responsible for these air quality conformity analyses for regional plans and programs.

Regional transportation projects are chosen based on many criteria, including their expected impacts on air quality. One source of federal transportation funds, Congestion Management and Air Quality (CMAQ), is dedicated to funding projects that are chosen based on their ability to reduce emissions.

The Environmental Protection Agency (EPA) also regulates the amount of ground level ozone allowed in each region. Ozone levels are measured by three ambient air quality stations in the region, two of which are located in

Hampton Roads Ozone Nonattainment Area and Air Quality Monitoring Stations



Data Source: Virginia Department of Environmental Quality.

Fourth Highest Daily Maximum Ozone Readings, 2001 - 2003 Eight-Hour Averages (ppb)

	2001	2002	2003	3 Year Average
Hampton	85	102	83	90
Suffolk - TCC	85	98	83	88
Suffolk - Holland	75	92	79	82

Data Source: VDOT.

Suffolk and the other in Hampton. In 1991, EPA first classified Hampton Roads as a marginal ozone nonattainment area based on violations of a one-hour ambient air quality standard. EPA redesignated the region to attainment status in 1997, based upon approval of the Hampton Roads Area Maintenance State Implementation Plan. As an ozone maintenance area, Hampton Roads still had to meet emission tests for both volatile organic compounds and nitrogen dioxide.

In 1997, EPA proposed a new eight-hour ambient air quality standard that is currently replacing the one-hour standard. To determine whether there is a violation of the eight-hour standard, EPA uses the fourth highest daily maximum eight-hour average ozone concentration over the course of the year, averaged over a three-year period. The region is determined to be in nonattainment if this value is 85 parts per billion or higher at one of the monitors. With a three-year average of 90 parts per billion at the air monitoring station in Hampton, Hampton Roads is now classified by EPA as a Marginal Ozone Nonattainment Area, the second-least severe of the six nonattainment classifications defined by EPA.

As a marginal ozone nonattainment area, certain actions must be undertaken in the region, most of which will affect stationary sources such as industries and power plants. Attainment in marginal ozone nonattainment areas must be in place by June 2007 according to EPA regulations.


A hazy Downtown Norfolk skyline

SUMMARY

This report includes numerous statistics regarding the state of transportation in Hampton Roads. Some of the most interesting statistics from each section of this report are summarized below:

Air Travel

- Norfolk International Airport experienced a 15% increase in passenger boardings between 2001 and 2002. Newport News-Williamsburg International Airport experienced a 30% increase in passenger boardings between 2001 and 2002.

Marine Data

- The Port of Hampton Roads ranked third among principal Atlantic Coast ports, with over 30 million short tons of goods imported and exported in 2002.

- The amount of general cargo handled by the Port of Hampton Roads has more than doubled over the last ten years.

Rail Travel

- Including coal, 69% of all inbound freight to Hampton Roads and 11% of all outbound freight from Hampton Roads by tonnage was transported by rail in 1998.

- In 2003, over 100,000 riders boarded Amtrak trains at the Newport News station, and 37,000 riders boarded Amtrak trains at the Williamsburg station.

Roadway Usage

- There were 36 million vehicle-miles of travel on the average day in Hampton Roads in 2002, an increase of over 5 million miles daily from 1993.

- The amount of vehicular travel per capita in Hampton Roads was 23.3 miles per person per day in 2002, up from 22.0 miles per person per day in 1993.

- The growth in roadway travel in Hampton Roads increased three times faster than the growth in population between 1993 and 2002.

- Interstates in Hampton Roads carried 29% of the regional daily traffic volumes in 2002, up from 20% in 1993.

- If local roadways are excluded, the amount of travel in Hampton Roads grew nearly three times faster than the amount of roadway capacity did between 1993 and 2002.

TTI Urban Mobility Report Data

- Drivers in Hampton Roads experience over 23 million hours of delay annually, at an annual cost of over $400 million to the region.

- The average peak period trip in Hampton Roads takes 21% longer than the same trip takes during free flow periods of the day.

- The average peak period traveler in Hampton Roads spent 28 hours stuck in traffic in 2002, up from 18 hours in 1993.

Commuting Data

- In Hampton Roads, the average trip to work in 2000 took 24.1 minutes, up from 21.6 minutes in 1990.

- Nearly 79% of commuters in Hampton Roads drove alone to work in 2000, up from nearly 73% in 1990.

- 48% of all Hampton Roads residents work in a jurisdiction that is different from the one that they live in.

- The percentage of people in Hampton Roads that drove more than 90 minutes to work more than tripled between 1990 and 2000.

- 15,000 more people commuted across the Hampton Roads harbor in 2000 than in 1990.

- The number of vehicles crossing between the Peninsula and the Southside increased from 107,900 per weekday in 1990 to 157,100 per weekday in 2000.

Vehicle Occupancy and HOV Data

- Vehicle occupancy rates dropped on regional interstates and arterials between 1999 and 2003.

- During the evening peak period, HOV lanes carry 12% of the traffic and 15% of the people on roadway segments with available HOV facilities.

- Violators are a significant problem on the region's HOV system.

Safety

- There were nearly 33,000 traffic crashes on Hampton Roads roadways in 2003, with 18,000 injuries and 127 fatalities.

- The crash rate per million vehicle-miles of travel decreased 7% in Hampton Roads between 1994 and 2003.

- 52% of the fatalities in Hampton Roads in 2003 involved alcohol consumption.

- The VDOT Freeway Incident Response Team responded to 24,000 incidents in 2003, although this number is much lower than in 2002 due to budget cutbacks.

Truck Data

- Nearly 15,000 trucks enter and exit each day at the ten most-used gateways of Hampton Roads.

- Most of the truck travel in Hampton Roads occurs during the non-peak travel periods.

Public Transportation

- There were 82 million passenger miles taken on transit in Hampton Roads in 2002, a 32% increase over 1993.

- With 51 transit passenger miles per capita in 2002, Hampton Roads ranked 23rd among the 37 large metropolitan areas.

Bike and Pedestrian Facilities

- There are currently 457 centerline miles of various types of bicycle and pedestrian facilities in Hampton Roads, with plans for over 1,400 additional centerline miles.

Transportation Financing

- Virginia ranks 41st among the 50 states and the District of Columbia in terms of taxes imposed on gasoline. Virginia also has the lowest fuel tax rate among neighboring states and the District of Columbia.

- The buying power of the gas tax has decreased 40% over the last 18 years.

- The average cost per gallon of regular unleaded gasoline was $1.82 in Virginia as of July 1, 2004, ranking the state 36th among the 50 states and the District of Columbia.

- The average cost per gallon of regular unleaded gasoline in Hampton Roads was also $1.82 on July 1, 2004. This cost was two cents a gallon higher than the Richmond-Petersburg metropolitan area, and seven cents a gallon higher than the Roanoke metropolitan area.

- $1.14 billion was devoted to highway maintenance in Virginia in VDOT's Fiscal Year 2004, up from $676 million in FY 1993. During the same time, funding for highway construction projects statewide did not change significantly.

- By FY 2009, for every dollar spent on maintaining highway infrastructure statewide, only 56 cents will be spent on constructing new facilities.

- The Hampton Roads 2026 Regional Transportation Plan included 298 candidate projects, at a total cost of $33 billion. Only 151 of these projects, at a total cost of $7 billion, were included in the final plan due to a lack of funding.

- Of the regional roadways that currently experience severe congestion, 66% have no improvements planned over the next 20 years due to a lack of funding.

- Over half of all lane miles in Hampton Roads are expected to be moderately or severely congested during the peak travel periods in 2026.

ITS

- The completed Hampton Roads Traffic Management System will cover 113 miles of freeway with 288 closed-circuit cameras, 2,330 vehicle detectors and sensors, and 244 variable message signs.



Air Quality

- With a 3-year average of 90 parts per billion at the Hampton air monitoring station, Hampton Roads is now classified by EPA as a Marginal Ozone Nonattainment Area, the second-least severe of the six nonattainment classifications.

- As a marginal nonattainment area, certain actions must be undertaken in the region, most of which will affect stationary sources such as industries and power plants.

HRPDC will be releasing Part II of the Congestion Management System report early in 2005. Part II will include a historical analysis of the traffic trends at major regional bridges and tunnels and a comprehensive congestion analysis of the region's highway system. Part III of the Congestion Management System report will include congestion management strategies and an analysis of their impacts, and identification of the most congested corridors and areas that require further analysis.

ADDITIONAL INFORMATION

The information provided in this report was compiled from a wide variety of sources, many of which are publicly available. Data from the following sources were included in this report and contain additional information:

Air Travel

The Federal Aviation Administration updates air passenger data for both the nation and individual airports at their website http://www.faa.gov. Passenger data is also provided on each of the region's airport websites, http://www.norfolkairport.com and http://www.nnwairport.com.

Marine Data

The Virginia Port Authority maintains up-to-date statistics regarding the Port of Virginia on their website at http://www.vaports.com/PORT-stats.htm. The Hampton Roads Maritime Association also releases the Port of Hampton Roads Annual Report, which contains extensive information regarding all aspects of the Port. Additional information is available through http://www.portofhamptonroads.com.

Rail Travel

The Federal Railroad Administration Office of Safety Analysis maintains a highway-rail safety database. This data is located at http://safetydata.fra.dot.gov/officeofsafety. Data for Amtrak ridership is available at http://www.amtrak.com.

Roadway Usage

The Highway Statistics Series contains analyzed statistical data on motor fuel; motor vehicles; driver licensing; highway-user taxation; highway finance; highway mileage, and Federal aid for highways. The reports are released annually by the Federal Highway Administration and are located at http://www.fhwa.dot.gov/policy/ohpi/hss/index.htm.

TTI Urban Mobility Report Data

The Texas Transportation Institute (TTI) annually releases the Urban Mobility Report, a nationally known study of mobility and traffic congestion on freeways and major streets in 75 cities. The report is located at http://mobility.tamu.edu.

Commuting Data

The Bureau of the Census, as part of Census 2000, collected and disseminated information regarding commuting patterns in jurisdictions throughout the country. Data from the 2000 Census is located at http://www.census.gov/main/www/cen2000.html.

Occupancy and HOV Data

The 2001 National Household Travel Survey, released every five years by the USDOT Bureau of Transportation Statistics, provides extensive information regarding personal travel in the United States. The highlights of the 2001 survey are located at http://nhts.ornl.gov/2001/reports.shtml.

Safety

The Virginia Department of Motor Vehicles annually releases the Virginia Traffic Crash Facts document, which is a comprehensive statistical overview of traffic crashes occurring throughout Virginia. The document is located at http://www.dmv.state.va.us/webdoc/citizen/drivers/crash_facts.asp.

Transit

The Federal Transit Administration collects and disseminates data on the state of mass transportation via the National Transit Database (NTD) program. The National Transit Database is located at http://www.ntdprogram.com/NTD/ntdhome.nsf/Docs/NTDData.

Bicycle and Pedestrian Facilities

In 2003, VDOT released the Hampton Roads District Bicycle Plan, which serves both as an inventory of existing facilities and as the basis for bicycle and pedestrian information for the region's 2026 Regional Transportation Plan. More information regarding VDOT's bicycle and pedestrian facility policies is available at http://virginiadot.org.

Transportation Financing

The American Petroleum Institute maintains a list of fuel taxes and fees by state. This data is located at http://api-ec.api.org.

National, statewide, and regional fuel prices are available via AAA's Daily Fuel Gauge Report. The data is updated each business day and is the most comprehensive retail gasoline survey available. This data is located at http://www.fuelgaugereport.com.

ITS

The Hampton Roads ITS Strategic Plan details the state of ITS in the region as well as goals that should be attained. The plan was updated in 2004, and this update is located at http://www.hrpdc.org/publications/techreports/transportation.html.

Air Quality

Virginia's Department of Environmental Quality maintains information regarding national air quality standards and regional air quality data. Their website is http://www.deq.virginia.gov/air.

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

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