Regional Performance Measures System Performance Report 2024

October 2024

HAMPTON ROADS TPO

T24-05

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REGIONAL PERFORMANCE MEASURES

SYSTEM PERFORMANCE REPORT

2024

PREPARED BY:

HAMPTON ROADS TPO

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Regional Performance Measures – System Performance Report 2024

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ABSTRACT
The Moving Ahead for Progress in the 21st Century (MAP-21) surface transportation legislation established a performance-and outcome-based program. As part of this program, current legislation requires that States and Metropolitan Planning Organizations (MPOs) prepare and use a set of federally-established performance measures that are tied to the national performance goals. Each MPO must set regional targets in the areas of roadway safety, transit asset management, transit safety, pavement condition, bridge condition, roadway performance, and freight.

Setting HRTPO targets is a collaborative effort. The Transportation Technical Advisory Committee (TTAC) recommends targets for the HRTPO Board to consider. In order to assist the TTAC, the committee formed a Regional Performance Measures Working Group. This Working Group includes staff from localities, transit agencies, VDOT, and subject-matter experts.

This Regional Performance Measures – System Performance Report includes a description of the methodology used to calculate each measure, historical data trends for each of the areas, information on statewide targets, a description of the targets that have been established by the HRTPO, and the progress being made towards meeting the established targets. This report is updated on an annual basis to reflect updated targets as well as progress towards meeting the established targets.

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Prepared in cooperation with the U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), and Virginia Department of Transportation (VDOT). The contents of this report reflect the views of the Hampton Roads Transportation Planning Organization (HRTPO). The HRTPO 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 Hampton Roads Planning District Commission. 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.

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

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INTRODUCTION

The Moving Ahead for Progress in the 21st Century (MAP-21) surface transportation legislation established a performance- and outcome-based program. The Federal Highway Administration (FHWA) defines performance-based planning and programming as a system-level, data-driven process to identify strategies and investments.

A key feature of MAP-21 (and continued under the current federal legislation) is the establishment of national performance goals in the following areas:

- **Safety** - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Infrastructure Condition** - To maintain the highway infrastructure asset system in a state of good repair.
- **Congestion Reduction** - To achieve a significant reduction in congestion on the National Highway System.
- **System Reliability** - To improve the efficiency of the surface transportation system.
- **Freight Movement and Economic Vitality** - To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental Sustainability** - To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- **Reduced Project Delivery Delays** - To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

As part of this program, federal legislation requires that States and Metropolitan Planning Organizations (MPOs) prepare and use a set of federally-established performance measures that are tied to the national performance goals, as described below.

MEASURES

States and MPOs must prepare and set targets for the federally-established performance measures in the following table:

Area	Measures
Safety	Fatalities
	Fatality Rate
	Serious Injuries
	Serious Injury Rate
	Bike/Pedestrian Fatalities & Serious Injuries
Transit	Transit Asset Management
	Transit Safety
Bridge Condition	NHS Bridge Deck Area in Good Condition
	NHS Bridge Deck Area in Poor Condition
Pavement Condition	Interstate System Pavement in Good Condition
	Interstate System Pavement in Poor Condition
	Non-Interstate NHS Pavement in Good Condition
	Non-Interstate NHS Pavement in Poor Condition
Roadway Performance	Interstate Travel Time Reliability
	Non-Interstate NHS Travel Time Reliability
Freight	Truck Travel Time Reliability
CMAQ	N/A for attainment areas (Hampton Roads is in attainment of the national ambient air quality standards for all criteria pollutants specified by EPA.)

NHS = National Highway System

INTRODUCTION

TARGET SETTING PROCESS

Each MPO must set targets for each of the measures shown on the previous page. These performance measures and targets must be reported based on the MPO's Metropolitan Planning Area (MPA). The Hampton Roads MPA (shown to the right) is comprised of 15 localities including all of Chesapeake, Hampton, Isle of Wight County, James City County, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, Williamsburg, and York County, and portions of Franklin, Gloucester County, and Southampton County.

For target setting, the MPO may:

- Adopt the statewide targets, but report metrics specific to the MPA
- Select unique, MPO specific targets, and report metrics specific to the MPA
- Use a combination of statewide and unique targets

For roadway safety, transit asset management, and transit safety, targets are established for a one-year time horizon and must be set on an annual basis. For bridge condition, pavement condition, roadway performance and freight measures, MPO targets are established for a four-year time horizon, whereas states must establish both two-year and four-year targets. States may adjust their four-year targets at the midway point after two years. If the state elects to make an adjustment and the MPO adopted the statewide targets, the MPO has the option to adopt the adjusted statewide target or to commit to a new, unique MPO-specific target within 180 days.

HAMPTON ROADS METROPOLITAN PLANNING AREA

If an MPO establishes its own unique four-year targets, the MPO may adjust its target at the midway point in a manner that is collectively developed, documented, and mutually agreed upon by the State DOT and MPO. This is allowable regardless of whether the state adjusted its four-year targets or not.

There are no "penalties" for MPOs for not meeting their performance targets, although it can be addressed during the MPO's quadrennial certification review to ensure adequate performance-based planning efforts.

Setting HRTPO targets is a collaborative effort. The Transportation Technical Advisory Committee (TTAC) – which is comprised of staff from Hampton Roads localities and stakeholders – recommends targets for the HRTPO Board to consider. In order to assist the TTAC, the committee formed a Regional Performance Measures and Targets Working Group. This group includes staff from localities, transit agencies, VDOT, and subject-matter experts.

The HRTPO Board established initial targets throughout 2018. Subsequent annual safety and transit asset management targets were established by the Board during the winter of each year between 2019 and 2024. In addition to safety and transit asset management targets, transit safety targets were approved by the Board each year between 2021 and 2024.

INCORPORATING TARGETS INTO THE PLANNING PROCESS

Federal legislation also requires that MPOs include these performance measures and targets and report on progress in planning documents such as the Long-Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP).

The LRTP is a comprehensive and multimodal transportation blueprint that identifies and plans for critically important transportation improvements that not only meet the transportation goals of the HRTPO but also impact the region's economic vitality and every citizen's quality of life. The LRTP – which must encompass a minimum of a 20-year time horizon – contains a list of transportation projects that are expected to be constructed based on the anticipated funding available during the time horizon. The **Hampton Roads 2045 Long-Range Transportation Plan** was approved by the HRTPO Board in July 2021 and work is currently underway on the 2050 LRTP.

The LRTP is required to include a description of the federally-mandated performance measures and targets used in assessing the performance of the transportation system. The LRTP shall also include a system performance report evaluating the condition and performance of the transportation system including progress achieved by the MPO towards meeting the performance targets, and this annual System Performance Report was created to satisfy this requirement. Also, MPOs that elect to conduct scenario planning (as HRTPO did for the 2045 LRTP and will also do for the 2050 LRTP) shall describe how the preferred scenario will improve the performance of the system.

INTRODUCTION

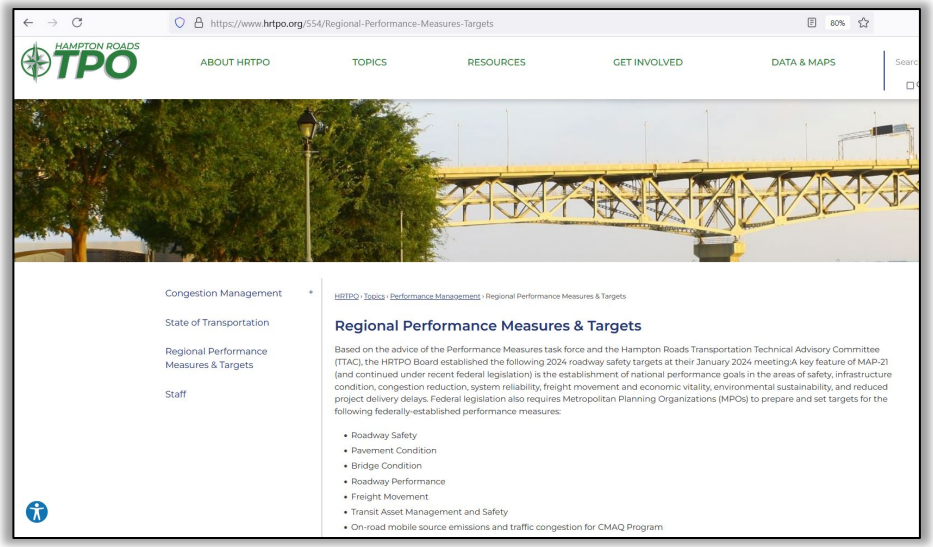
Transportation Improvement Programs are federally-mandated, regional documents that identify the programming of transportation funds over a four-year period. It lists all projects for which federal funds are anticipated, along with non-federally funded projects that are determined to be regionally significant. For performance measures and targets, TIPs shall include a description of the anticipated effect of the TIP toward achieving the performance targets identified by the MPO. The TIP must also link investment priorities to the achievement of performance targets in the plans. The **current TIP,** which represents the years FY 2024-2027, was adopted by the HRTPO Board in May 2023.

The HRTPO TIP and LRTP have been updated to include information on the program's impact on each of these areas. Amendments have been made to the TIP each year for updates to safety and transit targets and was amended in 2019 and 2023 for all of the other target areas. The 2045 LRTP also includes information on all of the updated measures and targets.

In addition, the metropolitan transportation planning agreement between the MPO, the State, and regional public transportation providers (commonly referred to as the 3-C agreement) was updated in September 2018 to include an article on Performance-Based Metropolitan Planning Process responsibilities. The updated agreement – which details each party's responsibilities in terms of performance-based planning – is available at **https://www.hrtpo.org/DocumentCenter/View/4103/01-Metropolitan-Planning-Agreement-PDF**.

WEBSITE

In addition to this document, the HRTPO also maintains a Regional Performance Measures and Targets website. This site includes information on each of these performance measures as well as the basis for selecting each regional target. Progress toward meeting targets is also detailed on the site. The HRTPO Regional Performance Measures and Targets website is **https://www.hrtpo.org/554/Regional-Performance-Measures-Targets**.



ROADWAY SAFETY

MEASURES

- **Number of Fatalities**
- **Fatality Rate**
- **Number of Serious Injuries**
- **Serious Injury Rate**
- **Number of Non-Motorized Fatalities & Serious Injuries Combined**

METHODOLOGY

This measure examines the safety of the regional roadway system in terms of the total number and rate of fatalities and serious injuries. In addition, bicyclist and pedestrian (non-motorized) fatalities and serious injuries are analyzed. These measures and targets cover all public roadways regardless of ownership or functional classification and help support the Highway Safety Improvement Program (HSIP), which is a federal program that aims to achieve a significant reduction in traffic fatalities and serious injuries on all public roads.

The number of fatalities throughout the Metropolitan Planning Area (MPA) must be determined on an annual basis using data from USDOT's Fatality Analysis Reporting System (FARS) database. The FARS database contains a description and more than 100 coded data elements of each reported fatal crash throughout the country. A crash must involve a motor vehicle traveling on a roadway that is generally open to the public and must result in the death of a person (either an occupant of a vehicle or a non-motorist) within 30 days of the crash to be included in the FARS database.

In order to determine the annual number of serious injuries within the MPA, data collected and prepared by VDOT is used. Serious injuries are generally defined as incapacitating injuries that can include skull fractures, internal injuries, broken or distorted limbs, unconsciousness, severe lacerations, severe burns, and other injuries that render the person unable to leave the scene without assistance. Law enforcement frequently uses the "KABCO" scale for classifying injuries resulting from crashes, and fatalities and serious injuries are defined as the "K" and "A" on this KABCO scale. (The other classifications in the KABCO scale include "B" for minor but visible injuries, "C" for nonvisible injuries, and "O" for other crashes that do not include an injury.)

In addition to the total number of fatalities and serious injuries in each region, MPOs must measure and establish targets in the rate of fatalities and serious injuries. This rate is based on the number of fatalities and serious injuries that occur per 100 million vehicle-miles of travel (VMT).

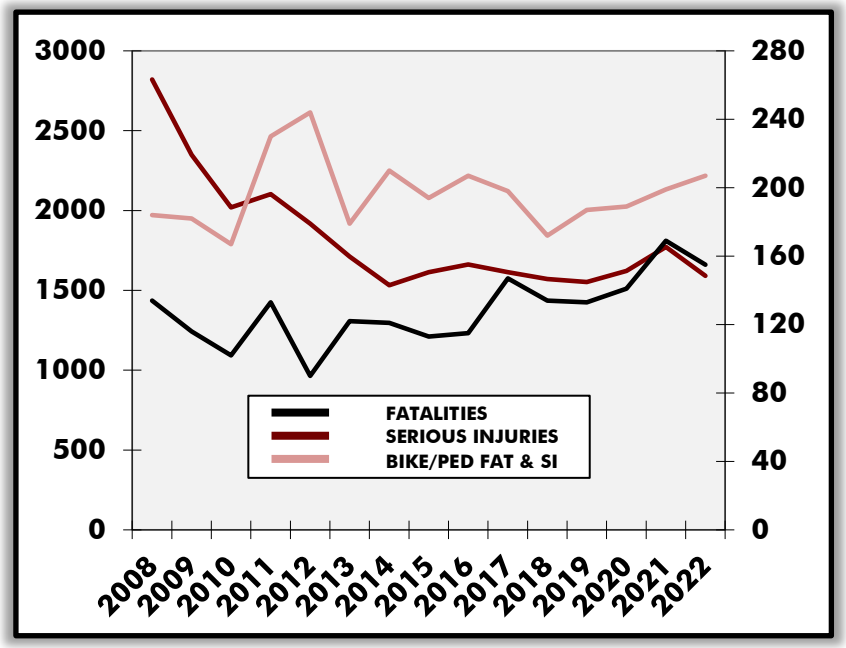
Finally, there is a fifth roadway safety measure related to the safety of non-motorists. MPOs must measure and set targets for the annual number of bicyclist and pedestrian fatalities and serious injuries within the MPA. This combined number is produced using FARS data for non-motorized fatalities and VDOT data for non-motorized serious injuries. The number should include all pedestrians, bicyclists, other cyclists, and persons on personal conveyances killed or seriously injured throughout the region in the calendar year.

ROADWAY SAFETY

CURRENT/HISTORICAL CONDITIONS

The following chart shows the number of fatalities, serious injuries, and the combined bike and pedestrian crashes and serious injuries in Hampton Roads between 2008 and 2022. This was the data that was used to assist with determining the regional 2024 targets.

FATALITIES, SERIOUS INJURIES, AND BIKE/ PEDESTRIAN FATALITIES & SERIOUS INJURIES IN HAMPTON ROADS (2008-2022)



STATEWIDE 2024 TARGETS

▶ **Number of Fatalities**	**1,005**
▶ **Fatality Rate per 100M VMT**	**1.187**
▶ **Number of Serious Injuries**	**7,137**
▶ **Serious Injury Rate per 100M VMT**	**8.429**
▶ **Number of Combined Bicyclist & Pedestrian Fatalities & Serious Injuries**	**765**

The statewide 2024 safety targets that were established by the Commonwealth Transportation board (CTB) are based on predictive models that take into account a number of external factors related to the amount of roadway travel, economic influences, and changing driver behavior. These model predictions are adjusted to account for the anticipated reduction in crashes due to the completion of roadway safety and capacity projects.

In recent years federal legislation was updated to require that safety targets must demonstrate level or improved performance for the fatality, fatality rate, and serious injury targets, based on the most recent five-year averages. This requirement impacted the 2024 statewide targets for the number of fatalities and the number of serious injuries. These two targets were set to maintain level performance from the most recent five-year average.

ROADWAY SAFETY

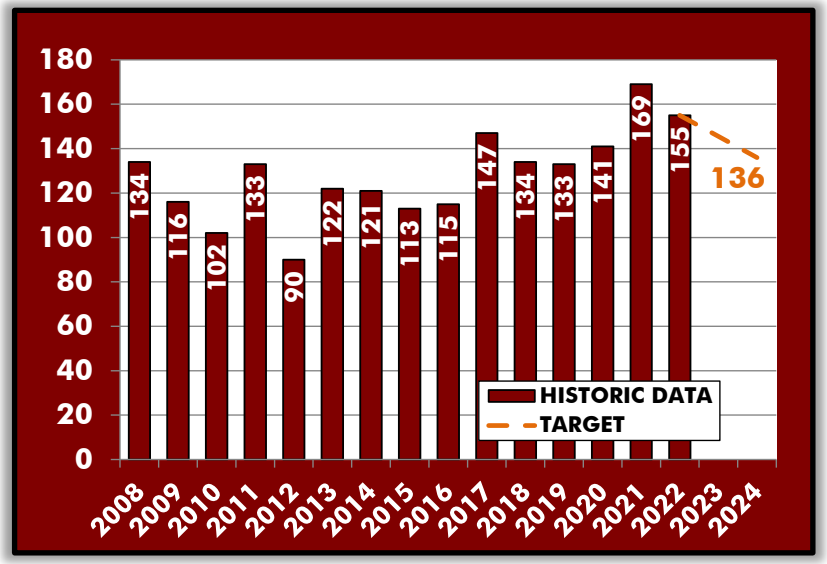
HRTPO 2024 TARGETS

HRTPO has established one-year roadway safety targets each year since 2018. The most recent one-year (2024) roadway safety targets that the HRTPO has established are shown below.

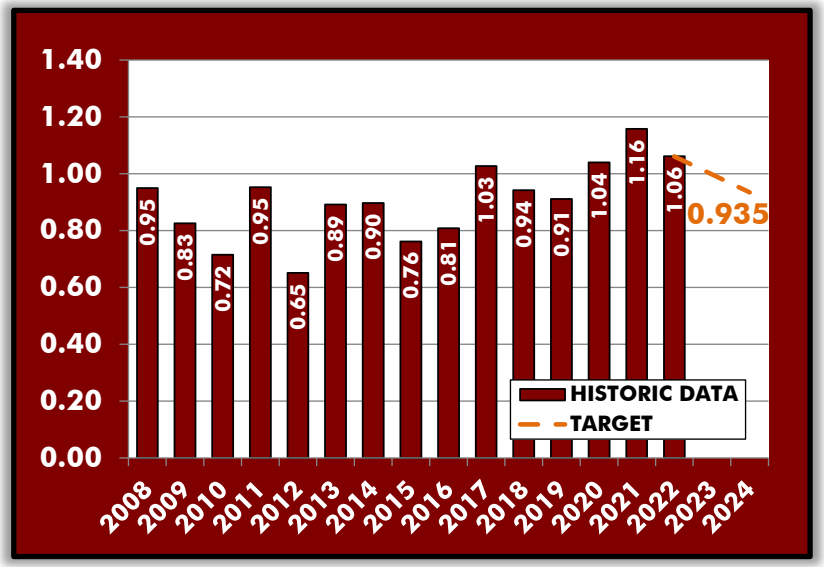
Each of these safety targets is based on the Vision Zero concept, where the number of fatalities, serious injuries, and non-motorized fatalities and serious injuries is reduced by a set amount each year to reach a goal of zero by 2050, the horizon of the upcoming regional Long-Range Transportation Plan. A 0.32% annual decrease in vehicle-miles of travel was assumed for the fatality and serious injury rates, which is equal to the rate assumed in statewide targets. More information on the Vision Zero concept is available at https://visionzeronetwork.org.

▶ Number of Fatalities	136
▶ Fatality Rate (per 100 MVMT)	0.935
▶ Number of Serious Injuries	1,505
▶ Serious Injury Rate (per 100 MVMT)	10.38
▶ Number of Non-Motorized Fatalities and Serious Injuries Combined	177

NUMBER OF FATALITIES



FATALITY RATE PER 100 MILLION VEHICLE-MILES OF TRAVEL (VMT)



ROADWAY SAFETY

PROGRESS TOWARDS ACHIEVING TARGETS

HRTPO has established one-year safety targets each year between 2018 and 2024. Each of these one-year regional targets is shown below. Information on whether Hampton Roads achieved its 2022 safety targets based on the 2022 data is also detailed for each of the five safety measures below:

- **Number of Fatalities - Targets**

2018	2019	2020	2021	2022	2023	2024
102	137	124	123	125	136	136

MISSING TARGET

There were 155 fatalities in Hampton Roads in 2022, which is significantly higher than the HRTPO's established target of 125. This level of fatalities would also miss the targets set for 2023 and 2024.

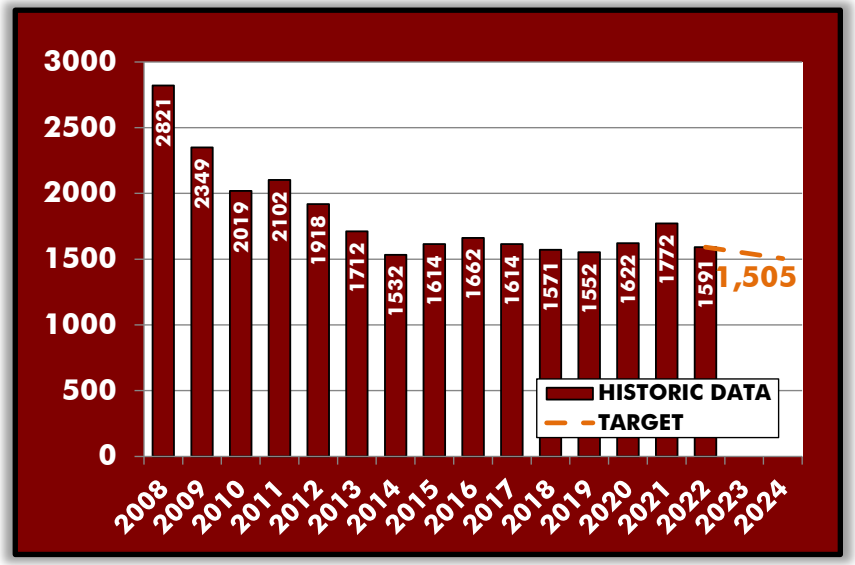
- **Fatality Rate (per 100 million VMT) - Targets**

2018	2019	2020	2021	2022	2023	2024
0.69	0.93	0.84	0.82	0.85	0.92	0.935

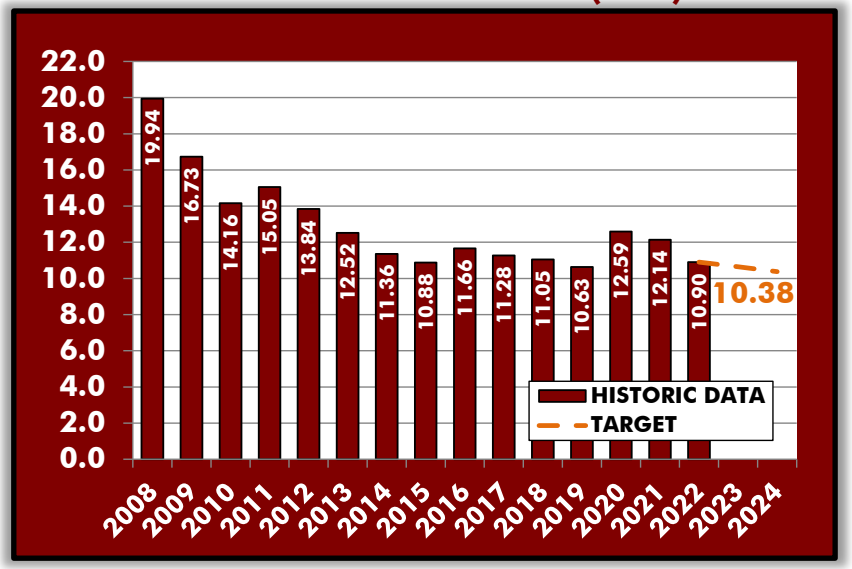
MISSING TARGET

The fatality rate in Hampton Roads was 1.06 in 2022, which exceeds the HRTPO's established target of 0.85 fatalities per 100 million VMT. This rate would also exceed the targets established for 2023 and 2024.

NUMBER OF SERIOUS INJURIES



SERIOUS INJURY RATE PER 100 MILLION VEHICLE-MILES OF TRAVEL (VMT)



ROADWAY SAFETY

PROGRESS TOWARDS ACHIEVING TARGETS (continued)

- **Number of Serious Injuries - Targets**

2018	2019	2020	2021	2022	2023	2024
1522	1522	1448	1433	1498	1513	1505

MISSING TARGET

There were 1,591 serious injuries in Hampton Roads in 2022, which is above the HRTPO's established target of 1,498. This number of serious injuries also exceeds the targets established for 2023 and 2024.

- **Serious Injury Rate (per 100 million VMT) – Targets**

2018	2019	2020	2021	2022	2023	2024
10.39	10.32	9.85	9.61	10.19	10.21	10.38

MISSING TARGET

The serious injury rate in Hampton Roads was 10.90 in 2022, which is above the HRTPO's established target of 10.19 serious injuries per 100 million VMT. This rate also exceeds the targets established for 2023 and 2024.

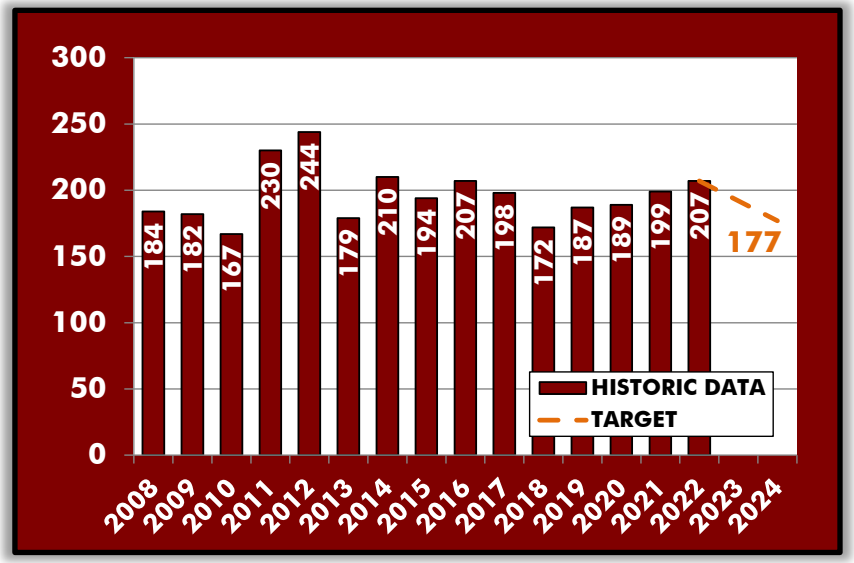
- **Number of Non-Motorized Fatalities and Serious Injuries - Targets**

2018	2019	2020	2021	2022	2023	2024
193	194	163	175	179	177	177

MISSING TARGET

There were 207 non-motorized fatalities and serious injuries combined in Hampton Roads in 2022, which exceeds the HRTPO's established target for 2022 of 179. This number of fatalities and serious injuries would also miss the targets established for the years 2023 and 2024.

NUMBER OF NON-MOTORIZED FATALITIES AND SERIOUS INJURIES COMBINED



These increases in fatalities and serious injuries are due to multiple factors, including an increase in speeding and decreased safety belt use. In order to improve roadway safety, VDOT has undertaken systemic improvements throughout the state such as installing rumble strips and reflective signal backplates, and DMV has allocated additional funding for educational and enforcement safety improvements.

In addition, HRTPO has recently updated the **Hampton Roads Regional Safety Study**, which details regional safety trends, crash characteristics, crash locations, efforts to improve roadway safety, general crash countermeasures, and an in-depth analysis of high crash locations. The study serves as the action plan localities can use to apply for federal Safe Streets and Roads for All (SS4A) implementation grants. Various localities in the region have also received funding from SS4A for both local safety action plans and for projects such as the Virginia Beach Trail.

BRIDGE CONDITION

MEASURES

- **Percentage of National Highway System (NHS) Bridge Deck Area in Good Condition**
- **Percentage of National Highway System (NHS) Bridge Deck Area in Poor Condition**

METHODOLOGY

This measure examines the condition of bridges on the National Highway System (NHS) – including on- and off-ramps connected to the NHS – on a regional basis. In order to be included, each bridge must meet National Bridge Inventory (NBI) standards. These standards include:

- The structure must be located on roadways open to the general public. Bridges located within the security perimeter of military bases and other secure federal facilities are not included.
- The bridge must carry a roadway. Structures that carry only railroad or pedestrian traffic are not included.
- The bridge must be more than 20 feet in length. Culverts are included, as long as the opening in the culvert is more than 20 feet in length.

Bridges are inspected on a regular basis. During these inspections, bridge inspectors rate the condition of the bridge's deck (the driving surface), superstructure (the structural members such as beams and girders), and substructure (the piers, abutments, piles, footings, and other components of the bridge's foundation).

Each of these three components is rated by the bridge inspector from 0 to 9, with 9 representing a component in excellent condition and 0 representing a failed condition or a closed bridge. For culverts, a single rating is given in place of the deck, superstructure, and substructure ratings to assess the general condition of the entire culvert.

Bridges are classified as being in good, fair, or poor condition based on **the lowest of the condition ratings** of the bridge's deck, superstructure, and substructure. For culverts, the classification is based on the culvert condition rating. These classification thresholds are shown in the table below.

Condition Rating Thresholds for Classification

	NBI Rating Scale (from 0 – 9)	9 8 7 Good	6 5 Fair	4 3 2 1 0 Poor
Bridge	Deck (Item 58)	≥7	5 or 6	≤4
	Superstructure (Item 59)	≥ 7	5 or 6	≤ 4
	Substructure (Item 60)	≥ 7	5 or 6	≤ 4
	Culvert (Item 62)	≥ 7	5 or 6	≤ 4

BRIDGE CONDITION

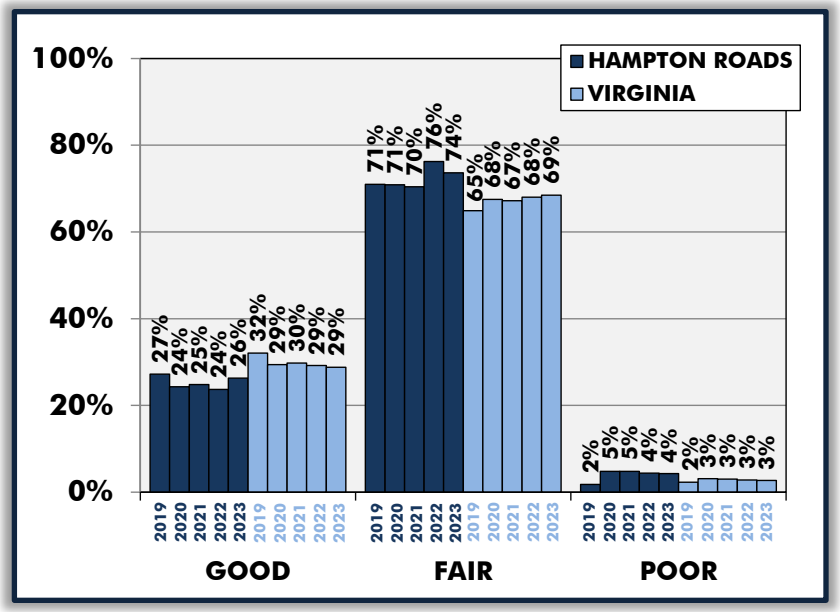
For example, if a structure has a deck condition rated as a 7, a superstructure condition rated as a 4, and a substructure condition rated as a 5, then the structure is classified as being in poor condition based on the lowest condition rating of 4.

After each NBI bridge on the NHS is classified as being in good, fair, or poor condition, the deck area of each bridge is calculated by multiplying the full width of the bridge by the bridge's length. The total deck area of each good bridge, fair bridge, and poor bridge throughout the region is summed together, and then divided by the total deck area of all NBI bridges on the NHS in the entire region. This produces a total regional percentage of bridges that are in good condition, fair condition, and poor condition. The regional percentages of NBI bridge deck area in good and poor condition on the NHS are tracked for regional targets.

CURRENT/HISTORICAL CONDITIONS

The following chart shows the percentage of NHS Bridge Deck Area in Good, Fair, and Poor condition in Hampton Roads and throughout Virginia for the years 2019 through 2023:

PERCENTAGE OF NHS BRIDGE DECK AREA IN HAMPTON ROADS AND VIRGINIA BY CONDITION (2019 - 2023)



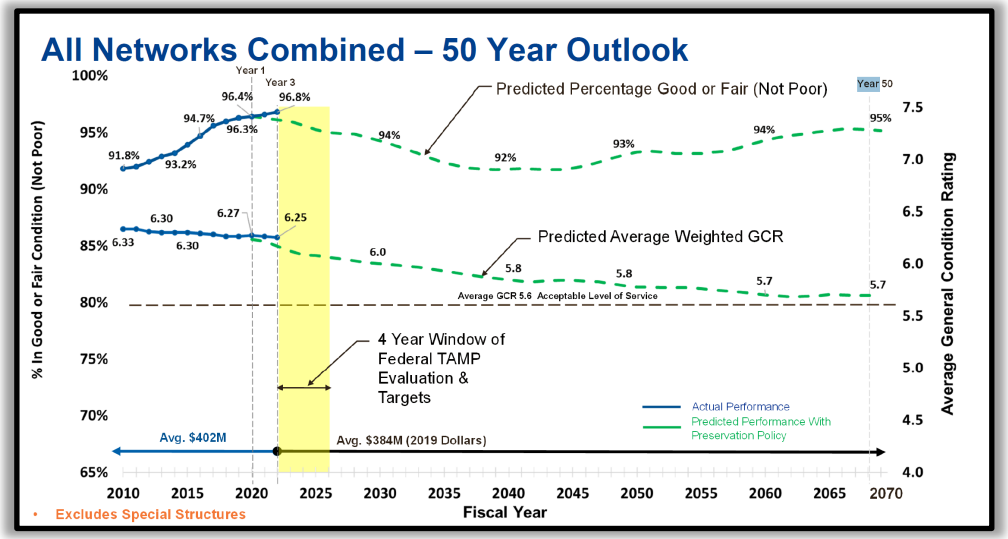
BRIDGE CONDITION

STATEWIDE 4-YEAR TARGETS (2021-2025)

- **Percentage of NHS Bridge Deck Area in Good Condition > 25.1%**
- **Percentage of NHS Bridge Deck Area in Poor Condition < 3.6%**

The statewide four-year targets established by the Commonwealth Transportation Board (CTB) are based on VDOT projections of bridge conditions assuming continued optimal use of maintenance funds. These statewide projections produced by VDOT are shown in the figures to the right.

STATEWIDE PROJECTED PERCENTAGE OF BRIDGES IN GOOD/FAIR CONDITION



Source: VDOT. Data assumes optimal use of maintenance funds.

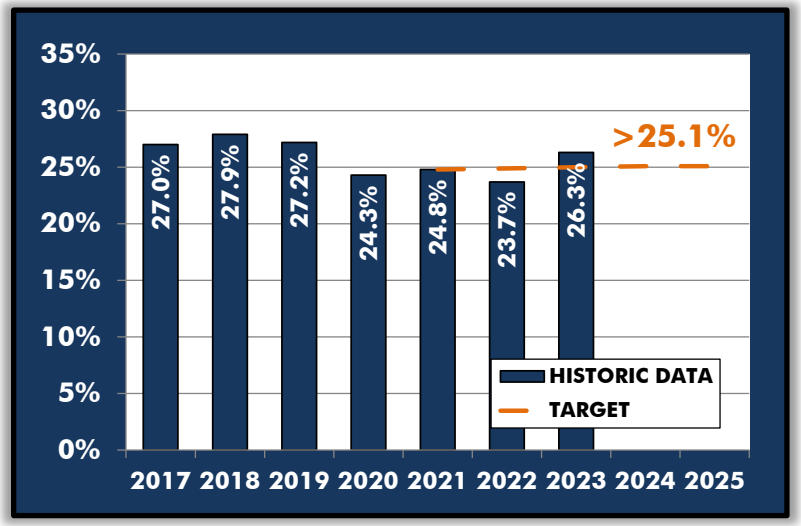
BRIDGE CONDITION

HRTPO 4-YEAR TARGETS (2021-2025)

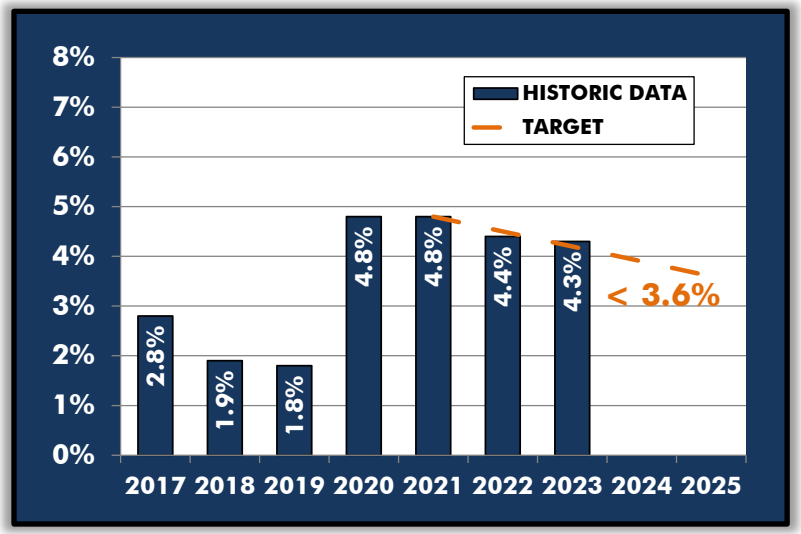
The HRTPO established four-year targets of greater than 25.1% of NHS Bridge Deck Area being in Good Condition, and less than 3.6% of NHS Bridge Deck Area being in Poor Condition. **Both of the percentage of NHS bridge deck area targets match the statewide targets established by the CTB.** HRTPO chose to match the regional bridge condition targets with the statewide targets since the existing condition of bridges in Hampton Roads was similar to the statewide conditions.

- **Percentage of NHS Bridge Deck Area in Good Condition** **> 25.1%**
- **Percentage of NHS Bridge Deck Area in Poor Condition** **< 3.6%**

PERCENTAGE OF NHS BRIDGE DECK AREA IN HAMPTON ROADS IN GOOD CONDITION



PERCENTAGE OF NHS BRIDGE DECK AREA IN HAMPTON ROADS IN POOR CONDITION



BRIDGE CONDITION

PROGRESS TOWARDS ACHIEVING TARGETS

Details on progress towards achieving targets for each of the bridge condition measures is shown below:

- **Percentage of NHS Bridge Deck Area in Good Condition**

  SURPASSING TARGET

  At 26.3% as of 2023, this is above (surpassing) the 25.0% level that would be necessary to be on pace to meet the 2025 regional target.

- **Percentage of NHS Bridge Deck Area in Poor Condition**

  MISSING TARGET

  At 4.3% as of 2023, this is slightly above the 4.2% level that would be necessary to be on pace to meet the 2025 regional target.

In order to improve the condition of bridges throughout the state, VDOT and the CTB have modified the investment strategy for a more balanced approach. VDOT is allocating more funding to rehabilitating bridges before they degrade into poor condition (referred to as "cusp" bridges), and a Special Structures fund was created to fund maintenance for major bridges such as the bridge-tunnels in the region. This fund is assisting with replacing the existing bridges at the Hampton Roads Bridge-Tunnel, which are currently in poor condition. In addition, additional funding in the IIJA (approximately $536 million) is available in Virginia for bridge repair and replacement over a five-year period.

PAVEMENT CONDITION

MEASURES

- **Percentage of Interstate System Pavement in Good Condition**
- **Percentage of Interstate System Pavement in Poor Condition**
- **Percentage of Non-Interstate NHS Pavement in Good Condition**
- **Percentage of Non-Interstate NHS Pavement in Poor Condition**

METHODOLOGY

This measure examines the condition of roadway pavement on the National Highway System (NHS). The percentage of the region's Interstate system and Non-Interstate NHS pavement in both good and poor condition is analyzed. This measure only includes through travel lanes; ramps, shoulders, turn lanes, crossovers, etc. are not included in this analysis.

Pavement condition data is collected annually by VDOT on every mile of the NHS throughout the state, regardless of roadway ownership. In the Hampton Roads Metropolitan Planning Area (MPA), there are over 500 miles (and over 2,400 lane-miles) of roadway included on the NHS. Information on VDOT's pavement data collection process is available at **https://www.vdot.virginia.gov/about/our-system/highways/state-pavement**.

The following metrics are used in determining the pavement condition of each NHS roadway:

- International Roughness Index (IRI) – IRI is used to determine the ride quality based on the smoothness of pavement. It is measured in inches per mile of roadway.
- Rutting and Faulting – Rutting is a surface depression in the wheel path of asphalt roadways, and faulting is the difference in elevation across joints or cracks in jointed concrete.
- Cracking – Cracking measures the percentage of roadway surface area where cracks are present.
- Present Serviceability Rating (PSR) – If the posted speed limit is less than 40 mph, the PSR can be used in place of the metrics above to determine the condition of the pavement.

Each of these aspects of each NHS roadway segment's pavement is rated as good, fair, or poor. These ratings are assigned based on the table below.

	Good	Fair	Poor
IRI (inches/mile)	<95	95-170	>170
Rutting (inches)	<0.20	0.20-0.40	>0.40
Faulting (inches)	<0.10	0.10-0.15	>0.15
Cracking (%)	<5	5-20 (asphalt) 5-15 (JCP) 5-10 (CRCP)	>20 (asphalt) >15 (JCP) >10 (CRCP)
PSR	PSR ≥ 4.0	2.0 ≤ PSR ≤ 4.0	PSR ≤ 2.0

PAVEMENT CONDITION

For roadways with a posted speed limit below 40 mph, the PSR can be used for determining the overall condition of the pavement. Otherwise, the overall condition of each section of NHS roadway is determined based on the pavement type and the appropriate metrics described previously. As shown in the figure to the right, for a section to be in good condition, all of the appropriate metrics must be rated as good. Roadway sections are determined to be in poor condition if two of the three metrics (IRI, cracking, and rutting/faulting) are rated poor for asphalt and jointed concrete, or both metrics (IRI and cracking) are rated poor for continuous concrete.

On a statewide level, no more than 5% of the Interstate system can be in poor condition. If this minimum threshold is not met, the state is required to obligate a specified percentage of its National Highway Performance Program (NHPP) and Surface Transportation Program (STP) funds to improve Interstate pavement condition. There is no similar penalty for the Non-Interstate NHS.

	Pavement Type			
	Asphalt and Jointed Concrete	Continuous Concrete		
Overall Section Condition Rating	3 metric ratings (IRI, cracking and rutting/faulting)	2 metric ratings (IRI and cracking)		Measures
Good	All three metrics rated "Good"	Both metrics rated "Good"	→	percentage of lane-miles in "Good" condition
Poor	≥ 2 metrics rated "Poor"	Both metrics rated "Poor"	→	percentage of lane-miles in "Poor" condition
Fair	All other combinations	All other combinations		

PAVEMENT CONDITION

CURRENT/HISTORICAL CONDITIONS

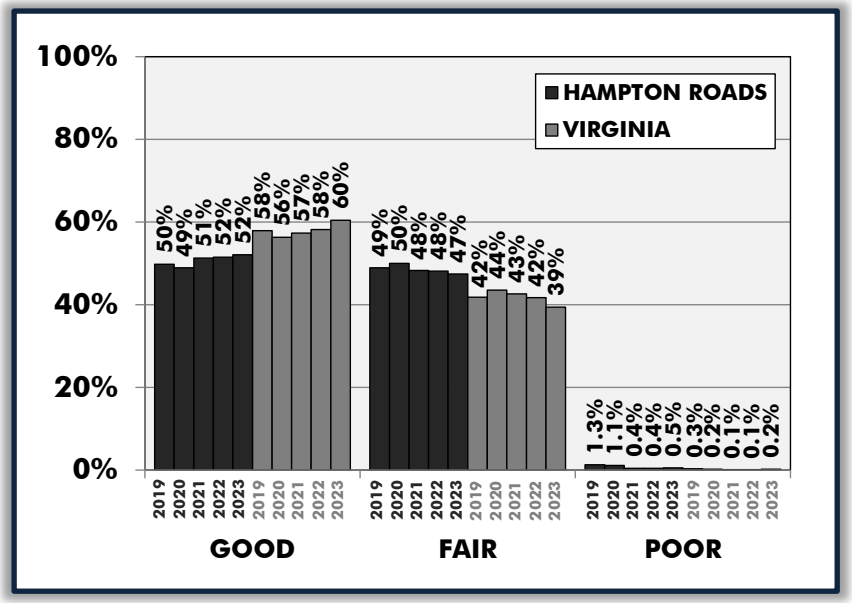
The following charts show the percentage of Interstate and Non-Interstate NHS pavement in good, fair, and poor condition in Hampton Roads and throughout Virginia for the years 2019 through 2023.

STATEWIDE 4-YEAR TARGETS (2021-2025)

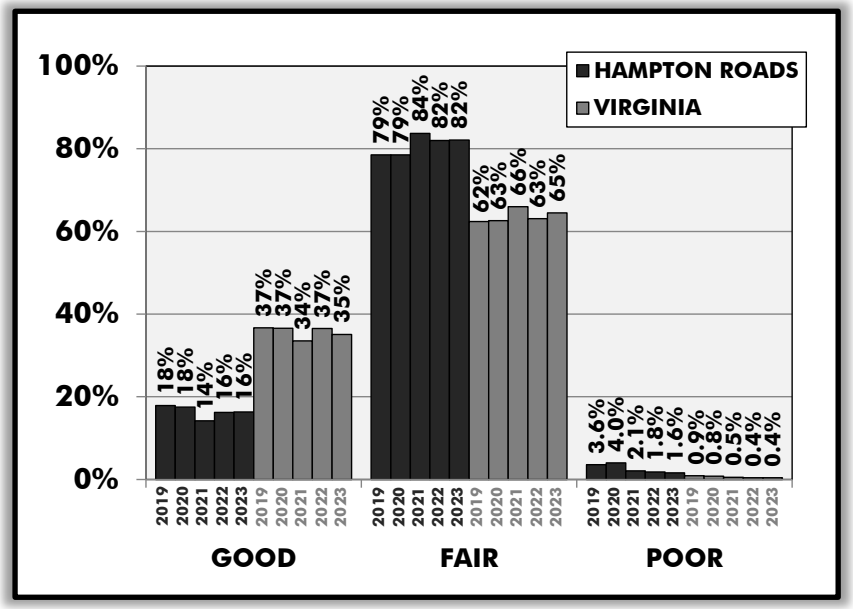
- **Percentage of Interstate System Pavement in Good Condition** **> 45%**
- **Percentage of Interstate System Pavement in Poor Condition** **< 3%**
- **Percentage of Non-Interstate NHS Pavement in Good Condition** **> 25%**
- **Percentage of Non-Interstate NHS Pavement in Poor Condition** **< 5%**

The statewide four-year targets established by the Commonwealth Transportation Board (CTB) are based on VDOT projections of pavement conditions assuming optimal use of maintenance funds.

PERCENTAGE OF PAVEMENT IN HAMPTON ROADS AND VIRGINIA BY CONDITION INTERSTATE (2019 - 2023)



PERCENTAGE OF PAVEMENT IN HAMPTON ROADS AND VIRGINIA BY CONDITION NON-INTERSTATE NHS (2019 - 2023)



PAVEMENT CONDITION

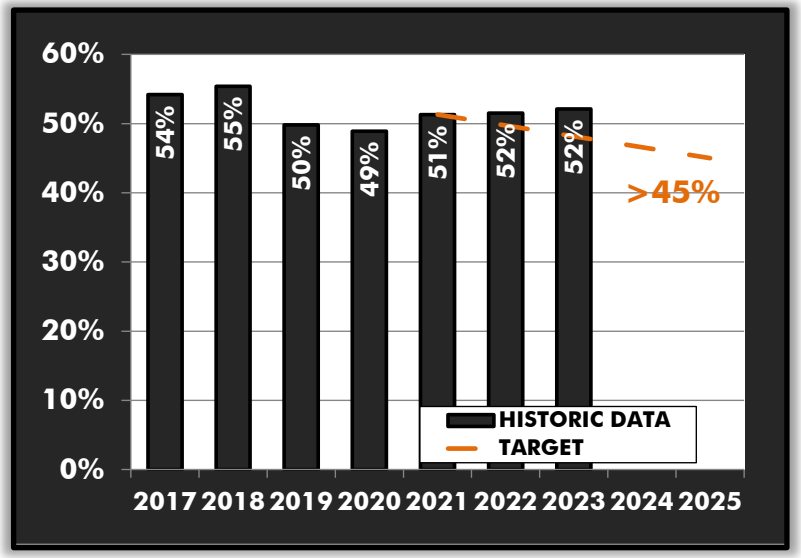
HRTPO 4-YEAR TARGETS (2021-2025)

The HRTPO established four-year targets of greater than 45% of Interstate pavement condition being in good condition, less than 3% of Interstate pavement condition being in poor condition, greater than 14% of Non-Interstate NHS pavement condition being in good condition, and less than 5% of Non-Interstate NHS pavement condition being in poor condition.

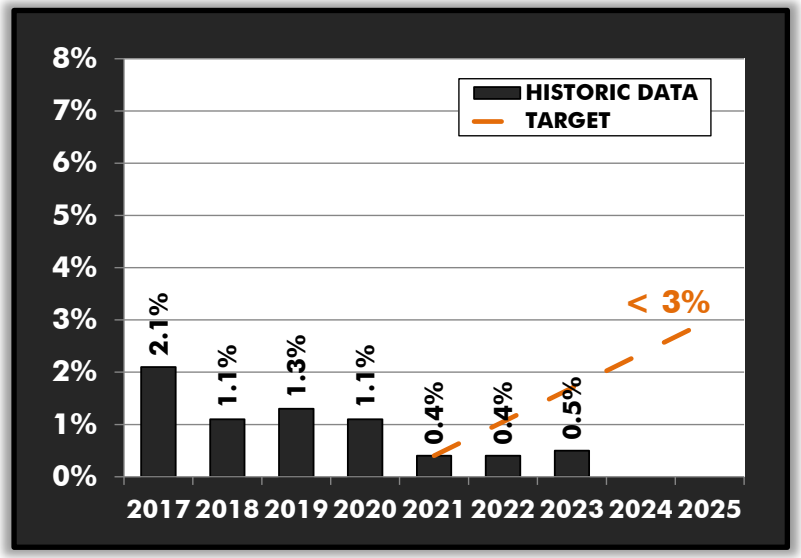
All of these percentages match the statewide targets established by the CTB, except for the percentage of Non-Interstate NHS pavement in good condition. HRTPO chose to match the regional Interstate targets with the statewide targets since the existing condition of Interstate pavement in Hampton Roads was similar to the statewide conditions. For Non-Interstate NHS, HRTPO chose a regional target for pavement in good condition that was lower than the statewide target, since the amount of the Non-Interstate NHS pavement in good condition is currently well below statewide levels.

- **Percentage of Interstate System pavement in Good Condition** > 45%
- **Percentage of Interstate System pavement in Poor Condition** < 3%
- **Percentage of Non-Interstate NHS pavement in Good Condition** > 14%
- **Percentage of Non-Interstate NHS pavement in Poor Condition** < 5%

PERCENTAGE OF PAVEMENT IN HAMPTON ROADS IN GOOD CONDITION - INTERSTATE



PERCENTAGE OF PAVEMENT IN HAMPTON ROADS IN POOR CONDITION - INTERSTATE



PAVEMENT CONDITION

PROGRESS TOWARDS ACHIEVING TARGETS

Hampton Roads is surpassing the level needed to reach the 2025 targets in all of the four pavement condition measures as of 2023. More details on progress towards achieving targets for each of the four pavement condition measures is shown below:

- **Percentage of Interstate System Pavement in Good Condition**

  SURPASSING TARGET

  At 52.1% as of 2023, this is surpassing (above) the 48.2% level that would be necessary to be on pace to meet the 2025 target.

- **Percentage of Interstate System Pavement in Poor Condition**

  SURPASSING TARGET

  At 0.5% as of 2023, this is surpassing (below) the 1.7% level that would be necessary to be on pace to meet the 2025 target.

- **Percentage of Non-Interstate NHS Pavement in Good Condition**

  SURPASSING TARGET

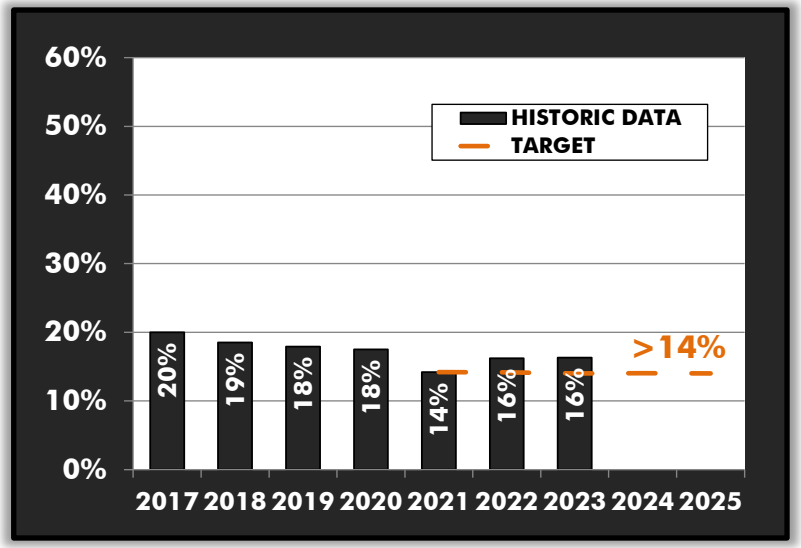
  At 16.3% as of 2023, this is surpassing (above) the 14.0% level that would be necessary to be on pace to meet the 2025 target.

- **Percentage of Non-Interstate NHS Pavement in Poor Condition**

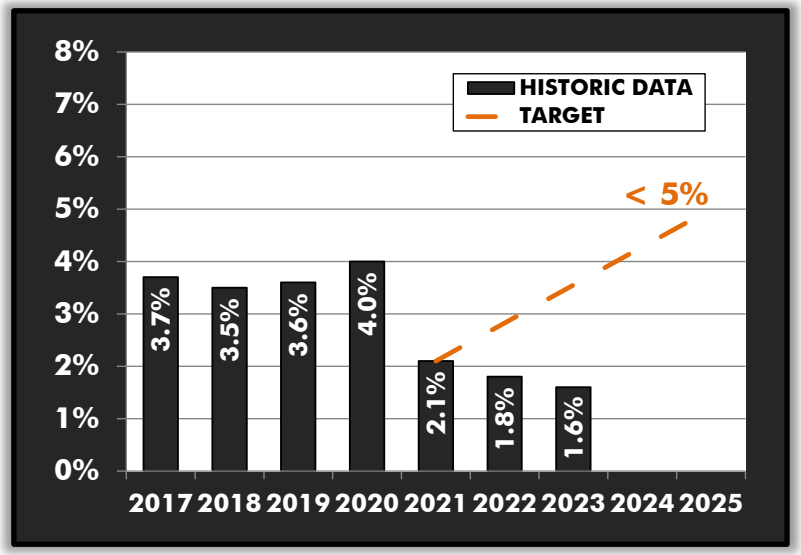
  SURPASSING TARGET

  At 1.6% as of 2023, this is surpassing (below) the 3.6% level that would be necessary to be on pace to meet the 2025 target.

PERCENTAGE OF PAVEMENT IN HAMPTON ROADS IN GOOD CONDITION - NON-INTERSTATE NHS



PERCENTAGE OF PAVEMENT IN HAMPTON ROADS IN POOR CONDITION - NON-INTERSTATE NHS



TRANSIT ASSET MANAGEMENT

MEASURES

- **Transit Asset Management (TAM) – Rolling Stock**
- **TAM – Equipment/Service Vehicles**
- **TAM - Infrastructure**
- **TAM - Facilities**

METHODOLOGY

This measure examines the condition of various aspects of the regional public transportation system. The Federal Transit Administration's (FTA) Performance-Based Planning final rule requires transit performance measures in the area of state of good repair, also referred to as transit asset management (TAM).

MPOs are required to establish regional targets and monitor progress for each of the assets using the performance measures in the following table:

Asset Type	Performance Measure	Asset Classes
Rolling Stock	% of revenue vehicles within each asset class that have met or exceeded their useful life benchmark (ULB)	Buses, cutaway buses, ferry boats, light rail vehicles, trolley buses, vans
Equipment/ Service Vehicles	% of vehicles that have met or exceeded their useful life benchmark (ULB)	Non-revenue automobiles, trucks and other rubber tire vehicles
Infrastructure	% of track segments, signals, and systems with performance restrictions	Light rail infrastructure
Facilities	% of facilities in each asset class rated under 3.0 on FTA's TERM scale	Passenger facilities, parking facilities, maintenance facilities, administrative facilities

Three transit agencies operate within the Hampton Roads Metropolitan Planning Area – Hampton Roads Transit (HRT), the Williamsburg Area Transit Authority (WATA), and Suffolk Transit. HRT, as a larger Tier I transit agency, must develop and carry out their own TAM plans. As Tier II transit agencies, WATA and Suffolk Transit are eligible to participate in group TAM plans. WATA and Suffolk Transit elected to use the statewide targets that were established by the Virginia Department of Rail and Public Transportation (DRPT) for Tier II agencies.

TRANSIT ASSET MANAGEMENT

CURRENT/HISTORICAL CONDITIONS

The following table shows the transit asset management conditions in Hampton Roads, based on a weighted average of the three regional transit agencies, in Fiscal Years 2018 through 2022:

Rolling Stock

% of revenue vehicles within each asset class that have met or exceeded their useful life benchmark

	2018	2019	2020	2021	2022
Buses	36.7%	26.9%	25.1%	10.9%	24.7%
Cutaway Buses	0%	7.7%	5.5%	8.3%	16.7%
Ferry Boat	50.0%	33.3%	33.3%	33.3%	33.3%
Light Rail Vehicles	0%	0%	0%	0%	0%
Minibus	28.6%	0%	0%	0%	0%
Trolley Buses	4.8%	0%	0%	0%	0%
Vans	40.0%	0%	0%	0%	0%

Equipment/Service Vehicles

% of vehicles that have met or exceeded their useful life benchmark

	2018	2019	2020	2021	2022
Non-Revenue/Service Vehicles	91.3%	74.0%	89.7%	86.5%	78.6%
Trucks & Other Rubber Tire Vehicles	64.0%	12.5%	17.6%	35.0%	89.0%

Infrastructure

% of track segments, signals, and systems with performance restrictions

	2018	2019	2020	2021	2022
Light Rail Infrastructure	2.8%	2.2%	5.0%	8.3%	8.3%

Facilities

% of facilities in each asset class rated under 3.0 on FTA's TERM scale

	2018	2019	2020	2021	2022
Passenger/Parking	9.1%	9.1%	0%	0%	0%
Maintenance	14.3%	14.3%	14.3%	14.3%	14.3%
Administrative	0%	0%	0%	0%	0%

STATEWIDE 2024 TARGETS

The Virginia Department of Rail and Public Transportation established targets for Tier II transit agencies – such as WATA and Suffolk Transit – that elected to participate in the statewide group TAM plan. The FY 2024 targets are:

Rolling Stock

(% of revenue vehicles that have met or exceeded their useful life benchmark)

- Buses < 15%
- Cutaway Buses < 10%
- Minibus < 20%
- Trolley Buses < 15%
- Vans < 20%

Equipment/Service Vehicles

(% of vehicles that have met or exceeded their useful life benchmark)

- Non-Revenue/Service Vehicles < 30%
- Trucks & Other Rubber Tire Vehs < 30%

Facilities

(% of facilities in each asset class rated under 3.0 on FTA's TERM scale)

- Passenger < 15%
- Maintenance < 10%
- Administrative < 10%

There are no statewide targets for Tier I transit agencies such as HRT. Each Tier I transit agency must establish their own transit asset management targets.

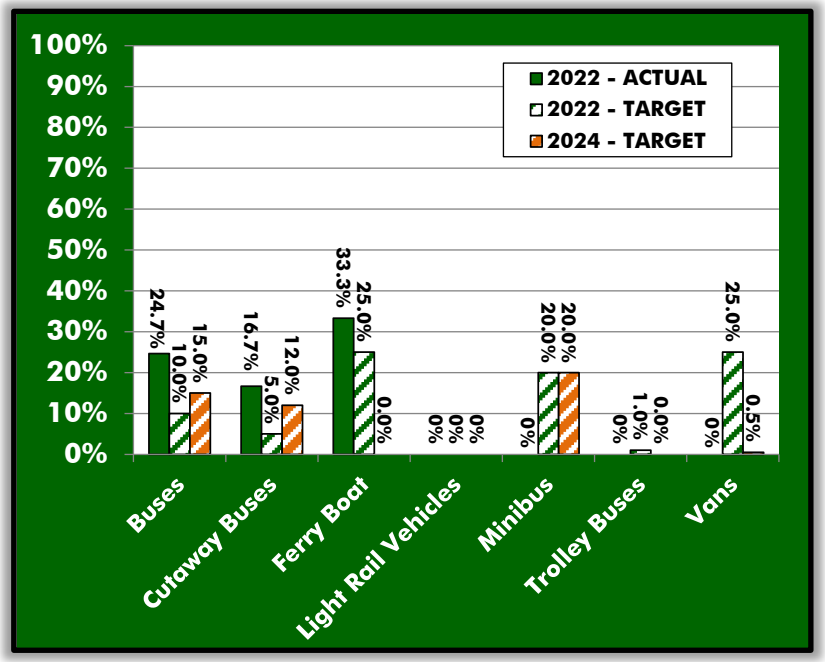
TRANSIT ASSET MANAGEMENT

HRTPO 2024 TARGETS

The HRTPO established one-year (2024) regional transit asset management targets for each of the categories as shown to the right. **These regional targets are based on a weighted average of HRT, WATA, and Suffolk Transit Fiscal Year 2024 targets.**

ROLLING STOCK TARGETS

PERCENTAGE OF REVENUE VEHICLES THAT HAVE MET OR EXCEEDED THEIR USEFUL LIFE BENCHMARK



Rolling Stock
% of revenue vehicles that have met or exceeded their useful life benchmark

- Buses < 15%
- Cutaway Buses < 12%
- Ferry Boat 0%
- Light Rail Vehicles 0%
- Minibus < 20%
- Trolley Buses 0%
- Vans < 0.5%

Equipment/Service Vehicles
% of vehicles that have met or exceeded their useful life benchmark

- Non-Revenue/Service Vehicles < 25%
- Trucks & Other Rubber Tire Vehicles < 23%

Infrastructure
% of track segments, signals, and systems with performance restrictions

- Light Rail Infrastructure 0%

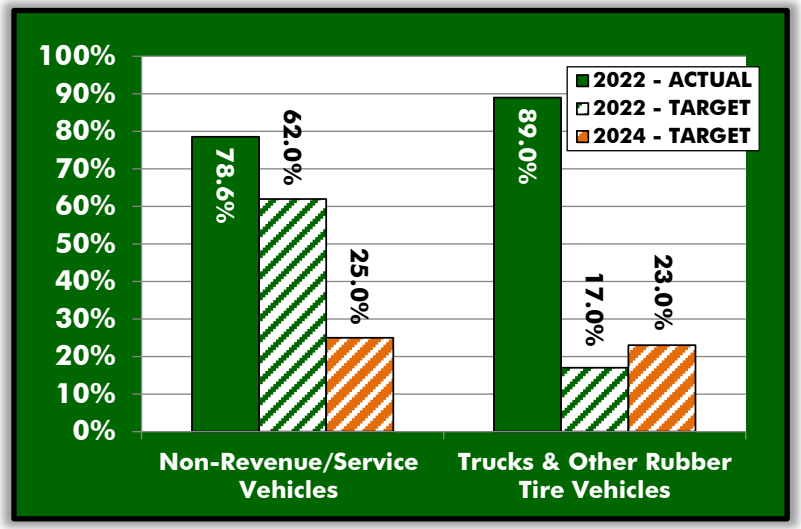
Facilities
% of facilities in each asset class rated under 3.0 on FTA's TERM scale

- Passenger/Parking < 0.4%
- Maintenance < 20%
- Administrative < 18%

TRANSIT ASSET MANAGEMENT

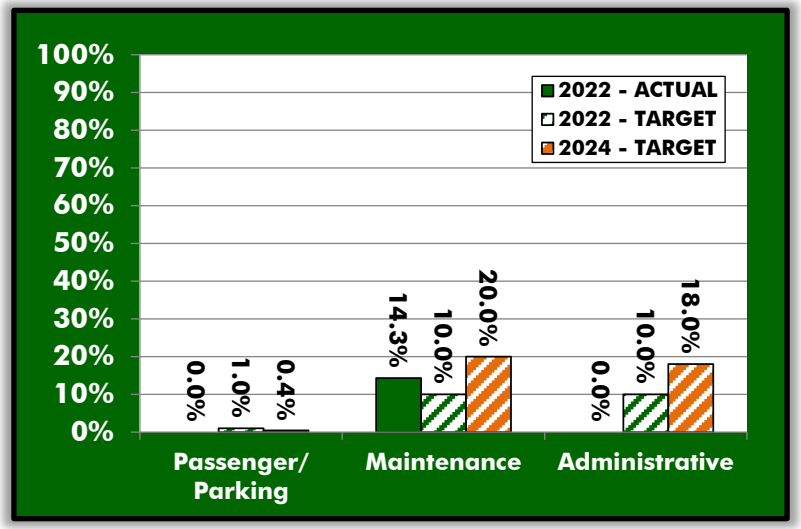
EQUIPMENT/SERVICE VEHICLES TARGETS

PERCENTAGE OF VEHICLES THAT HAVE MET OR EXCEEDED THEIR USEFUL LIFE BENCHMARK



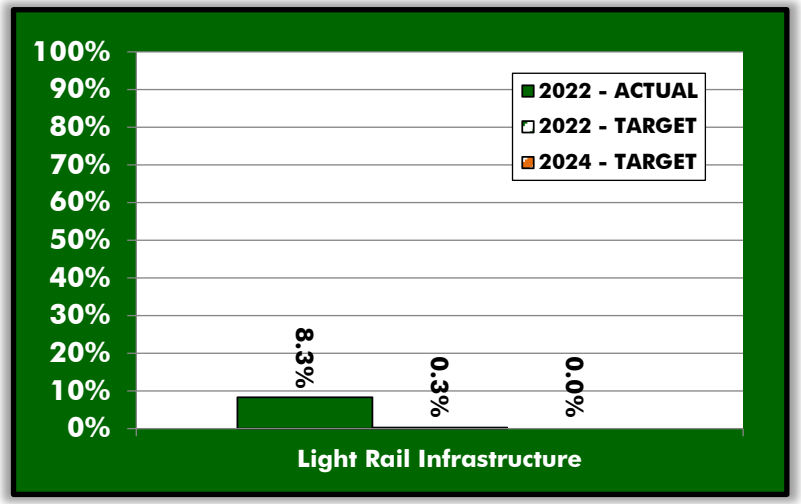
FACILITIES TARGETS

PERCENTAGE OF FACILITIES IN EACH ASSET CLASS RATED UNDER 3.0 ON FTA'S TERM SCALE



INFRASTRUCTURE TARGETS

PERCENTAGE OF TRACK SEGMENTS, SIGNALS, AND SYSTEMS WITH PERFORMANCE RESTRICTIONS



TRANSIT ASSET MANAGEMENT

PROGRESS TOWARDS ACHIEVING TARGETS

HRTPO has established one-year transit asset management targets each year between 2019 and 2024, based on a weighted average of the three agency's targets. Each of these one-year regional targets is shown below. Information on whether Hampton Roads achieved its 2022 transit asset management targets based on the 2022 data is also detailed for each of the measures below:

- **Rolling Stock: Buses - Targets**

2019	2020	2021	2022	2023	2024
41%	19%	10%	10%	28%	15%

MISSING TARGET

A total of 24.7% of the bus fleet in Hampton Roads met or exceeded the useful life benchmark in 2022, which is above the HRTPO's established target of 10%.

- **Rolling Stock: Cutaway Buses - Targets**

2019	2020	2021	2022	2023	2024
10%	1%	1%	5%	17%	12%

MISSING TARGET

A total of 16.7% of the cutaway bus fleet in Hampton Roads met or exceeded the useful life benchmark in 2022, which is above the HRTPO's established target of 5%.

- **Rolling Stock: Ferry Boat - Targets**

2019	2020	2021	2022	2023	2024
50%	33%	33%	25%	20%	0%

MISSING TARGET

A total of 33% of the ferry boat fleet in Hampton Roads met or exceeded the useful life benchmark in 2022, which is above the HRTPO's established target of 25%.

- **Rolling Stock: Light Rail Vehicles - Targets**

2019	2020	2021	2022	2023	2024
0%	0%	0%	0%	0%	0%

SURPASSING TARGET

None of the light rail vehicle fleet in Hampton Roads met or exceeded the useful life benchmark in 2022, which matches the HRTPO's established target of 0%.

- **Rolling Stock: Minibus - Targets**

2019	2020	2021	2022	2023	2024
20%	20%	20%	20%	20%	20%

SURPASSING TARGET

None of the minibus fleet in Hampton Roads met or exceeded the useful life benchmark in 2022, which is surpassing (below) the HRTPO's established target of 20%.

- **Rolling Stock: Trolley Buses - Targets**

2019	2020	2021	2022	2023	2024
3%	3%	10%	1%	0%	0%

SURPASSING TARGET

None of the trolley bus fleet in Hampton Roads met or exceeded the useful life benchmark in 2022, which is surpassing (below) the HRTPO's established target of 1%.

- **Rolling Stock: Vans - Targets**

2019	2020	2021	2022	2023	2024
25%	25%	25%	25%	0%	1%

SURPASSING TARGET

None of the van fleet in Hampton Roads met or exceeded the useful life benchmark in 2022, which is surpassing (below) the HRTPO's established target of 25%.

TRANSIT ASSET MANAGEMENT

- **Service Vehicles: Non-Revenue/Service Vehicles - Targets**

2019	2020	2021	2022	2023	2024
92%	66%	62%	62%	26%	25%

MISSING TARGET

A total of 78.6% of the non-revenue/service vehicle fleet in Hampton Roads met or exceeded the useful life benchmark in 2022, which is above the HRTPO's established target of 62%.

- **Service Vehicles: Trucks & Other Rubber Tire Vehicles - Targets**

2019	2020	2021	2022	2023	2024
70%	13%	17%	17%	38%	23%

MISSING TARGET

A total of 89.0% of the trucks & other rubber tire vehicles service fleet in Hampton Roads met or exceeded the useful life benchmark in 2022, which is above the HRTPO's established target of 17%.

- **Infrastructure: Light Rail Infrastructure - Targets**

2019	2020	2021	2022	2023	2024
2.6%	1.0%	4.0%	0.3%	0.0%	0.0%

MISSING TARGET

A total of 8.3% of the light rail infrastructure in Hampton Roads had performance restrictions in 2022, which is above the HRTPO's established target of 0.3%.

- **Facilities: Passenger/Parking - Targets**

2019	2020	2021	2022	2023	2024
1%	1%	1%	1%	1%	0.4%

SURPASSING TARGET

None of the passenger and parking facilities in Hampton Roads rated under 3.0 on FTA's TERM Scale in 2022, which is surpassing (below) the HRTPO's established target of 1.0%.

- **Facilities: Maintenance - Targets**

2019	2020	2021	2022	2023	2024
10%	10%	10%	10%	10%	20%

MISSING TARGET

A total of 14.3% of the maintenance facilities in Hampton Roads rated under 3.0 on FTA's TERM Scale in 2022, which is above the HRTPO's established target of 10%.

- **Facilities: Administrative - Targets**

2019	2020	2021	2022	2023	2024
10%	10%	10%	10%	10%	18%

SURPASSING TARGET

None of the administrative facilities in Hampton Roads rated under 3.0 on FTA's TERM Scale in 2022, which is surpassing (below) the HRTPO's established target of 10%.

The three Hampton Roads transit agencies will continue to invest in capital assets using increased state and federal sources as well as new regional sources such as the Hampton Roads Regional Transit Fund (HRRTF).

TRANSIT SAFETY

MEASURES

- Transit Fatalities
- Transit Injuries
- Transit Safety Events
- Transit System Reliability

METHODOLOGY

Starting in 2021, the Federal Transit Administration (FTA) requires MPOs to establish regional transit safety targets and incorporate them into Transportation Improvement Programs (TIPs) and Long-Range Transportation Plans (LRTPs). MPOs are required to establish targets and monitor progress in the following transit safety areas for each mode (bus, demand response, light rail, and vanpool):

Category	Measure
Fatalities	Total number of reportable fatalities per year
	Rate per total vehicle revenue miles
Injuries	Total number of reportable injuries per year
	Rate per total vehicle revenue miles
Safety Events	Total number of safety events per year
	Rate per total vehicle revenue miles
System Reliability	Distance between major failures

Safety events are defined as events that include the following if they occur on a transit right-of-way, transit infrastructure, at a transit revenue facility, at a transit facility during maintenance activity, or involving a transit revenue vehicle:

- A fatality confirmed within 30 days of the event
- An injury requiring immediate medical attention away from the scene for at least one person
- Property damage of $25,000 or more
- Collisions involving transit revenue vehicles that require towing a transit vehicle or other non-transit vehicle away from the scene
- An evacuation for life safety reasons

For system reliability, major failures are defined as those that limit actual vehicle movement or impact safety, such as issues related to doors, brakes, engines, steering, axles, and vehicle suspension systems.

Similar to transit asset management, Hampton Roads Transit (HRT), as a Tier I transit agency, must develop their own Public Transportation Agency Safety Plan (PTASP). As Tier II transit agencies, the Williamsburg Area Transit Authority (WATA) and Suffolk Transit are using the statewide transit safety targets that were established in the statewide PTASP developed by the Virginia Department of Rail and Public Transportation.

TRANSIT SAFETY

CURRENT/HISTORICAL CONDITIONS

The following table shows the transit safety conditions in Hampton Roads for the years 2019 through 2022:

Transit Fatalities

Total Number of Reportable Fatalities Per Year	2019	2020	2021	2022
Buses	0	1	1	0
Demand Response	0	0	0	1
Light Rail	0	0	0	0
Vanpool	0	0	0	0
Rate per 100,000 Total Vehicle Revenue Miles	**2019**	**2020**	**2021**	**2022**
Buses	0.0	0.09	0.09	0.0
Demand Response	0.0	0.0	0.0	0.27
Light Rail	0.0	0.0	0.0	0.0
Vanpool	0.0	0.0	0.0	0.0

Safety Events

Total Number of Safety Events Per Year	2019	2020	2021	2022
Buses	66	65	39	25
Demand Response	1	4	6	6
Light Rail	8	7	4	2
Vanpool	0	0	0	0
Rate per 100,000 Total Vehicle Revenue Miles	**2019**	**2020**	**2021**	**2022**
Buses	5.48	5.85	3.41	2.39
Demand Response	0.31	1.21	1.83	1.60
Light Rail	20.75	20.37	10.55	6.02
Vanpool	0	0	0	0

Transit Injuries

Total Number of Reportable Injuries Per Year	2019	2020	2021	2022
Buses	102	57	36	29
Demand Response	1	5	8	9
Light Rail	2	2	2	0
Vanpool	0	0	0	0
Rate per 100,000 Total Vehicle Revenue Miles	**2019**	**2020**	**2021**	**2022**
Buses	8.47	5.13	3.14	2.77
Demand Response	0.31	1.51	2.44	2.39
Light Rail	5.19	5.82	5.27	0
Vanpool	0	0	0	0

System Reliability

Distance Between Major Failures	2019	2020	2021	2022
Buses	12,509	17,060	19,637	18,563
Demand Response	135,748	368,039	1,638,518	-
Light Rail	9,402	13,745	11,492	8,744
Vanpool	693,712	-	-	-

TRANSIT SAFETY

STATEWIDE 2024 TARGETS

The Virginia Department of Rail and Public Transportation established targets for Tier II transit agencies – such as WATA and Suffolk Transit – that elected to participate in the statewide group PTASP. The statewide FY 2024 transit safety targets are:

Fatality Rate – 0 fatalities per 100,000 vehicle revenue miles
(Fatality rate for each mode)

Injury Rate – < 0.5 injuries per 100,000 vehicle revenue miles
(Injury rate for each mode)

Safety Event Rate - < 1 reportable event per 100,000 vehicle revenue miles
(Safety event rate for each mode)

Distance Between Major Failures - > 10,000 miles
(Distance for each mode)

There are no statewide targets for Tier I transit agencies such as HRT. Each Tier I transit agency must establish their own transit safety targets.

HRTPO 2024 TARGETS

The HRTPO established one-year (2024) regional transit safety targets for each of the categories as shown to the right. **These regional targets are based on a weighted average of HRT, WATA, and Suffolk Transit Fiscal Year 2024 targets.**

Transit Fatalities
Total Number of Reportable Fatalities/Rate per 100,000 Vehicle Revenue Miles

➤ Buses	0 / 0.0
➤ Demand Response	0 / 0.0
➤ Light Rail	0 / 0.0
➤ Vanpool	0 / 0.0

Transit Injuries
Total Number of Reportable Injuries/Rate per 100,000 Vehicle Revenue Miles

➤ Buses	< 83 / < 7.62
➤ Demand Response	0 / 0.0
➤ Light Rail	0 / 0.0
➤ Vanpool	0 / 0.0

Transit Safety Events
Total Number of Reportable Events/Rate per 100,000 Vehicle Revenue Miles

➤ Buses	< 71 / < 5.70
➤ Demand Response	< 1 / < 0.04
➤ Light Rail	< 5 / < 15.40
➤ Vanpool	0 / 0.0

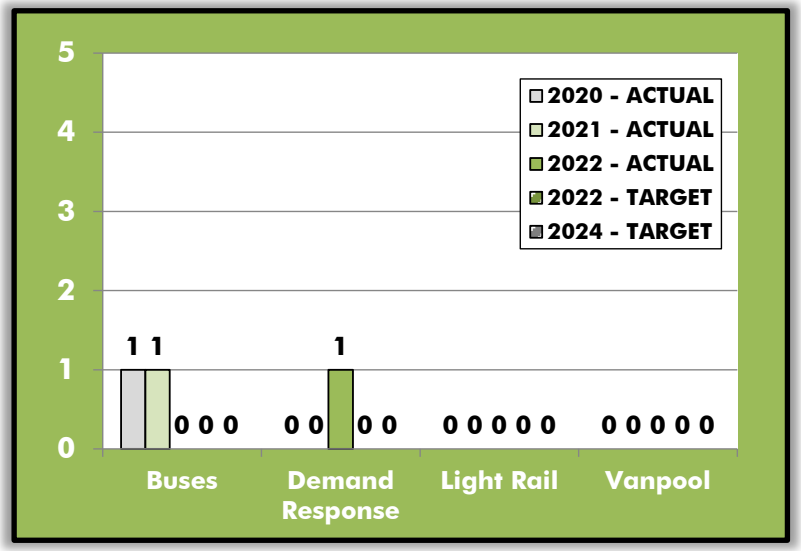
Transit System Reliability
Average Distance between Major Failures in Miles

➤ Buses	> 10,000
➤ Demand Response	> 29,249
➤ Light Rail	> 9,470
➤ Vanpool	> 498,800

TRANSIT SAFETY

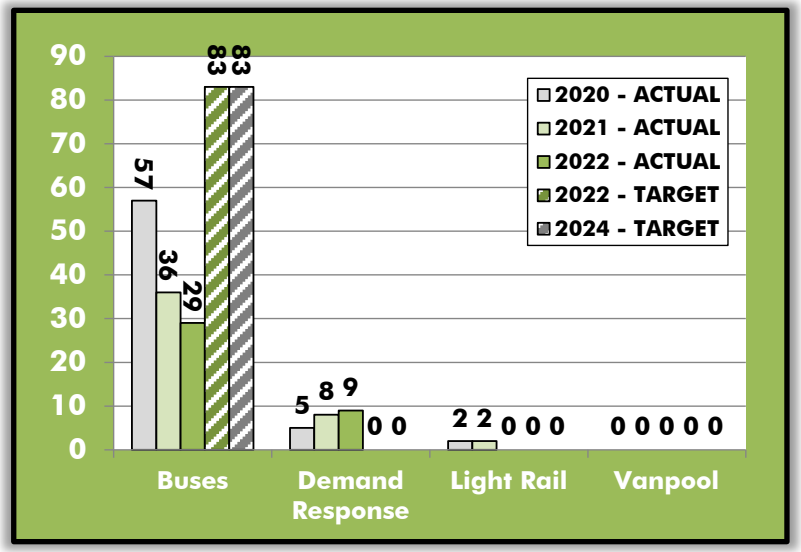
TRANSIT FATALITY TARGETS

TOTAL NUMBER OF REPORTABLE FATALITIES



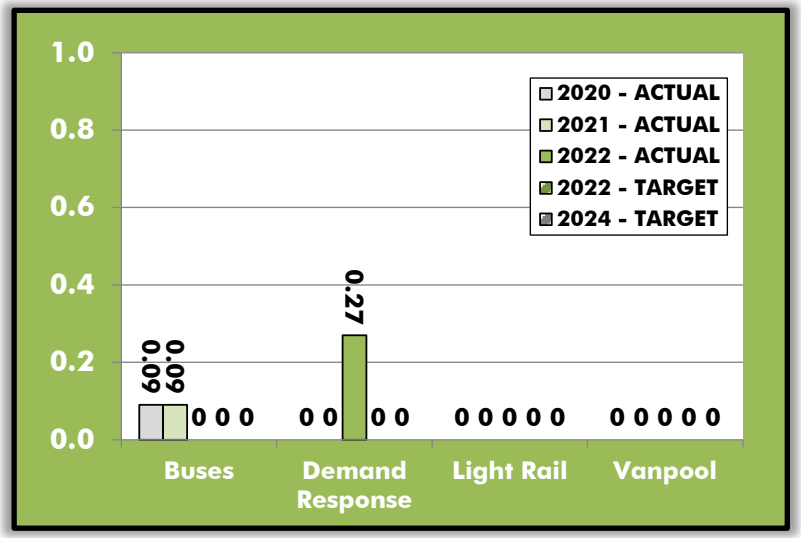
TRANSIT INJURY TARGETS

TOTAL NUMBER OF REPORTABLE INJURIES



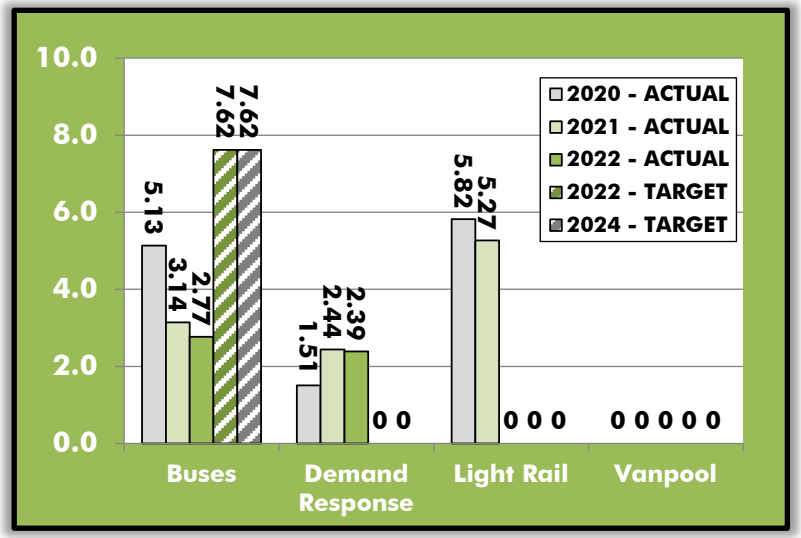
TRANSIT FATALITY RATE TARGETS

RATE PER 100,000 VEHICLE REVENUE MILES



TRANSIT INJURY RATE TARGETS

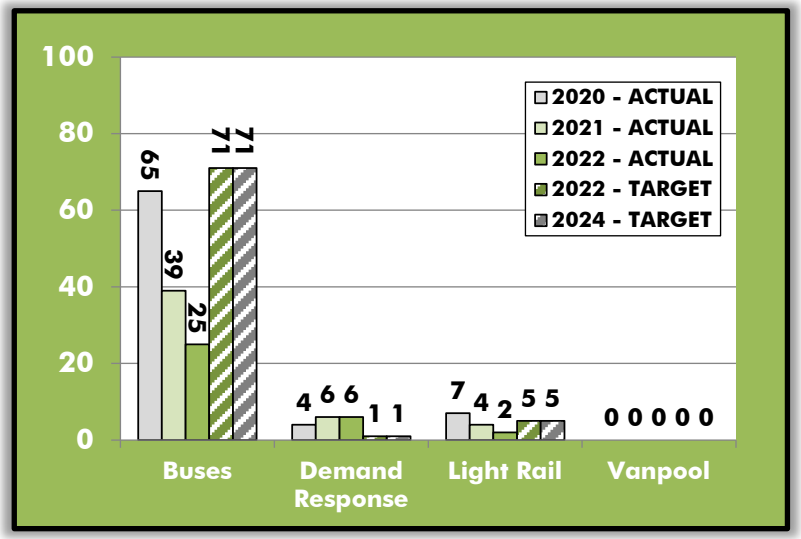
RATE PER 100,000 VEHICLE REVENUE MILES



TRANSIT SAFETY

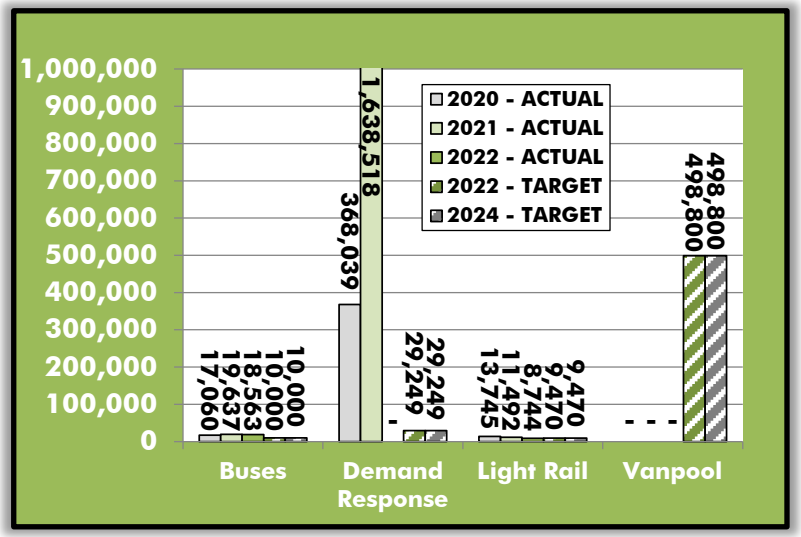
TRANSIT SAFETY EVENT TARGETS

TOTAL NUMBER OF REPORTABLE SAFETY EVENTS



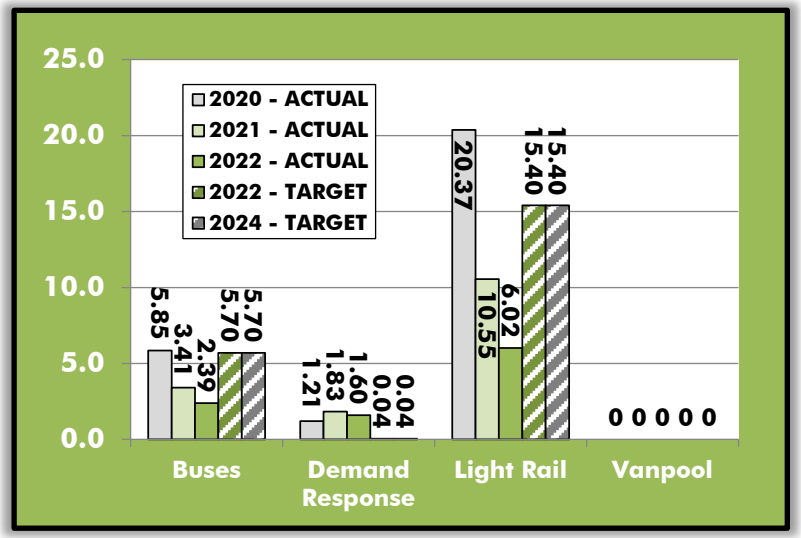
TRANSIT SYSTEM RELIABILITY TARGETS

DISTANCE BETWEEN MAJOR FAILURES IN MILES



TRANSIT SAFETY EVENT RATE TARGETS

RATE PER 100,000 VEHICLE REVENUE MILES



TRANSIT SAFETY

PROGRESS TOWARDS ACHIEVING TARGETS

Similar to transit asset management, data for measuring progress towards achieving transit safety targets is obtained from the National Transit Database (NTD). Information on whether Hampton Roads achieved its 2022 transit safety targets based on the 2022 data is also detailed for each of the measures below:

- **Transit Fatalities**

  Targets – 0 for all modes and all years

  Demand Response – MISSING TARGET

  All other Modes - SURPASSING TARGET

  A fatality occurred involving demand response in Hampton Roads in 2022, which is above the HRTPO's target of 0 fatalities. No other modes experienced a fatality in 2022.

- **Transit Fatality Rates**

  Targets – 0 per 100,000 vehicle revenue miles for all modes and years

  Demand Response – MISSING TARGET

  All other Modes - SURPASSING TARGET

  A fatality occurred involving demand response in Hampton Roads in 2022, which is above the HRTPO's established target of 0 fatalities per 100,000 vehicle revenue miles. No other modes experienced a fatality in 2022.

- **Transit Injuries**

  Targets – < 83 for bus for all years, 0 for all other modes

  Bus, Light Rail, Vanpool – SURPASSING TARGET

  Demand Response - MISSING TARGET

  The number of transit injuries on bus (29), light rail (0) and vanpool (0) met or exceeded the targets for the year 2022. The number of injuries on demand response (9), however, missed the target of zero for 2022.

- **Transit Injury Rates**

  Targets – < 7.62 for bus for all years, 0 for all other modes

  Bus, Light Rail, Vanpool – SURPASSING TARGET

  Demand Response - MISSING TARGET

  The rate of transit injuries on bus (2.77 injuries per 100,000 vehicle revenue miles), light rail (0) and vanpool (0) met or exceeded the targets for the year 2022. The rate of injuries on demand response (2.39), however, missed the target of zero for 2022.

TRANSIT SAFETY

- **Transit Safety Events**

  Targets – < 71 for bus, < 1 for demand response, < 5 for light rail, and 0 for vanpool for all years

  Bus, Light Rail, Vanpool – SURPASSING TARGET

  Demand Response - MISSING TARGET

  The number of transit safety events on bus (25), light rail (2) and vanpool (0) all met or exceeded the targets for the year 2022. The number of events on demand response (6), however, missed the target of less than 1 for 2022.

- **Transit Safety Event Rates**

  Targets – < 5.70 for bus, < 0.04 for demand response, < 15.40 for light rail, and 0 for vanpool for all years

  Bus, Light Rail, Vanpool – SURPASSING TARGET

  Demand Response - MISSING TARGET

  The rate of transit safety events on bus (2.39), light rail (6.02) and vanpool (0) all met or exceeded the targets for the year 2022. The rate of events on demand response (1.60), however, missed the target of less than 0.04 for 2022.

- **Transit System Reliability**

  Targets – > 10,000 miles for bus, > 29,249 miles for demand response, > 9,470 miles for light rail, > 498,800 for vanpool for all years

  Bus, Demand Response, Vanpool – SURPASSING TARGET

  Light Rail - MISSING TARGET

  The distance between major failures on bus (18,563 miles), demand response (no major failures), and vanpool (no major failures) all surpassed the targets for the year 2022. The distance between major failures on light rail (8,744 miles), however, missed the target of greater than 9,470 miles for the year 2022.

ROADWAY PERFORMANCE

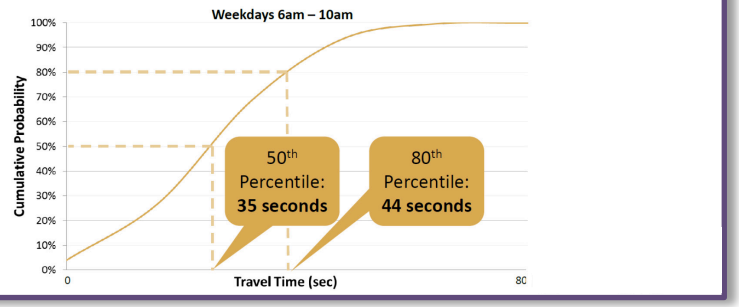
MEASURES

- **Interstate Travel Time Reliability (% reliable person-miles of travel)**
- **Non-Interstate National Highway System Travel Time Reliability (% reliable person-miles of travel)**

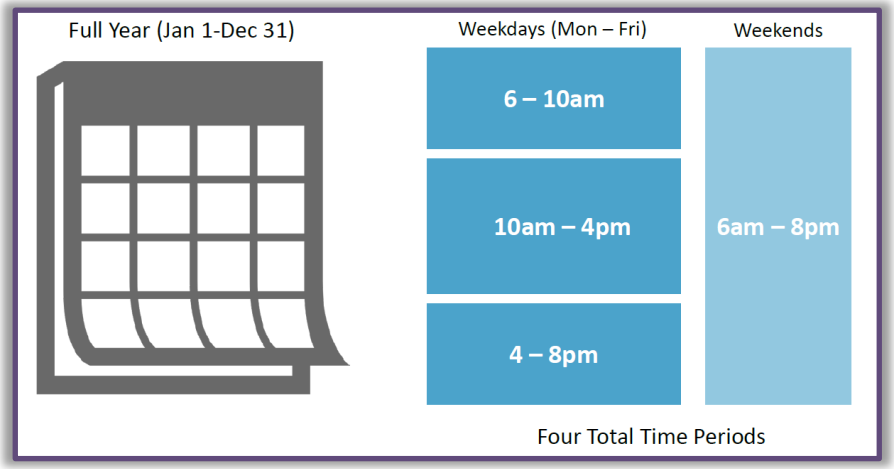
METHODOLOGY

This measure examines the roadway performance of the National Highway System (NHS) based on the person-miles travelled that are classified as reliable. The reliability of the system is calculated using a metric referred to as the Level of Travel Time Reliability (LOTTR). The LOTTR is defined as the ratio of the 80th percentile travel time to the mean (50th percentile) travel time. Travel time information – which is provided through the National Performance Management Research Data Set (NPMRDS) – is collected throughout the year on each segment of the NHS in 15-minute intervals. An example of this calculation is shown below:

$$Level\ of\ Travel\ Time\ Reliability = \frac{80th\ percentile\ travel\ time}{50th\ percentile\ travel\ time\ (\text{“}normal\ travel\ time\text{”})}$$



Travel times throughout the year are divided into four reporting periods: Weekday morning peak, weekday midday, weekday afternoon peak, and weekends. The time of day that each period represents is shown below:

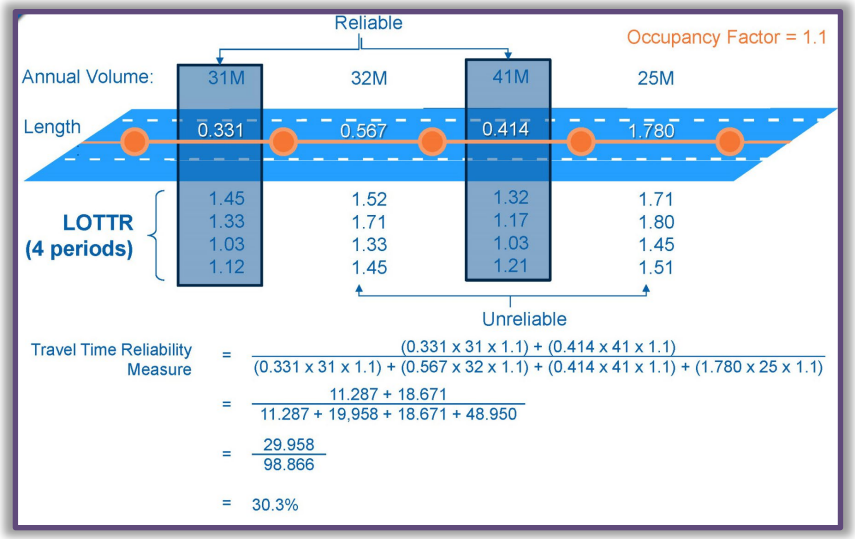


A LOTTR ratio is calculated for each Interstate and Non-Interstate NHS segment by direction for each of these time periods over the course of an entire year. This produces a total of four LOTTR ratios for each Interstate and Non-Interstate NHS segment. Segments are considered to be not reliable if any of these four LOTTR ratios are 1.50 or greater. For a segment to be classified as reliable, all four LOTTR ratios must be below 1.50. An example of this calculation is shown on the next page:

ROADWAY PERFORMANCE

$$\frac{\text{Longer Travel Time (80th)}}{\text{Normal Travel Time (50th)}} = \frac{\text{\# seconds}}{\text{\# seconds}} = \text{Level of Travel Time Reliability Ratio}$$

Level of Travel Time Reliability (LOTTR) *(Single Segment, Interstate Highway System)*		
Monday – Friday	6am – 10am	LOTTR = $\frac{44 \text{ sec}}{35 \text{ sec}} = 1.26$
	10am – 4pm	LOTTR = 1.39
	4pm – 8pm	LOTTR = 1.54
Weekends	6am – 8pm	LOTTR = 1.31
Must exhibit LOTTR below 1.50 during **all** of the time periods		**Segment is not reliable**



This procedure is followed for each Interstate and Non-Interstate NHS segment to determine whether the segment is reliable or not reliable. Each of the reliable individual Interstate and Non-Interstate NHS segments are then multiplied by the length of that particular segment, the annual vehicle volume on that segment, and an occupancy factor based on the average number of persons per vehicle that converts vehicular travel to person travel. These products are added together for the entire Interstate and Non-Interstate NHS network and divided by the same factors for the entire system to produce the regional percentage of reliable person-miles of travel on the Interstate and Non-Interstate NHS systems. An example of this calculation is shown to the right:

ROADWAY PERFORMANCE

CURRENT/HISTORICAL CONDITIONS

The following charts show the percentage of reliable person-miles of travel in Hampton Roads and throughout Virginia for 2016 through 2023. The chart on the left reflects the data for the Interstate system, and the chart on the right reflects the Non-Interstate NHS.

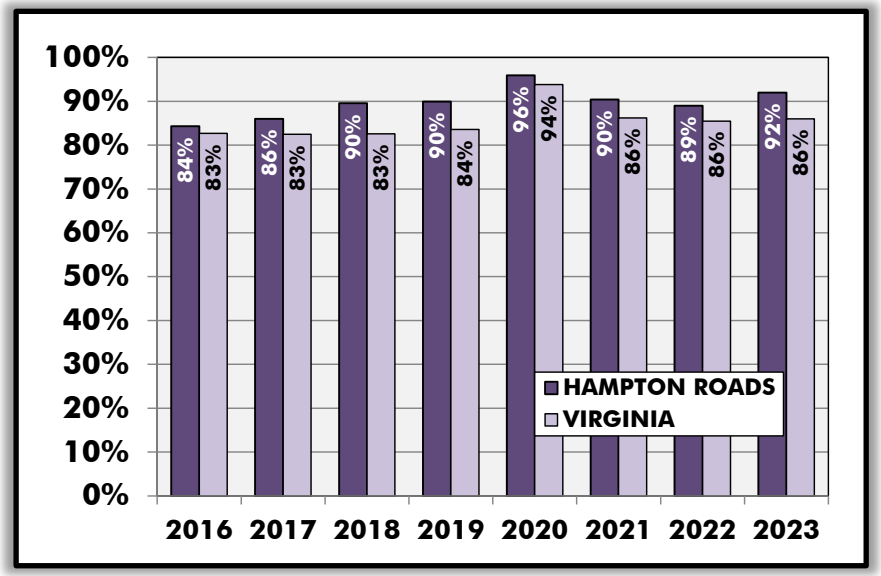
In addition, the maps on the following page show the LOTTR for Interstate and non-Interstate NHS in Hampton Roads in 2023.

STATEWIDE 4-YEAR TARGETS (2021-2025)

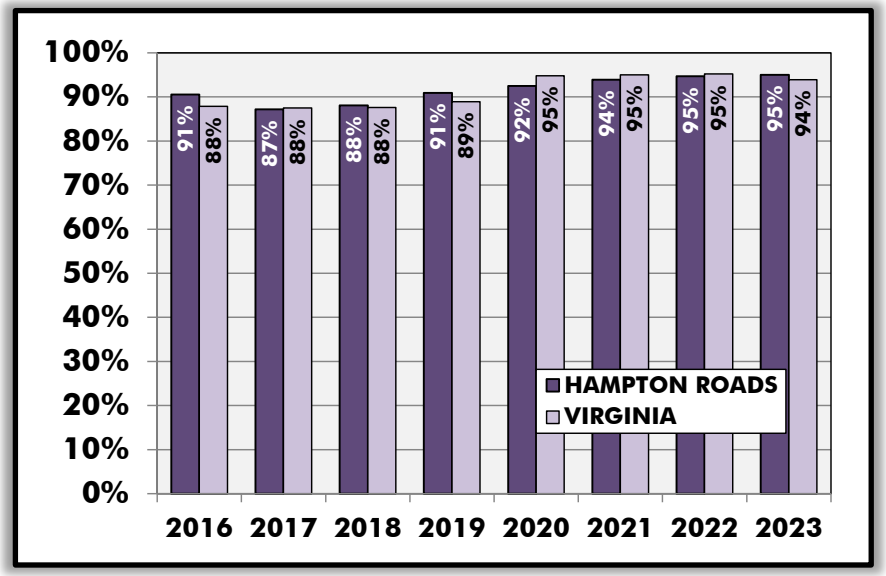
- **Percentage of Reliable Person-Miles of Travel - Interstate > 85%**
- **Percentage of Reliable Person-Miles of Travel – Non-Interstate NHS > 88%**

The statewide four-year targets established by the Commonwealth Transportation Board (CTB) are based on projections using a model created for VDOT that estimates future reliability values for both the state and each MPO based on 30 traffic and roadway characteristic variables.

PERCENTAGE OF RELIABLE PERSON-MILES OF TRAVEL - INTERSTATE (2016 - 2023)

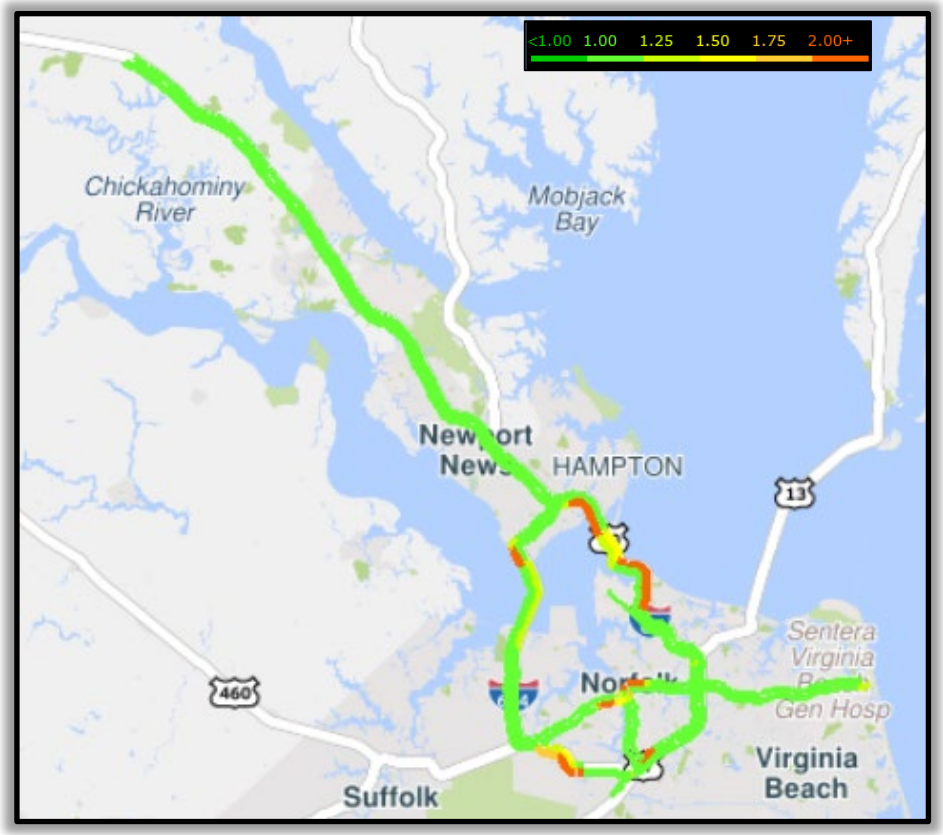


PERCENTAGE OF RELIABLE PERSON-MILES OF TRAVEL – NON-INTERSTATE NHS (2016 - 2023)



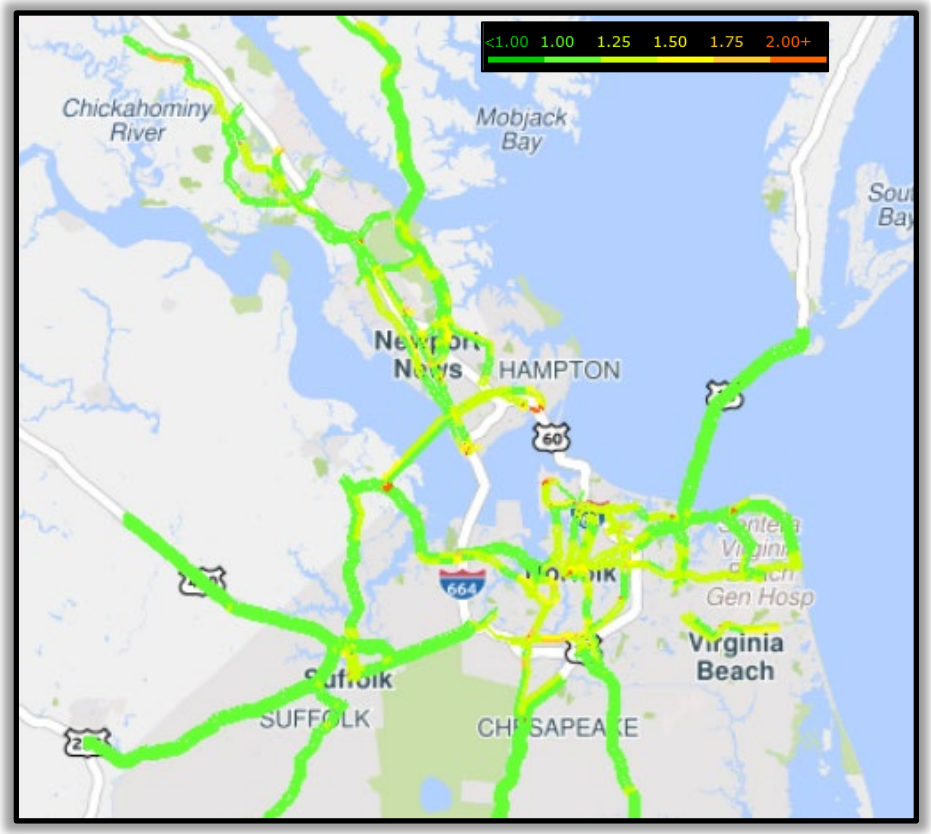
ROADWAY PERFORMANCE

LEVEL OF TRAVEL TIME RELIABILITY INTERSTATE (2023)



Source: RITIS using NPMRDS data

LEVEL OF TRAVEL TIME RELIABILITY NON-INTERSTATE NHS (2023)



Source: RITIS using NPMRDS data

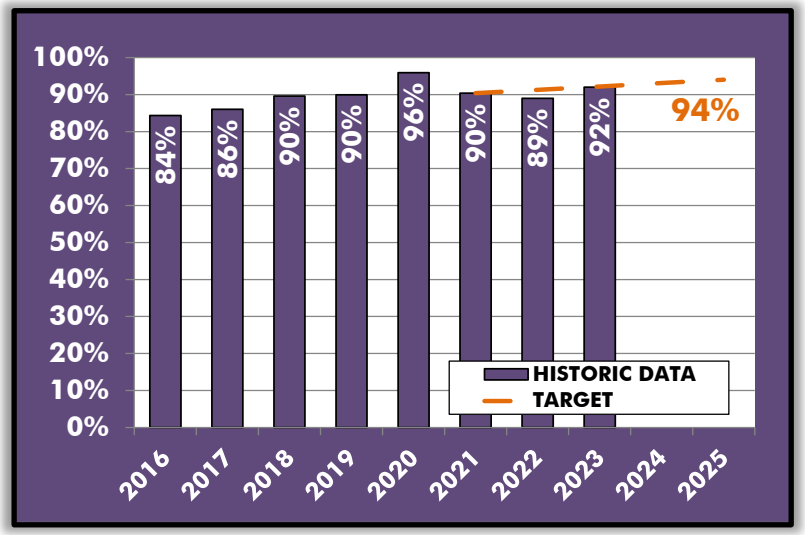
ROADWAY PERFORMANCE

HRTPO 4-YEAR TARGETS (2021-2025)

The HRTPO established four-year targets of greater than 94% of the Interstate travel in the region being reliable, and greater than 88% of the Non-Interstate NHS travel being reliable. **Both of these percentages match the VDOT travel time reliability model projections for Hampton Roads.**

- **Interstate Travel Time Reliability (% reliable person-miles)** **> 94%**
- **Non-Interstate NHS Travel Time Reliability (% reliable person-miles)** **> 88%**

PERCENTAGE OF RELIABLE PERSON-MILES OF TRAVEL – INTERSTATE



ROADWAY PERFORMANCE

PROGRESS TOWARDS ACHIEVING TARGETS

Hampton Roads is surpassing the level needed to reach the 2025 target in the roadway performance measure for the Non-Interstate NHS as of 2023, but not the target for the Interstate system. More details on each of the two roadway performance measures is shown below:

- **Percentage of Reliable Person-Miles of Travel - Interstate System**

  MISSING TARGET

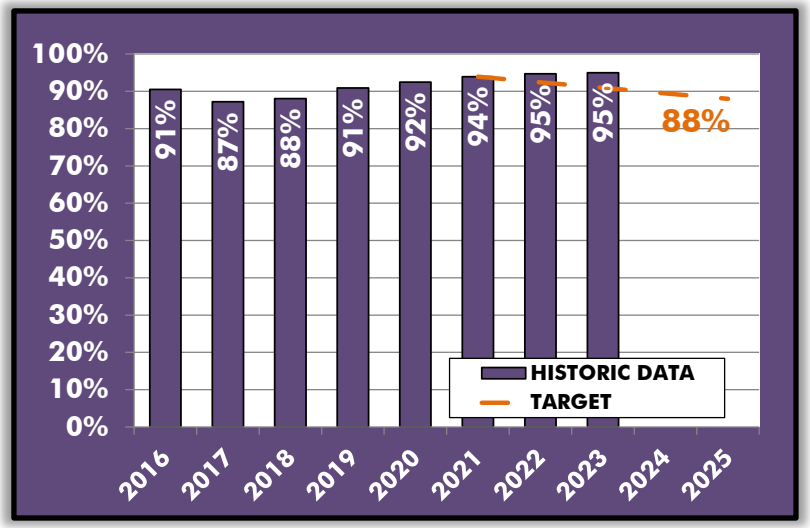
  At 92.0% as of 2023, this is below the 92.2% level that would be necessary to be on pace to meet the 2025 target.

- **Percentage of Reliable Person-Miles of Travel – Non-Interstate NHS**

  SURPASSING TARGET

  At 95.0% as of 2023, this is surpassing (above) the 91.0% level that would be necessary to be on pace to meet the 2025 target.

PERCENTAGE OF RELIABLE PERSON-MILES OF TRAVEL - NON-INTERSTATE NHS



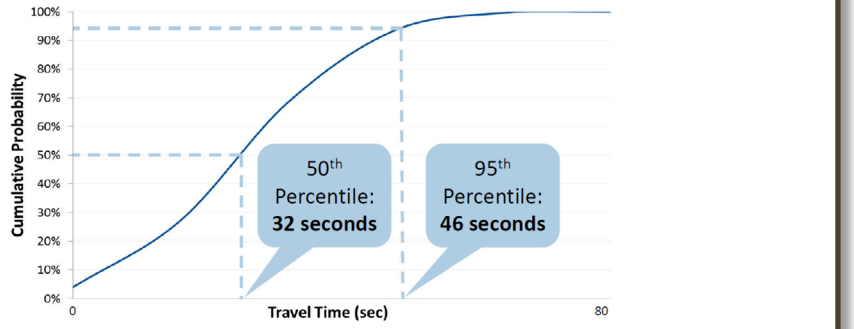
MEASURES

- **Truck Travel Time Reliability (TTTR) Index on the Interstate system**

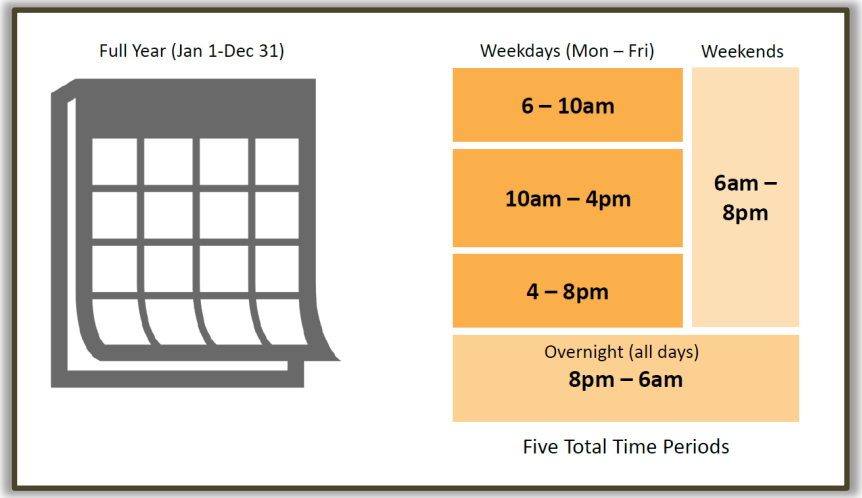
METHODOLOGY

This measure examines the reliability of moving freight via truck on the regional Interstate system. The reliability of freight movement is calculated using a metric referred to as the Truck Travel Time Reliability (TTTR) Index. The TTTR ratio is defined as the ratio of the 95th percentile travel time for trucks to the mean (50th percentile) travel time for trucks. This travel time information – which is provided through the National Performance Management Research Data Set (NPMRDS) – is collected throughout the year on each segment of the Interstate system in 15-minute intervals. An example of calculating this ratio is shown below:

$$Truck\ Travel\ Time\ Reliability = \frac{95th\ percentile\ truck\ travel\ time}{50th\ percentile\ truck\ travel\ time\ (\text{"}normal\ \text{truck}\ travel\ time\text{"})}$$



Truck travel times throughout the year are divided into five reporting periods: Weekday morning peak, weekday midday, weekday afternoon peak, weekends, and overnight. The time of day that each period represents is shown below:

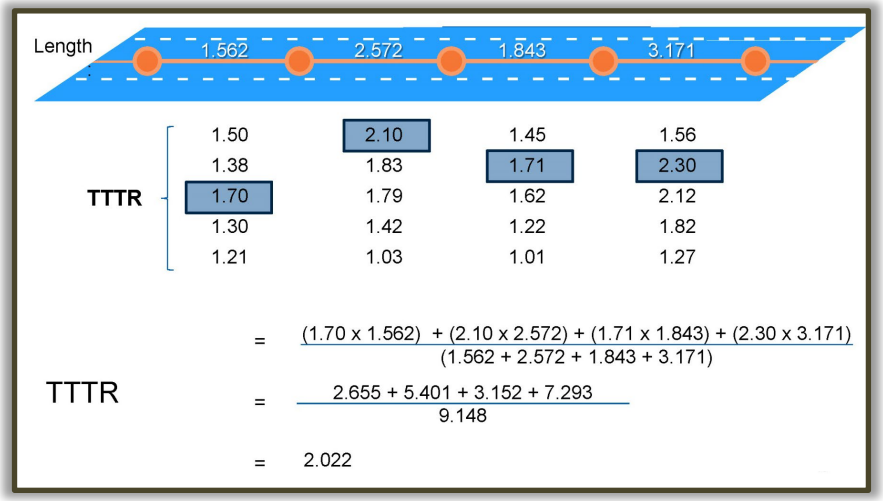


A TTTR ratio is calculated for each Interstate segment by direction for each of these time periods over the course of an entire year. This produces a total of five TTTR ratios for each Interstate segment. For each segment, the maximum of these five TTTR ratios is determined and used to calculate the regional index. This calculation is highlighted on the next page:

$$\frac{\text{Longer Truck Travel Time (95th)}}{\text{Normal Truck Travel Time (50th)}} = \frac{\text{\# seconds}}{\text{\# seconds}} = \text{Truck Travel Time Reliability (TTTR) Ratio}$$

Truck Travel Time Reliability (TTTR) (Single Segment, Interstate Highway System)		
Monday – Friday	6am – 10am	$TTTR = \frac{72 \text{ sec}}{50 \text{ sec}} = 1.44$
	10am – 4pm	TTTR = 1.39
	4pm – 8pm	TTTR = **1.49**
Weekends	6am – 8pm	TTTR = 1.31
Overnight	8pm – 6am	TTTR = 1.20
Maximum TTTR		**1.49**

These individual Interstate segment Maximum TTTR ratios are then multiplied by the length of that particular segment. These products are added together for the entire region and divided by the total directional length of the regional Interstate system to produce the regional Truck Travel Time Reliability Index. An example of this calculation is shown to the right:

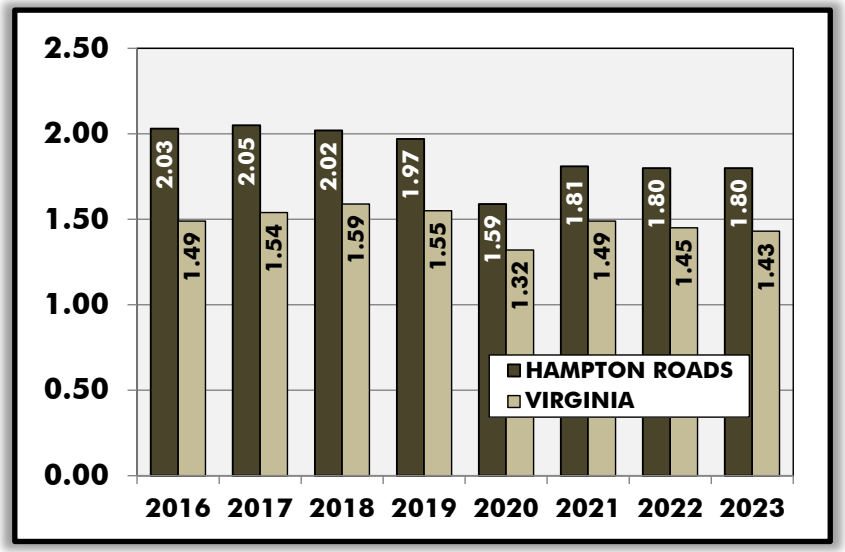


CURRENT/HISTORICAL CONDITIONS

The following chart shows the Truck Travel Time Reliability (TTTR) Index for the Interstate system in Hampton Roads and throughout Virginia for 2016 through 2023.

In addition, the map to the right graphically shows the TTTR on Interstate roadways in Hampton Roads in 2023.

TRUCK TRAVEL TIME RELIABILITY INDEX - INTERSTATE (2016 – 2023)

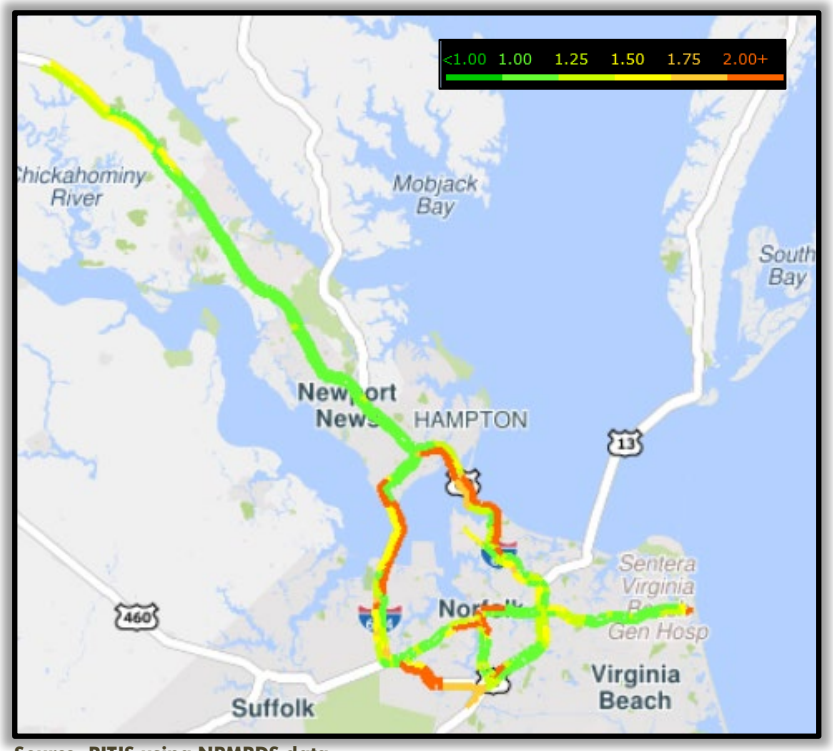


STATEWIDE 4-YEAR TARGETS (2021-2025)

- **Truck Travel Time Reliability (TTTR) Index - Interstate** **< 1.64**

The statewide four-year target established by the Commonwealth Transportation Board (CTB) is based on projections using a model created for VDOT that estimates future reliability values for both the state and each MPO based on 30 traffic and roadway characteristic variables.

TRUCK TRAVEL TIME RELIABILITY INDEX - INTERSTATE (2023)



Source: RITIS using NPMRDS data.

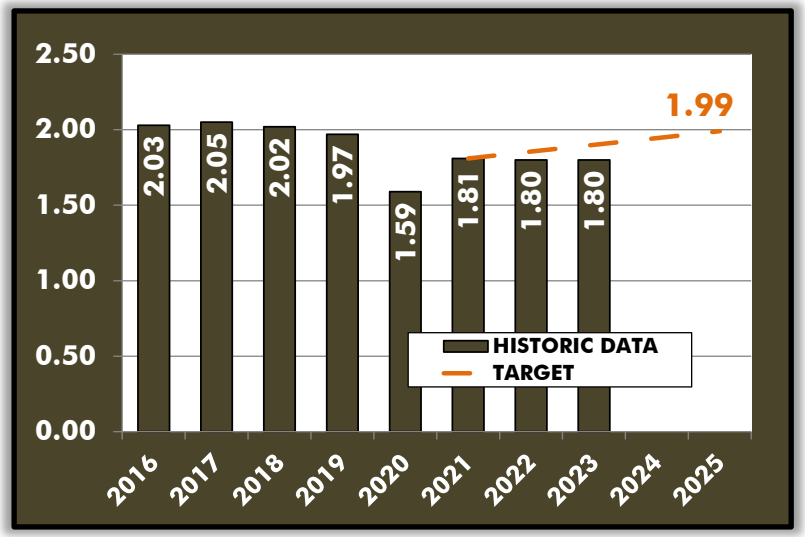
FREIGHT

HRTPO 4-YEAR TARGETS (2021-2025)

The HRTPO established a four-year target for the Truck Travel Time Reliability Index on the Interstate system of less than 1.99. **This percentage matches VDOT's truck travel time reliability model projections for Hampton Roads.**

- **Truck Travel Time Reliability Index (Interstate System)** **< 1.99**

TRUCK TRAVEL TIME RELIABILITY INDEX – INTERSTATE



PROGRESS TOWARDS ACHIEVING TARGETS

Hampton Roads is surpassing the level needed to reach the 2025 target in the freight measure as shown below:

- **Truck Travel Time Reliability Index (Interstate System)**

  SURPASSING TARGET

  At 1.80 as of 2023, this is surpassing (below) the 1.90 level that would be necessary to be on pace to meet the 2025 target.

SUMMARY

The Moving Ahead for Progress in the 21st Century (MAP-21) surface transportation legislation established a performance- and outcome-based program. As part of this program, States and Metropolitan Planning Organizations (MPOs) prepare and use a set of federally-established performance measures that are tied to national performance goals.

Each MPO must set regional targets in the areas of roadway safety, pavement condition, bridge condition, transit asset management, transit safety, roadway performance, and freight. These performance measures and targets must be reported based on the MPO's Metropolitan Planning Area (MPA). The Hampton Roads MPA is comprised of 15 localities including all of Chesapeake, Hampton, Isle of Wight County, James City County, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, Williamsburg, and York County and portions of Franklin, Gloucester County, and Southampton County.

For roadway safety, transit asset management, and transit safety, targets are established for a one-year time horizon and must be set on an annual basis. For the bridge condition, pavement condition, roadway performance and freight measures, MPO targets are established for a four-year time horizon, whereas states establish both two-year and four-year targets. For target setting, MPOs may adopt the statewide targets but report metrics specific to the MPA; select unique, MPO specific targets, and report metrics specific to the MPA; or use a combination of statewide and unique targets.

Setting the HRTPO targets – which are shown on the following pages – is a collaborative effort. The Transportation Technical Advisory Committee (TTAC) recommended targets for the HRTPO Board to consider. In order to assist the TTAC, the committee formed a Regional Performance Measures Working Group. This group includes staff from localities, transit agencies, VDOT, and subject-matter experts.

This Regional Performance Measures – System Performance Report is updated on an annual basis to reflect revised targets as well as progress towards meeting the established targets. The progress that Hampton Roads is making towards meeting the targets is summarized on the following pages.

In addition to this document, the HRTPO also maintains a Regional Performance Measures and Targets website that includes information on each of these performance measures as well as the basis for selecting each regional target. The HRTPO Regional Performance Measures and Targets website is **https://www.hrtpo.org/554/Regional-Performance-Measures-Targets**.

CURRENT HAMPTON ROADS REGIONAL TARGETS ESTABLISHED BY THE HRTPO BOARD AND PROGRESS TOWARD ACHIEVING ESTABLISHED TARGETS

ONE-YEAR TARGETS

ROADWAY SAFETY AND TRANSIT ASSET MANAGEMENT

Area	Measures	HRTPO Approved One-Year Target (2024)	Progress Towards Meeting Target (as of Most Recent Data)
Roadway Safety	Fatalities	136	MISSING TARGET
	Fatality Rate	0.935	MISSING TARGET
	Serious Injuries	1,505	MISSING TARGET
	Serious Injury Rate	10.38	MISSING TARGET
	Non-Motorized Fatalities & Serious Injuries	177	MISSING TARGET
Transit Asset Management	Rolling Stock - % of revenue vehicles within each asset class that have met or exceeded their useful life benchmark		
	Bus	< 15%	MISSING TARGET
	Cutaway Buses	< 12%	MISSING TARGET
	Ferry Boat	0%	MISSING TARGET
	Light Rail Vehicles	0%	SURPASSING TARGET
	Minibus	< 20%	SURPASSING TARGET
	Trolley Buses	0%	SURPASSING TARGET
	Van	< 0.5%	SURPASSING TARGET
	Equipment/Service Vehicles - % of vehicles that have met or exceeded their useful life benchmark		
	Non-Revenue/ Service Vehicles	< 25%	MISSING TARGET
	Trucks & Other Rubber Tire Vehs	< 23%	MISSING TARGET
	Infrastructure - % of track segments, signals, and systems with performance restrictions		
	Light Rail Infrastructure	0%	MISSING TARGET
	Facilities - % of facilities in each asset class rated under 3.0 on FTA's TERM scale		
	Passenger/Parking	< 0.4%	SURPASSING TARGET
	Maintenance	< 20%	MISSING TARGET
	Administrative	< 18%	SURPASSING TARGET

CURRENT HAMPTON ROADS REGIONAL TARGETS ESTABLISHED BY THE HRTPO BOARD AND PROGRESS TOWARD ACHIEVING ESTABLISHED TARGETS

ONE-YEAR TARGETS

TRANSIT SAFETY

Area	Measures	HRTPO Approved One-Year Target (2024)	Progress Towards Meeting Target (as of Most Recent Data)
Transit Safety	Transit Fatalities		
	Bus	0	SURPASSING TARGET
	Demand Response	0	MISSING TARGET
	Light Rail	0	SURPASSING TARGET
	Vanpool	0	SURPASSING TARGET
	Transit Fatality Rate		
	Bus	0.0	SURPASSING TARGET
	Demand Response	0.0	MISSING TARGET
	Light Rail	0.0	SURPASSING TARGET
	Vanpool	0.0	SURPASSING TARGET
	Transit Injuries		
	Bus	< 83	SURPASSING TARGET
	Demand Response	0	MISSING TARGET
	Light Rail	0	SURPASSING TARGET
	Vanpool	0	SURPASSING TARGET
	Transit Injury Rate		
	Bus	< 7.62	SURPASSING TARGET
	Demand Response	0.0	MISSING TARGET
	Light Rail	0.0	SURPASSING TARGET
	Vanpool	0.0	SURPASSING TARGET
	Safety Events		
	Bus	< 71	SURPASSING TARGET
	Demand Response	< 1	MISSING TARGET
	Light Rail	< 5	SURPASSING TARGET
	Vanpool	0	SURPASSING TARGET
	Safety Event Rate		
	Bus	< 5.70	SURPASSING TARGET
	Demand Response	< 0.04	MISSING TARGET
	Light Rail	< 15.40	SURPASSING TARGET
	Vanpool	0.0	SURPASSING TARGET
	System Reliability		
	Bus	> 10,000	SURPASSING TARGET
	Demand Response	> 29,249	SURPASSING TARGET
	Light Rail	> 9,470	MISSING TARGET
	Vanpool	> 498,800	SURPASSING TARGET

CURRENT HAMPTON ROADS REGIONAL TARGETS ESTABLISHED BY THE HRTPO BOARD AND PROGRESS TOWARD ACHIEVING ESTABLISHED TARGETS

FOUR-YEAR TARGETS

BRIDGE CONDITION, PAVEMENT CONDITION, ROADWAY PERFORMANCE, AND FREIGHT

Area	Measures	HRTPO Approved Four-Year Target (2025)	Progress Towards Meeting Target (as of Most Recent Data)
Bridge Condition	NHS bridge deck area in good condition	**> 25.1%**	SURPASSING TARGET
	NHS bridge deck area in poor condition	**< 3.6%**	MISSING TARGET
Pavement Condition	Interstate System pavement in good condition	**> 45%**	SURPASSING TARGET
	Interstate System pavement in poor condition	**< 3%**	SURPASSING TARGET
	Non-Interstate System NHS pavement in good condition	**> 14%**	SURPASSING TARGET
	Non-Interstate System NHS pavement in poor condition	**< 5%**	SURPASSING TARGET
Roadway Performance	Interstate Travel Time Reliability	**> 94%**	MISSING TARGET
	Non-Interstate NHS Travel Time Reliability	**> 88%**	SURPASSING TARGET
Freight	Truck Travel Time Reliability Index	**< 1.99**	SURPASSING TARGET

STATE PERFORMANCE MEASURES

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

The Hampton Roads regional performance measures (RPMs) include approximately 70 measures, which are organized in the following 12 categories:

- Transportation System Measures
  - Congestion Reduction
  - Safety
  - Transit Usage
  - HOV Usage
  - Job-to-Housing Ratios
  - Job and Housing Access to Transit
  - Job and Housing Access to Pedestrian Facilities
  - Air Quality
  - Movement of Freight
  - Vehicle-Miles Traveled (VMT)
  - Maintenance
- Financial System Measures

The first ten categories were suggested by the Commonwealth; the last two – Maintenance and Financial – were added by the Transportation Technical Advisory Committee (TTAC).

In April 2012, the HRTPO Board approved a set of targets for its RPMs. Lacking a basis for setting numerical targets, the HRTPO, with the approval of the TTAC's RPM Task Force, decided to set trend targets – increasing a particular value, decreasing a particular value, or maintaining that particular value.

This HRTPO Regional Performance Measures effort is updated annually as part of this System Performance Report. The RPM values and targets are presented on the following pages. The desired direction of each target and the progress in meeting these goals is indicated by the following:

goal: maintain value

goal: increase value

goal: decrease value

- Green indicates that the actual trend is following the desired trend
- Orange indicates that the actual trend is directionally opposite to the desired trend
- Blue indicates an unclear trend.

STATE PERFORMANCE MEASURES

A. Transportation System Performance Measures[13]	Data Source	Year 2011	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023	Desired Trend
															Actual Trend is Following Desired Trend
															Actual Trend is Going Against Desired Trend
															Actual Trend Unclear
1. congestion reduction															
Annual Delay, hours per peak auto commuter	TTI	39	39	41	43	44	46	46	44	43	22	38	42	n.a.	
Annual Excess Fuel Consumed, gallons per peak auto commuter	TTI	16	16	16	16	15	15	15	15	15	8	13	14	n.a.	
Travel Time Index (extra time during peak period), %	TTI/FHWA	1.17	1.18	1.18	1.17	1.17	1.17	1.17	1.16	1.16	1.06	1.11	1.14	n.a.	
2. safety															
Annual Roadway Fatalities, number	DMV[24]	136	99	131	125	121	125	155	139	147	150	179	162	166	
Annual Roadway Fatalities, per 100 million VMT[25]	DMV[24]	0.86	0.81	0.84	0.88	0.84	0.84	1.03	0.93	0.96	1.11	1.28	1.12	1.06	
Annual Roadway Injuries, number	DMV[24]	14,038	15,034	15,432	14,715	14,955	16,628	16,578	16,448	16,895	15,002	16,531	15,118	16,224	
Annual Roadway Injuries, per million VMT	DMV[24]	0.96	1.04	1.07	1.04	1.03	1.11	1.11	1.10	1.11	1.11	1.18	1.04	1.03	
Annual Roadway Crashes, number	DMV[24]	24,115	25,192	25,374	24,874	25,310	26,853	26,765	26,916	26,250	23,466	26,170	24,712	25,930	
Annual Roadway Crashes, per million VMT	DMV[24]	1.65	1.74	1.77	1.76	1.75	1.80	1.79	1.81	1.72	1.74	1.87	1.70	1.65	
Annual Transit Fatalities, number	FTA[6]	1	1	0	0	0	3	0	0	0	1	1	1	3	0
Annual Transit Fatalities, per 100 million PMT	FTA[6]	0.85	0.81	0.00	0.00	0.00	3.65	0.00	0.00	0.00	1.80	2.81	2.60	n.a.	0
Annual Transit Injuries, number	FTA[6]	113	73	95	98	123	187	114	101	105	64	46	38	48	
Annual Transit Injuries, per 100 million PMT	FTA[6]	96	59	86	101	145	227	130	127	134	115	129	99	n.a.	
Annual Transit Collisions[19], number	FTA[6]	30	26	35	30	39	49	79	79	76	89	42	31	43	
Annual Transit Collisions[19], per 100 million PMT	FTA[6]	26	21	32	31	46	60	90	99	97	160	118	80	n.a.	
Annual Aviation Fatalities[22], number[23]	NTSB	2	0	8	0	3	0	0	3	0	0	0	1	2	0
Annual Aviation Accidents[22], number[23]	NTSB	3	1	5	3	3	9	4	4	4	3	0	4	4	
Annual Hwy-Rail Crossing Accidents[20], per million population	FRA	1	4	4	5	3	3	3	5	5	5	5	3	2	
3. transit usage															
Annual Unlinked Passenger Trips (UPT), number	APTA/FTA[6]	19,371,225	21,234,400	21,361,191	19,987,547	19,085,376	17,942,371	16,814,136	15,753,209	15,083,291	8,041,122	7,183,188	7,550,668	8,351,662	
Annual Unlinked Passenger Trips (UPT), per capita[21]	HRTPO Calc.	13	14	14	13	12	12	11	10	10	5.2	4.6	4.9	5.4	
Annual Vehicle Revenue Miles (VRM), number	FTA[6]	16,016,548	16,158,133	15,634,645	15,552,017	16,084,113	16,857,027	16,963,577	16,719,945	16,985,301	15,586,906	15,453,212	14,687,738	n.a.	
Annual Vehicle Revenue Miles (VRM), per capita[21]	HRTPO Calc.	11	11	10	10	10	11	11	11	11	10	10	9	n.a.	
Annual Passenger Miles Traveled (PMT), number	FTA[6]	117,148,805	123,461,216	110,291,173	96,842,639	84,926,722	82,243,560	87,652,931	79,496,447	78,201,357	55,654,185	35,559,644	38,519,766	n.a.	
Annual Passenger Miles Traveled (PMT), per capita[21]	HRTPO Calc.	78	82	72	63	55	53	57	52	51	36	23	25	n.a.	
Passengers Boarding or Departing Amtrak Trains (HR)[32]	Amtrak	175,494	195,263	229,524	215,578	221,917	211,887	214,501	204,375	214,568	134,900	163,458	248,519	424,460	
Endpoint On-Time Performance, Amtrak (Rich/NN/Nor")[5 32]	Amtrak	76%	85%	84%	73%	71%	78%	73%	69%	75%	83%	80%	73%	72%	
Operating Cost Ratio[30], Amtrak ("Washington-NN" & "Washington-Norfolk")[5]	Amtrak	0.99	0.87	0.98	0.76	0.81	0.76	0.78	0.80	0.83	1.13	1.17	1.45	1.54	

See page 51 for an explanation of footnotes.

STATE PERFORMANCE MEASURES

	Data Source	Year 2011	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023	Desired Trend
4. HOV usage															
Persons per Hour per HOV Ln During Peak Period, avg of count stations	VDOT	571	638	598	612	525	679	717	722	901	542	930	n.a.	n.a.	
# of Park and Ride Spaces	VDOT	n.a.	4,423	n.a.	n.a.	4,193	3,069	3,075	3,075	4,124	n.a.	n.a.	2,692	2,670	
# of Occupied Park and Ride Spaces, per 100,000 population	VDOT	n.a.	n.a.	n.a.	n.a.	64	63	56	62	57	n.a.	n.a.	24	26	
% of Commuters with Journey-to-Work via Carpool[10]	Census	8.1%	8.9%	8.3%	8.2%	7.8%	9.3%	7.9%	8.5%	7.8%	n.a.	7.8%	8.1%	n.a.	
5. job-to-housing ratios															
Ratio of Jobs to Labor Force[2]															
Hampton Roads	VWC[34] & HRPDC	0.91	0.92	0.92	0.90	0.93	0.93	0.92	0.92	0.91	0.91	0.89	0.90	n.a.	
Chesapeake	VWC[34] & HRPDC	0.89	0.88	0.87	0.86	0.88	0.87	0.86	0.86	0.85	0.86	0.85	0.85	n.a.	n.a.
Franklin	VWC[34] & HRPDC	1.26	1.30	1.31	1.29	1.34	1.33	1.26	1.27	1.24	1.26	1.20	1.17	n.a.	
Gloucester	VWC[34] & HRPDC	0.51	0.52	0.52	0.50	0.51	0.51	0.50	0.50	0.49	0.51	0.50	0.50	n.a.	n.a.
Hampton	VWC[34] & HRPDC	0.90	0.91	0.90	0.88	0.89	0.90	0.89	0.88	0.86	0.84	0.82	0.79	n.a.	n.a.
Isle of Wight	VWC[34] & HRPDC	0.55	0.57	0.59	0.58	0.60	0.60	0.58	0.59	0.57	0.57	0.56	0.55	n.a.	n.a.
James City	VWC[34] & HRPDC	0.86	0.87	0.84	0.84	0.85	0.87	0.85	0.86	0.85	0.76	0.78	0.81	n.a.	n.a.
Newport News	VWC[34] & HRPDC	1.16	1.16	1.15	1.15	1.16	1.14	1.15	1.19	1.20	1.22	1.20	1.17	n.a.	n.a.
Norfolk	VWC[34] & HRPDC	1.33	1.32	1.30	1.28	1.34	1.34	1.33	1.33	1.30	1.31	1.28	1.29	n.a.	n.a.
Poquoson	VWC[34] & HRPDC	0.29	0.29	0.27	0.27	0.28	0.29	0.30	0.30	0.29	0.29	0.29	0.29	n.a.	n.a.
Portsmouth	VWC[34] & HRPDC	1.04	1.05	1.07	1.05	1.08	1.06	1.04	1.05	1.04	1.07	1.03	1.01	n.a.	n.a.
Southampton	VWC[34] & HRPDC	0.41	0.42	0.41	0.41	0.43	0.43	0.42	0.41	0.41	0.40	0.40	0.42	n.a.	
Suffolk	VWC[34] & HRPDC	0.64	0.69	0.68	0.68	0.71	0.73	0.73	0.75	0.75	0.76	0.77	0.79	n.a.	n.a.
Virginia Beach	VWC[34] & HRPDC	0.76	0.76	0.77	0.77	0.79	0.80	0.80	0.79	0.79	0.78	0.77	0.77	n.a.	n.a.
Williamsburg	VWC[34] & HRPDC	2.18	2.18	2.14	2.09	2.11	2.06	2.04	2.01	1.97	1.74	1.74	1.67	n.a.	n.a.
York	VWC[34] & HRPDC	0.71	0.70	0.70	0.69	0.71	0.71	0.69	0.68	0.67	0.63	0.63	0.66	n.a.	n.a.
Jobs - Labor Force[2] Regional Linear Dissimilarity Index, 0.0 to 1.0[3]	VWC[34] & HRPDC	0.11	0.11	0.11	0.10	0.11	0.10	0.10	0.11	0.11	0.11	0.11	0.10	n.a.	
% of Workers Working Outside Locality (City/County) in Which They Live	Census	47%	49%	46%	47%	49%	48%	48%	47%	48%	n.a.	43%	46%	n.a.	
Mean Travel Time to Work, minutes	Census	23.3	24.0	24.0	24.1	24.8	24.0	24.4	25.0	24.6	n.a.	24.2	24.9	n.a.	
6. job and housing access to transit															
% of Employment in TAZs[1] Served by Transit[18]	HRTPO[1]	84%	84%	84%	84%	85%	85%	84%	84%	84%	84%	84%	n.a.	n.a.	
% of Households in TAZs[1] Served by Transit[18]	HRTPO[1]	73%	73%	73%	73%	75%	75%	74%	74%	74%	74%	74%	n.a.	n.a.	
7. job and housing access to pedestrian facilities															
% of Housing Units[9] in areas[17] with 1%+ Walk-To-Work Mode Share	CTPP & ACS[33]	37%	38%	n.a.	38%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
8. air quality															
Annual # of Days when Ozone Levels were Above 8-Hour Standard	DEQ	7	3	0	0	0	3	0	0	0	0	0	1	0	0
NOx[7] (from motor vehicles), tons per day (near future)[15]	VDOT	43	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	31.4	n.a.	n.a.	n.a.	n.a.	n.a.	32
NOx[7] (from motor vehicles), grams per capita per day (near future)[15]	VDOT	23	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	16.5	n.a.	n.a.	n.a.	n.a.	n.a.	
VOC[7] (from motor vehicles), tons per day (near future)[15]	VDOT	35	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	20.9	n.a.	n.a.	n.a.	n.a.	n.a.	28
VOC[7] (from motor vehicles), grams per capita per day (near future)[15]	VDOT	19	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	10.9	n.a.	n.a.	n.a.	n.a.	n.a.	
CO_2 (greenhouse gas, from motor veh's), tons per day (near future)[15]	VDOT[16]	22,464	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
CO_2 (greenhouse gas, from motor veh's), grams/capita/day (near future)[15]	VDOT[16]	12,076	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	

See page 51 for an explanation of footnotes.

STATE PERFORMANCE MEASURES

	Data Source	Year 2011	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023	Desired Trend
9. movement of freight															
Shares (%) of General Cargo Handled by Port of Virginia, by container	VPA														
Barge	VPA	4%	4%	4%	4%	3%	3%	3%	3%	3%	4%	4%	4%	4%	
Rail	VPA	30%	32%	34%	33%	33%	37%	35%	35%	34%	32%	33%	32%	40%	
Truck	VPA	66%	64%	62%	63%	64%	61%	62%	62%	63%	64%	63%	64%	56%	
		100%	100%	100%	100%	100%	101%	100%	100%	100%	100%	100%	100%	100%	
Rail Mode Share (%), freight with HR origins, by value and tonnage	FAF														
by tonnage[26]	FAF	n.a.	8%	n.a.	n.a.	1.6%	n.a.	4.1%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
by value[26]	FAF	n.a.	14%	n.a.	n.a.	1.2%	n.a.	2.9%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Rail Mode Share (%), freight with HR destinations, by value and tonnage	FAF														
by tonnage[26]	FAF	n.a.	61%	n.a.	n.a.	48%	n.a.	32%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
by value[26]	FAF	n.a.	23%	n.a.	n.a.	9%	n.a.	5%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
10. per capita vehicle miles traveled															
Daily Vehicle Miles Traveled (VMT) per capita	VDOT	23.6	23.1	22.7	22.3	22.7	23.3	23.4	23.3	23.8	20.8	21.6	22.3	n.a.	
% of Commuters with Journey-to-Work by Alternate Modes[8]	Census	19%	19%	18%	18%	18%	20%	19%	19%	19%	n.a.	27%	24%	n.a.	
11. maintenance															
% of Pavement in Non-Deficient Condition, VDOT-maintained roads[27]	VDOT	76%	75%	83%	85%	89%	93%	93%	93%	90%	n.a.	n.a.	82%	n.a.	
% of Bridges Not Structurally Deficient	VDOT	94%	94%	94%	94%	93%	94%	95%	95%	95%	96%	96%	97%	97%	
Total Transit Revenue Service Interruptions (mechanical) per million PMT	FTA[6]	38	29	27	32	58	46	34	41	41	41	60	48	n.a.	
B. Financial System Performance Measures															
Actual Obligations / Planned Obligations[11]	VDOT	n.a.	1.28	0.95	1.14	0.60	0.53	0.72	0.60	0.65	0.94	0.85	1.45	1.38	n.a.
Average Age of Federal Dollars Spent on TIP Projects[14]	VDOT	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Mid-Fiscal-Year Total of Unspent Obligations for TIP Projects[12]	VDOT	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
% of Total District Allocn's in SYIP (i.e. omitting St'wide[31]), year one[4]	VDOT														
Bristol	HRTPO Calculatior	10%	10%	11%	8%	5%	5%	6%	3%	4%	4%	7%	5%	8%	n.a.
Culpeper	HRTPO Calculatior	2%	3%	8%	5%	3%	4%	4%	3%	3%	1%	3%	3%	3%	n.a.
Fredericksburg	HRTPO Calculatior	3%	6%	5%	4%	6%	7%	9%	4%	4%	7%	6%	11%	5%	n.a.
Hampton Roads	HRTPO Calculatior	16%	21%	29%	28%	36%	34%	27%	22%	31%	27%	29%	34%	36%	
Lynchburg	HRTPO Calculatior	2%	2%	2%	1%	2%	4%	5%	3%	3%	2%	3%	3%	3%	n.a.
Northern VA	HRTPO Calculatior	51%	37%	25%	31%	26%	27%	22%	49%	38%	44%	25%	25%	22%	n.a.
Richmond	HRTPO Calculatior	8%	8%	8%	7%	9%	10%	11%	9%	7%	4%	9%	9%	8%	n.a.
Salem	HRTPO Calculatior	3%	7%	8%	8%	6%	6%	8%	5%	6%	8%	12%	5%	6%	n.a.
Staunton	HRTPO Calculatior	5%	6%	4%	7%	6%	4%	7%	3%	4%	2%	5%	5%	10%	n.a.
total		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	

See page 51 for an explanation of footnotes.

STATE PERFORMANCE MEASURES

Footnotes

1 Transportation Analysis Zone (TAZ) data from regional 4-step model
2 Data employment by job location as "jobs" measure; employment by home location as "labor force" measure
3 Calculated via equation 2 in "Feasibility of Using Jobs/Housing Balance in Virginia Statewide Planning", VTRC, Aug 2010, pg. 26; 0: perfectly balanced; 1: perfectly unbalanced.
4 First fiscal year shown in SYIP, e.g. the "2013" number shown herein comes from the FY13 column of the FY13-18 SYIP.
5 New performance measure for FY13 evaluation (i.e. not included in FY12 evaluation).
6 FTA's National Transit Database
7 These two pollutants (NOx and VOC)--precursors of ground-level ozone--are measured in several Va. MPOs for AQ conformity.
Note: "2011" numbers are from VDOT's MOBILE 6.2 model; subsequent numbers will be calculated using MOVES model, making comparison to earlier numbers difficult.
8 Sum of all modes other than Drove Alone (i.e. including bike, ped, transit, work-at-home, carpool, etc.).
9 Given the necessary proximity of jobs to houses of persons who walk to work, this measure is intended to cover both job and housing access to pedestrian facilities.
10 The goal of HOV lanes--carpooling--is measured herein.
11 Actual obligations ("Obligated") / planned obligations ("TIP"); source: Annual Obligation Report (AOR).
12 "Total" = "Unspent Obligations" for each project, summed over all projects in TIP.
Due to large amount of funds typically obligated near end of fiscal years, "Total" calculated via financial "snapshot" taken near middle of subject fiscal year.
"Unspent Obligations" for a project = (total obligations for any year up to and including FY of snapshot) - (total spent in any year up to snapshot date).
Because the "total obligations" will exclude matching funds, the "total spent" should exclude matching funds.
13 The source of the first ten category names is Section 33.1-23.03 Code of Va. [amended via Chapter 670],
except that "movement of freight" is used herein instead of original "movement of freight by rail"; category 11 and financial RPMs were added by HRTPO.
14 This calculation covers all federal transportation dollars spent during the subject fiscal year.
"Average Age" is a weighted average of the ages of each payment made during the subject fiscal year.
The age of a specific payment is calculated by comparing the date of the payment to the date of the appropriate obligation for that payment.
To calculate "Average Age", weight the age of each payment by the amount of that payment.
If the actual dates are not available, monthly or FY data may be used, e.g. the age of a payment made in FY11 for an obligation made in FY09 is 2.0 years.
15 For air quality conformity, VDOT estimates emissions for various future years including one near future year; NOx and VOC emissions for the ozone season, and CO2 emissions as annual averages.
16 In addition to the pollutants required for AQ conformity, VDOT calculates CO2 when it conducts analyses for conformity.
17 Due to slow release of TAZ data by the CTPP, in later years staff used ACS data by Block Group (block groups being similar in size to TAZs).
18 Due to the relatively large size of a typical TAZ, consider only those TAZs which are bordered or penetrated by transit as being served by transit.
19 FTA's "National Transit Database" uses the term "collisions" ("Collision_Total"), instead of "crashes".
20 FRA uses the term "accidents".
21 Using July estimates from Weldon Cooper for nine localities (Ches., Norf., Ports., Suf., VaB., Hamp., JCC, NN, WImbg.).
Note: The Urbanized Area (UZA) population (which is typically used by FTA) could not be found for inter-census years.
For year 2000, the HR9 Weldon Cooper population (1,413,272) is similar to the Urbanized Area (UZA) population (1,394,439).
22 "Fatalities"= number of people died; "Accidents"=number of crash events; NTSB and FAA use the term "accidents".
23 No rate (e.g. "per PMT") is included here because the number of person-miles-of-travel (PMT) in the airspace above Hampton Roads is not known.
24 "DMV": Department of Motor Vehicles.
25 Rate shown is for a 3-year period ending in year shown.
26 Including domestic portion of international freight movement.
27 VDOT-maintained roadways only.
28 VMT for this year not yet available.
29 PMT for this year not yet available.
30 OCR = "Total Costs excl. OPEB's, Capital Charge and Other Costs" / "Total Revenue". (OPEB: other post-employment benefits)
31 Note: Some large projects (e.g. US 460, I-95 HOT Lanes) are in "Statewide".
32 Note: Norfolk Amtrak began on 12-12-12.
33 CTPP: Census Transportation Planning Products; ACS: American Community Survey
34 VWC: Virginia Workforce Connection

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 September 4, 2024, through September 20, 2024. No public comments were received.