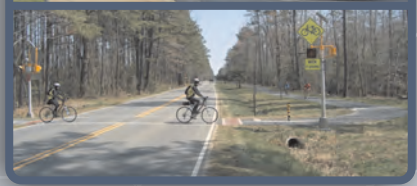
Hampton Roads Congestion Management Process











2010 UPDATE

HAMPTON ROADS TPO
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T10-07

SEPTEMBER 2010

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HAMPTON ROADS
CONGESTION MANAGEMENT PROCESS

2010 UPDATE

PREPARED BY:

HAMPTON ROADS TPO
TRANSPORTATION PLANNING ORGANIZATION

SEPTEMBER 2010

T10-07

TITLE:
Hampton Roads
Congestion Management Process: 2010 Update

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REPORT DATE:

September 2010

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ABSTRACT

The Congestion Management Process (CMP) for Hampton Roads is an on-going process that identifies congested locations, determines the causes of congestion, ranks the most congested segments, and develops transportation strategies to reduce traffic congestion and enhance safety and mobility regionwide. Federal regulations require that a CMP be in place in all Transportation Management Areas (TMAs), which are urban areas over 200,000 in population. The first Congestion Management System for Hampton Roads was released in 1995, and was updated in 1997, 2001, and 2005.

This update is the first to be categorized as a "Process" instead of a "System" to reflect that congestion management is an integral part of the metropolitan planning process, not a stand-alone program. This report provides a thorough assessment of the roadway system in Hampton Roads, updates the regional LOS congestion analysis (using the 2009 Existing and the 2030 roadway network), ranks the most congested corridors, and identifies congestion mitigation strategies and recommended improvements for the congested corridors.

ACKNOWLEDGMENTS

This report was prepared by the Hampton Roads Transportation Planning Organization (HRTPO) in cooperation with the U.S. Department of Transportation (USDOT), the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the Virginia Department of Transportation (VDOT), the Virginia Department of Rail and Public Transportation (DRPT), and the local jurisdictions and transit agencies within the Hampton Roads metropolitan planning area. The contents of this report reflect the views of the HRTPO. The HRTPO staff is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the FHWA, FTA, VDOT, or DRPT. This report does not constitute a standard, specification, or regulation. FHWA, FTA, VDOT, or DRPT acceptance of this report as evidence of fulfillment of the objectives of this task 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.

EXECUTIVE SUMMARY

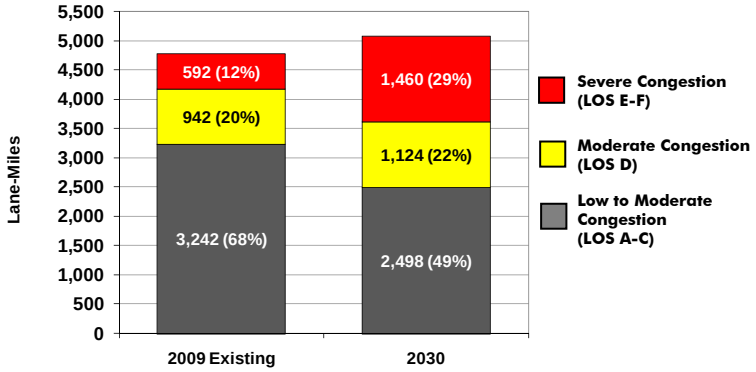
The Congestion Management Process (CMP) for Hampton Roads is an on-going process that identifies congested locations, determines the causes of congestion, ranks the most congested segments, and develops transportation strategies to reduce traffic congestion and enhance safety and mobility region-wide. Federal regulations require that a CMP be in place in all Transportation Management Areas (TMAs), which are urban areas over 200,000 in population. The first Congestion Management System for Hampton Roads was released in 1995, and was updated in 1997, 2001, and 2005.

Federal regulations also require that CMPs be implemented as a continuous part of the metropolitan planning process, which includes the Long-Range Transportation Plan (LRTP), the Transportation Improvement Program (TIP), and the Unified Planning Work Program (UPWP). The CMP is the first step in addressing regional congestion as it monitors the regional roadway network, identifies congestion, and develops strategies to address congestion. The CMP includes a ranking of roadways based on current congestion levels and other performance measures to determine where future congestion relief projects are most needed.

Roadway congestion levels are described using letter grades from A to F called levels of service (LOS), with LOS A representing the best operating conditions and LOS F representing the worst. Levels of Service A through D are considered to be acceptable operating conditions, while Levels of Service E and F are considered to be unacceptable operating conditions. Based on the analysis performed for this study, Hampton Roads is currently experiencing severe congestion (LOS E or F) on 12% of all CMP network lane-miles during the afternoon peak hour. Another 20% of the regional lane-miles currently experience moderate congestion (LOS D), and the remaining 68% experiences low to moderate congestion (LOS A-C).

By 2030, the amount of severe congestion in Hampton Roads is expected to more than double. 29% of all CMP roadway lane-miles are expected to experience severe congestion (LOS E or F) during the afternoon peak hour in 2030, while less than half (49%) of the lane-miles in the region are expected to experience low to moderate congestion (LOS A-C).

2009 Existing and 2030 LOS by Lane-Mile for the CMP Roadway Network (PM peak hour)



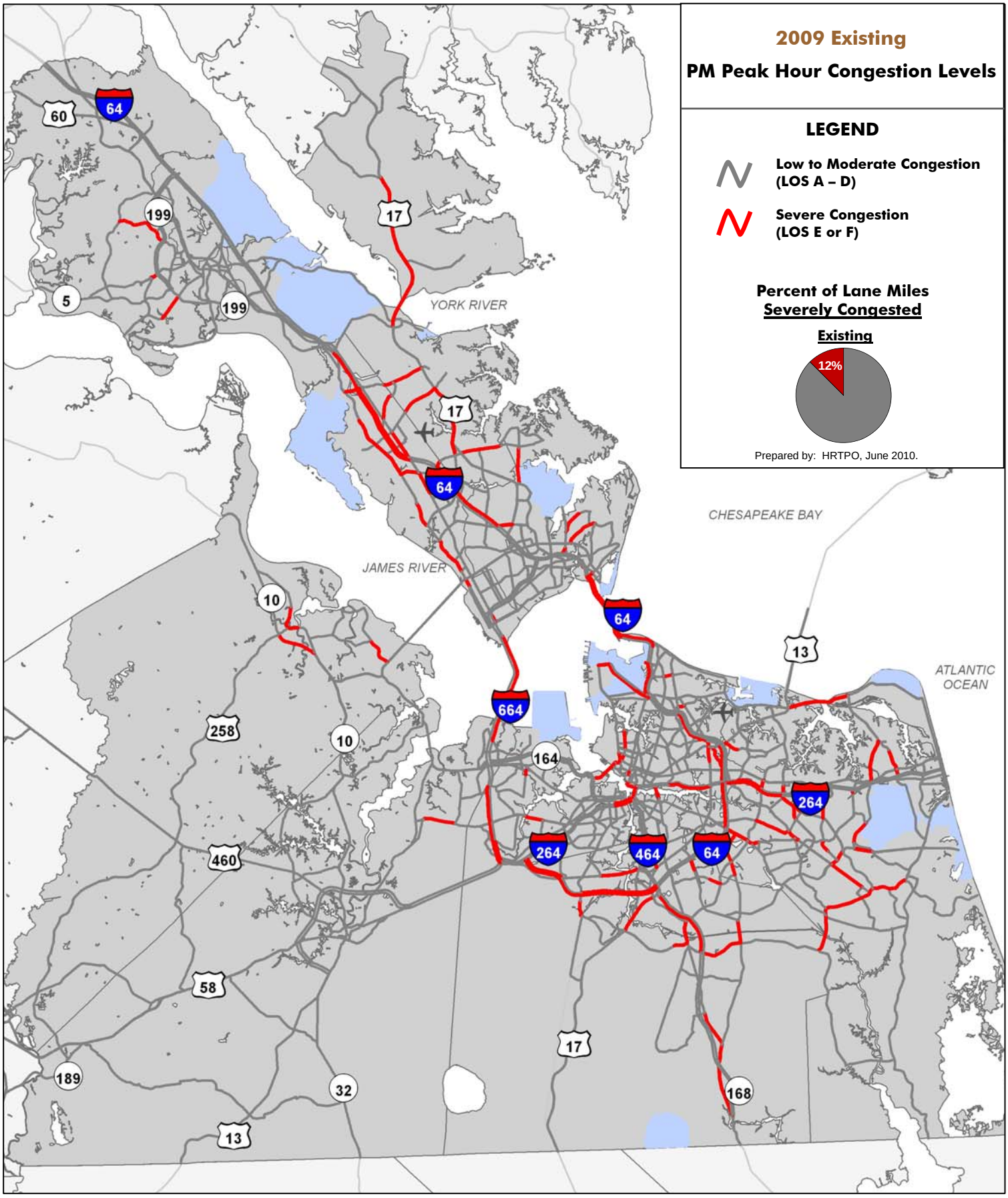
The 2030 congestion levels were determined using the volumes and improvement projects contained in the 2030 Amended Long-Range Transportation Plan. If transportation funding levels are not sufficient to construct all of these projects by 2030, congestion levels will likely be worse than what is shown in the upcoming tables, maps, and summaries.

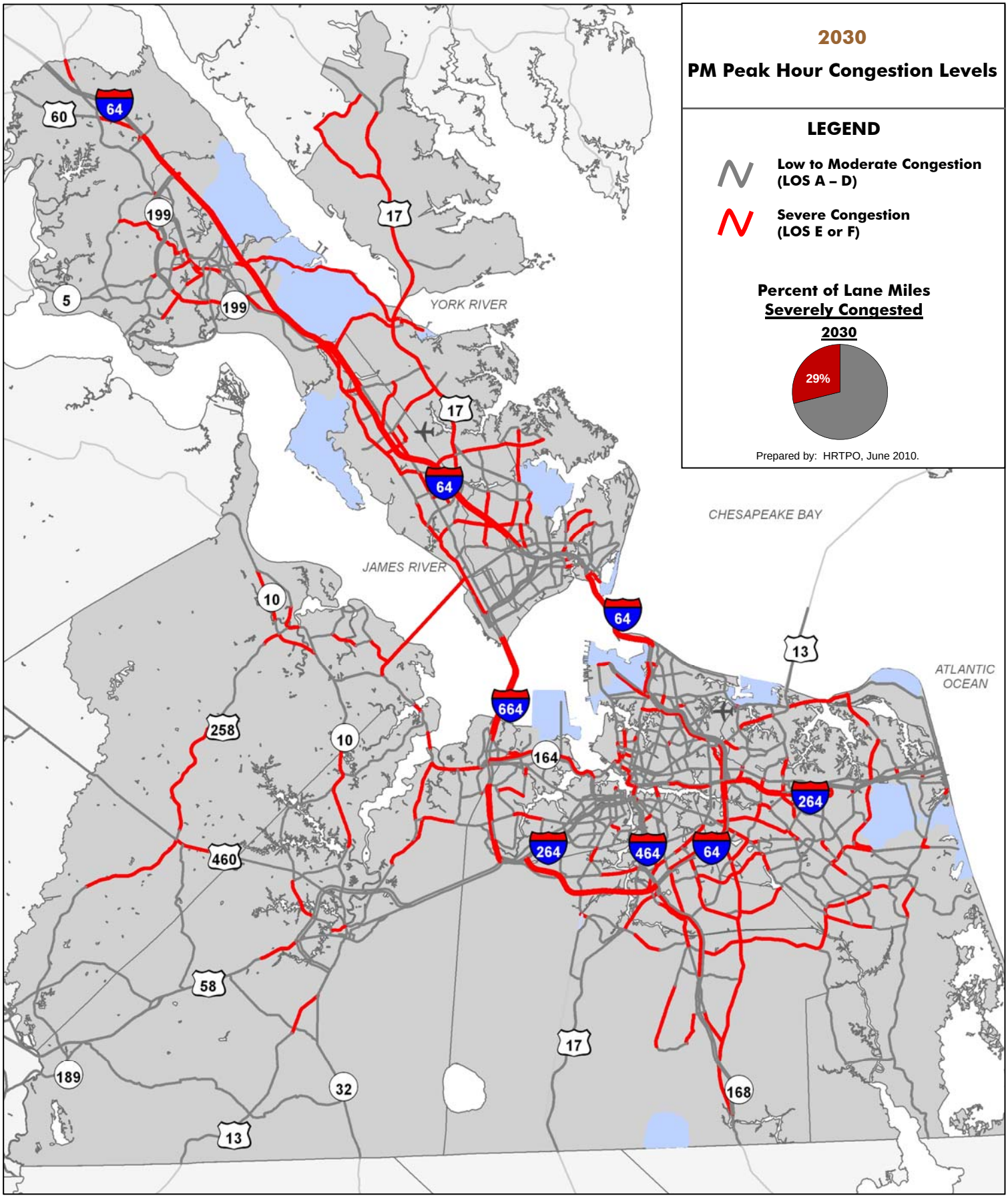
As congestion levels rise, it is imperative to evaluate, develop, and apply congestion mitigation strategies involving all transportation modes to improve service levels on the regional transportation system. In order to achieve this goal, a comprehensive "toolbox" of CMP mitigation strategies has been provided in this report. The strategies were grouped into five major categories:

HRTPO CONGESTION MITIGATION STRATEGIES

1) Eliminate Person Trips or Reduce VMT
2) Shift Trips from Automobile to Other Modes
3) Shift Trips from SOV to HOV
4) Improve Roadway Operations
5) Add Capacity

With so many congested roadway segments in Hampton Roads, additional criteria were used to rank and differentiate between the most critical corridors throughout the region. Congested roadway segments were grouped into 41 "Congested Corridors", 12 of which are on the freeway system and 29 of which are


2009 Existing
PM Peak Hour Congestion Levels
LEGEND
Low to Moderate Congestion (LOS A – D)
Severe Congestion (LOS E or F)
Percent of Lane Miles Severely Congested
Existing
12%
Prepared by: HRTPO, June 2010.
YORK RIVER
JAMES RIVER
CHESAPEAKE BAY
ATLANTIC OCEAN
60
64
199
5
17
10
258
460
58
189
32
13
664
164
264
464
168


2030
PM Peak Hour Congestion Levels
LEGEND
Low to Moderate Congestion (LOS A – D)
Severe Congestion (LOS E or F)
Percent of Lane Miles Severely Congested
2030
29%
Prepared by: HRTPO, June 2010.
YORK RIVER
JAMES RIVER
CHESAPEAKE BAY
ATLANTIC OCEAN
60
64
199
5
17
10
258
460
58
189
32
13
664
164
264
464
168

on the arterial system. Individual roadway segments within each Congested Corridor were scored based on five criteria: the existing level of service, freight, safety, travel speeds, and national significance. Each Congested Corridor was then ranked based on these roadway segment scores and characteristics. The top 6 freeway and top 10 arterial corridors throughout the region were selected as CMP Congested Corridors, as shown in the table to the right.

These 16 CMP Congested Corridors were analyzed in detail to determine probable causes of congestion, possible application of CMP mitigation strategies, and recommendations for congestion relief. Provided below is a summary of recommendations for each of the 16 CMP Congested Corridors:

CMP Congested Corridors

Top 6 Freeways

Rank	Jurisdiction	CMP Congested Corridor
1	HAM/NOR	Hampton Roads Bridge-Tunnel
2	NOR/PORT	Downtown Tunnel/Berkley Bridge
3	VB	I-264 from Newtown Rd to Independence Blvd
4	NN	I-64 from Yorktown Rd to Jefferson Ave
5	NOR/VB	I-64 from Northampton Blvd to Indian River Rd
6	CHES	I-64 from I-264/I-664 to I-464/Chesapeake Expressway

Top 10 Arterials

Rank	Jurisdiction	CMP Congested Corridor
1	NOR/PORT	Hampton Blvd/Midtown Tunnel from Western Fwy to 26th St
2	CHES	Dominion Blvd from Cedar Rd to Chesapeake Exp
3	VB	Indian River Rd/Ferrell Pkwy from I-64 to Indian Lakes Blvd
4	VB	Witchduck Rd from I-264 to Virginia Beach Blvd
5	CHES	Greenbrier Pkwy from Volvo Pkwy to I-64
6	NOR	Campostella Blvd from I-264 to Wilson Rd
7	NN	Jefferson Ave from Thimble Shoals Blvd to Denbigh Blvd
8	VB	Independence Blvd/Holland Rd from Va Beach Blvd to South Plaza Trail
9	NN/YC	Route 17 from I-64 to Denbigh Blvd
10	NOR	Military Hwy from Lowery Rd to I-64

Freeway Recommendations

#1 – Hampton Roads Bridge Tunnel (I-64)

- Add tolls/congestion pricing to Hampton Roads Bridge-Tunnel
- Increase transit service across the Hampton Roads Harbor (including ferry service)
- Continue to promote Transportation Demand Management (TDM) strategies such as ridesharing, transit usage, telecommuting
- Improve Intelligent Transportation Systems (ITS) technologies to minimize over-height vehicle turnarounds at the tunnel entrance
- Add additional capacity across the Hampton Roads Harbor

#2 – Downtown Tunnel/Berkley Bridge (I-264)

- Add tolls/congestion pricing to the Downtown Tunnel
- Continue to promote TDM strategies
- Add additional Variable Message Signs in Downtown Norfolk to alert drivers to traffic conditions
- Maintain bridge opening restrictions during morning and afternoon peak periods
- Construct and/or improve alternate routes (e.g. the Midtown Tunnel and Jordan Bridge)

#3 – I-264 from Newtown Rd to Independence Blvd

- Continue to promote TDM strategies
- Improve interchange of I-64 and I-264 to include an additional lane from westbound I-64 to eastbound I-264
- Redesign the merge of the inner and outer lanes of eastbound I-264 east of Newtown Road. Currently none of the outer lanes are continued through the merge area in spite of the outer lanes carrying a large proportion of the traffic volumes.
- Construct the Southeastern Parkway as an alternate route

#4 – I-64 from Yorktown Rd to Jefferson Ave

- Continue to promote TDM strategies
- Improve/expand the park and ride lot at Yorktown Road
- Improve interchange of I-64 and Fort Eustis Boulevard to minimize weaving movements
- Improve alternate routes (such as Route 460 or Route 17)
- Widen I-64

#5 – I-64 from Northampton Blvd to Indian River Rd

- Continue to promote TDM strategies

- Widen eastbound I-64 from the end of the Northampton Boulevard on-ramp to beyond the merging area from the reversible lanes
- Widen ramp from westbound I-64 to eastbound I-264 to 2 lanes
- Improve the interchange of I-64 and Indian River Road
- Lengthen the acceleration lane from the I-264 ramp to eastbound I-64
- Construct the Southeastern Parkway

#6 – I-64 from I-264/I-664 to I-464/Chesapeake Expressway

- Continue to promote TDM strategies
- Maintain bridge opening restrictions during morning and afternoon peak periods
- Improve the interchange of I-64 and I-464/Chesapeake Expressway to reduce weaving movements
- Lengthen acceleration ramps from George Washington Highway to both directions of I-64
- Improve alternate routes (such as Dominion Boulevard)
- Widen I-64 and the High Rise Bridge

Arterial Recommendations

#1 – Hampton Blvd/Midtown Tunnel from Western Fwy to 26th St

- Add tolls/congestion pricing to the Midtown Tunnel
- Give priority to HOV and/or transit vehicles via queue jumping
- Add Variable Message Signs in Downtown Norfolk to alert drivers to traffic conditions
- Continue to promote TDM strategies
- Widen the Midtown Tunnel
- Construct/widen alternate routes (Downtown Tunnel/Third Crossing)

#2 – Dominion Blvd from Cedar Rd to Chesapeake Exp

- Add tolls/congestion pricing to Steel Bridge
- Continue to promote TDM strategies
- Add adaptive signal timing at the intersection of Cedar Road & Dominion Boulevard to prioritize traffic on Cedar Road when the drawbridge is open, and prioritize clearing Dominion Boulevard after the drawbridge closes
- Lengthen right-turn lane on southbound Dominion Boulevard at Moses Grandy Trail
- Maintain bridge opening restrictions during morning and afternoon peak periods
- Widen Dominion Boulevard
- Construct new, fixed span bridge over the Elizabeth River
- Improve alternate route (I-64/High Rise Bridge)

#3 – Indian River Rd/Ferrell Pkwy from I-64 to Indian Lakes Blvd

- Continue to promote TDM Strategies
- Improve the intersection of Indian River Road and Kempsville Road (considering non-traditional intersection configurations)
- Increase the use of access management strategies
- Widen Indian River Road
- Construct the Southeastern Parkway

#4 – Witchduck Rd from I-264 to Virginia Beach Blvd

- Add transit service on Witchduck Road
- Continue to promote TDM strategies
- Add a right-turn bay on northbound Witchduck Road at Cleveland Street
- Lengthen turn bays on Witchduck Road at I-264
- Coordinate signals on Witchduck Road
- Increase the use of access management strategies
- Improve interchange of I-264 and Witchduck Road
- Widen Witchduck Road

#5 – Greenbrier Pkwy from Volvo Pkwy to I-64

- Continue to promote TDM strategies
- Add pedestrian and bicycle facilities
- Add an additional through lane on the northbound Greenbrier Parkway approach at the Volvo Parkway intersection
- Lengthen left-turn lane (or add 2nd left-turn lane) on northbound Greenbrier Parkway at the Crossways Boulevard intersection
- Coordinate signals on Greenbrier Parkway

- Add lane arrows on eastbound Crossways Boulevard at Greenbrier Parkway
- Extend the northbound Greenbrier Parkway to westbound I-64 (towards Virginia Beach) ramp to the northern Greenbrier Mall Entrance

#6 – Campostella Blvd from I-264 to Wilson Rd

- Continue to promote TDM strategies
- Add an additional left-turn lane on westbound Kimball Terrace at Campostella Road
- Convert the existing through-right lane into a left-through-right lane on northbound Wilson Road at Campostella Road
- Continue to restrict left-turns from northbound Campostella Road to Wilson Road
- Change the signal phasing at the intersection of Campostella Road and Wilson Road to allow a southbound right-turn overlap with the northbound left-turns from Wilson Road
- Convert existing lanes into reversible lanes so that additional through lanes are provided in the peak direction during each peak travel period
- Lengthen acceleration lane from eastbound I-264 to southbound Campostella Road

#7 – Jefferson Ave from Thimble Shoals Blvd to Denbigh Blvd

- Add light rail parallel to the Jefferson Avenue corridor
- Add bus pullouts on Jefferson Avenue at bus stops located adjacent to through lanes
- Continue to promote TDM strategies
- Improve pedestrian and bicycle facilities
- Add a right-turn bay on westbound Thimble Shoals Boulevard at Jefferson Avenue
- Add an additional left-turn lane on northbound Jefferson Avenue at Jefferson Commons
- Add an additional left-turn lane on both approaches of Jefferson Avenue at Turnberry Boulevard
- Lengthen left-turn lanes on any approach where vehicles spill into main travel lanes during the peak hour
- Increase signage alerting vehicles traveling to the airport to use the right lane on northbound Jefferson Avenue
- Increase the use of access management strategies
- Lengthen acceleration lane for ramp from eastbound I-64 to southbound Jefferson Avenue
- Improve interchange of I-64 and Jefferson Avenue (consider a diamond interchange)
- Complete Middle Ground Boulevard extension between Warwick Boulevard and Jefferson Avenue
- Construct a new interchange at I-64 and Bland Boulevard

#8 – Independence Blvd/Holland Rd from Va Beach Blvd to South Plaza Trail

- Continue to promote TDM strategies
- Add an additional through lane on northbound South Plaza Trail at Holland Road
- Add additional left-turn lanes on both approaches of Holland Road at South Plaza Trail
- Improve the interchange of I-264 and Independence Boulevard to add capacity, improve safety, and reduce weaving movements
- Widen Holland Road

#9 – Route 17 from I-64 to Denbigh Blvd

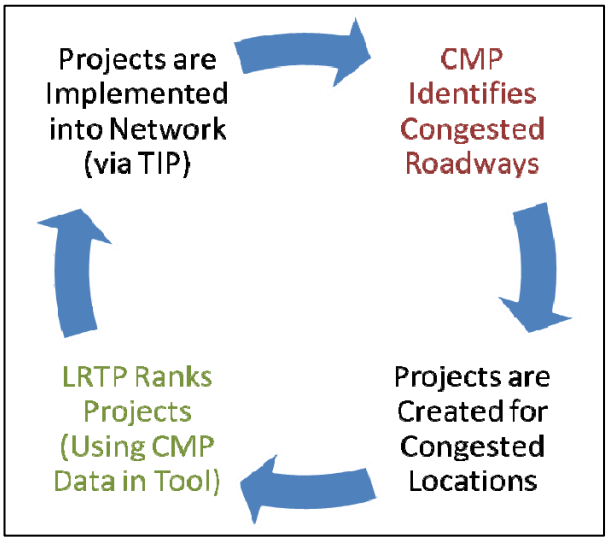
- Provide transit service on Route 17 in York County
- Continue to promote TDM strategies
- Add pedestrian and bicycle facilities
- Stripe right-turn bays onto existing shoulder where shoulder widths are adequate
- Lengthen left-turn lanes on any approach where vehicles spill into main travel lanes during the peak hour
- Improve coordination of signals on Route 17
- Increase the use of access management strategies
- Extend the westbound I-64 off-ramp on northbound Route 17 to the 3-lane section north of Traverse Road
- Widen Route 17

#10 – Military Hwy from Lowery Rd to I-64

- Add bus pull-outs on Military Highway at bus stops located adjacent to through lanes
- Increase transit service on Military Highway
- Continue to promote TDM strategies
- Improve the intersection of Military Highway and Northampton Boulevard
- Lengthen right-turn lane on southbound Military Highway at the Target shopping center
- Lengthen acceleration lane for ramp from eastbound I-64 to southbound Military Highway
- Widen Military Highway

In light of the current mismatch between transportation funding and transportation deficiencies, it is more important than ever that only the most beneficial projects be selected for construction. The HRTPO staff encourages local planners, engineers, and decision makers to strongly consider the CMP results when developing future projects for the most congested areas. Once projects are developed, data from the CMP will be input into the LRTP Project Prioritization Tool in order to assist in the ranking of projects. Finally, the highest priority projects should be implemented into the network via the TIP and the process can begin again.

The HRTPO staff will continue to monitor and refine the regional CMP. Roadway data, such as traffic volumes, peak hour factors, roadway and signal characteristics, safety data, capacity changes, and other transportation characteristics will be updated continuously in order to assist with future CMP report releases and other HRTPO planning efforts.



Steps for Integrating CMP into the Planning Process

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INTRODUCTION

The Congestion Management Process (CMP) for Hampton Roads is an on-going process that identifies congested locations, determines the causes of congestion, ranks the most congested segments, and develops transportation strategies to reduce traffic congestion and enhance safety and mobility regionwide. Federal regulations require that a CMP be in place in all Transportation Management Areas (TMAs), which are urban areas over 200,000 in population. The CMP is consistent with the increased emphasis on transportation management and operations contained in the most recent reauthorization of the nation's surface transportation program – Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU). The CMP builds upon more than a decade of experience in planning for congestion management, including the Congestion Management System (CMS), which was first introduced in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).

The Hampton Roads Transportation Planning Organization (HRTPO) began developing a Congestion Management System for the region in the early 1990s, and released the region's first CMS report in 1995. Updates to the CMS were released in 1997, 2001, and 2005. One of the primary performance measures of the CMS has been a comprehensive regional roadway congestion analysis of the existing conditions, which identifies the most congested locations in the region. The last CMS update, released in 2005, included a level of service (LOS) congestion analysis for the 2003 roadway network. The current congestion analysis is limited to identifying congestion on roadways due to reliable data constraints of other transportation modes and facilities. This report provides a thorough assessment of the roadway system in Hampton Roads and updates the regional LOS congestion analysis (afternoon peak hour) for the 2009 Existing and 2030 roadway networks. In addition, this report ranks the most congested corridors based on congestion and a variety of other criteria, including freight, safety, travel speed, and national significance. Finally, congestion mitigation strategies are identified and recommended for these locations.

CMP TASKS AND GOALS

According to the FHWA[1], the CMP should assist the MPO to perform the following tasks for the regional transportation system:

- Measure multi-modal transportation system performance
- Identify congested locations
- Determine the causes of congestion
- Evaluate the potential of different strategies
- Propose alternative strategies that best address the causes and impacts of congestion
- Track and evaluate the impact of previously implemented congestion management strategies

The overall goal of the Hampton Roads CMP is to take a regional approach to identify and address congestion concerns. The CMP also develops a "toolbox" of strategies to address the most congested locations. Since the region cannot simply build itself out of congestion, all strategies must be considered, with adding capacity as the last resort. For some severely congested corridors, additional roadway capacity may be the only solution for congestion based on the roadway characteristics.

CONVERSION FROM CMS TO CMP

According to the Federal Highway Administration (FHWA), and in accordance with SAFETEA-LU, all Transportation Management Areas (TMAs) are required to have a "congestion management process" (CMP) in place, as opposed to a "congestion management system" (CMS). The name change is intended to encourage regions to incorporate congestion management into the metropolitan planning process, rather than have it as a stand-alone program or system. In the past, the Hampton Roads Congestion Management System has been viewed as an on-going process rather than a stand-alone program, so this concept is not new to the region. Hampton Roads jurisdictions have always been

[1] An Interim Guidebook on the Congestion Management Process in Metropolitan Transportation Planning, FHWA, February 2008

encouraged to utilize the CMS as a tool for developing transportation projects for the Hampton Roads Long-Range Transportation Plan (LRTP).

INTEGRATING CMP INTO THE PLANNING PROCESS

Federal regulations require that CMPs be implemented as a continuous part of the metropolitan planning process, which also includes the Long-Range Transportation Plan (LRTP), the Transportation Improvement Program (TIP), and the Unified Planning Work Program (UPWP). The CMP is the first step in addressing regional congestion as it monitors the regional roadway network, identifies congestion, and develops strategies to address congestion (**Figure 1**). The CMP also includes a ranking of roadways based on current congestion and other performance measures to determine where future congestion relief projects are most needed. The HRTPO encourages local planners, engineers, and decision makers to strongly consider the CMP results when developing future projects for the most congested areas. Once projects are developed, data from the CMP will be input into the LRTP Project Prioritization Tool in order to assist in the ranking of projects. Finally, the highest priority projects are implemented into the network via the TIP and the process begins again.

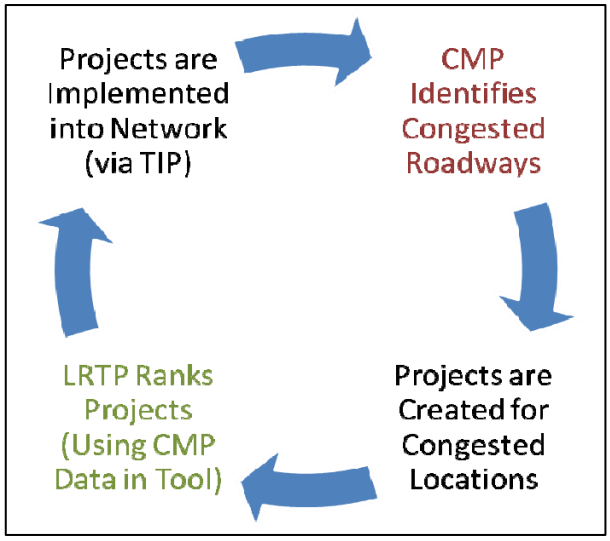
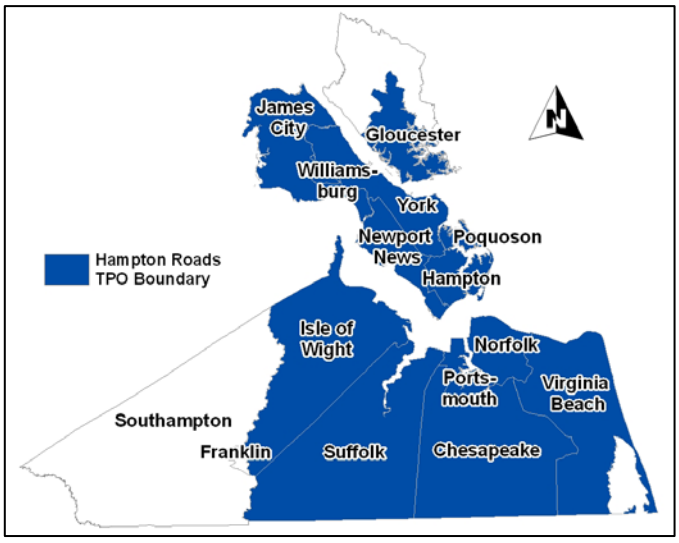


Figure 1 – Steps for Integrating CMP into the Planning Process



Map 1 – Hampton Roads Metropolitan Planning Area

CMP STUDY AREA

The Hampton Roads Transportation Planning Organization (HRTPO) serves as the intergovernmental transportation planning body or Metropolitan Planning Organization (MPO) within the Hampton Roads Metropolitan Planning Area (MPA). The Hampton Roads MPA, which is located in Southeastern Virginia, adjacent to the Atlantic Ocean and the Chesapeake Bay (**Map 1**), is divided by the James River and the Hampton Roads harbor into two subregions: the Peninsula and the Southside. The Peninsula is the northern subregion, comprised of the cities of Hampton, Newport News, Poquoson, and Williamsburg, and the counties of James City and York, as well as a portion of Gloucester County. The Southside includes the cities of Chesapeake, Norfolk, Portsmouth, Suffolk, and Virginia Beach, as well as Isle of Wight County and the towns of Windsor and Smithfield.

Hampton Roads is named after the body of water that splits the region, one of the world's largest natural harbors. The region also contains miles of coastal beaches and easy access to the Chesapeake Bay and other waterways, making Hampton Roads a prime East Coast tourist destination. Furthermore, the location and physical features make it an attractive location for foreign trade and many military facilities. The region's military presence is anchored by Naval Station Norfolk, the largest in the world, which totals more than 96,000 military and civilian employees. The

Hampton Roads region is comprised of four state-operated port facilities, several private port facilities, eighty-three federal facilities (including over twenty-five military facilities), two international airports, two Amtrak stations, multiple rail lines, and shipyards. Providing links to these facilities are a system of highways, bridges and tunnels, bike and pedestrian facilities, and multiple transit modes and authorities. The same factors that provide the region with so many economic and recreational advantages also create a set of geographical challenges for creating and maintaining the transportation infrastructure. Hampton Roads' location and topography requires many bridges and tunnels, which involve higher costs for construction and maintenance. The combination of these factors creates a need for a safe, efficient, and well maintained regional transportation system.

REPORT CONTENTS

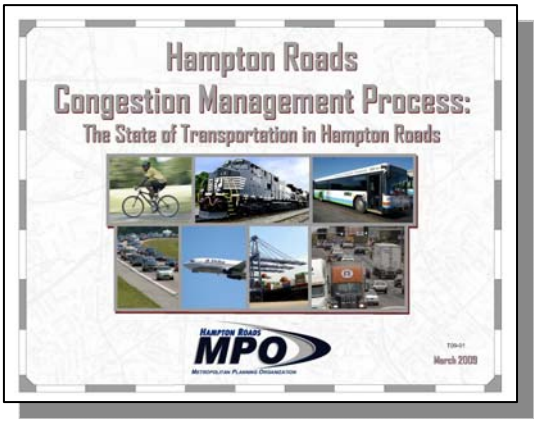
This report is organized into seven sections:

1) **INTRODUCTION**
2) **SYSTEM MONITORING –** Traffic volumes and characteristics at regional bridges and tunnels and recently completed and planned projects
3) **IDENTIFICATION OF CONGESTED LOCATIONS –** 2009 Existing and 2030
4) **RANKING OF CMP CONGESTED CORRIDORS** – Criteria includes: existing congestion level, freight, safety, travel speeds, and National Highway System/Strategic Highway Network
5) **IDENTIFICATION OF CONGESTION MITIGATION STRATEGIES** – Contains tools and methods to relieve congested areas
6) **APPLICATION OF STRATEGIES TO CMP CONGESTED CORRIDORS –** Identifies causes of congestion and recommends improvements to Top 6 Congested Freeways and Top 10 Congested Arterials
7) **NEXT STEPS**

SYSTEM MONITORING

As part of its transportation planning efforts, HRTPO staff continuously monitors statistics regarding the Hampton Roads transportation network. HRTPO staff does this by collecting transportation data from a variety of sources on an ongoing basis and maintaining various databases related to all facets of the regional transportation system.

Much of the transportation data collected by the HRTPO is included in the CMP Database. This database serves as a "one-stop shop" of transportation data for facilities included within the CMP roadway network (which is described further on page 17). This data includes existing and historical daily volumes, peak hour characteristics and levels of service, roadway characteristics, daily and hourly truck volumes, and crash data. In addition, HRTPO staff also maintains databases for other transportation modes such as air, rail, and marine transportation.



Statistics from these databases are used by the HRTPO to produce the *State of Transportation in Hampton Roads* report.[2] This report highlights the current state and historical trends on many facets of the Hampton Roads transportation system as shown in the box to the right. New developments and significant changes to the regional transportation system are also highlighted.

The *State of Transportation in Hampton Roads* report is updated on a biennial basis. The most recent version of the report was released in March 2009, and another update will be produced in 2011.

INFORMATION INCLUDED IN THE STATE OF TRANSPORTATION IN HAMPTON ROADS

AIR TRAVEL –

- Passenger levels at Norfolk and Newport News-Williamsburg International Airports
- Airfares at regional airports
- Nonstop destinations

RAIL TRAVEL –

- Amtrak passenger levels at stations in Newport News and Williamsburg
- Rail safety

MARINE TRANSPORTATION –

- Cargo levels at the Port of Virginia
- Cruise passenger levels

ROADWAY TRAVEL –

- Vehicle-miles of travel
- Licensed drivers/registered vehicles
- Regional roadway capacity (lane-miles)
- Annual hours of delay per traveler
- Travel time to work
- Commuting methods
- Crashes, injuries, and fatalities
- Trucks
- Public transportation usage
- Bicycle/pedestrian facilities
- Intelligent Transportation Systems/Transportation Operations

TRANSPORTATION FINANCING –

- Transportation revenues and allocations
- Gasoline taxes/fees
- Roadway projects

[2] *Hampton Roads Congestion Management Process: The State of Transportation in Hampton Roads*, HRTPO, March 2009.

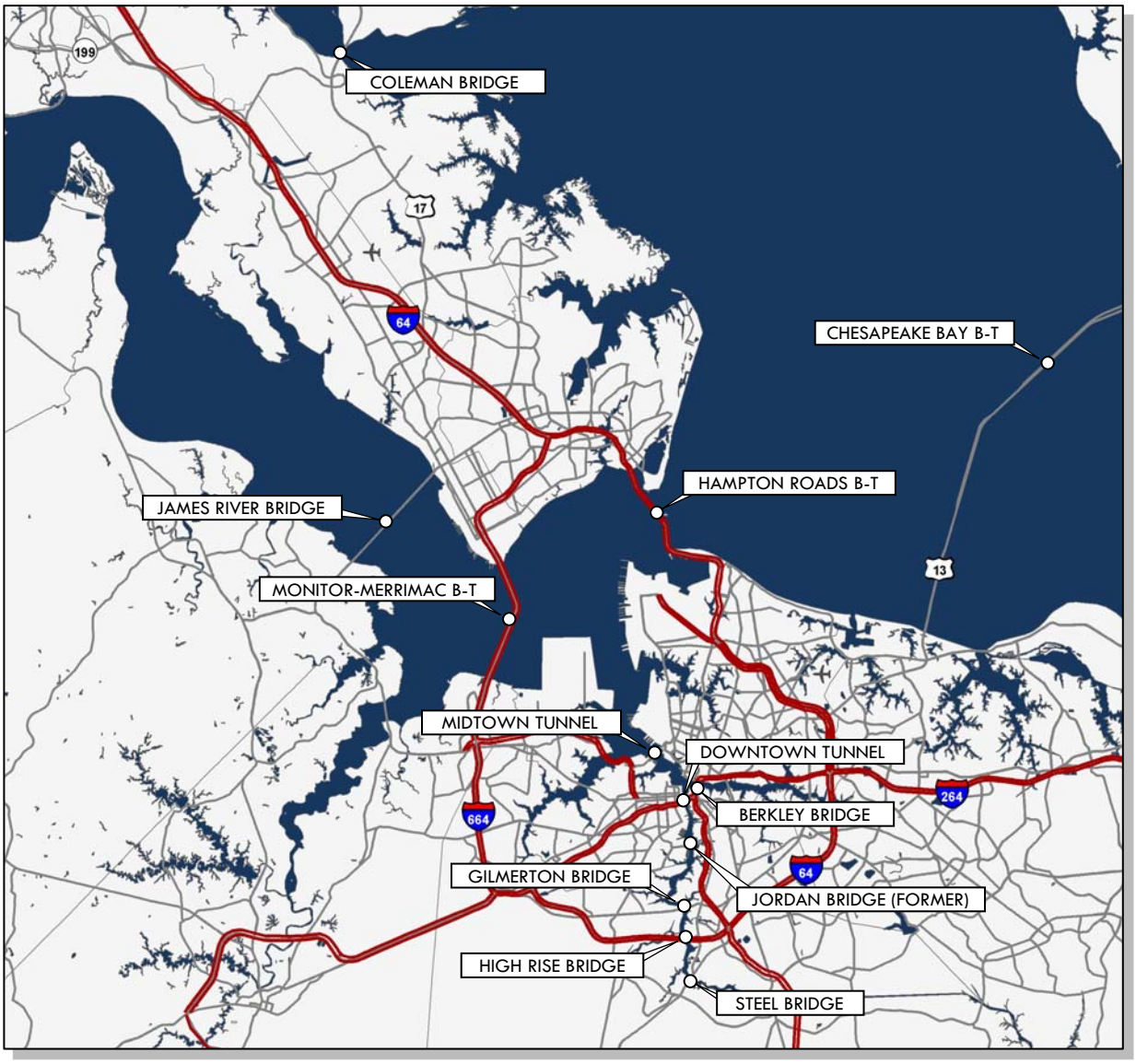
BRIDGES AND TUNNELS

Hampton Roads unique topography makes bridges and tunnels not only a prominent part of the regional landscape but also the most critical part of the Hampton Roads transportation network. In fact, Hampton Roads has more lane-miles of bridges than all other metropolitan areas in Virginia and most other metropolitan areas throughout the country.

Because of the importance of bridges and tunnels to the region's transportation system, HRTPO completed the Regional Bridge Study in 2008. This study looked at various aspects of bridges in Hampton Roads, including the condition of every bridge throughout the region, bridge funding and projects, an analysis of the impacts that major bridge closures would have on traffic patterns throughout the region, and a comparison of bridges in Hampton Roads with those in other metropolitan areas.

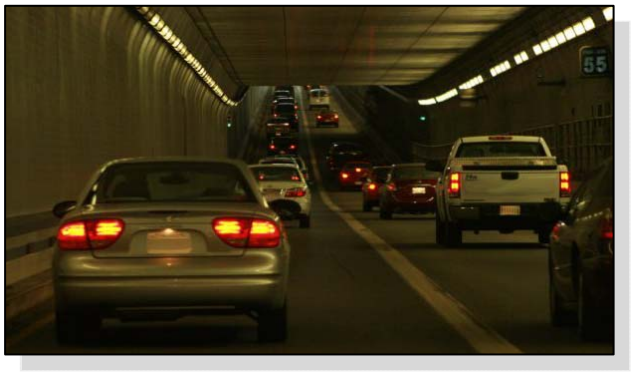
This section of the CMP provides additional information on the major bridges and tunnels throughout Hampton Roads. It describes the bridges and tunnels that cross the Hampton Roads Harbor, the Chesapeake Bay, the Elizabeth River, or the York River, and provides detailed traffic volumes and characteristics for each facility. A total of twelve major regional bridges/tunnels are analyzed in this section as shown on **Map 2**.

Map 2 – Major Regional Bridges and Tunnels



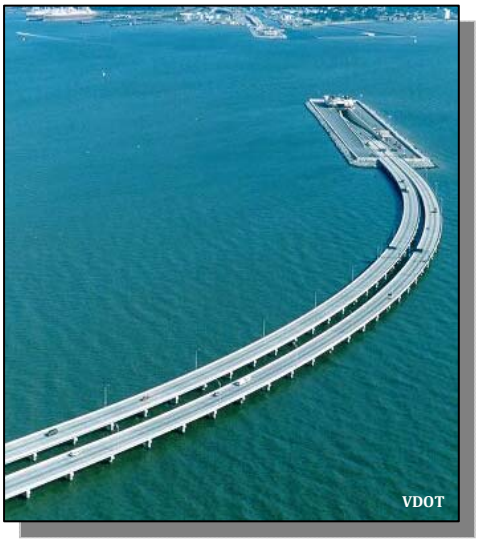
Hampton Roads Harbor Crossings

Hampton Roads Bridge-Tunnel



The Hampton Roads Bridge-Tunnel (HRBT/I-64) is one of the most congested facilities in the region. Opened to traffic in 1957, the Hampton Roads Bridge-Tunnel replaced ferries that carried travelers between Norfolk and Hampton. The eastbound bridges and tunnel were added in 1976, which widened the facility from 2 to 4 lanes.

Monitor-Merrimac Memorial Bridge-Tunnel



The Monitor-Merrimac Memorial Bridge-Tunnel (MMMBT/I-664) is the newest tunnel facility in Hampton Roads. Connecting Newport News and Suffolk, the 4-lane facility opened to traffic in 1992.

James River Bridge

The James River Bridge (US Routes 17/258) is the westernmost Hampton Roads harbor crossing in the region, connecting Newport News with Isle of Wight County. The first James River Bridge was the original Hampton Roads harbor crossing, opening to traffic in 1928. In 1982 the aging 2-lane facility was replaced with the current 4-lane structure. Tolls were collected on the James River Bridge from its opening in 1928 until 1976.

Chesapeake Bay Crossing

Chesapeake Bay Bridge-Tunnel

The Chesapeake Bay Bridge-Tunnel (CBBT) connects Virginia Beach with the Eastern Shore of Virginia. The 18-mile facility was opened to traffic in 1964 and was designated as one of the Seven Engineering Wonders of the Modern World. In 1999, parallel spans were opened to traffic, widening the facility from 2 to 4 lanes outside of the two tunnels. With a one-way toll of $12, the CBBT has one of the highest tolls in the country.

Elizabeth River Crossings

Midtown Tunnel

The Midtown Tunnel (US Route 58) is a 2-lane facility that crosses underneath the Elizabeth River between the Cities of Norfolk and Portsmouth. Opened to traffic in 1962, the Midtown Tunnel carries more vehicles than any other two-lane facility in the state of Virginia. Tolls were collected from the facility's opening until they were removed in 1986.

Downtown Tunnel

The Downtown Tunnel (I-264) is a 4-lane facility that crosses underneath the Southern Branch of the Elizabeth River between the Cities of Norfolk and Portsmouth. The original 2-lane facility opened to traffic in 1952 as the first tunnel facility in Hampton Roads. Tolls were removed from the Downtown Tunnel in 1986 and the parallel tube was opened to traffic in 1987.

Berkley Bridge

The Berkley Bridge (I-264) is an 8-lane drawbridge that crosses the Eastern Branch of the Elizabeth River between Downtown Norfolk and South Norfolk near the Downtown Tunnel. Opened in 1952 with the Downtown Tunnel and widened in 1991, the Berkley Bridge opens at approximately 9 am, 11 am, 1 pm, and 2:30 pm on weekdays for marine traffic and on demand outside of restricted hours.

The former Jordan Bridge

The Jordan Bridge was a 2-lane drawbridge that spanned the Southern Branch of the Elizabeth River between Chesapeake and Portsmouth. Opened in 1928, the bridge was falling into a state of disrepair when it was closed to traffic on November 8th, 2008.

Plans are in place for a private developer to build a replacement bridge at this site and the bridge is scheduled to be complete by the end of 2011.

Gilmerton Bridge

The Gilmerton Bridge (Military Highway/US Route 13) spans the Southern Branch of the Elizabeth River in the City of Chesapeake. Completed in 1938, the span opens on demand outside of restricted rush hours. The Gilmerton Bridge is currently being replaced, and completion of the new bridge is expected in 2013.

High Rise Bridge

The High Rise Bridge (I-64) is a four-lane span over the Southern Branch of the Elizabeth River in the City of Chesapeake that opened in 1972. Although the High Rise Bridge provides 65 feet of vertical clearance, the bridge can open for larger ships as necessary. It, along with the Berkley Bridge, is among only eight drawbridges on the Interstate system in the United States.

Steel Bridge

The Steel Bridge (Dominion Boulevard/US Route 17) is a two-lane drawbridge that spans the Southern Branch of the Elizabeth River in the City of Chesapeake. Constructed in 1962, the Steel Bridge carries the second-highest number of vehicles of any 2-lane facility in Hampton Roads. The bridge opens on the hour every hour between 6 am and 6 pm, with rush hour restrictions in place between 7 am and 9 am and 4 pm and 6 pm on weekdays.

York River Crossing

Coleman Bridge

The Coleman Bridge (Route 17) connects the Peninsula in York County with the Middle Peninsula in Gloucester County. In 1996, the original 2-lane span, which was opened to traffic in 1952, was replaced with a 4-lane facility. Tolls were implemented for northbound traffic after it was widened, and are currently $2 for two-axle vehicles or $0.85 with an EZ-Pass transponder. The bridge opens on demand with rush hour restrictions in place between 5 am and 8 am and 3 pm and 6 pm on weekdays.

Traffic Volumes and Characteristics at Regional Bridges and Tunnels

This section details the traffic volumes and characteristics at the previously described bridges and tunnels. Included in this section are an analysis of daily traffic volumes, traffic volumes by time of day at the busiest tunnels, and backups that occur at the Hampton Roads Bridge-Tunnel.

Daily Volumes

Figure 2 on page 10 shows the Annual Average Daily Traffic (AADT) volumes at the major bridges and tunnels in Hampton Roads for the years 1990-2009. Of the facilities analyzed in this section, the Berkley Bridge carries the most traffic with over 117,000 vehicles served by the Berkley Bridge on average each day in 2009. The Downtown Tunnel carries the most traffic of any of the tunnel facilities in Hampton Roads with an average of 92,000 vehicles each day in 2009. This was about 3,800 more vehicles per day than the Hampton Roads Bridge-Tunnel carried in 2009.

The Monitor-Merrimac Memorial Bridge-Tunnel has experienced the most growth of any of the major bridges and tunnels, with an average annual growth rate of 5.1% between its opening in 1992 and 2009. Three bridges in Chesapeake, the High Rise Bridge, Steel Bridge, and Gilmerton Bridge, had the next highest growth rates at about 2.0% annually between 1990 and 2009.

Looking only at the Hampton Roads harbor crossings (the Hampton Roads Bridge-Tunnel, Monitor-Merrimac Memorial Bridge-Tunnel, and James River Bridge), nearly 172,000 vehicles crossed the Hampton Roads harbor each day in 2009. The number of vehicles crossing the Hampton Roads harbor has increased 71% since 1990, when 100,000 vehicles crossed the harbor each day (as shown in **Figure 3** on page 11). By comparison, vehicular travel throughout Hampton Roads increased 23% between 1990 and 2009, less than a third of the growth seen at the Hampton Roads harbor crossings.

On the Southside of Hampton Roads, nearly 260,000 vehicles crossed the Southern Branch of the Elizabeth River each day in 2009 on one of the fixed river crossings between the Midtown Tunnel and the Steel Bridge (**Figure 4** on page 11). The number of vehicles crossing the Southern Branch of the Elizabeth River increased 35% from 1990 to 2009. Although this growth is larger than the regional growth rate in vehicular travel, it is only half the growth experienced at the Hampton Roads harbor crossings during this time. In addition, the volume of vehicles crossing the Elizabeth River decreased every year between 2006 and 2009, and 2009 volumes were 7% lower than the levels seen in 2006.

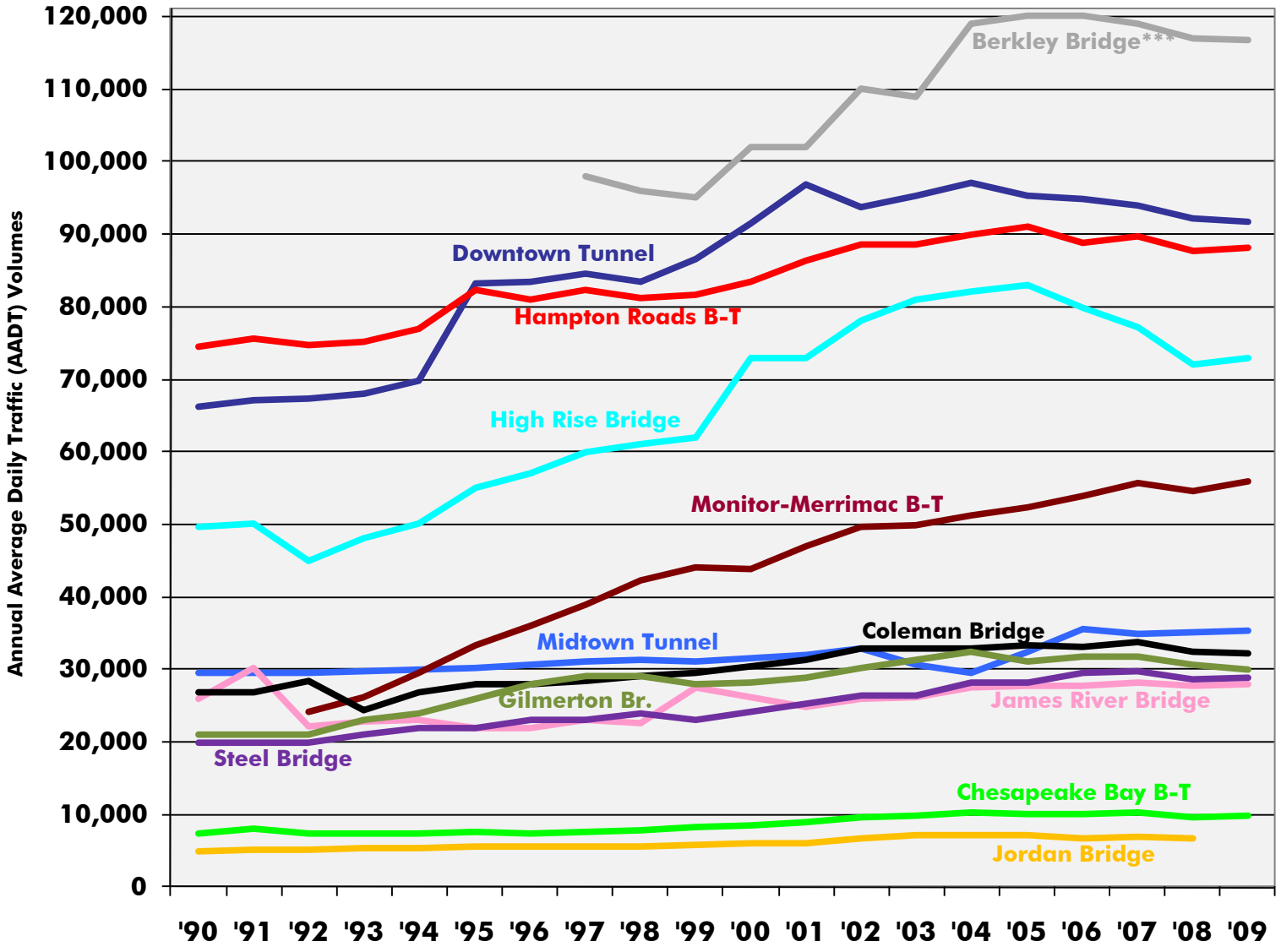
Daily volumes at the region's bridges and tunnels are greatly affected by a variety of factors including the day of week and the time of year. **Table 1** shows this variation in traffic volumes at the regional bridges and tunnels where data is available. Not surprisingly, the Chesapeake Bay Bridge-Tunnel is the facility most affected by seasonality, with 81% higher daily traffic volumes during the summer months than during the winter months. This is due to the Chesapeake Bay Bridge-Tunnel carrying fewer commuters than the other facilities in the region. The Midtown Tunnel has the highest variation based on the day of week, with 39% higher volumes on weekdays than on weekends.

Table 1 – Variation in Daily Volumes by Season and Day of Week, 2009

Facility	Variation in Daily Traffic Volumes Summer vs. Winter	Variation in Daily Traffic Volumes Weekdays vs. Weekends
Chesapeake Bay Bridge-Tunnel	+80.8%	-34.2%
Coleman Bridge	+14.1%	+20.7%
Downtown Tunnel	+6.4%	+22.2%
Hampton Roads Bridge-Tunnel	+12.1%	+13.5%
James River Bridge	+10.2%	+21.2%
Midtown Tunnel	+9.0%	+39.3%
Monitor Merrimac Memorial Bridge-Tunnel	+17.6%	+21.8%
Steel Bridge	+7.1%	+16.9%

Data Sources: VDOT, CBBT. Table only includes regional bridges and tunnels where data for every day of the year was available. Summer includes the months of June, July, and August; winter includes the months of December, January, and February.

Figure 2 – Annual Average Daily Traffic Volumes and Growth Rates at Regional Bridges and Tunnels, 1990 - 2009



Average Annual Growth Rates, 1990 to 2009

Monitor-Merrimac B-T*	5.1%
High Rise Bridge	2.0%
Steel Bridge	2.0%
Gilmerton Bridge	1.9%
Downtown Tunnel	1.7%
Jordan Bridge**	1.6%
Chesapeake Bay B-T	1.5%
Coleman Bridge	1.0%
Hampton Roads B-T	0.9%
Midtown Tunnel	0.9%
James River Bridge	0.4%

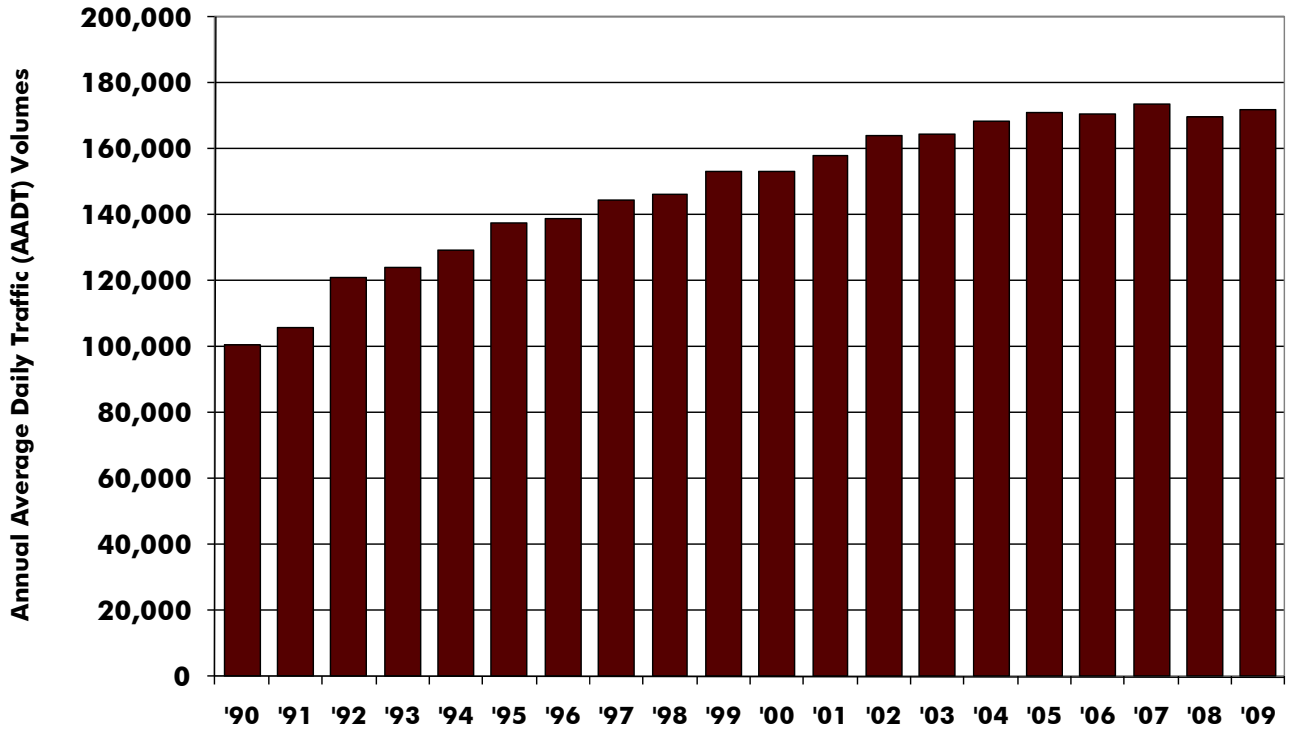
* The Monitor-Merrimac Memorial Bridge-Tunnel was opened to vehicular traffic on May 1, 1992. The growth rate listed represents the growth from 1992 to 2009.

** The Jordan Bridge was closed to vehicular traffic on November 8, 2008. The growth rate listed represents growth from 1990 to 2008.

*** Data for the Berkley Bridge is not available prior to 1997.

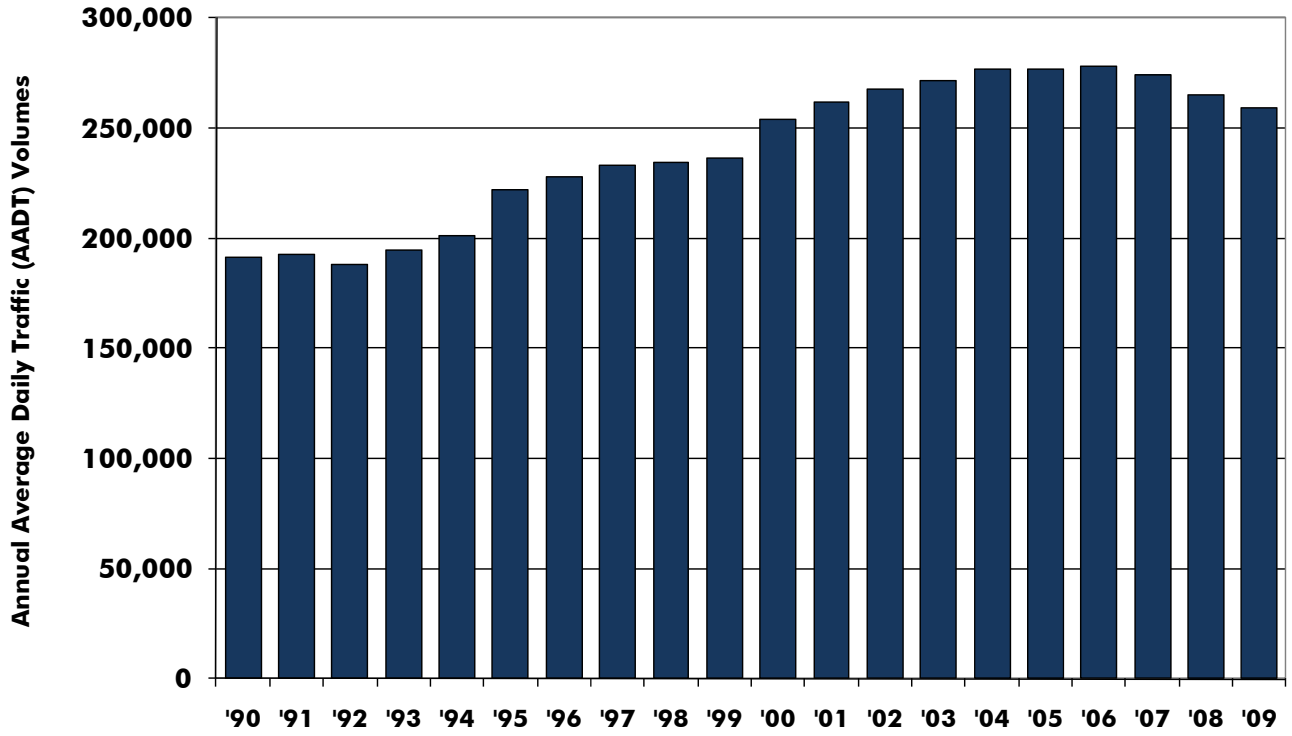
Data Sources: VDOT, Chesapeake Bay Bridge-Tunnel.

Figure 3 – Annual Average Daily Traffic Volumes Crossing the Hampton Roads Harbor, 1990 - 2009



Hampton Roads harbor crossings include the Hampton Roads Bridge-Tunnel, Monitor-Merrimac Memorial Bridge-Tunnel, and the James River Bridge.
Data Source: VDOT.

Figure 4 – Annual Average Daily Traffic Volumes Crossing the Elizabeth River Southern Branch, 1990 - 2009



Elizabeth River Southern Branch crossings include the Midtown Tunnel, Downtown Tunnel, Jordan Bridge, Gilmerton Bridge, High Rise Bridge, and Steel Bridge.
Data Source: VDOT.

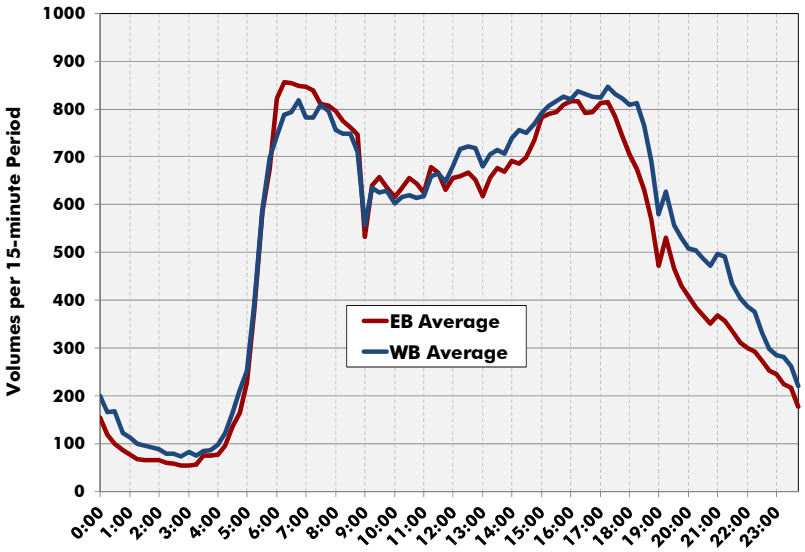
Volumes by Time of Day

At the Downtown Tunnel, backups are prevalent in both directions during both the morning and afternoon peak travel periods. The highest traffic flow rates are between 800 and 850 vehicles per 15-minute period in each direction, which translates to 1,600 to 1,700 vehicles per lane per hour. These maximum flow rates are seen at the Downtown Tunnel between 6:00 and 8:00 am and between 3:00 and 6:00 pm, as seen in **Figure 5**.

At the Hampton Roads Bridge-Tunnel, traffic queues in the eastbound direction during the morning peak travel period and both directions during the afternoon peak period. Similar to the Downtown Tunnel, the highest traffic flow rates during the afternoon peak periods at the Hampton Roads Bridge-Tunnel are around 800 vehicles per 15-minute period or 1,600 vehicles per lane per hour. These flow rates are seen at the Hampton Roads Bridge-Tunnel between 3:30 pm and 5:30 pm, as seen in **Figure 6**.

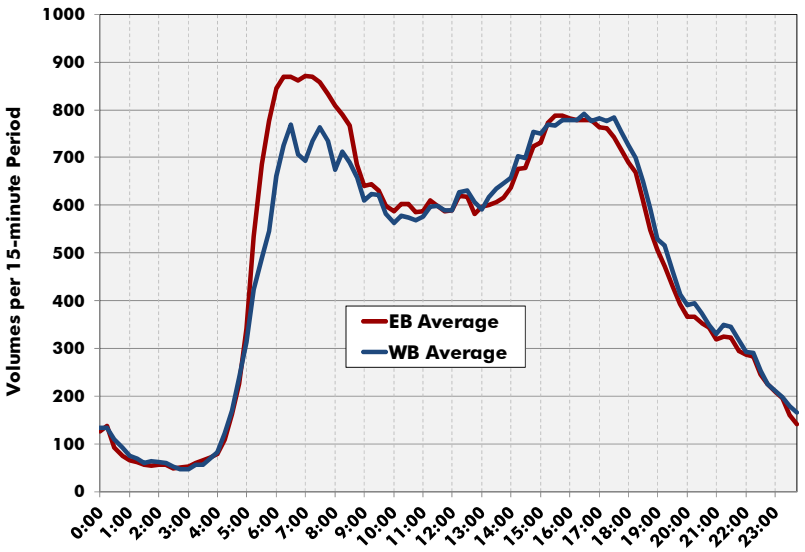
It should be noted that although the eastbound Hampton Roads Bridge-Tunnel is congested during both the morning and afternoon peak travel periods, the eastbound tunnel carries a higher vehicular volume during the morning peak period. The eastbound tunnel maxes out at about 870 vehicles per 15-minute period between 6:00 am and 7:30 am, which is 10% higher than the traffic flow carried during the afternoon peak travel period. This is likely due to a higher concentration of commuter traffic during the morning, and these commuters are more familiar and more comfortable driving through the tunnel than non-commuters.

Figure 5 – Average Weekday Volumes by Time of Day at the Downtown Tunnel, 2009



Data Source: VDOT.

Figure 6 – Average Weekday Volumes by Time of Day at the Hampton Roads Bridge-Tunnel, 2009



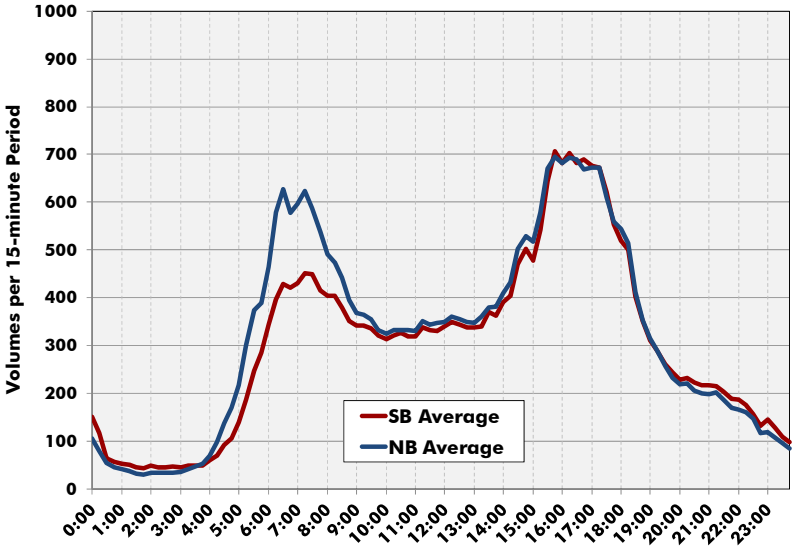
Data Source: VDOT.

The maximum flow rates seen at the Downtown Tunnel and the Hampton Roads Bridge-Tunnel are much lower than those experienced on typical freeway facilities throughout the region. According to the *Highway Capacity Manual*, an optimal freeway facility can carry about 2,300 passenger cars per lane per hour, with this capacity being reduced for various factors including trucks, narrow lane or shoulder widths, roadway grades, etc. One example in Hampton Roads, I-64 near Norview Avenue in Norfolk, maxes out at a flow of around 2,100 vehicles per lane per hour based on VDOT data. This is about 20-25% higher than the 1,600 to 1,700 vehicles per lane per hour carried by the Downtown Tunnel and Hampton Roads Bridge-Tunnel, which is the primary cause for the long backups at these facilities.

There are generally few backups at the Monitor-Merrimac Memorial Bridge-Tunnel. Backups usually only occur during incidents such as crashes, debris, or bad weather. However, traffic flows at the Monitor-Merrimac Memorial Bridge-Tunnel are approaching 700 vehicles per 15-minute period (or 1,400 vehicles per lane per hour) during the afternoon peak travel period, as seen in **Figure 7**. This flow level is only about 12% below the maximum traffic flows seen at the Hampton Roads Bridge-Tunnel and Downtown Tunnel. If traffic volumes continue to grow 5% each year as they have historically, congestion can be expected to occur regularly at the Monitor-Merrimac Memorial Bridge-Tunnel in the near future.

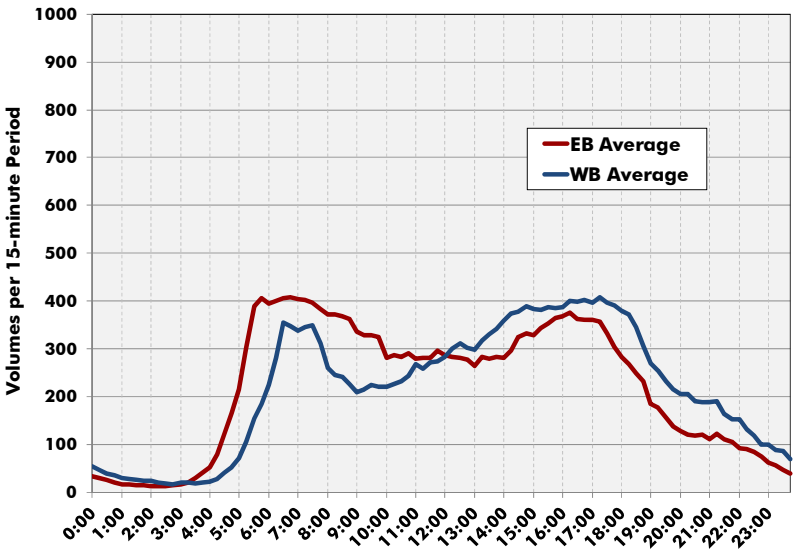
At the Midtown Tunnel (**Figure 8**), the primary backups are eastbound during the morning peak period and westbound during the afternoon peak period. The highest traffic flow rates at the Midtown Tunnel are around 400 vehicles per 15-minute period (or 1,600 vehicles per lane per hour), which is similar to the capacities seen at the other tunnel facilities.

Figure 7 – Average Weekday Volumes by Time of Day at the Monitor-Merrimac Memorial Bridge-Tunnel, 2009



Data Source: VDOT.

Figure 8 – Average Weekday Volumes by Time of Day at the Midtown Tunnel, 2009



Data Source: VDOT.

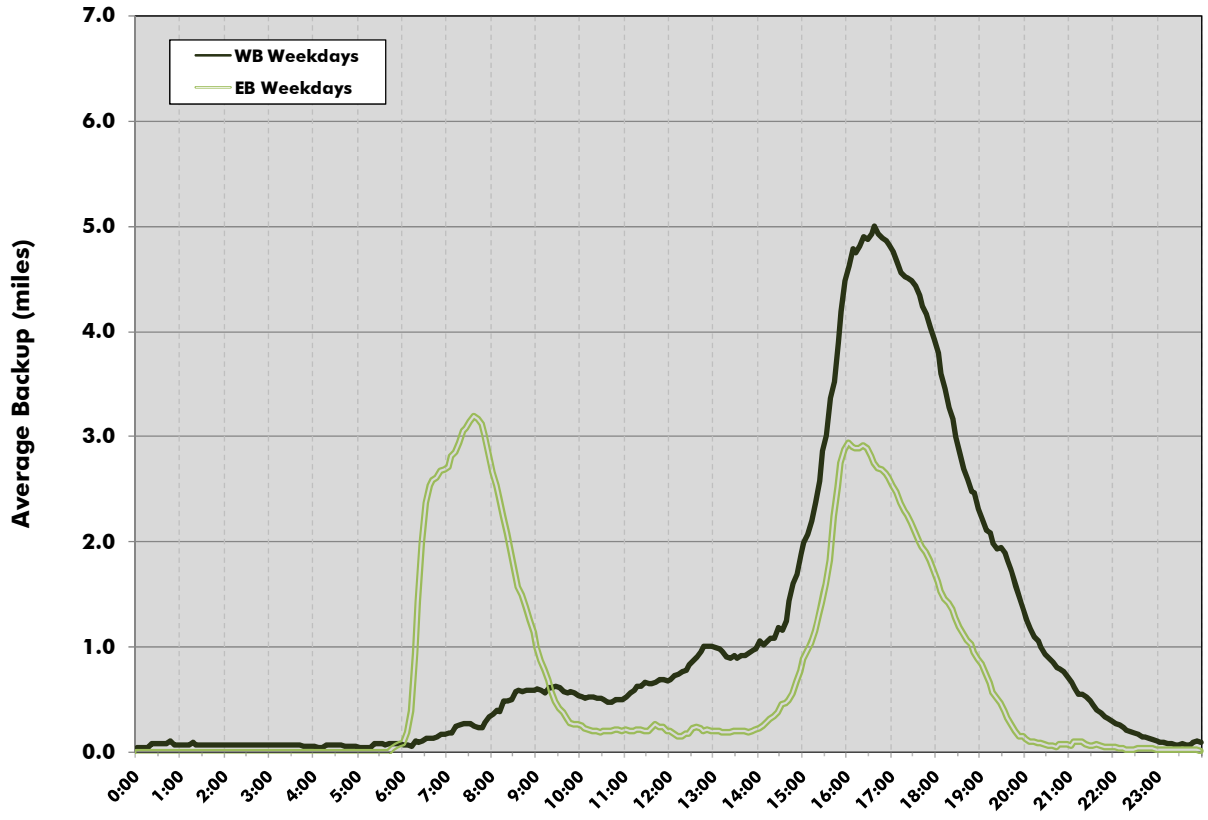
Backups at the Hampton Roads Bridge-Tunnel

Any resident or frequent visitor of Hampton Roads knows about the infamous backups at the Hampton Roads Bridge-Tunnel. These backups not only impact the mobility of drivers in Hampton Roads but also affect the regional economy as well. This section examines the backups at the Hampton Roads Bridge-Tunnel based on an analysis of data collected and disseminated to travelers by the VDOT Hampton Roads Transportation Operation Center (TOC) in 2008.

Figure 9 shows the average weekday queue lengths by time of day at the Hampton Roads Bridge-Tunnel in 2008. The times that backups occur and the length of those backups vary in the eastbound and westbound directions. In the eastbound direction, backups are prevalent during both the morning and afternoon peak travel periods. Backups begin on average at around 6:00 am and grow to a maximum length of 3.25 miles around 7:30 am. Backups decrease from that point and are below one mile in length on average by 9:00 am. Eastbound backups then begin to increase at around 2:00 pm and expand until reaching a peak of about three miles in length at 4:00 pm. Queues decrease at a constant rate from 4:00 pm until being nearly nonexistent by 8:00 pm.

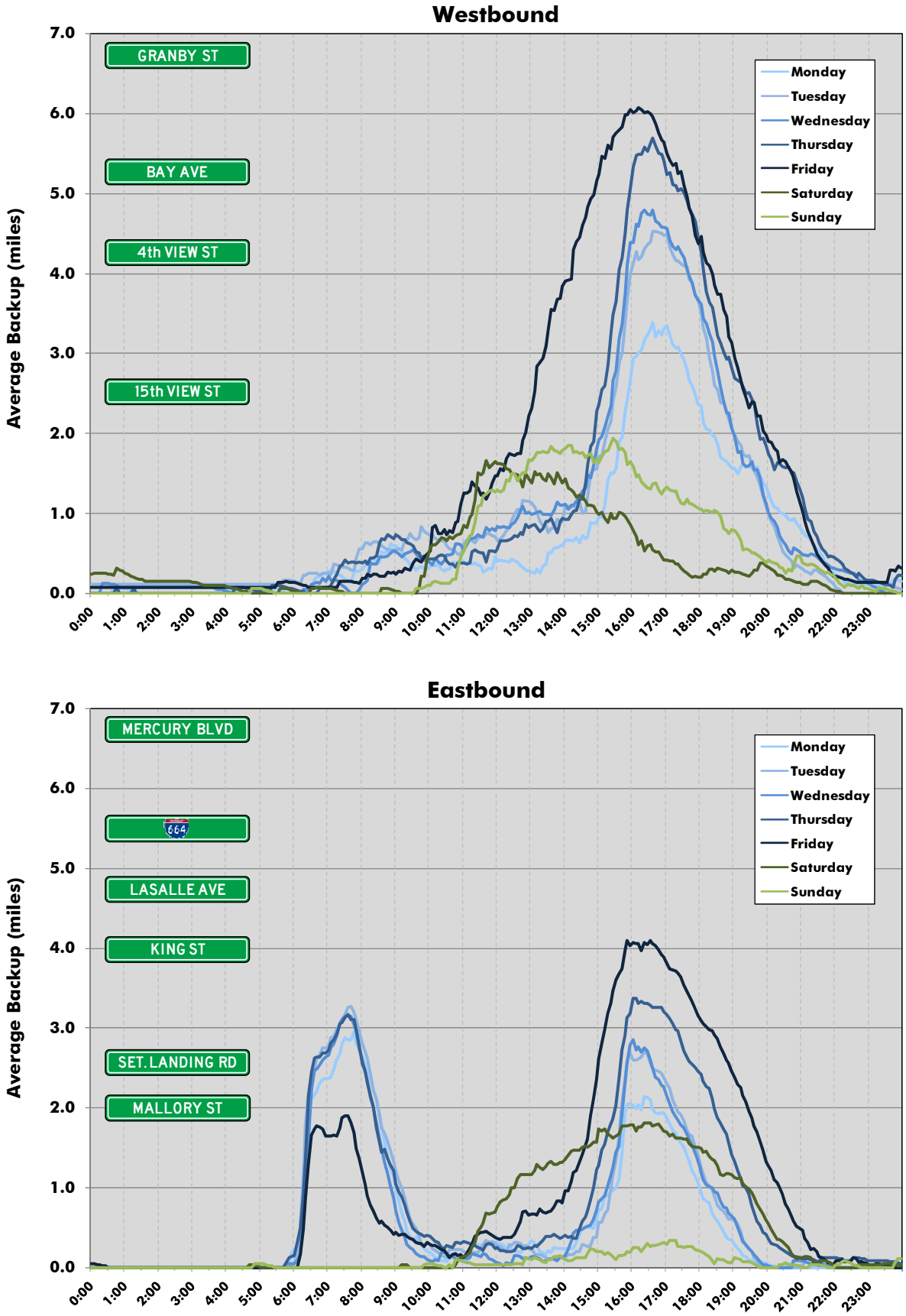
There are usually no backups at the westbound Hampton Roads Bridge-Tunnel during the morning peak travel period, and although there are some backups in the middle of the day in the westbound direction, these are usually due to crashes or other types of incidents. Queues during the afternoon peak period, however, are longer in the westbound direction than the eastbound direction. Backups start becoming more prevalent in the westbound direction at around 2 pm and grow to a maximum of five miles in length at 4:45 pm. Queues decrease at a constant rate afterward and are below one mile in length on average by around 8:15 pm.

Figure 9 – Average Weekday Queues at the Hampton Roads Bridge-Tunnel by Direction, 2008



Data Source: VDOT. Weekdays include Tuesdays - Thursdays, minus holidays.

Figure 10 – Average Backups at the Hampton Roads Bridge-Tunnel by Day of Week, 2008



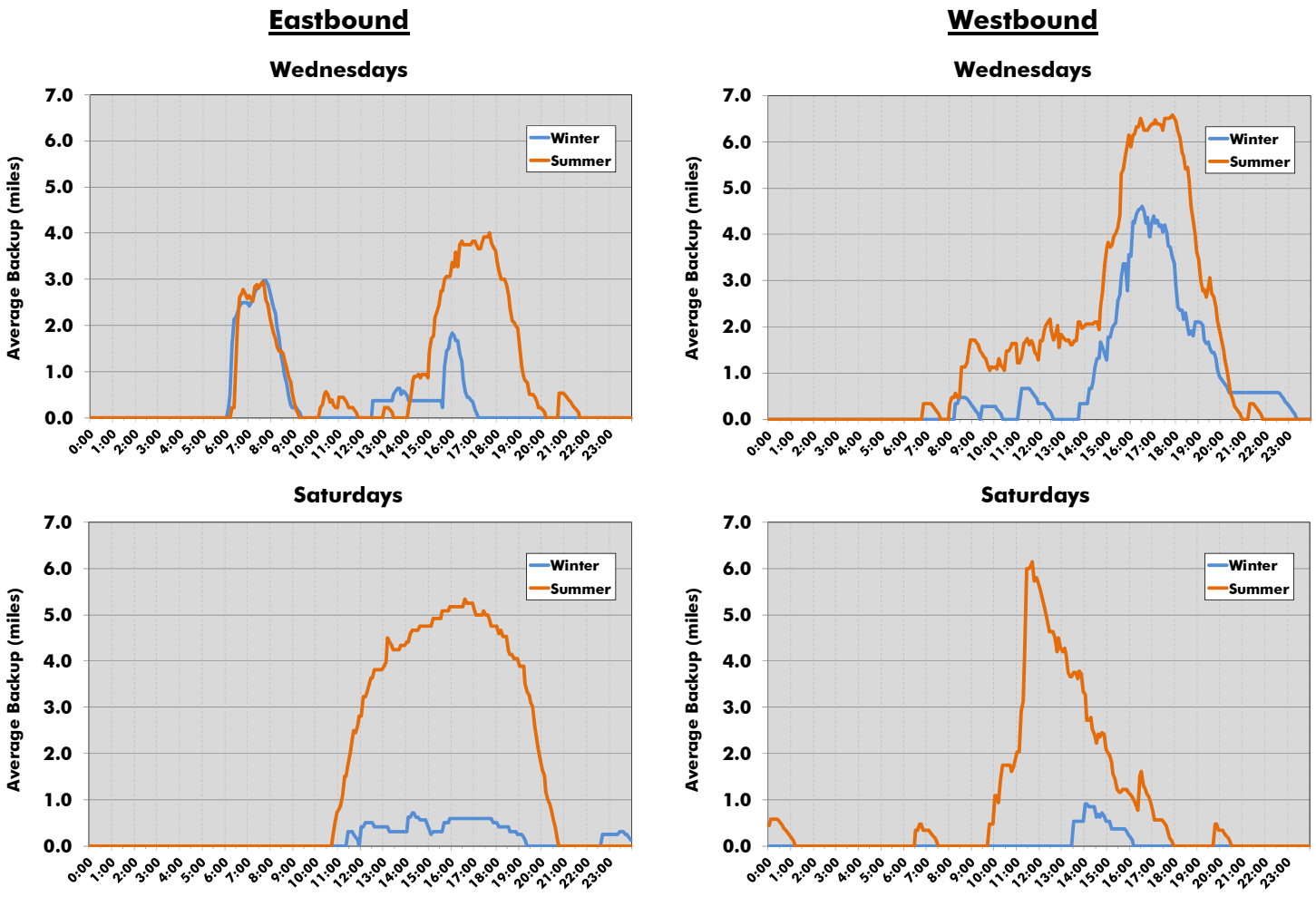
Data Source: VDOT.

Backups at the Hampton Roads Bridge-Tunnel vary by the day of the week. **Figure 10** on page 15 shows the average backups by direction for each day of the week in 2008. In the morning peak period, the maximum backups in the eastbound direction were consistently around three miles in length on Mondays through Thursdays. The afternoon peak period backups, however, increased each weekday in both directions with Fridays having the longest backups. Friday afternoon backups reached over six miles in length on average in the westbound direction and four miles in length in the eastbound direction in 2008, both of which are nearly double the length normally experienced on Mondays.

Seasonality also impacts backups at the Hampton Roads Bridge-Tunnel as shown in **Figure 11**. This is not surprising since the facility is used by tourists accessing the resort areas of Virginia Beach and the Outer Banks. Morning backups are similar regardless of the time of year, but backups during the afternoon peak period are much larger and exist for a longer time in both directions in the summer than during the winter. As an example, summer backups on a typical Wednesday reach four miles in the eastbound direction and 6.5 miles in the westbound direction, both of which are two miles longer than the backups seen in winter.

Backups are also prevalent at the Hampton Roads Bridge-Tunnel on Saturdays during the summer. In the eastbound direction, there are queues for twelve hours on average with a maximum backup of over five miles in length. In the westbound direction, backups exist for eight hours on average with a maximum backup of over six miles in length. During the winter months, queues on Saturdays at the Hampton Roads Bridge-Tunnel are usually only caused by incidents.

Figure 11 – Average Backups at the Hampton Roads Bridge-Tunnel by Season, 2008



Data Source: VDOT.

CMP ROADWAY NETWORK

The roadways throughout Hampton Roads included in the congestion analysis are defined as the CMP roadway network. This congestion analysis includes roadways within the Hampton Roads Transportation Planning Organization (HRTPO) boundary (see Map 1 on page 2), which is also referred to as the Hampton Roads Metropolitan Planning Area (MPA).

In addition, congestion levels were determined for roadways in two localities outside of the MPA. Roadways in the City of Franklin and Southampton County were analyzed as part of the Hampton Roads Planning District Commission's (HRPDC) rural long-range transportation planning task. Although levels of service were determined for roadways in the City of Franklin and Southampton County, regional roadway and congestion statistics within this report only reflect the CMP network within the MPA and do not include roadways in these two jurisdictions.

The CMP roadway network includes all roadways in Hampton Roads classified as interstates, freeways or other expressways, principal arterials, or minor arterials. The CMP network also includes several roadways classified as collectors. These collectors were chosen for inclusion in the CMP network based on network connectivity, access to major activity centers, and input from jurisdictions.

There were few changes made to the CMP roadway network from the previous update. The existing CMP roadway network (excluding Franklin and Southampton County) includes 1,357 centerline-miles and 4,776 lane-miles[3] of roadway. By comparison, the 2003 CMP network included 1,330 centerline-miles and 4,666 lane-miles of roadway. Most of the network changes involved adding roadways in new mixed-use urban areas such as Coliseum Central in Hampton, Oyster Point City Center in Newport News, and Town Center in Virginia Beach.

In addition to existing facilities, major roadways that are expected to be constructed in the future are also included in the CMP roadway network. These projects, which are included in the Long-Range Transportation Plan, are described in the Roadway Improvements section of this report beginning on the next page.

[3] A lane-mile is defined as the length of a roadway segment multiplied by the number of lanes. A one-mile long, four-lane wide roadway segment would comprise four lane-miles.

DATA

The traffic volume and characteristic data used in this study were obtained from a variety of sources. Most of the data used in this study was obtained from VDOT. VDOT collects data at over 16,000 locations throughout the state as part of its Traffic Monitoring Program, including 3,000 locations in Hampton Roads. Data is collected at most locations for a 48-hour period once every three years. In this study, data from the years 2007-2009 was used to determine "existing" weekday volumes and characteristics.

In addition to VDOT's data, traffic volumes collected by other sources throughout the region are used in this report and in other HRTPO planning efforts. The Cities of Hampton, Newport News, and Virginia Beach maintain their own traffic data collection programs, and all five tunnels in the region and the Chesapeake Expressway collect traffic volume data as part of their daily operations.

For the limited number of roadway segments where traffic volume data was not available from any of these sources, daily volumes were estimated to the nearest one thousand vehicles by HRTPO staff with assistance from officials of those localities.

Existing weekday traffic volumes for each roadway segment are included in **Appendices A and B**. Traffic volume data is also available in the *Average Weekday Traffic Volumes for Major Roadways in Hampton Roads* web document, which is updated annually and is available on the HRTPO website.

Traffic volumes for 2030 were projected by applying engineering judgment to output from the Hampton Roads Travel Demand Model. This model is maintained as part of the long-range transportation planning process and produces daily volumes based on projected socioeconomic conditions and the future roadway network.

ROADWAY IMPROVEMENTS

Many improvements have been made to the Hampton Roads roadway network in recent years, and many more changes, both large and small, are planned for the future. This section details those major roadway projects completed throughout Hampton Roads in recent years as well as those projects planned and programmed in the future.

Recently Completed Roadway Projects

Table 2 includes major roadway widening and new roadway construction projects completed in Hampton Roads over the last ten years. These 32 roadway projects added nearly 200 lane-miles to the regional roadway network. In addition to these 32 projects, many smaller projects have been completed throughout the region during this time. This includes intersection improvements (such as adding or extending turn bays and adding traffic signals), installing medians, and implementing Intelligent Transportation System (ITS) technologies such as coordinating traffic signals.

One example of a major roadway project that greatly improved the regional transportation network is the Pinners Point Interchange in Portsmouth. The Pinners Point Interchange, which was completed in 2005, provides a direct connection between the Western Freeway and the Midtown Tunnel/MLK Freeway. About 54,000 vehicles use the Pinners Point Interchange each weekday, and many of these users previously used the local roadways within the Port Norfolk neighborhood to travel between the Western Freeway and the Midtown Tunnel. Over 30,000 vehicles used Bayview Avenue in Port Norfolk each weekday before the Pinners Point Interchange was constructed, and many other neighborhood roads carried over 10,000 vehicles each day. Today, volumes on Bayview Avenue and most other roadways in the Port Norfolk neighborhood have dropped below 2,000 vehicles per weekday.

In addition, many of these new Western Freeway and Pinners Point Interchange users previously used High Street, a four-lane arterial that is the closest parallel route to the south. About 8,000 fewer vehicles use High Street each weekday since the completion of the Pinners Point Interchange, and the afternoon peak hour level of service on High Street improved from an unacceptable LOS F to an acceptable LOS D currently.

Table 2 – Roadway Projects Completed in Hampton Roads, 2001 - 2010

FACILITY	LOCATION	IMPROVEMENT TYPE	COMPLETED
Birdneck Rd	General Booth Blvd to Southern Blvd	Widening from 2L to 4L	2010*
Chesapeake Expressway	Battlefield Blvd south of Great Bridge to Gallbush Rd	New 4L Facility	2001
Commander Shepard Blvd	NASA Main Gate to Magruder Blvd	Widening from 2L to 4L	2005
Convention Center Blvd	Coliseum Dr to Armistead Ave	New 5L Facility	2007
Dam Neck Rd	Salem Rd to Landstown Rd	New 2L Facility	2006
Fort Eustis Blvd	George Washington Hwy to Old York-Hampton Hwy	New 4L Facility	2006
Great Bridge Bridge	Wayne Ave to Albemarle Dr	Widening from 2L to 5L	2004
Greenbrier Pkwy	Volvo Pkwy to Eden Way	Widening from 5L to 6L	2009
Grove Connector	I-64 to Route 60 and Busch Gardens	New Interchange	2002
Hampton Roads Center Pkwy	Jefferson Ave to Hampton CL	New 4L Facility	2003
I-64	Bland Blvd to Hampton Roads Center Pkwy	New HOV lanes	2001
I-64	Greenbrier Pkwy to I-464	Widening from 6L to 8L	2009
I-64	Hampton Roads Center Pkwy to I-664	New HOV lanes	2006
Independence Blvd	Pembroke Blvd to Haygood Rd	Widening from 4L to 6L	2001
Jefferson Ave	Buchanan Dr to Green Grove Ln	Widening from 4L to 6L	2010
Kempsville Road	Battlefield Blvd to Centerville Tpke	Widening from 2L to 6L	2001 - 2002
London Bridge Rd	Shipps Corner Rd to Virginia Beach Blvd	Widening from 2L to 4L/6L	2003 - 2006
Lynnhaven Pkwy	Holland Rd to South Lynnhaven Rd	Widening from 4L to 6L	2010
Monticello Ave (Route 5000)	John Tyler Hwy to News Rd	New 2L Facility	2001
Moses Grandy Trail	Shipyard Rd to Dominion Blvd	New 4L Facility	2006
Oceana Blvd	General Booth Blvd to Tomcat Blvd	Widening from 2L to 4L	2001 - 2002
Oceana Blvd	South of Southern Blvd to Virginia Beach Blvd	New 4L Facility	2003
Pinners Point Interchange	West Norfolk Rd to MLK Fwy	New 4L Facility	2004 - 2005
Route 17	NC State Line to Dominion Blvd	Widening from 2L to 4L	2005
Route 199	Williamsburg CL to Route 60	Widening from 2L to 4L	2004 - 2005
Route 258	Union Camp Dr to Business Route 58	New 2L Facility	2003
South Plaza Trail	Princess Anne Rd to Independence Blvd	Widening from 2L to 4L	2004
Southwest Suffolk Bypass	Carolina Rd to Suffolk Bypass	New 4L Facility	2003
Treyburn Dr	Monticello Ave to Ironbound Rd	New 2L Facility	2007
Virginia Beach Blvd	Jett St to Military Hwy	Widening from 4L to 6L	2010*
Volvo/Lynnhaven Pkwy	Kempsville Rd to Centerville Tpke	New 4L Facility	2007
Warwick Blvd	J Clyde Morris Blvd to Nettles Dr	Widening from 4L to 6L	2010

Data obtained from various sources.
* Roadway projects anticipated to be completed during the second half of 2010.

Future Roadway Projects

Roadway improvement projects planned and programmed for Hampton Roads are included in three documents: the Long-Range Transportation Plan (LRTP), the Six-Year Improvement Program (SYIP), and the Transportation Improvement Program (TIP). A description of each of these three documents is given below.

Long-Range Transportation Plan

HRTPO is responsible for producing the regional Long-Range Transportation Plan[4]. The purpose of the LRTP is "to guide transportation investments to projects designed to meet the transportation goals of the HRTPO--economic vitality, safety, mobility, and environmental protection." The LRTP contains a list of transportation projects that are expected to be constructed based on the anticipated funding during the time horizon.

The LRTP is updated on a quadrennial cycle per federal regulations and encompasses a 20-year time horizon at a minimum. The current LRTP is for the 2030 time horizon and work on the 2034 version is ongoing. Many stakeholders are involved in the preparation of the LRTP including transportation engineers and planners from each city and county, VDOT, local public transit officials, the public, and others.

Six-Year Improvement Program

The Six-Year Improvement Program[5] is a statewide document through which the Commonwealth Transportation Board (CTB) allocates funds for the construction, development or study of transportation projects. The projects included in the SYIP not only encompass major projects such as new roadway construction and widening existing facilities but also include smaller projects such as adding or extending turn bays at intersections, adding traffic signals and improving freeway ramps.

Per its name, the Six-Year Improvement Program includes information on funding for each project over the course of the upcoming six fiscal years. The SYIP also includes timelines for the expected initiation of preliminary engineering design, right-of-way acquisition, and construction phases of each project.

The SYIP is developed annually by VDOT and the CTB, and the CTB approves an updated SYIP each June. In 2008 and 2009, the SYIP was revised within fiscal years due to updated funding projections, which led to many projects being removed from the program.

Transportation Improvement Program

The Hampton Roads Transportation Improvement Program[6] is a multi-year program for the implementation of transportation projects in Hampton Roads. The TIP is a federally-mandated document that lists all projects for which federal funds are anticipated, along with non-federally funded projects that are regionally significant. Before any federally funded and/or regionally significant transportation project can be built, it must be included in the current TIP approved by the HRTPO board.

The Hampton Roads TIP covers a four-year time period and is updated and amended on a recurring basis. Not only are roadway projects included in the TIP but transit, bicycle and pedestrian, and freight-related projects are included as well. Most of the projects included in the TIP are included in the SYIP and vice versa.

Maps 3 and **4** on pages 20-21 as well as **Tables 3** and **4** on pages 22-24 show the projects throughout Hampton Roads included in the LRTP, SYIP, or TIP as of June 2010.

[4] *Hampton Roads 2030 Long-Range Transportation Plan*, HRTPO, December 2007, Amended December 2009.

[5] *FY 2011-2016 Six-Year Improvement Program*, Commonwealth Transportation Board, June 2010.

[6] *Hampton Roads Transportation Improvement Program FY 2009-2012*, HRTPO, June 2008, includes amendments through June 2010.

MAP 3

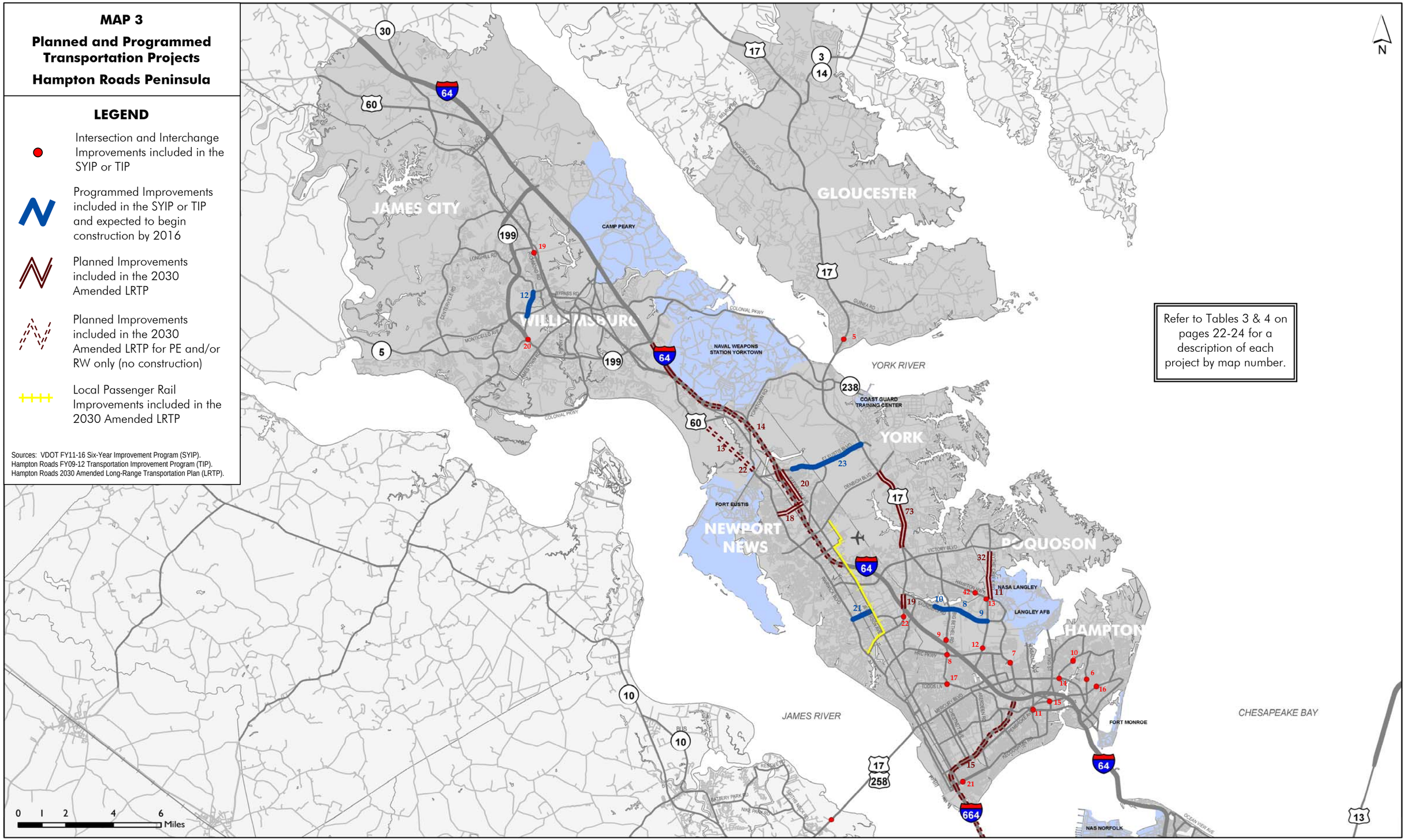
Planned and Programmed Transportation Projects

Hampton Roads Peninsula

LEGEND

- Intersection and Interchange Improvements included in the SYIP or TIP
- Programmed Improvements included in the SYIP or TIP and expected to begin construction by 2016
- Planned Improvements included in the 2030 Amended LRTP
- Planned Improvements included in the 2030 Amended LRTP for PE and/or RW only (no construction)
- Local Passenger Rail Improvements included in the 2030 Amended LRTP

Sources: VDOT FY11-16 Six-Year Improvement Program (SYIP).
Hampton Roads FY09-12 Transportation Improvement Program (TIP).
Hampton Roads 2030 Amended Long-Range Transportation Plan (LRTP).



MAP 4

Planned and Programmed Transportation Projects

Hampton Roads Southside

LEGEND

- Intersection and Interchange Improvements included in the SYIP or TIP
- Programmed Improvements included in the SYIP or TIP and expected to begin construction by 2016
- Planned Improvements included in the 2030 Amended LRTP
- Planned Improvements included in the 2030 Amended LRTP for PE and/or RW only (no construction)
- Local Passenger Rail Improvements included in the 2030 Amended LRTP

Sources: VDOT FY11-16 Six-Year Improvement Program (SYIP).
Hampton Roads FY09-12 Transportation Improvement Program (TIP).
Hampton Roads 2030 Amended Long-Range Transportation Plan (LRTP).

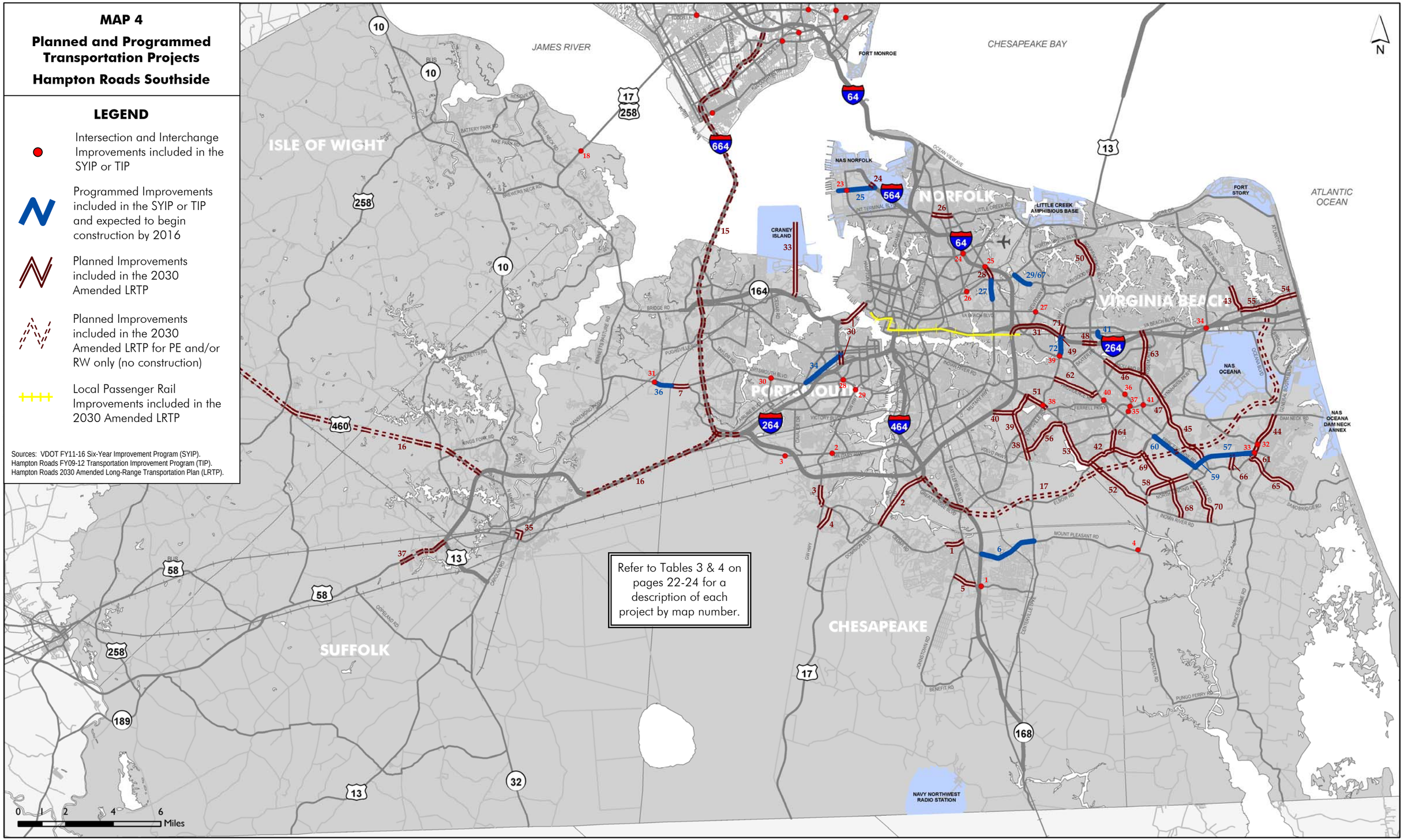


Table 3 – Roadway Widening Projects Included in the Six-Year Improvement Program/Transportation Improvement Program or the Long-Range Transportation Plan

Map #	UPC Code	Jurisdiction	Facility	Project	Document	Projected Construction Begin
1		Chesapeake	Cedar Rd - Albemarle Dr to Battlefield Blvd	Widen to 4 lanes	LRTP	-
2	56187	Chesapeake	Dominion Blvd - Cedar Rd to Chesapeake Expressway	Widen to 4 lanes	LRTP	-
3		Chesapeake	George Washington Hwy - Mill Creek Pkwy to Willowood Dr	Widen to 4 lanes	LRTP	-
4		Chesapeake	George Washington Hwy - Sawyers Mill Rd to Cedar Rd	New 4 lane facility	LRTP	-
5		Chesapeake	Hanbury Rd - Johnstown Rd to Battlefield Blvd	Widen to 4 lanes	LRTP	-
6	84359	Chesapeake	Mount Pleasant Rd - Chesapeake Expressway to Centerville Tpke	Widen to 4 lanes	SYIP/TIP	FY 2014
7	18591	Chesapeake	Portsmouth Blvd - Suffolk CL to Joliff Rd	Widen to 4 lanes	LRTP	-
8	60970	Hampton	Commander Shepard Blvd - Big Bethel Rd to N. Campus Pkwy	New 4 lane facility	SYIP/TIP	FY 2011
9	66846	Hampton	Commander Shepard Blvd - N. Campus Pkwy to Magruder Blvd	New 4 lane facility	SYIP/TIP	Underway
10	57047	Hampton	Saunders Rd - Newport News CL to Big Bethel Rd	Widen to 4 lanes	SYIP/TIP	FY 2014
11	T9089	Hampton	Wythe Creek Rd - Commander Shepard Blvd to Poquoson CL	Widen to 4 lanes	LRTP	-
12	50057	James City	Ironbound Rd - Strawberry Plains Rd to Longhill Connector Rd	Widen to 4 lanes	SYIP/TIP	Underway
13	13496	James City	Route 60 Relocation - BASF Dr to Newport News CL	New 4 lane facility (PE/RW Only)	LRTP	-
14		Multiple	I-64 - Route 199 (Exit 242) to Jefferson Ave (Exit 255)	Widen to 8 lanes (PE Only)	LRTP	-
15		Multiple	I-664 - Bowers Hill to I-64 in Hampton	Widening (PE Only)	LRTP	-
16		Multiple	Route 460 - Petersburg to Hampton Roads	New facility (PE Only)	LRTP	-
17	16556	Multiple	Southeastern Parkway and Greenbelt	New facility (PE Only)	LRTP	-
18	4483	Newport News	Atkinson Blvd - Warwick Blvd to Jefferson Ave	New 4 lane facility	LRTP	-
19		Newport News	J Clyde Morris Blvd - I-64 to Harpersville Rd	Widen to 6 lanes	LRTP	-
20	67673	Newport News	Jefferson Ave - Green Grove Lane to Fort Eustis Blvd	Widen to 6 lanes	LRTP	-
21	11816	Newport News	Middle Ground Blvd - Jefferson Ave to Warwick Blvd	New 4 lane facility	SYIP/TIP	FY 2011
22	14598	Newport News	Route 60 Relocation - James City CL to Fort Eustis Blvd	New 4 lane facility (PE Only)	LRTP	-
23	92992	Newport News/York	Fort Eustis Blvd - East of Jefferson Ave to Route 17	Widen to 4 lanes	SYIP/TIP	Underway
24	59175	Norfolk	I-564/Chambers Field Interchange	New facility	LRTP	-
25	18968	Norfolk	Intermodal Connector	New 4 lane facility	SYIP/TIP	FY 2015
26		Norfolk	Little Creek Rd - Tidewater Dr to Military Hwy	Widen to 6 lanes	LRTP	-
27	9783	Norfolk	Military Hwy - Lowery Rd to Northampton Blvd	Widen to 8 lanes	SYIP/TIP	FY 2013
28	1765	Norfolk	Military Hwy - Northampton Blvd to Robin Hood Rd	Widen to 6 lanes	LRTP	-
29	52147	Norfolk	Wesleyan Dr - Northampton Blvd to Virginia Beach CL	Widen to 4 lanes	SYIP/TIP	FY 2013
30		Norfolk/Portsmouth	Midtown Tunnel/MLK Extension	Widening and New Facility	LRTP	-
31	57048	Norfolk/Va Beach	I-64 to I-264 ramp - Curlew Dr to Witchduck Rd	Add additional lane	LRTP	-
32	13427	Poquoson	Wythe Creek Rd - Hampton CL to Alphus St	Widen to 4 lanes	LRTP	-
33		Portsmouth	Craney Island Access Rd	New 2 lane facility	LRTP	-
34	65655	Portsmouth	Turnpike Road - Portsmouth Blvd to Constitution Ave	Widen to 4 lanes	SYIP/TIP	FY 2015
35	15826	Suffolk	Finney Ave Extension	New 2 lane facility	LRTP	-
36	61407	Suffolk	Nansemond Pkwy - Shoulders Hill Rd to Chesapeake CL	Widen to 4 lanes	SYIP/TIP	FY 2016
37		Suffolk	Route 58 - Manning Bridge Rd to Suffolk Bypass	Widen to 6 lanes (PE Only)	LRTP	-
38		Virginia Beach	Centerville Tpke - Chesapeake CL to Kempsville Rd	Widen to 4 lanes	LRTP	-
39		Virginia Beach	Centerville Tpke - Kempsville Rd to Indian River Rd	Widen to 6 lanes	LRTP	-
40	80029	Virginia Beach	City Line Rd - I-64 to Centerville Tpke	New 4 lane facility and interchange	LRTP	-
41		Virginia Beach	Constitution Drive from Bonney Rd to Columbus St	New 4 lane facility	SYIP/TIP	Underway
42	15828	Virginia Beach	Dam Neck Rd/Elbow Rd - Indian River Rd to VB Amphitheater	Widen to 4 lanes	LRTP	-
43		Virginia Beach	First Colonial Rd - Va Beach Blvd to Old Donation Rd	Widen to 6 lanes	LRTP	-
44		Virginia Beach	General Booth Blvd - Princess Anne Rd to Dam Neck Rd	Widen to 6 lanes	LRTP	-
45	15827	Virginia Beach	Holland Rd - Dam Neck Rd to Nimmo Pkwy	Widen to 4 lanes	LRTP	-
46		Virginia Beach	Holland Rd - Independence Blvd to Rosemont Rd	Widen to 6 lanes	LRTP	-
47		Virginia Beach	Holland Rd - Rosemont Rd to Dam Neck Rd	Widen to 6 lanes	LRTP	-
48		Virginia Beach	I-264 at Independence Blvd	Interchange improvements	LRTP	-
49	17630	Virginia Beach	I-264 at Witchduck Rd	Interchange improvements	LRTP	-
50		Virginia Beach	Independence Blvd - Haygood Rd to Northampton Blvd	Widen to 6 lanes	LRTP	-
51		Virginia Beach	Indian River Rd - Centerville Tpke to Ferrell Pkwy	Widen to 8 lanes	LRTP	-
52		Virginia Beach	Indian River Rd - Elbow Rd to North Landing Rd	Widen to 4 lanes	LRTP	-
53	15829	Virginia Beach	Indian River Rd - Lynnhaven Pkwy to Elbow Rd	Widen to 4 lanes	LRTP	-
54	14601	Virginia Beach	Laskin Rd - Birdneck Rd to Pacific Ave	Widen to 6 lanes	LRTP	-
55	12546	Virginia Beach	Laskin Rd - First Colonial Rd to Birdneck Rd	Widen to 6 lanes	LRTP	-
56	14603	Virginia Beach	Lynnhaven Pkwy - Centerville Tpke to Indian River Rd	New 4 lane facility	LRTP	-
57	52058	Virginia Beach	Nimmo Pkwy - Holland Rd to General Booth Blvd	New 4 lane facility	SYIP/TIP	FY 2012
58		Virginia Beach	Nimmo Pkwy - North Landing Rd to West Neck Rd	New 2 lane facility	LRTP	-
59	93522	Virginia Beach	Nimmo Pkwy - Princess Anne Rd to Holland Rd	New 4 lane facility	SYIP/TIP	FY 2011
60	93522	Virginia Beach	Princess Anne Rd - Dam Neck Rd to Nimmo Pkwy	Widen to 4 lanes	SYIP/TIP	Underway

Table 3 Continued – Roadway Widening Projects Included in the Six-Year Improvement Program/ Transportation Improvement Program or the Long-Range Transportation Plan

Map #	UPC Code	Jurisdiction	Facility	Project	Document	Projected Construction Begin
61		Virginia Beach	Princess Anne Rd - General Booth Blvd to Upton Dr	Widen to 4 lanes	LRTP	-
62		Virginia Beach	Providence Rd - Kempsville Rd to Princess Anne Rd	Widen to 4 lanes	LRTP	-
63		Virginia Beach	Rosemont Rd - Holland Rd to Va Beach Blvd	Widen to 6 lanes	LRTP	-
64		Virginia Beach	Salem Rd - Elbow Rd to Independence Blvd	Widen to 4 lanes	LRTP	-
65		Virginia Beach	Sandbridge Rd - Princess Anne Rd to Atwoodtown Rd	Widen to 4 lanes	LRTP	-
66		Virginia Beach	Seaboard Rd - Princess Anne Rd to Nimmo Pkwy	New 2 lane facility	LRTP	-
67	52148	Virginia Beach	Wesleyan Dr - Norfolk CL to Baker Rd	Widen to 4 lanes	SYIP/TIP	FY 2013
68		Virginia Beach	West Neck Pkwy - Indian River Rd to North Landing Rd	New 4 lane facility	LRTP	-
69		Virginia Beach	West Neck Pkwy - North Landing Rd to Dam Neck Rd	New 4 lane facility	LRTP	-
70		Virginia Beach	West Neck Rd - Indian River Rd to North Landing Rd	Widen to 4 lanes	LRTP	-
71	55202	Virginia Beach	Witchduck Rd - I-264 to Va Beach Blvd	Widen to 6 lanes	LRTP	-
72	93254	Virginia Beach	Witchduck Rd - Princess Anne Rd to I-264	Widen to 6 lanes	SYIP/TIP	Underway
73	60843	York	Route 17 - Hampton Hwy to Denbigh Blvd	Widen to 6 lanes	LRTP	-

Projects shown as being included in the LRTP are either only included in the Long-Range Transportation Plan or are not expected to begin construction by 2016. Projects shown as being included in the SYIP/TIP are expected to begin construction by 2016.

UPC Codes are unique Universal Project Codes assigned to each project by VDOT.

Sources: FY 2009-2012 Transportation Improvement Program, FY 2011-2016 Six-Year Improvement Program, Hampton Roads 2030 Amended Long-Range Transportation Plan.

Table 4 – Intersection/Interchange Improvements included in the Six-Year Improvement Program or the Transportation Improvement Program

Map #	UPC Code	Jurisdiction	Project	Projected Construction Begin
1	72798	Chesapeake	Intersection and ramp improvements - Hanbury Rd at the Chesapeake Expressway	FY 2011
2	94529	Chesapeake	Add left turn lane - Military Hwy at Baugher Ave	FY 2012
3	86502	Chesapeake	Add left turn lane - Military Hwy at Galberry Rd	Underway
4	52151	Chesapeake	Add left turn lane - Mount Pleasant Rd at Fentress Airfield Rd	FY 2011
5	56934	Gloucester	Route 17 - Widening and Install Median	Underway
6	86489	Hampton	Add left turn lane - Andrews Blvd at Woodland Rd	FY 2012
7	86497	Hampton	Extend left turn lane - Armistead Ave at Tidemill Ln	FY 2011
8	83199	Hampton	Add free flow lane - NB Big Bethel Rd at Hampton Roads Center Pkwy	FY 2011
9	86494	Hampton	Extend NB and SB left turn lane - Big Bethel Rd at Thomas Nelson Dr	FY 2012
10	86488	Hampton	Add left turn lane - Fox Hill Rd at Clemwood Pkwy	FY 2012
11	86490	Hampton	Add left turn lane - LaSalle Ave at Queen St	FY 2012
12	86678	Hampton	Add right turn acceleration lane - Magruder Blvd at Butler Farm Rd	FY 2011
13	89904	Hampton	Extend left turn lane - Magruder Blvd at Semple Farm Rd	FY 2012
14	83370	Hampton	Add second left turn lane - EB Mercury Blvd at Fox Hill Rd	FY 2011
15	81441	Hampton	Add turn lane - Pembroke Ave at Armistead Ave	FY 2011
16	86480	Hampton	Add left turn lane - Pembroke Ave at Grimes Rd	FY 2011
17	83454	Hampton	Add turn lanes - Todds Ln at Big Bethel Rd	FY 2012
18	95026	Isle of Wight	Extend left turn lane - Route 17 at Kings Cove Way	Underway
19	97010	James City	Intersection improvements - Richmond Rd at Airport Rd	FY 2011
20	94541	James City	Add turn lanes - Route 199 at John Tyler Hwy	Underway
21	89911	Newport News	Install roundabout - 25th St at Madison Ave	FY 2011
22	19022	Newport News	Intersection improvements - J Clyde Morris Blvd at Diligence Dr	Underway
23	14672	Norfolk	New railroad overpass of Hampton Blvd into Norfolk International Terminals	Underway
24	17824	Norfolk	Ramp improvement - I-64 at Norview Ave	FY 2012
25	84243	Norfolk	Intersection improvements - Military Hwy at Robin Hood Rd	FY 2013
26	84361	Norfolk	Intersection improvements - Princess Anne Rd at Sewells Point Rd	FY 2011
27	70276	Norfolk	Add second left turn lane - EB Va Beach Blvd at Newtown Rd	Underway
28	97054	Portsmouth	Intersection improvements - Frederick Blvd at Portsmouth Blvd	FY 2011
29	96908	Portsmouth	Intersection improvements - George Washington Hwy at Frederick Blvd	FY 2011
30	97011	Portsmouth	Intersection improvements - Portsmouth Blvd at Elmhurst Ln	FY 2011
31	17568	Suffolk	Intersection improvements - Nansemond Pkwy at Shoulders Hill Rd	Underway
32	84341	Virginia Beach	Intersection improvements - General Booth Blvd at London Bridge Rd	FY 2011
33	93662	Virginia Beach	Add left turn lane - General Booth Blvd at Nimmo Pkwy	FY 2011
34	94544	Virginia Beach	New interchange - I-264 at London Bridge Rd	Underway
35	93661	Virginia Beach	Add left turn lane - Independence Blvd at Buckner Blvd	FY 2012
36	84338	Virginia Beach	Intersection improvements - Independence Blvd at Dahlia Dr	FY 2011
37	84346	Virginia Beach	Intersection improvements - Independence Blvd at Lynnhaven Pkwy	Underway
38	84366	Virginia Beach	Intersection improvements - Indian River Rd at Kempsville Rd	FY 2011
39	51866	Virginia Beach	Intersection improvements - Princess Anne Rd at Kempsville Rd	FY 2011
40	84132	Virginia Beach	Intersection improvements - Princess Anne Rd at Salem Rd	Underway
41	84335	Virginia Beach	Intersection improvements - Rosemont Rd at Lynnhaven Pkwy	FY 2011
42	94459	York	Extend turn lane - Hampton Hwy at Tabb Smith Trail	Underway

UPC Codes are unique Universal Project Codes assigned to each project by VDOT.

Sources: FY 2009-2012 Transportation Improvement Program, FY 2011-2016 Six-Year Improvement Program.

IDENTIFICATION OF CONGESTED LOCATIONS

This section provides a thorough assessment of the roadway system in Hampton Roads and updates the regional level of service (LOS) congestion analysis (afternoon peak hour) for the 2009 Existing and 2030 roadway networks. As mentioned previously, the CMP analysis includes all interstates, freeways and other expressways, principal arterials, and minor arterials as well as selected collectors throughout Hampton Roads. The congestion identification analysis is presently limited to roadways due to reliable data constraints of other transportation modes and facilities. The results of this analysis will enable the region to identify corridors that are experiencing severe congestion levels today and into the future.

LEVEL OF SERVICE DEFINITIONS

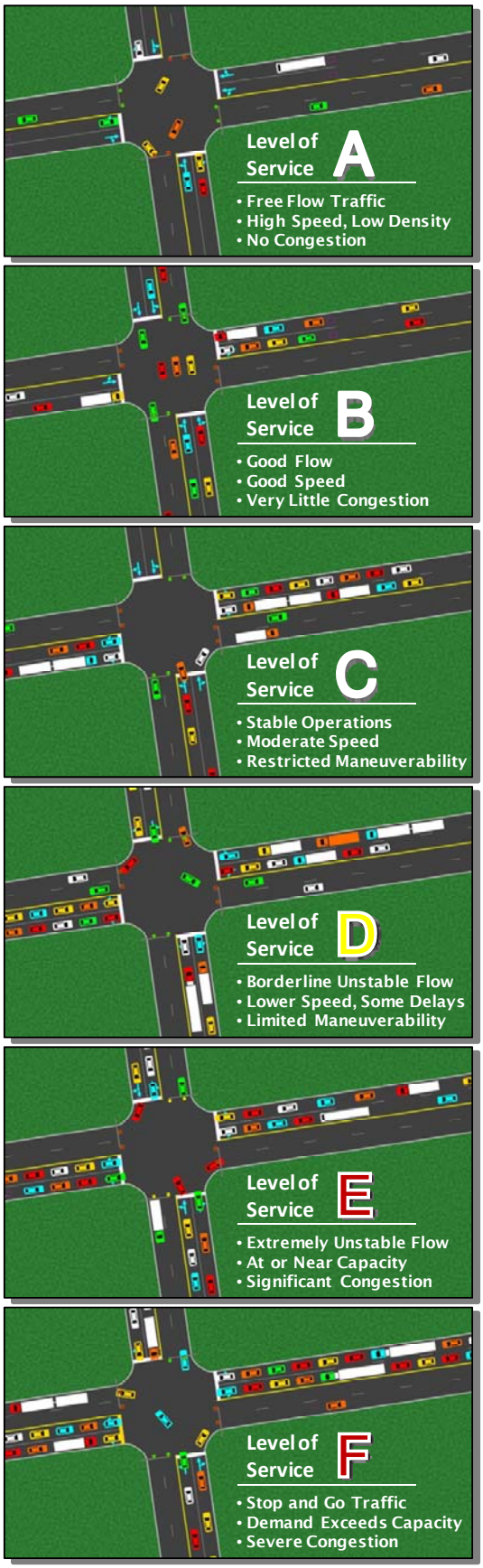
Roadway congestion levels were determined using a widely accepted engineering standard from the *Highway Capacity Manual* (HCM)[7] called Level of Service (LOS). Level of Service is measured on a scale of "A" through "F," with LOS A representing the best operating conditions and LOS F representing the worst (see **Figure 12**). Levels of Service A through D are considered to be acceptable operating conditions, while Levels of Service E and F (indicated in red in upcoming maps and tables) are considered to be unacceptable operating conditions. LOS D (indicated in yellow) is the "warning" level condition where favorable conditions are on the verge of becoming unfavorable.

METHODOLOGY

For the 2009 Existing congestion analysis (PM peak hour), LOS software[8] based on HCM was utilized to compute congestion levels based on various roadway, traffic, and signal control characteristics for each roadway segment, using the most recent traffic

[7] *Highway Capacity Manual*, Transportation Research Board, 2000
[8] LOSPLAN Software, Florida Department of Transportation, 2004

Figure 12 – Level of Service Definitions



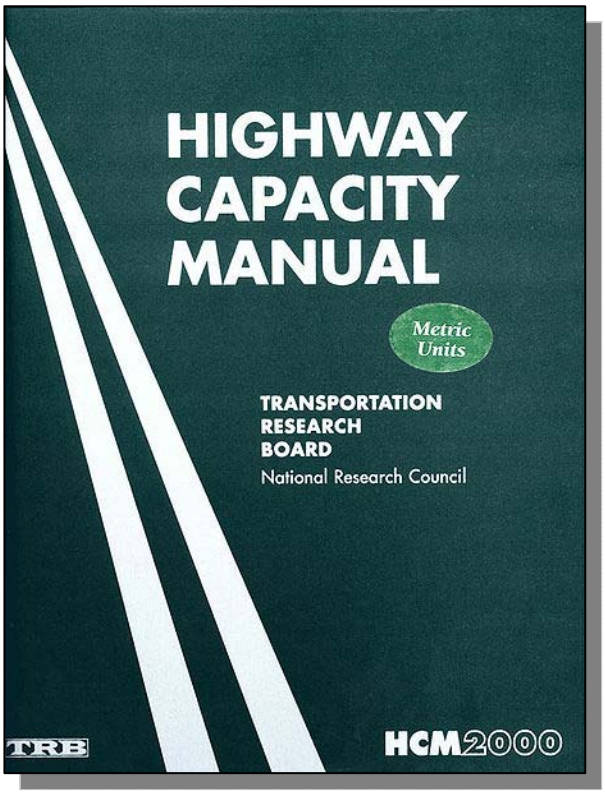
Simulation Source: Synchro/SimTraffic 7

count that was available (usually 2007 – 2009). For this analysis, the PM peak hour (highest volume of traffic in four consecutive 15-minute periods from 3 to 7 pm) was determined for each roadway segment during a typical weekday. It is important to note that although AM peak hour, off-peak, weekend, and special events traffic conditions are not included in this analysis, they should be considered in order to optimize traffic flow throughout the day.

Three levels of analysis are generally used in computing levels of service: (1) Generalized Planning (2) Conceptual Planning, and (3) Operational Analysis. Generalized planning uses generalized tables with many default values to calculate "in the ballpark" levels of service. Conceptual planning is more detailed than generalized planning, however it does not involve comprehensive operational analysis. Conceptual planning includes additional roadway factors and characteristics, such as number of through lanes, signals per mile, median type, and peak hour factors. An operational analysis may include factors such as intersection signal timing, turn bay lengths, and turning movements into and out of driveways along a facility.

The CMP study uses a conceptual planning level analysis for the 2009 Existing and 2030 projected travel conditions and is best suited for obtaining a solid determination of the LOS of a facility. The 2030 congestion levels were determined using the volumes and improvement projects contained in the 2030 Amended Long-Range Transportation Plan. Since the CMP covers the entire region, an operational level analysis was not practical due to lack of detailed data for all roadways. For many of the most congested corridors that are identified in the CMP, HRTPO staff recommends a corridor study with an operational analysis (i.e. using Synchro or Highway Capacity Software) be undertaken to produce detailed results and recommendations.

The LOS software used in this study does not have the ability to model delays associated with special conditions, such as drawbridges or railroad crossings. Levels of service for roadways with these conditions could be significantly worse than the results indicate, especially when interruptions occur during peak hours.



CMP Levels of Service are calculated based on methods included in the *Highway Capacity Manual*

2030 Congestion Levels

The 2030 congestion levels were determined with the assumption that all improvement projects contained in the 2030 Amended Long-Range Transportation Plan are built by 2030. If transportation funding levels are not sufficient to construct all of these projects by 2030, congestion levels will likely be worse than what is shown in the upcoming tables, maps, and summaries.

2009 EXISTING AND 2030 CONGESTED LOCATIONS

The overall results of the CMP congestion analysis (**Figure 13**) show that approximately 592 lane-miles or 12% of the 2009 Existing roadway network's total lane-miles (4,776) are operating at unacceptable/ severe conditions (LOS E or F) during the PM peak hour. Another 942 lane-miles (20%) currently experience moderate congestion (LOS D) during the PM peak hour, and the remaining 3,242 lane-miles (68%) experience low to moderate congestion (LOS A-C).

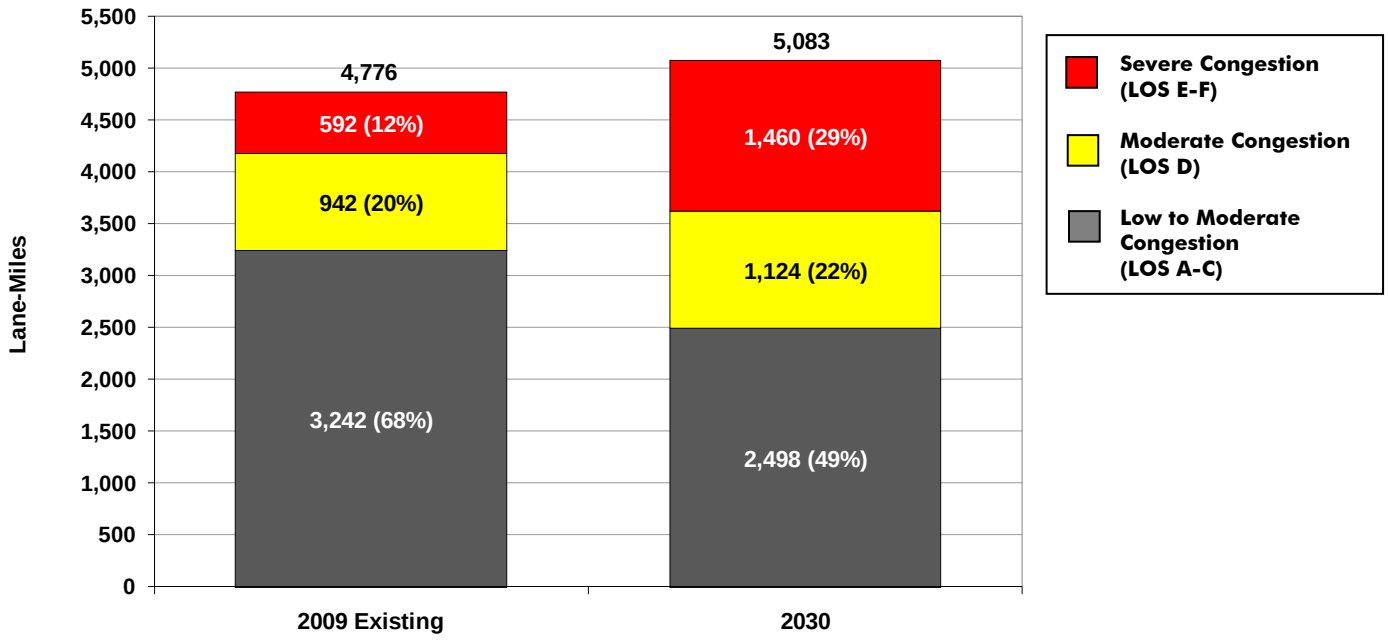
By the year 2030, the number of severely congested lane-miles (LOS E or F) during the PM peak hour is expected to more than double from the 592 lane-miles in the 2009 Existing network to 1,460 lane-miles. In fact, nearly a third (29%) of the entire CMP roadway network is expected to operate at unacceptable/severe conditions in 2030, up from 12%. Less than half (49%) of the lane-miles in the 2030 CMP network are expected to contain low to moderate congestion (LOS A-C), down from 68% in the 2009 Existing network.

As mentioned in the previous section, these figures resulting from congestion analysis include only those roadways in the CMP network within the Hampton Roads Metropolitan Planning Area (MPA). Although levels of service were determined for roadways in the City of Franklin and Southampton County, these two jurisdictions are excluded from these statistics since they fall outside of the MPA.

All of the severely congested roadways (LOS E or F) in the 2009 Existing and 2030 networks are indicated in red in the upcoming maps and tables. Roads that are moderately congested (LOS D) are indicated in yellow. **Maps 5** and **6** on pages 29-30 display the 2009 Existing PM peak hour congestion levels for the Peninsula and Southside subregions of Hampton Roads, respectively. **Maps 7** and **8** on pages 31-32 display the 2030 PM peak hour congestion levels for the same subregions. **Map 9** on page 33 provides a side by side comparison of 2009 Existing and the 2030 congested locations for the PM peak hour.

Afternoon peak hour levels of service are also

Figure 13 – 2009 Existing and 2030 Levels of Service by Lane-Mile for the CMP Roadway Network (PM Peak Hour)

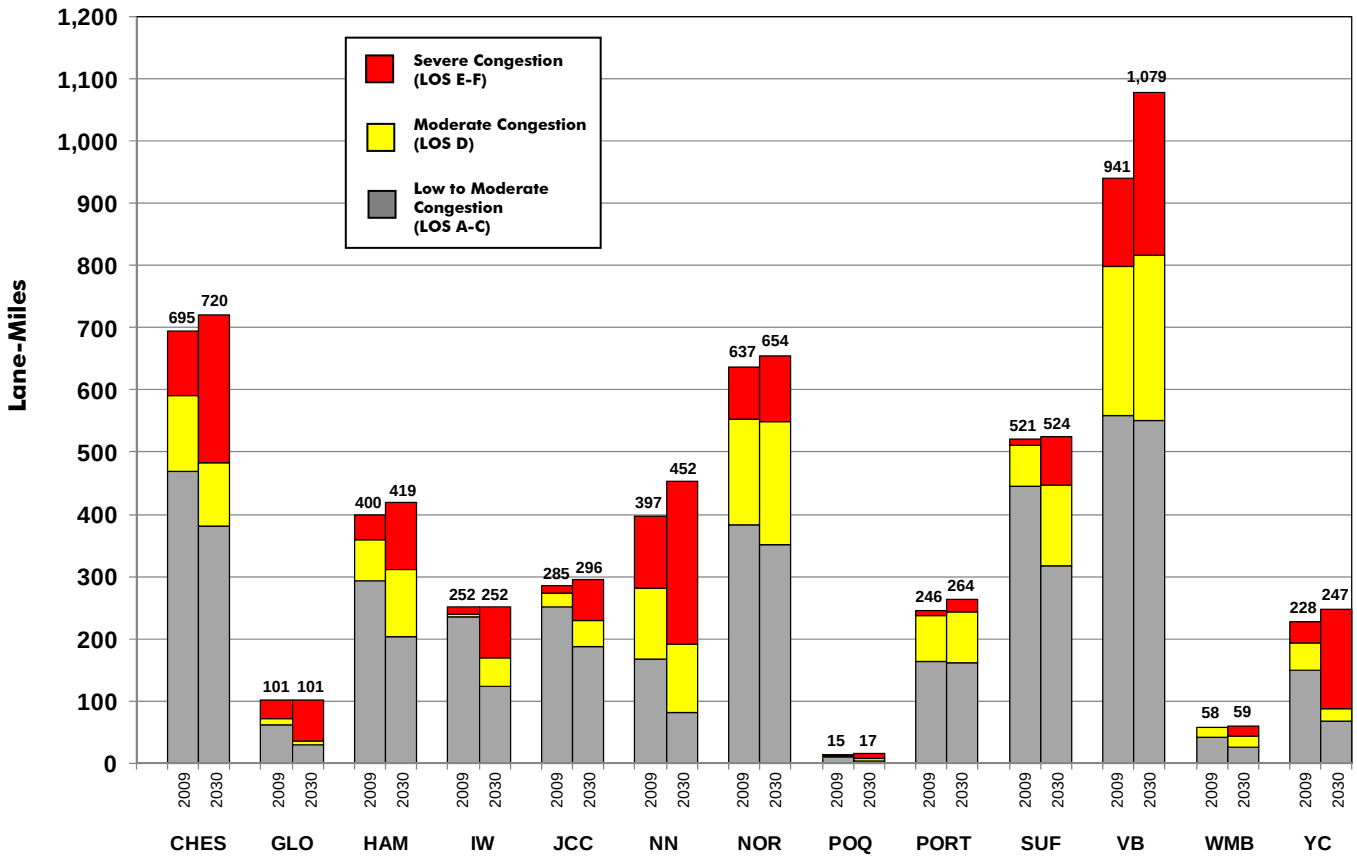


* Numbers above each bar represent the total number of lane-miles for that year.

provided in table format in alphabetical order by jurisdiction for every CMP roadway segment for the 2009 Existing and 2030 travel conditions in **Appendix A (Interstates and Freeways/Expressways)** and **Appendix B (Arterials and Collectors)**. In addition to congestion levels, other data is provided in these appendices for reference, including roadway segment length (miles), existing and projected 2030 daily traffic volumes, the number of existing and 2030 lanes, the existing volume to capacity ratios during the PM peak hour, and CMP congestion ranking (see section entitled "Ranking of CMP Congested Corridors" on page 34 for further discussion).

Figure 14 provides a detailed summary of congestion levels for the 2009 Existing and 2030 roadway networks for each Hampton Roads jurisdiction. Although Virginia Beach has the highest number of severely congested lane-miles in both the 2009 Existing and 2030 networks, Newport News is expected to experience the largest increase in the number of severely congested lane-miles (144 lane-miles) between 2009 and 2030, followed by Chesapeake (133 lane-miles) and York County (125 lane-miles). In fact, every jurisdiction in Hampton Roads is expected to see their number of severely congested lane-miles at least double between 2009 and 2030, with the exception of Norfolk and Virginia Beach.

Figure 14 – 2009 Existing and 2030 Levels of Service by Lane-Mile for Each Jurisdiction (PM Peak Hour)



* Numbers above each bar represent the total number of lane-miles for that year.

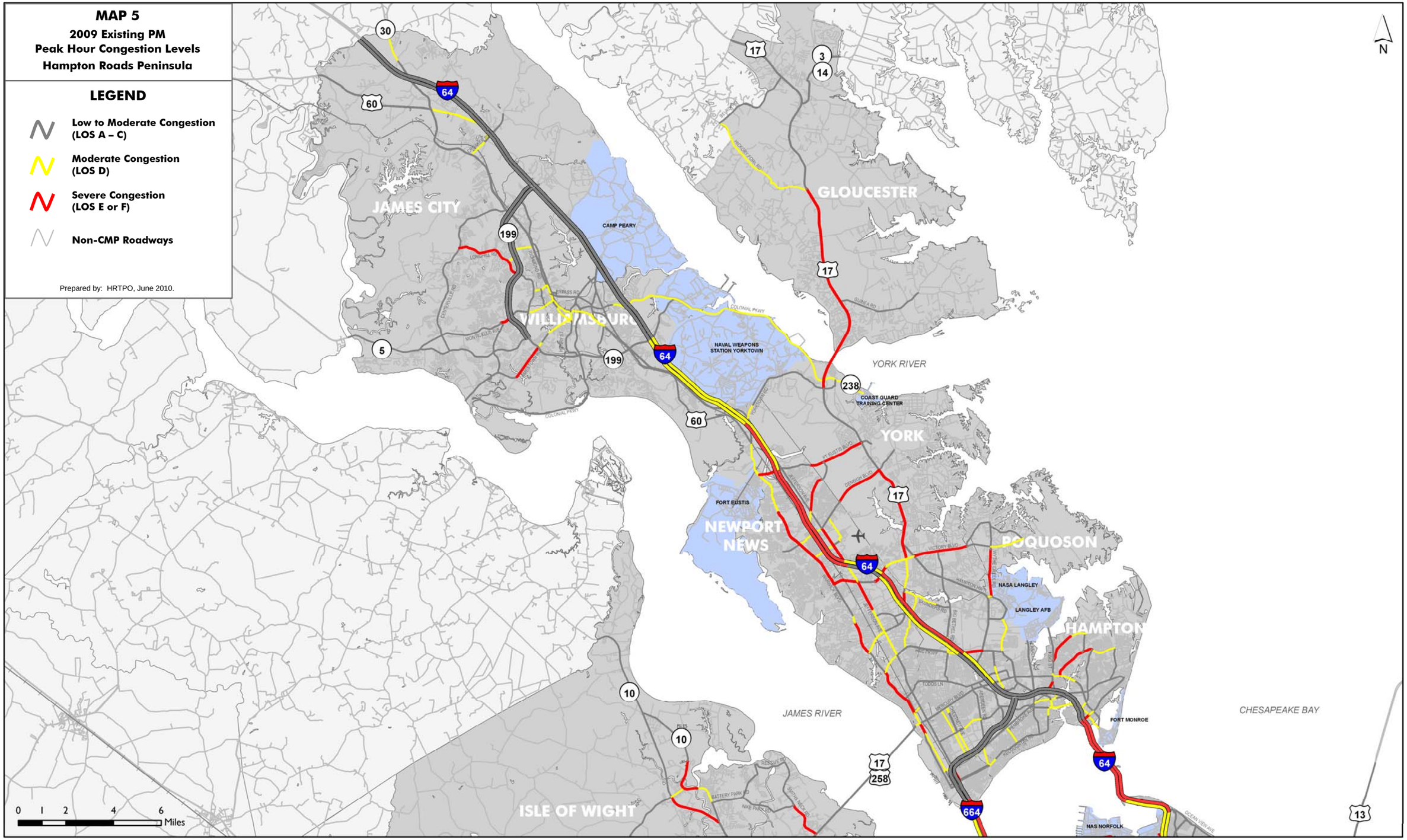
MAP 5

2009 Existing PM
Peak Hour Congestion Levels
Hampton Roads Peninsula

LEGEND

- Low to Moderate Congestion (LOS A – C)
- Moderate Congestion (LOS D)
- Severe Congestion (LOS E or F)
- Non-CMP Roadways

Prepared by: HRTPO, June 2010.



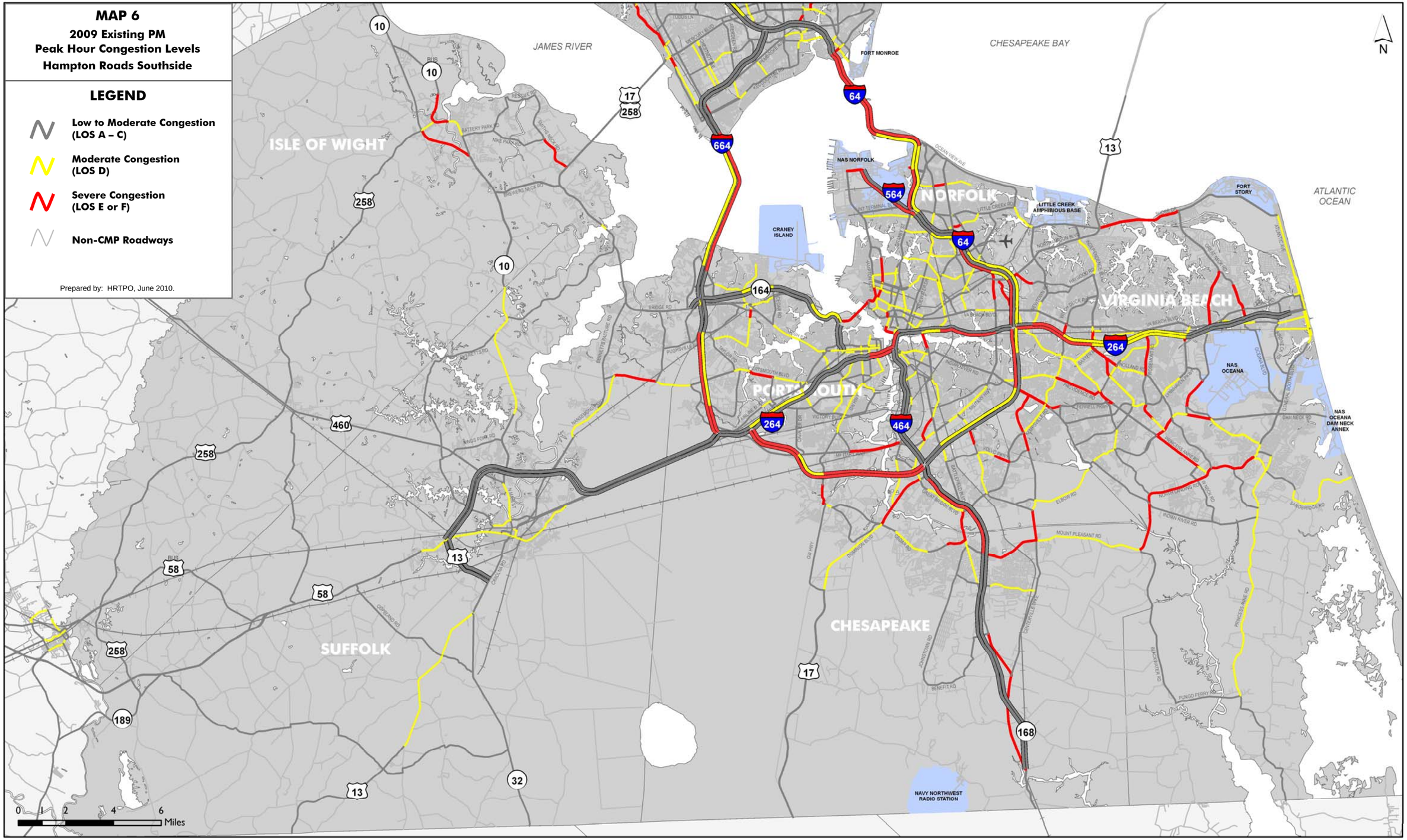
MAP 6

2009 Existing PM
Peak Hour Congestion Levels
Hampton Roads Southside

LEGEND

- Low to Moderate Congestion (LOS A – C)
- Moderate Congestion (LOS D)
- Severe Congestion (LOS E or F)
- Non-CMP Roadways

Prepared by: HRTPO, June 2010.

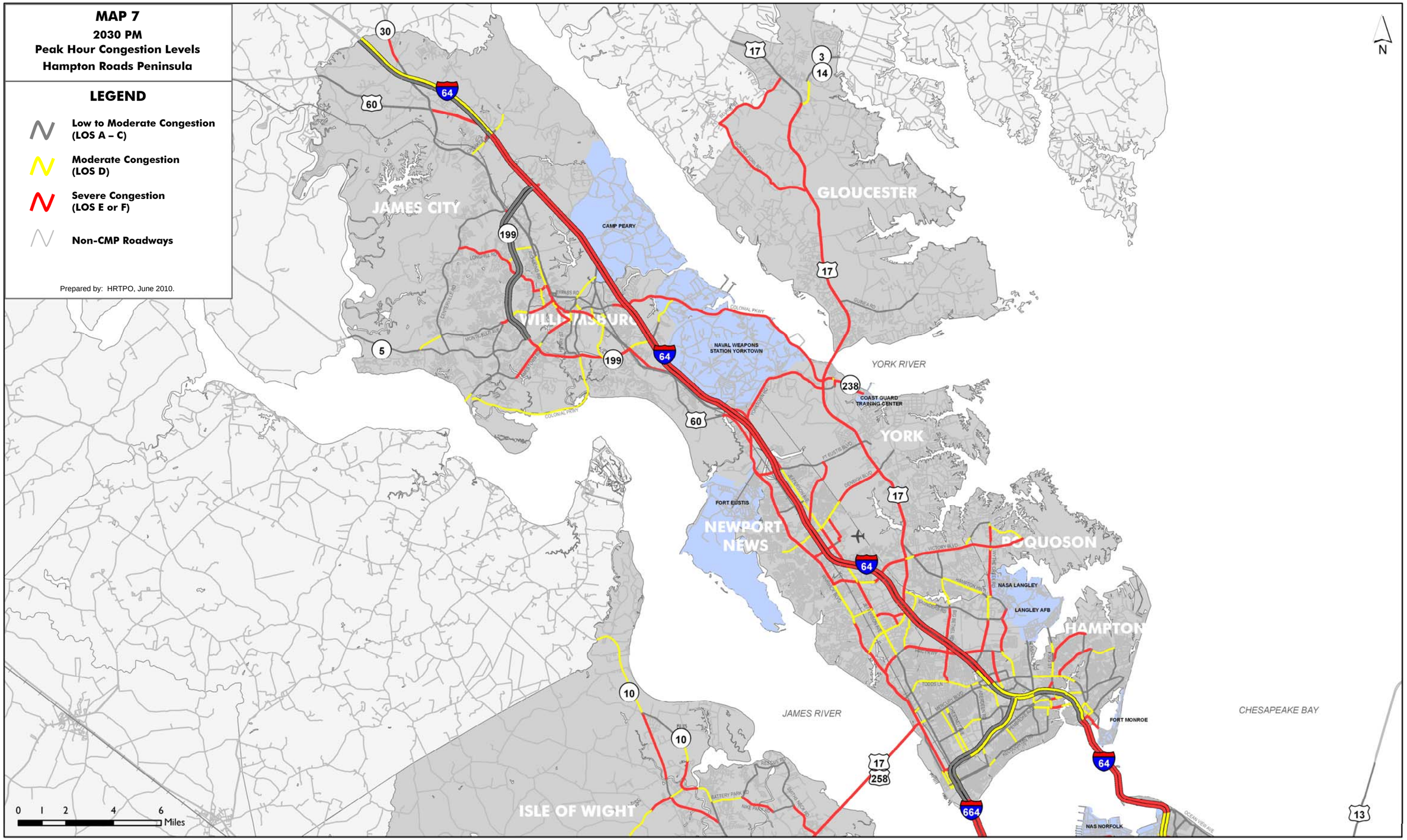


MAP 7
2030 PM
Peak Hour Congestion Levels
Hampton Roads Peninsula

LEGEND

- Low to Moderate Congestion (LOS A – C)
- Moderate Congestion (LOS D)
- Severe Congestion (LOS E or F)
- Non-CMP Roadways

Prepared by: HRTPO, June 2010.



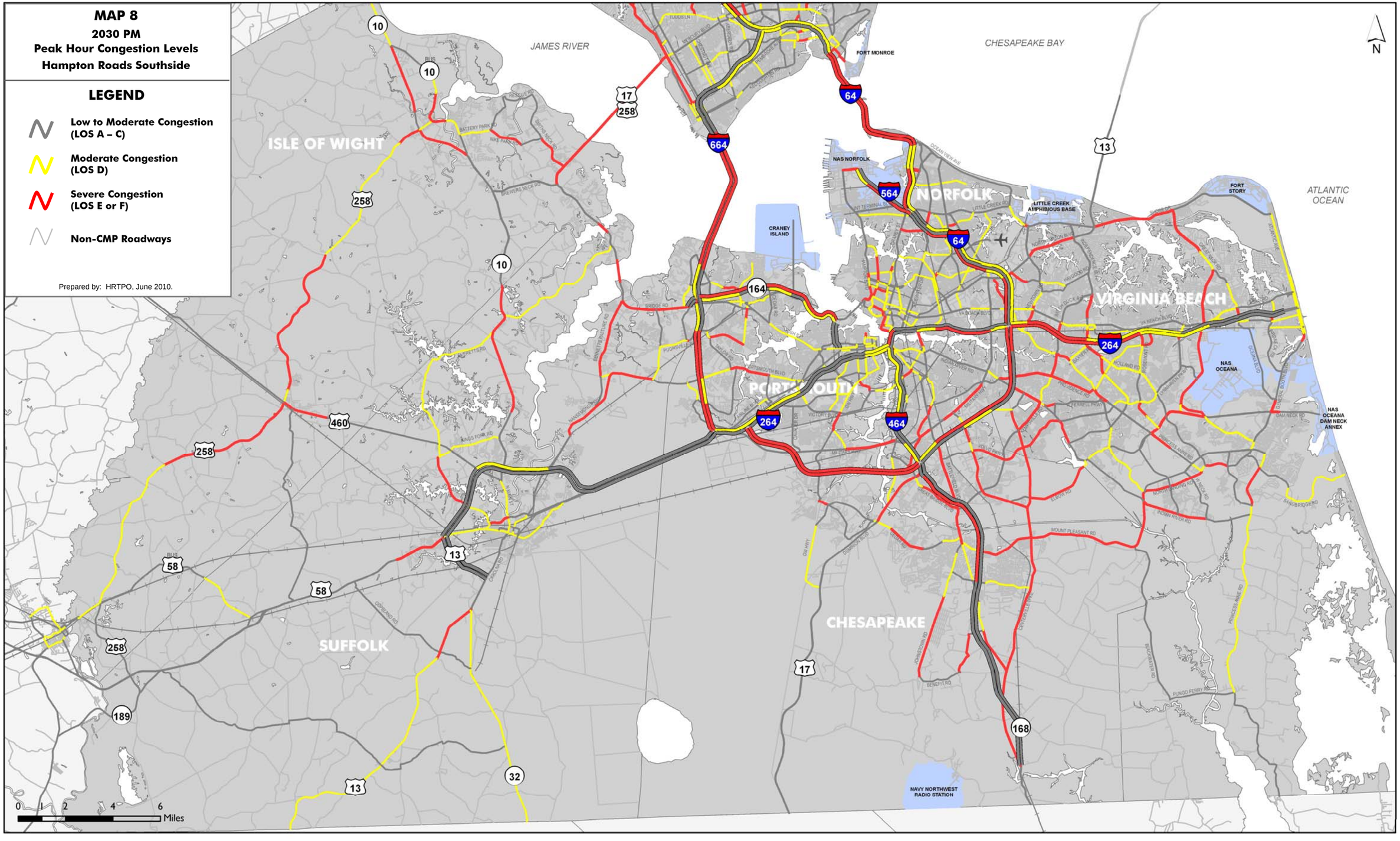
MAP 8

2030 PM
Peak Hour Congestion Levels
Hampton Roads Southside

LEGEND

- Low to Moderate Congestion (LOS A – C)
- Moderate Congestion (LOS D)
- Severe Congestion (LOS E or F)
- Non-CMP Roadways

Prepared by: HRTPO, June 2010.



2009 Existing

2030

MAP 9

PM Peak Hour Congestion Levels

2009 Existing and 2030

LEGEND

Low to Moderate Congestion (LOS A – D)

Severe Congestion (LOS E or F)

Percent of Lane Miles Severely Congested

Existing	2030
12%	29%

Prepared by: HRTPO, June 2010.

YORK RIVER

JAMES RIVER

CHESAPEAKE BAY

ATLANTIC OCEAN

RANKING OF CMP CONGESTED CORRIDORS

Roadway congestion is prevalent throughout Hampton Roads, as was shown in the previous section. Since transportation funding levels are not adequate to address most roadway deficiencies, it is imperative to select those projects that will be the most beneficial to the region. With 592 lane-miles in Hampton Roads that are currently severely congested during the PM peak hour, additional criteria were needed to rank and differentiate between the most critical corridors in the region. This section details the methodology used to determine which congested corridors throughout Hampton Roads would be analyzed in this CMP report.

CMP SEGMENT RANKING CRITERIA

A variety of factors were considered for comparing congested locations. Based on an assessment of available data as well as discussions with other transportation professionals throughout the region, five factors were included in the CMP Segment Ranking Criteria as shown below.

CMP SEGMENT RANKING CRITERIA

1) Existing Level of Service
2) Freight
3) Safety
4) Travel Speeds
5) National Highway System (NHS)/Strategic Highway Network (STRAHNET)

Other factors were considered but ultimately excluded from the CMP Segment Ranking Criteria. These criteria included traffic density (in terms of daily traffic volume per lane), the locations of future projects, and future levels of service. Traffic density was excluded from the ranking criteria because it largely replicated the existing level of service conditions. The location of future projects and future levels of service were also excluded due to the large number of changes that have occurred and will likely continue to occur in the Six-Year Improvement Program, Transportation Improvement Program, and 2030 Long-Range Transportation Plan.

Once these five criteria were selected, weights were applied to each criterion to produce scores for each congested roadway segment. Only those roadway segments that are currently congested (LOS E or F) had scores assigned to them. **Table 5** shows the weights that were assigned to each of these five criteria. The maximum score that any roadway segment could achieve was 25 points. CMP Segment Ranking Scores for each roadway segment are included in **Appendices A and B**.

Table 5 – CMP Segment Ranking Criteria Weights

	ARTERIALS		FREEWAYS	
CMP CRITERIA	VALUE	SCORE	VALUE	SCORE
Existing LOS[1] (10 point max.)	LOS A-D	0	LOS A-D	0
	LOS E	8	LOS E	8
	LOS F	10	LOS F	10
Freight[2] (5 point max.)	Daily # of Trucks		Daily # of Trucks	
	≤ 500	0	≤ 1500	0
	501 - 1000	2	1501 - 3000	2
	> 1000	3	> 3000	3
	Daily % of Trucks		Daily % of Trucks	
	≤ 4%	0	≤ 4%	0
	4% - 8%	1	4% - 8%	1
	> 8%	2	> 8%	2
Safety[3] (5 point max.)	Percentile		EPDO Rate Per MVMT	
	0th - 25th	0	≤ 1	0
	25th - 50th	0	1 - 2	0
	50th - 75th	3	2 - 3	3
	75th - 100th	5	> 3	5
HRPDC 2005 Travel Time[4] (2 point max.)	LOS A-D	0	LOS A-D	0
	LOS E	1	LOS E	1
	LOS F	2	LOS F	2
NHS/Strahnet (3 point max.)	None	0	None	0
	NHS	2	NHS	2
	STRAHNET	3	STRAHNET	3

1 – Roadway segment must have an Existing LOS of E or F to be scored.
2 – Based on VDOT vehicle classification data. For those locations where truck data is not collected by VDOT, VDOT estimates were used.
3 – Based on VDOT crash data. For freeways, data from 2006-2008 was used and freeways were analyzed based on the Equivalent Property Damage Only (EPDO) Rate per million vehicle-miles of travel (MVMT). This rate takes into account the number and severity of crashes per amount of travel. For arterials, only data from 2008 was used since VDOT began including the location of all crashes within cities in 2008. Since only one year of data was available, arterials were scored based on their percentile relative to all CMP roadway segments in terms of the total number of crashes.
4 – Based on the Regional Travel Time collected by HRPDC in 2005. Levels of Service were determined based on these travel speeds by using Highway Capacity Manual methods. The direction with the lowest travel speed was used on all arterial segments.

Although CMP Segment Ranking Scores were produced for each congested roadway segment in the region, these segments needed to be grouped into corridors for analysis purposes. Congested corridors were created based on the location and proximity of each of the congested roadway segments. A total of 41 congested corridors throughout Hampton Roads, 12 of which are on the freeway system and 29 of which are on the arterial system, were created and ranked in this process.

These 41 congested corridors were ranked based on four factors: the CMP Segment Ranking Scores of each roadway segment within the corridor, the daily traffic volume on each roadway segment, the number of lanes, and the length of each roadway segment. These factors were used to produce a CMP Weighted Corridor Score for all 41 congested corridors. The process used to produce the CMP Weighted Corridor Scores is described in detail in **Appendix C**.

Based on the CMP Weighted Corridor Score, the top 6 freeway and top 10 arterial corridors were selected as CMP Congested Corridors as shown in **Table 6**. Each of these 16 CMP Congested Corridors is examined in detail in the Application of Strategies to CMP Congested Corridors section, which begins on page 52.

Although the remaining 25 corridors are not analyzed in this report, congestion remains a problem within these corridors. These corridors, shown in **Table 7**, should be considered in any future studies regarding congested locations throughout Hampton Roads, including future Congestion Management Process report updates.

Table 6 – CMP Congested Corridors

Freeways

Rank	Jurisdiction	CMP Congested Corridor
1	HAM/NOR	Hampton Roads Bridge-Tunnel
2	NOR/PORT	Downtown Tunnel/Berkley Bridge
3	VB	I-264 from Newtown Rd to Independence Blvd
4	NN	I-64 from Yorktown Rd to Jefferson Ave
5	NOR/VB	I-64 from Northampton Blvd to Indian River Rd
6	CHES	I-64 from I-264/I-664 to I-464/Chesapeake Expressway

Arterials

Rank	Jurisdiction	CMP Congested Corridor
1	NOR/PORT	Hampton Blvd/Midtown Tunnel from Western Fwy to 26th St
2	CHES	Dominion Blvd from Cedar Rd to Chesapeake Exp
3	VB	Indian River Rd/Ferrell Pkwy from I-64 to Indian Lakes Blvd
4	VB	Witchduck Rd from I-264 to Virginia Beach Blvd
5	CHES	Greenbrier Pkwy from Volvo Pkwy to I-64
6	NOR	Campostella Blvd from I-264 to Wilson Rd
7	NN	Jefferson Ave from Thimble Shoals Blvd to Denbigh Blvd
8	VB	Independence Blvd/Holland Rd from Va Beach Blvd to South Plaza Trail
9	NN/YC	Route 17 from I-64 to Denbigh Blvd
10	NOR	Military Hwy from Lowery Rd to I-64

Table 7 – Other Congested Corridors Not Included in Analysis

Freeways

Jurisdiction	CMP Congested Corridor
CHES	Chesapeake Expressway from Mount Pleasant Rd to I-64
NOR	I-64 from Norview Avenue to Military Hwy
HAM/NN	I-64 from Oyster Point Rd to HRC Pkwy
NOR	I-264 from Ballentine Blvd to Military Hwy
NOR	I-564 from Admiral Taussig Blvd to I-64
CHES	I-664 from Montior-Merrimac Bridge-Tunnel to Routes 13/58/460

Arterials

Jurisdiction	CMP Congested Corridor
CHES	Cedar/Battlefield from Briarfield Rd to Great Bridge Blvd
VB	Centerville Tpke from Lynnhaven Pkwy to Indian River Rd
CHES	Centerville Tpke from Mount Pleasant Rd to Butts Station Rd
VB	Dam Neck Rd from Princess Anne Rd to London Bridge Rd
VB	First Colonial Rd from I-264 to Old Donation Pkwy
NN/YC	Fort Eustis Blvd from Warwick Blvd to Route 17
CHES	George Washington Hwy from Moses Grandy Trail to I-64
VB	London Bridge Rd from Shipps Corner Rd to International Pkwy
CHES	Military Hwy from Canal Rd to I-464
CHES/VB	North Landing Rd from Blackwater Rd to General Booth Blvd
NN	Oyster Point Rd/Victory Blvd from Warwick Blvd to York CL
VB	Rosemont Rd from Faculty Dr to I-264
IW	Route 10 from Route 258 to Bus Route 10
GLO/YC	Route 17 from Goosley Rd to Hickory Fork Rd
VB	Shore Drive from Northampton Blvd to Great Neck Rd
YC	Victory Blvd from Hampton Hwy to Poquoson CL
NN	Warwick Blvd from Deep Creek Rd to Huntington Ave
NN	Warwick Blvd from Snidow Blvd to Oyster Point Rd
NOR/VB	Wesleyan Dr from Northampton Blvd to Baker Rd

IDENTIFICATION OF CONGESTION MITIGATION STRATEGIES

The first critical step in solving congestion problems in Hampton Roads is to identify and develop potential congestion mitigation strategies. As a part of the CMP, a "toolbox" of specific congestion mitigation measures has been assembled to promote strategic solutions involving all modes of transportation, better land development, and more efficient use of the existing transportation system as required by federal CMP regulations.

HRTPO CONGESTION MITIGATION STRATEGIES

1) Eliminate Person Trips or Reduce VMT
2) Shift Trips from Automobile to Other Modes
3) Shift Trips from SOV to HOV
4) Improve Roadway Operations
5) Add Capacity

During the strategy evaluation process, it is important to consider using the strategies in the order presented in a "top-down" approach that would examine strategies to eliminate or shift automobile trips or improve roadway operations prior to adding capacity. Given today's economic conditions and budgetary constraints, it is imperative to first investigate strategies that utilize the existing capacity on our transportation network. It is also important for regional decision makers, planners, engineers, and other agencies involved with transportation to communicate and coordinate their efforts on a regular basis to solve existing problems and mitigate future congestion in Hampton Roads.

Table 8 below provides a detailed description of all five strategies contained in the Congestion Mitigation Strategy "Toolbox"[9]. It also provides examples and ways to apply these techniques and strategies to reduce overall congestion. Most of the congestion mitigation strategies are intended to be applied to individual corridors; however, there are several strategies that may be applied to the entire region.

Table 8 – Congestion Mitigation Strategy "Toolbox"

Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	Encourage more efficient patterns of commercial or residential development in defined areas. Specific land use policies and/or regulations that could significantly decrease both the total number of trips and overall trip lengths, as well as making transit use, bicycling and walking more viable include, but are not limited to the following: · Encouraging development in existing centers and/or communities (i.e. infill development) · Discouraging development outside of designated growth areas · Promoting higher density and mixed uses in proximity to existing or planned transit service · Establishing a policy for new and existing subdivisions to include sidewalks, bike paths, and transit facilities where appropriate
	Congestion/Value Pricing	
	1-2 Road User Fees/HOT Lanes	Includes area-wide pricing fees, time-of-day/congestion pricing and tolls. Most appropriately applied to freeways and expressways. Requires infrastructure to collect user fees. High Occupancy Toll (HOT) lanes – combines HOV and pricing strategies by allowing single occupancy vehicles to gain access to HOV lanes by paying a toll.
	1-3 Parking Fees	Market-based strategy designed to modify mode choice by imposing higher costs for parking private automobiles. Most appropriately applied to parking facilities in urban environments.
	Transportation Demand Management	
	1-4 Telecommuting	Encouraging employers to consider telecommuting options full- or part-time to reduce travel demand.
	1-5 Employee Flextime Benefits/Compressed Work Week	Encouraging employers to consider allowing employees to maintain a flexible schedule - thus allowing the employee the option to commute during non-peak hours.

[9] Primary Source: Wilmington Area Planning Council (WILMAPCO), 2009 Congestion Management System.

Table 8 – Congestion Mitigation Strategy "Toolbox" continued

Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	Includes heavy rail, commuter rail, and light rail services. Most appropriately applied in a dense context serving a major employment center.
	2-2 Exclusive Right-of-Way - New Bus Facilities	Includes Busway, Bus Only Lanes, Bus Pull-Out Bays, and Bus Bypass Ramps. Most appropriately applied to freeways and expressways with high existing transit ridership rates.
	2-3 Ferry Services	Implement ferry services and supporting facilities.
	2-4 Fleet Expansion	Expansion of existing rail, bus, and/or ferry capacity to provide increased service.
	2-5 Improved Intermodal Connections	Improve the efficiency and functionality of intermodal connectors (i.e. expanded parking/improved access to stations) where several modes of transportation are physically and operationally integrated.
	2-6 Improved/Increased Park & Ride Facilites & Capital Improvements	Improve existing facilities and identify new locations.
	Public Transit Operational Improvements	
	2-7 Service Expansion	Includes increased service frequency/area, special events, and accomodations for persons with disabilities.
	2-8 Traffic Signal Preemption	Improve traffic flow for transit vehicles traveling through signalized intersections.
	2-9 Improved Transit Performance	Includes electronic fare payment, ticket vending machines, eliminating/consolidating stops, express transit routes, and improved transfers.
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	Includes system-wide reducitons, off-peak discounts and deep discount programs.
	2-11 Transit Information Systems	Improved in-vehicle and station information systems to improve the dissemination of transit-related information to the user.
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	Includes on-road facilities, pathways, and greenways.
	2-13 Bicycle Storage Systems	Providing safe and secure places for bicyclists to store their bicycles.
	2-14 Improved/Expanded Pedestrian Network	Includes sidewalks, pedestrian signals and signs, crosswalks, overpasses/tunnels, pedestrian only zones, countdown signals, street lighting, greenways, and walkways.
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	Most appropriate for freeways and expressways.
	3-2 HOV Toll Savings	Preferential pricing to multi-occupant vehicles. Requires infrastructure to administer toll collection.
	Transportation Demand Management	
	3-3 Rideshare Matching Services	Providing carpool/vanpool matching, ridesharing information resources and services, car sharing, and guaranteed ride programs.
	3-4 Vanpool/Employer Shuttle Program	Organizing groups of commuters to travel together in a passenger van or employer-provided shuttle on a regular basis.
	3-5 Trip Reduction Program	Organizing groups (i.e. employers) that offer tax incentives, commuter rewards, or transit subsidies on a regular basis.
	3-6 Parking Management	Preferential parking is a low-cost incentive that can be used to encourage the utilization of alternative commute modes, such as carpooling and vanpooling.

Table 8 – Congestion Mitigation Strategy "Toolbox" continued

Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**
	4-1 Geometric Improvements Improvements to roadway and intersection geometrics to improve overall efficiency and operation.
	4-2 Intersection Turn Restrictions Providing intersections turn restrictions to reduce conficts and increase overall intersection performance.
	4-3 Intersection Signalization Improvements Improving signal operations through re-timing signal phases, adding signal actuation, event/holiday timing plans, emergency vehicle preemption etc.
	4-4 Coordinated Intersections Signals Improving traffic signal progression along identified corridors.
	4-5 Roadway Environment Includes improvements in pavement markings, pavement condition, pavement reflectors, signage, rumble strips, guardrails, line-of-sight clearances, roadway lighting, etc. that improve roadway operations and congestion.
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS) Utilizing the latest technology to assist in congestion mitigation, information dissemination, and traffic planning efforts. Examples include road sensors, video detection, changeable message signs, SMART Tag (electronic toll), red light enforcement equipment, truck height/weight enforcement technologies, fiber optic network, ITS data archives, 511 Traveler service, and Smart Travel Laboratories.
	4-7 Reversible Lanes Reversible Lane Systems enable the maximum use of roadways with heavy directional distribution of traffic by changing the direction of the individual travel lanes. Lane control signs, displayed well in advance of a merge, are often used to close lanes with lower traffic volume and open additional lanes for higher volume.
	4-8 Freight Policies and Improvements Includes delivery hour restrictions, truck lane restrictions, truck route signage and enforcement, truck route diversion, truck only lanes, bridge lift restrictions, rail improvements, intermodal yards, etc.
	4-9 Incident Management, Detection, Response & Clearance Utilize traveler radio, travel alert notification (via e-mail, fax, etc.), and general public outreach to enhance incident-related information dissemination.
	4-10 Construction Management Minimizing congestion caused by roadway maintenance and construction, and alert travelers to construction activities.
	4-11 Elimination of Bottlenecks Eliminating high-traffic areas where one or more travel lane(s) is dropped.
	4-12 Ramp Metering Metering vehicular access to a freeway during peak periods to optimize the operational capacity of the freeway.
	4-13 Access Control and Connectivity Reduction or elimination of "side friction", especially from driveways via traffic engineering, regulatory techniques, and purchase of property rights. Also includes connections between properties, developments, and roadways.
	4-14 Median Control Addition of medians with turn bays via traffic engineering and regulatory techniques.
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**
	5-1 Freeway Lanes Increasing the capacity of congested freeways through additional travel lanes.
	5-2 Arterial lanes Increasing the capacity of congested arterials through additional travel lanes.
	5-3 Interchanges Improving Interchange design to allow smoother traffic flow to/from arterials.
	5-4 Improve Alternate Routes Constructing new roadways or increasing the capacity of other roadways that will decrease demand on congested existing facilities.

The Hampton Roads region is already implementing many of these congestion mitigation strategies through state, regional, and local initiatives. The following section provides some of the methods through which this is being done.

LAND USE AND ACTIVITY CENTERS

(Included in Strategy #1)

One strategy to mitigate congestion is to plan for and manage urban land use and growth patterns. Encouraging more efficient commercial and residential growth patterns can reduce both the number of trips as well as overall trip lengths. Since land use decisions are generally made at the local level, jurisdictions within Hampton Roads are encouraged to keep growth management strategies in mind. Land development strategies oftentimes incorporate public transit, bicycling, and walking, which help areas manage transportation demand and meet air quality conformity standards. Some examples of land use strategies include transit-oriented development, densification and infill strategies, and encouragement of mixed-use development.

Recently in Hampton Roads, several jurisdictions have planned and constructed high density mixed-use activity centers offering an assortment of modern offices, shops, entertainment, restaurants, apartments and condos in a single area. These developments offer residents a vibrant, livable community in which they can live, work, and play. Activity centers that are currently open and/or under development include: The Town Center of Virginia Beach, City Center at Oyster Point (Newport News), Coliseum Central/Peninsula Town Center (Hampton), Portsmouth City Center, Harbour View Station Town Center and Marketplace (Suffolk), Towne Place at Greenbrier (Chesapeake), and New Town (Williamsburg). Currently, many of these activity centers are destination points for residents living in the immediate area and those traveling by automobile. Some locations, such as the Town Center of Virginia Beach and City Center at Oyster Point, already have plans to incorporate future transit lines (i.e. light rail). It will be imperative that future connections be made between these locations and other high-density locations (i.e. downtown Norfolk and Virginia Beach Oceanfront) throughout the region via public transit (bus, light rail, and high speed rail) in order to reduce the number and length of overall auto trips in Hampton Roads.

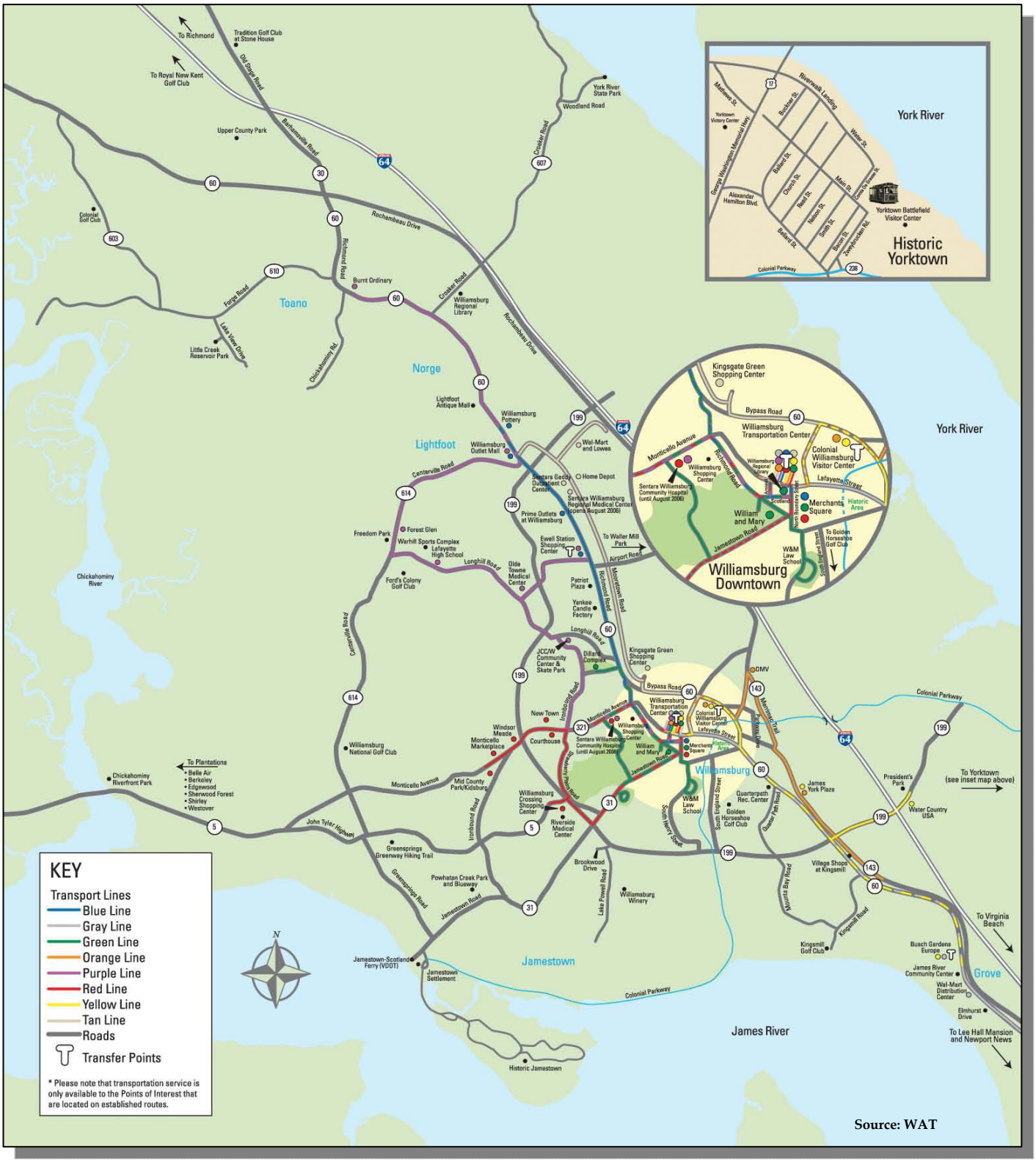
PUBLIC TRANSPORTATION

(Included in Strategy #2)

Public transportation is an integral component for addressing congestion in both the near-term and long-term. Transit services offer a cost-effective alternative to single occupant vehicles and can reduce the overall number of vehicles on the transportation network. Public transit capital improvements along a fixed route or guideway can lead to transit-oriented land development/redevelopment, which can boost ridership and overall success of the program. Transit vehicles, particularly buses that share local roadways, are vulnerable to congestion, which can limit transit's ability to maintain and attract new riders. For this reason, it is imperative to make the necessary improvements and accommodations for transit routes in order to maintain acceptable levels of service. Over the long term, public transit can provide a sustainable congestion mitigation strategy by shortening trip lengths from origins to destinations and moving more residents using fewer vehicles. *A Transit Vision Plan for Hampton Roads* (HRTPO, Draft) has recently been developed and should be used as a planning tool for mitigating regional congestion.

Williamsburg Area Transport

Williamsburg Area Transport (WAT) provides a public transportation system to citizens of James City County, the City of Williamsburg, and York County. WAT's primary objective is to "ensure that services meet the social and business needs of the community by providing a seamless coordinated regional transit system serving residents, visitors, and students through fixed routes and transportation service for the disabled." WAT currently has nine bus routes and one trolley route in operation seven days a week. **Map 10** on page 40 shows the existing bus routes for WAT. Visit www.williamsburgtransport.com for more information.



Map 10 – Williamsburg Area Transport (WAT) Bus Routes and Transfer Points

Hampton Roads Transit

Hampton Roads Transit (HRT) is the largest public transportation agency for the Hampton Roads region, serving a population of more than 1.3 million in seven cities including: Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, Suffolk, and Virginia Beach. HRT's mission is to serve the community through high quality, safe, efficient and sustainable regional transportation services.

HRT currently offers the following transit services:

- 70 Fixed Regular Bus Routes
- Handi-Ride – Service Available for Persons with Disabilities
- NET (Norfolk Electric Transit) – Serving Downtown Norfolk
- Paddlewheel Ferry – Serving Downtown Norfolk and Olde Towne Portsmouth
- Portsmouth Loop – Serving Olde Towne Portsmouth
- MAX (Metro Area Express) – Express Bus Service
- TRAFFIX – Providing transportation alternatives
- VB Wave – Serving Virginia Beach resort area

Maps 11 and **12** on pages 42-43 show the HRT bus system for the Hampton Roads Peninsula and Southside. Visit www.gohrt.com for more information on HRT services.

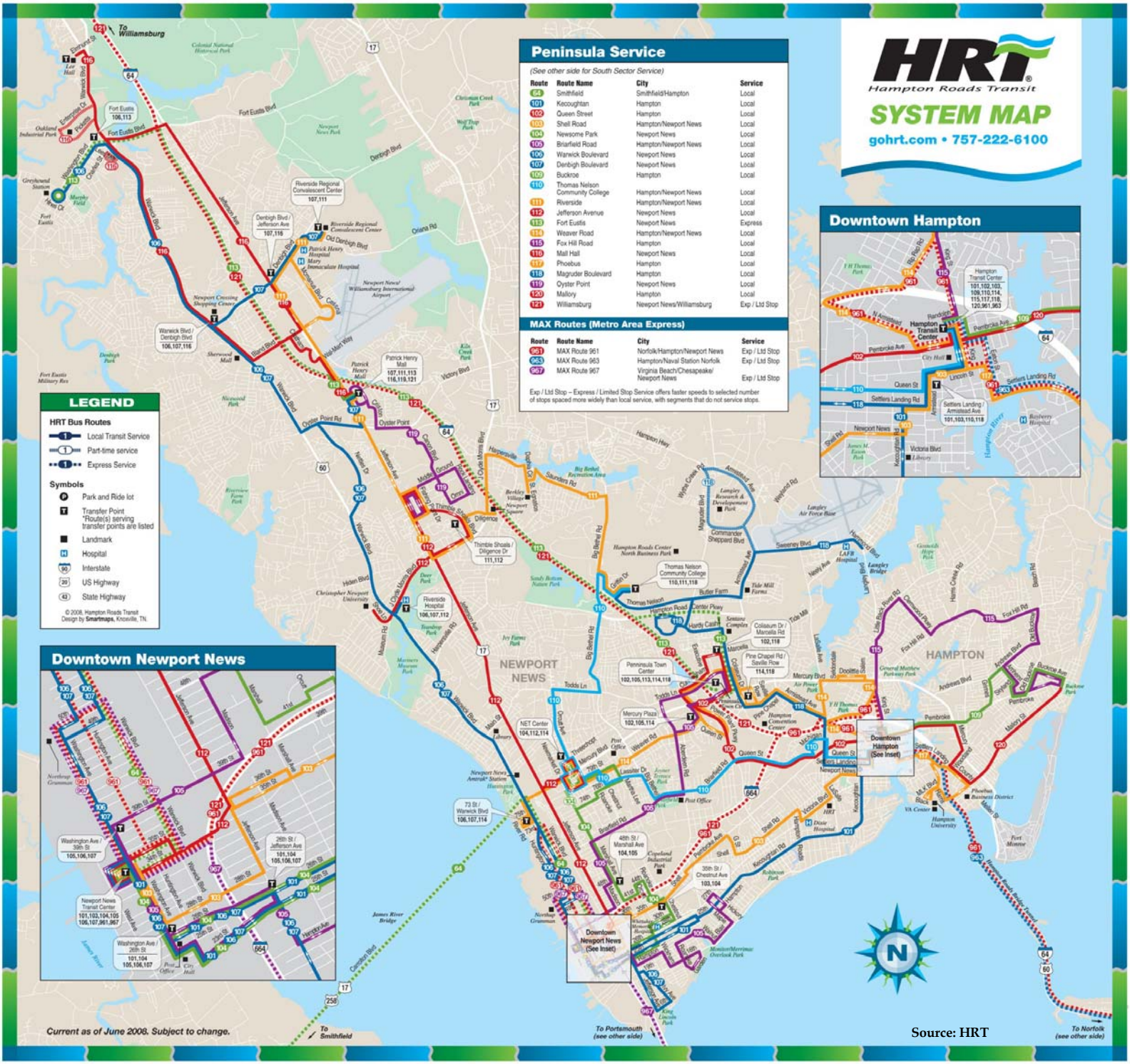
The Tide

"The Tide" light rail system is currently under construction. It will extend 7.4 miles from the Eastern Virginia Medical Center through downtown Norfolk, continuing along the former Norfolk Southern right-of-way adjacent to I-264 to Newtown Road. Eleven stations will be constructed along the route (four with park and ride facilities), providing access to major areas such as Norfolk State University, Tidewater Community College (Norfolk Campus), Harbor Park, City Hall, MacArthur Center, and the Sentara Norfolk General Hospital. **Map 13** on page 44 shows the Tide route and stations.

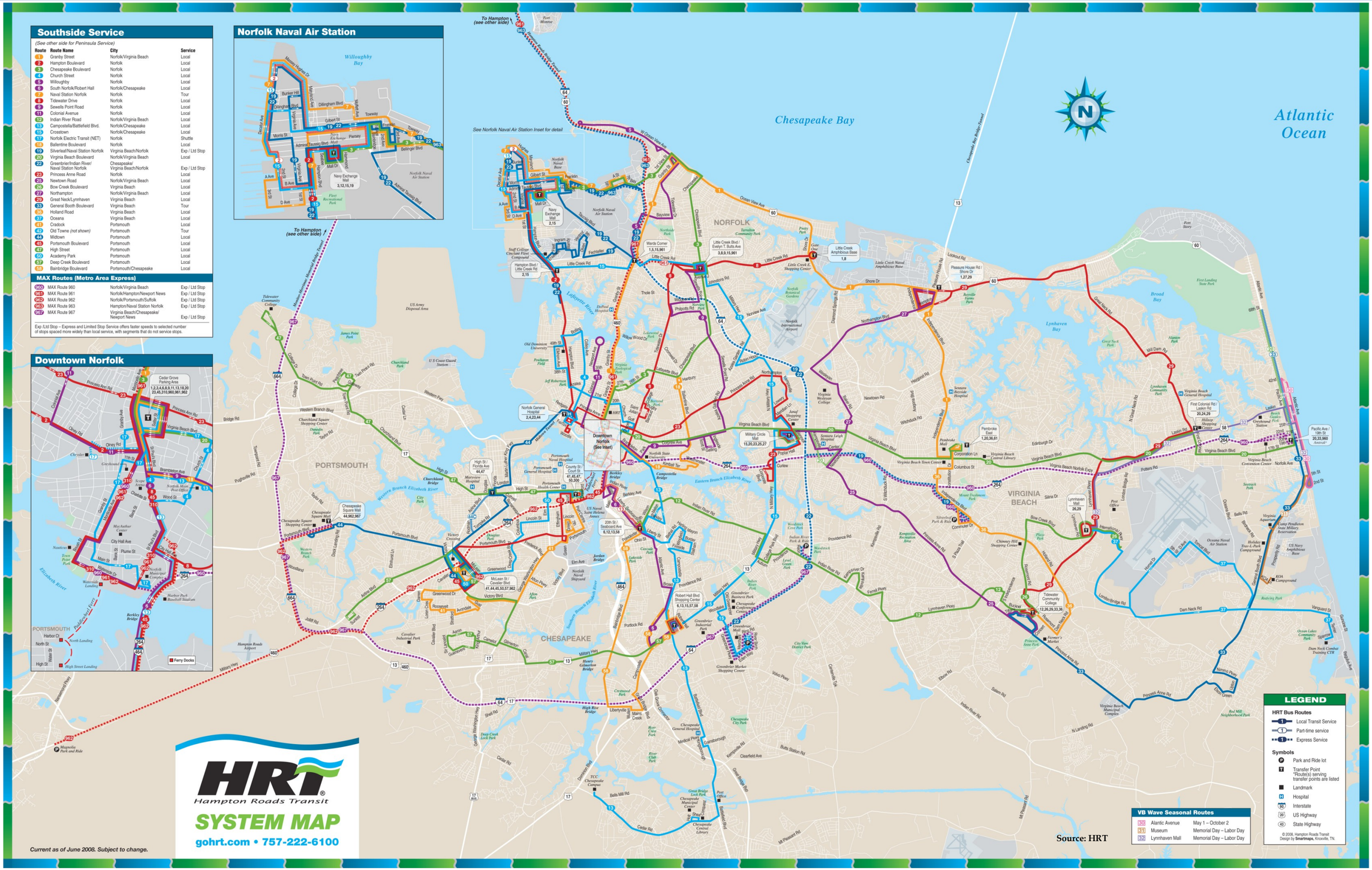
Specific goals that have been identified for "The Tide" include the following:

- Enhance the continued development and redevelopment of the City of Norfolk.
- Improve the access, reliability, and linkage of the public transportation system.
- Create transit corridors that link residential, educational, employment and other activity centers.
- Contribute to the protection and preservation of the environment through a multimodal transportation system.

The initial 7.4 mile segment of "The Tide" is expected to be complete in May 2011. An important element to the long-term success of the system and for attracting new ridership is future network expansion. Studies are currently underway to examine extending the light rail line to the Virginia Beach oceanfront as well as other localities, such as Chesapeake. Connections to future high speed rail lines as well as to high activity centers, such as large military bases and the Norfolk International Airport, will also enhance the overall system and the public transit objectives for the region.

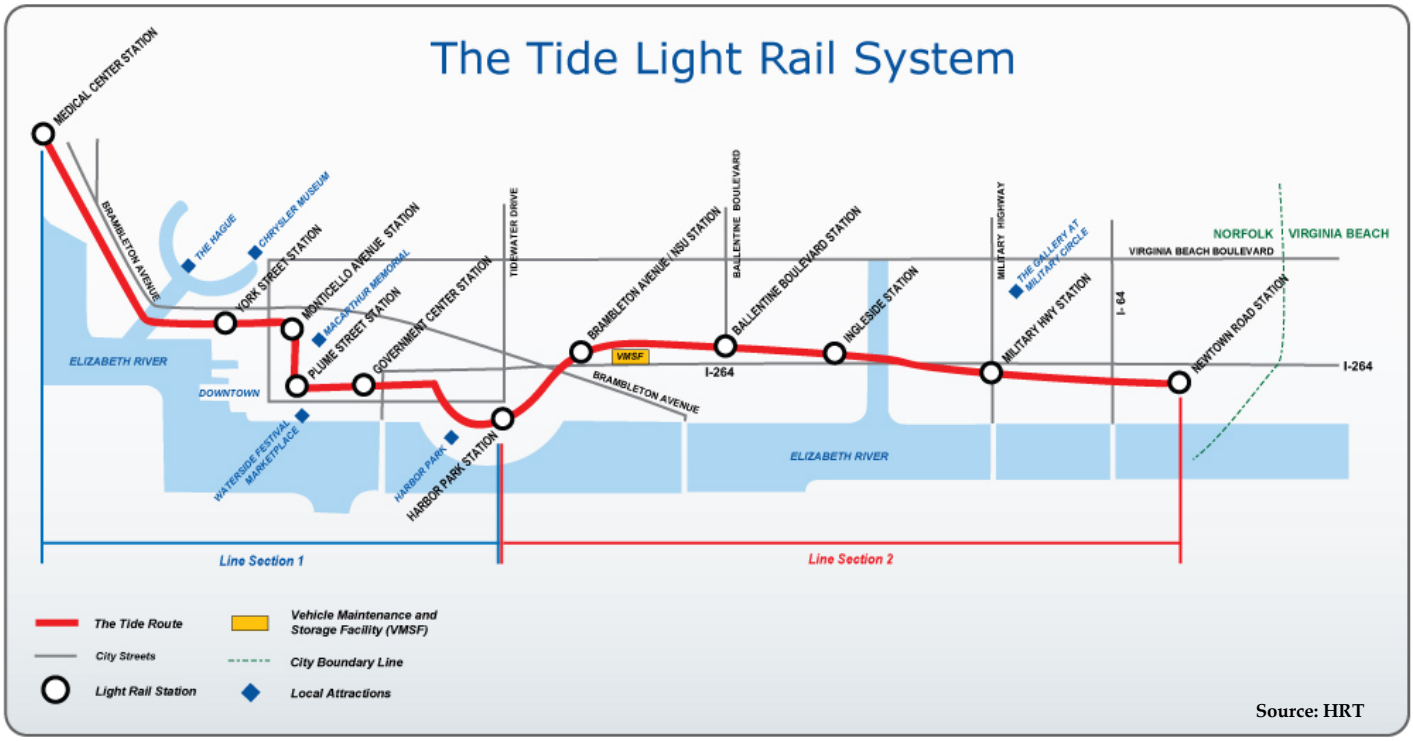


Map 11 – Hampton Roads Transit (HRT) Bus System Map - Peninsula



Source: HRT

Map 12 – Hampton Roads Transit (HRT) Bus System Map - Southside



Map 13 – The Tide Light Rail System (Norfolk) Map

Peninsula Rapid Transit Project

In 2008, HRT worked on an Alternatives Analysis/Draft Environmental Impact Statement (AA/DEIS) to study a new transit corridor in the city of Newport News. At this point in time, alignment and mode have not been determined and work on this project has been delayed due to the uncertainty of available funding. The Peninsula Rapid Transit Project (PRTP) is intended to complement the existing bus service on the Peninsula. Upon completion of the PRTP, the bus service will be modified to intersect the PRTP at strategic locations allowing passengers to transfer between modes. The initial A3 Build Alternatives included: Light Rail Transit (LRT), Bus Rapid Transit (BRT), and Streetcar, beginning at Christopher Newport University and terminating at Huntington Pointe.

The purpose of the PRTP is to:

- Increase transit travel speeds to provide a time-competitive alternative to personal motor vehicles for travel to and from major activity centers;
- Increase transit ridership and the percentage of transit users in the region;
- Enhance transit connections between major activity centers and high-growth areas;
- Provide opportunities for transit-oriented development and transit-supported economic revitalization; and,
- Contribute to maintenance or improvement of regional air quality.

The long term vision is to connect this fixed guideway service to Williamsburg and ultimately to "The Tide" Norfolk Light Rail Transit service via the Third Crossing. For more information about this project visit: www.hrtransit.org/prt/index.asp

Richmond/Hampton Roads Passenger Rail Project

Statewide Initiative

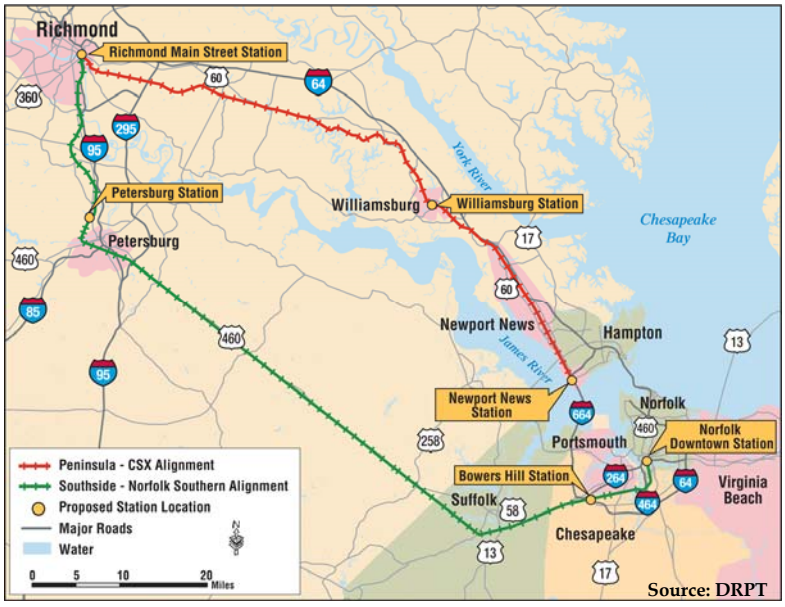
The Virginia Department of Rail and Public Transportation (DRPT) is investigating improved passenger rail service between Richmond and Hampton Roads to ultimately connect to the Southeast, Northeast and Mid-Atlantic regions as an extension of the Southeast High Speed Rail Corridor (SEHSR).[10]

DRPT examined potential routes and possible environmental impacts for more frequent conventional service and higher speed rail service in the Tier I Environmental Impact Statement (EIS). The Draft EIS was released for public review and comment in December 2009, and in January 2010, public hearings were held to gain feedback on the alternatives under evaluation.

The project focused on five alternatives:

- No Action Alternative
- Status Quo Alternative
- Build Alternative 1
- Build Alternative 2a
- Build Alternative 2b

Build Alternative 1 serves both the Peninsula and the Southside, with three daily round trips on the Peninsula and six daily round trips on the Southside. The Peninsula service would remain the same as in the No-Action Alternative, with three 79 mph maximum speed daily round trips between Newport News and Richmond serving the Newport News Amtrak Station, Williamsburg Station and Richmond Main Street Station. The Southside service would include six daily round trips operating at speeds of 90 mph or 110 mph between Downtown Norfolk, Chesapeake (Bower's Hill Station), Petersburg and Richmond Main Street Station. **Map 14** shows the preliminary rail alignment alternatives between Richmond and Hampton Roads.



Map 14 – Preliminary Rail Alignment Alternatives Map

On February 17, 2010, based on the evaluation and public comments received, the Commonwealth Transportation Board (CTB) selected Alternative 1 as the preferred alternative for enhanced passenger rail service between Richmond and Hampton Roads. DRPT will complete the Tier I Final EIS document in order to achieve a federal Record of Decision. The Federal Railroad Administration (FRA) Record of Decision will determine the next steps in the federal review process.

DRPT will apply for federal funding to advance the selected alternative. Federal funding and annual operating funds are critical for the project's financial plan. Virginia currently has no dedicated source of operating funds for intercity passenger rail service.

According to DRPT, preliminary cost estimates for Build Alternative 1 indicate $475.4 million in capital improvements and $80 million in annual operating costs, with annual ridership projected at up to 1.1 million passengers. The estimated travel time between Richmond and Newport News is approximately 1 hour 11 minutes, and the travel time between Richmond and Norfolk is estimated at 1 hour 35 minutes.

In the meantime, the Commonwealth Transportation Board has approved $93 million in funding to establish conventional passenger rail service between

[10] Primary Source: Virginia Department of Rail and Public Transportation, www.rich2hrrail.info/

Downtown Norfolk and Richmond along the Route 460 corridor beginning in late 2013.

For more information visit: www.rich2hrrail.info.

Regional Initiative

In preparation of this corridor extension, during a special HRTPO Board meeting held on October 30, 2009, a resolution was approved to support regional High-Speed and Intercity Passenger Rail – specifically supporting the designation of a high-speed rail corridor along the Norfolk Southern/Route 460 rail corridor and the endorsement of the enhancement of the intercity passenger rail service along the CSX/I-64 rail corridor. Furthermore, the resolution identified the need to procure consultant services to advise the HRTPO in positioning Hampton Roads to be more competitive regarding high-speed and intercity passenger rail and associated funding, and to develop a regional high-speed and intercity passenger rail campaign and vision plan component for the HRTPO 2034 Long-Range Transportation Plan.

In Phase 1 of the consultant six-month contract (from January 28, 2010 to July 31, 2010), the consultant will develop the base scenario for the HRTPO alternative, and establish if there is a case for high-speed rail. In Phase 2, if there is a case, the consultant will refine the base scenario and complete sensitivity and risk analysis for the vision plan. Phase 2 will depend on successful completion of Phase 1 with respect to the potential for the HRTPO options, the availability of HRTPO funding, and HRTPO Board approval.

Phase 1 will include:

- Implementation Plan.
  The Implementation Plan will be developed that sets goals, timetables, and arrangements for implementing passenger rail service in the Richmond/Hampton Roads corridors. The Implementation Plan will recommend an action program that sets out the steps that need to be followed to ensure the successful implementation of passenger rail in the Richmond/Hampton Roads corridors.

- Station Development analysis for public-private partnership including private participation.
  A key output will be joint development potential for each station along each corridor and the contributions of the private sector to project funding. Additionally, station stops will be included in defining service scenarios. Preliminary estimates for station development will be identified.

- Analysis of Interim Steps of 79-mph and 90-mph higher speed service on the CSX/I-64 and Norfolk Southern/Route 460 rail corridors including demand, revenue, cost, and subsidies.
  This work will reflect the practicalities of funding, cash flow, and the potential evolution of the system in each corridor.

- Vision Plan.
  An extensive Vision Plan document will be prepared in Phase 1 that will evaluate the potential for the development of high-speed passenger rail service on the Norfolk Southern/Route 460 rail corridor and the enhancement of the intercity passenger rail service on the CSX/I-64 rail corridor.

For more information visit:
http://www.hrtpo.org/chronicle.

TRANSPORTATION DEMAND MANAGEMENT

(Included in Strategies #1 and #3)

Transportation Demand Management (TDM) programs are designed to reduce traffic congestion through a variety of mobility options, such as ridesharing, transit usage, telecommuting, and spreading out peak period traffic. TDM strategies focus on alternatives to driving alone by encouraging the use of alternate modes or programs.

In Hampton Roads, TRAF*FIX* is a cooperative public service that implements these TDM strategies by offering transportation alternatives to area commuters. TRAF*FIX* offers a wide variety of programs, including carpooling and commuter matching, guaranteed ride programs, vanpooling and van leasing, and telecommuting assistance. TRAF*FIX* staff are employees of HRT; however, the program is funded by the HRTPO board via federal Congestion Mitigation and Air Quality (CMAQ) funds.

Over the last decade, TRAF*FIX*, in coordination with the Hampton Roads jurisdictions, Hampton Roads Transit (HRT), VDOT, and HRTPO, has been promoting various TDM programs through major employers throughout the region. Some of the local employers that are partnering with TRAF*FIX* to implement TDM programs include:

- Amerigroup
- Anheuser-Busch
- Canon
- Chesapeake General
- CNU
- Coopervision
- MICG
- Military Outreach
- ODU
- Regent University
- Sentara Williamsburg
- Smithfield Foods
- Stihl
- Sysco
- TCC
- TNCC
- Walmart
- William & Mary
- Yorktown Coast Guard

The CMP strategies implemented by TRAF*FIX* are evaluated in **Table 9**, using ratings compiled from the Victoria Transport Policy Institute TDM Encyclopedia. While all of the strategies reduce congestion, and assist the transportation disadvantaged, some strategies vary in their effect on other outcomes, such as promoting efficient land use.

Table 9 – TRAF*FIX* Programs by CMP Strategy

CMP Strategy	Reduces Congestion	Road & Parking Savings	Consumer Savings	Transportation Choices	Road Safety	Environmental Protection	Efficient Land Use	Community Livability	Applicability to all commuters	Benefits transportation disadvantaged	Improves basic mobility	TRAF*FIX* Program
1-4 Telecommuting	3	2	2	3	1	1	-2	2	-1	3	3	Telework Program (www.teleworkva.org) Employer Outreach Program
1-5 Employee Flextime Benefits	3	1	1	3	0	0	0	1	-1	3	3	Employer Outreach Program
1-5 Compressed Work Week	3	2	2	3	1	1	-1	1	-1	3	3	Employer Outreach Program
3-3 Rideshare Matching Services	3	3	3	3	2	2	-1	2	3	3	2	Commuter Computer, Guaranteed Ride Program, Regional Rideshare Program, Carpool and Vanpool Program Employer Outreach Program
3-4 Vanpool/Employer Shuttle Program	3	3	3	3	2	2	-1	2	3	3	2	Vanpool Leases, Employer Outreach Program
3-5 Trip Reduction Program	3	3	3	3	2	2	2	2	3	3	1	NuRide Program, Transportation Incentives Program, Partnership with FarmFresh, Employer Outreach Program
3-6 Parking Management	3	3	0	0	3	3	3	3	2	2	0	Employer Outreach Program

Ratings Compiled from the Victoria Transport Policy Institute TDM Encyclopedia (www.vtpi.org/tdm)

Rating from 3 (very beneficial) to –3 (very harmful). A 0 indicates no impact or mixed impacts.

TRAF*FIX* also teams up with HRT, VDOT, and the Hampton Roads jurisdictions to provide Park & Ride lots (**Table 10**). These facilities provide ridesharers with free, all-day parking and are convenient for express buses, carpools, and vanpools.

For more information visit: www.traffixonline.org

Table 10 – Hampton Roads Park & Ride Lots

Cheapeake
Greenbrier Mall – Mall Ring Road
Chesapeake Center (Kmart)
Gloucester
Route 17 Business & Route 3/14
Route 216 & 17
Route 1216 (Hayes Rescue Squad)
Route 374 (Rappahannock Community College)
Hampton
Hampton Transit Center – King St. & Pembroke Avenue
Isle of Wight
Smithfield – Route 10/258
Bartlett – Rt. 669 & Smith's Neck Road
James City County
Rochambeau Blvd. & Rt. 30
Newport News
Rt. 60 & Old Courthouse Road
Yorktown Rd. & Rt. 143
Portsmouth
Downtown Tunnel & Port Centre Pkwy (Park & Sail lot)
Suffolk
58 Bypass – Rt. F-675 & Rt. 10
Rt. 337 & Rt. 58/460 Business (Magnolia Park & Ride)
Virginia Beach
18th Street and Arctic Avenue
Silverleaf Station – 4300 Commuter Road
Indian River Park & Ride lot- Reon Dr. & Indian River Rd.
York County
East Rochambeau Drive

Source: HRT

The Future of TRAFFIX

TRAF*FIX* released the *Long-Range Transportation Demand Management (TDM) Plan* in February 2010. The TDM Plan was primarily based on the 2007 *Virginia State of the Commute Survey* (VSOC Survey) and the 2009 *Transportation Demand Management Report*, appendix to *A Transit Vision Plan for Hampton Roads* (HRTPO, Draft). The TDM Plan set the following strategic imperatives:

- Focus on the Greatest Point of Leverage – The Business Market, Not Residential Rideshare Market
- Support Hampton Roads' Key Industries
  - Education
  - Military
  - Healthcare
  - Shipping & Shipbuilding
  - Retail
  - Tourism
- Examine and Respond to Human Service Needs as Appropriate
- Create Third-party Business Development Partnerships to Efficiently Prospect for New TDM Clients
- Secure More Funding Through Additional Sources
- Continue to Build TDM Infrastructure
- Build a TDM Advocacy Group to Advance TDM as a Major Component of the Region's Long-Range Transportation Plan
- Measure & Package TDM Results
- Over Time, Make TRAF*FIX* the Region's Green Mobility Expert
- Study the Optimal Long-term Organizational Structure of TRAF*FIX*

Based on the strategic imperatives, TRAF*FIX* set the following long and short-term goals:

- Increase TRAF*FIX*'s Oversight Committee presence and impact.
- Increase TRAF*FIX*'s physical office presence.
- Have TDM become a major component of the region's transportation system.
- Be the principal agency and resource in the Hampton Roads region for TDM-related planning and implementation. In doing so, TRAF*FIX* will continue to work closely with VDOT, DRPT, and HRTPO to develop effective programs.
- Elevate the awareness and status of TRAF*FIX* as the expert in TDM planning and implementation in the Hampton Roads business community.
- Increase Teleworking.
- Expand TRAF*FIX*'s focus beyond commuter work trips using online, self-service trip planning tools and services available for all residents.
- Have timely and actionable market-based data and information on the agency's overall and service level performance and impact.

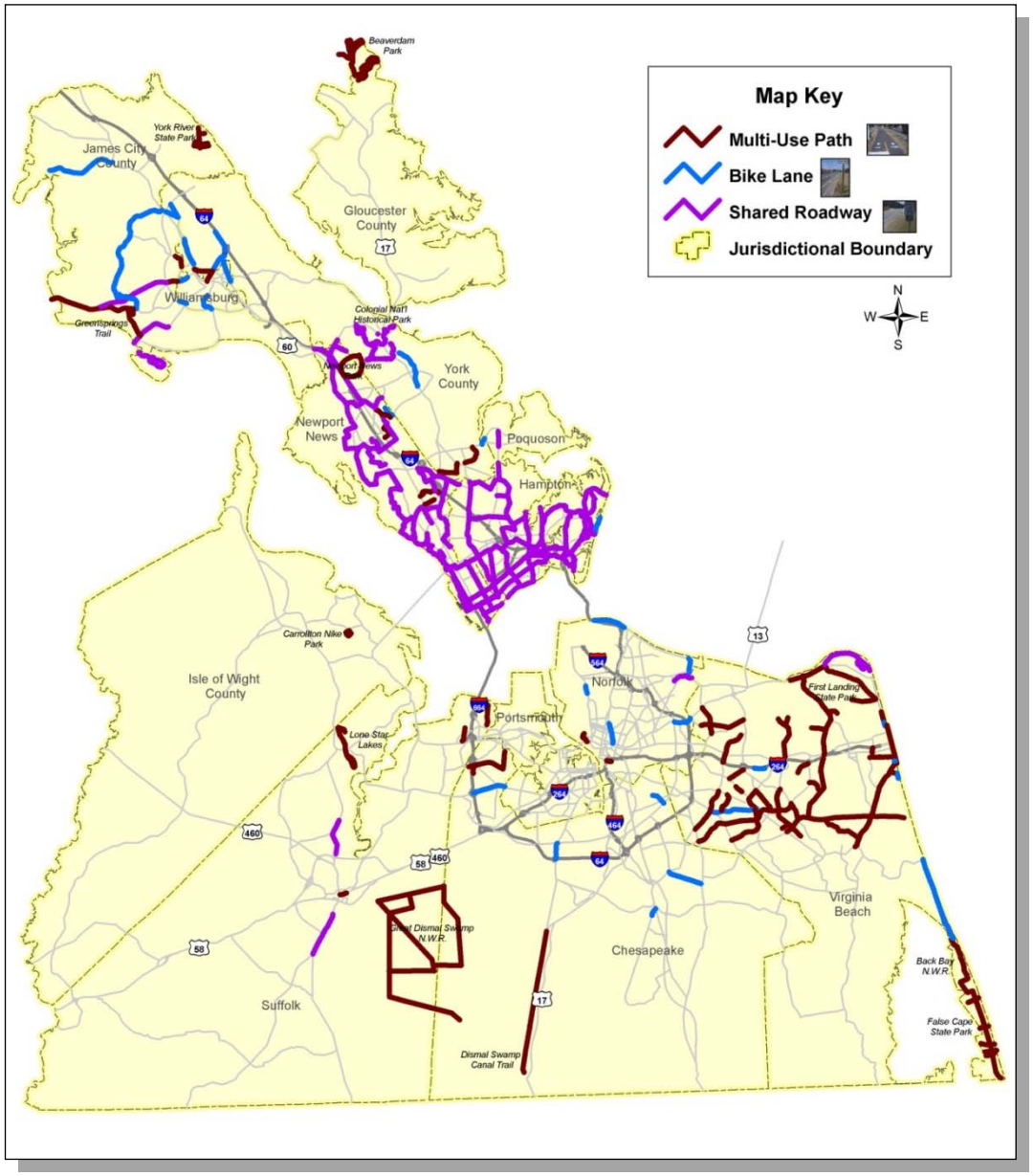
BICYCLE AND PEDESTRIAN FACILITIES

(Included in Strategy #2)

Making investments in non-motorized modes of transportation, such as biking and walking, can increase safety and mobility in a cost-efficient manner. Bicycle and pedestrian facilities provide a zero-emission alternative to motorized modes and can mitigate congestion in localized areas of the region. These facilities must be coordinated with local land use plans and policies and integrated with other modes, such as transit, to be effective.

In Hampton Roads, many new developers are now required by their jurisdictions and VDOT to incorporate facilities for non-motorized transportation, such as sidewalks, into their developments, whereas in the past they were not required to do so. This has resulted in a disjointed pattern of sidewalks for many roadways and communities. Local jurisdictions within Hampton Roads need to work toward providing the necessary connections to improve the overall network.

There are currently 400 miles of bicycle facilities throughout Hampton Roads, as shown in **Map 15**. These facilities range significantly in size and scope, from secluded paths in city and state parks to bicycle lanes along major thoroughfares. Of the 400 miles of bicycle facilities in the region, 177 miles are shared roadways, which are roadways that are signed as a bicycle route but do not have a portion of the roadway reserved exclusively for cyclists (see **Figure 15** on page 50). 175 miles of the regional total are multi-use paths (separate paths from the roadway that are prohibited for use by motor vehicle traffic). The remaining 48 miles of bicycle facilities in Hampton Roads are bicycle lanes, which are roadways that have a portion of the pavement delineated for bicycle use only.



Map 15 – Existing Bicycle Facilities in Hampton Roads

There are currently plans for over 1,400 miles of bicycle facilities in VDOT's Hampton Roads District Bicycle Plan, which was created based on each locality's plans. However, at current funding levels it is expected that many of these facilities will not be constructed in the near future.

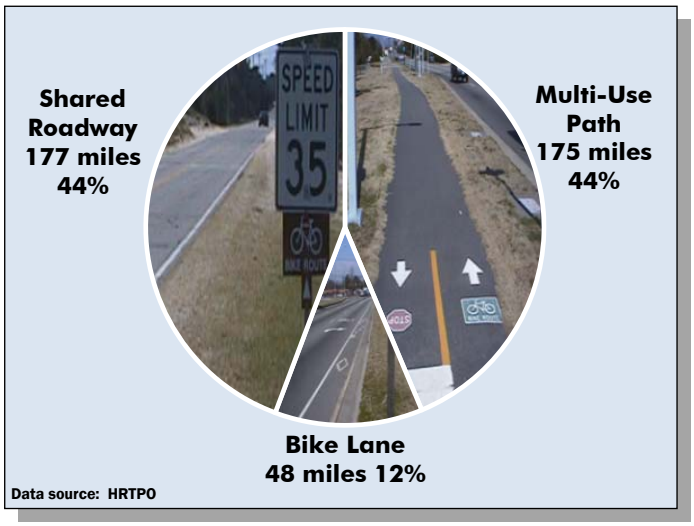


Figure 15 – Existing Centerline Miles of Bicycle Facilities by Type in Hampton Roads

HRTPO BOARD ADVISORY COMMITTEES

(Included in All Strategies)

Members of the Hampton Roads Transportation Planning Organization (HRTPO) Board advisory committees and subcommittees work collaboratively as a region to address transportation problems and implement congestion mitigation strategies. Below is a description of each committee and their roles and responsibilities:

The Transportation Technical Advisory Committee (TTAC) acts as an advisory body to the HRTPO for transportation issues that are primarily technical in nature. It is staffed by transportation professionals from member localities, VDOT, HRT, WAT, FHWA, DRPT, and the Navy. The TTAC interacts with HRTPO's professional staff on technical matters related to planning, programming, and transportation-related air quality planning. Through this work, the TTAC develops recommendations on projects and programs for HRTPO Board consideration.

The Transportation Advisory Committee (TAC) acts as a standing advisory committee of the HRTPO Board, comprised mainly of city managers from the member jurisdictions. The TAC meets from time to time as circumstances require to act upon matters referred to it by the HRTPO Board.

The Citizen Transportation Advisory Committee (CTAC) serves as an advisory committee to the HRTPO Board and provides public input to the HRTPO Board on transportation issues. Members of the CTAC are selected from the public by the HRTPO board, and include citizens from all jurisdictions.

The Freight Transportation Advisory Committee (FTAC) advises the HRTPO Board on regional freight-related transportation issues and serves to raise awareness freight transportation. The FTAC is mainly compromised of members of the freight community, including shippers, truckers, and distributers. One objective of this committee is to identify freight bottlenecks and then develop projects and other mitigation strategies to alleviate those locations.

The Hampton Roads Transportation Operations (HRTO) Subcommittee, which is described more in the next section, advises TTAC on regional transportation operational issues. Several other regional transportation committees, such as the Hampton Roads Regional Concept of Transportation Operations (RCTO) and the Hampton Roads Highway Incident Management (HRHIM) Committee, are led by other organizations and are discussed in more detail in the following section.

ITS & OPERATIONS

(Included in Strategy #4)

As roadway projects become more costly and more difficult to construct, using Intelligent Transportation Systems (ITS) technologies and systems operations as a cost-effective method of maximizing the capacity of the existing roadway network has become more important than ever. The purpose of system operations is to maximize the safety, security, and mobility of roadway users by actively managing the regional transportation system. This is done through both trained and coordinated manpower and technological

improvements. Some examples include incident management, signal coordination and optimization, automated toll collection, and providing traveler information via multiple forms of media such as highway advisory radio and 511 Virginia.

In Hampton Roads, regional system operations are led by the VDOT Hampton Roads Transportation Operations Center (TOC). The Transportation Operations Center maintains ITS infrastructure on the interstate system, monitors traffic conditions throughout the region, responds to crashes and other incidents with the Safety Service Patrol, and distributes traveler information via changeable message signs and highway advisory radio.

The Hampton Roads Transportation Operations Center completed the third and final phase of their system in late 2008. With this completed phase, 113 miles, nearly the entire Hampton Roads freeway system, is now instrumented with ITS technologies. The completed system includes nearly 300 closed-circuit cameras, over 2,300 vehicle detectors and sensors, and 240 changeable message signs, as seen in **Figure 16**.

Many local jurisdictions in Hampton Roads also operate their own transportation operations centers. Norfolk opened its own Smart Traffic Center in 2000 and since then Chesapeake, Hampton, Newport News and Virginia Beach have opened centers as well. These local transportation operations centers are connected with the Hampton Roads Transportation Operations

Hampton Roads has been a leader in the use of Intelligent Transportation Systems (ITS). With the completion of Phase 3 (2008) of the Traffic Management System, nearly every mile of Interstate in the region is instrumented with ITS technologies. In addition, various cities throughout the region maintain varying amounts of ITS infrastructure as well. The following ITS technologies are in use throughout Hampton Roads:

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

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

Highway Advisory Radio
Provides up-to-date traveler information through radio broadcasts on 610 AM.

511 Virginia
Provides up-to-date traveler information via telephone or the internet.

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

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

Vehicle Detection Devices
Records traffic volumes and speeds. Also notifies transportation operations centers of congestion and incidents.

Transit Automatic Vehicle Location (AVL)
Provides the location of transit vehicles, helping to keep them on schedule.

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

Emergency Vehicle Signal Preemption
Changes signal phase when an emergency vehicle approaches, improving safety and response time of emergency vehicles.

Figure 16 – ITS Technologies used in Hampton Roads

Center (or will be in the future), enabling data and video sharing and instant communication on a regional level.

Another way the state is improving systems operations is through operating the 511 Virginia traveler information service. This service disseminates traveler information via cellular or land line phone, email, text message, and the recently improved website http://www.511virginia.org. The 511 Virginia service was launched statewide in February 2002 and has received approximately 9 million calls and nearly 6 million website visits since then.

Hampton Roads Transportation Operations (HRTO) Subcommittee

The Hampton Roads Transportation Operations Subcommittee (HRTO) is comprised of regional transportation professionals from Hampton Roads jurisdictions, Virginia Department of Transportation (VDOT), local transit agencies, and other invited participants, such as local police and fire/EMS personnel. The group serves as an advisory subcommittee to the Transportation Technical Advisory Committee (TTAC) and meets bi-monthly to discuss methods that can be utilized to improve transportation operations in the region.

Recent actions by the HRTO subcommittee include creating regional standards for ITS technology, improving communications and data sharing between cities and VDOT, obtaining CMAQ funding for additional equipment that enables Virginia State Police and other transportation officials to clear fatal crashes faster, and sharing accomplishments and lessons learned from individual city Transportation Operations Centers. HRTO also provides assistance in the development of the regional ITS Strategic Plan and the regional ITS architecture.

Hampton Roads Regional Concept of Transportation Operations (RCTO)

Due to high profile incidents on freeways throughout the region, the HRTPO established a goal for improving incident management in Hampton Roads. This goal is being achieved by a Regional Concept of Transportation Operations (RCTO), with Hampton Roads being one of only four RCTO demonstration sites nationwide.

An RCTO is defined by FHWA as a management tool that assists in planning and implementing management and operations strategies in a collaborative and sustained manner. In Hampton Roads, the objectives of the RCTO include improving responder safety, decreasing incident clearance time, decreasing the number of secondary incidents (those incidents that occur as a result of a previous incident), improving interagency communication, and reviewing incidents on a regular basis to determine where improvements could be made.

Over the last five years members of various agencies throughout Hampton Roads have been collaborating on the RCTO effort. These agencies include VDOT, HRTPO, city and state police, first responders, local operations engineers and many others. Meetings are held bi-monthly and discussions are led by VDOT. As part of this effort, an RCTO document and executive summary report were created, which is available at: http://hrtpo.org/TPO_Reports.asp.

Hampton Roads Highway Incident Management (HRHIM) Committee

The Hampton Roads Highway Incident Management (HRHIM) Committee meets quarterly to discuss highway incident response, clearance, and safety issues. The committee has a rich history of cooperation and coordination, producing a Multi-Jurisdictional Memorandum of Understanding for Highway Incident Management in December of 1999, which is currently being updated. Participating agencies include Virginia State Police (VSP), Virginia Department of Transportation (VDOT), HRTPO staff, law enforcement agencies, fire and rescue agencies, medical examiners, and towing agencies.

APPLICATIONS OF STRATEGIES TO CMP CONGESTED CORRIDORS

This section provides an analysis of applying the congestion mitigation strategies mentioned in the previous section to CMP Congested Corridors in Hampton Roads. The CMP Congested Corridors were selected based on the CMP Ranking Criteria and methodology shown in the Ranking of CMP Congested Corridors section of this report (page 34). The 16 CMP Congested Corridors that resulted from this methodology are shown in **Table 11**.

All 16 of the CMP Congested Corridors are analyzed within this section (see pages 54-85). Each CMP Congested Corridor includes two pages summarizing the issues within the corridor and some possible remedies that could help alleviate some of the congestion.

The first page for each corridor includes:

- **Location Map** – Shows the layout of the corridor and includes weekday traffic volumes, level of service (2009 PM), truck volumes, and traffic signal locations.
- **Corridor Characteristics** – Provides the corridor length, speed limits, roadway class, transit service availability, and safety data for the corridor. For the 6 freeway corridors, safety is given in terms of the Equivalent Property Damage Only (EPDO) Crash Rate per million vehicle-miles of travel (MVMT). This rate takes into account both the number and severity of crashes per amount of travel. Multiple EPDO Crash Rates are listed for those corridors that include more than one roadway segment. For the 10 arterial corridors, the total number of crashes along the corridor is listed.
- **Peak Hour Characteristics** – Provides the time and peak direction for the AM and PM peak hour.
- **Historical Weekday Volumes** – Shows the change in weekday traffic volumes over the last ten years.

Table 11 – CMP Congested Corridors

Top 6 Freeways

Rank	Jurisdiction	CMP Congested Corridor
1	HAM/NOR	Hampton Roads Bridge-Tunnel
2	NOR/PORT	Downtown Tunnel/Berkley Bridge
3	VB	I-264 from Newtown Rd to Independence Blvd
4	NN	I-64 from Yorktown Rd to Jefferson Ave
5	NOR/VB	I-64 from Northampton Blvd to Indian River Rd
6	CHES	I-64 from I-264/I-664 to I-464/Chesapeake Expressway

Top 10 Arterials

Rank	Jurisdiction	CMP Congested Corridor
1	NOR/PORT	Hampton Blvd/Midtown Tunnel from Western Fwy to 26th St
2	CHES	Dominion Blvd from Cedar Rd to Chesapeake Exp
3	VB	Indian River Rd/Ferrell Pkwy from I-64 to Indian Lakes Blvd
4	VB	Witchduck Rd from I-264 to Virginia Beach Blvd
5	CHES	Greenbrier Pkwy from Volvo Pkwy to I-64
6	NOR	Campostella Blvd from I-264 to Wilson Rd
7	NN	Jefferson Ave from Thimble Shoals Blvd to Denbigh Blvd
8	VB	Independence Blvd/Holland Rd from Va Beach Blvd to South Plaza Trail
9	NN/YC	Route 17 from I-64 to Denbigh Blvd
10	NOR	Military Hwy from Lowery Rd to I-64

- **Probable Causes of Congestion** – Lists possible causes based on available data, discussions with officials from the localities, and field observations.
- **Recent Projects** – Description of any projects that were recently completed within the corridor or are currently under construction.
- **Future Projects** – Description of any projects planned for the corridor, including any current timelines. These projects are included in the Transportation Improvement Program or the Long-Range Transportation Plan.

The second page for each corridor includes:

- **Congestion Mitigation Strategy Toolbox** – This table shows all of the congestion mitigation strategies described in the previous section and whether each of these strategies are currently in use within the corridor, and if not, whether the particular strategy could benefit the corridor.
- **2030 Corridor Characteristics** – Provides the number of lanes, projected volumes, and congestion level for the 2030 Amended Long-Range Transportation Plan (LRTP) network.
- **Recommendations** – Provides possible improvements based on site observations and applicable CMP strategies.

CMP CONGESTED CORRIDOR - FREEWAY #1

Hampton Roads Bridge-Tunnel (I-64)
Cities of Norfolk and Hampton

Probable Causes of Congestion

- Heavy PM peak hour volume (3,080-3,133)
- Capacity deficiency (2 lanes per direction)
- Crashes along corridor (above average EPDO Rate)
- Overheight vehicle turnaround in northbound direction
- Tunnel-related human factors

Recent Projects

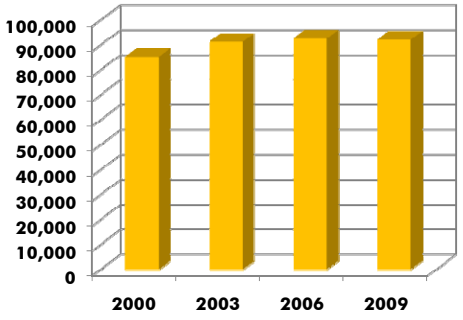
- None

Future Projects

- None

Historical Weekday Volumes

Hampton Roads Bridge-Tunnel (both directions)



Corridor Characteristics

Corridor Length	3.88 Miles
Speed Limit	55 mph
Roadway Class	Interstate
Transit Service	HRT MAX Bus Routes 961 & 963
'06-'08 EPDO Crash Rate	2.33 (Eastbound) 3.15 (Westbound)

Peak Hour Characteristics

AM Peak Hour	6:15 – 7:15 AM (Eastbound) 7:00 – 8:00 AM (Westbound)
PM Peak Hour	3:45 – 4:45 PM (Eastbound) 3:15 – 4:15 PM (Westbound)
AM Peak Direction	Eastbound
PM Peak Direction	Westbound

	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	YES
	1-3 Parking Fees	-
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	YES
	2-2 Exclusive Right-of-Way - New Bus Facilities	YES
	2-3 Ferry Services	YES
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	-
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	YES
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	-
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	-
	2-13 Bicycle Storage Systems	-
	2-14 Improved/Expanded Pedestrian Network	-
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	YES
	3-2 HOV Toll Savings	YES
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	-
	4-3 Intersection Signalization Improvements	-
	4-4 Coordinated Intersections Signals	-
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	-
	4-8 Freight Policies and Improvements	IN USE
	4-9 Incident Management, Detection, Response & Clearance	IN USE
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	YES
	4-12 Ramp Metering	YES
	4-13 Access Control and Connectivity	-
	4-14 Median Control	-
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	YES
	5-2 Arterial lanes	-
	5-3 Interchanges	YES
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - FREEWAY #1
Hampton Roads Bridge Tunnel (I-64)

Segment	Length (mi)	Direction	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
Hampton Roads Bridge-Tunnel	3.88	Eastbound	2	2	110,000	F
		Westbound	2	2		F

Observations

- Detailed descriptions of back-ups for the Hampton Roads Bridge-Tunnel are found in the System Monitoring section of this report, under "Traffic Volumes and Characteristics at Regional Bridges and Tunnels"

Recommendations

- Add tolls/congestion pricing to Hampton Roads Bridge-Tunnel
- Increase transit service across the Hampton Roads Harbor (including ferry service)
- Continue to promote TDM strategies
- Improve ITS technologies to minimize over-height vehicle turnarounds at the tunnel entrance
- Add additional capacity across the Hampton Roads Harbor

CMP CONGESTED CORRIDOR - FREEWAY #2

Downtown Tunnel/Berkley Bridge (I-264)
Cities of Norfolk and Portsmouth

Probable Causes of Congestion

- Heavy PM peak hour volume (6,585 vehicles on Berkley Bridge & 3,314 vehicles in Downtown Tunnel in peak dir.)
- High directional distribution on Berkley Bridge during PM peak (62% westbound)
- Capacity deficiency (2 lanes per direction in Downtown Tunnel)
- Crashes along corridor (above average EPDO rate), weaving and bridge lifts
- Short merging areas at the tunnel entrances
- Tunnel-related human factors

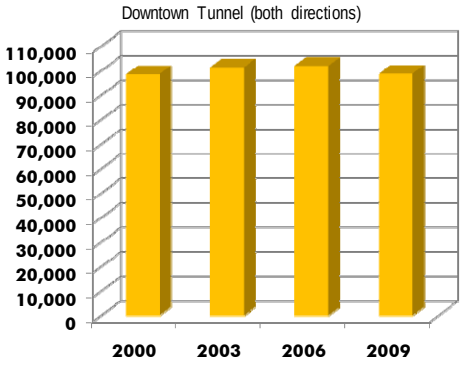
Recent Projects

- None

Future Projects

- Tolling (via the Midtown Tunnel/MLK Extension LRTP project)

Historical Weekday Volumes



Corridor Characteristics

Corridor Length	1.84 Miles
Speed Limit	55 mph
Roadway Class	Interstate
Transit Service	HRT Bus Routes 6, 13, 45, MAX 962
'06-'08 EPDO Crash Rate	5.62 – 5.94 (Eastbound) 2.21 – 4.90 (Westbound)

Peak Hour Characteristics

AM Peak Hour	6:15 – 7:15 AM (Eastbound) 7:00 – 8:00 AM (Westbound)
PM Peak Hour	3:45 – 4:45 PM (Eastbound) 4:30 – 5:30 PM (Westbound)
AM Peak Direction	Eastbound
PM Peak Direction	Westbound

	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	YES
	1-3 Parking Fees	YES
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	YES
	2-2 Exclusive Right-of-Way - New Bus Facilities	YES
	2-3 Ferry Services	IN USE
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	YES
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	YES
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	-
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	-
	2-13 Bicycle Storage Systems	-
	2-14 Improved/Expanded Pedestrian Network	-
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	YES
	3-2 HOV Toll Savings	YES
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	-
	4-3 Intersection Signalization Improvements	-
	4-4 Coordinated Intersections Signals	-
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	-
	4-8 Freight Policies and Improvements	IN USE
	4-9 Incident Management, Detection, Response & Clearance	IN USE
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	YES
	4-12 Ramp Metering	YES
	4-13 Access Control and Connectivity	-
	4-14 Median Control	-
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	YES
	5-2 Arterial lanes	-
	5-3 Interchanges	YES
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - FREEWAY #2
Downtown Tunnel/Berkley Bridge (I-264)

Segment	Length (mi)	Direction	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
Downtown Tunnel	1.12	Eastbound	2	2	77,000*	D*
		Westbound	2	2		D*
Berkley Bridge	0.72	Eastbound	4	4	125,000	A-C
		Westbound	4	4		F

* Assumes tolls are in place

Observations

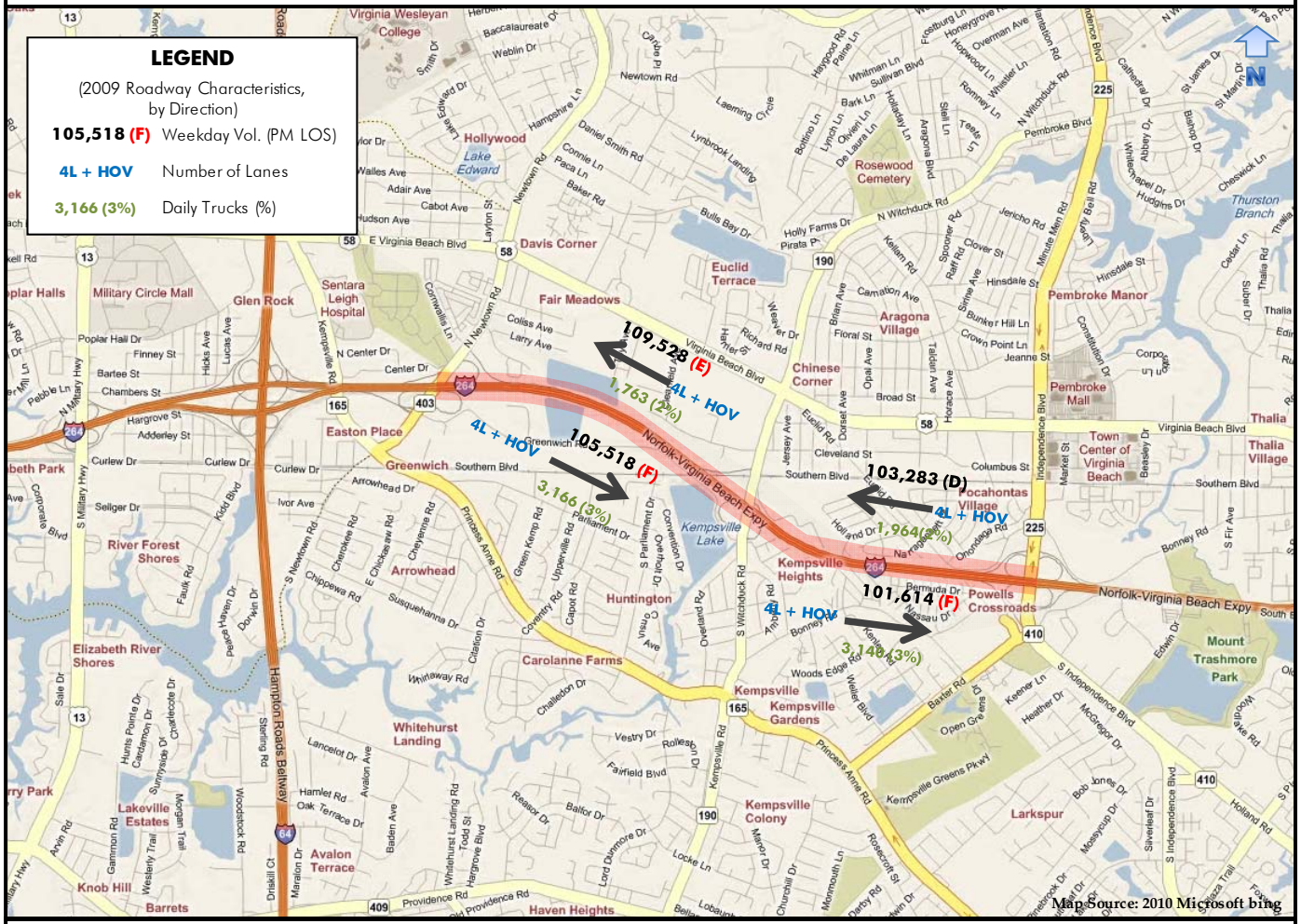
- Westbound traffic regularly backs up to Brambleton Avenue during the PM peak period
- Backups during the PM peak period spill onto the city streets in Downtown Norfolk and Portsmouth
- Weaving is an issue in both directions at the Berkley Bridge

Recommendations

- Add tolls/congestion pricing to the Downtown Tunnel
- Continue to promote TDM strategies
- Add additional Variable Message Signs in Downtown Norfolk to alert drivers to traffic conditions
- Maintain bridge opening restrictions during morning and afternoon peak periods
- Construct and/or improve alternate routes (e.g. the Midtown Tunnel and Jordan Bridge)

CMP CONGESTED CORRIDOR - FREEWAY #3

I-264 Between Newtown Road and Independence Boulevard
City of Virginia Beach



Probable Causes of Congestion

- Heavy PM peak hour volume (9,044-9,075 vehicles in peak direction)
- Weaving
- Crashes along corridor (above average EPDO rate)
- Interchange geometry at Witchduck Road and Independence Boulevard
- Lane drop at the point where the inner and outer lanes of eastbound I-264 merge, east of Newtown Road

Recent Projects

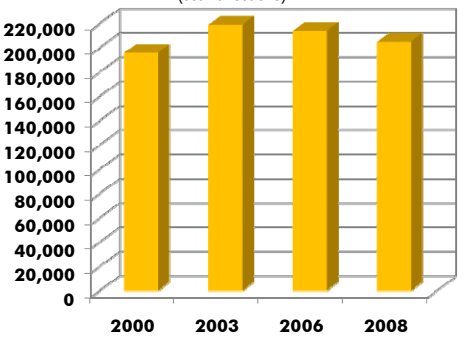
- None

Future Projects

- Interchange Improvements – I-264 at Independence Boulevard (LRTP)
- Interchange Improvements – I-264 at Witchduck Road (LRTP)
- Add lane eastbound from I-64 to Witchduck Road (LRTP)

Historical Weekday Volumes

Between Witchduck Road and Independence Boulevard (both directions)



Corridor Characteristics

Corridor Length	2.74 Miles
Speed Limit	55 mph
Roadway Class	Interstate
Transit Service	HRT Bus Routes 19, MAX 960
'06-'08 EPDO Crash Rate	2.37 – 2.89 (Eastbound) 2.23 – 2.97 (Westbound)

Peak Hour Characteristics

AM Peak Hour	7:30 – 8:30 AM (Eastbound) 7:15 – 8:15 AM (Westbound)
PM Peak Hour	4:45 – 5:45 PM (Eastbound) 4:45 – 5:45 PM (Westbound)
AM Peak Direction	Westbound
PM Peak Direction	Eastbound

	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	YES
	1-3 Parking Fees	-
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	YES
	2-2 Exclusive Right-of-Way - New Bus Facilities	-
	2-3 Ferry Services	-
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	-
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	YES
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	-
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	-
	2-13 Bicycle Storage Systems	-
	2-14 Improved/Expanded Pedestrian Network	-
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	IN USE
	3-2 HOV Toll Savings	YES
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	-
	4-3 Intersection Signalization Improvements	-
	4-4 Coordinated Intersections Signals	-
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	YES
	4-8 Freight Policies and Improvements	-
	4-9 Incident Management, Detection, Response & Clearance	IN USE
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	-
	4-12 Ramp Metering	YES
	4-13 Access Control and Connectivity	-
	4-14 Median Control	-
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	YES
	5-2 Arterial lanes	-
	5-3 Interchanges	YES
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - FREEWAY #3

I-264

Between Newtown Road and Independence Boulevard

Segment	Length (mi)	Direction	Number of Conventional Lanes 2009	Number of Conventional Lanes 2030	2030 Projected Volumes	2030 Congestion Level
I-264 Newtown Road to Witchduck Road	1.47	Eastbound	4	5	252,000	E
		Westbound	4	4		F
I-264 Witchduck Road to Independence Boulevard	1.27	Eastbound	4	4	238,000	F
		Westbound	4	4		E

Observations

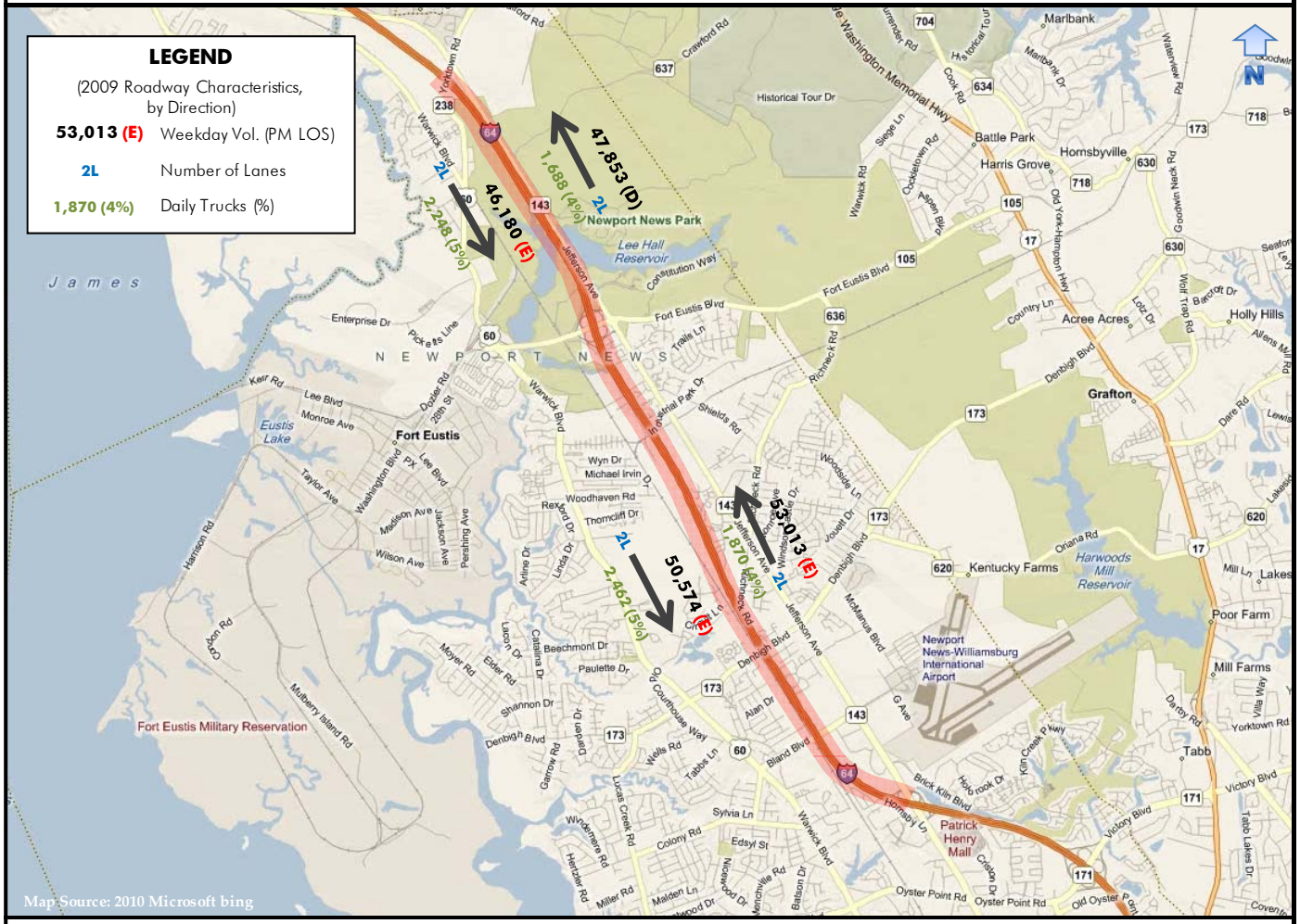
- Backups occur where the inner and outer lanes merge on eastbound I-264 east of Newtown Road

Recommendations

- Continue to promote TDM strategies
- Improve interchange of I-64 and I-264 to include an additional lane from westbound I-64 to eastbound I-264
- Redesign the merge of the inner and outer lanes of eastbound I-264 east of Newtown Road. Currently none of the outer lanes are continued through the merge area in spite of the outer lanes carrying a large proportion of the traffic volumes.
- Construct Southeastern Parkway

CMP CONGESTED CORRIDOR - FREEWAY #4

I-64 Between Yorktown Road and Jefferson Avenue
City of Newport News



Corridor Characteristics

Corridor Length	7.31 Miles
Speed Limit	65 mph
Roadway Class	Interstate
Transit Service	HRT Bus Routes 113 & 121
'06-'08 EPDO Crash Rate	1.28 – 3.11 (Eastbound) 1.69 – 1.73 (Westbound)

Peak Hour Characteristics

AM Peak Hour	7:00 – 8:00 AM (Eastbound) 7:15 – 8:15 AM (Westbound)
PM Peak Hour	5:00 – 6:00 PM (Eastbound) 4:45 – 5:45 PM (Westbound)
AM Peak Direction	Westbound
PM Peak Direction	Westbound

Probable Causes of Congestion

- Heavy PM peak hour volume (3,658 vehicles westbound and 3,371-3,540 vehicles eastbound)
- Capacity deficiency (2 lanes per direction)
- Bottleneck/merging vehicles (8 lanes reduced to 4 lanes west of Bland Boulevard)
- Crashes along corridor in the eastbound direction (above average EPDO rate)
- Short acceleration lanes and weaving areas at the Fort Eustis Boulevard interchange

Recent Projects

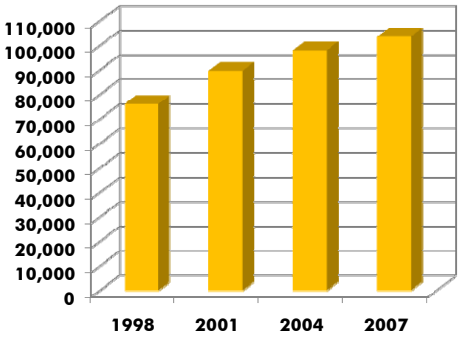
- None

Future Projects

- Widen I-64 from Route 199 (Exit 242) to Jefferson Avenue (Exit 255) to 8 lanes (LRTP – PE Only)

Historical Weekday Volumes

Between Jefferson Avenue and Fort Eustis Boulevard (both directions)



	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	YES
	1-3 Parking Fees	-
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	YES
	2-2 Exclusive Right-of-Way - New Bus Facilities	YES
	2-3 Ferry Services	-
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	-
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	YES
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	-
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	-
	2-13 Bicycle Storage Systems	-
	2-14 Improved/Expanded Pedestrian Network	-
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	YES
	3-2 HOV Toll Savings	YES
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	-
	4-3 Intersection Signalization Improvements	-
	4-4 Coordinated Intersections Signals	-
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	-
	4-8 Freight Policies and Improvements	YES
	4-9 Incident Management, Detection, Response & Clearance	IN USE
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	YES
	4-12 Ramp Metering	YES
	4-13 Access Control and Connectivity	-
	4-14 Median Control	-
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	YES
	5-2 Arterial lanes	-
	5-3 Interchanges	YES
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - FREEWAY #4

I-64

Between Yorktown Road and Jefferson Avenue

Segment	Length (mi)	Direction	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
I-64 Yorktown Road to Fort Eustis Boulevard	2.45	Eastbound	2	2	128,000	F
		Westbound	2	2		F
I-64 Fort Eustis Boulevard to Jefferson Avenue	4.86	Eastbound	2	2	125,000	F
		Westbound	2	2		F

Observations

- Westbound I-64 traffic regularly backs up at Bland Boulevard (4 lanes reduced to 2 lanes in westbound direction) during the PM peak period

Recommendations

- Continue to promote TDM strategies
- Improve/expand park and ride lot at Yorktown Road
- Improve interchange of I-64 and Fort Eustis Boulevard to minimize weaving movements
- Improve alternate routes (such as Route 460 or Route 17)
- Widen I-64

CMP CONGESTED CORRIDOR - FREEWAY #5

I-64 Between Northampton Boulevard and Indian River Road
Cities of Norfolk and Virginia Beach

Corridor Characteristics

Corridor Length	4.62 Miles
Speed Limit	55 mph
Roadway Class	Interstate
Transit Service	HRT MAX Bus Routes 918/919, 922
'06-'08 EPDO Crash Rate	1.17 – 5.52 (Southbound) 1.47 – 2.39 (Northbound)

Peak Hour Characteristics

AM Peak Hour	7:15 – 8:15 AM (Southbound) 7:30 – 8:30 AM (Northbound)
PM Peak Hour	3:15 – 4:15 PM (Southbound) 4:30 – 5:30 PM (Northbound)
AM Peak Direction	Northbound
PM Peak Direction	Southbound

Probable Causes of Congestion

- Heavy PM peak hour volume (6,330-7,099 vehicles southbound)
- High directional distribution between I-264 and Indian River Road during PM peak (60% southbound)
- Capacity deficiency (3 lanes per direction in some locations)
- Merging vehicles at I-64/I-264 Interchange
- Crashes along corridor (some segments have above average EPDO rates)

Recent Projects

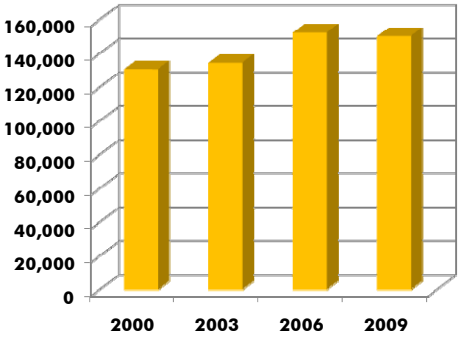
- Converted the rightmost lane of both approaches at the I-264 interchange into exit only lanes.

Future Projects

- Widen ramp from westbound I-64 to eastbound I-264 from 1 lane to 2 lanes (LRTP)

Historical Weekday Volumes

Between I-264 and Indian River Road (both directions)



	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	YES
	1-3 Parking Fees	-
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	YES
	2-2 Exclusive Right-of-Way - New Bus Facilities	YES
	2-3 Ferry Services	-
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	-
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	YES
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	-
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	-
	2-13 Bicycle Storage Systems	-
	2-14 Improved/Expanded Pedestrian Network	-
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	IN USE
	3-2 HOV Toll Savings	YES
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	-
	4-3 Intersection Signalization Improvements	-
	4-4 Coordinated Intersections Signals	-
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	IN USE
	4-8 Freight Policies and Improvements	YES
	4-9 Incident Management, Detection, Response & Clearance	IN USE
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	YES
	4-12 Ramp Metering	YES
	4-13 Access Control and Connectivity	-
	4-14 Median Control	-
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	YES
	5-2 Arterial lanes	-
	5-3 Interchanges	YES
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - FREEWAY #5

I-64

Between Northampton Boulevard and Indian River Road

Segment	Length (mi)	Direction	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
I-64 Northampton Boulevard to I-264	2.12	Southbound	3-4	3-4	195,000	F
		Northbound	4	4		D
I-64 I-264 to Virginia Beach City Line	0.93	Southbound	3-4	3-4	171,000	F
		Northbound	3-4	3-4		E
I-64 Norfolk City Line to Indian River Road	1.57	Southbound	3-4	3-4	171,000	F
		Northbound	3-4	3-4		A-C

Observations

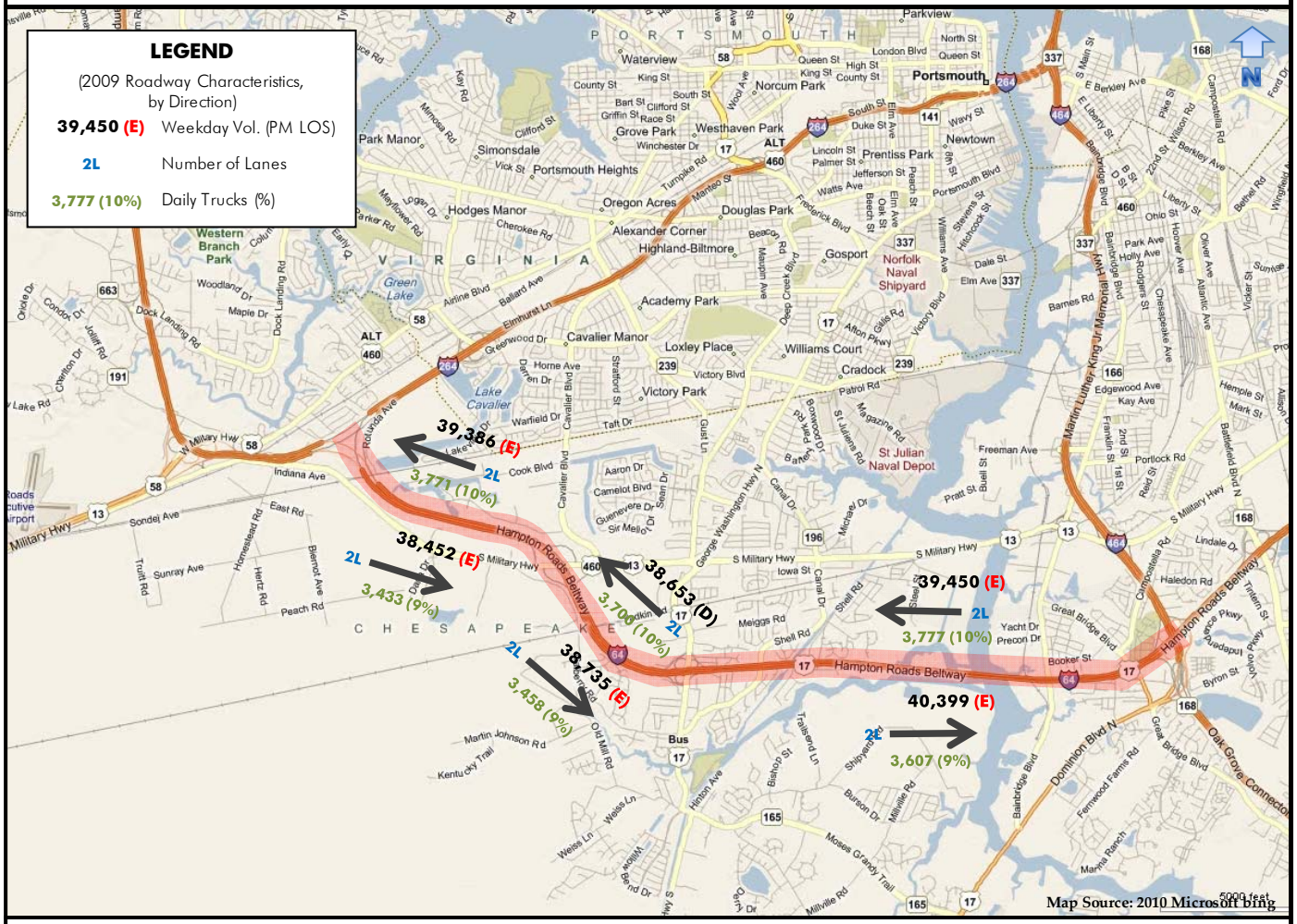
- Ramps from I-264 back up regularly beyond Virginia Beach Boulevard and the Norfolk/Virginia Beach line during the PM peak hour
- Backups occur at the merging area of the Northampton Boulevard onramp to eastbound I-64

Recommendations

- Continue to promote TDM strategies
- Widen eastbound I-64 from the end of the Northampton Boulevard on-ramp to beyond the merging area for the reversible lanes
- Widen ramp from westbound I-64 to eastbound I-264 to 2 lanes
- Improve the interchange of I-64 and Indian River Road
- Lengthen acceleration lane from the I-264 ramp to eastbound I-64
- Construct Southeastern Parkway

CMP CONGESTED CORRIDOR - FREEWAY #6

I-64 Between I-264/I-664 and I-464/Chesapeake Expressway
City of Chesapeake



Probable Causes of Congestion

- Heavy PM peak hour volume (3,156-3,184 vehicles traveling towards Suffolk and 3,070-3,461 vehicles traveling towards Virginia Beach)
- Capacity deficiency (2 lanes per direction)
- Capacity constraints of the High Rise Bridge
- Weaving/merging vehicles at I-464/Chesapeake Expressway & I-264/I-664 Interchanges
- Crashes along corridor (some segments have above average EPDO rates)
- Sun glare
- High Truck Volumes

Recent Projects

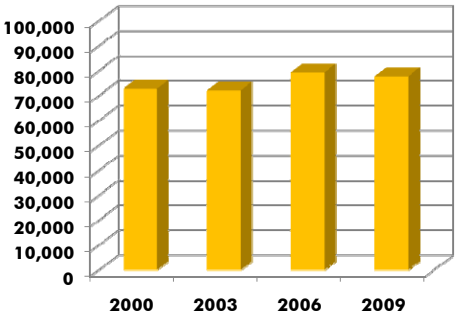
- None

Future Projects

- None

Historical Weekday Volumes

Between I-264/I-664 and Military Highway (both directions)



Corridor Characteristics

Corridor Length	8.22 Miles
Speed Limit	55 mph
Roadway Class	Interstate
Transit Service	HRT Bus Route MAX 967
'06-'08 EPDO Crash Rate	1.45 – 1.76 (towards Virginia Beach) 0.72 – 2.07 (towards Suffolk)

Peak Hour Characteristics

AM Peak Hour	6:30 – 7:30 AM (towards Virginia Beach) 6:45 – 7:45 AM (towards Suffolk)
PM Peak Hour	4:30 – 4:30 PM (towards Virginia Beach) 4:15 – 5:15 PM (towards Suffolk)
AM Peak Direction	towards Virginia Beach
PM Peak Direction	towards Suffolk

	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	YES
	1-3 Parking Fees	-
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	-
	2-2 Exclusive Right-of-Way - New Bus Facilities	YES
	2-3 Ferry Services	-
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	-
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	YES
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	-
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	-
	2-13 Bicycle Storage Systems	-
	2-14 Improved/Expanded Pedestrian Network	-
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	YES
	3-2 HOV Toll Savings	YES
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	-
	4-3 Intersection Signalization Improvements	-
	4-4 Coordinated Intersections Signals	-
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	-
	4-8 Freight Policies and Improvements	IN USE
	4-9 Incident Management, Detection, Response & Clearance	IN USE
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	-
	4-12 Ramp Metering	YES
	4-13 Access Control and Connectivity	-
	4-14 Median Control	-
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	YES
	5-2 Arterial lanes	-
	5-3 Interchanges	YES
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - FREEWAY #6

I-64

Between I-264/664 and I-464/Chesapeake Expressway

Segment	Length (mi)	Direction	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
I-64 I-264/664 to Military Highway	2.31	towards Va Beach	2	2	94,000	F
		towards Suffolk	2	2		F
I-64 Military Highway to George Washington Highway	1.53	towards Va Beach	2	2	102,000	F
		towards Suffolk	2	2		F
I-64 George Washington Highway to I-464/ Chesapeake Expressway	4.38	towards Va Beach	2	2	103,000	F
		towards Suffolk	2	2		F

Observations

- Backups at the merge of George Washington Highway ramps and I-64 towards Virginia Beach
- Backups from weaving on I-64 towards Suffolk at the I-464/Chesapeake Expressway interchange
- Traffic congestion at the High Rise Bridge

Recommendations

- Continue to promote TDM strategies
- Maintain bridge opening restrictions during morning and afternoon peak periods
- Improve interchange of I-64 and I-464/Chesapeake Expressway to reduce weaving movements
- Lengthen acceleration ramps from George Washington Highway to both directions of I-64
- Improve alternate routes (such as Dominion Boulevard)
- Widen I-64 and the High Rise Bridge

CMP CONGESTED CORRIDOR - ARTERIAL #1

Hampton Boulevard/Midtown Tunnel Between Western Freeway and 26th Street Cities of Norfolk and Portsmouth

Probable Causes of Congestion

- Heavy PM peak hour volume
- High directional distribution on Hampton Boulevard during PM peak (68% southbound)
- High signals per mile on Hampton Boulevard
- Heavy truck volumes (4%)
- Capacity deficiency (2 Lanes at Midtown Tunnel)
- Lack of turn lanes on Hampton Boulevard

Recent Projects

- Pinners Point Interchange (completed in 2005)

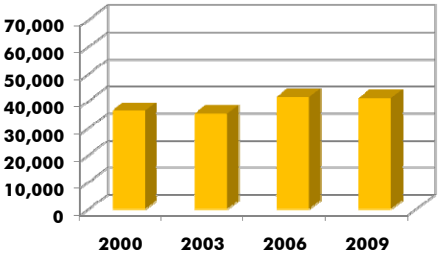
Future Projects

- Midtown Tunnel/MLK Extension* – widening & new facility (LRTP)

* Discussions are currently underway to construct this as a public-private project.

Historical Weekday Volumes

Between Western Freeway and Brambleton Avenue



Corridor Characteristics

Corridor Length	2.63 Miles
Speed Limit	30-35 mph
Roadway Class	Principal Arterial
Transit Service	HRT Bus Routes 2, 4, 44
2008 Total Crashes	50

Peak Hour Characteristics

AM Peak Hour	7:00 – 8:00 AM
PM Peak Hour	3:15 – 4:15 PM (Hampton Blvd) 4:15 – 5:15 PM (Midtown Tun.)
AM Peak Direction	Northbound
PM Peak Direction	Southbound

	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	YES
	1-3 Parking Fees	YES
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	YES
	2-2 Exclusive Right-of-Way - New Bus Facilities	YES
	2-3 Ferry Services	IN USE
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	YES
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	YES
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	YES
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	YES
	2-13 Bicycle Storage Systems	YES
	2-14 Improved/Expanded Pedestrian Network	YES
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	-
	3-2 HOV Toll Savings	-
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	IN USE
	4-3 Intersection Signalization Improvements	IN USE
	4-4 Coordinated Intersections Signals	IN USE
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	-
	4-8 Freight Policies and Improvements	IN USE
	4-9 Incident Management, Detection, Response & Clearance	IN USE
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	YES
	4-12 Ramp Metering	-
	4-13 Access Control and Connectivity	YES
	4-14 Median Control	YES
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	-
	5-2 Arterial lanes	YES
	5-3 Interchanges	-
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - ARTERIAL #1

Hampton Boulevard/Midtown Tunnel

Between Western Freeway and 26th Street

Segment	Length (mi)	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
Midtown Tunnel MLK/Western Freeway to Brambleton Avenue	1.54	2	4	42,000*	A-C*
Hampton Boulevard Brambleton Avenue to 21st Street	0.88	4	4	37,000	F
Hampton Boulevard 21st Street to 26th Street	0.21	4	4	41,000	D

* Assumes tolls are in place as part of the Midtown Tunnel project

Observations

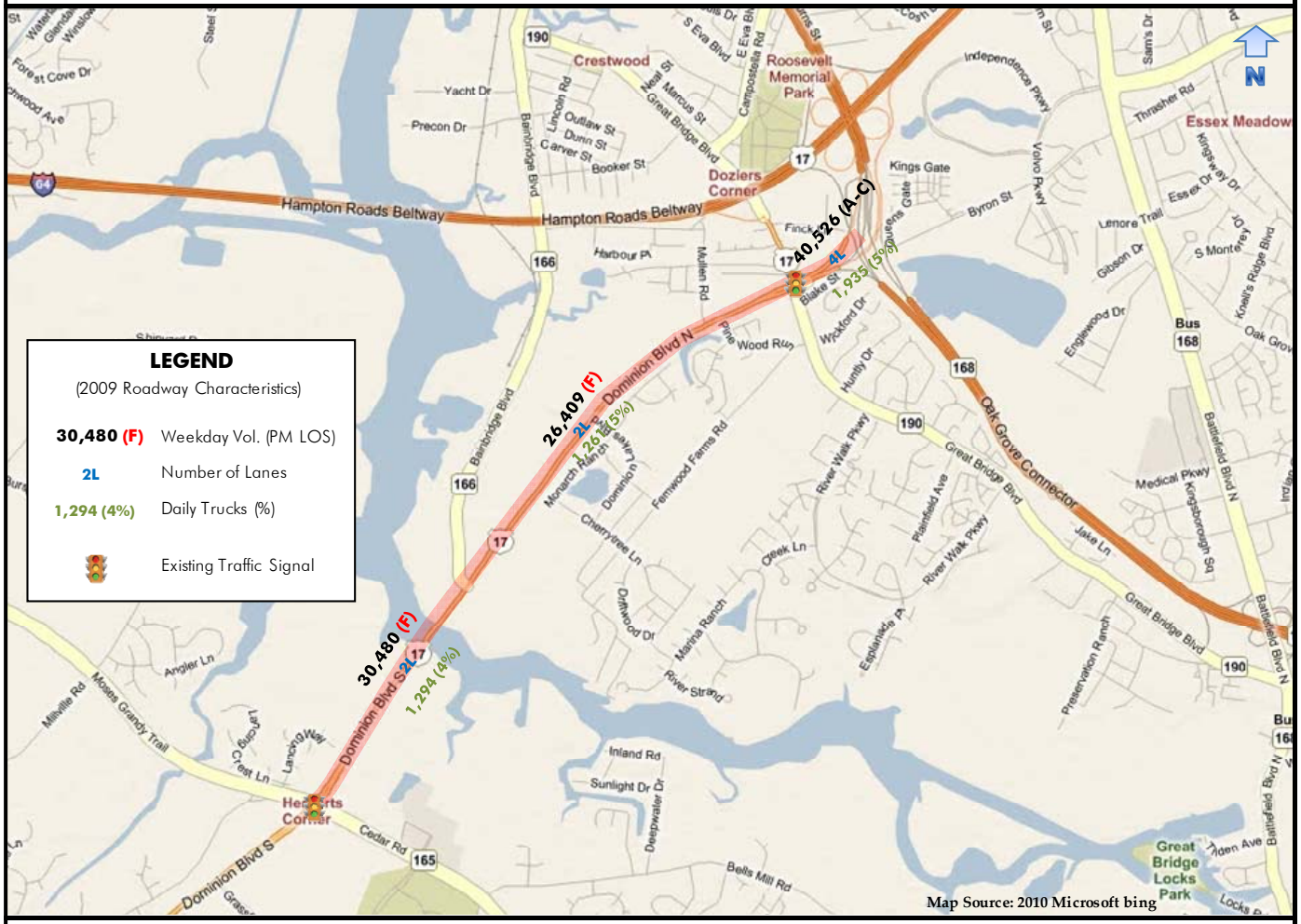
- Afternoon backups from the Midtown Tunnel frequently reach 26th Street on Hampton Boulevard and Colley Avenue on Brambleton Avenue.

Recommendations

- Add tolls/congestion pricing to the Midtown Tunnel
- Give priority to HOV and/or transit vehicles via queue jumping
- Add Variable Message Signs in Downtown Norfolk to alert drivers to traffic conditions
- Continue to promote TDM strategies
- Widen the Midtown Tunnel
- Construct/widen alternate routes (Downtown Tunnel/Third Crossing)

CMP CONGESTED CORRIDOR - ARTERIAL #2

Dominion Boulevard/MLK Highway Between Cedar Road and Chesapeake Expressway
City of Chesapeake



Corridor Characteristics

Corridor Length	2.85 Miles
Speed Limit	55 mph
Roadway Class	Principal Arterial
Transit Service	None
2008 Total Crashes	65

Peak Hour Characteristics

AM Peak Hour	7:15 – 8:15 AM
PM Peak Hour	4:45 – 5:45 PM
AM Peak Direction	Northbound
PM Peak Direction	Southbound

Probable Causes of Congestion

- Heavy PM peak hour volume and directional distribution (61% southbound)
- Bridge openings
- Capacity deficiency (2 lanes)
- Heavy truck volumes (4-5%)

Recent Projects

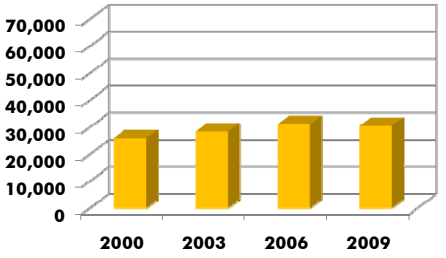
- None

Future Projects

- Widening Dominion Boulevard to 4 lanes from George Washington Highway to Chesapeake Expressway (LRTP), including a fixed span over the Southern Branch of the Elizabeth River

Historical Weekday Volumes

Between Cedar Road and Bainbridge Boulevard



	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	YES
	1-3 Parking Fees	-
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	-
	2-2 Exclusive Right-of-Way - New Bus Facilities	-
	2-3 Ferry Services	-
	2-4 Fleet Expansion	-
	2-5 Improved Intermodal Connections	-
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	YES
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	-
	2-9 Improved Transit Performance	-
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	-
	2-11 Transit Information Systems	-
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	-
	2-13 Bicycle Storage Systems	-
	2-14 Improved/Expanded Pedestrian Network	-
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	-
	3-2 HOV Toll Savings	YES
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	-
	4-3 Intersection Signalization Improvements	YES
	4-4 Coordinated Intersections Signals	-
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	-
	4-8 Freight Policies and Improvements	IN USE
	4-9 Incident Management, Detection, Response & Clearance	YES
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	-
	4-12 Ramp Metering	-
	4-13 Access Control and Connectivity	IN USE
	4-14 Median Control	-
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	-
	5-2 Arterial lanes	YES
	5-3 Interchanges	-
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - ARTERIAL #2

Dominion Boulevard/MLK Highway

Between Cedar Road and Chesapeake Expressway

Segment	Length (mi)	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
Dominion Boulevard Cedar Road to Brainbridge Boulevard	0.93	2	4	73,000	F
Dominion Boulevard Brainbridge Boulevard to Great Bridge Boulevard	1.62	2	4	66,000	F
MLK Highway (formerly Dominion Boulevard) Great Bridge Boulevard to Chesapeake Expressway	0.30	4	4	87,000	F

Observations

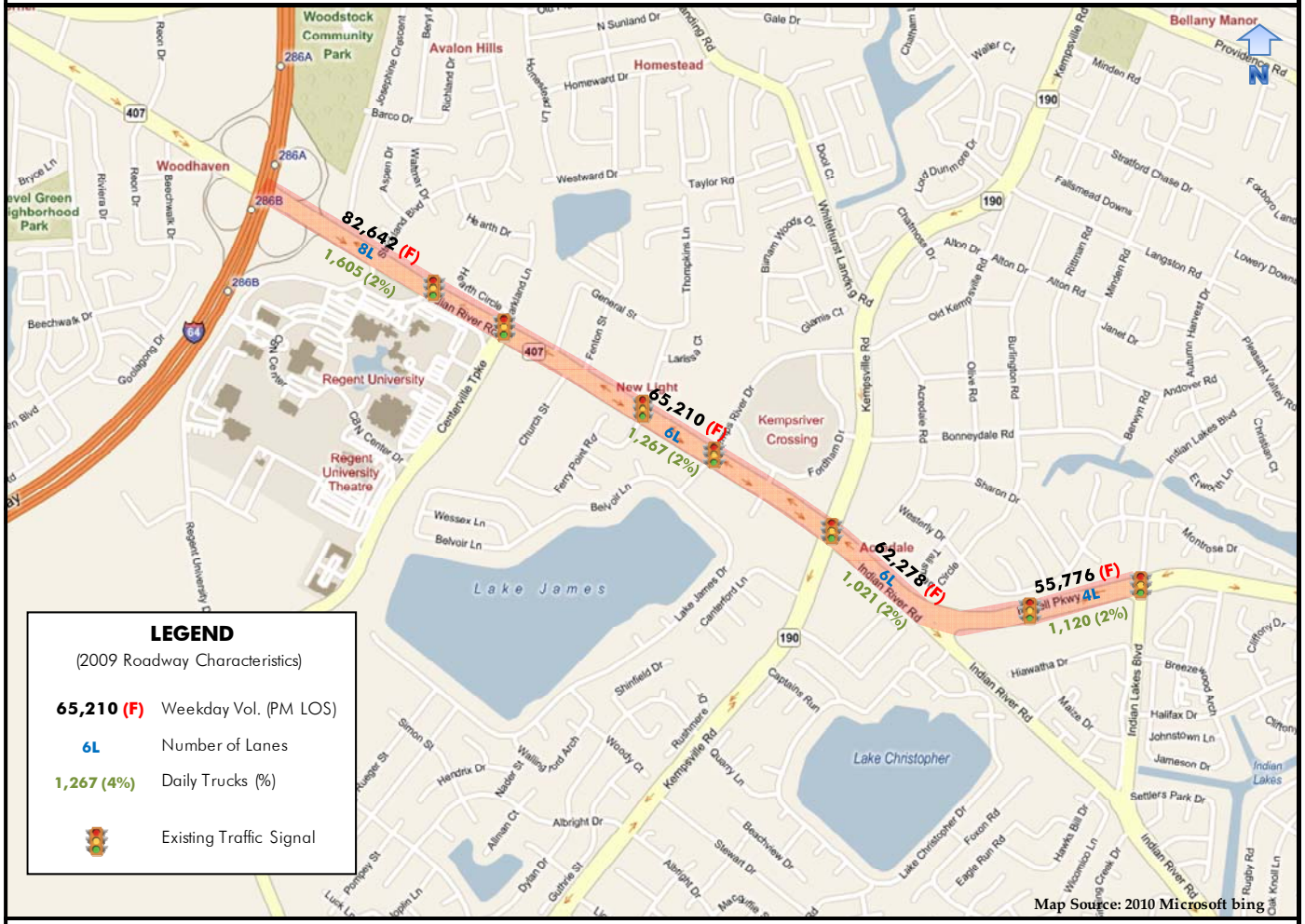
- AM peak hour northbound traffic backs up from the Steel Bridge through the Cedar Road intersection

Recommendations

- Add tolls/congestion pricing to Steel Bridge
- Continue to promote TDM strategies
- Add adaptive signal timing at the intersection of Cedar Road & Dominion Boulevard to prioritize traffic on Cedar Road when the drawbridge is open, and prioritize clearing Dominion Boulevard after the drawbridge closes
- Lengthen right-turn lane on southbound Dominion Boulevard at Moses Grandy Trail
- Maintain bridge opening restrictions during morning and afternoon peak periods
- Widen Dominion Boulevard
- Construct new, fixed span bridge over the Elizabeth River
- Improve alternate route (I-64/High Rise Bridge)

CMP CONGESTED CORRIDOR - ARTERIAL #3

Indian River Road/Ferrell Parkway Between I-64 and Indian Lakes Boulevard
City of Virginia Beach



LEGEND
(2009 Roadway Characteristics)

65,210 (F)	Weekday Vol. (PM LOS)
6L	Number of Lanes
1,267 (4%)	Daily Trucks (%)
	Existing Traffic Signal

Corridor Characteristics

Corridor Length	1.98 Miles
Speed Limit	45 mph
Roadway Class	Minor Arterial
Transit Service	HRT Bus Route 12
2008 Total Crashes	152

Peak Hour Characteristics

AM Peak Hour	7:15 – 8:15 AM
PM Peak Hour	5:00 – 6:00 PM
AM Peak Direction	Westbound
PM Peak Direction	Eastbound

Probable Causes of Congestion

- Heavy PM peak hour volume (2,102-3,665 vehicles in peak direction)
- High directional distribution on Indian River Road during PM peak (58-61% eastbound)
- High signals per mile
- Weaving
- Heavy traffic at Kempsville Road intersection
- Crashes along corridor

Recent Projects

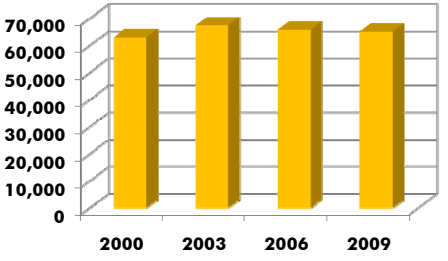
- None

Future Projects

- Intersection Improvements – Indian River Road at Kempsville Road (TIP – FY 2011)
- Widen Indian River Road from Centerville Turnpike to Ferrell Parkway to 8 lanes (LRTP)

Historical Weekday Volumes

Between Centerville Turnpike and Kempsville Road



	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	-
	1-3 Parking Fees	-
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	-
	2-2 Exclusive Right-of-Way - New Bus Facilities	-
	2-3 Ferry Services	-
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	-
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	YES
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	-
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	YES
	2-13 Bicycle Storage Systems	YES
	2-14 Improved/Expanded Pedestrian Network	YES
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicle (HOV)**	
	3-1 Add HOV Lanes	-
	3-2 HOV Toll Savings	-
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	YES
	4-3 Intersection Signalization Improvements	YES
	4-4 Coordinated Intersections Signals	YES
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	YES
	4-8 Freight Policies and Improvements	-
	4-9 Incident Management, Detection, Response & Clearance	YES
	4-10 Construction Management	YES
	4-11 Elimination of Bottlenecks	-
	4-12 Ramp Metering	-
	4-13 Access Control and Connectivity	YES
	4-14 Median Control	IN USE
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	-
	5-2 Arterial lanes	YES
	5-3 Interchanges	-
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - ARTERIAL #3

Indian River Road / Ferrell Parkway

Between I-64 and Indian Lakes Boulevard

Segment	Length (mi)	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
Indian River Road I-64 to Centerville Turnpike	0.57	8	8	103,000	F
Indian River Road Centerville Turnpike to Kempsville Road	0.72	6	8	79,000	E
Indian River Road Kempsville Road to Ferrell Parkway	0.24	6	8	73,000	D
Ferrell Parkway Indian River Road to Indian Lakes Boulevard	0.45	4	4	58,000	F

Observations

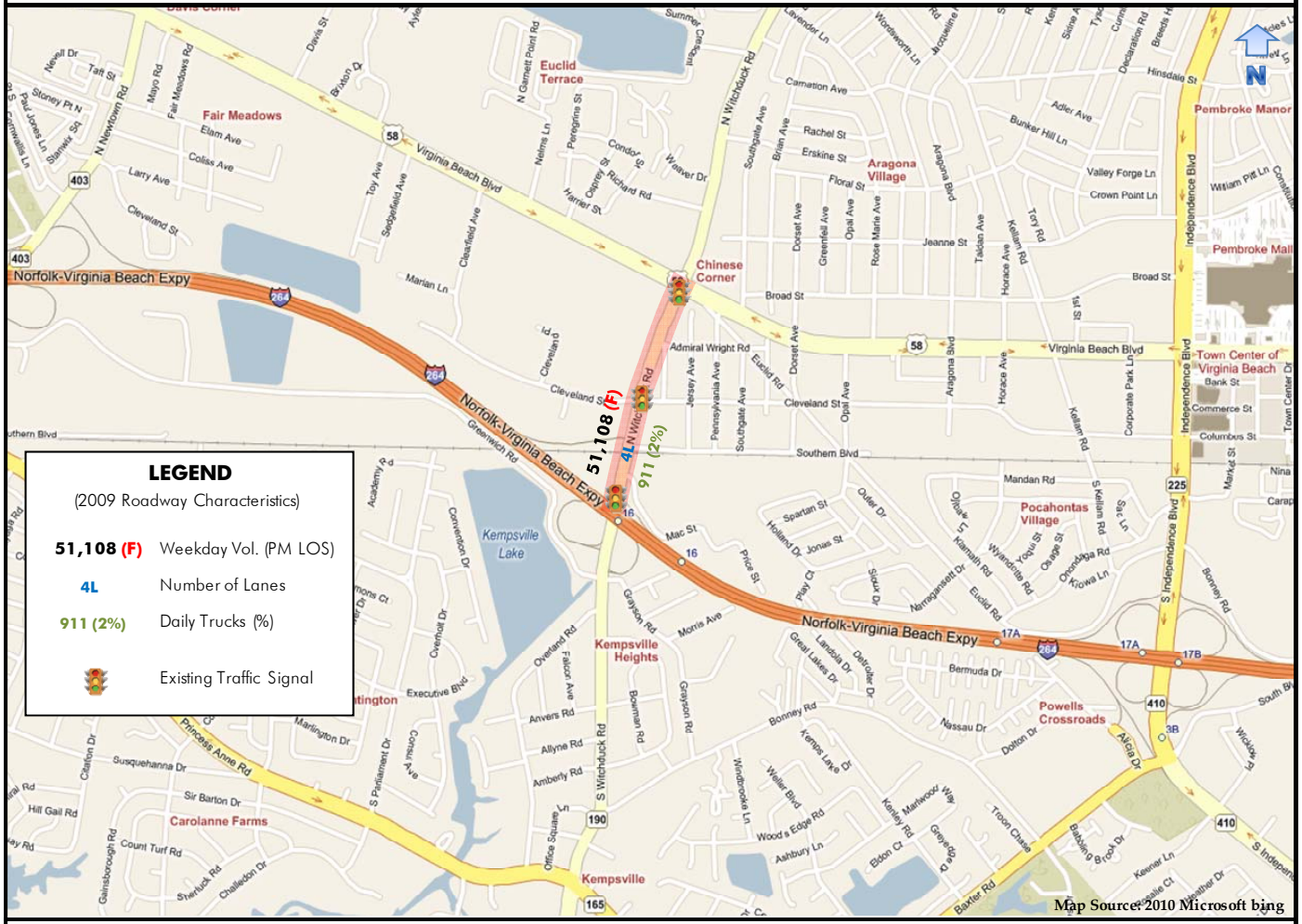
- The queue for the eastbound Indian River Road approach to Kempsville Road spills back onto I-64 during the PM peak period

Recommendations

- Continue to promote TDM Strategies
- Improve the intersection of Indian River Road and Kempsville Road (considering non-traditional intersection configurations)
- Increase the use of access management strategies
- Widen Indian River Road
- Construct the Southeastern Parkway

CMP CONGESTED CORRIDOR - ARTERIAL #4

Witchduck Road Between I-264 and Virginia Beach Boulevard
City of Virginia Beach



Corridor Characteristics

Corridor Length	0.51 Miles
Speed Limit	35 mph
Roadway Class	Minor Arterial
Transit Service	None
2008 Total Crashes	47

Peak Hour Characteristics

AM Peak Hour	7:45 – 8:45 AM
PM Peak Hour	4:15 – 5:15 PM
AM Peak Direction	Northbound
PM Peak Direction	Southbound

Probable Causes of Congestion

- Heavy PM peak hour volume (2,403 vehicles in peak direction)
- High signals per mile
- Heavy traffic at Virginia Beach Boulevard and Cleveland Street intersections
- Crashes along corridor
- Northbound left-turn bay onto I-264 westbound backs up into through lane

Recent Projects

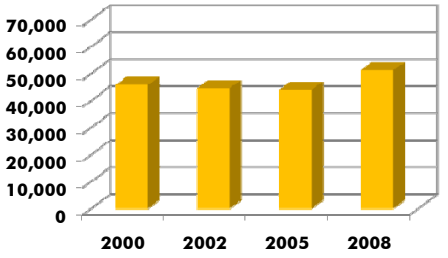
- None

Future Projects

- Interchange Improvements – Witchduck Road & I-264 (LRTP)
- Widen Witchduck Road from I-264 to Virginia Beach Boulevard to 6 lanes (LRTP)

Historical Weekday Volumes

Between I-264 and Virginia Beach Boulevard



	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	-
	1-3 Parking Fees	-
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	-
	2-2 Exclusive Right-of-Way - New Bus Facilities	-
	2-3 Ferry Services	-
	2-4 Fleet Expansion	-
	2-5 Improved Intermodal Connections	-
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	-
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	-
	2-9 Improved Transit Performance	-
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	-
	2-11 Transit Information Systems	-
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	YES
	2-13 Bicycle Storage Systems	YES
	2-14 Improved/Expanded Pedestrian Network	YES
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	-
	3-2 HOV Toll Savings	-
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	-
	4-3 Intersection Signalization Improvements	YES
	4-4 Coordinated Intersections Signals	YES
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	-
	4-8 Freight Policies and Improvements	-
	4-9 Incident Management, Detection, Response & Clearance	YES
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	-
	4-12 Ramp Metering	-
	4-13 Access Control and Connectivity	YES
	4-14 Median Control	IN USE
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	-
	5-2 Arterial lanes	YES
	5-3 Interchanges	YES
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - ARTERIAL #4

Witchduck Road

Between I-264 and Virginia Beach Boulevard

Segment	Length (mi)	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
Witchduck Road I-264 to Virginia Beach Boulevard	0.51	4	6	71,000	F

Observations

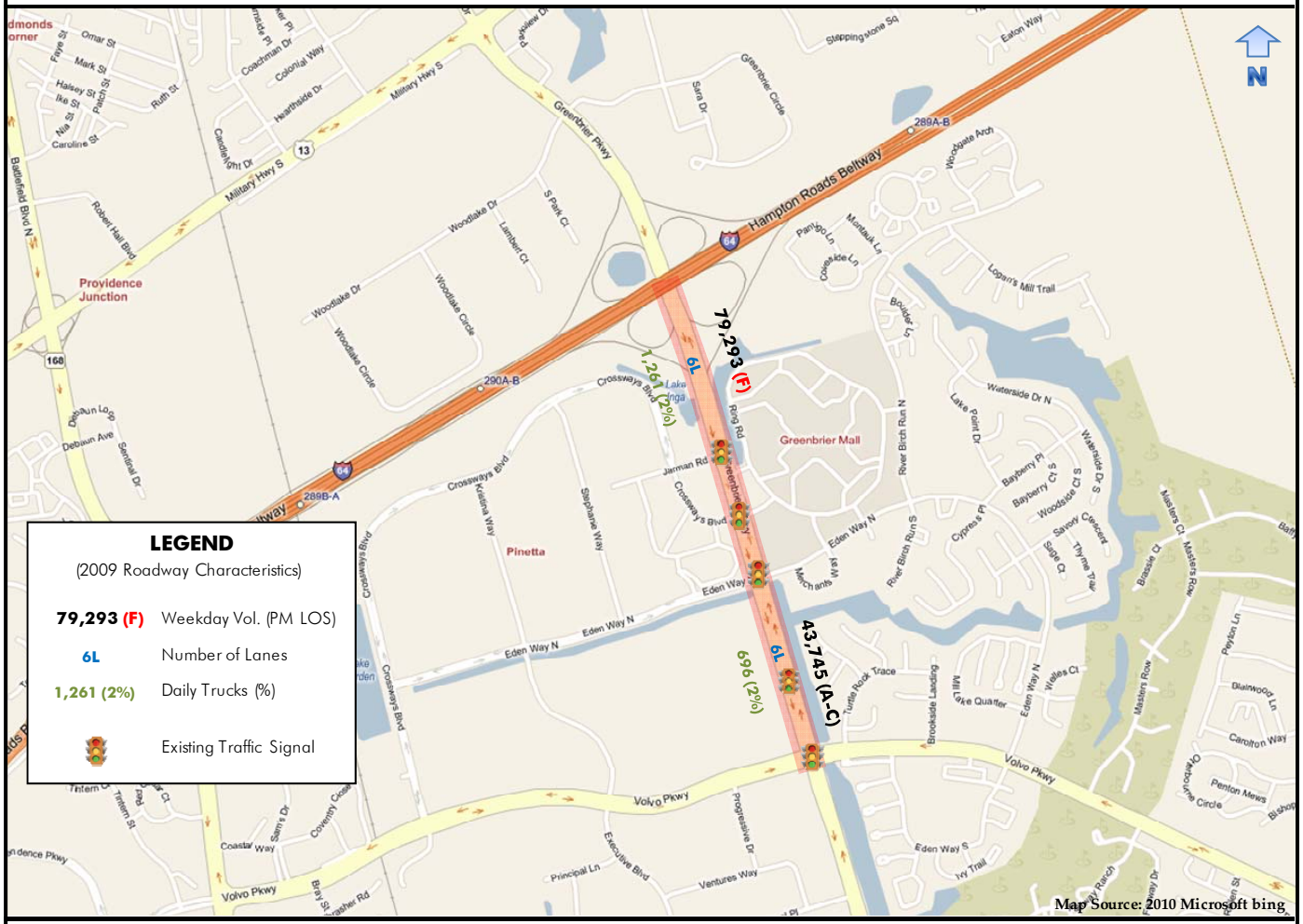
- Northbound left-turn from Witchduck Road to I-264 westbound backs up into through lane

Recommendations

- Add transit service on Witchduck Road
- Continue to promote TDM strategies
- Add a right-turn bay on northbound Witchduck Road at Cleveland Street
- Lengthen turn bays on Witchduck Road at I-264
- Coordinate signals on Witchduck Road
- Increase the use of access management strategies
- Improve interchange of I-264 and Witchduck Road
- Widen Witchduck Road

CMP CONGESTED CORRIDOR - ARTERIAL #5

Greenbrier Parkway Between Volvo Parkway and I-64
City of Chesapeake



LEGEND
(2009 Roadway Characteristics)

79,293 (F)	Weekday Vol. (PM LOS)
6L	Number of Lanes
1,261 (2%)	Daily Trucks (%)
	Existing Traffic Signal

Corridor Characteristics

Corridor Length	1.10 Miles
Speed Limit	45 mph
Roadway Class	Minor Arterial
Transit Service	HRT Bus Routes 15 & 22, MAX 967
2008 Total Crashes	64

Peak Hour Characteristics

AM Peak Hour	7:30 – 8:30 AM
PM Peak Hour	5:00 – 6:00 PM
AM Peak Direction	Northbound
PM Peak Direction	Southbound

Probable Causes of Congestion

- Heavy PM peak hour volume (3,357 vehicles in peak direction)
- High signals per mile
- Weaving between I-64 and Crossways Boulevard
- Heavy traffic at Eden Way and Volvo Parkway intersections
- Crashes along corridor

Recent Projects

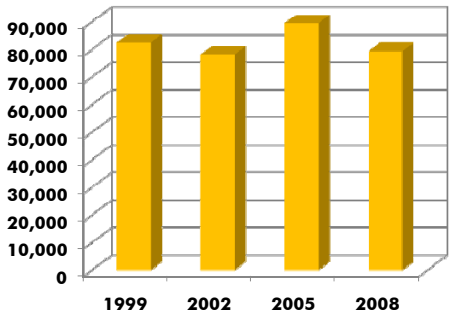
- Extended left-turn bay and added 2nd left-turn bay northbound at Eden Way (completed in 2008)
- Added right-turn bays northbound at Crossways Boulevard/ Greenbrier Mall Entrance and Eden Way (completed in 2008)
- Added 3rd northbound lane from Volvo Parkway to Eden Way (completed in 2009)

Future Projects

- None

Historical Weekday Volumes

Between Eden Way and I-64



	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	-
	1-3 Parking Fees	-
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	-
	2-2 Exclusive Right-of-Way - New Bus Facilities	-
	2-3 Ferry Services	-
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	-
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	YES
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	-
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	YES
	2-13 Bicycle Storage Systems	YES
	2-14 Improved/Expanded Pedestrian Network	YES
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	-
	3-2 HOV Toll Savings	-
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	-
	4-3 Intersection Signalization Improvements	YES
	4-4 Coordinated Intersections Signals	YES
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	-
	4-8 Freight Policies and Improvements	-
	4-9 Incident Management, Detection, Response & Clearance	YES
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	-
	4-12 Ramp Metering	-
	4-13 Access Control and Connectivity	IN USE
	4-14 Median Control	IN USE
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	-
	5-2 Arterial lanes	YES
	5-3 Interchanges	YES
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - ARTERIAL #5

Greenbrier Parkway

Between Volvo Parkway and I-64

Segment	Length (mi)	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
Greenbrier Parkway Volvo Parkway to Eden Way	0.41	6	6	50,000	D
Greenbrier Parkway Eden Way to I-64	0.69	6	6	94,000	F

Observations

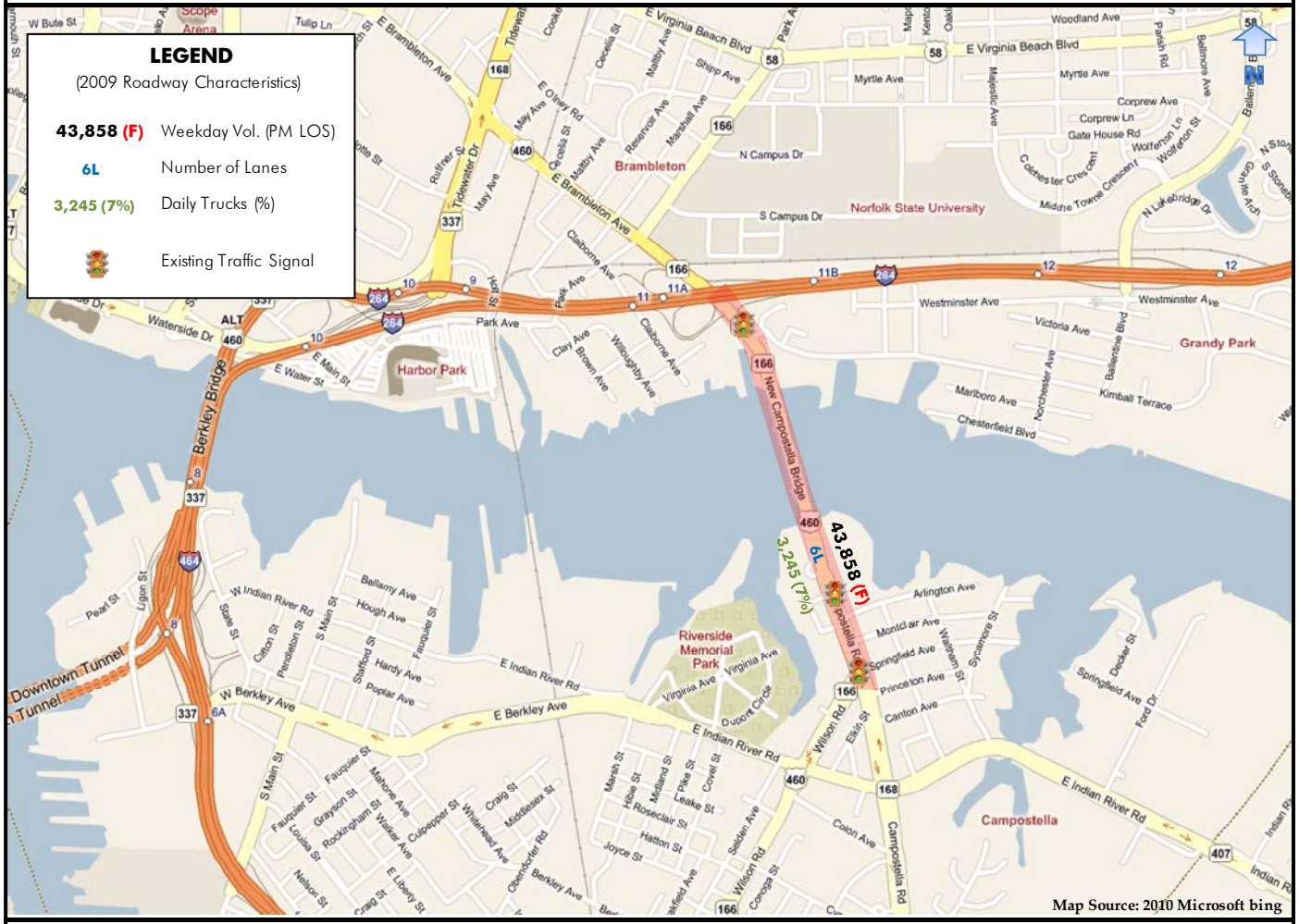
- Weaving is an issue on southbound Greenbrier Parkway between I-64 and Crossways Boulevard/ Greenbrier Mall Entrance
- Traffic backs up from the left-turn lane into the through lane on northbound Greenbrier Parkway at the Crossways Boulevard/Greenbrier Mall Entrance intersection during the PM peak hour

Recommendations

- Continue to promote TDM strategies
- Add pedestrian and bicycle facilities
- Add an additional through lane on the northbound Greenbrier Parkway approach at the Volvo Parkway intersection
- Lengthen left-turn lane (or add 2nd left-turn lane) on northbound Greenbrier Parkway at the Crossways Boulevard intersection
- Coordinate signals on Greenbrier Parkway
- Add lane arrows on eastbound Crossways Boulevard at Greenbrier Parkway
- Extend northbound Greenbrier Parkway to westbound I-64 (towards Virginia Beach) ramp to north Mall Entrance

CMP CONGESTED CORRIDOR - ARTERIAL #6

Campostella Road Between I-264 and Wilson Road
City of Norfolk



Probable Causes of Congestion

- Heavy PM peak hour volume (2,898 vehicles in peak direction)
- High directional distribution on Campostella Road during PM peak (70% southbound)
- Heavy truck volumes (7%)
- No acceleration lane for vehicles from I-264

Recent Projects

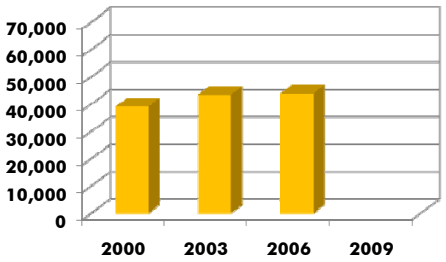
- None

Future Projects

- None

Historical Weekday Volumes

Between I-264 and Wilson Road



2009 data was not available for this segment.

Corridor Characteristics

Corridor Length	0.87 Miles
Speed Limit	30 mph
Roadway Class	Principal Arterial
Transit Service	HRT Bus Routes 13 & 18
2008 Total Crashes	30

Peak Hour Characteristics

AM Peak Hour	7:15 – 8:15 AM
PM Peak Hour	4:30 – 5:30 PM
AM Peak Direction	Northbound
PM Peak Direction	Southbound

	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	YES
	1-3 Parking Fees	-
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	-
	2-2 Exclusive Right-of-Way - New Bus Facilities	-
	2-3 Ferry Services	-
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	YES
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	-
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	-
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	YES
	2-13 Bicycle Storage Systems	YES
	2-14 Improved/Expanded Pedestrian Network	YES
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	-
	3-2 HOV Toll Savings	-
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	IN USE
	4-3 Intersection Signalization Improvements	YES
	4-4 Coordinated Intersections Signals	IN USE
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	YES
	4-8 Freight Policies and Improvements	YES
	4-9 Incident Management, Detection, Response & Clearance	YES
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	-
	4-12 Ramp Metering	-
	4-13 Access Control and Connectivity	YES
	4-14 Median Control	IN USE
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	-
	5-2 Arterial lanes	YES
	5-3 Interchanges	YES
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - ARTERIAL #6

Campostella Road

Between I-264 and Wilson Road

Segment	Length (mi)	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
Campostella Road I-264 to Wilson Road	0.87	6	6	46,000	F

Observations

- Traffic backs up on southbound Campostella Road from Wilson Road onto the Campostella Bridge

Recommendations

- Continue to promote TDM strategies
- Add an additional left-turn lane on westbound Kimball Terrace at Campostella Road
- Convert the existing through-right lane into a left-through-right lane on northbound Wilson Road at Campostella Road
- Continue to restrict left-turns from northbound Campostella Road to Wilson Road
- Change the signal phasing at the intersection of Campostella Road and Wilson Road to allow a southbound right-turn overlap with the northbound left-turns from Wilson Road
- Convert existing lanes into reversible lanes
- Lengthen acceleration lane from eastbound I-264 to southbound Campostella Road

CMP CONGESTED CORRIDOR - ARTERIAL #7

Jefferson Avenue Between Thimble Shoals Boulevard and Denbigh Boulevard
City of Newport News

LEGEND
(2009 Roadway Characteristics)

68,974 (F)	Weekday Vol. (PM LOS)
6L	Number of Lanes
1,854 (2%)	Daily Trucks (%)
	Existing Traffic Signal

Corridor Characteristics

Corridor Length	4.32 Miles
Speed Limit	45 mph
Roadway Class	Principal Arterial
Transit Service	HRT Bus Routes 107, 111, 112, 113, 116, 119
2008 Total Crashes	310

Peak Hour Characteristics

AM Peak Hour	7:30 – 8:30 AM
PM Peak Hour	4:45 – 5:45 PM
AM Peak Direction	Southbound
PM Peak Direction	Northbound

Probable Causes of Congestion

- Heavy PM peak hour volume (2,863-3,041 vehicles in peak direction)
- High signals per mile
- Heavy traffic at Denbigh Boulevard, Bland Boulevard, and Oyster Point Road intersections
- Weaving on northbound Jefferson Avenue between I-64 and Bland Boulevard
- Few available routes that cross I-64 and the CSX rail line
- Crashes along corridor

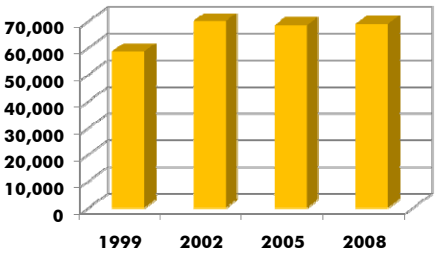
Recent Projects

- Intersection improvements at Thimble Shoals Boulevard (completed in 2008)

Future Projects

- Middle Ground Boulevard extension from Jefferson Avenue to Warwick Boulevard (TIP – FY 2011)

Historical Weekday Volumes
Between Bland Boulevard and I-64



	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	-
	1-3 Parking Fees	YES
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	YES
	2-2 Exclusive Right-of-Way - New Bus Facilities	YES
	2-3 Ferry Services	-
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	YES
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	YES
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	-
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	YES
	2-13 Bicycle Storage Systems	YES
	2-14 Improved/Expanded Pedestrian Network	YES
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	-
	3-2 HOV Toll Savings	-
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	YES
	4-3 Intersection Signalization Improvements	YES
	4-4 Coordinated Intersections Signals	YES
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	-
	4-8 Freight Policies and Improvements	-
	4-9 Incident Management, Detection, Response & Clearance	YES
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	-
	4-12 Ramp Metering	-
	4-13 Access Control and Connectivity	YES
	4-14 Median Control	IN USE
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	-
	5-2 Arterial lanes	YES
	5-3 Interchanges	YES
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - ARTERIAL #7

Jefferson Avenue

Between Thimble Shoals Boulevard and Denbigh Boulevard

Segment	Length (mi)	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
Jefferson Avenue Thimble Shoals Boulevard to Middle Ground Boulevard	0.30	6	6	66,000	D
Jefferson Avenue Middle Ground Boulevard to Oyster Point Road	1.28	6	6	63,000	F
Jefferson Avenue Oyster Point Road to I-64	0.95	6	6	65,000	D
Jefferson Avenue I-64 to Bland Boulevard	0.92	6	6	76,000	F
Jefferson Avenue Bland Boulevard to Denbigh Boulevard	0.87	6	6	72,000	F

Observations

- Traffic exiting from westbound I-64 to northbound Jefferson Avenue backs up onto the through lanes of the interstate during the PM peak period
- Weaving is an issue on northbound Jefferson Avenue between I-64 and Bland Boulevard

Recommendations

- Add light rail parallel to Jefferson Avenue
- Add bus pullouts on Jefferson Avenue at bus stops located adjacent to through lanes
- Continue to promote TDM strategies
- Improve pedestrian and bicycle facilities
- Add a right-turn bay on westbound Thimble Shoals Boulevard at Jefferson Avenue
- Add an additional left-turn lane on northbound Jefferson Avenue at Jefferson Commons
- Add an additional left-turn lane on both approaches of Jefferson Avenue at Turnberry Boulevard
- Lengthen left-turn lanes on any approach where vehicles spill into main travel lanes during the peak hour
- Increase signage alerting vehicles traveling to the airport to use the right lane on northbound Jefferson Avenue
- Increase the use of access management strategies
- Lengthen acceleration lane for ramp from eastbound I-64 to southbound Jefferson Avenue
- Improve interchange of I-64 and Jefferson Avenue (consider a diamond interchange)
- Complete Middle Ground Boulevard extension between Warwick Boulevard and Jefferson Avenue
- Construct a new interchange at I-64 and Bland Boulevard

CMP CONGESTED CORRIDOR - ARTERIAL #8

Independence Boulevard/Holland Road Between Virginia Beach Boulevard and S Plaza Trail
City of Virginia Beach

Corridor Characteristics

Corridor Length	2.03 Miles
Speed Limit	45 mph
Roadway Class	Principal/Minor Arterial
Transit Service	HRT Bus Routes 19 & 36, MAX 960
2008 Total Crashes	262

Peak Hour Characteristics

AM Peak Hour	7:30 – 8:30 AM
PM Peak Hour	4:45 – 5:45 PM
AM Peak Direction	Northbound
PM Peak Direction	Southbound

Probable Causes of Congestion

- Heavy PM peak hour volume (2,717-4,196 vehicles in peak direction on Independence Boulevard)
- Weaving on northbound Independence Boulevard between I-264 and Bonney Road
- Heavy traffic at Virginia Beach Boulevard, Bonney Road, Baxter Road, and S Independence Boulevard intersections
- Crashes along corridor

Recent Projects

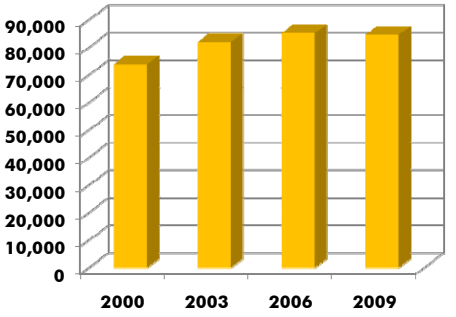
- Intersection Improvements at the intersection of Independence Boulevard and Holland Road

Future Projects

- Interchange Improvements – I-264 & Independence Boulevard (LRTP)
- Holland Road Widening from 4 to 6 lanes (LRTP)

Historical Weekday Volumes

Between I-264 and Columbus Street



	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	-
	1-3 Parking Fees	YES
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	YES
	2-2 Exclusive Right-of-Way - New Bus Facilities	-
	2-3 Ferry Services	-
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	YES
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	YES
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	YES
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	YES
	2-13 Bicycle Storage Systems	YES
	2-14 Improved/Expanded Pedestrian Network	YES
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	-
	3-2 HOV Toll Savings	-
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	IN USE
	4-3 Intersection Signalization Improvements	YES
	4-4 Coordinated Intersections Signals	IN USE
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	-
	4-8 Freight Policies and Improvements	-
	4-9 Incident Management, Detection, Response & Clearance	YES
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	-
	4-12 Ramp Metering	-
	4-13 Access Control and Connectivity	YES
	4-14 Median Control	IN USE
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	-
	5-2 Arterial lanes	YES
	5-3 Interchanges	YES
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - ARTERIAL #8

Independence Boulevard/Holland Road

Between Virginia Beach Boulevard and S Plaza Trail

Segment	Length (mi)	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
Independence Boulevard Virginia Beach Boulevard to Columbus Street	0.18	8	8	78,000	D
Independence Boulevard Columbus Street to I-264	0.49	8	8	96,000	F
Independence Boulevard I-264 to Baxter Road	0.23	8	8	95,000	F
Independence Boulevard Baxter Road to Holland Road	0.80	8	8	89,000	F
Holland Road Independence Boulevard to S Plaza Trail	0.33	4	6	53,000	D

Observations

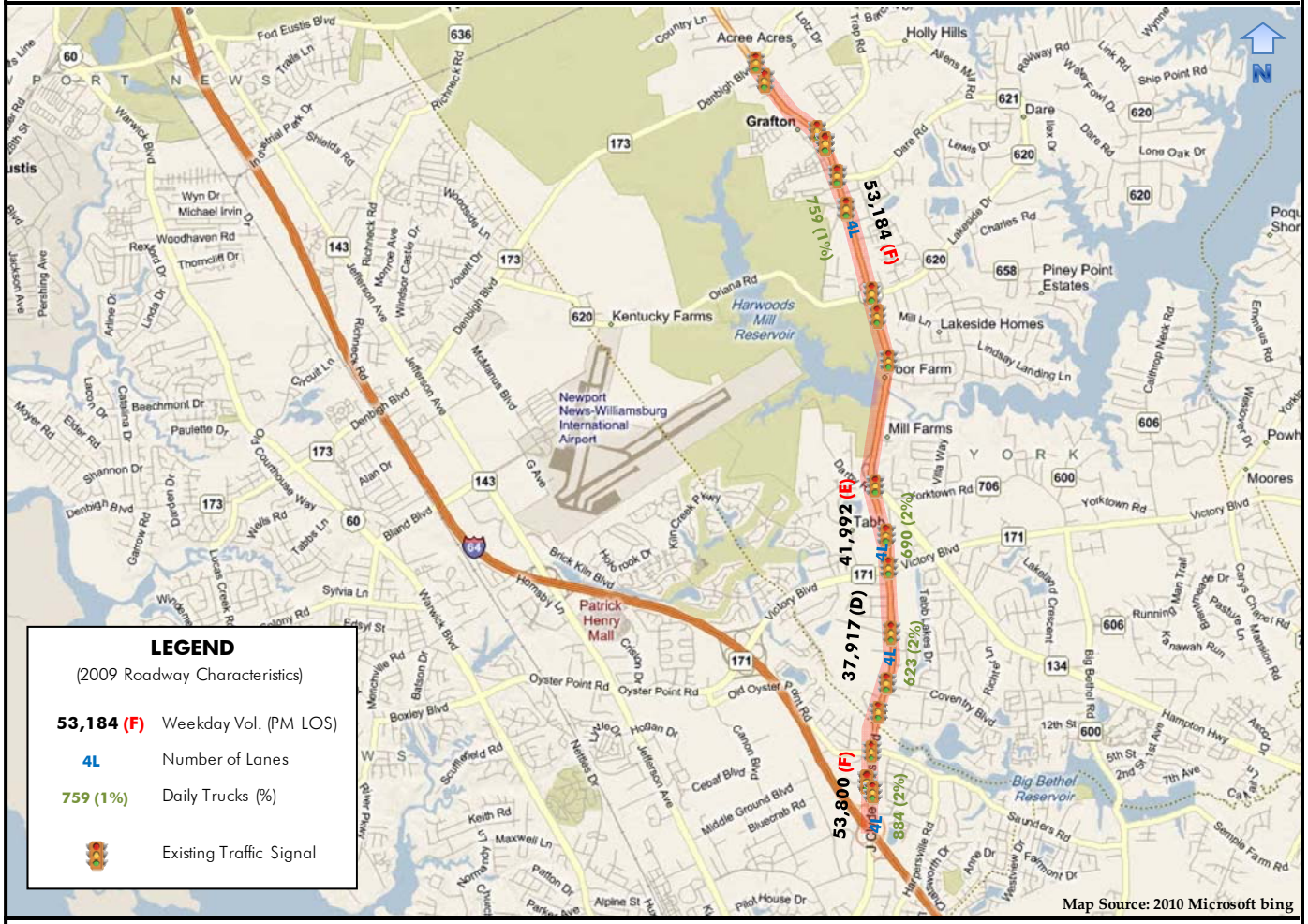
- Traffic backs up on eastbound Holland Road from S. Plaza Trail to Independence Boulevard during the PM peak hour
- Traffic backs up on northbound Independence Boulevard from Bonney Road onto I-264 ramps
- Weaving is an issue on northbound Independence Boulevard between I-264 and Bonney Road

Recommendations

- Continue to promote TDM strategies
- Add an additional through lane on northbound S Plaza Trail at Holland Road
- Add additional left-turn lanes on both approaches of Holland Road at S Plaza Trail
- Improve the interchange of I-264 and Independence Boulevard to add capacity, improve safety, and reduce weaving movements
- Widen Holland Road

CMP CONGESTED CORRIDOR - ARTERIAL #9

Route 17 Between I-64 and Denbigh Boulevard
City of Newport News and York County



LEGEND
(2009 Roadway Characteristics)

53,184 (F)	Weekday Vol. (PM LOS)
4L	Number of Lanes
759 (1%)	Daily Trucks (%)
	Existing Traffic Signal

Corridor Characteristics

Corridor Length	6.08 Miles
Speed Limit	45 mph
Roadway Class	Principal Arterial
Transit Service	HRT Bus Route 111
2008 Total Crashes	222

Peak Hour Characteristics

AM Peak Hour	7:15 – 8:15 AM
PM Peak Hour	4:45 – 5:45 PM
AM Peak Direction	Southbound
PM Peak Direction	Northbound

Probable Causes of Congestion

- Heavy PM peak hour volume (1,983-2,444 vehicles in peak direction for most of the corridor)
- High signals per mile
- Capacity deficiency (4 lanes)
- Heavy traffic at Victory Boulevard and Oriana Road/Lakeside Drive intersections
- Short merging area for traffic from Hampton Highway to northbound Route 17

Recent Projects

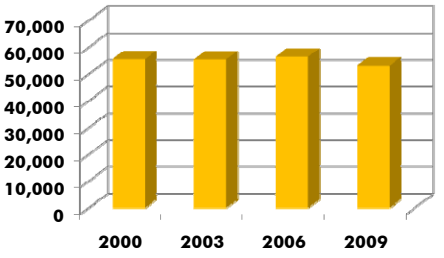
- Arterial signal system upgrade (completed in 2005)

Future Projects

- Widen Route 17 from Hampton Highway to Denbigh Boulevard to 6 lanes (LRTP)
- Widen Route 17 from I-64 to Harpersville Road (LRTP)

Historical Weekday Volumes

Between Hampton Highway and Denbigh Boulevard



	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	-
	1-3 Parking Fees	-
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	-
	2-2 Exclusive Right-of-Way - New Bus Facilities	-
	2-3 Ferry Services	-
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	-
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	YES
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	-
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	YES
	2-13 Bicycle Storage Systems	YES
	2-14 Improved/Expanded Pedestrian Network	YES
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	-
	3-2 HOV Toll Savings	-
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	YES
	4-3 Intersection Signalization Improvements	YES
	4-4 Coordinated Intersections Signals	YES
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	YES
	4-7 Reversible Lanes	YES
	4-8 Freight Policies and Improvements	-
	4-9 Incident Management, Detection, Response & Clearance	YES
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	-
	4-12 Ramp Metering	-
	4-13 Access Control and Connectivity	YES
	4-14 Median Control	IN USE
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	-
	5-2 Arterial lanes	YES
	5-3 Interchanges	-
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - ARTERIAL #9

Route 17

Between I-64 and Denbigh Boulevard

Segment	Length (mi)	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
Route 17 I-64 to Harpersville Road	0.60	4	6	70,000	F
Route 17 Harpersville Road to York CL	0.19	4	4	49,000	F
Route 17 Newport News CL to Victory Boulevard	1.20	4	4	49,000	F
Route 17 Victory Boulevard to Hampton Highway	0.64	4	4	48,000	F
Route 17 Hampton Highway to Denbigh Boulevard	3.45	4	6	86,000	F

Observations

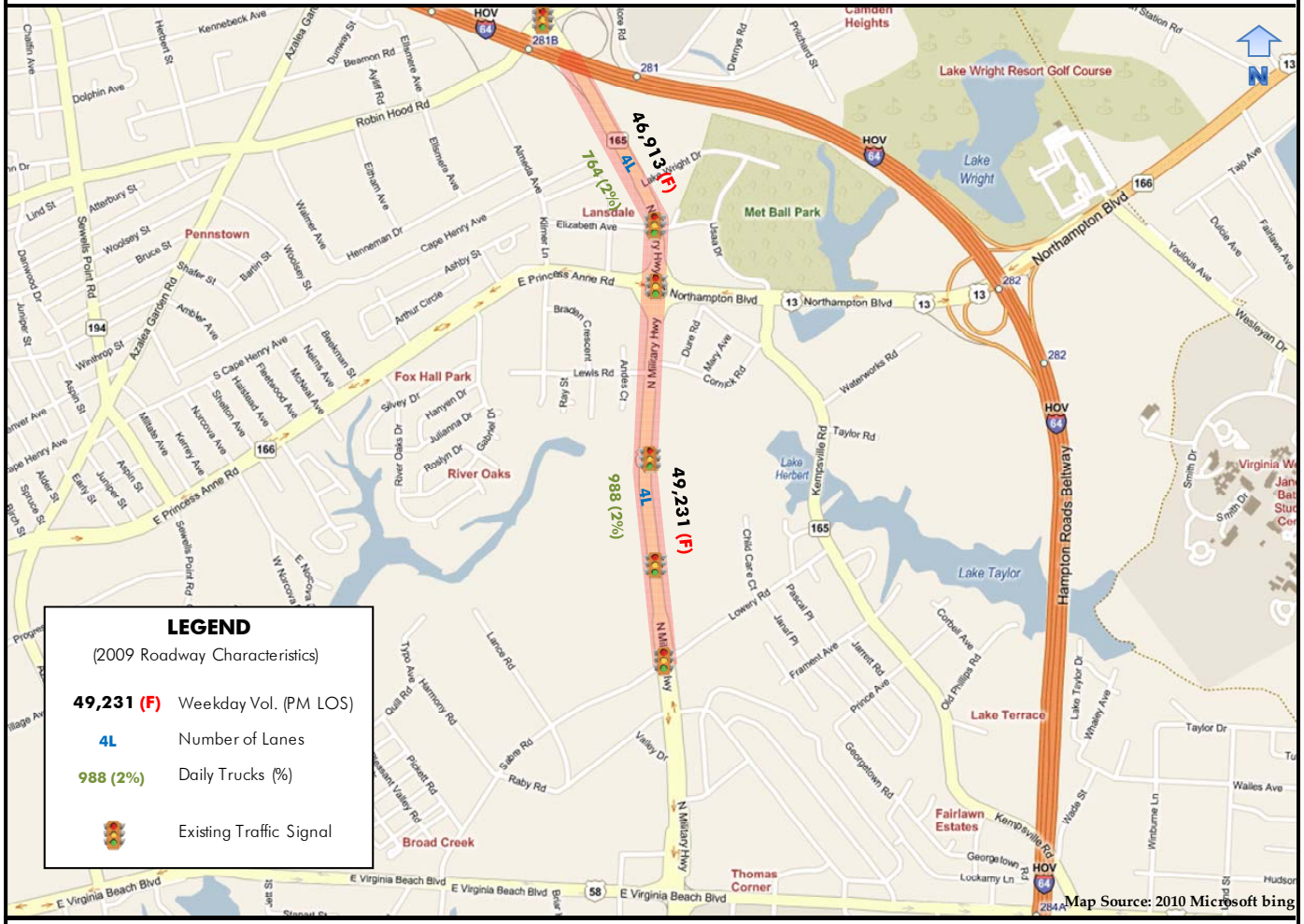
- Traffic on northbound Route 17 backs up from Oriana Road/Lakeside Drive to Hampton Highway during the PM peak hour

Recommendations

- Provide transit service on Route 17 in York County
- Continue to promote TDM strategies
- Add pedestrian and bicycle facilities
- Stripe right-turn bays onto existing shoulder where shoulder widths are adequate
- Lengthen left-turn lanes on any approach where vehicles spill into main travel lanes during the peak hour
- Improve coordination of signals on Route 17
- Increase the use of access management strategies
- Extend the westbound I-64 off-ramp on northbound Route 17 to the 3-lane section north of Traverse Road
- Widen Route 17

CMP CONGESTED CORRIDOR - ARTERIAL #10

Military Highway Between Lowery Road and I-64
City of Norfolk



Corridor Characteristics

Corridor Length	1.33 Miles
Speed Limit	40 – 45 mph
Roadway Class	Principal Arterial
Transit Service	HRT Bus Routes 15 & 23
2008 Total Crashes	71

Peak Hour Characteristics

AM Peak Hour	7:15 – 8:15 AM
PM Peak Hour	4:30 – 5:30 PM
AM Peak Direction	Northbound (Lowery – Northampton) Southbound (Northampton – I-64)
PM Peak Direction	Southbound

Probable Causes of Congestion

- Heavy PM peak hour volume (2,037-2,046 vehicles in peak direction)
- Heavy traffic at Princess Anne Road/Northampton Boulevard intersection

Recent Projects

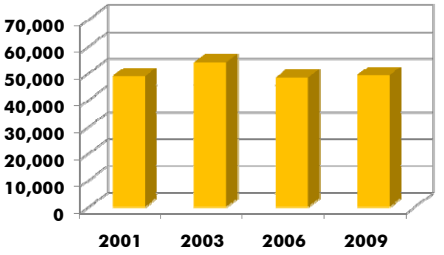
- None

Future Projects

- Widen Military Highway from Lowery Road to Northampton Boulevard to 8 lanes (TIP – FY 2013)
- Intersection Improvements – Military Highway at Robin Hood Road (TIP – FY 2013)
- Widen Military Highway from Northampton Boulevard to Robin Hood Road to 6 lanes (LRTP)

Historical Weekday Volumes

Between Lowery Road and Northampton Boulevard



	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce VMT	**Growth Management/Activity Centers**	
	1-1 Land Use Policies/Regulations	IN USE
	Congestion/Value Pricing	
	1-2 Road User Fees/High Occupancy Toll (HOT) Lanes	-
	1-3 Parking Fees	-
	Transportation Demand Management (TDM)	
	1-4 Telecommuting	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**Public Transit Capital Improvements**	
	2-1 Exclusive Right-of-Way - New Rail Service	-
	2-2 Exclusive Right-of-Way - New Bus Facilities	-
	2-3 Ferry Services	-
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	-
	2-6 Improved/Increased Park & Ride Facilities & Capital Improvements	-
	Public Transit Operational Improvements	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	-
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	Bicycle and Pedestrian Modes	
	2-12 Improved/Expanded Bicycle Network	YES
	2-13 Bicycle Storage Systems	YES
	2-14 Improved/Expanded Pedestrian Network	YES
Strategy #3 Shift Trips from SOV to HOV	**High Occupancy Vehicles (HOV)**	
	3-1 Add HOV Lanes	-
	3-2 HOV Toll Savings	-
	Transportation Demand Management (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**Traffic Operational Improvements**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Turn Restrictions	YES
	4-3 Intersection Signalization Improvements	YES
	4-4 Coordinated Intersections Signals	IN USE
	4-5 Roadway Environment	YES
	4-6 Intelligent Transportation Systems/Smart Traffic Centers (ITS)	IN USE
	4-7 Reversible Lanes	-
	4-8 Freight Policies and Improvements	-
	4-9 Incident Management, Detection, Response & Clearance	YES
	4-10 Construction Management	IN USE
	4-11 Elimination of Bottlenecks	-
	4-12 Ramp Metering	-
	4-13 Access Control and Connectivity	YES
	4-14 Median Control	YES
Strategy #5 Add Capacity	**Addition of General Purpose Lanes**	
	5-1 Freeway Lanes	-
	5-2 Arterial lanes	YES
	5-3 Interchanges	YES
	5-4 Improve Alternate Routes	YES

CMP CONGESTED CORRIDOR - ARTERIAL #10

Military Highway

Between Lowery Road and I-64

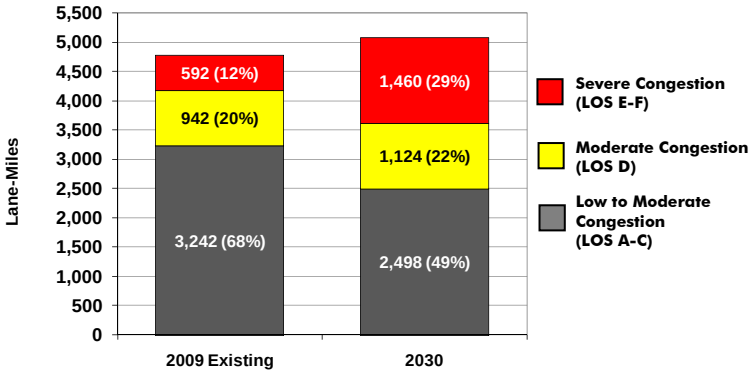
Segment	Length (mi)	Number of Lanes 2009	Number of Lanes 2030	2030 Projected Volumes	2030 Congestion Level
Military Highway Lowery Road to Princess Anne Road/ Northampton Boulevard	0.81	4	8	61,000	A-C
Military Highway Princess Anne Road/ Northampton Boulevard to I-64	0.52	4	6	61,000	D

Recommendations

- Add bus pull-outs on Military Highway at bus stops located adjacent to through lanes
- Increase transit service on Military Highway
- Continue to promote TDM strategies
- Improve the intersection of Military Highway and Northampton Boulevard
- Lengthen right-turn lane on southbound Military Highway at the Target shopping center
- Lengthen acceleration lane for ramp from eastbound I-64 to southbound Military Highway
- Widen Military Highway

NEXT STEPS

The Congestion Management Process (CMP) for Hampton Roads is an on-going process that identifies congested locations, determines the causes of congestion, ranks the most congested segments, and develops transportation strategies to reduce traffic congestion and enhance safety and mobility regionwide. Currently, the Hampton Roads region is experiencing severe congestion on 12% of all CMP roadway lane-miles during the afternoon peak hour. Severe congestion levels are expected to more than double to nearly a third (29%) of all CMP roadway lane-miles during the afternoon peak hour by the year 2030.



2009 Existing and 2030 LOS by Lane-Mile for the CMP Roadway Network (PM peak hour)

All of the existing congested roadway segments (LOS E or F) in the region were grouped into 41 "Congested Corridors" (12 Freeways and 29 Arterials). The 41 congested corridors were ranked based on four factors: the CMP Segment Ranking Score (which takes into account the existing level of service, freight, safety, travel speeds, and national significance of roadway segments within the corridor), the daily traffic volume on each roadway segment, the number of lanes, and the length of each roadway segment. The top 6 freeway and top 10 arterial corridors were selected as CMP Congested Corridors.

As congestion levels rise, it is imperative to evaluate, develop, and apply congestion mitigation strategies involving all modes of transportation to improve service levels on the regional transportation system. In order to achieve this goal, a comprehensive "toolbox" of CMP mitigation strategies has been provided in prior sections of this report. The strategies were grouped into five major categories:

HRTPO CONGESTION MITIGATION STRATEGIES

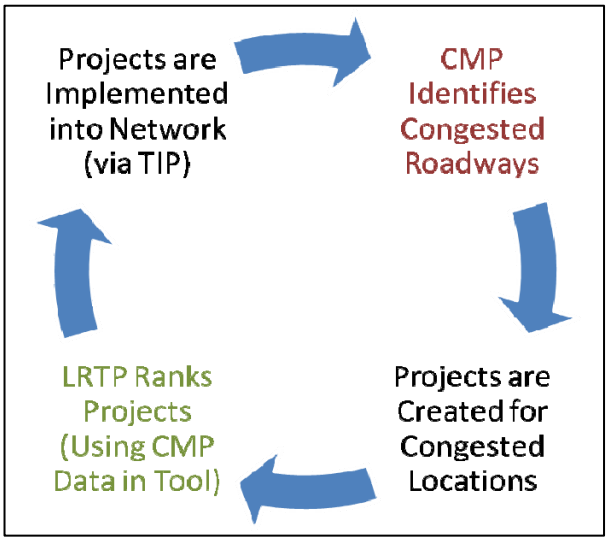
1) Eliminate Person Trips or Reduce VMT
2) Shift Trips from Automobile to Other Modes
3) Shift Trips from SOV to HOV
4) Improve Roadway Operations
5) Add Capacity

As part of this CMP update, 16 CMP Congested Corridors were analyzed in detail to determine probable causes of congestion, peak hour characteristics, recent and future projects, existing and future congestion levels, possible application of CMP mitigation strategies, and recommendations for congestion relief. Although the remaining 25 corridors are not analyzed in this report, congestion remains a problem within these corridors. These corridors should be considered in any future studies regarding congested locations throughout Hampton Roads including future Congestion Management Process report updates. The jurisdictions in which the remaining congested corridors are located are encouraged to perform detailed corridor studies to determine alternative strategies and recommendations to address congestion.

Federal regulations require that CMPs be implemented as a continuous part of the metropolitan planning process, which also includes the Long-Range Transportation Plan (LRTP), the Transportation Improvement Program (TIP), and the Unified Planning Work Program (UPWP). The CMP is the first step in addressing regional congestion as it monitors the regional roadway network, identifies congestion, and develops strategies to address congestion. The CMP includes a ranking of roadways based on the current congestion and other performance measures to determine where future congestion relief projects are most needed.

In light of the current mismatch between transportation funding and transportation deficiencies, it is more important than ever that only the most beneficial projects be selected for construction. The HRTPO staff encourages local planners, engineers, and decision makers to strongly consider the CMP results when developing future projects for the most congested areas. Once projects are developed, data from the CMP will be input into the LRTP Project Prioritization Tool in order to assist in the ranking of projects. Finally, the highest priority projects should be implemented into the network via the TIP and the process can begin again.

The HRTPO staff will continue to monitor and refine the regional CMP. Roadway data, such as traffic volumes, peak hour factors, roadway and signal characteristics, safety data, capacity changes, and other transportation improvements will be updated continuously in order to assist with future CMP report releases and other HRTPO planning efforts.



Steps for Integrating CMP into the Planning Process

APPENDICES

Appendix A – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Interstates and Freeways/Expressways

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	DIR	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES (INCLUDES HOV LANES)				NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
						ONE-WAY EXISTING	TWO-WAY EXISTING	COUNT YEAR	2030 TWO-WAY (AMENDED)	2009	2030	EXISTING	2030		
CHES	I-64	CITY LINE RD/VA BEACH CL	GREENBRIER PKWY	EB	1.30	68,875	132,485	2007	157,000	4	4	D	F	0.86	-
				WB		63,610		2009		4	4	A-C	D	0.61	-
CHES	I-64	GREENBRIER PKWY	BATTLEFIELD BLVD	EB	1.42	62,890	128,252	2009	148,000	4	4	D	E	0.81	-
				WB		65,362		2005		4	4	A-C	A-C	0.57	-
CHES	I-64	BATTLEFIELD BLVD	I-464	EB	1.08	51,960	102,982	2008	137,000	4	4	A-C	D	0.57	-
				WB		51,022		2008		4	4	A-C	A-C	0.46	-
CHES	I-64	I-464	GEORGE WASHINGTON HWY	EB	4.38	39,450	79,849	2006	103,000	2	2	E	F	0.93	19
				WB		40,399		2006		2	2	E	F	0.90	16
CHES	I-64	GEORGE WASHINGTON HWY	MILITARY HWY	EB	1.53	38,653	77,388	2006	102,000	2	2	D	F	0.82	-
				WB		38,735		2006		2	2	E	F	0.88	16
CHES	I-64	MILITARY HWY	I-264&664	EB	2.31	39,386	77,838	2009	94,000	2	2	E	F	0.93	16
				WB		38,452		2009		2	2	E	F	0.89	16
CHES	I-264	I-64&664	WCL PORTSMOUTH	EB	1.23	28,390	55,936	2006	56,000	2	2	A-C	A-C	0.41	-
				WB		27,546		2006		2	2	D	D	0.75	-
CHES	I-464	I-64	MILITARY HWY	NB	1.00	30,843	59,199	2006	88,000	3	3	A-C	A-C	0.28	-
				SB		28,356		2006		3	3	A-C	D	0.51	-
CHES	I-464	MILITARY HWY	FREEMAN AVE	NB	0.97	23,551	48,913	2006	75,000	3	3	A-C	A-C	0.20	-
				SB		25,362		2006		3	3	A-C	A-C	0.43	-
CHES	I-464	FREEMAN AVE	POINDEXTER ST	NB	1.90	26,264	48,686	2009	81,000	3	3	A-C	A-C	0.23	-
				SB		22,422		2009		3	3	A-C	D	0.42	-
CHES	I-464	POINDEXTER ST	NORFOLK CL	NB	0.72	28,433	46,768	2006	71,000	2	2	A-C	A-C	0.38	-
				SB		18,335		2006		2	2	A-C	D	0.50	-
CHES	I-664	I-64 & I-264	ROUTES 13/58/460	EB	1.70	60,275	121,308	2009	139,000	4	4	A-C	A-C	0.53	-
				WB		61,033		2009		4	4	A-C	D	0.66	-
CHES	I-664	ROUTES 13/58/460	DOCK LANDING RD	EB	1.25	44,000	88,800	2006	94,000	2	2	E	E	0.91	14
				WB		44,800		2006		2	2	E	F	0.98	15
CHES	I-664	DOCK LANDING RD	PORTSMOUTH BLVD	EB	1.14	42,669	81,555	2006	86,000	2	2	E	E	0.94	14
				WB		38,886		2006		2	2	D	D	0.79	-
CHES	I-664	PORTSMOUTH BLVD	PUGHSVILLE RD	EB	2.06	41,606	83,659	2006	93,000	2	2	E	F	0.96	14
				WB		42,053		2006		2	2	D	E	0.84	-
CHES	I-664	PUGHSVILLE RD	SUFFOLK CL	EB	0.83	40,405	80,370	2005	92,000	3	3	A-C	D	0.62	-
				WB		39,965		2005		3	3	A-C	A-C	0.47	-
CHES	CHESAPEAKE EXPWY	GALLBUSH RD	BATTLEFIELD BLVD (NEAR INDIAN CREEK)	NB	2.61	5,020	10,039	2008	20,000	2	2	A-C	A-C	0.06	-
				SB		5,019		2008		2	2	A-C	A-C	0.13	-
CHES	CHESAPEAKE EXPWY	BATTLEFIELD BLVD (NEAR INDIAN CREEK)	HILLCREST PKWY	NB	2.63	6,271	12,103	2006	23,000	2	2	A-C	A-C	0.11	-
				SB		5,832		2006		2	2	A-C	A-C	0.15	-
CHES	CHESAPEAKE EXPWY	HILLCREST PKWY	BATTLEFIELD BLVD (S OF GREAT BRIDGE)	NB	2.21	13,362	26,628	2006	43,000	2	2	A-C	A-C	0.24	-
				SB		13,266		2006		2	2	A-C	A-C	0.35	-
CHES	CHESAPEAKE EXPWY	BATTLEFIELD BLVD (S OF GREAT BRIDGE)	HANBURY RD	NB	0.59	13,666	26,075	2008	42,000	2	2	A-C	A-C	0.24	-
				SB		12,409		2008		2	2	A-C	A-C	0.35	-
CHES	CHESAPEAKE EXPWY	HANBURY RD	MT PLEASANT RD	NB	1.31	21,971	42,143	2008	59,000	2	2	A-C	A-C	0.35	-
				SB		20,172		2008		2	2	A-C	E	0.65	-
CHES	CHESAPEAKE EXPWY	MT PLEASANT RD	BATTLEFIELD BLVD (N OF GREAT BRIDGE)	NB	2.31	32,791	63,350	2008	81,000	2	2	A-C	A-C	0.49	-
				SB		30,559		2008		2	2	F	F	1.06	12
CHES	CHESAPEAKE EXPWY	BATTLEFIELD BLVD (N OF GREAT BRIDGE)	DOMINION BLVD	NB	1.90	30,592	62,861	2008	77,000	2	2	A-C	A-C	0.51	-
				SB		32,269		2008		2	2	F	F	1.03	12
CHES	CHESAPEAKE EXPWY	DOMINION BLVD	I-64	NB	0.57	28,517	65,905	2009	77,000	3	3	A-C	A-C	0.29	-
				SB		37,388		2009		3	3	A-C	A-C	0.61	-
CHES	ROUTE 13/58/460	SUFFOLK CL	I-664	EB	2.50	35,065	69,953	2009	79,000	3	3	A-C	A-C	0.39	-
				WB		34,888		2009		3	3	A-C	A-C	0.60	-
HAM	I-64	NEWPORT NEWS CL	HRC PARKWAY	EB	2.24	78,675	160,630	2007	213,000	4	4	D	F	0.83	-
				WB		81,955		2007		4	4	F	F	1.06	15
HAM	I-64	HRC PARKWAY	MAGRUDER BLVD	EB	0.77	65,000	129,778	2007	182,000	4	4	A-C	E	0.67	-
				WB		64,778		2007		4	4	D	F	0.76	-

See page 121 for Legend

Appendix A – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Interstates and Freeways/Expressways

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	DIR	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES (INCLUDES HOV LANES)				NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
						ONE-WAY EXISTING	TWO-WAY EXISTING	COUNT YEAR	2030 TWO-WAY (AMENDED)	2009	2030	EXISTING	2030		
HAM	I-64	MAGRUDER BLVD	MERCURY BLVD	EB	1.04	82,000	165,553	2007	212,000	5	5	A-C	D	0.63	-
				WB		83,553		2007		5	5	D	F	0.78	-
HAM	I-64	MERCURY BLVD	I-664	EB	0.96	57,888	122,460	2004	192,000	6	6	A-C	A-C	0.30	-
				WB		64,572		2004		6	6	A-C	D	0.45	-
HAM	I-64	I-664	ARMISTEAD AVE	EB	0.88	58,068	114,011	2007	143,000	3	3	A-C	D	0.68	-
				WB		55,943		2007		3	3	A-C	D	0.61	-
HAM	I-64	ARMISTEAD AVE	RIP RAP RD	EB	0.46	45,029	97,800	2004	129,000	3	3	A-C	A-C	0.48	-
				WB		52,771		2004		3	3	A-C	D	0.60	-
HAM	I-64	RIP RAP RD	KING ST	EB	0.33	45,029	97,800	2004	115,000	3	3	A-C	A-C	0.48	-
				WB		52,771		2004		3	3	A-C	D	0.60	-
HAM	I-64	KING ST	SETTLERS LANDING RD	EB	1.22	45,029	97,800	2004	123,000	3	3	A-C	A-C	0.48	-
				WB		52,771		2004		3	3	A-C	D	0.60	-
HAM	I-64	SETTLERS LANDING RD	MALLORY ST	EB	0.54	49,144	99,150	2004	122,000	3	3	A-C	A-C	0.52	-
				WB		50,006		2004		3	3	A-C	D	0.59	-
HAM	I-64/HRBT	MALLORY ST	NORFOLK CL	EB	3.69	46,764	92,063	2009	110,000	2	2	F	F	1.04	19
				WB		45,299		2009		2	2	F	F	1.03	21
HAM	I-664	NEWPORT NEWS CL	ABERDEEN RD	EB	0.44	31,714	64,964	2004	88,000	3	3	A-C	A-C	0.35	-
				WB		33,250		2004		3	3	A-C	D	0.61	-
HAM	I-664	ABERDEEN RD	POWER PLANT PKWY	EB	1.29	29,574	61,347	2004	84,000	3	3	A-C	A-C	0.33	-
				WB		31,773		2004		3	3	A-C	D	0.54	-
HAM	I-664	POWER PLANT PKWY	I-64	EB	1.38	32,902	67,871	2004	92,000	3	3	A-C	A-C	0.34	-
				WB		34,969		2004		3	3	A-C	D	0.52	-
JCC	I-64	NEW KENT CL	RTE 30	EB	2.69	25,122	49,376	2007	81,000	2	2	A-C	A-C	0.43	-
				WB		24,254		2007		2	2	A-C	D	0.48	-
JCC	I-64	RTE 30	CROAKER RD (RTE 607)	EB	4.34	26,658	55,206	2007	82,000	2	2	A-C	A-C	0.50	-
				WB		28,548		2007		2	2	A-C	D	0.57	-
JCC	I-64	CROAKER RD (RTE 607)	YORK CL	EB	1.67	31,561	62,101	2007	108,000	2	2	A-C	F	0.58	-
				WB		30,540		2007		2	2	A-C	F	0.64	-
JCC	I-64	YORK CL	NEWPORT NEWS CL	EB	2.38	41,795	86,497	2007	106,000	2	2	D	F	0.83	-
				WB		44,702		2007		2	2	D	E	0.77	-
JCC	RTE 199	YORK CL	RICHMOND RD (RTE 60)	EB	0.16	12,190	24,535	2007	37,000	2	2	A-C	A-C	0.29	-
				WB		12,345		2007		2	2	A-C	A-C	0.25	-
JCC	RTE 199	RICHMOND RD (RTE 60)	LONGHILL RD (RTE 612)	EB	2.94	11,128	22,252	2007	35,000	2	2	A-C	A-C	0.24	-
				WB		11,124		2007		2	2	A-C	A-C	0.27	-
JCC	RTE 199	LONGHILL RD (RTE 612)	MONTICELLO AVE (RTE 321)	EB	1.89	14,474	28,869	2007	36,000	2	2	A-C	A-C	0.29	-
				WB		14,395		2007		2	2	A-C	A-C	0.39	-
JCC	RTE 199	MONTICELLO AVE (RTE 321)	JOHN TYLER HWY (RTE 5)	EB	1.30	15,163	30,270	2007	37,000	2	2	A-C	A-C	0.29	-
				WB		15,107		2007		2	2	A-C	A-C	0.38	-
NN	I-64	JAMES CITY CL	RTE 143 (NORTH)	EB	0.27	41,795	86,497	2007	106,000	2	2	D	F	0.83	-
				WB		44,702		2007		2	2	D	E	0.77	-
NN	I-64	RTE 143 (NORTH)	YORKTOWN RD	EB	0.88	43,973	88,412	2007	122,000	2	2	D	F	0.84	-
				WB		44,439		2007		2	2	D	F	0.82	-
NN	I-64	YORKTOWN RD	FORT EUSTIS BLVD	EB	2.45	46,180	94,033	2007	128,000	2	2	E	F	0.90	20
				WB		47,853		2007		2	2	D	F	0.88	-
NN	I-64	FORT EUSTIS BLVD	JEFFERSON AVE	EB	4.86	50,574	103,587	2007	125,000	2	2	E	F	0.94	14
				WB		53,013		2007		2	2	E	F	0.97	13
NN	I-64	JEFFERSON AVE	OYSTER POINT RD	EB	1.60	60,983	125,422	2007	164,000	4	4	A-C	E	0.67	-
				WB		64,439		2007		4	4	D	E	0.74	-
NN	I-64	OYSTER POINT RD	J C MORRIS BLVD	EB	1.64	69,634	137,387	2009	182,000	4	4	D	F	0.77	-
				WB		67,753		2009		4	4	E	F	0.96	15
NN	I-64	J C MORRIS BLVD	HAMPTON CL	EB	0.90	78,675	160,630	2007	213,000	4	4	D	F	0.83	-
				WB		81,955		2007		4	4	F	F	1.06	15
NN	I-664/MMMBT	SUFFOLK CL	TERMINAL AVE	EB	2.85	28,822	59,617	2009	80,000	2	2	D	F	0.90	-
				WB		30,795		2009		2	2	E	F	0.92	17

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Appendix A – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Interstates and Freeways/Expressways

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	DIR	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES (INCLUDES HOV LANES)				NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
						ONE-WAY EXISTING	TWO-WAY EXISTING	COUNT YEAR	2030 TWO-WAY (AMENDED)	2009	2030	EXISTING	2030		
NN	I-664	TERMINAL AVE	23RD ST	EB	0.92	24,319	48,016	2004	68,000	3	3	A-C	A-C	0.37	-
				WB		23,697		2004		3	3	A-C	A-C	0.30	-
NN	I-664	23RD ST	CHESTNUT AVE	EB	1.69	25,933	52,860	2004	72,000	3	3	A-C	A-C	0.29	-
				WB		26,927		2004		3	3	A-C	A-C	0.46	-
NN	I-664	CHESTNUT AVE	HAMPTON CL	EB	0.24	31,714	64,964	2004	88,000	3	3	A-C	A-C	0.35	-
				WB		33,250		2004		3	3	A-C	D	0.61	-
NOR	I-64/HRBT	HAMPTON CL	OCEAN VIEW AVE	EB	0.19	46,764	92,063	2009	110,000	2	2	F	F	1.04	19
				WB		45,299		2009		2	2	F	F	1.03	21
NOR	I-64	OCEAN VIEW AVE	4TH VIEW AVE	EB	1.82	46,764	92,063	2009	110,000	2	2	D	E	0.79	-
				WB		45,299		2009		2	2	E	F	0.88	20
NOR	I-64	4TH VIEW AVE	BAY AVE	EB	1.01	44,136	84,658	2006	94,000	2	2	D	D	0.74	-
				WB		40,522		2006		2	2	D	D	0.69	-
NOR	I-64	BAY AVE	GRANBY ST	EB	1.60	50,403	89,873	2006	104,000	2	2	E	F	0.88	14
				WB		39,470		2006		2	2	D	D	0.68	-
NOR	I-64	GRANBY ST	I-564/LITTLE CREEK RD	EB	0.21	50,403	89,873	2006	101,000	2	2	E	E	0.88	14
				WB		39,470		2006		2	2	D	D	0.68	-
NOR	I-64 REV	I-564/LITTLE CREEK RD	TIDEWATER DR	R	1.17	25,782	143,931	2009	160,000	2	2	A-C	A-C	0.32	-
	I-64	I-564/LITTLE CREEK RD	TIDEWATER DR	EB		52,624		2009		4	4	A-C	A-C	0.60	-
	I-64	I-564/LITTLE CREEK RD	TIDEWATER DR	WB		65,525		2003		4	4	A-C	A-C	0.49	-
NOR	I-64 REV	TIDEWATER DR	CHESAPEAKE BLVD	R	1.04	25,782	147,227	2009	164,000	2	2	A-C	A-C	0.32	-
	I-64	TIDEWATER DR	CHESAPEAKE BLVD	EB		59,299		2008		3	3	D	E	0.86	-
	I-64	TIDEWATER DR	CHESAPEAKE BLVD	WB		62,146		2009		3	3	A-C	D	0.62	-
NOR	I-64 REV	CHESAPEAKE BLVD	NORVIEW AVE	R	0.97	25,782	158,255	2009	171,000	2	2	A-C	A-C	0.32	-
	I-64	CHESAPEAKE BLVD	NORVIEW AVE	EB		68,784		2006		3	3	E	E	0.89	15
	I-64	CHESAPEAKE BLVD	NORVIEW AVE	WB		63,689		2003		3	3	A-C	D	0.65	-
NOR	I-64 REV	NORVIEW AVE	MILITARY HWY	R	1.22	25,782	172,939	2009	179,000	2	2	A-C	A-C	0.32	-
	I-64	NORVIEW AVE	MILITARY HWY	EB		74,076		2008		3	3	E	F	1.00	15
	I-64	NORVIEW AVE	MILITARY HWY	WB		73,081		2009		3	3	D	D	0.82	-
NOR	I-64 REV	MILITARY HWY	NORTHAMPTON BLVD	R	1.07	25,782	163,191	2009	172,000	2	2	A-C	A-C	0.32	-
	I-64	MILITARY HWY	NORTHAMPTON BLVD	EB		65,202		2006		3	3	D	D	0.82	-
	I-64	MILITARY HWY	NORTHAMPTON BLVD	WB		72,207		2009		3	3	D	D	0.79	-
NOR	I-64 REV	NORTHAMPTON BLVD	I-264	R	2.12	18,177	181,081	2006	195,000	2	2	A-C	A-C	0.22	-
	I-64	NORTHAMPTON BLVD	I-264	EB		81,159		2006		3	3	F	F	1.01	22
	I-64	NORTHAMPTON BLVD	I-264	WB		81,745		2006		4	4	D	D	0.68	-
NOR	I-64	I-264	VA BEACH CL	EB	0.93	77,164	150,243	2008	171,000	3	3	F	F	1.16	17
	I-64	I-264	VA BEACH CL	WB		73,079		2009		3	3	D	E	0.78	-
NOR	I-264/DOWNTOWN TUNNEL	PORTSMOUTH CL	I-464	EB	0.40	47,809	98,790	2009	77,000	2	2	F	D	1.07	23
				WB		50,981		2009		2	2	F	D	1.10	21
NOR	I-264/BERKLEY BRIDGE	I-464	WATERSIDE/CITY HALL/TIDEWATER	EB	0.72	62,585	125,297	2006	125,000	4	4	A-C	A-C	0.56	-
				WB		62,712		2006		4	4	E	E	0.91	20
NOR	I-264	WATERSIDE/CITY HALL/TIDEWATER	BRAMBLETON AVE	EB	0.91	57,655	108,508	2009	119,000	5	5	A-C	A-C	0.63	-
				WB		50,853		2009		4	4	A-C	A-C	0.30	-
NOR	I-264	BRAMBLETON AVE	BALLENTINE BLVD	EB	0.85	67,845	135,107	2009	125,000	4	4	D	D	0.96	-
				WB		67,262		2009		4	4	A-C	A-C	0.47	-
NOR	I-264	BALLENTINE BLVD	MILITARY HWY	EB	2.43	70,253	139,533	2008	140,000	4	4	F	F	1.01	15
				WB		69,280		2008		4	4	A-C	A-C	0.48	-
NOR	I-264	MILITARY HWY	I-64	EB	0.78	70,253	139,533	2008	170,000	6	6	A-C	D	0.58	-
				WB		69,280		2008		6	6	A-C	A-C	0.31	-
NOR	I-264	I-64	NEWTOWN RD/WCL VA. BEACH	EB	0.74	125,000	254,872	2006	309,000	6	7	E	E	0.94	14
				WB		129,872		2006		6	6	A-C	D	0.66	-
NOR	I-464	CHESAPEAKE CL	SOUTH MAIN ST	NB	0.42	28,433	46,768	2006	69,000	2	2	A-C	A-C	0.38	-
				SB		18,335		2006		2	2	A-C	D	0.50	-
NOR	I-464	SOUTH MAIN ST	I-264	NB	0.61	20,341	43,413	2006	65,000	2	2	A-C	A-C	0.28	-
				SB		23,072		2006		2	2	A-C	D	0.57	-

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Appendix A – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Interstates and Freeways/Expressways

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	DIR	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES (INCLUDES HOV LANES)				NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
						ONE-WAY EXISTING	TWO-WAY EXISTING	COUNT YEAR	2030 TWO-WAY (AMENDED)	2009	2030	EXISTING	2030		
NOR	I-564	ADMIRAL TAUSSIG BLVD	FUTURE INTERMODAL CONNECTOR	NB	0.50	20,746	43,811	2009	37,000	2	2	A-C	A-C	0.16	-
				SB		23,065		2009		2	2	E	D	1.00	11
NOR	I-564	FUTURE INTERMODAL CONNECTOR	INTERNATIONAL TERMINAL BLVD	NB	1.37	20,746	43,811	2009	55,000	3	3	A-C	A-C	0.10	-
				SB		23,065		2009		3	3	E	F	1.00	11
NOR	I-564	INTERNATIONAL TERMINAL BLVD	I-64	NB	0.90	39,082	67,314	2006	70,000	3	3	A-C	A-C	0.26	-
				SB		28,232		2006		3	3	F	F	1.07	18
NOR	INTERMODAL CONNECTOR	SECOND ST	I-564	EB	1.50	DNE	DNE	2009	20,000	0	2	-	A-C	-	-
				WB		DNE		2009		0	2	-	A-C	-	-
PORT	I-264	WCL PORTSMOUTH	GREENWOOD DR	EB	0.42	28,390	55,936	2006	56,000	2	2	A-C	A-C	0.41	-
				WB		27,546		2006		2	2	D	D	0.75	-
PORT	I-264	GREENWOOD DR	VICTORY BLVD	EB	1.31	23,213	51,555	2006	55,000	2	2	A-C	A-C	0.29	-
				WB		28,342		2006		2	2	D	D	0.76	-
PORT	I-264	VICTORY BLVD	PORTSMOUTH BLVD	EB	0.75	31,993	63,564	2009	71,000	3	3	A-C	A-C	0.30	-
				WB		31,571		2009		3	3	A-C	A-C	0.53	-
PORT	I-264	PORTSMOUTH BLVD	FREDERICK BLVD	EB	0.91	29,222	61,167	2006	71,000	3	3	A-C	A-C	0.20	-
				WB		31,945		2006		3	3	A-C	A-C	0.50	-
PORT	I-264	FREDERICK BLVD	FUTURE MLK FWY	EB	0.45	37,650	74,208	2006	79,000	3	3	A-C	A-C	0.39	-
				WB		36,558		2006		3	3	A-C	A-C	0.56	-
PORT	I-264	FUTURE MLK FWY	DES MOINES AVE	EB	0.51	37,650	74,208	2006	74,000	3	3	A-C	A-C	0.39	-
				WB		36,558		2006		3	3	A-C	A-C	0.56	-
PORT	I-264	DES MOINES AVE	EFFINGHAM ST	EB	0.72	32,593	67,033	2006	67,000	3	3	A-C	A-C	0.34	-
				WB		34,440		2006		3	3	A-C	A-C	0.52	-
PORT	I-264/DOWNTOWN TUNNEL	EFFINGHAM ST	NORFOLK CL	EB	0.72	47,809	98,790	2009	77,000	2	2	F	D	1.07	23
				WB		50,981		2009		2	2	F	D	1.10	21
PORT	M L K FREEWAY	HIGH ST	LONDON BLVD	NB	0.25	6,518	13,489	2007	50,000	2	2	A-C	A-C	0.17	-
				SB		6,971		2007		2	2	A-C	A-C	0.14	-
PORT	M L K FREEWAY	LONDON BLVD	WESTERN FREEWAY/MIDTOWN TUNNEL	NB	0.98	16,500	33,000	2007	58,000	3	3	A-C	A-C	0.28	-
				SB		16,500		2007		3	3	A-C	A-C	0.20	-
PORT	WESTERN FWY	SUFFOLK CL	TOWN POINT RD	EB	1.01	25,059	49,891	2009	76,000	2	2	A-C	D	0.52	-
				WB		24,832		2009		2	2	A-C	E	0.61	-
PORT	WESTERN FWY	TOWN POINT RD	CEDAR LN	EB	1.31	27,260	54,744	2009	76,000	2	2	A-C	A-C	0.46	-
				WB		27,484		2009		2	2	D	F	0.75	-
PORT	WESTERN FWY	CEDAR LN	APM BLVD	EB	1.00	24,756	50,038	2009	85,000	2	2	A-C	D	0.43	-
				WB		25,282		2009		2	2	A-C	F	0.65	-
PORT	WESTERN FWY	APM BLVD	WEST NORFOLK RD	EB	0.61	23,077	47,175	2009	85,000	2	2	A-C	A-C	0.37	-
				WB		24,098		2009		2	2	A-C	F	0.64	-
PORT	WESTERN FWY	WEST NORFOLK RD	MLK FREEWAY/MIDTOWN TUNNEL	EB	1.78	26,570	53,573	2009	80,000	2	2	A-C	D	0.46	-
				WB		27,003		2009		2	2	D	F	0.79	-
SUF	I-664	CHESAPEAKE CL	BRIDGE RD	EB	0.74	40,405	80,370	2005	92,000	3	3	A-C	D	0.62	-
				WB		39,965		2005		3	3	A-C	A-C	0.47	-
SUF	I-664	BRIDGE RD	WESTERN FWY	EB	0.15	27,679	56,103	2005	66,000	2	2	D	E	0.81	-
				WB		28,424		2005		2	2	A-C	A-C	0.51	-
SUF	I-664	WESTERN FWY	COLLEGE DR	EB	1.41	31,849	64,925	2009	86,000	3	3	A-C	D	0.57	-
				WB		33,076		2009		3	3	A-C	A-C	0.39	-
SUF	I-664/MMMBT	COLLEGE DR	NEWPORT NEWS CL	EB	3.28	28,822	59,617	2009	80,000	2	2	D	F	0.90	-
				WB		30,795		2009		2	2	E	F	0.92	17
SUF	ROUTE 13/58/460	SUFFOLK BYPASS	CHESAPEAKE CL	EB	3.61	35,065	69,953	2009	79,000	3	3	A-C	A-C	0.39	-
				WB		34,888		2009		3	3	A-C	A-C	0.60	-
SUF	SOUTHWEST SUFFOLK BYPASS	HOLLAND RD	CAROLINA RD	NB	2.55	4,665	9,462	2008	13,000	2	2	A-C	A-C	0.07	-
				SB		4,797		2008		2	2	A-C	A-C	0.14	-
SUF	SUFFOLK BYPASS	HOLLAND RD	PITCHKETTLE RD	EB	1.69	16,715	33,474	2008	54,000	2	2	A-C	A-C	0.26	-
				WB		16,759		2008		2	2	A-C	A-C	0.44	-
SUF	SUFFOLK BYPASS	PITCHKETTLE RD	PRUDEN BLVD	EB	1.63	19,436	39,738	2008	47,000	2	2	A-C	A-C	0.30	-
				WB		20,302		2008		2	2	A-C	A-C	0.55	-

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JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	DIR	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES (INCLUDES HOV LANES)				NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
						ONE-WAY EXISTING	TWO-WAY EXISTING	COUNT YEAR	2030 TWO-WAY (AMENDED)	2009	2030	EXISTING	2030		
SUF	SUFFOLK BYPASS	PRUDEN BLVD	GODWIN BLVD	EB	1.06	19,737	41,722	2009	64,000	2	2	A-C	A-C	0.32	-
				WB		21,985		2009		2	2	A-C	D	0.57	-
SUF	SUFFOLK BYPASS	GODWIN BLVD	WILROY RD	EB	1.85	27,496	53,520	2009	69,000	2	2	A-C	A-C	0.47	-
				WB		26,024		2009		2	2	A-C	D	0.67	-
SUF	SUFFOLK BYPASS	WILROY RD	ROUTES 13/58/460	EB	2.02	22,307	44,768	2009	52,000	2	2	A-C	A-C	0.37	-
				WB		22,461		2009		2	2	A-C	A-C	0.56	-
SUF	WESTERN FWY	BRIDGE RD	I-664	EB	0.74	7,145	20,501	2008	34,000	2	2	A-C	A-C	0.12	-
				WB		13,356		2008		2	2	A-C	A-C	0.35	-
SUF	WESTERN FWY	I-664	COLLEGE DR	EB	0.57	20,360	40,676	2008	71,000	2	2	A-C	D	0.41	-
				WB		20,316		2008		2	2	A-C	E	0.55	-
SUF	WESTERN FWY	COLLEGE DR	PORTSMOUTH CL	EB	0.20	25,059	49,891	2009	78,000	2	2	A-C	D	0.52	-
				WB		24,832		2009		2	2	A-C	E	0.61	-
VB	I-264	NEWTOWN RD/ECL NORFOLK	WITCHDUCK RD	EB	1.47	103,792	213,320	2009	252,000	4	5	F	E	1.00	19
				WB		109,528		2003		4	4	E	F	0.89	16
VB	I-264	WITCHDUCK RD	INDEPENDENCE BLVD	EB	1.27	101,614	204,897	2008	238,000	4	4	F	F	1.00	19
				WB		103,283		2008		4	4	D	E	0.82	-
VB	I-264	INDEPENDENCE BLVD	ROSEMONT RD	EB	2.36	83,246	166,032	2007	198,000	4	4	D	E	0.77	-
				WB		82,786		2009		4	4	D	D	0.70	-
VB	I-264	ROSEMONT RD	LYNNHAVEN PKWY	EB	1.72	72,009	144,461	2008	172,000	4	4	D	D	0.71	-
				WB		72,452		2008		4	4	D	D	0.68	-
VB	I-264	LYNNHAVEN PKWY	LASKIN RD	EB	1.48	54,291	102,260	2006	149,000	4	4	A-C	D	0.54	-
				WB		47,969		2006		4	4	A-C	A-C	0.42	-
VB	I-264	LASKIN RD	FIRST COLONIAL RD	EB	1.19	35,006	75,562	2006	97,000	4	4	A-C	A-C	0.36	-
				WB		40,556		2006		4	4	A-C	A-C	0.37	-
VB	I-264	FIRST COLONIAL RD	S.E. PARKWAY	EB	0.92	34,308	67,315	2003	76,000	3	3	A-C	A-C	0.49	-
				WB		33,007		2003		3	3	A-C	A-C	0.42	-
VB	I-264	S.E. PARKWAY	BIRDNECK RD	EB	0.56	34,308	67,315	2003	76,000	3	3	A-C	A-C	0.49	-
				WB		33,007		2003		3	3	A-C	A-C	0.42	-
VB	I-264	BIRDNECK RD	PARKS AVE	EB	0.49	16,155	30,607	2009	46,000	3	3	A-C	A-C	0.19	-
				WB		14,452		2009		3	3	A-C	A-C	0.21	-
VB	I-64	NORFOLK CL	INDIAN RIVER RD	EB	1.57	77,164	150,243	2008	171,000	4	4	F	F	1.08	17
				WB		73,079		2009		4	4	A-C	A-C	0.57	-
VB	I-64	INDIAN RIVER RD	CITY LINE RD/CHESEAPEAKE CL	EB	1.36	68,875	132,485	2007	138,000	4	4	D	E	0.86	-
				WB		63,610		2009		4	4	A-C	A-C	0.61	-
YC	I-64	JAMES CITY CL	RTE 199/646	EB	1.12	31,561	62,101	2007	108,000	2	2	A-C	F	0.58	-
				WB		30,540		2007		2	2	A-C	F	0.64	-
YC	I-64	RTE 199/646	RTE 143	EB	4.29	27,671	54,394	2008	94,000	2	2	A-C	E	0.52	-
				WB		26,723		2008		2	2	A-C	F	0.60	-
YC	I-64	RTE 143	RTE 199 (EAST OF WILLIAMSBURG)	EB	3.88	31,791	64,079	2007	100,000	2	2	A-C	E	0.59	-
				WB		32,288		2007		2	2	A-C	E	0.64	-
YC	I-64	RTE 199 (EAST OF WILLIAMSBURG)	GROVE CONNECTOR	EB	1.14	40,059	81,028	2007	105,000	2	2	D	F	0.78	-
				WB		40,969		2007		2	2	D	F	0.78	-
YC	I-64	GROVE CONNECTOR	JAMES CITY CL	EB	0.85	41,795	86,497	2007	106,000	2	2	D	F	0.83	-
				WB		44,702		2007		2	2	D	E	0.77	-
YC	RTE 199	JCC LINE (WESTSIDE)	MOORETOWN RD	EB	0.57	12,190	24,535	2007	37,000	2	2	A-C	A-C	0.30	-
				WB		12,345		2007		2	2	A-C	A-C	0.26	-
YC	RTE 199	MOORETOWN RD	I-64	EB	0.85	12,912	25,199	2007	40,000	2	2	A-C	A-C	0.28	-
				WB		12,287		2007		2	2	A-C	A-C	0.29	-

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Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
CHES	22ND ST	LIBERTY ST	BERKLEY AVE/NORFOLK CL	0.31	6,553	2005	9,000	4	4	A-C	D	0.32	-
CHES	AIRLINE BLVD	I-664	JOLLIFF RD	0.38	10,891	2009	17,000	4	4	A-C	A-C	0.26	-
CHES	AIRLINE BLVD	JOLLIFF RD	PORTSMOUTH CL	1.78	7,801	2008	17,000	2	2	A-C	A-C	0.39	-
CHES	ATLANTIC AVE	CAMPOSTELLA RD	PROVIDENCE RD	0.38	16,154	2008	17,000	4	4	A-C	A-C	0.46	-
CHES	ATLANTIC AVE	PROVIDENCE RD	OLD ATLANTIC AVE	1.07	17,770	2009	22,000	4	4	A-C	A-C	0.54	-
CHES	ATLANTIC AVE	OLD ATLANTIC AVE	CAMPOSTELLA RD	0.57	10,357	2008	12,000	4	4	A-C	A-C	0.38	-
CHES	BAINBRIDGE BLVD	DOMINION BLVD	GREAT BRIDGE BLVD	2.05	5,184	2008	6,000	2	2	D	D	0.73	-
CHES	BAINBRIDGE BLVD	GREAT BRIDGE BLVD	MILITARY HWY	0.68	9,353	2008	10,000	2	2	A-C	A-C	0.62	-
CHES	BAINBRIDGE BLVD	MILITARY HWY	FREEMAN AVE	0.70	12,022	2008	12,000	2	2	A-C	A-C	0.59	-
CHES	BAINBRIDGE BLVD	FREEMAN AVE	SWAIN AVE	0.94	11,842	2005	16,000	4	4	A-C	A-C	0.37	-
CHES	BAINBRIDGE BLVD	SWAIN AVE	CHESAPEAKE DR	0.20	11,842	2005	12,000	2	2	D	D	0.73	-
CHES	BAINBRIDGE BLVD	CHESAPEAKE DR	POINDEXTER ST	0.93	8,984	2008	12,000	4	4	A-C	A-C	0.29	-
CHES	BAINBRIDGE BLVD	POINDEXTER ST	NORFOLK CL	0.53	1,725	2008	4,000	2	2	A-C	A-C	0.11	-
CHES	BATTLEFIELD BLVD	NORTH CAROLINA STATE LINE	BALLAHACK RD	0.50	21,852	2009	30,000	4	4	A-C	A-C	0.36	-
CHES	BATTLEFIELD BLVD	BALLAHACK RD	GALLBUSH RD	1.00	21,852	2009	30,000	4	4	A-C	A-C	0.36	-
CHES	BATTLEFIELD BLVD	GALLBUSH RD	INDIAN CREEK RD	2.63	13,343	2008	15,000	2	2	E	E	0.60	11
CHES	BATTLEFIELD BLVD	INDIAN CREEK RD	CENTERVILLE TNPK	1.54	16,804	2008	23,000	2	2	E	E	0.70	11
CHES	BATTLEFIELD BLVD	CENTERVILLE TNPK	HILLCREST PKWY	2.05	16,377	2008	21,000	2	2	E	E	0.67	11
CHES	BATTLEFIELD BLVD	HILLCREST PKWY	PEACEFUL RD/HILLWELL RD	1.61	7,260	2003	11,000	2	2	A-C	D	0.34	-
CHES	BATTLEFIELD BLVD	PEACEFUL RD/HILLWELL RD	HANBURY RD	0.57	9,224	2008	12,000	2	2	A-C	A-C	0.58	-
CHES	BATTLEFIELD BLVD	HANBURY RD	JOHNSTOWN RD	1.61	16,009	2008	17,000	2	2	D	D	0.82	-
CHES	BATTLEFIELD BLVD	JOHNSTOWN RD	CEDAR RD	0.28	29,623	2008	37,000	4	4	D	E	0.76	-
CHES	BATTLEFIELD BLVD	CEDAR RD	GREAT BRIDGE BLVD	1.20	35,831	2008	50,000	4	4	F	F	1.05	13
CHES	BATTLEFIELD BLVD	GREAT BRIDGE BLVD	GREAT BRIDGE BYPASS	0.19	37,224	2008	57,000	4	4	D	F	0.90	-
CHES	BATTLEFIELD BLVD	GREAT BRIDGE BYPASS	VOLVO PKWY	1.97	44,686	2008	65,000	6	6	A-C	F	0.76	-
CHES	BATTLEFIELD BLVD	VOLVO PKWY	I-64	0.65	61,053	2008	72,000	6	6	D	E	0.83	-
CHES	BATTLEFIELD BLVD	I-64	MILITARY HWY	0.76	42,012	2006	48,000	6	6	A-C	A-C	0.64	-
CHES	BATTLEFIELD BLVD	MILITARY HWY	CAMPOSTELLA RD	0.56	22,710	2008	25,000	4	4	A-C	A-C	0.51	-
CHES	BENEFIT RD	JOHNSTOWN RD	SIGN PINE RD	1.80	2,031	2008	6,000	2	2	A-C	A-C	0.10	-
CHES	BLACKWATER RD	VIRGINIA BEACH CL	FENTRESS AIRFIELD RD	2.59	2,902	2008	5,000	2	2	A-C	A-C	0.16	-
CHES	BRIDGE RD	SUFFOLK CL	CHURCHLAND BLVD	0.61	23,146	2009	28,000	4	4	A-C	A-C	0.51	-
CHES	BRUCE RD	TAYLOR RD	TYRE NECK RD	1.60	12,671	2008	17,000	2	2	D	E	0.71	-
CHES	BUTTS STATION RD	KEMPSVILLE RD	CENTERVILLE TNPK	2.08	11,942	2008	19,000	2	2	A-C	F	0.93	-
CHES	CAMPOSTELLA RD	GREAT BRIDGE BLVD	MILITARY HWY	1.32	8,300	2008	10,000	2	2	D	E	0.72	-
CHES	CAMPOSTELLA RD	MILITARY HWY	BATTLEFIELD BLVD	1.06	16,219	2008	15,000	2	2	F	E	1.02	15
CHES	CAMPOSTELLA RD	BATTLEFIELD BLVD	PROVIDENCE RD	0.44	13,809	2008	16,000	2	2	D	E	0.77	-
CHES	CAMPOSTELLA RD	PROVIDENCE RD	ATLANTIC AVE	1.47	13,763	2008	14,000	2	2	D	D	0.77	-
CHES	CAMPOSTELLA RD	ATLANTIC AVE	NORFOLK CL/BERKELY AVE EXT	0.34	17,672	2008	26,000	6	6	A-C	A-C	0.37	-
CHES	CANAL DR	MILITARY HWY	GEORGE WASHINGTON HWY	0.97	14,647	2008	21,000	4	4	A-C	D	0.62	-
CHES	CAVALIER BLVD	MILITARY HWY	PORTSMOUTH CL	1.24	9,756	2008	18,000	4	4	A-C	A-C	0.34	-
CHES	CEDAR RD	SHIPYARD RD/MOSES GRANDY TR	SCENIC PKWY	2.02	6,001	2008	7,000	2	2	A-C	A-C	0.39	-
CHES	CEDAR RD	SCENIC PKWY	MOSES GRANDY TRAIL	1.02	4,565	2008	7,000	2	2	A-C	A-C	0.34	-
CHES	CEDAR RD	DOMINION BLVD	BELLS MILL RD (WEST)	0.65	26,081	2008	34,000	4	4	A-C	D	0.64	-
CHES	CEDAR RD	BELLS MILL RD (WEST)	BELLS MILL RD (EAST)	1.68	30,693	2008	34,000	4	4	D	E	0.89	-
CHES	CEDAR RD	BELLS MILL RD (EAST)	BRIARFIELD DR	0.88	26,723	2008	34,000	4	4	A-C	A-C	0.58	-
CHES	CEDAR RD	BRIARFIELD DR	BATTLEFIELD BLVD	0.79	26,723	2008	34,000	3	4	F	D	1.32	12
CHES	CENTERVILLE TNPK	BATTLEFIELD BLVD	ETHRIDGE MANOR BLVD	3.75	6,773	2008	16,000	2	2	A-C	F	0.44	-
CHES	CENTERVILLE TNPK	ETHRIDGE MANOR BLVD	MT PLEASANT RD	2.15	9,709	2008	21,000	2	2	A-C	F	0.65	-
CHES	CENTERVILLE TNPK	MT PLEASANT RD	BUTTS STATION RD	1.27	16,610	2008	25,000	2	2	F	F	1.35	15
CHES	CENTERVILLE TNPK	BUTTS STATION RD	ELBOW RD	0.45	9,516	2008	20,000	2	2	D	F	0.50	-

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JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
CHES	CENTERVILLE TNPK	ELBOW RD	S.E. PARKWAY	0.45	7,536	2008	24,000	2	2	A-C	F	0.52	-
CHES	CENTERVILLE TNPK	S.E. PARKWAY	VA BEACH CL	0.95	7,536	2008	33,000	2	2	A-C	F	0.52	-
CHES	CHURCHLAND BLVD	WESTERN BRANCH BLVD	TOWN POINT RD	0.59	6,741	2008	7,000	2	2	A-C	D	0.34	-
CHES	CHURCHLAND BLVD	TOWN POINT RD	PORTSMOUTH CL	0.11	13,649	2008	15,000	4	4	D	D	0.40	-
CHES	DOCK LANDING RD	JOLLIFF RD	I-664	0.39	5,455	2008	12,000	4	4	A-C	A-C	0.14	-
CHES	DOCK LANDING RD	I-664	EAGLE HILL DR	0.74	5,704	2008	4,000	4	4	A-C	A-C	0.21	-
CHES	DOCK LANDING RD	EAGLE HILL DR	PORTSMOUTH BLVD	2.44	5,666	2008	4,000	2	2	A-C	A-C	0.45	-
CHES	DOMINION BLVD	GEORGE WASHINGTON HWY	CEDAR RD	4.00	10,090	2008	27,000	2	4	D	A-C	0.38	-
CHES	DOMINION BLVD/STEEL BRIDGE	CEDAR RD	BAINBRIDGE BLVD	0.93	30,480	2009	73,000	2	4	F	F	1.51	16
CHES	DOMINION BLVD	BAINBRIDGE BLVD	GREAT BRIDGE BLVD	1.62	26,409	2008	66,000	2	4	F	F	1.11	16
CHES	EDINBURGH PKWY/ST BRIDES RD	SIGN PINE RD	HILLCREST PKWY	0.80	2,455	2003	12,000	2	2	A-C	E	0.19	-
CHES	ELBOW RD	BUTTS STATION RD	CENTERVILLE TNPK	0.86	4,000	2008	8,000	2	2	A-C	A-C	0.34	-
CHES	ELBOW RD	CENTERVILLE TNPK	VA BEACH CL	2.85	7,453	2008	11,000	2	2	D	E	0.46	-
CHES	ETHERIDGE MANOR RD	HILLWELL RD	CENTERVILLE TPKE	1.99	13,856	2008	14,000	2	2	D	D	0.77	-
CHES	FENTRESS AIRFIELD RD	BLACKWATER RD	MOUNT PLEASANT RD	0.16	4,751	2008	7,000	2	2	A-C	A-C	0.43	-
CHES	FREEMAN AVE	I-464	BAINBRIDGE BLVD	0.20	8,679	2008	11,000	4	4	A-C	A-C	0.20	-
CHES	GEORGE WASHINGTON HWY	NORTH CAROLINA STATE LINE	DOMINION BLVD	9.83	12,260	2009	17,000	4	4	A-C	A-C	0.21	-
CHES	GEORGE WASHINGTON HWY	DOMINION BLVD	GW HWY RELOCATED	2.83	4,363	2008	9,000	2	2	A-C	D	0.23	-
CHES	GEORGE WASHINGTON HWY	GW HWY RELOCATED	MOSES GRANDY TR @ HINTON AVE	0.55	4,363	2008	-	2	0	A-C	-	0.29	-
CHES	GEORGE WASHINGTON HWY	MOSES GRANDY TR @ HINTON AVE	MILL CREEK PKWY	0.10	23,832	2006	30,000	2	2	F	F	1.36	17
CHES	GEORGE WASHINGTON HWY	MILL CREEK PKWY	WILLOWOOD DR	0.80	24,626	2008	36,000	2	4	E	A-C	0.97	12
CHES	GEORGE WASHINGTON HWY	WILLOWOOD DR	I-64	0.38	24,626	2008	35,000	4	4	A-C	A-C	0.47	-
CHES	GEORGE WASHINGTON HWY	I-64	MILITARY HWY	0.94	20,928	2008	26,000	4	4	A-C	A-C	0.47	-
CHES	GEORGE WASHINGTON HWY	MILITARY HWY	CANAL DR	0.98	14,292	2008	16,000	2	2	A-C	A-C	0.68	-
CHES	GEORGE WASHINGTON HWY	CANAL DR	PORTSMOUTH CL	0.61	26,248	2008	37,000	4	4	D	F	0.85	-
CHES	GEORGE WASH HWY RELOCATED	GEORGE WASHINGTON HWY	CEDAR RD	1.00	DNE	2009	9,000	0	4	-	A-C	-	-
CHES	GREAT BRIDGE BLVD	BAINBRIDGE BLVD	CAMPOSTELLA RD	0.84	5,045	2008	8,000	2	2	A-C	A-C	0.39	-
CHES	GREAT BRIDGE BLVD	CAMPOSTELLA RD	I-64	0.30	10,722	2008	13,000	2	2	D	E	0.81	-
CHES	GREAT BRIDGE BLVD	I-64	DOMINION BLVD	0.26	12,915	2008	19,000	3	3	D	A-C	0.79	-
CHES	GREAT BRIDGE BLVD	DOMINION BLVD	RIVERWALK PKWY WEST	0.50	12,127	2008	20,000	4	4	A-C	D	0.46	-
CHES	GREAT BRIDGE BLVD	RIVERWALK PKWY WEST	BATTLEFIELD BLVD	1.82	12,127	2008	18,000	2	2	D	F	0.92	-
CHES	GREENBRIER PKWY	KEMPSVILLE RD	VOLVO PKWY	1.86	27,789	2008	33,000	4	4	D	F	0.89	-
CHES	GREENBRIER PKWY	VOLVO PKWY	EDEN WAY	0.41	43,745	2008	50,000	6	6	A-C	D	0.73	14
CHES	GREENBRIER PKWY	EDEN WAY	I-64	0.69	79,293	2008	94,000	6	6	F	F	1.22	14
CHES	GREENBRIER PKWY	I-64	WOODLAKE DR	0.50	56,745	2008	52,000	6	6	D	D	0.95	-
CHES	GREENBRIER PKWY	WOODLAKE DR	MILITARY HWY	0.26	33,133	2008	30,000	6	6	A-C	A-C	0.55	-
CHES	HANBURY RD	JOHNSTOWN RD	BATTLEFIELD BLVD	1.01	8,390	2008	8,000	2	4	A-C	A-C	0.54	-
CHES	HANBURY RD	BATTLEFIELD BLVD	CHESAPEAKE EXPRESSWAY	0.26	15,487	2003	18,000	4	4	A-C	A-C	0.44	-
CHES	HANBURY RD	CHESAPEAKE EXPRESSWAY	HILLWELL RD	0.38	15,487	2003	15,000	4	4	A-C	A-C	0.44	-
CHES	HILLCREST PKWY	EDINBURGH PKWY	CHESAPEAKE EXPRESSWAY	0.36	2,455	2003	17,000	6	6	A-C	A-C	0.07	-
CHES	HILLCREST PKWY	CHESAPEAKE EXPRESSWAY	BATTLEFIELD BLVD	0.30	11,652	2003	14,000	4	4	A-C	A-C	0.48	-
CHES	INDIAN RIVER RD	NORFOLK CL	KEMP LANE	0.39	21,240	2008	31,000	6	6	A-C	A-C	0.41	-
CHES	INDIAN RIVER RD	KEMP LANE	VA BEACH CL	1.22	28,197	2008	40,000	6	6	A-C	A-C	0.47	-
CHES	JOHNSTOWN RD	BENEFIT RD	STONEGATE PKWY	3.85	3,417	2008	12,000	2	2	A-C	E	0.21	-
CHES	JOHNSTOWN RD	STONEGATE PKWY	HANBURY RD	1.27	3,417	2008	8,000	2	2	A-C	D	0.29	-
CHES	JOHNSTOWN RD	HANBURY RD	PARKER RD	0.76	9,238	2003	13,000	2	2	A-C	D	0.64	-
CHES	JOHNSTOWN RD	PARKER RD	BATTLEFIELD BLVD	0.49	9,238	2003	22,000	4	4	A-C	A-C	0.32	-
CHES	JOLLIFF RD	AIRLINE BLVD	DOCK LANDING RD	2.22	3,198	2008	5,000	2	2	A-C	A-C	0.26	-
CHES	JOLLIFF RD	DOCK LANDING RD	PORTSMOUTH BLVD	0.90	3,201	2008	5,000	2	2	A-C	D	0.24	-
CHES	KEMPSVILLE RD	BATTLEFIELD BLVD	GREENBRIER PKWY	1.27	30,508	2008	48,000	6	6	A-C	A-C	0.55	-

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JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
CHES	KEMPSVILLE RD	GREENBRIER PKWY	VOLVO PKWY	1.89	19,568	2008	47,000	6	6	A-C	A-C	0.35	-
CHES	KEMPSVILLE RD	VOLVO PKWY	VA BEACH CL	0.38	32,360	2008	39,000	6	6	A-C	A-C	0.60	-
CHES	LIBERTY ST	SCL NORFOLK	22ND ST	0.36	4,546	2008	7,000	2	2	A-C	D	0.25	-
CHES	LIBERTY ST	22ND ST	POINDEXTER RD	0.06	7,962	2008	22,000	4	4	A-C	D	0.29	-
CHES	LIBERTY ST	POINDEXTER RD	OLD ATLANTIC AVE	0.37	7,962	2008	15,000	4	4	A-C	D	0.29	-
CHES	LIBERTY ST	OLD ATLANTIC AVE	CAMPOSTELLA RD	0.37	5,124	2008	10,000	4	4	A-C	A-C	0.19	-
CHES	MILITARY HWY	AIRLINE BLVD	I-64	3.28	8,866	2005	20,000	4	4	A-C	A-C	0.21	-
CHES	MILITARY HWY	I-64	CAVALIER BLVD	0.30	18,904	2008	23,000	4	4	A-C	A-C	0.42	-
CHES	MILITARY HWY	CAVALIER BLVD	GEORGE WASHINGTON HWY	0.91	18,904	2008	23,000	4	4	A-C	A-C	0.42	-
CHES	MILITARY HWY	GEORGE WASHINGTON HWY	CANAL DR	1.01	19,724	2008	25,000	4	4	A-C	A-C	0.47	-
CHES	MILITARY HWY/GILMERTON BRIDGE	CANAL DR	BAINBRIDGE BLVD	2.18	34,470	2008	41,000	4	4	F	F	1.01	12
CHES	MILITARY HWY	BAINBRIDGE BLVD	I-464	0.46	32,039	2008	37,000	4	4	A-C	A-C	0.72	-
CHES	MILITARY HWY	I-464	CAMPOSTELLA RD	0.64	29,376	2008	33,000	4	4	A-C	A-C	0.71	-
CHES	MILITARY HWY	CAMPOSTELLA RD	BATTLEFIELD BLVD	0.60	29,602	2008	36,000	4	4	D	E	0.82	-
CHES	MILITARY HWY	BATTLEFIELD BLVD	ALLISON DR	0.66	31,269	2008	39,000	6	6	A-C	A-C	0.56	-
CHES	MILITARY HWY	ALLISON DR	GREENBRIER PKWY	0.50	31,809	2008	40,000	4	4	D	F	0.88	-
CHES	MILITARY HWY	GREENBRIER PKWY	VA BEACH CL	1.68	34,114	2008	41,000	4	4	D	E	0.82	-
CHES	MLK HWY (FORMER DOMINION BLVD)	GREAT BRIDGE BLVD	I-464/OAK GROVE CONNECTOR	0.30	40,526	2008	87,000	4	4	A-C	F	0.69	-
CHES	MOSES GRANDY TRAIL	GW HWY @ HINTON AVE	SHIPYARD/CEDAR RD/GW HWY RELOC	0.32	16,487	2006	37,000	2	2	D	F	0.85	-
CHES	MOSES GRANDY TRAIL	SHIPYARD RD/CEDAR RD	CEDAR RD	1.97	8,853	2006	25,000	4	4	A-C	A-C	0.25	-
CHES	MOSES GRANDY TRAIL	CEDAR RD	DOMINION BLVD	0.21	13,941	2005	32,000	4	4	A-C	D	0.43	-
CHES	MOUNT PLEASANT RD	BATTLEFIELD BLVD	CHESAPEAKE EXPRESSWAY	0.76	18,963	2008	23,000	4	4	A-C	D	0.63	-
CHES	MOUNT PLEASANT RD	CHESAPEAKE EXPRESSWAY	CENTERVILLE TNPK	2.43	19,230	2008	40,000	2	4	F	F	1.19	10
CHES	MOUNT PLEASANT RD	CENTERVILLE TNPK	FENTRESS AIRFIELD RD	4.53	11,066	2008	14,000	2	2	D	E	0.52	-
CHES	MOUNT PLEASANT RD	FENTRESS AIRFIELD RD	VA BEACH CL	0.91	11,182	2008	16,000	2	2	E	E	0.68	8
CHES	OLD ATLANTIC AVE	ATLANTIC AVE	LIBERTY ST	0.31	5,518	2008	15,000	4	4	A-C	D	0.16	-
CHES	POINDEXTER ST	PORTSMOUTH CL	I-464	0.85	DNE	2009	11,000	0	2	-	D	-	-
CHES	POINDEXTER ST	I-464	BAINBRIDGE BLVD	0.20	12,456	2008	17,000	4	4	D	D	0.42	-
CHES	POINDEXTER ST	BAINBRIDGE BLVD	LIBERTY ST	0.48	8,866	2008	12,000	2	2	D	F	0.81	-
CHES	POPLAR HILL RD	WESTERN BRANCH BLVD	CHURCHLAND BLVD	0.23	14,690	2008	16,000	4	4	D	D	0.44	-
CHES	PORTSMOUTH BLVD	SUFFOLK CL	JOLLIFF RD	0.75	13,296	2008	33,000	2	4	D	A-C	0.55	-
CHES	PORTSMOUTH BLVD	JOLLIFF RD	I-664	0.60	18,533	2008	29,000	4	4	A-C	A-C	0.49	-
CHES	PORTSMOUTH BLVD	I-664	TAYLOR RD	1.34	24,109	2008	31,000	4	4	A-C	D	0.59	-
CHES	PORTSMOUTH BLVD	TAYLOR RD	PORTSMOUTH CL	0.70	31,253	2008	37,000	4	4	D	E	0.81	-
CHES	PROVIDENCE RD	ATLANTIC AVE	CAMPOSTELLA RD	0.20	5,700	2003	10,000	4	4	A-C	A-C	0.17	-
CHES	PROVIDENCE RD	CAMPOSTELLA RD	VA BEACH CL	2.34	17,462	2008	20,000	4	4	A-C	A-C	0.50	-
CHES	PUGHSVILLE RD	SUFFOLK CL	I-664	0.63	9,837	2008	23,000	4	4	A-C	A-C	0.28	-
CHES	PUGHSVILLE RD	I-664	TAYLOR RD	0.37	22,467	2008	26,000	4	4	A-C	A-C	0.61	-
CHES	SIGN PINE RD	EDINBURGH PKWY	BENEFIT RD	1.02	2,404	2008	12,000	2	2	A-C	F	0.22	-
CHES	TAYLOR RD	PORTSMOUTH BLVD	ELIZABETH HARBOR RD	0.77	25,034	2008	29,000	4	4	A-C	A-C	0.61	-
CHES	TAYLOR RD	ELIZABETH HARBOR RD	BRUCE RD	0.99	25,034	2008	29,000	4	4	A-C	A-C	0.65	-
CHES	TAYLOR RD	BRUCE RD	PUGHSVILLE RD	0.31	23,918	2008	30,000	4	4	A-C	D	0.66	-
CHES	TAYLOR RD	PUGHSVILLE RD	WESTERN BRANCH BLVD	1.70	16,153	2008	20,000	4	4	A-C	A-C	0.55	-
CHES	TOWN POINT RD	PORTSMOUTH CL	CHURCHLAND BLVD	0.09	24,669	2008	27,000	4	4	D	D	0.62	-
CHES	TYRE NECK RD	BRUCE RD	SILVERWOOD BLVD	1.10	10,755	2008	14,000	2	2	D	D	0.69	-
CHES	TYRE NECK RD	SILVERWOOD BLVD	PORTSMOUTH CL	0.15	12,420	2006	14,000	2	2	D	E	0.88	-
CHES	VOLVO PKWY	BATTLEFIELD BLVD	GREENBRIER PKWY	1.40	27,232	2008	29,000	4	4	A-C	A-C	0.66	-
CHES	VOLVO PKWY	GREENBRIER PKWY	EDEN WAY	0.44	23,461	2008	30,000	4	4	D	F	0.86	-
CHES	VOLVO PKWY	EDEN WAY	KEMPSVILLE RD	0.98	26,491	2008	40,000	4	4	E	F	0.97	10
CHES	VOLVO PKWY	KEMPSVILLE RD	VA BEACH CL	0.53	3,773	2007	33,000	4	4	A-C	F	0.13	-

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Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
CHES	WESTERN BRANCH BLVD	CHURCHLAND BLVD	TAYLOR RD	0.32	18,639	2008	28,000	4	4	A-C	A-C	0.42	-
CHES	WESTERN BRANCH BLVD	TAYLOR RD	PORTSMOUTH CL	0.32	25,201	2006	28,000	4	4	A-C	A-C	0.53	-
FR	ARMORY DR	ROUTE 58	BAILEY DR	0.80	12,311	2009	21,000	4	4	A-C	A-C	0.37	-
FR	ARMORY DR	BAILEY DR	COLLEGE DR	0.42	14,763	2009	21,000	4	4	A-C	A-C	0.43	-
FR	ARMORY DR	COLLEGE DR	GARDNER ST	0.56	7,199	2009	8,000	2	2	D	D	0.61	-
FR	ARMORY DR/SECOND AVE	GARDNER ST	HIGH ST	0.31	7,340	2009	8,000	2	2	D	D	0.61	-
FR	CLAY ST	SOUTHAMPTON CL	COLLEGE DR	1.20	3,222	2009	3,000	4	4	A-C	A-C	0.10	-
FR	CLAY ST	COLLEGE DR	HOMESTEAD RD	0.50	4,617	2009	5,000	4	4	A-C	A-C	0.16	-
FR	CLAY ST	HOMESTEAD RD	LEE ST	0.45	3,898	2009	4,000	4	4	A-C	A-C	0.15	-
FR	CLAY ST/FOURTH AVE	LEE ST	HIGH ST	0.35	2,577	2009	3,000	2	2	A-C	A-C	0.16	-
FR	COLLEGE DR	SOUTH ST	ARMORY DR	0.48	8,137	2009	11,000	2	2	A-C	D	0.61	-
FR	COLLEGE DR	ARMORY DR	CLAY ST	0.87	9,967	2009	13,000	2	4	A-C	A-C	0.65	-
FR	FAIRVIEW DR	HUNTERDALE RD	CRESENT DR	0.25	4,769	2009	4,000	2	2	D	D	0.38	-
FR	FAIRVIEW DR	CRESENT DR	HIGH ST	0.61	4,479	2009	5,000	2	2	D	D	0.38	-
FR	FOURTH AVE/MECHANIC ST	HIGH ST	SECOND AVE	0.35	1,734	2009	2,000	2	2	A-C	A-C	0.13	-
FR	HIGH ST	SOUTH ST	SECOND AVE	0.29	3,305	2009	4,000	2	2	A-C	A-C	0.26	-
FR	HIGH ST	SECOND AVE	FOURTH AVE	0.09	3,670	2009	4,000	2	2	A-C	D	0.30	-
FR	HIGH ST	FOURTH AVE	HOMESTEAD RD	0.66	3,870	2009	4,000	2	2	D	D	0.35	-
FR	HIGH ST	HOMESTEAD RD	FAIRVIEW DR	0.39	3,067	2009	4,000	2	2	A-C	D	0.28	-
FR	HUNTERDALE RD	CLAY ST	FAIRVIEW DR	0.18	9,289	2009	16,000	2	4	D	A-C	0.74	-
FR	MAIN ST	SOUTH ST	SECOND AVE	0.27	3,221	2009	4,000	2	2	A-C	A-C	0.24	-
FR	PRETLOW ST	ROUTE 58	MORTON ST	1.11	2,105	2009	2,000	2	2	A-C	A-C	0.13	-
FR	PRETLOW ST	MORTON ST	LAUREL ST	0.22	3,371	2009	4,000	2	2	A-C	A-C	0.25	-
FR	PRETLOW ST	LAUREL ST	SOUTH ST	0.32	3,490	2009	3,000	2	2	A-C	A-C	0.28	-
FR	SECOND AVE	HIGH ST	MAIN ST	0.15	5,915	2009	8,000	2	2	D	D	0.45	-
FR	SECOND AVE	MAIN ST	MECHANIC ST	0.10	5,890	2009	6,000	2	2	D	D	0.47	-
FR	SECOND AVE	MECHANIC ST	ISLE OF WIGHT CL	0.21	11,625	2006	11,000	4	4	A-C	A-C	0.33	-
FR	SOUTH ST	ROUTE 58	COLLEGE DR	0.48	6,199	2009	6,000	2	2	A-C	A-C	0.34	-
FR	SOUTH ST	COLLEGE DR	PRETLOW ST	0.68	8,726	2009	10,000	2	2	D	D	0.67	-
FR	SOUTH ST	PRETLOW ST	HIGH ST	0.20	6,248	2009	7,000	2	2	D	D	0.45	-
FR	SOUTH ST	HIGH ST	MAIN ST	0.16	3,708	2009	4,000	2	2	A-C	A-C	0.27	-
GLO	BELROI RD	HICKORY FORK RD	ROUTE 17	3.62	4,941	2009	11,000	2	2	A-C	E	0.29	-
GLO	GUINEA RD	ROUTE 17	MARYUS RD	3.66	8,509	2009	11,000	2	2	A-C	A-C	0.74	-
GLO	HICKORY FORK RD	ROUTE 17	BELROI RD	5.33	5,760	2009	8,000	2	2	D	E	0.41	-
GLO	RTE 17 (COLEMAN BRIDGE)	YORK CL	RTE 216 (GUINEA RD)	2.96	34,208	2009	52,000	4	4	F	F	1.15	14
GLO	RTE 17	RTE 216 (GUINEA RD)	RTE 614 (HICKORY FORK RD)	4.29	36,528	2009	48,000	4	4	F	F	1.06	12
GLO	RTE 17	RTE 614 (HICKORY FORK RD)	RTE 17 BUS S (MAIN ST)	4.76	30,100	2009	39,000	4	4	A-C	F	0.84	-
GLO	RTE 17	RTE 17 BUS S (MAIN ST)	RTE 17 BUS N (MAIN ST)	1.68	19,916	2009	23,000	4	4	A-C	A-C	0.51	-
GLO	RTE 17	RTE 17 BUS N (MAIN ST)	RTE 606 (ARK RD)	2.38	16,238	2009	23,000	4	4	A-C	A-C	0.24	-
GLO	MAIN ST (BUS RTE 17)	RTE 17 (SOUTH INTERSECTION)	RTE 3/14E	1.20	21,761	2009	27,000	4	4	A-C	D	0.71	-
GLO	RTE 3/14	RTE 17 BUS	COW CREEK	1.70	17,551	2009	25,000	4	4	A-C	A-C	0.31	-
HAM	ABERDEEN RD	NEWPORT NEWS CL	PEMBROKE AVE	0.30	12,477	2008	12,000	4	4	D	D	0.46	-
HAM	ABERDEEN RD	PEMBROKE AVE	I-664	0.17	16,610	2005	17,000	4	4	D	D	0.47	-
HAM	ABERDEEN RD	I-664	BRIARFIELD RD	0.99	19,330	2009	23,000	4	4	A-C	A-C	0.43	-
HAM	ABERDEEN RD	BRIARFIELD RD	MERCURY BLVD	1.29	16,900	2009	20,000	4	4	A-C	A-C	0.46	-
HAM	ABERDEEN RD	MERCURY BLVD	TODDS LA	0.20	12,845	2008	17,000	4	4	A-C	A-C	0.44	-
HAM	ARMISTEAD AVE	COMMANDER SHEPPARD BLVD	HRC PARKWAY	1.52	26,121	2009	34,000	4	4	D	F	0.88	-
HAM	ARMISTEAD AVE	HRC PARKWAY	MERCURY BLVD	1.30	27,246	2009	37,000	4	4	A-C	D	0.65	-
HAM	ARMISTEAD AVE	MERCURY BLVD	PINE CHAPEL RD	0.14	20,180	2007	29,000	4	4	A-C	A-C	0.47	-
HAM	ARMISTEAD AVE	PINE CHAPEL RD	LASALLE AVE	0.95	20,055	2009	23,000	4	4	A-C	A-C	0.47	-

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JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
HAM	ARMISTEAD AVE	LA SALLE AVE	RIP RAP RD	0.44	21,377	2007	22,000	4	4	A-C	A-C	0.61	-
HAM	ARMISTEAD AVE	RIP RAP RD	PEMBROKE AVE	0.37	14,303	2009	21,000	4	4	A-C	A-C	0.40	-
HAM	ARMISTEAD AVE	PEMBROKE AVE	SETTLERS LANDING RD	0.37	13,518	2009	16,000	4	4	D	D	0.41	-
HAM	BIG BETHEL RD	TODDS LANE	HRC PKWY	1.23	26,810	2009	45,000	4	4	A-C	F	0.66	-
HAM	BIG BETHEL RD	HRC PKWY	THOMAS NELSON DR	0.57	27,526	2007	36,000	4	4	D	E	0.76	-
HAM	BIG BETHEL RD	THOMAS NELSON DR	SAUNDERS RD	1.25	17,173	2009	35,000	4	4	A-C	E	0.48	-
HAM	BIG BETHEL RD	SAUNDERS RD	SEMPLE FARM RD	0.15	13,337	2009	21,000	4	4	A-C	A-C	0.37	-
HAM	BIG BETHEL RD	SEMPLE FARM RD	YORK CL	0.28	11,142	2007	17,000	2	2	A-C	D	0.60	-
HAM	BRIARFIELD RD	NEWPORT NEWS CL	ABERDEEN RD	0.87	11,183	2008	13,000	2	2	D	D	0.75	-
HAM	BRIARFIELD RD	ABERDEEN RD	QUEEN ST	1.06	12,795	2009	17,000	4	4	A-C	A-C	0.42	-
HAM	CHESTNUT AVE	NEWPORT NEWS CL	MERCURY BLVD	0.20	8,103	2008	9,000	2	2	D	D	0.62	-
HAM	COMMANDER SHEPPARD BLVD	BIG BETHEL RD	NORTH CAMPUS PKWY	1.33	DNE	2009	10,000	0	4	-	A-C	-	-
HAM	COMMANDER SHEPPARD BLVD	NORTH CAMPUS PKWY	MAGRUDER BLVD	0.44	DNE	2009	10,000	0	4	-	A-C	-	-
HAM	COMMANDER SHEPPARD BLVD	MAGRUDER BLVD	ARMISTEAD AVE	0.73	7,513	2007	12,000	4	4	A-C	A-C	0.27	-
HAM	COMMANDER SHEPPARD BLVD	ARMISTEAD AVE	NASA MAIN GATE	0.32	19,757	2009	37,000	4	4	A-C	F	0.64	-
HAM	COMMANDER SHEPPARD BLVD	NASA MAIN GATE	WYTHE CREEK RD	0.96	17,652	2009	24,000	4	4	A-C	A-C	0.64	-
HAM	COMMANDER SHEPPARD BLVD	WYTHE CREEK RD	MAGRUDER BLVD	0.18	22,567	2008	30,000	4	4	D	D	0.82	-
HAM	COLISEUM DR	CONVENTION CENTER BLVD	PINE CHAPEL RD	0.53	1,865	2009	14,000	4	4	A-C	A-C	0.05	-
HAM	COLISEUM DR	PINE CHAPEL RD	MERCURY BLVD	0.30	7,387	2008	19,000	4	4	D	D	0.25	-
HAM	COLISEUM DR	MERCURY BLVD	MARCELLA DR	0.66	21,006	2008	39,000	4	4	D	E	0.52	-
HAM	COLISEUM DR	MARCELLA DR	HRC PARKWAY	0.74	15,322	2008	39,000	4	4	A-C	F	0.42	-
HAM	CONVENTION CENTER BLVD	COLISEUM DR	ARMISTEAD AVE	0.30	1,320	2009	8,000	5	5	A-C	A-C	0.06	-
HAM	COUNTY ST	WOODLAND RD	MALLORY ST	0.41	4,855	2008	8,000	3	3	D	D	0.47	-
HAM	CUNNINGHAM DR	TODDS LA	COLISEUM DR	0.86	20,032	2009	29,000	4	4	A-C	A-C	0.50	-
HAM	CUNNINGHAM DR	COLISEUM DR	MERCURY BLVD	0.74	12,048	2009	15,000	4	4	A-C	A-C	0.34	-
HAM	FOX HILL RD	OLD BUCKROE RD	WOODLAND RD	1.10	22,674	2009	23,000	4	4	D	D	0.89	-
HAM	FOX HILL RD	WOODLAND RD	MERCURY BLVD	1.89	26,997	2009	31,000	4	4	E	F	0.96	11
HAM	HARRIS CREEK RD	FOX HILL RD	LITTLE BACK RIVER RD	0.80	3,175	2008	6,000	2	2	A-C	A-C	0.27	-
HAM	HRC PARKWAY	NEWPORT NEWS CL	BIG BETHEL RD	1.26	23,568	2009	39,000	4	4	A-C	F	0.64	-
HAM	HRC PARKWAY	BIG BETHEL RD	I-64	0.57	45,345	2009	71,000	4	4	D	F	0.98	-
HAM	HRC PARKWAY	I-64	MAGRUDER BLVD	0.87	44,416	2009	54,000	4	4	F	F	1.32	14
HAM	HRC PARKWAY	MAGRUDER BLVD	COLISEUM DR	0.45	34,704	2009	36,000	4	4	A-C	A-C	0.92	-
HAM	HRC PARKWAY	COLISEUM DR	ARMISTEAD AVE	0.40	26,595	2009	28,000	4	4	A-C	A-C	0.68	-
HAM	KECOUGHTAN RD	NEWPORT NEWS CL	POWHATAN PKWY	1.19	6,569	2009	8,000	4	4	A-C	A-C	0.21	-
HAM	KECOUGHTAN RD	POWHATAN PKWY	LA SALLE AVE	1.09	7,885	2007	9,000	4	4	A-C	A-C	0.26	-
HAM	KECOUGHTAN RD	LA SALLE AVE	VICTORIA BLVD	1.04	6,765	2009	11,000	4	4	A-C	A-C	0.23	-
HAM	KECOUGHTAN RD	VICTORIA BLVD	SETTLERS LANDING RD	0.28	11,266	2008	15,000	4	4	D	D	0.38	-
HAM	KING ST	PEMBROKE AVE	I-64 OVERPASS	0.29	9,820	2007	10,000	3	3	D	D	0.69	-
HAM	KING ST	I-64 OVERPASS	RIP RAP RD	0.45	9,820	2007	10,000	4	4	A-C	A-C	0.35	-
HAM	KING ST	RIP RAP RD	MERCURY BLVD	0.20	18,102	2009	18,000	4	4	A-C	A-C	0.72	-
HAM	KING ST	MERCURY BLVD	OLD FOX HILL RD	0.12	27,382	2007	28,000	4	4	D	D	0.82	-
HAM	KING ST	OLD FOX HILL RD	LITTLE BACK RIVER RD	0.54	23,924	2009	26,000	4	4	A-C	D	0.71	-
HAM	KING ST	LITTLE BACK RIVER RD	LAMINGTON RD	0.30	6,921	2009	9,000	4	4	A-C	A-C	0.33	-
HAM	KING ST	LAMINGTON RD	OLD BUCKINGHAM RD	0.49	6,921	2009	9,000	2	2	A-C	D	0.66	-
HAM	KING ST	OLD BUCKINGHAM RD	LANGLEY AFB	0.61	6,921	2009	9,000	3	3	A-C	A-C	0.53	-
HAM	LA SALLE AVE	KECOUGHTAN RD	VICTORIA BLVD	0.58	5,245	2009	6,000	2	2	A-C	A-C	0.36	-
HAM	LA SALLE AVE	VICTORIA BLVD	SETTLERS LANDING RD	0.68	13,287	2009	17,000	4	4	A-C	A-C	0.42	-
HAM	LA SALLE AVE	SETTLERS LANDING RD	PEMBROKE AVE	0.15	15,906	2007	17,000	4	4	A-C	A-C	0.56	-
HAM	LA SALLE AVE	PEMBROKE AVE	ARMISTEAD AVE	0.51	18,168	2009	24,000	4	4	A-C	D	0.61	-
HAM	LA SALLE AVE	ARMISTEAD AVE	MERCURY BLVD	0.63	14,252	2009	17,000	4	4	A-C	A-C	0.33	-

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JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
HAM	LA SALLE AVE	MERCURY BLVD	LANGLEY GATE	1.46	13,387	2009	19,000	4	4	A-C	A-C	0.40	-
HAM	LITTLE BACK RIVER RD	KING ST	ROCKWELL RD	1.33	12,365	2009	16,000	2	2	F	F	1.25	10
HAM	LITTLE BACK RIVER RD	ROCKWELL RD	HARRIS CREEK RD	0.67	6,551	2009	10,000	3	3	D	F	0.68	-
HAM	MAGRUDER BLVD	YORK CL	SEMPLE FARM RD	0.28	21,794	2009	25,000	4	4	A-C	A-C	0.70	-
HAM	MAGRUDER BLVD	SEMPLE FARM RD	COMM SHEPPARD BLVD (SOUTH)	0.90	31,984	2008	34,000	4	4	A-C	D	0.92	-
HAM	MAGRUDER BLVD	COMM SHEPPARD BLVD (SOUTH)	HRC PARKWAY	1.38	37,994	2009	50,000	4	4	A-C	F	0.93	-
HAM	MAGRUDER BLVD	HRC PARKWAY	I-64	0.67	32,312	2008	36,000	4	4	A-C	A-C	0.71	-
HAM	MALLORY ST	I-64	COUNTY ST	0.40	13,606	2007	17,000	2	2	F	F	1.14	13
HAM	MALLORY ST	COUNTY ST	MERCURY BLVD	0.23	10,001	2007	13,000	2	2	D	D	0.62	-
HAM	MALLORY ST	MERCURY BLVD	PEMBROKE AVE	1.94	5,843	2009	12,000	4	4	A-C	A-C	0.17	-
HAM	MELLEN ST	MERCURY BLVD	MALLORY ST	0.70	4,587	2009	7,000	2	2	D	F	0.80	-
HAM	MERCURY BLVD	NEWPORT NEWS CL	BIG BETHEL RD	1.26	51,785	2009	64,000	8	8	A-C	A-C	0.56	-
HAM	MERCURY BLVD	BIG BETHEL RD	ABERDEEN RD	0.78	50,124	2009	64,000	8	8	A-C	A-C	0.53	-
HAM	MERCURY BLVD	ABERDEEN RD	POWER PLANT PKWY	0.43	57,746	2007	69,000	8	8	A-C	A-C	0.59	-
HAM	MERCURY BLVD	POWER PLANT PKWY	I-64	0.38	62,071	2009	69,000	8	8	A-C	A-C	0.66	-
HAM	MERCURY BLVD	I-64	COLISEUM DR	0.35	55,452	2009	64,000	8	8	A-C	A-C	0.56	-
HAM	MERCURY BLVD	COLISEUM DR	CUNNINGHAM DR	0.42	45,396	2009	62,000	8	8	A-C	A-C	0.47	-
HAM	MERCURY BLVD	CUNNINGHAM DR	ARMISTEAD AVE	0.24	54,209	2009	66,000	8	8	A-C	A-C	0.62	-
HAM	MERCURY BLVD	ARMISTEAD AVE	LA SALLE AVE	0.70	54,611	2009	62,000	8	8	A-C	A-C	0.68	-
HAM	MERCURY BLVD	LA SALLE AVE	KING ST	0.82	57,242	2009	64,000	8	8	A-C	D	0.72	-
HAM	MERCURY BLVD	KING ST	FOX HILL RD	0.31	42,078	2005	50,000	6	6	D	D	0.79	-
HAM	MERCURY BLVD	FOX HILL RD	ANDREWS BLVD	0.70	29,743	2009	34,000	4	4	D	D	0.83	-
HAM	MERCURY BLVD	ANDREWS BLVD	PEMBROKE AVE	0.55	19,716	2007	24,000	4	4	A-C	A-C	0.49	-
HAM	MERCURY BLVD	PEMBROKE AVE	WOODLAND RD	0.44	8,563	2009	11,000	4	4	A-C	A-C	0.26	-
HAM	MERCURY BLVD	WOODLAND RD	MALLORY ST	0.50	8,563	2009	15,000	4	4	A-C	D	0.28	-
HAM	MERCURY BLVD	MALLORY ST	MELLEN ST/INGALLS RD	0.78	4,488	2009	6,000	4	4	A-C	A-C	0.23	-
HAM	OLD BUCKROE RD	PEMBROKE AVE	FOX HILL RD	1.50	6,231	2009	8,000	2	2	A-C	A-C	0.45	-
HAM	PEMBROKE AVE	NEWPORT NEWS CL	ABERDEEN RD	0.33	7,767	2007	11,000	4	4	A-C	A-C	0.51	-
HAM	PEMBROKE AVE	ABERDEEN RD	POWHATAN PKWY	1.18	10,456	2009	13,000	4	4	A-C	A-C	0.40	-
HAM	PEMBROKE AVE	POWHATAN PKWY	SETTLERS LANDING RD	1.44	12,600	2009	17,000	4	4	A-C	A-C	0.50	-
HAM	PEMBROKE AVE	SETTLERS LANDING RD	LA SALLE AVE	0.17	12,224	2009	16,000	4	4	A-C	A-C	0.44	-
HAM	PEMBROKE AVE	LA SALLE AVE	ARMISTEAD AVE	0.71	10,168	2009	16,000	4	4	D	D	0.49	-
HAM	PEMBROKE AVE	ARMISTEAD AVE	KING ST	0.27	15,702	2004	21,000	4	4	D	E	0.66	-
HAM	PEMBROKE AVE	KING ST	EATON ST	0.14	8,925	2009	14,000	4	4	A-C	D	0.29	-
HAM	PEMBROKE AVE	EATON ST	BARRON ST	0.40	8,925	2009	14,000	2	2	A-C	D	0.54	-
HAM	PEMBROKE AVE	BARRON ST	MERCURY BLVD	0.60	8,925	2009	13,000	3	3	A-C	D	0.54	-
HAM	PEMBROKE AVE	MERCURY BLVD	WOODLAND RD	0.19	11,488	2009	18,000	4	4	A-C	A-C	0.44	-
HAM	PEMBROKE AVE	WOODLAND RD	OLD BUCKROE RD	1.10	13,081	2009	15,000	4	4	A-C	A-C	0.50	-
HAM	PEMBROKE AVE	OLD BUCKROE RD	MALLORY ST	0.60	2,497	2009	6,000	2	2	A-C	A-C	0.20	-
HAM	POWER PLANT PKWY	I-664	BRIARFIELD RD	0.73	14,920	2008	17,000	4	4	A-C	A-C	0.36	-
HAM	POWER PLANT PKWY	BRIARFIELD RD	PINE CHAPEL RD	0.46	22,408	2009	29,000	4	4	A-C	D	0.74	-
HAM	POWER PLANT PKWY	PINE CHAPEL RD	MERCURY BLVD	0.71	15,918	2009	25,000	4	4	A-C	D	0.59	-
HAM	POWHATAN PKWY	KECOUGHTAN RD	PEMBROKE AVE	0.76	8,420	2007	9,000	2	2	D	D	0.57	-
HAM	POWHATAN PKWY	PEMBROKE AVE	I-664	0.19	23,392	2008	25,000	4	4	A-C	A-C	0.59	-
HAM	QUEEN ST	BRIARFIELD RD	MICHIGAN DR	1.27	11,606	2009	16,000	4	4	A-C	A-C	0.37	-
HAM	QUEEN ST	MICHIGAN DR	PEMBROKE AVE	0.09	11,606	2009	15,000	4	4	A-C	A-C	0.39	-
HAM	RIP RAP RD	ARMISTEAD AVE	I-64	0.20	8,408	2005	7,000	2	2	D	D	0.65	-
HAM	RIP RAP RD	I-64	KING ST	0.46	11,449	2007	16,000	2	2	E	F	0.93	12
HAM	ROANOKE AVE	NEWPORT NEWS CL	MERCURY BLVD	0.19	4,417	2008	6,000	2	2	D	D	0.37	-
HAM	SAUNDERS RD	NEWPORT NEWS CL	BIG BETHEL RD	0.72	10,479	2009	10,000	2	4	A-C	A-C	0.58	-

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Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
HAM	SETTLERS LANDING RD	PEMBROKE AVE	LA SALLE AVE	0.15	10,724	2008	11,000	4	4	A-C	A-C	0.32	-
HAM	SETTLERS LANDING RD	LA SALLE AVE	KECOUGHTAN RD	0.60	10,508	2005	18,000	4	4	A-C	D	0.32	-
HAM	SETTLERS LANDING RD	KECOUGHTAN RD	ARMISTEAD AVE	0.08	16,434	2009	24,000	4	4	D	D	0.44	-
HAM	SETTLERS LANDING RD	ARMISTEAD AVE	EATON ST	0.43	14,656	2009	19,000	2	2	D	E	0.77	-
HAM	SETTLERS LANDING RD	EATON ST	TYLER ST	0.64	18,285	2009	29,000	4	4	D	D	0.48	-
HAM	SETTLERS LANDING RD	TYLER ST	I-64	0.10	24,033	2005	28,000	4	4	E	F	0.94	15
HAM	TODDS LA	NEWPORT NEWS CL	BIG BETHEL RD	1.19	17,063	2009	32,000	4	4	A-C	D	0.48	-
HAM	TODDS LA	BIG BETHEL RD	ABERDEEN RD	0.98	19,968	2007	28,000	4	4	A-C	D	0.62	-
HAM	TODDS LA	ABERDEEN RD	CUNNINGHAM DR	0.30	23,589	2007	33,000	4	4	A-C	D	0.62	-
HAM	TODDS LA	CUNNINGHAM DR	MERCURY BLVD	0.18	14,800	2009	18,000	4	4	A-C	A-C	0.51	-
HAM	WOODLAND RD	I-64	COUNTY ST	0.22	24,063	2009	33,000	4	4	D	D	0.61	-
HAM	WOODLAND RD	COUNTY ST	MERCURY BLVD	0.38	18,132	2009	24,000	4	4	D	D	0.48	-
HAM	WOODLAND RD	MERCURY BLVD	PEMBROKE AVE	0.45	13,785	2007	17,000	4	4	A-C	A-C	0.39	-
HAM	WOODLAND RD	PEMBROKE AVE	FOX HILL RD	1.82	10,845	2009	18,000	4	4	A-C	A-C	0.30	-
HAM	WYTHE CREEK RD	COMMANDER SHEPPARD BLVD	POQUOSON CL	1.00	17,880	2008	32,000	2	4	F	F	1.54	10
IW/SMT	BATTERY PARK RD	S CHURCH ST	NIKE PARK RD	1.33	11,003	2008	14,000	2	2	A-C	D	0.78	-
IW	BATTERY PARK RD	NIKE PARK RD	COUNTRY WAY	1.17	4,106	2008	5,000	2	2	A-C	A-C	0.32	-
IW	BENNS CHURCH BLVD	SUFFOLK CL	RIDDICK RD	2.07	10,894	2008	14,000	4	4	A-C	A-C	0.19	-
IW	BENNS CHURCH BLVD	RIDDICK RD	ROUTE 10 & 32 (BREWERS NECK RD)	2.08	10,894	2008	14,000	4	4	A-C	A-C	0.19	-
IW	BENNS CHURCH BLVD	ROUTE 10 & 32 (BREWERS NECK RD)	ECL SMITHFIELD (RTE 644)	1.00	24,481	2008	38,000	4	4	A-C	A-C	0.58	-
IW/SMT	BENNS CHURCH BLVD	ECL SMITHFIELD (RTE 644)	CHURCH ST S	0.96	28,868	2008	38,000	4	4	A-C	A-C	0.66	-
IW	BREWERS NECK BLVD	ROUTE 10 & 32 (BENN'S CHURCH)	RTE 670	1.82	24,573	2008	33,000	4	4	A-C	A-C	0.37	-
IW	BREWERS NECK BLVD	RTE 670	ROUTE 17	1.03	24,573	2008	30,000	4	4	A-C	A-C	0.37	-
IW	BUCKHORN DR	SUFFOLK CL	SUNSET DR (RTE 609)	1.34	538	2008	1,000	2	2	A-C	A-C	0.03	-
IW	BUCKHORN DR	SUNSET DR (RTE 609)	SCL WINDSOR	2.64	556	2008	1,000	2	2	A-C	A-C	0.04	-
IW	BUS RTE 10	NCL SMITHFIELD	JENKINS LANE	0.87	4,621	2008	7,000	2	2	A-C	D	0.26	-
IW	BUS RTE 10	JENKINS LANE	RT 10 BYPASS	2.05	1,816	2008	3,000	2	2	A-C	A-C	0.14	-
IW	BUS RTE 58/BUS RTE 258	FRANKLIN CL	JAMESTOWN LN (RTE 691)	0.33	8,358	2008	11,000	4	4	A-C	A-C	0.18	-
IW	BUS RTE 58/BUS RTE 258	JAMESTOWN LN (RTE 691)	ROUTE 258	1.19	8,358	2008	17,000	2	2	A-C	D	0.40	-
IW	BUS RTE 58	ROUTE 258	SUFFOLK CL	5.20	3,035	2008	7,000	2	2	A-C	A-C	0.11	-
IW	CARROLLTON BLVD	SUFFOLK CL	WEST END CHUCKATUCK BRIDGE	0.60	15,213	2008	26,000	2	2	D	F	0.92	-
IW	CARROLLTON BLVD	WEST END CHUCKATUCK BRIDGE	ROUTE 258	1.83	15,213	2008	26,000	4	4	A-C	A-C	0.35	-
IW	CARROLLTON BLVD/JAMES RIVER BR	ROUTE 258	NEWPORT NEWS CL	6.81	29,788	2009	59,000	4	4	A-C	F	0.61	-
IW/SMT	CHURCH ST S	RTE 10 BYPASS	BATTERY PARK RD	0.85	15,705	2008	18,000	4	4	A-C	A-C	0.40	-
IW/SMT	CHURCH ST S	BATTERY PARK RD	CYPRESS CREEK BRIDGE	1.00	14,240	2008	16,000	2	2	D	D	0.78	-
IW/SMT	CHURCH ST S	CYPRESS CREEK BRIDGE	MAIN ST	0.58	14,310	2008	16,000	2	2	E	F	0.97	8
IW/SMT	CHURCH ST N	MAIN ST	SMITHFIELD CL	1.28	8,375	2008	13,000	2	2	E	F	0.84	8
IW/WIND	COURT ST	SCL WINDSOR/BUCKHORN DR	ROUTE 460	0.31	876	2008	2,000	2	2	A-C	A-C	0.07	-
IW/SMT	MAIN ST	ROUTE 10 BYPASS	CHURCH ST	0.64	4,972	2008	7,000	2	2	D	D	0.40	-
IW	NIKE PARK RD	BATTERY PARK RD	TITUS CREEK DR	1.55	9,492	2008	11,000	2	2	A-C	F	0.86	-
IW	RESCUE RD	NEWPORT ST (RTE 1002)	SMITH'S NECK RD	1.30	966	2008	2,000	2	2	A-C	A-C	0.09	-
IW	ROUTE 10 (OLD STAGE HWY)	BUS RTE 10	IW/SURRY CL	4.20	7,244	2008	12,000	2	2	A-C	D	0.32	-
IW/SMT	ROUTE 10 BYPASS	CHURCH ST S	FAIRWAY DR	1.55	17,861	2008	19,000	2	2	E	E	0.67	11
IW/SMT	ROUTE 10 BYPASS	FAIRWAY DR	MAIN ST	0.75	17,861	2008	19,000	2	2	E	E	0.85	12
IW/SMT	ROUTE 10 BYPASS	MAIN ST	NCL SMITHFIELD	0.78	10,707	2008	15,000	2	2	A-C	A-C	0.58	-
IW	ROUTE 10 BYPASS	NCL SMITHFIELD	BUS RTE 10	2.96	7,152	2008	15,000	2	2	A-C	E	0.32	-
IW	ROUTE 258	SUFFOLK CL	UNION CAMP DR (RTE 656)	1.54	3,748	2008	7,000	2	2	A-C	A-C	0.16	-
IW	ROUTE 258	UNION CAMP DR (RTE 656)	CARRSVILLE HWY (BUS RTE 58)	1.31	1,047	2008	7,000	2	2	A-C	A-C	0.03	-
IW	ROUTE 258	CARRSVILLE HWY (BUS RTE 58)	BURDETTE RD (W RTE 619)	5.60	3,935	2008	11,000	2	2	A-C	D	0.19	-
IW	ROUTE 258	BURDETTE RD (W RTE 619)	RIVER RUN TRAIL (W RTE 614)	1.25	3,935	2008	11,000	2	2	A-C	D	0.19	-

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Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
IW	ROUTE 258	RIVER RUN TRAIL (W RTE 614)	BLACKWATER RD (RTE 603)	5.77	5,460	2008	11,000	2	2	A-C	E	0.32	-
IW	ROUTE 258	BLACKWATER RD (RTE 603)	WCL WINDSOR	0.08	5,359	2008	11,000	2	2	A-C	E	0.30	-
IW/WIND	ROUTE 258	WCL WINDSOR	ROUTE 460	0.15	5,359	2008	11,000	2	2	A-C	E	0.30	-
IW/WIND	ROUTE 258	ROUTE 460	ECL WINDSOR	0.25	5,980	2008	11,000	2	2	A-C	D	0.27	-
IW	ROUTE 258	ECL WINDSOR	COURT ST NORTH (RTE 610)	0.59	5,980	2008	13,000	2	2	A-C	E	0.27	-
IW	ROUTE 258	COURT ST NORTH (RTE 610)	IRON MINE SPRINGS RD (RTE 605)	4.27	4,844	2008	13,000	2	2	A-C	E	0.28	-
IW	ROUTE 258	IRON MINE SPRINGS RD (RTE 605)	CENTRAL HILL RD (W RTE 637)	2.28	4,844	2008	13,000	2	2	A-C	E	0.28	-
IW	ROUTE 258	CENTRAL HILL RD (W RTE 637)	SCOTTS FACTORY RD (RTE 620)	5.20	5,472	2008	11,000	2	2	A-C	D	0.29	-
IW	ROUTE 258	SCOTTS FACTORY RD (RTE 620)	WCL SMITHFIELD	1.04	5,472	2008	11,000	2	2	A-C	D	0.28	-
IW/SMT	ROUTE 258/N MAIN ST	WCL SMITHFIELD	RTE 10 BYPASS	0.76	13,737	2008	19,000	2	2	A-C	F	0.73	-
IW	ROUTE 460	SOUTHAMPTON CL	FIRETOWER RD (RTE 644)	0.54	9,697	2008	27,000	4	4	A-C	A-C	0.14	-
IW	ROUTE 460	FIRETOWER RD (RTE 644)	WCL WINDSOR	5.56	9,697	2008	27,000	4	4	A-C	A-C	0.14	-
IW/WIND	ROUTE 460	WCL WINDSOR	ROUTE 258	0.08	9,697	2008	25,000	4	4	A-C	A-C	0.14	-
IW/WIND	ROUTE 460	ROUTE 258	COURT ST (RTE 610)	0.46	13,942	2008	31,000	4	4	A-C	E	0.43	-
IW	ROUTE 460	COURT ST (RTE 610)	ECL WINDSOR	0.75	13,236	2008	31,000	4	4	A-C	E	0.42	-
IW	ROUTE 460	ECL WINDSOR	SUFFOLK CL	2.35	13,236	2008	34,000	4	4	A-C	A-C	0.24	-
IW	SMITH'S NECK RD	CARROLLTON BLVD	REYNOLDS DR	0.72	11,894	2008	19,000	2	2	E	F	0.76	11
IW	SMITH'S NECK RD	REYNOLDS DR	TITUS CREEK DR	1.03	8,757	2008	17,000	2	2	E	F	0.55	11
IW	SMITH'S NECK RD	TITUS CREEK DR	RESCUE RD	2.10	1,688	2008	2,000	2	2	A-C	A-C	0.11	-
IW	TITUS CREEK DR	SMITH'S NECK RD	NIKE PARK RD	0.92	6,941	2008	9,000	2	2	A-C	A-C	0.58	-
IW	TODD AVE/WARWICK ST	COUNTRY WAY	NEWPORT ST (RTE 1002)	0.57	1,117	2008	1,000	2	2	A-C	A-C	0.09	-
JCC	BARHAMSVILLE RD	I-64	ROUTE 60	1.71	9,237	2007	19,000	4	4	A-C	A-C	0.12	-
JCC	CENTERVILLE RD	JOHN TYLER HWY	MONTICELLO AVE	0.50	3,462	2007	8,000	2	2	A-C	A-C	0.13	-
JCC	CENTERVILLE RD	MONTICELLO AVE	NEWS RD	1.62	4,158	2007	4,000	2	2	A-C	A-C	0.16	-
JCC	CENTERVILLE RD	NEWS RD	LONGHILL RD	2.85	6,441	2007	12,000	2	2	A-C	A-C	0.33	-
JCC	CENTERVILLE RD	LONGHILL RD	RICHMOND RD	3.11	10,174	2007	16,000	2	2	A-C	A-C	0.52	-
JCC	COLONIAL NATL HIST PKWY	JAMESTOWN/RTE 359	WILLIAMSBURG CL/RTE 199	7.51	2,118	2007	6,000	2	2	A-C	D	0.13	-
JCC	CROAKER RD	ROUTE 60	MAXTON LN (RTE 760)	0.73	9,275	2007	12,000	2	2	D	D	0.38	-
JCC	CROAKER RD	MAXTON LN (RTE 760)	I-64	0.45	9,260	2007	24,000	4	4	A-C	A-C	0.15	-
JCC	CROAKER RD	I-64	FENTON MILL RD	0.41	6,773	2007	16,000	4	4	A-C	A-C	0.10	-
JCC	CROAKER RD	FENTON MILL RD	RIVERVIEW RD	0.73	3,542	2007	12,000	2	2	A-C	D	0.15	-
JCC	IRONBOUND RD	STRAWBERRY PLAINS RD	MONTICELLO AVE	0.13	7,659	2007	12,000	2	4	A-C	A-C	0.54	-
JCC	IRONBOUND RD	MONTICELLO AVE	WILLIAMSBURG CL	0.76	10,984	2007	12,000	2	4	A-C	A-C	0.56	-
JCC	IRONBOUND RD/NEWS RD	JOHN TYLER HWY	MONTICELLO AVE	1.36	10,967	2007	15,000	2	2	A-C	A-C	0.60	-
JCC	IRONBOUND RD/SANDY BAY RD	JAMESTOWN RD	JOHN TYLER HWY	0.98	8,299	2007	10,000	2	2	A-C	A-C	0.49	-
JCC	JAMESTOWN RD	JAMES RIVER/FERRY	COLONIAL PARKWAY (RTE 359)	0.37	6,700	2007	10,000	2	2	A-C	D	0.28	-
JCC	JAMESTOWN RD	COLONIAL PARKWAY (RTE 359)	SANDY BAY RD (RTE 681)	1.46	8,235	2007	10,000	2	2	A-C	A-C	0.47	-
JCC	JAMESTOWN RD	SANDY BAY RD (RTE 681)	NECK-O-LAND RD	0.88	7,965	2007	10,000	2	2	A-C	A-C	0.50	-
JCC	JAMESTOWN RD	NECK-O-LAND RD	WILLIAMSBURG CL	1.46	16,707	2007	19,000	2	2	F	F	1.05	10
JCC	JOHN TYLER HWY	CHARLES CITY CL	MONTICELLO AVE	1.50	3,214	2007	7,000	2	2	A-C	A-C	0.13	-
JCC	JOHN TYLER HWY	MONTICELLO AVE	CENTERVILLE RD (RTE 614N)	2.70	4,800	2007	7,000	2	2	A-C	A-C	0.25	-
JCC	JOHN TYLER HWY	CENTERVILLE RD (RTE 614 N)	IRONBOUND RD (RTE 615)	2.10	11,303	2007	14,000	2	2	A-C	A-C	0.55	-
JCC	JOHN TYLER HWY	IRONBOUND RD (RTE 615)	STANLEY DR (RTE 712)	1.56	12,682	2007	17,000	2	2	A-C	A-C	0.66	-
JCC	JOHN TYLER HWY	STANLEY DR (RTE 712)	ROUTE 199	0.23	14,984	2007	17,000	4	4	A-C	A-C	0.37	-
JCC	LONGHILL CONNECTOR RD	LONGHILL RD (RTE 612)	IRONBOUND RD	0.85	8,336	2007	23,000	2	2	A-C	F	0.54	-
JCC	LONGHILL RD	CENTERVILLE RD (RTE 614)	OLDE TOWNE RD (RTE 658)	2.39	18,299	2007	27,000	2	2	F	F	1.00	10
JCC	LONGHILL RD	OLDE TOWNE RD (RTE 658)	ROUTE 199	0.66	20,055	2007	27,000	2	2	F	F	1.26	10
JCC	LONGHILL RD	ROUTE 199	LONGHILL CONNECTOR RD	0.30	20,000	2007	31,000	4	4	A-C	E	0.64	-
JCC	MERRIMAC TRL	NEWPORT NEWS CL @ I-64	YORK CL (SOUTH OF GROVE INT)	2.44	10,282	2007	17,000	4	4	A-C	A-C	0.45	-
JCC	MERRIMAC TRL	YORK CL @ ROUTE 199	PENNIMAN RD (YORK CL)	1.21	16,543	2007	22,000	4	4	A-C	A-C	0.41	-

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JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
JCC	MONTICELLO AVE	JOHN TYLER HWY	CENTERVILLE RD (RTE 614)	1.08	4,574	2007	10,000	2	2	A-C	D	0.25	-
JCC	MONTICELLO AVE	CENTERVILLE RD (RTE 614)	NEWS RD	2.65	11,395	2007	12,000	2	2	A-C	A-C	0.86	-
JCC	MONTICELLO AVE	NEWS RD	ROUTE 199	0.57	41,348	2007	45,000	4	4	F	F	1.20	12
JCC	MONTICELLO AVE	ROUTE 199	IRONBOUND RD (RTE 615)	0.82	25,204	2007	30,000	4	4	A-C	D	0.73	-
JCC	OLD STAGE RD	NEW KENT CL	BARNES RD (RTE 601 S)	1.29	11,015	2007	13,000	2	2	D	E	0.55	-
JCC	OLD STAGE RD	BARNES RD (RTE 601 S)	I-64	0.84	11,015	2007	21,000	4	4	A-C	A-C	0.20	-
JCC	OLDE TOWNE RD	LONGHILL RD	RICHMOND RD	1.40	10,256	2007	15,000	2	2	D	D	0.63	-
JCC	POCAHONTAS TRL	WILLIAMSBURG CL	YORK CL @ 199	1.38	8,513	2007	15,000	4	4	A-C	A-C	0.21	-
JCC	POCAHONTAS TRL	YORK CL	BASF RD/ROUTE 60 RELOCATION	3.10	10,653	2007	15,000	2	2	A-C	A-C	0.55	-
JCC	POCAHONTAS TRL	BASF RD/ROUTE 60 RELOCATION	NEWPORT NEWS CL	1.04	9,226	2007	17,000	2	2	A-C	A-C	0.43	-
JCC	RICHMOND RD	ROUTE 199	OLDE TOWNE RD (RTE 658)	1.92	16,341	2007	20,000	4	4	A-C	A-C	0.35	-
JCC	RICHMOND RD	OLDE TOWNE RD (RTE 658)	WILLIAMSBURG CL	0.48	20,470	2007	24,000	4	4	A-C	A-C	0.41	-
JCC	ROCHAMBEAU DR	ROUTE 60	CROAKER RD (RTE 607)	3.03	7,764	2007	11,000	2	2	D	E	0.40	-
JCC	ROUTE 199	JOHN TYLER HWY (RTE 5)	WILLIAMSBURG CL	0.23	37,160	2007	45,000	4	4	A-C	F	0.84	-
JCC	ROUTE 199	WILLIAMSBURG CL	HENRY ST/COLONIAL PKWY	1.73	33,784	2007	49,000	4	4	A-C	F	0.84	-
JCC	ROUTE 199	HENRY ST/COLONIAL PKWY	MOUNTS BAY RD/QUARTERPATH RD	1.11	34,021	2007	47,000	4	4	A-C	F	0.79	-
JCC	ROUTE 199	MOUNTS BAY RD/QUARTERPATH RD	RTE 60/RTE 143/YORK CL	1.19	32,250	2007	47,000	4	4	A-C	F	0.78	-
JCC	ROUTE 60	NEW KENT CL	ROUTE 30	5.05	6,736	2007	8,000	4	4	A-C	A-C	0.09	-
JCC	ROUTE 60	ROUTE 30	CROAKER RD (RTE 607)	3.17	17,201	2007	25,000	4	4	A-C	A-C	0.25	-
JCC	ROUTE 60	CROAKER RD (RTE 607)	CENTERVILLE RD (RTE 614)	2.70	21,892	2007	39,000	4	4	A-C	A-C	0.31	-
JCC	ROUTE 60	CENTERVILLE RD (RTE 614)	ROUTE 199	0.28	24,656	2007	44,000	4	4	A-C	F	0.67	-
JCC	STRAWBERRY PLAINS RD	JOHN TYLER HWY/ROUTE 199	IRONBOUND RD	1.35	6,946	2007	11,000	2	2	A-C	A-C	0.41	-
NN	23RD/25TH CONNECTOR	HUNTINGTON AVE	JEFFERSON AVE	0.36	1,903	2007	8,000	2	2	A-C	D	0.11	-
NN	25TH ST	JEFFERSON AVE	26TH ST	1.37	3,413	2009	4,000	2	2	A-C	A-C	0.15	-
NN	25TH ST	26TH ST	HAMPTON CL	0.46	6,534	2009	7,000	2	2	D	D	0.51	-
NN	26TH ST	25TH ST	ROANOKE AVE	0.67	1,359	2009	2,000	2	2	A-C	A-C	0.04	-
NN	26TH ST	ROANOKE AVE	JEFFERSON AVE	0.74	3,366	2009	5,000	2	2	A-C	A-C	0.11	-
NN	26TH ST	JEFFERSON AVE	WARWICK BLVD	0.34	3,563	2009	4,000	2	2	A-C	A-C	0.10	-
NN	26TH ST	WARWICK BLVD	HUNTINGTON AVE	0.13	3,563	2009	7,000	2	2	A-C	A-C	0.10	-
NN	39TH ST	HUNTINGTON AVE	MADISON AVE	0.63	4,910	2009	9,000	2	2	D	F	0.55	-
NN	39TH ST	MADISON AVE	HAMPTON CL	1.00	8,990	2009	10,000	4	4	D	D	0.50	-
NN	ATKINSON BLVD	WARWICK BLVD	JEFFERSON AVE	1.19	DNE	2009	25,000	0	4	-	A-C	-	-
NN	BLAND BLVD	WARWICK BLVD	I-64	0.54	32,987	2009	37,000	4	4	D	E	0.87	-
NN	BLAND BLVD	I-64	JEFFERSON AVE	0.40	32,987	2009	37,000	4	4	D	E	0.87	-
NN	BLAND BLVD	JEFFERSON AVE	McMANUS BLVD	0.48	21,454	2008	33,000	4	4	A-C	A-C	0.49	-
NN	BRIARFIELD RD	JEFFERSON AVE	HAMPTON CL	1.17	9,169	2009	11,000	2	2	A-C	A-C	0.48	-
NN	BUXTON AVE	HAMPTON CL	25TH ST	0.52	15,282	2009	13,000	2	2	D	A-C	0.76	-
NN	CENTER AVE	WARWICK BLVD	JEFFERSON AVE	0.35	4,823	2009	8,000	2	2	D	D	0.42	-
NN	CHESTNUT AVE	39TH ST	44TH ST	0.20	8,200	2009	9,000	4	4	D	D	0.32	-
NN	CHESTNUT AVE	44TH ST	BRIARFIELD RD	0.90	8,200	2009	9,000	2	2	D	D	0.62	-
NN	CHESTNUT AVE	BRIARFIELD RD	HAMPTON CL	1.00	7,945	2009	9,000	4	4	A-C	A-C	0.23	-
NN	DENBIGH BLVD	LUCAS CREEK RD	WARWICK BLVD	0.51	21,008	2009	30,000	4	4	A-C	D	0.65	-
NN	DENBIGH BLVD	WARWICK BLVD	JEFFERSON AVE	1.15	35,178	2008	36,000	4	4	D	D	0.85	-
NN	DENBIGH BLVD	JEFFERSON AVE	YORK CL	1.32	26,119	2009	34,000	4	4	A-C	D	0.63	-
NN	DILIGENCE DR	THIMBLE SHOALS BLVD	J CLYDE MORRIS BLVD	0.45	22,941	2009	48,000	4	4	A-C	F	0.65	-
NN	FORT EUSTIS BLVD	WARWICK BLVD	I-64	0.82	38,541	2009	63,000	4	4	F	F	1.03	17
NN	FORT EUSTIS BLVD	I-64	JEFFERSON AVE	0.16	24,729	2007	27,000	4	4	A-C	A-C	0.63	-
NN	FORT EUSTIS BLVD	JEFFERSON AVE	.54 MILES EAST OF RTE 143	0.54	16,939	2009	35,000	4	4	A-C	A-C	0.46	-
NN	FORT EUSTIS BLVD	.54 MILES EAST OF RTE 143	YORK CL	0.74	16,939	2009	31,000	2	4	A-C	A-C	0.93	-
NN	HRC PARKWAY	HARPERSVILLE RD	HAMPTON CL	0.63	23,568	2009	39,000	4	4	A-C	F	0.64	-

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Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
NN	HARPERSVILLE RD	J CLYDE MORRIS BLVD	SAUNDERS RD	0.54	12,077	2009	13,000	2	2	D	D	0.84	-
NN	HARPERSVILLE RD	SAUNDERS RD	HRC PARKWAY	2.33	11,621	2009	13,000	2	2	D	D	0.77	-
NN	HARPERSVILLE RD	HRC PARKWAY	JEFFERSON AVE	0.44	25,807	2009	45,000	6	6	A-C	A-C	0.44	-
NN	HARPERSVILLE RD	JEFFERSON AVE	WARWICK BLVD	0.89	14,962	2009	21,000	2	2	D	F	0.93	-
NN	HUNTINGTON AVE	71ST ST	39TH ST	1.78	11,428	2009	16,000	3	3	A-C	A-C	0.29	-
NN	HUNTINGTON AVE	39TH ST	23RD ST	0.78	6,712	2009	12,000	3	3	A-C	D	0.36	-
NN	J CLYDE MORRIS BLVD	WARWICK BLVD	JEFFERSON AVE	1.12	32,941	2009	39,000	4	4	D	D	0.75	-
NN	J CLYDE MORRIS BLVD	JEFFERSON AVE	I-64	1.53	57,505	2008	66,000	6	6	A-C	D	0.76	-
NN	J CLYDE MORRIS BLVD	I-64	HARPERSVILLE RD	0.60	53,800	2008	70,000	4	6	F	F	1.21	19
NN	J CLYDE MORRIS BLVD	HARPERSVILLE RD	YORK CL	0.19	27,568	2009	49,000	4	4	A-C	F	0.62	-
NN	JEFFERSON AVE	JAMES CITY CL	YORKTOWN RD	1.14	13,987	2009	25,000	4	4	A-C	F	0.56	-
NN	JEFFERSON AVE	YORKTOWN RD	FORT EUSTIS BLVD	2.50	9,546	2009	46,000	4	4	A-C	F	0.32	-
NN	JEFFERSON AVE	FORT EUSTIS BLVD	FUTURE ATKINSON BLVD	1.34	28,212	2009	52,000	4	6	A-C	D	0.72	-
NN	JEFFERSON AVE	FUTURE ATKINSON BLVD	DENBIGH BLVD	1.68	35,853	2006	61,000	4	6	A-C	D	0.53	-
NN	JEFFERSON AVE	DENBIGH BLVD	BLAND BLVD	0.87	63,112	2008	72,000	6	6	F	F	1.06	18
NN	JEFFERSON AVE	BLAND BLVD	I-64	0.92	68,974	2008	76,000	6	6	F	F	1.01	15
NN	JEFFERSON AVE	I-64	OYSTER POINT RD	0.95	55,788	2009	65,000	6	6	D	D	0.81	-
NN	JEFFERSON AVE	OYSTER POINT RD	MUELLER LA	0.83	62,314	2008	63,000	6	6	E	F	0.99	13
NN	JEFFERSON AVE	MUELLER LA	MIDDLE GROUND BLVD	0.45	62,314	2008	63,000	6	6	E	F	0.99	13
NN	JEFFERSON AVE	MIDDLE GROUND BLVD	J CLYDE MORRIS BLVD	1.10	53,274	2009	66,000	6	6	D	D	0.74	-
NN	JEFFERSON AVE	J CLYDE MORRIS BLVD	HARPERSVILLE RD	1.12	59,649	2009	67,000	6	6	D	D	0.85	-
NN	JEFFERSON AVE	HARPERSVILLE RD	MAIN ST	1.67	47,606	2009	50,000	6	6	A-C	A-C	0.73	-
NN	JEFFERSON AVE	MAIN ST	CENTER AVE	0.72	48,863	2009	51,000	6	6	A-C	A-C	0.76	-
NN	JEFFERSON AVE	CENTER AVE	MERCURY BLVD	0.61	45,996	2009	42,000	6	6	A-C	A-C	0.72	-
NN	JEFFERSON AVE	MERCURY BLVD	BRIARFIELD RD	1.06	37,596	2009	40,000	6	6	A-C	A-C	0.53	-
NN	JEFFERSON AVE	BRIARFIELD RD	41ST ST	1.08	31,037	2009	33,000	6	6	A-C	A-C	0.41	-
NN	JEFFERSON AVE	41ST ST	35TH ST	0.25	14,330	2009	14,000	4	4	A-C	A-C	0.39	-
NN	JEFFERSON AVE	35TH ST	25TH ST	0.54	14,330	2009	14,000	2	2	E	D	0.90	13
NN	MAIN ST	WARWICK BLVD	JEFFERSON AVE	0.42	17,620	2008	26,000	4	4	A-C	A-C	0.47	-
NN	MAIN ST	JEFFERSON AVE	HAMPTON CL	0.56	24,602	2009	27,000	4	4	A-C	D	0.73	-
NN	MCMANUS BLVD/SIEMENS WAY	DENBIGH BLVD	BLAND BLVD	1.04	10,786	2009	20,000	2	2	D	F	0.77	-
NN	MERCURY BLVD/JAMES RIVER BR	ISLE OF WIGHT CL	RIVER RD	0.22	29,788	2009	59,000	4	4	A-C	F	0.61	-
NN	MERCURY BLVD	RIVER RD	WARWICK BLVD	0.23	31,222	2009	53,000	4	4	D	F	0.98	-
NN	MERCURY BLVD	WARWICK BLVD	JEFFERSON AVE	0.34	46,291	2009	55,000	6	6	A-C	D	0.81	-
NN	MERCURY BLVD	JEFFERSON AVE	HAMPTON CL	0.25	43,121	2009	52,000	6	6	A-C	A-C	0.68	-
NN	MIDDLE GROUND BLVD	WARWICK BLVD	JEFFERSON AVE	1.00	DNE	2009	33,000	0	4	-	D	-	-
NN	OYSTER POINT RD	WARWICK BLVD	JEFFERSON AVE	1.04	55,006	2008	51,000	4	4	F	F	1.40	15
NN	OYSTER POINT RD	JEFFERSON AVE	CANON BLVD	0.73	44,779	2008	55,000	6	6	A-C	D	0.69	-
NN	OYSTER POINT RD	CANON BLVD	I-64	0.42	54,828	2007	65,000	6	6	E	F	0.96	11
NN	RICHNECK RD	DENBIGH BLVD	JEFFERSON AVE	0.97	3,795	2009	12,000	2	2	D	F	0.45	-
NN	RICHNECK RD	JEFFERSON AVE	YORK CL	1.53	8,773	2009	20,000	2	2	E	F	0.83	11
NN	ROANOKE AVE	I-664	43RD ST	0.20	4,006	2009	6,000	4	4	A-C	A-C	0.13	-
NN	ROANOKE AVE	43RD ST	BRIARFIELD RD	1.00	4,006	2009	7,000	2	2	D	D	0.36	-
NN	ROANOKE AVE	BRIARFIELD RD	HAMPTON CL	0.90	4,320	2009	4,000	2	2	D	D	0.35	-
NN	SAUNDERS RD	HARPERSVILLE RD	HAMPTON CL	0.84	7,799	2009	9,000	2	2	D	D	0.61	-
NN	THIMBLE SHOALS BLVD	JEFFERSON AVE	DILIGENCE DR	0.87	22,132	2009	39,000	4	4	A-C	F	0.62	-
NN	THIMBLE SHOALS BLVD	DILIGENCE DR	J CLYDE MORRIS BLVD	0.38	12,584	2009	24,000	4	4	A-C	F	0.56	-
NN	VICTORY BLVD	I-64	YORK CL	0.51	65,070	2008	78,000	6	6	F	F	1.24	12
NN	WARWICK BLVD	JAMES CITY CL	YORKTOWN RD	1.69	13,067	2009	23,000	2	2	A-C	F	0.64	-
NN	WARWICK BLVD	YORKTOWN RD	FORT EUSTIS BLVD	1.44	16,786	2009	27,000	2	2	D	F	0.83	-

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JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
NN	WARWICK BLVD	FORT EUSTIS BLVD	SNIDOW BLVD	1.86	34,221	2009	40,000	4	4	D	F	0.87	-
NN	WARWICK BLVD	SNIDOW BLVD	DENBIGH BLVD	1.66	45,198	2008	54,000	4	4	E	F	0.97	10
NN	WARWICK BLVD	DENBIGH BLVD	BLAND BLVD	0.84	47,668	2008	68,000	4	4	F	F	1.01	16
NN	WARWICK BLVD	BLAND BLVD	OYSTER POINT RD	1.39	43,811	2008	60,000	4	4	F	F	1.06	15
NN	WARWICK BLVD	OYSTER POINT RD	MIDDLE GROUND BLVD	1.31	26,629	2009	36,000	4	4	A-C	D	0.66	-
NN	WARWICK BLVD	MIDDLE GROUND BLVD	DEEP CREEK RD	0.55	32,486	2008	50,000	4	6	D	D	0.80	-
NN	WARWICK BLVD	DEEP CREEK RD	J CLYDE MORRIS BLVD	1.43	45,867	2009	62,000	4	6	F	F	1.12	12
NN	WARWICK BLVD	J CLYDE MORRIS BLVD	HARPERSVILLE RD	1.07	25,444	2009	56,000	5	5	A-C	F	0.68	-
NN	WARWICK BLVD	HARPERSVILLE RD	MAIN ST	1.49	41,988	2008	49,000	4	4	F	F	1.27	12
NN	WARWICK BLVD	MAIN ST	CENTER AVE	0.69	24,017	2009	35,000	4	4	F	F	0.98	10
NN	WARWICK BLVD	CENTER AVE	MERCURY BLVD	0.50	29,314	2009	38,000	6	6	D	F	0.79	-
NN	WARWICK BLVD	MERCURY BLVD	HUNTINGTON AVE	0.50	32,296	2009	34,000	6	6	F	F	1.27	12
NN	WARWICK BLVD	23RD ST	39TH ST	0.75	3,754	2009	10,000	3	3	A-C	D	0.23	-
NN	WARWICK BLVD	39TH ST	HUNTINGTON AVE	1.75	13,584	2009	17,000	3	3	D	F	0.82	-
NN	YORKTOWN RD	WARWICK BLVD	I-64	0.98	6,306	2009	18,000	2	2	A-C	F	0.40	-
NN	YORKTOWN RD	I-64	JEFFERSON AVE	0.15	11,041	2007	20,000	2	2	A-C	F	0.58	-
NN	YORKTOWN RD	JEFFERSON AVE	CRAWFORD RD	0.61	13,196	2009	18,000	2	2	D	F	0.81	-
NN	YORKTOWN RD	CRAWFORD RD	YORK CL	0.44	10,887	2009	14,000	2	2	A-C	F	0.78	-
NOR	21ST ST	HAMPTON BLVD	COLLEY AVE	0.35	8,982	2009	12,000	2	2	D	D	0.60	-
NOR	21ST ST	COLLEY AVE	LLEWELLYN ST	0.45	14,866	2009	21,000	2	2	D	F	0.74	-
NOR	21ST ST	LLEWELLYN ST	MONTICELLO AVE	0.27	10,383	2009	7,000	2	2	D	D	0.55	-
NOR	26TH ST	HAMPTON BLVD	COLLEY AVE	0.39	4,185	2009	10,000	3	3	A-C	A-C	0.14	-
NOR	26TH ST	COLLEY AVE	LLEWELLYN AVE	0.77	8,209	2009	15,000	3	3	A-C	D	0.29	-
NOR	26TH ST	LLEWELLYN AVE	MONTICELLO AVE	0.27	9,042	2009	9,000	3	3	A-C	A-C	0.31	-
NOR	26TH ST	MONTICELLO AVE	CHURCH ST	0.15	8,701	2009	12,000	3	3	A-C	D	0.29	-
NOR	26TH ST	CHURCH ST	27TH ST	0.26	9,458	2009	11,000	3	3	A-C	A-C	0.33	-
NOR	27TH ST	HAMPTON BLVD	COLLEY AVE	0.39	10,007	2009	11,000	3	3	A-C	A-C	0.23	-
NOR	27TH ST	COLLEY AVE	LLEWELLYN AVE	0.47	10,007	2009	14,000	3	3	A-C	A-C	0.23	-
NOR	27TH ST	LLEWELLYN AVE	MONTICELLO AVE	0.26	9,926	2009	12,000	3	3	A-C	A-C	0.22	-
NOR	27TH ST	MONTICELLO AVE	CHURCH ST	0.10	9,926	2009	12,000	3	3	A-C	A-C	0.22	-
NOR	27TH ST	CHURCH ST	26TH ST	0.25	9,926	2009	7,000	3	3	A-C	A-C	0.22	-
NOR	38TH ST	HAMPTON BLVD	COLLEY AVE	0.40	6,235	2009	7,000	2	2	D	D	0.43	-
NOR	38TH ST	COLLEY AVE	LLEWELLYN AVE	0.54	9,272	2009	8,000	2	2	D	D	0.58	-
NOR	38TH ST	LLEWELLYN AVE	GRANBY ST	0.16	4,679	2009	5,000	2	2	D	D	0.35	-
NOR	4TH VIEW ST	I-64	OCEAN VIEW AVE	0.24	12,289	2009	27,000	4	4	A-C	A-C	0.28	-
NOR	ADMIRAL TAUSSIG BLVD	HAMPTON BLVD	I-564	0.74	26,756	2009	33,000	4	4	F	F	1.05	15
NOR	AZALEA GARDEN RD	VA BEACH BLVD	PRINCESS ANNE RD	0.79	10,175	2009	10,000	2	2	D	D	0.60	-
NOR	AZALEA GARDEN RD	PRINCESS ANNE RD	SEWELLS POINT RD	0.31	14,919	2009	17,000	4	4	D	D	0.44	-
NOR	AZALEA GARDEN RD	SEWELLS POINT RD	ROBIN HOOD RD	0.64	9,567	2009	10,000	2	2	D	D	0.58	-
NOR	AZALEA GARDEN RD	ROBIN HOOD RD	I-64	0.43	9,645	2009	12,000	2	2	D	D	0.59	-
NOR	AZALEA GARDEN RD	I-64	MILITARY HWY	0.40	8,597	2009	10,000	2	2	D	D	0.55	-
NOR	AZALEA GARDEN RD	MILITARY HWY	NORVIEW AVE	0.60	12,326	2009	20,000	4	4	A-C	D	0.38	-
NOR	AZALEA GARDEN RD	NORVIEW AVE	LITTLE CREEK RD	1.42	12,326	2009	18,000	4	4	A-C	D	0.38	-
NOR	BAINBRIDGE BLVD	SCL NORFOLK	S MAIN ST	0.50	1,587	2009	2,000	2	2	A-C	A-C	0.08	-
NOR	BALLENTINE BLVD	I-264	VA BEACH BLVD	0.70	26,861	2009	29,000	4	4	D	D	0.71	-
NOR	BALLENTINE BLVD	VA BEACH BLVD	PRINCESS ANNE RD	0.50	14,689	2009	15,000	2	2	D	D	0.78	-
NOR	BALLENTINE BLVD	PRINCESS ANNE RD	CHESAPEAKE BLVD	0.95	11,820	2009	10,000	2	2	D	D	0.56	-
NOR	BAY AVE	FIRST VIEW ST	I-64	0.27	16,820	2009	14,000	4	4	E	D	0.91	8
NOR	BAY AVE/OCEAN AVE	I-64	GRANBY ST	0.38	2,384	2009	7,000	2	2	A-C	E	0.30	-
NOR	BAYVIEW BLVD	GRANBY ST	TIDEWATER DR	0.61	9,301	2009	12,000	2	2	D	D	0.55	-

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JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
NOR	BAYVIEW BLVD	TIDEWATER DR	CHESAPEAKE BLVD	0.51	12,873	2009	12,000	2	2	E	D	0.85	14
NOR	BAYVIEW BLVD	CHESAPEAKE BLVD	CAPE VIEW AVE	1.11	7,547	2009	7,000	2	2	D	D	0.49	-
NOR	BERKLEY AVE	I-464	STATE ST	0.10	15,500	2009	24,000	4	4	D	F	0.78	-
NOR	BERKLEY AVE	STATE ST	MAIN ST	0.10	15,003	2009	22,000	4	4	A-C	D	0.35	-
NOR	BERKLEY AVE	MAIN ST	BERKLEY AVE EXT	0.20	14,576	2009	17,000	4	4	D	D	0.40	-
NOR	BERKLEY AVE	BERKLEY AVE EXT	INDIAN RIVER RD	0.54	12,000	2003	13,000	4	4	D	D	0.42	-
NOR	BERKLEY AVE EXT	BERKLEY AVE/FAUQUIER ST	WILSON RD	0.77	4,276	2009	5,000	2	2	A-C	A-C	0.21	-
NOR	BERKLEY AVE EXT	WILSON RD	CAMPOSTELLA RD	0.48	3,715	2009	6,000	2	2	A-C	A-C	0.18	-
NOR	BOUSH ST/WATERSIDE DR	ST PAULS BLVD	CITY HALL AVE	0.57	32,111	2009	37,000	4	4	F	F	1.08	14
NOR	BOUSH ST	CITY HALL AVE	BUTE STREET	0.35	28,177	2009	38,000	4	4	D	F	0.88	-
NOR	BOUSH ST	BUTE STREET	BRAMBLETON AVE	0.09	28,177	2009	38,000	4	4	D	F	0.88	-
NOR	BOUSH ST	BRAMBLETON AVE	OLNEY RD	0.14	6,739	2006	8,000	3	3	A-C	A-C	0.25	-
NOR	BOUSH ST	OLNEY RD	VA BEACH BLVD	0.07	6,739	2006	9,000	3	3	A-C	A-C	0.25	-
NOR	BRAMBLETON AVE	HAMPTON BLVD	COLLEY AVE	0.50	34,404	2006	38,000	6	6	A-C	A-C	0.46	-
NOR	BRAMBLETON AVE	COLLEY AVE	BOUSH ST	0.85	46,317	2006	61,000	6	6	A-C	D	0.63	-
NOR	BRAMBLETON AVE	BOUSH ST	MONTICELLO AVE	0.18	29,635	2009	43,000	6	6	A-C	A-C	0.42	-
NOR	BRAMBLETON AVE	MONTICELLO AVE	ST PAULS BLVD	0.12	29,635	2009	46,000	6	6	A-C	A-C	0.42	-
NOR	BRAMBLETON AVE	ST PAULS BLVD	CHURCH ST	0.30	19,381	2009	19,000	6	6	A-C	A-C	0.30	-
NOR	BRAMBLETON AVE	CHURCH ST	TIDEWATER DR	0.29	28,168	2009	33,000	6	6	A-C	A-C	0.47	-
NOR	BRAMBLETON AVE	TIDEWATER DR	PARK AVE	0.42	33,658	2009	36,000	4	4	D	D	0.83	-
NOR	BRAMBLETON AVE	PARK AVE	I-264	0.20	47,162	2006	52,000	6	6	D	D	0.84	-
NOR	CAMPOSTELLA RD	SCL NORFOLK/BERKLEY AVE EXT	INDIAN RIVER RD	0.55	26,794	2006	28,000	6	6	A-C	A-C	0.46	-
NOR	CAMPOSTELLA RD	INDIAN RIVER RD	WILSON RD	0.23	25,051	2009	31,000	6	6	A-C	D	0.62	-
NOR	CAMPOSTELLA RD	WILSON RD	S. END CAMPOSTELLA BRIDGE	0.33	43,858	2006	46,000	6	6	F	F	1.01	14
NOR	CAMPOSTELLA RD	S. END CAMPOSTELLA BRIDGE	KIMBALL TERR	0.44	43,858	2006	46,000	6	6	F	F	1.01	14
NOR	CAMPOSTELLA RD	KIMBALL TERR	I-264	0.10	43,858	2006	46,000	6	6	F	F	1.01	19
NOR	CHESAPEAKE BLVD	LAFAYETTE BLVD	CROMWELL DR	0.13	19,790	2009	36,000	4	4	A-C	D	0.49	-
NOR	CHESAPEAKE BLVD	CROMWELL DR	ROBIN HOOD RD	0.21	19,790	2009	39,000	4	4	A-C	E	0.49	-
NOR	CHESAPEAKE BLVD	ROBIN HOOD RD	HYDE CIR	0.89	19,790	2009	23,000	4	4	A-C	A-C	0.49	-
NOR	CHESAPEAKE BLVD	HYDE CIR	NORVIEW AVE	0.13	19,790	2009	25,000	6	6	A-C	A-C	0.33	-
NOR	CHESAPEAKE BLVD	NORVIEW AVE	I-64	0.94	20,191	2009	26,000	6	6	A-C	A-C	0.32	-
NOR	CHESAPEAKE BLVD	I-64	JOHNSTONS RD	0.31	28,219	2009	29,000	6	6	A-C	A-C	0.49	-
NOR	CHESAPEAKE BLVD	JOHNSTONS RD	LITTLE CREEK RD	0.49	28,219	2009	26,000	6	6	A-C	A-C	0.49	-
NOR	CHESAPEAKE BLVD	LITTLE CREEK RD	SHEPPARD AVE	0.63	25,022	2009	23,000	4	4	A-C	A-C	0.67	-
NOR	CHESAPEAKE BLVD	SHEPPARD AVE	BAYVIEW BLVD	0.41	25,022	2009	23,000	4	4	A-C	A-C	0.67	-
NOR	CHESAPEAKE BLVD	BAYVIEW BLVD	CHESAPEAKE ST	0.61	14,339	2009	12,000	4	4	A-C	A-C	0.37	-
NOR	CHESAPEAKE BLVD	CHESAPEAKE ST	OCEAN VIEW AVE	0.47	5,682	2009	6,000	4	4	A-C	A-C	0.15	-
NOR	CHURCH ST	BRAMBLETON AVE	VA BEACH BLVD	0.22	17,344	2009	17,000	4	4	D	D	0.43	-
NOR	CHURCH ST	VA BEACH BLVD	PRINCESS ANNE RD	0.12	17,359	2009	17,000	4	4	D	D	0.45	-
NOR	CHURCH ST	PRINCESS ANNE RD	26TH ST	0.83	20,419	2009	21,000	4	4	D	D	0.58	-
NOR	CHURCH ST	26TH ST	27TH ST	0.06	13,807	2009	15,000	4	4	A-C	A-C	0.35	-
NOR	CHURCH ST	27TH ST	MONTICELLO AVE	0.21	12,724	2009	14,000	4	4	A-C	A-C	0.29	-
NOR	CHURCH ST	MONTICELLO AVE	GRANBY ST	0.13	29,000	2003	29,000	4	4	A-C	A-C	0.60	-
NOR	CITY HALL AVE	BOUSH ST	GRANBY ST	0.08	8,000	2003	9,000	2	2	D	D	0.66	-
NOR	CITY HALL AVE	GRANBY ST	MONTICELLO AVE	0.06	8,000	2003	13,000	2	2	D	F	0.66	-
NOR	CITY HALL AVE	MONTICELLO AVE	ST PAULS BLVD	0.29	8,000	2003	23,000	4	4	A-C	D	0.23	-
NOR	COLLEY AVE	BRAMBLETON AVE	OLNEY RD	0.21	17,743	2009	26,000	4	4	D	D	0.44	-
NOR	COLLEY AVE	OLNEY RD	PRINCESS ANNE RD	0.39	14,736	2009	18,000	4	4	D	D	0.48	-
NOR	COLLEY AVE	PRINCESS ANNE RD	21ST ST	0.40	15,853	2009	19,000	2	2	F	F	1.14	13
NOR	COLLEY AVE	21ST ST	26TH ST	0.24	17,265	2009	18,000	4	4	D	D	0.48	-

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Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
NOR	COLLEY AVE	26TH ST	27TH ST	0.05	17,265	2009	20,000	4	4	D	D	0.48	-
NOR	COLLEY AVE	27TH ST	38TH ST	0.34	14,523	2009	16,000	2	2	E	E	0.88	14
NOR	COLLEY AVE	38TH ST	53RD ST	0.74	14,523	2009	16,000	2	2	E	E	0.88	11
NOR	CROMWELL DR	TAIT TERRACE DR	CHESAPEAKE BLVD	0.59	16,193	2009	21,000	4	4	D	D	0.40	-
NOR	CROMWELL DR	CHESAPEAKE BLVD	TIDEWATER DR	0.82	14,097	2009	14,000	2	2	D	D	0.79	-
NOR	DUKE ST	OLNEY RD	BRAMBLETON AVE	0.19	11,558	2009	9,000	3	3	F	F	1.48	15
NOR	GRANBY ST	CHURCH ST	38TH ST	0.36	25,937	2009	23,000	4	4	A-C	A-C	0.68	-
NOR	GRANBY ST	38TH ST	LLEWELLYN AVE	0.42	25,937	2009	24,000	4	4	A-C	A-C	0.64	-
NOR	GRANBY ST	LLEWELLYN AVE	WILLOW WOOD DRIVE	0.28	39,773	2009	41,000	6	6	A-C	A-C	0.63	-
NOR	GRANBY ST	WILLOW WOOD DRIVE	THOLE ST	1.15	38,403	2009	42,000	6	6	A-C	A-C	0.54	-
NOR	GRANBY ST	THOLE ST	LITTLE CREEK RD	0.60	30,584	2009	30,000	6	6	A-C	A-C	0.39	-
NOR	GRANBY ST	LITTLE CREEK RD	I-564	0.26	27,329	2009	23,000	6	6	A-C	A-C	0.41	-
NOR	GRANBY ST	I-564	I-64	0.18	25,984	2009	39,000	4	4	A-C	F	0.72	-
NOR	GRANBY ST	I-64	BAYVIEW BLVD	0.99	25,984	2009	23,000	4	4	D	A-C	0.79	-
NOR	GRANBY ST	BAYVIEW BLVD	BAY AVE	0.56	14,500	2009	15,000	4	4	A-C	A-C	0.57	-
NOR	GRANBY ST	BAY AVE	TIDEWATER DR	0.38	14,500	2009	12,000	4	4	A-C	A-C	0.57	-
NOR	GRANBY ST	TIDEWATER DR	OCEAN VIEW AVE	0.71	12,011	2009	9,000	4	4	A-C	A-C	0.43	-
NOR	HAMPTON BLVD	BRAMBLETON AVE	PRINCESS ANNE RD	0.40	37,415	2006	36,000	4	4	F	F	1.06	16
NOR	HAMPTON BLVD	PRINCESS ANNE RD	21ST ST	0.48	37,415	2006	37,000	4	4	F	F	1.06	17
NOR	HAMPTON BLVD	21ST ST	26TH ST	0.21	37,587	2009	41,000	4	4	D	D	0.84	-
NOR	HAMPTON BLVD	26TH ST	27TH ST	0.05	38,416	2009	37,000	4	4	D	D	0.88	-
NOR	HAMPTON BLVD	27TH ST	38TH ST	0.18	38,416	2009	45,000	4	4	D	F	0.88	-
NOR	HAMPTON BLVD	38TH ST	JAMESTOWN CRESCENT	1.32	40,998	2009	41,000	6	6	A-C	A-C	0.58	-
NOR	HAMPTON BLVD	JAMESTOWN CRESCENT	LITTLE CREEK RD	1.28	40,988	2009	41,000	6	6	A-C	A-C	0.58	-
NOR	HAMPTON BLVD	LITTLE CREEK RD	INTERNATIONAL TERMINAL BLVD	0.18	41,701	2006	42,000	6	6	A-C	A-C	0.62	-
NOR	HAMPTON BLVD	INTERNATIONAL TERMINAL BLVD	INTERMODAL CONNECTOR	1.00	34,242	2006	30,000	6	6	A-C	A-C	0.52	-
NOR	HAMPTON BLVD	INTERMODAL CONNECTOR	ADM TAUSSIG BLVD	0.92	34,242	2006	35,000	6	6	A-C	A-C	0.52	-
NOR	INDIAN RIVER RD	MARSH ST	WILSON RD	0.36	14,611	2009	17,000	4	4	D	D	0.42	-
NOR	INDIAN RIVER RD	WILSON RD	CAMPOSTELLA RD	0.16	14,611	2009	19,000	4	4	D	D	0.45	-
NOR	INDIAN RIVER RD	CAMPOSTELLA RD	CHESAPEAKE CL	0.71	20,470	2009	29,000	6	6	A-C	A-C	0.38	-
NOR	INGLESIDE RD	VA BEACH BLVD	PRINCESS ANNE RD	0.66	16,050	2006	18,000	4	4	A-C	A-C	0.37	-
NOR	INGLESIDE RD	PRINCESS ANNE RD	TAIT TERRACE DR	0.46	16,228	2009	21,000	4	4	A-C	A-C	0.40	-
NOR	INTERNATIONAL TERMINAL BLVD	HAMPTON BLVD	I-564	1.74	28,673	2009	23,000	4	4	A-C	A-C	0.62	-
NOR	JAMESTOWN CRESCENT	53RD ST	HAMPTON BLVD	0.73	6,090	2009	8,000	2	2	A-C	D	0.34	-
NOR	JOHNSTONS RD	SEWELLS POINT RD	CHESAPEAKE BLVD	0.21	7,099	2009	7,000	2	2	D	D	0.42	-
NOR	JOHNSTONS RD	CHESAPEAKE BLVD	MILITARY HWY	0.36	11,339	2009	11,000	2	2	E	E	0.90	13
NOR	JOHNSTONS RD/HALPRIN LN	MILITARY HWY	LITTLE CREEK RD	0.94	7,260	2009	9,000	2	2	D	D	0.51	-
NOR	KEMPSVILLE RD	NEWTOWN RD	VA BEACH BLVD	1.00	23,851	2009	26,000	4	4	D	D	0.79	-
NOR	KEMPSVILLE RD	VA BEACH BLVD	NORTHAMPTON BLVD	1.58	13,883	2009	15,000	2	2	E	F	0.98	8
NOR	LAFAYETTE BLVD	27TH ST	TIDEWATER DR	0.89	17,419	2009	19,000	4	4	D	D	0.53	-
NOR	LAFAYETTE BLVD	TIDEWATER DR	CHESAPEAKE BLVD	0.56	19,141	2009	24,000	4	4	D	D	0.50	-
NOR	LIBERTY ST	STATE ST	SOUTH MAIN ST	0.11	4,156	2009	7,000	2	2	A-C	D	0.26	-
NOR	LIBERTY ST	SOUTH MAIN ST	NCL CHESAPEAKE	0.63	5,172	2009	7,000	2	2	D	D	0.37	-
NOR	LITTLE CREEK RD	HAMPTON BLVD	GRANBY ST	1.98	22,369	2009	20,000	4	4	D	D	0.66	-
NOR	LITTLE CREEK RD	GRANBY ST	I-64	0.35	27,158	2009	23,000	4	4	D	D	0.65	-
NOR	LITTLE CREEK RD	I-64	TIDEWATER DR	0.77	25,991	2009	26,000	6	6	A-C	A-C	0.41	-
NOR	LITTLE CREEK RD	TIDEWATER DR	SEWELLS POINT RD	0.18	29,385	2009	36,000	4	6	A-C	A-C	0.63	-
NOR	LITTLE CREEK RD	SEWELLS POINT RD	CHESAPEAKE BLVD	0.53	29,385	2009	35,000	4	6	A-C	A-C	0.63	-
NOR	LITTLE CREEK RD	CHESAPEAKE BLVD	MILITARY HWY	0.15	40,517	2009	44,000	4	6	D	A-C	0.83	-
NOR	LITTLE CREEK RD	MILITARY HWY	AZALEA GARDEN RD	1.54	28,328	2009	31,000	4	4	A-C	A-C	0.61	-

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Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
NOR	LITTLE CREEK RD	AZALEA GARDEN RD	SHORE DR	1.10	25,157	2009	30,000	4	4	A-C	A-C	0.56	-
NOR	LLEWELLYN AVE	VA BEACH BLVD	PRINCESS ANNE RD	0.30	9,391	2009	10,000	4	4	D	D	0.39	-
NOR	LLEWELLYN AVE	PRINCESS ANNE RD	21ST ST	0.50	9,982	2009	13,000	4	4	A-C	D	0.36	-
NOR	LLEWELLYN AVE	21ST ST	26TH ST	0.26	8,749	2009	11,000	4	4	A-C	D	0.32	-
NOR	LLEWELLYN AVE	26TH ST	27TH ST	0.05	8,749	2009	11,000	4	4	A-C	D	0.32	-
NOR	LLEWELLYN AVE	27TH ST	35TH ST	0.41	7,486	2009	10,000	3	3	D	D	0.47	-
NOR	LLEWELLYN AVE	35TH ST	38TH ST	0.15	7,486	2009	10,000	3	3	D	D	0.47	-
NOR	LLEWELLYN AVE	38TH ST	DELAWARE AVE	0.20	12,688	2009	13,000	3	3	D	E	0.80	-
NOR	LLEWELLYN AVE	DELAWARE AVE	GRANBY ST	0.27	8,412	2009	10,000	2	2	A-C	D	0.33	-
NOR	MIDTOWN TUNNEL	PORTSMOUTH CL	BRAMBLETON AVE	0.59	41,115	2009	42,000	2	4	F	A-C	1.11	17
NOR	MILITARY HWY	VA BEACH CL	I-264	0.75	50,478	2009	58,000	8	8	A-C	A-C	0.77	-
NOR	MILITARY HWY	I-264	VA BEACH BLVD	0.83	50,683	2006	51,000	8	8	A-C	A-C	0.64	-
NOR	MILITARY HWY	VA BEACH BLVD	LOWERY RD	0.54	49,231	2009	51,000	8	8	A-C	A-C	0.51	-
NOR	MILITARY HWY	LOWERY RD	PRIN ANNE RD/NORTHAMPTON BLVD	0.81	49,231	2009	61,000	4	8	F	A-C	1.01	13
NOR	MILITARY HWY	PRIN ANNE RD/NORTHAMPTON BLVD	I-64	0.52	46,913	2009	61,000	4	6	F	D	1.01	14
NOR	MILITARY HWY	I-64	AZALEA GARDEN RD	0.65	25,958	2009	26,000	4	4	A-C	A-C	0.61	-
NOR	MILITARY HWY	AZALEA GARDEN RD	NORVIEW AVE	0.39	26,064	2009	28,000	4	4	A-C	A-C	0.59	-
NOR	MILITARY HWY	NORVIEW AVE	JOHNSTONS RD	1.16	26,555	2009	28,000	4	4	A-C	A-C	0.55	-
NOR	MILITARY HWY	JOHNSTONS RD	LITTLE CREEK RD	0.48	26,555	2009	21,000	4	4	A-C	A-C	0.55	-
NOR	MONTICELLO AVE	CITY HALL AVE	BRAMBLETON AVE	0.47	6,917	2006	15,000	4	4	A-C	D	0.31	-
NOR	MONTICELLO AVE	BRAMBLETON AVE	ST PAULS BLVD	0.19	4,656	2009	15,000	4	4	A-C	D	0.14	-
NOR	MONTICELLO AVE	ST PAULS BLVD	VA BEACH BLVD	0.10	26,231	2009	28,000	4	4	A-C	A-C	0.50	-
NOR	MONTICELLO AVE	VA BEACH BLVD	PRINCESS ANNE RD	0.18	22,494	2009	25,000	4	4	A-C	A-C	0.45	-
NOR	MONTICELLO AVE	PRINCESS ANNE RD	21ST ST	0.48	22,494	2009	25,000	4	4	A-C	A-C	0.45	-
NOR	MONTICELLO AVE	21ST ST	26TH ST	0.27	18,326	2009	18,000	4	4	A-C	A-C	0.40	-
NOR	MONTICELLO AVE	26TH ST	27TH ST	0.05	18,326	2009	21,000	4	4	A-C	A-C	0.40	-
NOR	MONTICELLO AVE	27TH ST	CHURCH ST	0.18	18,326	2009	12,000	4	4	A-C	A-C	0.40	-
NOR	NEWTOWN RD	KEMPSVILLE RD	I-264	0.38	31,540	2009	33,000	4	4	D	D	0.76	-
NOR	NEWTOWN RD	I-264	VA BEACH BLVD	0.66	37,874	2009	46,000	4	4	D	F	0.83	-
NOR	NEWTOWN RD	VA BEACH BLVD	VA BEACH CL	0.15	41,723	2009	53,000	4	4	D	F	0.86	-
NOR	NORTHAMPTON BLVD	MILITARY HWY	KEMPSVILLE RD	0.24	34,240	2009	40,000	6	6	A-C	A-C	0.53	-
NOR	NORTHAMPTON BLVD	KEMPSVILLE RD	I-64	0.49	36,498	2009	35,000	6	6	A-C	A-C	0.66	-
NOR	NORTHAMPTON BLVD	I-64	WESLEYAN DR/VA BEACH CL	0.34	90,685	2006	115,000	8	8	F	F	1.02	16
NOR	NORVIEW AVE	TIDEWATER DR	CHESAPEAKE BLVD	1.14	6,518	2009	8,000	2	2	D	D	0.50	-
NOR	NORVIEW AVE	CHESAPEAKE BLVD	I-64	0.41	22,993	2009	26,000	4	4	A-C	A-C	0.58	-
NOR	NORVIEW AVE	I-64	MILITARY HWY	0.47	28,127	2009	29,000	4	4	A-C	A-C	0.59	-
NOR	NORVIEW AVE	MILITARY HWY	AZALEA GARDEN RD	0.50	14,346	2009	23,000	4	4	A-C	A-C	0.34	-
NOR	NORVIEW AVE	AZALEA GARDEN RD	NORFOLK INT AIRPORT	0.20	13,103	2009	22,000	4	4	A-C	A-C	0.31	-
NOR	OCEAN VIEW AVE	4TH VIEW ST	TIDEWATER DR	0.09	15,220	2009	20,000	4	4	A-C	A-C	0.37	-
NOR	OCEAN VIEW AVE	TIDEWATER DR	GRANBY ST	0.75	15,220	2009	16,000	4	4	A-C	A-C	0.37	-
NOR	OCEAN VIEW AVE	GRANBY ST	CHESAPEAKE BLVD	0.44	19,778	2009	21,000	4	4	A-C	A-C	0.48	-
NOR	OCEAN VIEW AVE	CHESAPEAKE BLVD	21ST BAY ST	3.15	19,495	2006	20,000	4	4	A-C	A-C	0.41	-
NOR	OLNEY RD	COLLEY AVE	DUKE ST/VA BEACH BLVD	0.56	10,595	2009	21,000	4	4	D	E	0.49	-
NOR	PARK AVE	BRAMBLETON AVE	VA BEACH BLVD	0.45	16,483	2009	19,000	4	4	D	D	0.42	-
NOR	PARK AVE	VA BEACH BLVD	PRINCESS ANNE RD	0.14	14,918	2009	18,000	4	4	A-C	A-C	0.33	-
NOR	PRINCESS ANNE RD	HAMPTON BLVD	COLLEY AVE	0.08	6,249	2009	9,000	2	2	A-C	D	0.30	-
NOR	PRINCESS ANNE RD	COLLEY AVE	LLEWELLYN AVE	0.57	8,777	2009	9,000	2	2	D	D	0.47	-
NOR	PRINCESS ANNE RD	LLEWELLYN AVE	MONTICELLO AVE	0.18	9,720	2009	12,000	2	2	D	D	0.48	-
NOR	PRINCESS ANNE RD	MONTICELLO AVE	CHURCH ST	0.51	9,986	2009	13,000	2	2	D	D	0.54	-
NOR	PRINCESS ANNE RD	CHURCH ST	TIDEWATER DR	0.28	17,628	2009	21,000	4	4	D	D	0.47	-

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JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
NOR	PRINCESS ANNE RD	TIDEWATER DR	MAY AVE	0.14	23,335	2009	30,000	4	4	D	D	0.60	-
NOR	PRINCESS ANNE RD	MAY AVE	PARK AVE	0.36	23,335	2009	30,000	4	4	D	D	0.60	-
NOR	PRINCESS ANNE RD	PARK AVE	BALLENTINE BLVD	0.97	19,530	2009	22,000	4	4	A-C	A-C	0.41	-
NOR	PRINCESS ANNE RD	BALLENTINE BLVD	INGLESIDE RD	0.37	23,581	2009	29,000	4	4	A-C	A-C	0.53	-
NOR	PRINCESS ANNE RD	INGLESIDE RD	AZALEA GARDEN RD	0.59	23,581	2009	28,000	4	4	A-C	A-C	0.50	-
NOR	PRINCESS ANNE RD	AZALEA GARDEN RD	SEWELLS POINT RD	0.32	25,124	2009	27,000	4	4	A-C	A-C	0.57	-
NOR	PRINCESS ANNE RD	SEWELLS POINT RD	MILITARY HWY	1.18	25,124	2009	28,000	4	4	A-C	A-C	0.57	-
NOR	ROBIN HOOD RD	CHESAPEAKE BLVD	SEWELLS POINT RD	0.98	6,567	2009	8,000	2	2	D	D	0.40	-
NOR	ROBIN HOOD RD	SEWELLS POINT RD	AZALEA GARDEN RD	0.36	5,440	2009	8,000	2	2	D	D	0.36	-
NOR	ROBIN HOOD RD	AZALEA GARDEN RD	ELLSMERE AVE	0.41	9,552	2009	12,000	4	4	A-C	D	0.32	-
NOR	ROBIN HOOD RD	ELLSMERE AVE	MILITARY HWY	0.33	12,217	2009	15,000	2	2	E	F	0.82	15
NOR	SEWELLS POINT RD	PRINCESS ANNE RD	AZALEA GARDEN RD	0.26	13,686	2009	6,000	2	2	D	A-C	0.76	-
NOR	SEWELLS POINT RD	AZALEA GARDEN RD	ROBIN HOOD RD	0.50	13,686	2009	21,000	4	4	A-C	A-C	0.38	-
NOR	SEWELLS POINT RD	ROBIN HOOD RD	CHESAPEAKE BLVD	0.86	13,686	2009	15,000	4	4	A-C	A-C	0.38	-
NOR	SEWELLS POINT RD	CHESAPEAKE BLVD	PARTRIDGE ST	0.12	9,124	2009	11,000	2	2	D	D	0.58	-
NOR	SEWELLS POINT RD	PARTRIDGE ST	PHILPOTTS RD	0.28	9,124	2009	11,000	2	2	D	D	0.58	-
NOR	SEWELLS POINT RD	PHILPOTTS RD	I-64	0.31	9,124	2009	11,000	4	4	A-C	A-C	0.29	-
NOR	SEWELLS POINT RD	I-64	LITTLE CREEK RD	1.02	9,124	2009	13,000	4	4	A-C	D	0.29	-
NOR	SHORE DRIVE	21ST BAY ST	LITTLE CREEK RD	0.88	23,876	2009	28,000	4	4	A-C	A-C	0.54	-
NOR	SHORE DRIVE	LITTLE CREEK RD	VA BEACH CL	0.98	34,434	2009	36,000	4	4	D	D	0.85	-
NOR	SOUTH MAIN ST	I-464	BAINBRIDGE BLVD	0.07	1,300	2003	2,000	2	2	A-C	A-C	0.10	-
NOR	SOUTH MAIN ST	BAINBRIDGE BLVD	LIBERTY ST	0.21	5,270	2009	8,000	2	2	D	D	0.50	-
NOR	SOUTH MAIN ST	LIBERTY ST	BERKLEY AVE	0.06	2,300	2003	5,000	2	2	A-C	D	0.19	-
NOR	ST PAULS BLVD	WATERSIDE DR	CITY HALL AVE	0.23	16,085	2009	16,000	6	6	D	D	0.42	-
NOR	ST PAULS BLVD	CITY HALL AVE	I-264 RAMP/MACARTHUR MALL	0.11	43,558	2009	16,000	6	6	D	A-C	0.67	-
NOR	ST PAULS BLVD	I-264 RAMP/MACARTHUR MALL	BRAMBLETON AVE	0.39	43,558	2009	43,000	6	6	A-C	A-C	0.60	-
NOR	ST PAULS BLVD	BRAMBLETON AVE	MONTICELLO AVE	0.25	24,199	2009	21,000	6	6	A-C	A-C	0.32	-
NOR	STATE ST	LIBERTY ST	BERKLEY AVE	0.07	3,641	2006	9,000	2	2	A-C	D	0.21	-
NOR	STATE ST	BERKLEY AVE	I-464 RAMP	0.15	1,665	2009	3,000	2	2	A-C	D	0.31	-
NOR	THOLE ST	GRANBY ST	TIDEWATER DR	1.10	11,383	2009	12,000	2	2	D	E	0.79	-
NOR	TIDEWATER DR	CITY HALL AVE	BRAMBLETON AVE	0.35	24,512	2009	30,000	6	6	A-C	A-C	0.31	-
NOR	TIDEWATER DR	BRAMBLETON AVE	VA BEACH BLVD	0.29	33,995	2009	36,000	6	6	A-C	A-C	0.44	-
NOR	TIDEWATER DR	VA BEACH BLVD	PRINCESS ANNE RD	0.14	33,225	2009	39,000	6	6	A-C	A-C	0.42	-
NOR	TIDEWATER DR	PRINCESS ANNE RD	LAFAYETTE BLVD	1.59	33,225	2009	32,000	4	4	A-C	A-C	0.67	-
NOR	TIDEWATER DR	LAFAYETTE BLVD	CROMWELL DR	0.62	31,528	2009	29,000	4	4	A-C	A-C	0.61	-
NOR	TIDEWATER DR	CROMWELL DR	NORVIEW AVE	0.43	41,267	2008	41,000	4	4	D	D	0.83	-
NOR	TIDEWATER DR	NORVIEW AVE	THOLE ST	0.91	39,627	2009	32,000	4	4	D	A-C	0.84	-
NOR	TIDEWATER DR	THOLE ST	I-64	0.15	39,627	2009	38,000	4	4	D	D	0.89	-
NOR	TIDEWATER DR	I-64	LITTLE CREEK RD	0.68	31,401	2009	33,000	4	4	D	E	0.92	-
NOR	TIDEWATER DR	LITTLE CREEK RD	BAYVIEW BLVD	1.18	19,672	2009	21,000	4	4	A-C	A-C	0.67	-
NOR	TIDEWATER DR	BAYVIEW BLVD	GRANBY ST	1.01	13,330	2009	10,000	4	4	A-C	A-C	0.41	-
NOR	TIDEWATER DR	GRANBY ST	OCEAN VIEW AVE	0.89	6,682	2009	10,000	4	4	A-C	A-C	0.21	-
NOR	VA BEACH BLVD	OLNEY RD	GRANBY ST	0.23	6,362	2009	11,000	4	4	A-C	D	0.24	-
NOR	VA BEACH BLVD	GRANBY ST	MONTICELLO AVE	0.07	5,659	2009	10,000	4	4	A-C	A-C	0.19	-
NOR	VA BEACH BLVD	MONTICELLO AVE	CHURCH ST	0.45	13,427	2009	20,000	4	4	A-C	A-C	0.40	-
NOR	VA BEACH BLVD	CHURCH ST	TIDEWATER DR	0.30	13,427	2009	26,000	4	4	A-C	D	0.40	-
NOR	VA BEACH BLVD	TIDEWATER DR	PARK AVE	0.53	15,843	2006	20,000	4	4	A-C	A-C	0.40	-
NOR	VA BEACH BLVD	PARK AVE	BALLENTINE BLVD	0.99	15,796	2009	20,000	4	4	A-C	A-C	0.38	-
NOR	VA BEACH BLVD	BALLENTINE BLVD	INGLESIDE RD	0.48	32,697	2006	35,000	6	6	A-C	A-C	0.57	-
NOR	VA BEACH BLVD	INGLESIDE RD	AZALEA GARDEN RD	0.43	32,697	2006	37,000	6	6	A-C	A-C	0.57	-

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Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
NOR	VA BEACH BLVD	AZALEA GARDEN RD	JETT ST	0.38	32,831	2006	42,000	6	6	A-C	A-C	0.62	-
NOR	VA BEACH BLVD	JETT ST	MILITARY HWY	0.88	32,831	2006	44,000	4	6	D	D	0.93	-
NOR	VA BEACH BLVD	MILITARY HWY	GLENROCK RD	0.36	27,227	2009	41,000	6	6	A-C	A-C	0.40	-
NOR	VA BEACH BLVD	GLENROCK RD	KEMPSVILLE RD	0.51	27,227	2009	41,000	4	4	A-C	D	0.60	-
NOR	VA BEACH BLVD	KEMPSVILLE RD	NEWTOWN RD	0.93	29,241	2009	34,000	4	4	A-C	D	0.72	-
NOR	WESLEYAN DR	NORTHAMPTON BLVD	NCL VA BEACH	0.38	20,585	2009	34,000	2	4	F	F	1.23	16
NOR	WILLOW WOOD DR	GRANBY ST	TIDEWATER DR	1.10	11,683	2009	13,000	2	2	D	D	0.69	-
NOR	WILSON RD	BERKLEY AVE/CHESAPEAKE CL	INDIAN RIVER RD	0.44	9,052	2009	10,000	2	2	D	D	0.73	-
NOR	WILSON RD	INDIAN RIVER RD	CAMPOSTELLA RD	0.22	9,052	2009	7,000	4	4	A-C	A-C	0.34	-
POQ	EAST YORKTOWN RD	YORK CL	HUNT'S NECK RD	1.14	4,129	2007	7,000	2	2	A-C	A-C	0.27	-
POQ	EAST YORKTOWN RD	HUNT'S NECK RD	POQUOSON AVE	0.18	8,849	2007	13,000	2	2	A-C	D	0.57	-
POQ	LITTLE FLORIDA RD	WYTHE CREEK RD	POQUOSON AVE	1.44	13,413	2007	19,000	2	2	D	F	0.93	-
POQ	POQUOSON AVE	WYTHE CREEK RD	LITTLE FLORIDA RD	1.50	3,592	2007	10,000	2	2	A-C	D	0.23	-
POQ	VICTORY BLVD	YORK CL	WYTHE CREEK RD	0.79	13,992	2007	19,000	2	2	A-C	F	0.82	-
POQ	WYTHE CREEK RD	HAMPTON CL	ALPHUS ST	0.96	14,324	2007	29,000	2	4	F	F	1.08	10
POQ	WYTHE CREEK RD	ALPHUS ST	LITTLE FLORIDA RD	0.12	15,994	2007	28,000	4	4	A-C	D	0.51	-
POQ	WYTHE CREEK RD	LITTLE FLORIDA RD	HUDGINS RD	0.25	13,685	2007	24,000	4	4	A-C	A-C	0.41	-
POQ	WYTHE CREEK RD	HUDGINS RD	POQUOSON AVE	0.61	8,730	2007	19,000	2	2	A-C	F	0.52	-
PORT	AIRLINE BLVD	CHESAPEAKE CL	GREENWOOD DR	0.30	13,759	2006	17,000	3	3	D	D	0.71	-
PORT	AIRLINE BLVD	GREENWOOD DR	ELMHURST LN	0.16	15,229	2006	17,000	3	3	D	D	0.69	-
PORT	AIRLINE BLVD	ELMHURST LN	.55 MI E ELMHURST LN	0.55	12,071	2006	12,000	3	3	A-C	A-C	0.57	-
PORT	AIRLINE BLVD	.55 MI E ELMHURST LN	VICTORY BLVD	0.75	12,071	2006	13,000	4	4	A-C	A-C	0.27	-
PORT	AIRLINE BLVD	VICTORY BLVD	PORTSMOUTH BLVD	0.29	13,787	2006	16,000	4	4	A-C	A-C	0.34	-
PORT	AIRLINE BLVD	PORTSMOUTH BLVD	FREDERICK BLVD	1.35	15,876	2006	17,000	4	4	A-C	A-C	0.39	-
PORT	AIRLINE BLVD	FREDERICK BLVD	HIGH ST	0.20	19,973	2006	16,000	4	4	A-C	A-C	0.48	-
PORT	CAVALIER BLVD	CHESAPEAKE CL	GREENWOOD DR	0.81	10,770	2006	16,000	4	4	A-C	A-C	0.36	-
PORT	CEDAR LN	HIGH ST	W NORFOLK RD	1.18	12,342	2006	12,000	2	2	A-C	A-C	0.65	-
PORT	CEDAR LN	W NORFOLK RD	WESTERN FREEWAY	0.23	18,884	2006	19,000	4	4	A-C	A-C	0.44	-
PORT	CHURCHLAND BLVD	CHESAPEAKE CL	W NORFOLK RD	0.08	14,954	2006	16,000	4	4	D	D	0.46	-
PORT	CHURCHLAND BLVD	W NORFOLK RD	TYRE NECK RD	0.12	10,659	2006	9,000	4	4	A-C	A-C	0.33	-
PORT	CHURCHLAND BLVD	TYRE NECK RD	HIGH ST	0.30	10,934	2006	10,000	4	4	A-C	A-C	0.33	-
PORT	COUNTY ST	CONSTITUTION AVE	PENINSULA AVE	0.40	5,051	2006	4,000	3	3	D	D	0.44	-
PORT	COUNTY ST	PENINSULA AVE	ELM AVE	0.31	4,650	2006	3,000	4	4	A-C	A-C	0.21	-
PORT	COUNTY ST	ELM AVE	EFFINGHAM ST	0.33	4,461	2006	4,000	4	4	A-C	A-C	0.20	-
PORT	COURT ST	CRAWFORD ST	COUNTY ST	0.30	8,486	2006	9,000	4	4	A-C	A-C	0.34	-
PORT	COURT ST	COUNTY ST	HIGH ST	0.10	7,440	2006	7,000	4	4	A-C	A-C	0.32	-
PORT	COURT ST	HIGH ST	LONDON BLVD	0.10	3,927	2006	6,000	4	4	A-C	D	0.17	-
PORT	COURT ST	LONDON BLVD	CRAWFORD PKWY	0.24	1,230	2006	1,000	4	4	A-C	A-C	0.10	-
PORT	CRANEY ISLAND ACCESS RD	WESTERN FREEWAY	PROPOSED TERMINAL	2.00	DNE	2009	7,000	0	2	-	A-C	-	-
PORT	CRAWFORD PKWY	EFFINGHAM ST	CRAWFORD ST	0.43	4,154	2006	11,000	4	4	A-C	D	0.18	-
PORT	CRAWFORD ST	CRAWFORD PKWY	LONDON BLVD	0.22	2,747	2006	4,000	4	4	A-C	A-C	0.11	-
PORT	CRAWFORD ST	LONDON BLVD	HIGH ST	0.11	7,714	2006	8,000	4	4	A-C	A-C	0.35	-
PORT	CRAWFORD ST	HIGH ST	COUNTY ST	0.11	8,292	2006	9,000	4	4	A-C	D	0.37	-
PORT	CRAWFORD ST	COUNTY ST	COURT ST	0.23	10,265	2006	11,000	4	4	D	D	0.41	-
PORT	DEEP CREEK BLVD	VICTORY BLVD	GREENWOOD DR	0.83	7,373	2006	8,000	2	2	D	D	0.44	-
PORT	DEEP CREEK BLVD	GREENWOOD DR	PORTSMOUTH BLVD	0.73	9,467	2006	11,000	2	2	D	D	0.57	-
PORT	DEEP CREEK BLVD	PORTSMOUTH BLVD	FREDERICK BLVD	0.14	10,074	2006	10,000	2	2	D	D	0.52	-
PORT	DEEP CREEK BLVD	FREDERICK BLVD	DES MOINES AVE	0.77	6,652	2006	8,000	2	2	D	D	0.39	-
PORT	DES MOINES AVE	DEEP CREEK BLVD	I-264	0.10	8,878	2006	13,000	2	2	D	D	0.45	-
PORT	EFFINGHAM ST	FREDERICK BLVD	ELM AVE	0.35	21,782	2006	22,000	4	4	D	D	0.76	-

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Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
PORT	EFFINGHAM ST	ELM AVE	PORTSMOUTH BLVD	0.70	18,902	2006	20,000	4	4	A-C	D	0.60	-
PORT	EFFINGHAM ST	PORTSMOUTH BLVD	I-264	0.77	28,887	2006	33,000	6	6	A-C	D	0.61	-
PORT	EFFINGHAM ST	I-264	SOUTH ST	0.14	37,052	2006	30,000	6	6	A-C	A-C	0.55	-
PORT	EFFINGHAM ST	SOUTH ST	HIGH ST	0.21	29,958	2006	23,000	4	4	D	A-C	0.67	-
PORT	EFFINGHAM ST	HIGH ST	LONDON BLVD	0.11	26,036	2006	24,000	4	4	A-C	A-C	0.51	-
PORT	EFFINGHAM ST	LONDON BLVD	NORTH ST	0.10	18,622	2006	18,000	5	5	D	D	0.67	-
PORT	EFFINGHAM ST	NORTH ST	CRAWFORD PKWY	0.19	18,450	2006	19,000	4	4	D	D	0.63	-
PORT	EFFINGHAM ST	CRAWFORD PKWY	NAVAL MEDICAL CENTER	0.09	17,555	2006	21,000	4	4	D	E	0.75	-
PORT	ELM AVE	LONDON BLVD	HIGH ST	0.10	7,022	2006	7,000	3	3	D	D	0.54	-
PORT	ELM AVE	HIGH ST	COUNTY ST	0.10	10,324	2006	10,000	4	4	D	A-C	0.39	-
PORT	ELM AVE	COUNTY ST	SOUTH ST	0.19	10,654	2006	9,000	4	4	D	A-C	0.44	-
PORT	ELM AVE	SOUTH ST	I-264	0.09	8,742	2006	9,000	2	2	D	D	0.70	-
PORT	ELM AVE	I-264	PORTSMOUTH BLVD	0.70	8,742	2006	9,000	2	2	D	D	0.70	-
PORT	ELM AVE	PORTSMOUTH BLVD	EFFINGHAM ST	0.34	7,420	2006	8,000	4	4	A-C	A-C	0.25	-
PORT	ELM AVE	EFFINGHAM ST	VICTORY BLVD	0.70	9,303	2006	12,000	2	2	D	F	0.81	-
PORT	ELM AVE	VICTORY BLVD	BURTONS POINT RD	0.30	10,319	2006	9,000	4	4	A-C	A-C	0.40	-
PORT	ELM AVE	BURTONS POINT RD	CHESAPEAKE CL	0.31	DNE	2009	11,000	0	2	-	D	-	-
PORT	ELMHURST LN	GARWOOD AVE	AIRLINE BLVD	0.19	4,550	2006	5,000	4	4	A-C	A-C	0.20	-
PORT	ELMHURST LN	AIRLINE BLVD	PORTSMOUTH BLVD	1.03	7,254	2006	8,000	4	4	A-C	A-C	0.24	-
PORT	FREDERICK BLVD	GEORGE WASHINGTON HWY	PORTSMOUTH BLVD	0.66	14,160	2006	18,000	4	4	A-C	A-C	0.40	-
PORT	FREDERICK BLVD	PORTSMOUTH BLVD	DEEP CREEK BLVD	0.08	15,288	2006	18,000	4	4	A-C	A-C	0.53	-
PORT	FREDERICK BLVD	DEEP CREEK BLVD	I-264	0.52	21,440	2006	23,000	4	4	A-C	A-C	0.65	-
PORT	FREDERICK BLVD	I-264	TURNPIKE RD	0.36	41,699	2006	39,000	4	4	D	D	0.87	-
PORT	FREDERICK BLVD	TURNPIKE RD	AIRLINE BLVD	0.51	28,833	2006	28,000	4	4	D	A-C	0.63	-
PORT	FREDERICK BLVD	AIRLINE BLVD	HIGH ST	0.14	18,090	2006	21,000	4	4	A-C	A-C	0.45	-
PORT	GARWOOD AVE	GREENWOOD DR	ELMHURST LN	0.17	4,358	2006	6,000	4	4	A-C	A-C	0.18	-
PORT	GEORGE WASHINGTON HWY	CHESAPEAKE CL	VICTORY BLVD	0.17	28,444	2006	37,000	4	4	D	F	0.81	-
PORT	GEORGE WASHINGTON HWY	VICTORY BLVD	DAVIS ST	0.19	22,967	2006	23,000	5	5	D	D	0.64	-
PORT	GEORGE WASHINGTON HWY	DAVIS ST	GREENWOOD DR	0.42	25,509	2006	27,000	4	4	D	D	0.73	-
PORT	GEORGE WASHINGTON HWY	GREENWOOD DR	FREDERICK BLVD	0.33	27,428	2006	30,000	4	4	D	D	0.81	-
PORT	GREENWOOD DR	AIRLINE BLVD	I-264	0.50	17,737	2006	20,000	4	4	A-C	A-C	0.39	-
PORT	GREENWOOD DR	I-264	CAVALIER BLVD	0.88	16,391	2006	19,000	4	4	A-C	A-C	0.43	-
PORT	GREENWOOD DR	CAVALIER BLVD	VICTORY BLVD	0.63	9,912	2007	13,000	4	4	A-C	A-C	0.26	-
PORT	GREENWOOD DR	VICTORY BLVD	INDEPENDENCE ST	1.05	5,433	2006	6,000	4	4	A-C	A-C	0.18	-
PORT	GREENWOOD DR	INDEPENDENCE ST	DEEP CREEK BLVD	0.37	4,589	2006	5,000	2	2	A-C	A-C	0.30	-
PORT	GREENWOOD DR	DEEP CREEK BLVD	GEORGE WASHINGTON HWY	0.51	3,631	2006	5,000	2	2	A-C	D	0.27	-
PORT	HARBOR ST	TURNPIKE RD	HIGH ST	0.16	5,992	2006	-	2	0	D	-	0.47	-
PORT	HIGH ST	TYRE NECK RD	CHURCHLAND BLVD	0.22	21,211	2006	23,000	4	4	A-C	A-C	0.50	-
PORT	HIGH ST	CHURCHLAND BLVD	CEDAR LA	0.89	27,243	2006	29,000	4	4	A-C	A-C	0.63	-
PORT	HIGH ST	CEDAR LA	FREDERICK BLVD	2.39	32,692	2006	28,000	4	4	D	D	0.92	-
PORT	HIGH ST	FREDERICK BLVD	AIRLINE BLVD	0.12	17,756	2006	14,000	4	4	D	D	0.54	-
PORT	HIGH ST	AIRLINE BLVD	MT VERNON AVE	0.23	14,315	2006	13,000	5	5	A-C	A-C	0.34	-
PORT	HIGH ST	MT VERNON AVE	M L K FWY	0.48	15,119	2006	15,000	4	4	D	D	0.44	-
PORT	HIGH ST	M L K FWY	ELM AVE	0.79	17,764	2006	16,000	4	4	D	D	0.59	-
PORT	HIGH ST	ELM AVE	EFFINGHAM ST	0.33	11,455	2006	8,000	4	4	D	A-C	0.40	-
PORT	HIGH ST	EFFINGHAM ST	CRAWFORD ST	0.51	7,211	2006	10,000	2	2	D	D	0.58	-
PORT	LONDON BLVD	HIGH ST	MT VERNON AVE	0.31	20,861	2006	14,000	6	6	A-C	A-C	0.37	-
PORT	LONDON BLVD	MT VERNON AVE	M L K FWY	0.40	20,861	2006	14,000	6	6	A-C	A-C	0.35	-
PORT	LONDON BLVD	M L K FWY	ELM AVE	0.86	29,382	2006	29,000	6	6	A-C	A-C	0.63	-
PORT	LONDON BLVD	ELM AVE	EFFINGHAM ST	0.32	24,741	2006	24,000	6	6	A-C	A-C	0.49	-

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JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
PORT	LONDON ST	EFFINGHAM ST	CRAWFORD ST	0.50	8,483	2006	10,000	2	2	D	D	0.73	-
PORT	MIDTOWN TUNNEL	MLK FWY/WESTERN FREEWAY	NORFOLK CL	0.95	41,115	2009	42,000	2	4	F	A-C	1.11	17
PORT	MLK EXTENSION	I-264	HIGH ST	0.44	DNE	2009	51,000	0	4	-	A-C	-	-
PORT	PORTCENTRE PKWY	PORTSMOUTH BLVD	CRAWFORD ST	0.68	10,519	2006	9,000	4	4	D	D	0.52	-
PORT	PORTSMOUTH BLVD	CHESAPEAKE CL	ELMHURST LN	1.01	31,704	2006	37,000	4	4	E	F	0.91	8
PORT	PORTSMOUTH BLVD	ELMHURST LN	VICTORY BLVD	1.19	24,028	2006	25,000	4	4	D	D	0.72	-
PORT	PORTSMOUTH BLVD	VICTORY BLVD	AIRLINE BLVD	0.22	17,932	2006	20,000	4	4	D	D	0.54	-
PORT	PORTSMOUTH BLVD	AIRLINE BLVD	TURNPIKE RD	0.10	16,828	2006	18,000	4	4	D	D	0.39	-
PORT	PORTSMOUTH BLVD	TURNPIKE RD	I-264	0.35	14,542	2006	15,000	4	4	A-C	A-C	0.41	-
PORT	PORTSMOUTH BLVD	I-264	DEEP CREEK BLVD	1.07	12,294	2006	13,000	4	4	A-C	A-C	0.34	-
PORT	PORTSMOUTH BLVD	DEEP CREEK BLVD	FREDERICK BLVD	0.17	7,409	2006	8,000	4	4	A-C	A-C	0.25	-
PORT	PORTSMOUTH BLVD	FREDERICK BLVD	ELM AVE	0.77	10,172	2006	10,000	4	4	A-C	A-C	0.52	-
PORT	PORTSMOUTH BLVD	ELM AVE	EFFINGHAM ST	0.34	6,271	2006	6,000	4	4	A-C	A-C	0.40	-
PORT	PORTSMOUTH BLVD	EFFINGHAM ST	PORTCENTRE PKWY	0.54	5,550	2006	5,000	2	2	D	D	0.62	-
PORT	TOWN POINT RD	SUFFOLK CL	TWIN PINES RD	0.72	9,478	2006	12,000	2	2	D	E	0.60	-
PORT	TOWN POINT RD	TWIN PINES RD	WESTERN FREEWAY	0.11	28,017	2006	31,000	4	4	E	E	0.88	12
PORT	TOWN POINT RD	WESTERN FREEWAY	CHESAPEAKE CL	0.25	26,522	2006	29,000	4	4	D	D	0.73	-
PORT	TURNPIKE RD	PORTSMOUTH BLVD	FREDERICK BLVD	1.06	5,733	2006	6,000	2	4	A-C	A-C	0.30	-
PORT	TURNPIKE RD	FREDERICK BLVD	HOWARD ST	0.29	11,439	2006	11,000	2	4	A-C	A-C	0.57	-
PORT	TURNPIKE RD	HOWARD ST	HARBOR DR	0.53	9,382	2006	9,000	2	4	A-C	A-C	0.46	-
PORT	TURNPIKE RD	HARBOR DR	COUNTY ST	0.10	9,382	2006	9,000	3	4	A-C	A-C	0.46	-
PORT	TWIN PINES RD	TOWN POINT RD	HEDGEROW LN	1.38	10,937	2006	12,000	2	2	D	D	0.66	-
PORT	TYRE NECK RD	CHESAPEAKE CL	HIGH ST	0.24	12,420	2006	14,000	2	2	F	F	1.22	15
PORT	TYRE NECK RD	HIGH ST	CHURCHLAND BLVD	0.18	6,331	2006	7,000	2	2	D	D	0.54	-
PORT	TYRE NECK RD	CHURCHLAND BLVD	WEST NORFOLK RD	0.07	4,259	2006	5,000	2	2	D	D	0.37	-
PORT	VICTORY BLVD	PORTSMOUTH BLVD	AIRLINE BLVD	0.20	7,634	2006	8,000	4	4	A-C	A-C	0.22	-
PORT	VICTORY BLVD	AIRLINE BLVD	I-264	0.36	25,378	2006	29,000	6	6	D	D	0.42	-
PORT	VICTORY BLVD	I-264	GREENWOOD DR	0.55	21,206	2007	26,000	4	4	D	D	0.52	-
PORT	VICTORY BLVD	GREENWOOD DR	DEEP CREEK BLVD	1.08	16,159	2006	19,000	4	4	A-C	A-C	0.39	-
PORT	VICTORY BLVD	DEEP CREEK BLVD	GEORGE WASHINGTON HWY	0.44	18,686	2006	22,000	5	5	A-C	A-C	0.52	-
PORT	VICTORY BLVD	GEORGE WASHINGTON HWY	AFTON PKWY	1.24	12,033	2006	12,000	4	4	A-C	A-C	0.58	-
PORT	VICTORY BLVD	AFTON PKWY	ELM AVE	0.57	6,864	2006	7,000	4	4	A-C	A-C	0.43	-
PORT	W NORFOLK RD	CHURCHLAND BLVD	TYRE NECK RD	0.11	3,750	2006	5,000	2	2	A-C	A-C	0.24	-
PORT	W NORFOLK RD	TYRE NECK RD	CEDAR LN	1.02	6,630	2006	10,000	2	2	D	D	0.45	-
PORT	W NORFOLK RD	CEDAR LN	WESTERN FWY	1.58	5,569	2006	10,000	4	4	A-C	A-C	0.15	-
PORT	WESTERN BRANCH BLVD	CHESAPEAKE CL	TYRE NECK RD	0.21	25,201	2006	27,000	4	4	A-C	A-C	0.56	-
SH	BUS ROUTE 58	ROUTE 35	ECL COURTLAND	1.10	6,013	2009	7,000	2	2	D	D	0.43	-
SH	BUS ROUTE 58	ECL COURTLAND	ROUTE 58	1.18	6,013	2009	7,000	4	4	A-C	A-C	0.07	-
SH	BUSINESS ROUTE 58 (CAMP PKWY)	ROUTE 58	DELAWARE RD (RTE 687)	1.88	3,222	2009	3,000	4	4	A-C	A-C	0.04	-
SH	BUSINESS ROUTE 58 (CAMP PKWY)	DELAWARE RD (RTE 687)	FRANKLIN CL	0.44	3,222	2009	3,000	4	4	A-C	A-C	0.04	-
SH	ROUTE 35	NC STATE LINE	SCL BOYKINS	1.40	1,485	2009	3,000	2	2	A-C	A-C	0.08	-
SH	ROUTE 35	SCL BOYKINS	ROUTE 1324	0.81	1,485	2009	3,000	2	2	A-C	A-C	0.14	-
SH	ROUTE 35	ROUTE 1324	ROUTE 186	0.42	1,485	2009	3,000	2	2	A-C	D	0.15	-
SH	ROUTE 35	ROUTE 186	NCL BOYKINS	0.44	3,611	2009	5,000	2	2	D	D	0.32	-
SH	ROUTE 35	NCL BOYKINS	ROUTE 671	0.46	3,611	2009	5,000	2	2	A-C	A-C	0.18	-
SH	ROUTE 35	ROUTE 671	GRAYS SHOP RD (RTE 673)	5.22	1,331	2009	3,000	2	2	A-C	A-C	0.07	-
SH	ROUTE 35	GRAYS SHOP RD (RTE 673)	ROUTE 58	4.38	1,347	2009	2,000	2	2	A-C	A-C	0.07	-
SH	ROUTE 35/BUS ROUTE 58	ROUTE 58	WCL COURTLAND	2.03	2,726	2009	5,000	2	2	A-C	A-C	0.14	-
SH	ROUTE 35/BUS ROUTE 58	WCL COURTLAND	BUS RTE 58	0.14	2,726	2009	5,000	2	2	D	D	0.26	-
SH	ROUTE 35	BUS RTE 58	NCL COURTLAND	0.59	4,020	2009	8,000	2	2	A-C	D	0.30	-

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Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
SH	ROUTE 35	NCL COURTLAND	IVOR RD (RTE 616)	0.10	4,020	2009	8,000	2	2	A-C	D	0.18	-
SH	ROUTE 35	IVOR RD (RTE 616)	CARYS BRIDGE RD (RTE 653)	6.18	1,953	2009	4,000	2	2	A-C	A-C	0.10	-
SH	ROUTE 35	CARYS BRIDGE RD (RTE 653)	SUSSEX CL	3.94	1,862	2009	4,000	2	2	A-C	A-C	0.09	-
SH	ROUTE 58	GREENVILLE CL	ADAMS GROVE RD (RTE 615)	5.44	11,211	2009	32,000	4	4	A-C	A-C	0.12	-
SH	ROUTE 58	ADAMS GROVE RD (RTE 615)	DREWRY RD (RTE 659)	4.72	10,703	2009	30,000	4	4	A-C	A-C	0.12	-
SH	ROUTE 58	DREWRY RD (RTE 659)	PINOPOLIS RD (ROUTE 653)	5.69	11,080	2009	32,000	4	4	A-C	A-C	0.11	-
SH	ROUTE 58	PINOPOLIS RD (ROUTE 653)	ROUTE 35	5.71	13,463	2009	32,000	4	4	A-C	A-C	0.14	-
SH	ROUTE 58	ROUTE 35	BUS RTE 58 W	3.46	14,019	2009	27,000	4	4	A-C	A-C	0.17	-
SH	ROUTE 58	BUS RTE 58 W	CAMP PKWY (BUS RTE 58 E)	2.50	18,956	2009	24,000	4	4	A-C	A-C	0.21	-
SH	ROUTE 58	CAMP PKWY (BUS RTE 58 E)	ARMORY DR (RTE 671)	2.70	16,602	2009	36,000	4	4	A-C	A-C	0.19	-
SH	ROUTE 58	ARMORY DR (RTE 671)	ROUTE 258	0.97	16,602	2009	36,000	4	4	A-C	A-C	0.19	-
SH	ROUTE 58	ROUTE 258	PRETLOW RD (RTE 714)	1.88	16,546	2009	36,000	4	4	A-C	A-C	0.19	-
SH	ROUTE 58	PRETLOW RD (RTE 714)	SUFFOLK CL	0.93	17,541	2008	28,000	4	4	A-C	A-C	0.20	-
SH	ROUTE 186	NC STATE LINE	WCL BRANCHVILLE	2.98	1,062	2009	2,000	2	2	A-C	A-C	0.05	-
SH	ROUTE 186	WCL BRANCHVILLE	JOYNER RD (RTE 701)	0.27	1,062	2009	2,000	2	2	A-C	A-C	0.08	-
SH	ROUTE 186	JOYNER RD (RTE 701)	ECL BRANCHVILLE	0.35	1,119	2009	3,000	2	2	A-C	A-C	0.09	-
SH	ROUTE 186	ECL BRANCHVILLE	WCL BOYKINS	2.35	1,119	2009	3,000	2	2	A-C	A-C	0.06	-
SH	ROUTE 186	WCL BOYKINS	ROUTE 35	0.26	1,627	2009	3,000	2	2	A-C	D	0.15	-
SH	ROUTE 189	ROUTE 258	PRETLOW RD (RTE 714)	2.20	1,879	2009	3,000	2	2	A-C	A-C	0.13	-
SH	ROUTE 189	PRETLOW RD (RTE 714)	SUFFOLK CL	0.22	2,373	2009	3,000	2	2	A-C	A-C	0.14	-
SH	ROUTE 258	NC STATE LINE	ROUTE 189	5.28	5,498	2009	6,000	2	2	A-C	A-C	0.28	-
SH	ROUTE 258	ROUTE 189	DOGWOOD BEND RD (RTE 684)	3.44	3,645	2009	4,000	2	2	A-C	A-C	0.16	-
SH	ROUTE 258	DOGWOOD BEND RD (RTE 684)	ROUTE 58	0.40	4,325	2009	7,000	4	4	A-C	A-C	0.06	-
SH	ROUTE 460	SUSSEX CL	WCL IVOR	3.72	9,415	2007	24,000	4	4	A-C	A-C	0.14	-
SH	ROUTE 460	WCL IVOR	ROUTE 616 (IVOR RD)	0.56	8,886	2009	24,000	4	4	A-C	A-C	0.27	-
SH	ROUTE 460	ROUTE 616 (IVOR RD)	ECL IVOR	0.73	7,724	2009	24,000	4	4	A-C	A-C	0.21	-
SH	ROUTE 460	ECL IVOR	ISLE OF WIGHT CL	3.59	10,377	2006	27,000	4	4	A-C	A-C	0.15	-
SH	ROUTE 616	ROUTE 35	SAINT LUKES RD (RTE 633)	5.84	1,055	2009	1,000	2	2	A-C	A-C	0.06	-
SH	ROUTE 616	SAINT LUKES RD (RTE 633)	SEACOCK RD (RTE 614)	4.30	1,132	2009	1,000	2	2	A-C	A-C	0.07	-
SH	ROUTE 616	SEACOCK RD (RTE 614)	MILLFIELD RD (RTE 605)	2.04	1,469	2009	2,000	2	2	A-C	A-C	0.10	-
SH	ROUTE 616	MILLFIELD RD (RTE 605)	SCL IVOR	4.38	1,514	2009	2,000	2	2	A-C	A-C	0.09	-
SH	ROUTE 616	SCL IVOR	ROUTE 460	0.67	1,751	2009	2,000	2	2	A-C	D	0.21	-
SH	ROUTE 671	ROUTE 35	CROSS KEYS RD (RTE 665)	2.02	1,919	2009	3,000	2	2	A-C	A-C	0.11	-
SH	ROUTE 671	CROSS KEYS RD (RTE 665)	WCL NEWSOMS	2.49	2,410	2009	4,000	2	2	A-C	A-C	0.14	-
SH	ROUTE 671	WCL NEWSOMS	GRAYS SHOP RD (RTE 673)	0.17	2,372	2009	5,000	2	2	A-C	A-C	0.20	-
SH	ROUTE 671	GRAYS SHOP RD (RTE 673)	ECL NEWSOMS	0.60	2,427	2009	4,000	2	2	A-C	A-C	0.24	-
SH	ROUTE 671	ECL NEWSOMS	SUNBEAM RD (RTE 680)	3.83	2,886	2009	4,000	2	2	A-C	A-C	0.18	-
SH	ROUTE 671	SUNBEAM RD (RTE 680)	DELAWARE RD (RTE 687)	3.84	4,049	2009	6,000	2	2	A-C	D	0.22	-
SH	ROUTE 671	DELAWARE RD (RTE 687)	ROUTE 58	1.77	5,258	2009	8,000	4	4	A-C	A-C	0.13	-
SUF	BENNETTS PASTURE RD	NANSEMOND PKWY	KINGS HWY	1.36	4,762	2008	6,000	2	2	A-C	A-C	0.32	-
SUF	BENNETTS PASTURE RD	KINGS HWY	BRIDGE RD	3.38	9,075	2008	19,000	2	2	A-C	F	0.55	-
SUF	BRIDGE RD	ISLE OF WIGHT CL	E. END CHUCKATUCK BRIDGE	0.16	14,778	2008	26,000	2	2	A-C	F	0.77	-
SUF	BRIDGE RD	E. END CHUCKATUCK BRIDGE	CRITTENDEN RD	0.71	14,778	2008	25,000	4	4	A-C	A-C	0.37	-
SUF	BRIDGE RD	CRITTENDEN RD	N. END NANSEMOND RIVER	0.79	18,815	2008	32,000	4	4	A-C	A-C	0.48	-
SUF	BRIDGE RD	N. END NANSEMOND RIVER	S. END NANSEMOND RIVER	0.77	18,815	2008	32,000	2	2	A-C	F	0.96	-
SUF	BRIDGE RD	S. END NANSEMOND RIVER	BENNETTS PASTURE RD	0.91	18,815	2008	32,000	4	4	A-C	A-C	0.48	-
SUF	BRIDGE RD	BENNETTS PASTURE RD	SHOULDERS HILL RD	1.53	25,420	2008	48,000	4	4	A-C	F	0.68	-
SUF	BRIDGE RD	SHOULDERS HILL RD	HARBOUR VIEW BLVD	1.16	31,870	2008	45,000	4	4	A-C	F	0.86	-
SUF	BRIDGE RD	HARBOUR VIEW BLVD	WESTERN FWY	0.18	30,142	2008	47,000	4	4	A-C	F	0.85	-
SUF	BRIDGE RD	WESTERN FWY	I-664	0.49	16,831	2008	22,000	4	4	A-C	A-C	0.45	-

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JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
SUF	BRIDGE RD	I-664	COLLEGE DR	0.55	19,224	2008	25,000	4	4	A-C	A-C	0.40	-
SUF	BRIDGE RD	COLLEGE DR	CHESAPEAKE CL	0.05	23,146	2009	28,000	4	4	A-C	A-C	0.50	-
SUF	BUCKHORN DR	ROUTE 58	INDIAN TRAIL	3.30	412	2008	1,000	2	2	A-C	A-C	0.02	-
SUF	BUCKHORN DR	INDIAN TRAIL	ISLE OF WIGHT CL	1.55	282	2008	1,000	2	2	A-C	A-C	0.02	-
SUF	CAROLINA RD	NC STATE LINE	RTE 642	2.89	3,863	2008	8,000	2	2	A-C	D	0.21	-
SUF	CAROLINA RD	RTE 642	RTE 675	2.06	4,147	2008	8,000	2	2	A-C	D	0.22	-
SUF	CAROLINA RD	RTE 675	BABBTOWN RD (RTE 759)	1.40	4,476	2008	8,000	2	2	A-C	D	0.24	-
SUF	CAROLINA RD	BABBTOWN RD (RTE 759)	WHALEYVILLE BLVD	3.08	4,952	2008	8,000	2	2	A-C	D	0.26	-
SUF	CAROLINA RD	WHALEYVILLE BLVD	TURLINGTON RD	0.87	15,611	2008	26,000	4	4	A-C	A-C	0.27	-
SUF	CAROLINA RD	TURLINGTON RD	SW SUFFOLK BYPASS	0.61	15,611	2008	31,000	4	4	A-C	A-C	0.27	-
SUF	CAROLINA RD	SW SUFFOLK BYPASS	FAYETTE ST	1.84	11,450	2008	14,000	4	4	A-C	A-C	0.30	-
SUF	COLLEGE DR	BRIDGE RD	WESTERN FREEWAY	0.14	16,836	2008	21,000	4	4	A-C	A-C	0.41	-
SUF	COLLEGE DR	WESTERN FREEWAY	HAMPTON ROADS PKWY	0.74	17,722	2008	26,000	4	4	A-C	A-C	0.42	-
SUF	COLLEGE DR	HAMPTON ROADS PKWY	I-664	0.70	21,299	2008	26,000	4	4	A-C	A-C	0.62	-
SUF	COLLEGE DR	I-664	HARBOUR VIEW BLVD	0.60	12,253	2008	13,000	2	2	A-C	A-C	0.54	-
SUF	CONSTANCE RD	HOLLAND RD	PITCHKETTLE RD	0.28	8,440	2008	11,000	2	2	A-C	D	0.56	-
SUF	CONSTANCE RD	PITCHKETTLE RD	MAIN ST	0.85	11,175	2008	15,000	2	2	D	E	0.71	-
SUF	CONSTANCE RD	MAIN ST	WILROY RD	0.88	17,240	2008	21,000	4	4	A-C	A-C	0.45	-
SUF	COPELAND RD	ROUTE 58	WHALEYVILLE BLVD	5.26	638	2008	2,000	2	2	A-C	A-C	0.05	-
SUF	COPELAND RD	WHALEYVILLE BLVD	CAROLINA RD	1.56	722	2003	1,000	2	2	A-C	A-C	0.04	-
SUF	CRITTENDEN RD	KINGS HWY	BRIDGE RD (RTE 17)	5.26	3,193	2008	13,000	2	2	A-C	D	0.11	-
SUF	EVERETTS RD	LAKE PRINCE DR (RTE 604)	MOORE FARM LN	1.42	1,730	2008	9,000	2	2	A-C	D	0.11	-
SUF	EVERETTS RD	MOORE FARM LN	GODWIN BLVD	0.93	1,628	2008	9,000	2	2	A-C	D	0.10	-
SUF	FINNEY AVE	N MAIN ST	PINNER ST	0.20	7,517	2008	3,000	2	2	D	A-C	0.45	-
SUF	FINNEY AVE EXTENSION	WASHINGTON ST	FINNEY AVE	0.50	DNE	2009	2,000	0	2	-	A-C	-	-
SUF	GODWIN BLVD	PRUDEN BLVD	SUFFOLK BYPASS	0.54	19,877	2008	22,000	4	4	A-C	A-C	0.43	-
SUF	GODWIN BLVD	SUFFOLK BYPASS	KINGS FORK RD	1.40	21,557	2008	28,000	4	4	A-C	A-C	0.50	-
SUF	GODWIN BLVD	KINGS FORK ROAD	1.36 MI N OF KINGS FORK RD	1.36	12,345	2008	20,000	4	4	A-C	A-C	0.18	-
SUF	GODWIN BLVD	1.36 MILES N OF KINGS FORK RD	EVERETS RD	3.46	12,345	2008	19,000	2	2	D	E	0.49	-
SUF	GODWIN BLVD	EVERETS RD	KINGS HWY	0.87	12,547	2008	20,000	2	2	D	E	0.54	-
SUF	GODWIN BLVD	KINGS HWY	ISLE OF WIGHT CL	1.31	10,552	2008	15,000	2	2	D	E	0.48	-
SUF	HAMPTON ROADS PKWY	HARBOUR VIEW BLVD	COLLEGE DR	0.80	10,472	2008	15,000	4	4	A-C	A-C	0.27	-
SUF	HAMPTON ROADS PKWY	COLLEGE DR	PORTSMOUTH CL	0.60	8,770	2008	12,000	4	4	D	D	0.27	-
SUF	HARBOUR VIEW BLVD	BRIDGE RD	HAMPTON ROADS PKWY	1.02	22,002	2008	31,000	4	4	A-C	D	0.67	-
SUF	HARBOUR VIEW BLVD	HAMPTON ROADS PKWY	COLLEGE DR	1.44	10,000	2008	20,000	4	4	A-C	A-C	0.30	-
SUF	HOLLAND RD (BUS RTE 58)	SUFFOLK BYPASS	CONSTANCE RD	1.86	10,376	2008	12,000	2	2	D	D	0.76	-
SUF	HOLLAND RD (BUS RTE 58)	RURITAN BLVD	HOLLAND RD (RTE 58)	0.70	2,709	2008	7,000	2	2	A-C	A-C	0.11	-
SUF	KINGS FORK RD	PITCHKETTLE RD	PRUDEN BLVD	0.64	2,473	2008	7,000	2	2	A-C	D	0.12	-
SUF	KINGS FORK RD	PRUDEN BLVD	GODWIN BLVD	2.27	4,778	2008	11,000	2	2	A-C	D	0.25	-
SUF	KINGS HWY	GODWIN BLVD	CRITTENDEN RD	0.69	3,412	2008	15,000	2	2	A-C	D	0.13	-
SUF	KINGS HWY	BENNETTS PASTURE RD	NANSEMOND PKWY	0.48	3,086	2008	10,000	2	2	A-C	D	0.21	-
SUF	LAKE PRINCE DR (RTE 604)	ROUTE 460 (PRUDEN BLVD)	ROUTE 603 (EVERETTS RD)	3.93	2,311	2008	7,000	2	2	A-C	D	0.11	-
SUF	MAIN ST	FAYETTE ST	WASHINGTON ST	0.35	12,397	2008	15,000	4	4	A-C	A-C	0.31	-
SUF	MAIN ST	WASHINGTON ST	CONSTANCE RD	0.67	22,347	2008	28,000	4	4	A-C	D	0.58	-
SUF	MAIN ST	CONSTANCE RD	PRUDEN BLVD/GODWIN BLVD	1.55	28,704	2006	36,000	4	4	D	D	0.73	-
SUF	MARKET ST	WASHINGTON ST	MAIN ST	0.49	4,085	2008	8,000	4	4	A-C	A-C	0.15	-
SUF	NANSEMOND PKWY	WILROY RD	BENNETTS PASTURE RD	1.72	10,584	2008	28,000	2	2	D	F	0.42	-
SUF	NANSEMOND PKWY	BENNETTS PASTURE RD	KINGS HWY	1.33	8,692	2008	28,000	2	2	D	F	0.36	-
SUF	NANSEMOND PKWY	KINGS HWY	SHOULDERS HILL RD	1.77	13,178	2008	35,000	2	2	E	F	0.59	11
SUF	NANSEMOND PKWY	SHOULDERS HILL RD	CHESAPEAKE CL	0.75	13,296	2008	37,000	2	4	D	A-C	0.55	-

See page 121 for Legend

Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
SUF	PINNER ST	WASHINGTON ST	BANK ST	0.11	6,212	2008	8,000	2	2	D	D	0.48	-
SUF	PINNER ST	BANK ST	FINNEY AVE	0.20	6,212	2008	8,000	1	2	D	A-C	0.38	-
SUF	PINNER ST	FINNEY AVE	CONSTANCE RD	0.87	10,006	2008	12,000	2	2	A-C	D	0.62	-
SUF	PITCHKETTLE RD	CONSTANCE RD	SUFFOLK BYPASS	1.36	3,392	2008	10,000	2	2	A-C	D	0.16	-
SUF	PITCHKETTLE RD	SUFFOLK BYPASS	KINGS FORK RD	2.41	2,503	2008	14,000	2	2	A-C	E	0.13	-
SUF	PORTSMOUTH BLVD	WILROY RD	WASHINGTON ST	1.59	16,692	2008	18,000	4	4	A-C	A-C	0.43	-
SUF	PORTSMOUTH BLVD	WASHINGTON ST	SUFFOLK BYPASS	1.04	24,369	2008	29,000	4	4	A-C	A-C	0.61	-
SUF	PROVIDENCE RD (RTE 604)	KINGS FORK RD	ROUTE 460 (PRUDEN BLVD)	0.50	1,292	2008	9,000	2	2	A-C	D	0.07	-
SUF	PRUDEN BLVD	ISLE OF WIGHT CL	LAKE PRINCE DR	3.08	14,551	2008	29,000	4	4	A-C	A-C	0.22	-
SUF	PRUDEN BLVD	LAKE PRINCE DR	KINGS FORK RD	0.58	15,848	2008	29,000	4	4	A-C	A-C	0.22	-
SUF	PRUDEN BLVD	KINGS FORK RD	SUFFOLK BYPASS	1.47	20,789	2008	32,000	4	4	A-C	A-C	0.29	-
SUF	PRUDEN BLVD	SUFFOLK BYPASS	GODWIN BLVD	1.10	10,810	2008	18,000	4	4	A-C	A-C	0.29	-
SUF	PUGHSVILLE RD	SHOULDERS HILL RD	TOWN POINT RD	1.20	5,119	2008	14,000	2	2	A-C	D	0.33	-
SUF	PUGHSVILLE RD	TOWN POINT RD	CHESAPEAKE CL	0.08	9,837	2008	20,000	2	2	A-C	F	0.60	-
SUF	ROUTE 58	SOUTHAMPTON CL	RTE 189/258	1.34	17,541	2008	28,000	4	4	A-C	A-C	0.20	-
SUF	ROUTE 58	RTE 189/258	RTE 272 (S. QUAY RD)	1.26	17,192	2008	30,000	4	4	A-C	A-C	0.19	-
SUF	ROUTE 58	RTE 272	S. QUAY RD (ROUTE 189)	4.17	18,530	2008	26,000	4	4	A-C	A-C	0.20	-
SUF	ROUTE 58 (HOLLAND BYPASS)	S. QUAY RD (ROUTE 189)	BUS RTE 58 (HOLLAND RD)	1.19	18,248	2008	30,000	4	4	A-C	A-C	0.21	-
SUF	ROUTE 58 (HOLLAND RD)	BUS RTE 58 (HOLLAND RD)	RTE 649 (LUMMIS RD)	4.01	22,085	2008	35,000	4	4	A-C	A-C	0.27	-
SUF	ROUTE 58 (HOLLAND RD)	RTE 649 (LUMMIS RD)	RTE 643 (MANNING BRIDGE RD)	2.05	22,707	2008	45,000	4	4	A-C	A-C	0.30	-
SUF	ROUTE 58 (HOLLAND RD)	RTE. 643 (MANNING BRIDGE RD)	COVE POINT DR	1.03	26,910	2008	45,000	4	4	A-C	F	0.61	-
SUF	ROUTE 58 (HOLLAND RD)	COVE POINT DR	SUFFOLK BYPASS	1.20	28,798	2008	45,000	4	4	D	F	0.72	-
SUF	ROUTE 189 (IN HOLLAND)	RTE 58 (SOUTH OF HOLLAND)	BUS RTE 58 (RURITAN BLVD)	0.37	710	2008	1,000	2	2	A-C	A-C	0.03	-
SUF	ROUTE 189	SOUTHAMPTON CL	RTE 272	2.08	2,025	2008	5,000	2	2	A-C	A-C	0.09	-
SUF	ROUTE 189	RTE 272	RTE 58	0.83	2,626	2008	5,000	2	2	A-C	A-C	0.11	-
SUF	ROUTE 258	RTE 58	ISLE OF WIGHT CL	0.83	3,569	2008	6,000	2	2	A-C	A-C	0.15	-
SUF	ROUTE 272	ROUTE 189	ROUTE 58	1.33	1,540	2008	5,000	2	2	A-C	A-C	0.08	-
SUF	ROUTE 616	ROUTE 58	WHALEYVILLE BLVD	11.50	303	2008	5,000	2	2	A-C	A-C	0.01	-
SUF	ROUTE 616	WHALEYVILLE BLVD	CAROLINA RD	6.70	162	2008	1,000	2	2	A-C	A-C	0.01	-
SUF	RURITAN BLVD (BUS RTE 58)	ISLE OF WIGHT CL	RTE 189 (HOLLAND RD BUS)	2.65	2,400	2008	9,000	2	2	A-C	D	0.11	-
SUF	SHOULDERS HILL RD	NANSEMOND PKWY	PUGHSVILLE RD	1.44	6,940	2008	11,000	2	2	A-C	D	0.28	-
SUF	SHOULDERS HILL RD	PUGHSVILLE RD	BRIDGE RD	1.63	10,106	2008	14,000	2	2	A-C	A-C	0.64	-
SUF	TOWN POINT RD	PUGHSVILLE RD	BRIDGE RD	1.71	1,145	2008	5,000	2	2	A-C	A-C	0.09	-
SUF	WASHINGTON ST	W CONSTANCE RD	SARATOGA ST	0.84	10,030	2008	12,000	2	2	D	D	0.59	-
SUF	WASHINGTON ST	SARATOGA ST	MAIN ST	0.08	10,030	2008	7,000	3	3	D	D	0.59	-
SUF	WASHINGTON ST	MAIN ST	PINNER ST	0.20	10,490	2008	9,000	2	2	D	D	0.59	-
SUF	WASHINGTON ST	PINNER ST	PORTSMOUTH BLVD	2.84	12,393	2008	14,000	2	2	D	D	0.73	-
SUF	WHALEYVILLE BLVD	NC STATE LINE	RTE 616 (MINERAL SPRING RD)	5.37	4,751	2009	11,000	2	2	A-C	D	0.21	-
SUF	WHALEYVILLE BLVD	RTE 616 (MINERAL SPRING RD)	RTE 677 (GREAT FORK RD)	1.27	5,734	2008	11,000	2	2	A-C	D	0.25	-
SUF	WHALEYVILLE BLVD	RTE 677 (GREAT FORK RD)	RTE 675 (CYPRESS CHAPEL RD)	0.83	7,528	2008	12,000	2	2	D	D	0.35	-
SUF	WHALEYVILLE BLVD	RTE 675 (CYPRESS CHAPEL RD)	RTE 759 (BABBTOWN RD)	3.28	8,428	2008	13,000	2	2	D	D	0.38	-
SUF	WHALEYVILLE BLVD	RTE 759 (BABBTOWN RD)	RTE 32 (CAROLINA RD)	2.56	9,395	2008	14,000	2	2	D	E	0.45	-
SUF	WILROY RD	CONSTANCE RD	SUFFOLK BYPASS	1.98	5,906	2008	12,000	2	2	A-C	A-C	0.31	-
SUF	WILROY RD	SUFFOLK BYPASS	NANSEMOND PKWY	1.89	8,874	2008	16,000	2	2	A-C	A-C	0.49	-
VB	21ST ST	PARKS AVE	PACIFIC AVE	0.53	9,333	2008	20,000	4	4	A-C	A-C	0.15	-
VB	21ST ST	PACIFIC AVE	ATLANTIC AVE	0.06	5,047	2009	9,000	3	3	A-C	A-C	0.10	-
VB	22ND ST	PARKS AVE	PACIFIC AVE	0.53	12,064	2009	19,000	4	4	A-C	A-C	0.18	-
VB	22ND ST	PACIFIC AVE	ATLANTIC AVE	0.06	3,185	2009	8,000	3	3	A-C	A-C	0.06	-
VB	30TH ST	LASKIN RD	PACIFIC AVE	0.32	2,000	2009	5,000	3	3	A-C	A-C	0.14	-
VB	30TH ST	PACIFIC AVE	ATLANTIC AVE	0.06	2,000	2009	5,000	3	3	A-C	A-C	0.14	-

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Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
VB	ATLANTIC AVE	83RD ST	PACIFIC AVE	2.62	22,766	2009	31,000	4	4	D	D	0.67	-
VB	ATLANTIC AVE	PACIFIC AVE	LASKIN RD	0.85	5,618	2009	8,000	2	2	D	D	0.37	-
VB	ATLANTIC AVE	LASKIN RD	25TH ST	0.41	9,296	2009	9,000	2	2	D	D	0.56	-
VB	ATLANTIC AVE	25TH ST	22ND AVE	0.24	9,296	2009	9,000	2	2	D	D	0.56	-
VB	ATLANTIC AVE	22ND AVE	21ST AVE	0.07	9,296	2009	8,000	2	2	D	D	0.56	-
VB	ATLANTIC AVE	21ST ST	VA BEACH BLVD	0.27	9,799	2009	10,000	2	2	D	D	0.59	-
VB	ATLANTIC AVE	VA BEACH BLVD	5TH ST	0.82	8,567	2009	10,000	2	2	D	D	0.58	-
VB	BAXTER RD	PRINCESS ANNE RD	INDEPENDENCE BLVD	0.96	22,227	2010	26,000	4	4	D	D	0.72	-
VB	BIRDNECK RD	GENERAL BOOTH BLVD	NORFOLK AVE	2.29	12,884	2009	22,000	2	4	A-C	A-C	0.66	-
VB	BIRDNECK RD	NORFOLK AVE	VA BEACH BLVD	0.31	18,954	2006	26,000	4	4	A-C	A-C	0.47	-
VB	BIRDNECK RD	VA BEACH BLVD	I-264	0.33	26,207	2009	45,000	4	4	A-C	F	0.70	-
VB	BIRDNECK RD	I-264	LASKIN RD	0.58	23,080	2009	31,000	4	4	A-C	D	0.57	-
VB	BLACKWATER RD	PUNGO FERRY RD	CHESAPEAKE CL	4.47	2,468	2009	5,000	2	2	A-C	A-C	0.16	-
VB	BONNEY RD	INDEPENDENCE BLVD	ROSEMONT RD	2.39	14,259	2009	14,000	4	4	D	D	0.52	-
VB	CENTERVILLE TNPK	CHESAPEAKE CL	LYNNHAVEN PKWY	0.38	9,198	2009	33,000	2	4	A-C	F	0.59	-
VB	CENTERVILLE TNPK	LYNNHAVEN PKWY	KEMPSVILLE RD	0.75	14,873	2008	33,000	2	4	E	F	0.99	11
VB	CENTERVILLE TNPK	KEMPSVILLE RD	JAKE SEARS RD	0.88	20,450	2009	43,000	2	6	F	E	1.49	12
VB	CENTERVILLE TNPK	JAKE SEARS RD	INDIAN RIVER RD	0.95	20,450	2009	29,000	2	6	F	A-C	1.37	12
VB	CHESAPEAKE BAY BRIDGE-TUNNEL	SHORE DR	TOLL PLAZA	0.91	7,773	2009	15,000	4	4	A-C	A-C	0.13	-
VB	CHESAPEAKE BAY BRIDGE-TUNNEL	TOLL PLAZA	NCL VA BEACH	0.24	7,773	2009	15,000	4	4	A-C	A-C	0.13	-
VB	CITY LINE RD	I-64	CENTERVILLE TNPK	1.00	DNE	2009	25,000	0	4	-	D	-	-
VB	COLUMBUS ST	INDEPENDENCE BLVD	CONSTITUTION DR	0.30	13,684	2009	21,000	4	4	D	D	0.42	-
VB	CONSTITUTION DR	BONNEY RD	COLUMBUS ST	0.45	DNE	2009	8,000	0	4	-	A-C	-	-
VB	CONSTITUTION DR	COLUMBUS ST	VIRGINIA BEACH BLVD	0.17	5,387	2008	11,000	4	4	A-C	D	0.19	-
VB	DAM NECK RD	SALEM RD	VA BEACH AMPHITHEATER	1.07	9,428	2008	22,000	2	4	A-C	A-C	0.53	-
VB	DAM NECK RD	VA BEACH AMPHITHEATER	PRINCESS ANNE RD	1.16	12,823	2009	22,000	4	4	A-C	A-C	0.34	-
VB	DAM NECK RD	PRINCESS ANNE RD	ROSEMONT RD	0.44	41,267	2010	45,000	4	4	F	F	1.07	13
VB	DAM NECK RD	ROSEMONT RD	HOLLAND RD	0.55	41,267	2010	46,000	4	4	F	F	1.07	15
VB	DAM NECK RD	HOLLAND RD	DRAKESMILE RD	0.72	41,606	2009	47,000	4	4	D	F	0.98	-
VB	DAM NECK RD	DRAKESMILE RD	LONDON BRIDGE RD	0.86	49,378	2010	52,000	4	4	F	F	1.16	14
VB	DAM NECK RD	LONDON BRIDGE RD	HARPERS RD	0.60	31,936	2009	34,000	4	4	A-C	A-C	0.89	-
VB	DAM NECK RD	HARPERS RD	GENERAL BOOTH BLVD	2.19	26,791	2009	28,000	4	4	A-C	A-C	0.74	-
VB	DAM NECK RD	GENERAL BOOTH BLVD	UPTON DR	0.40	35,171	2008	36,000	6	4	A-C	F	0.89	-
VB	DAM NECK RD	UPTON DR	USN TRAINING CENTER	1.70	20,559	2009	9,000	4	4	A-C	A-C	0.78	-
VB	DIAMOND SPRINGS RD	NEWTOWN RD	WESLEYAN RD	0.41	22,524	2008	21,000	4	4	A-C	A-C	0.59	-
VB	DIAMOND SPRINGS RD	WESLEYAN RD	NORTHAMPTON BLVD	1.22	22,343	2008	23,000	4	4	A-C	A-C	0.59	-
VB	DIAMOND SPRINGS RD	NORTHAMPTON BLVD	SHORE DR	1.32	27,605	2009	29,000	4	4	A-C	A-C	0.73	-
VB	DRAKESMILE RD	DAM NECK RD	SHIPPS CORNER RD	0.25	22,835	2010	27,000	4	4	A-C	D	0.79	-
VB	ELBOW RD	CHESAPEAKE CL	INDIAN RIVER RD	0.32	7,780	2010	11,000	2	2	A-C	D	0.36	-
VB	ELBOW RD	INDIAN RIVER RD	SALEM RD	1.21	10,094	2010	22,000	2	4	D	D	0.62	-
VB	FERRELL PKWY	INDIAN RIVER RD	INDIAN LAKES BLVD	0.45	55,776	2009	58,000	4	4	F	F	1.12	17
VB	FERRELL PKWY	INDIAN LAKES BLVD	PLEASANT VALLEY RD	0.87	44,882	2009	47,000	4	4	A-C	A-C	0.91	-
VB	FERRELL PKWY	PLEASANT VALLEY RD	PRINCESS ANNE RD	1.42	42,724	2010	45,000	4	4	A-C	A-C	0.87	-
VB	FIRST COLONIAL RD	VA BEACH BLVD	I-264	0.22	31,279	2009	35,000	4	4	D	D	0.68	-
VB	FIRST COLONIAL RD	I-264	LASKIN RD	0.35	41,813	2008	42,000	4	4	E	E	0.95	15
VB	FIRST COLONIAL RD	LASKIN RD	OLD DONATION PKWY	1.10	37,853	2009	47,000	4	6	E	D	0.89	13
VB	FIRST COLONIAL RD	OLD DONATION PKWY	GREAT NECK RD	0.89	16,978	2009	27,000	4	4	A-C	A-C	0.36	-
VB	GENERAL BOOTH BLVD	PRINCESS ANNE RD	NIMMO PKWY	0.30	41,300	2009	39,000	4	6	D	A-C	0.92	-
VB	GENERAL BOOTH BLVD	NIMMO PKWY	LONDON BRIDGE RD	0.56	41,122	2008	56,000	4	6	D	D	0.91	-
VB	GENERAL BOOTH BLVD	LONDON BRIDGE RD	DAM NECK RD	1.51	30,817	2009	46,000	4	6	A-C	A-C	0.69	-

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JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
VB	GENERAL BOOTH BLVD	DAM NECK RD	OCEANA BLVD/PROSPERITY RD	0.60	61,472	2009	73,000	6	6	D	F	0.88	-
VB	GENERAL BOOTH BLVD	OCEANA BLVD/PROSPERITY RD	BIRDNECK RD	1.20	31,296	2009	39,000	4	4	A-C	A-C	0.76	-
VB	GENERAL BOOTH BLVD	BIRDNECK RD	HARBOUR POINT	1.61	19,766	2008	21,000	4	4	A-C	A-C	0.46	-
VB	GREAT NECK RD	VA BEACH BLVD	FIRST COLONIAL RD	2.36	41,560	2009	50,000	4	4	F	F	1.01	10
VB	GREAT NECK RD	FIRST COLONIAL RD	SHOREHAVEN RD	0.98	41,986	2009	52,000	6	6	A-C	D	0.66	-
VB	GREAT NECK RD	SHOREHAVEN RD	SHORE DR	2.24	33,716	2009	44,000	4	4	A-C	F	0.77	-
VB	HAYGOOD RD	NEWTOWN RD	WESLEYAN DR	0.25	7,432	2010	9,000	2	2	A-C	A-C	0.39	-
VB	HAYGOOD RD	WESLEYAN DR	INDEPENDENCE BLVD	1.10	18,239	2009	22,000	4	4	A-C	A-C	0.46	-
VB	HOLLAND RD	INDEPENDENCE BLVD	SOUTH PLAZA TRAIL	0.33	41,663	2009	53,000	4	6	F	D	1.05	17
VB	HOLLAND RD	SOUTH PLAZA TRAIL	ROSEMONT RD	1.32	36,509	2009	57,000	4	6	D	D	0.82	-
VB	HOLLAND RD	ROSEMONT RD	LYNNHAVEN PKWY	1.15	30,055	2009	53,000	4	6	A-C	D	0.66	-
VB	HOLLAND RD	LYNNHAVEN PKWY	DAM NECK RD	1.07	29,327	2009	46,000	4	6	A-C	A-C	0.66	-
VB	HOLLAND RD	DAM NECK RD	FUTURE NIMMO PKWY	1.93	16,876	2008	32,000	2	4	A-C	A-C	0.81	-
VB	HOLLAND RD	FUTURE NIMMO PKWY	PRINCESS ANNE RD	0.76	11,811	2009	10,000	2	2	A-C	A-C	0.58	-
VB	INDEPENDENCE BLVD	INDIAN RIVER RD	SALEM RD	1.93	6,208	2009	6,000	2	2	A-C	A-C	0.37	-
VB	INDEPENDENCE BLVD	SALEM RD	PRINCESS ANNE RD	0.77	17,350	2009	19,000	4	4	A-C	A-C	0.50	-
VB	INDEPENDENCE BLVD	PRINCESS ANNE RD	LYNNHAVEN PKWY	0.55	27,935	2009	30,000	4	4	A-C	A-C	0.68	-
VB	INDEPENDENCE BLVD	LYNNHAVEN PKWY	PLAZA TRAIL	1.65	32,162	2009	34,000	4	4	D	D	0.84	-
VB	INDEPENDENCE BLVD	PLAZA TRAIL	HOLLAND RD	0.76	35,052	2009	37,000	4	4	F	F	1.09	13
VB	INDEPENDENCE BLVD	HOLLAND RD	BAXTER RD	0.80	72,173	2009	89,000	8	8	E	F	0.98	10
VB	INDEPENDENCE BLVD	BAXTER RD	I-264	0.23	84,465	2009	95,000	8	8	F	F	1.14	17
VB	INDEPENDENCE BLVD	I-264	COLUMBUS ST	0.49	84,507	2009	96,000	8	8	E	F	0.98	16
VB	INDEPENDENCE BLVD	COLUMBUS ST	VA BEACH BLVD	0.18	61,288	2008	78,000	8	8	D	D	0.71	-
VB	INDEPENDENCE BLVD	VA BEACH BLVD	JEANNE ST	0.28	54,666	2009	69,000	8	8	A-C	A-C	0.62	-
VB	INDEPENDENCE BLVD	JEANNE ST	PEMBROKE BLVD	1.07	54,666	2009	75,000	6	6	A-C	F	0.82	-
VB	INDEPENDENCE BLVD	PEMBROKE BLVD	HAYGOOD RD	0.90	51,686	2009	62,000	6	6	A-C	A-C	0.69	-
VB	INDEPENDENCE BLVD	HAYGOOD RD	NORTHAMPTON BLVD	1.77	43,793	2009	51,000	4	6	D	A-C	0.92	-
VB	INDEPENDENCE BLVD	NORTHAMPTON BLVD	SHORE DR	0.58	26,072	2009	27,000	4	4	A-C	A-C	0.62	-
VB	INDIAN LAKES BLVD	FERRELL PKWY	INDIAN RIVER RD	0.45	12,713	2010	15,000	4	4	A-C	A-C	0.31	-
VB	INDIAN RIVER RD	CHESAPEAKE CL	MILITARY HWY	0.52	33,888	2010	40,000	6	6	A-C	A-C	0.56	-
VB	INDIAN RIVER RD	MILITARY HWY	PROVIDENCE RD	0.57	30,322	2008	41,000	6	6	A-C	D	0.69	-
VB	INDIAN RIVER RD	PROVIDENCE RD	I-64	0.66	36,111	2009	45,000	6	6	A-C	A-C	0.59	-
VB	INDIAN RIVER RD	I-64	CENTERVILLE TNPK	0.57	82,642	2009	103,000	8	8	F	F	1.06	14
VB	INDIAN RIVER RD	CENTERVILLE TNPK	KEMPSVILLE RD	0.72	62,339	2010	79,000	6	8	F	E	1.00	15
VB	INDIAN RIVER RD	KEMPSVILLE RD	FERRELL PKWY	0.24	64,278	2008	73,000	6	8	F	D	1.02	19
VB	INDIAN RIVER RD	FERRELL PKWY	LYNNHAVEN PKWY	0.91	15,798	2008	17,000	4	4	A-C	A-C	0.60	-
VB	INDIAN RIVER RD	LYNNHAVEN PKWY	INDEPENDENCE BLVD	1.36	14,648	2010	34,000	2	4	A-C	F	0.90	-
VB	INDIAN RIVER RD	INDEPENDENCE BLVD	ELBOW RD	0.83	9,659	2010	25,000	2	4	A-C	A-C	0.50	-
VB	INDIAN RIVER RD	ELBOW RD	S.E. PARKWAY	1.12	5,027	2010	21,000	2	4	A-C	A-C	0.26	-
VB	INDIAN RIVER RD	S.E. PARKWAY	NORTH LANDING RD	1.70	5,027	2010	21,000	2	4	A-C	A-C	0.26	-
VB	INDIAN RIVER RD	NORTH LANDING RD	WEST NECK RD	2.84	3,835	2009	18,000	2	2	A-C	F	0.24	-
VB	INDIAN RIVER RD	WEST NECK RD	PRINCESS ANNE RD	1.97	3,835	2009	11,000	2	2	A-C	A-C	0.24	-
VB	INTERNATIONAL PKWY	LYNNHAVEN PKWY	LONDON BRIDGE RD	1.02	13,490	2010	13,000	4	4	A-C	A-C	0.43	-
VB	KEMPSVILLE RD	CHESAPEAKE CL	CENTERVILLE TNPK	1.01	26,582	2009	42,000	6	6	A-C	A-C	0.46	-
VB	KEMPSVILLE RD	CENTERVILLE TNPK	INDIAN RIVER RD	1.54	36,340	2009	42,000	4	4	D	F	0.87	-
VB	KEMPSVILLE RD	INDIAN RIVER RD	PROVIDENCE RD	1.29	29,885	2009	34,000	4	4	D	D	0.78	-
VB	KEMPSVILLE RD	PROVIDENCE RD	PRINCESS ANNE RD	0.98	30,978	2009	38,000	4	4	D	E	0.77	-
VB	LASKIN RD	VA BEACH BLVD	FIRST COLONIAL RD	1.48	29,970	2009	39,000	4	4	A-C	D	0.69	-
VB	LASKIN RD	FIRST COLONIAL RD	WINWOOD DR	0.51	28,833	2009	33,000	4	6	A-C	A-C	0.63	-
VB	LASKIN RD	WINWOOD DR	BIRDNECK RD	0.98	29,906	2009	34,000	4	6	A-C	A-C	0.65	-

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Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
VB	LASKIN RD	BIRDNECK RD	30TH ST	0.68	31,116	2009	39,000	4	6	A-C	A-C	0.62	-
VB	LASKIN RD	30TH ST	PACIFIC AVE	0.29	29,515	2006	25,000	4	4	D	A-C	0.66	-
VB	LASKIN RD/31ST ST	PACIFIC AVE	ATLANTIC AVE	0.06	6,106	2009	12,000	4	4	A-C	A-C	0.13	-
VB	LONDON BRIDGE RD	GENERAL BOOTH BLVD	DAM NECK RD	2.22	24,512	2010	25,000	4	4	D	D	0.80	-
VB	LONDON BRIDGE RD	DAM NECK RD	DRAKESMILE RD	1.10	11,920	2009	13,000	2	2	A-C	F	0.93	-
VB	LONDON BRIDGE RD	SHIPPS CORNER RD/DRAKESMILE RD	INTERNATIONAL PKWY	1.34	36,392	2009	44,000	4	4	F	F	1.24	13
VB	LONDON BRIDGE RD	INTERNATIONAL PKWY	POTTERS RD	2.08	30,701	2009	41,000	4	4	A-C	F	0.90	-
VB	LONDON BRIDGE RD	POTTERS RD	I-264	0.31	27,184	2009	39,000	6	6	D	D	0.54	-
VB	LONDON BRIDGE RD	I-264	VA BEACH BLVD	0.05	27,184	2009	58,000	6	6	D	F	0.54	-
VB	LYNNHAVEN PKWY	CHESAPEAKE CL	CENTERVILLE TNPK	0.55	5,732	2008	33,000	4	4	A-C	F	0.20	-
VB	LYNNHAVEN PKWY	CENTERVILLE TNPK	INDIAN RIVER RD	2.07	DNE	2009	32,000	0	4	-	E	-	-
VB	LYNNHAVEN PKWY	INDIAN RIVER RD	SALEM RD	2.01	18,449	2009	22,000	4	4	A-C	A-C	0.52	-
VB	LYNNHAVEN PKWY	SALEM RD	PRINCESS ANNE RD	0.48	20,039	2009	21,000	4	4	A-C	A-C	0.52	-
VB	LYNNHAVEN PKWY	PRINCESS ANNE RD	INDEPENDENCE BLVD	0.67	25,178	2009	31,000	4	4	A-C	D	0.63	-
VB	LYNNHAVEN PKWY	INDEPENDENCE BLVD	ROSEMONT RD	0.56	31,369	2010	34,000	4	4	D	D	0.77	-
VB	LYNNHAVEN PKWY	ROSEMONT RD	HOLLAND RD	0.92	24,810	2009	30,000	4	4	A-C	D	0.64	-
VB	LYNNHAVEN PKWY	HOLLAND RD	S LYNNHAVEN RD	1.06	36,176	2006	51,000	4	6	D	A-C	0.78	-
VB	LYNNHAVEN PKWY	S LYNNHAVEN RD	INTERNATIONAL PKWY	0.61	38,676	2009	46,000	6	6	A-C	A-C	0.56	-
VB	LYNNHAVEN PKWY	INTERNATIONAL PKWY	POTTERS RD	1.17	51,048	2007	53,000	6	6	A-C	A-C	0.73	-
VB	LYNNHAVEN PKWY	POTTERS RD	I-264	0.20	72,664	2006	81,000	6	6	F	F	1.17	19
VB	LYNNHAVEN PKWY	I-264	VA BEACH BLVD	0.42	25,554	2009	19,000	4	4	D	D	0.68	-
VB	MILITARY HWY	CHESAPEAKE CL	PROVIDENCE RD	0.16	34,114	2008	41,000	6	6	A-C	A-C	0.54	-
VB	MILITARY HWY	PROVIDENCE RD	INDIAN RIVER RD	0.50	26,842	2010	35,000	6	6	A-C	A-C	0.55	-
VB	MILITARY HWY	INDIAN RIVER RD	NORFOLK CL	0.98	43,104	2010	45,000	8	8	A-C	A-C	0.69	-
VB	NEWTOWN RD	NORFOLK CL	BAKER RD	0.24	38,970	2007	45,000	4	4	D	D	0.80	-
VB	NEWTOWN RD	BAKER RD	DIAMOND SPRINGS RD	0.48	26,927	2009	35,000	4	4	A-C	D	0.61	-
VB	NEWTOWN RD	DIAMOND SPRINGS RD	HAYGOOD RD	0.90	7,432	2010	9,000	2	2	A-C	A-C	0.44	-
VB	NIMMO PKWY	NORTH LANDING RD	WEST NECK RD	2.22	DNE	2009	20,000	0	4	-	A-C	-	-
VB	NIMMO PKWY	WEST NECK RD	PRINCESS ANNE RD	0.85	9,946	2004	20,000	4	4	A-C	A-C	0.28	-
VB	NIMMO PKWY	PRINCESS ANNE RD	HOLLAND RD	0.57	DNE	2009	29,000	0	4	-	A-C	-	-
VB	NIMMO PKWY	HOLLAND RD	GENERAL BOOTH BLVD	2.02	DNE	2009	26,000	0	4	-	A-C	-	-
VB	NIMMO PKWY	GENERAL BOOTH BLVD	UPTON DR	0.69	12,241	2007	18,000	4	4	A-C	A-C	0.35	-
VB	NORFOLK AVE	BIRDNECK RD	PACIFIC AVE	1.40	12,267	2009	12,000	2	2	D	D	0.71	-
VB	NORFOLK AVE	PACIFIC AVE	ATLANTIC AVE	0.06	4,264	2009	4,000	4	4	D	A-C	0.26	-
VB	NORTHAMPTON BLVD	WESLEYAN DR/NORFOLK CL	DIAMOND SPRINGS RD	0.98	63,963	2008	75,000	8	8	A-C	A-C	0.63	-
VB	NORTHAMPTON BLVD	DIAMOND SPRINGS RD	INDEPENDENCE BLVD	2.13	38,720	2009	61,000	6	6	A-C	F	0.66	-
VB	NORTHAMPTON BLVD	INDEPENDENCE BLVD	SHORE DR	1.01	28,170	2009	25,000	6	6	A-C	A-C	0.41	-
VB	NORTH LANDING RD	CHESAPEAKE CL	INDIAN RIVER RD	1.12	12,257	2009	16,000	2	2	E	E	0.75	8
VB	NORTH LANDING RD	INDIAN RIVER RD	SALEM RD	0.36	13,752	2009	21,000	2	2	F	F	1.05	15
VB	NORTH LANDING RD	SALEM RD	WEST NECK RD	2.08	13,752	2009	22,000	2	2	F	F	1.07	10
VB	NORTH LANDING RD	WEST NECK RD	PRINCESS ANNE RD	0.57	13,752	2009	13,000	2	2	F	F	1.07	13
VB	OCEANA BLVD	GENERAL BOOTH BLVD	HARPERS RD/S.E. PARKWAY	0.63	32,566	2008	35,000	4	4	A-C	A-C	0.67	-
VB	OCEANA BLVD	HARPERS RD/S.E. PARKWAY	TOMCAT BLVD (NAS MAIN ENT)	0.39	32,566	2008	35,000	4	4	A-C	A-C	0.67	-
VB	OCEANA BLVD/FIRST COLONIAL RD	TOMCAT BLVD (NAS MAIN ENT)	VA BEACH BLVD	3.11	37,845	2009	38,000	4	4	A-C	A-C	0.77	-
VB	PACIFIC AVE	ATLANTIC AVE	LASKIN RD	0.83	23,022	2009	32,000	4	4	D	D	0.67	-
VB	PACIFIC AVE	LASKIN RD	22ND ST	0.65	20,489	2008	26,000	4	4	A-C	D	0.54	-
VB	PACIFIC AVE	22ND ST	21ST ST	0.07	20,489	2008	27,000	4	4	A-C	D	0.54	-
VB	PACIFIC AVE	21ST ST	VA BEACH BLVD	0.27	20,895	2009	21,000	4	4	D	D	0.63	-
VB	PACIFIC AVE	VA BEACH BLVD	5TH ST	0.82	21,528	2009	20,000	4	4	D	D	0.67	-
VB	PACIFIC AVE	5TH ST	HARBOUR POINT	0.28	20,980	2006	26,000	4	4	D	E	0.80	-

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JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
VB	PEMBROKE BLVD	WITCHDUCK RD	INDEPENDENCE BLVD	0.40	10,288	2009	13,000	4	4	A-C	A-C	0.25	-
VB	PLAZA TRAIL, S.	PRINCESS ANNE RD	INDEPENDENCE BLVD	0.76	14,698	2008	27,000	4	4	A-C	D	0.45	-
VB	PLAZA TRAIL, S.	INDEPENDENCE BLVD	HOLLAND RD	0.49	14,646	2010	24,000	4	4	D	D	0.48	-
VB	PLAZA TRAIL, S.	HOLLAND RD	MARINA LAKE RD	0.24	11,907	2010	17,000	4	4	A-C	D	0.34	-
VB	PLAZA TRAIL, S.	MARINA LAKE RD	ROSEMONT RD	1.41	11,907	2010	12,000	2	2	D	D	0.72	-
VB	PLAZA TRAIL, S.	ROSEMONT RD	I-264	0.94	12,463	2009	13,000	2	2	E	E	0.91	-
VB	PLAZA TRAIL, S.	I-264	VA BEACH BLVD	0.17	12,463	2009	11,000	4	4	D	A-C	0.43	-
VB	PRINCESS ANNE RD	NEWTOWN RD/NORFOLK CL	KEMPSVILLE RD	1.90	27,079	2009	28,000	4	4	D	D	0.86	-
VB	PRINCESS ANNE RD	KEMPSVILLE RD	BAXTER RD	0.58	27,374	2008	39,000	4	4	D	F	0.86	-
VB	PRINCESS ANNE RD	BAXTER RD	PROVIDENCE RD	1.65	27,864	2009	26,000	4	4	D	D	0.83	-
VB	PRINCESS ANNE RD	PROVIDENCE RD	FERRELL PKWY	0.76	38,445	2009	45,000	4	4	F	F	1.13	10
VB	PRINCESS ANNE RD	FERRELL PKWY	LYNNHAVEN PKWY	0.48	61,410	2009	69,000	8	8	A-C	A-C	0.67	-
VB	PRINCESS ANNE RD	LYNNHAVEN PKWY	INDEPENDENCE BLVD	0.44	45,918	2009	54,000	8	8	A-C	A-C	0.49	-
VB	PRINCESS ANNE RD	INDEPENDENCE BLVD	DAM NECK RD	1.48	48,794	2009	56,000	8	8	A-C	A-C	0.57	-
VB	PRINCESS ANNE RD	DAM NECK RD	S.E. PARKWAY	1.09	26,212	2009	40,000	2	4	F	F	1.34	10
VB	PRINCESS ANNE RD	S.E. PARKWAY	NIMMO PKWY	1.24	26,212	2009	28,000	2	4	F	A-C	1.34	10
VB	PRINCESS ANNE RD	NIMMO PKWY	NORTH LANDING RD	0.55	13,882	2008	8,000	2	2	D	D	0.78	-
VB	PRINCESS ANNE RD	NORTH LANDING RD	HOLLAND RD	0.27	26,894	2009	11,000	2	2	F	D	1.39	15
VB	PRINCESS ANNE RD	HOLLAND RD	SEABOARD RD	1.00	26,894	2009	21,000	2	2	F	F	1.35	10
VB	PRINCESS ANNE RD	SEABOARD RD	GENERAL BOOTH BLVD	1.00	26,894	2009	10,000	2	2	F	A-C	1.35	10
VB	PRINCESS ANNE RD	GENERAL BOOTH BLVD	SANDBRIDGE RD/UPTON DR	0.85	15,418	2008	11,000	2	4	D	A-C	0.78	-
VB	PRINCESS ANNE RD	SANDBRIDGE RD/UPTON DR	SEABOARD RD	1.76	11,456	2009	14,000	2	2	D	E	0.78	-
VB	PRINCESS ANNE RD	SEABOARD RD	INDIAN RIVER RD	0.38	11,859	2009	12,000	2	2	D	D	0.79	-
VB	PRINCESS ANNE RD	INDIAN RIVER RD	PUNGO FERRY RD	7.71	8,532	2009	12,000	2	2	D	D	0.41	-
VB	PRINCESS ANNE RD	PUNGO FERRY RD	NORTH CAROLINA STATE LINE	5.74	3,674	2008	4,000	2	2	A-C	A-C	0.17	-
VB	PROVIDENCE RD	CHESAPEAKE CL	MILITARY HWY	0.08	13,163	2009	20,000	4	4	A-C	A-C	0.40	-
VB	PROVIDENCE RD	MILITARY HWY	INDIAN RIVER RD	0.72	17,281	2008	23,000	4	4	A-C	A-C	0.40	-
VB	PROVIDENCE RD	INDIAN RIVER RD	KEMPSVILLE RD	2.28	22,968	2009	35,000	4	4	D	F	0.82	-
VB	PROVIDENCE RD	KEMPSVILLE RD	PRINCESS ANNE RD	2.02	14,674	2008	33,000	2	4	F	F	1.08	10
VB	PUNGO FERRY RD	BLACKWATER RD	PRINCESS ANNE RD	2.73	3,594	2009	4,000	2	2	A-C	A-C	0.19	-
VB	ROSEMONT RD	DAM NECK RD	FACULTY DRIVE	0.93	16,310	2009	16,000	2	2	D	D	0.82	-
VB	ROSEMONT RD	FACULTY DRIVE	LYNNHAVEN PKWY	0.58	18,073	2009	19,000	2	2	F	F	1.00	15
VB	ROSEMONT RD	LYNNHAVEN PKWY	HOLLAND RD	1.25	22,664	2009	26,000	4	4	A-C	A-C	0.61	-
VB	ROSEMONT RD	HOLLAND RD	PLAZA TRAIL	1.16	33,539	2009	48,000	4	6	E	D	0.89	11
VB	ROSEMONT RD	PLAZA TRAIL	I-264	0.61	35,761	2008	59,000	4	6	E	E	0.90	13
VB	ROSEMONT RD	I-264	VA BEACH BLVD	0.14	32,657	2009	48,000	4	6	D	D	0.81	-
VB	SALEM RD	NORTH LANDING RD	ELBOW RD	2.60	4,413	2010	9,000	2	2	A-C	D	0.43	-
VB	SALEM RD	ELBOW RD	INDEPENDENCE BLVD	0.90	12,030	2010	22,000	2	4	D	D	0.81	-
VB	SALEM RD	INDEPENDENCE BLVD	LYNNHAVEN PKWY	0.60	12,030	2010	21,000	4	4	A-C	A-C	0.39	-
VB	SALEM RD	LYNNHAVEN PKWY	PRINCESS ANNE RD	0.73	16,047	2009	16,000	6	6	A-C	A-C	0.36	-
VB	SANDBRIDGE RD	PRINCESS ANNE RD	ATWOODTOWN RD	1.55	12,653	2009	15,000	2	4	A-C	A-C	0.85	-
VB	SANDBRIDGE RD	ATWOODTOWN RD	SANDPIPER DR	3.18	7,419	2009	12,000	2	2	D	D	0.31	-
VB	SEABOARD RD	PRINCESS ANNE RD (AT PA ELEMENTAR	PRINCESS ANNE RD (AT PUNGO FIELD)	2.42	2,668	2010	4,000	2	2	A-C	A-C	0.19	-
VB	SEABOARD RD EXTENDED	NIMMO PKWY	PRINCESS ANNE RD (AT PA ELEMENTAR	0.63	DNE	2009	8,000	0	4	-	A-C	-	-
VB	SHORE DRIVE	NORFOLK CL	DIAMOND SPRINGS RD	0.21	35,155	2009	42,000	4	4	D	E	0.82	-
VB	SHORE DRIVE	DIAMOND SPRINGS RD	INDEPENDENCE BLVD	1.82	29,519	2009	32,000	4	4	A-C	A-C	0.68	-
VB	SHORE DRIVE	INDEPENDENCE BLVD	NORTHAMPTON BLVD	1.01	19,945	2009	22,000	4	4	A-C	A-C	0.52	-
VB	SHORE DRIVE	NORTHAMPTON BLVD	N GREAT NECK RD	3.47	40,097	2009	48,000	4	4	F	F	1.11	13
VB	SHORE DRIVE	N GREAT NECK RD	ATLANTIC AVE	4.61	14,335	2009	8,000	4	4	A-C	A-C	0.31	-
VB	UPTON DR	NIMMO PKWY	PRINCESS ANNE RD	0.72	17,527	2009	24,000	4	4	D	D	0.51	-

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JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
VB	VA BEACH BLVD	NEWTOWN RD/NORFOLK CL	WITCHDUCK RD	1.26	39,095	2009	56,000	8	8	A-C	A-C	0.44	-
VB	VA BEACH BLVD	WITCHDUCK RD	INDEPENDENCE BLVD	1.12	35,147	2009	59,000	8	8	A-C	D	0.43	-
VB	VA BEACH BLVD	INDEPENDENCE BLVD	CONSTITUTION DR	0.32	40,633	2009	55,000	8	8	A-C	D	0.48	-
VB	VA BEACH BLVD	CONSTITUTION DR	ROSEMONT RD	1.90	45,167	2009	60,000	8	8	A-C	A-C	0.51	-
VB	VA BEACH BLVD	ROSEMONT RD	S. PLAZA TRAIL/LITTLE NECK RD	0.39	52,488	2009	72,000	8	8	A-C	A-C	0.61	-
VB	VA BEACH BLVD	S. PLAZA TRAIL/LITTLE NECK RD	LYNNHAVEN PKWY	1.61	38,840	2009	51,000	8	8	A-C	A-C	0.47	-
VB	VA BEACH BLVD	LYNNHAVEN PKWY	GREAT NECK RD	0.83	52,318	2009	49,000	8	8	A-C	A-C	0.59	-
VB	VA BEACH BLVD	GREAT NECK RD	LASKIN RD	0.14	31,148	2006	38,000	8	8	A-C	A-C	0.35	-
VB	VA BEACH BLVD	LASKIN RD	FIRST COLONIAL RD	1.04	35,531	2009	38,000	4	4	D	D	0.86	-
VB	VA BEACH BLVD	FIRST COLONIAL RD	N OCEANA BLVD	0.45	20,860	2009	23,000	4	4	D	D	0.67	-
VB	VA BEACH BLVD	N OCEANA BLVD	BIRDNECK RD	0.96	14,422	2009	19,000	4	4	A-C	A-C	0.42	-
VB	VA BEACH BLVD	BIRDNECK RD	PACIFIC AVE	1.18	14,294	2009	16,000	4	4	D	D	0.40	-
VB	VA BEACH BLVD	PACIFIC AVE	ATLANTIC AVE	0.07	14,294	2009	14,000	4	4	D	D	0.43	-
VB	WESLEYAN DR	NORFOLK CL	BAKER RD	0.43	18,197	2009	34,000	2	4	F	F	1.12	11
VB	WESLEYAN DR	BAKER RD	DIAMOND SPRINGS RD	0.54	14,799	2009	24,000	4	4	A-C	A-C	0.46	-
VB	WESLEYAN DR	DIAMOND SPRINGS RD	HAYGOOD DR	1.18	22,642	2009	31,000	4	4	A-C	D	0.68	-
VB	WEST NECK PKWY	DAM NECK RD	NIMMO PKWY	2.50	DNE	2009	9,000	0	4	-	A-C	-	-
VB	WEST NECK PKWY	NIMMO PKWY	NORTH LANDING RD	0.30	DNE	2009	13,000	0	4	-	A-C	-	-
VB	WEST NECK PKWY	NORTH LANDING RD	INDIAN RIVER RD	1.25	DNE	2009	10,000	0	4	-	A-C	-	-
VB	WEST NECK RD	NIMMO PKWY	NORTH LANDING RD	0.19	8,000	2003	8,000	4	4	A-C	A-C	0.27	-
VB	WEST NECK RD	NORTH LANDING RD	INDIAN RIVER RD	2.05	2,830	2010	5,000	2	4	A-C	A-C	0.22	-
VB	WITCHDUCK RD	PRINCESS ANNE RD	I-264	0.78	27,526	2009	49,000	4	6	A-C	A-C	0.55	-
VB	WITCHDUCK RD	I-264	VA BEACH BLVD	0.51	51,108	2008	71,000	4	6	F	F	1.40	16
VB	WITCHDUCK RD	VA BEACH BLVD	PEMBROKE BLVD	1.58	17,990	2009	21,000	4	4	A-C	A-C	0.44	-
WMB	BOUNDARY ST	JAMESTOWN RD	FRANCIS ST	0.07	11,076	2007	12,000	2	2	D	D	0.51	-
WMB	BYPASS RD	RICHMOND RD	YORK CL	0.11	21,128	2007	32,000	4	4	A-C	A-C	0.43	-
WMB	BYPASS RD	ROUTE 132/YORK CL	PAGE ST	0.71	13,844	2007	25,000	4	4	A-C	A-C	0.32	-
WMB	CAPITOL LANDING RD	BYPASS RD	MERRIMAC TRAIL	0.62	6,754	2007	13,000	4	4	A-C	A-C	0.18	-
WMB	COLONIAL NATL HIST PKWY	JAMES CITY CL/RTE 199	YORK CL	3.09	2,919	2007	8,000	2	2	A-C	A-C	0.18	-
WMB	FRANCIS ST	BOUNDARY ST	HENRY ST	0.09	7,660	2007	8,000	2	2	D	D	0.53	-
WMB	HENRY ST S.	ROUTE 199	FRANCIS ST	1.85	4,120	2007	7,000	2	2	A-C	A-C	0.27	-
WMB	HENRY ST	FRANCIS ST	LAFAYETTE ST	0.38	5,565	2007	9,000	2	2	D	D	0.45	-
WMB	HENRY ST N.	LAFAYETTE ST	RTE 132Y	0.44	7,504	2007	11,000	2	2	A-C	A-C	0.46	-
WMB	IRONBOUND RD	JAMES CITY CL	LONGHILL CONNECTOR RD	0.18	10,984	2007	12,000	2	4	A-C	A-C	0.56	-
WMB	IRONBOUND RD	LONGHILL CONNECTOR RD	LONGHILL RD	0.57	10,115	2007	15,000	2	2	D	E	0.64	-
WMB	IRONBOUND RD	LONGHILL RD	RICHMOND RD	0.05	13,632	2007	20,000	4	4	D	D	0.38	-
WMB	JAMESTOWN RD	JAMES CITY CL	RTE 199	0.06	18,414	2007	25,000	4	4	A-C	A-C	0.55	-
WMB	JAMESTOWN RD	RTE 199	JOHN TYLER LN	0.27	11,933	2007	15,000	3	3	D	D	0.74	-
WMB	JAMESTOWN RD	JOHN TYLER LN	COLLEGE CREEK	0.58	12,235	2007	19,000	4	4	A-C	A-C	0.38	-
WMB	JAMESTOWN RD	COLLEGE CREEK	BOUNDARY ST	0.92	12,235	2007	19,000	2	2	D	F	0.81	-
WMB	LAFAYETTE ST	RICHMOND RD	HENRY ST	0.95	9,796	2007	18,000	2	2	D	F	0.61	-
WMB	LAFAYETTE ST	HENRY ST	CAPITOL LANDING RD	0.85	9,682	2007	15,000	2	2	D	E	0.59	-
WMB	LAFAYETTE ST	CAPITOL LANDING RD	PAGE ST	0.21	7,890	2007	15,000	2	2	D	F	0.55	-
WMB	MERRIMAC TRAIL	YORK CL (SOUTH)	CAPITOL LANDING RD	0.90	7,617	2007	13,000	2	2	A-C	A-C	0.43	-
WMB	MERRIMAC TRAIL	CAPITOL LANDING RD	YORK CL (NORTH)	0.37	9,974	2007	18,000	4	4	A-C	A-C	0.26	-
WMB	MONTICELLO AVE	IRONBOUND RD	RICHMOND RD	1.17	15,876	2007	23,000	2	2	D	F	0.81	-
WMB	PAGE ST	BYPASS RD	SECOND ST	0.31	13,531	2007	27,000	4	4	A-C	D	0.34	-
WMB	PAGE ST	SECOND ST	YORK ST	0.25	14,714	2004	25,000	4	4	A-C	D	0.41	-
WMB	QUARTERPATH RD	ROUTE 199	YORK ST	1.44	629	2004	9,000	2	2	A-C	D	0.05	-
WMB	RICHMOND RD	JAMES CITY CL	IRONBOUND RD	1.34	19,148	2007	29,000	4	4	A-C	D	0.49	-

See page 121 for Legend

Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
WMB	RICHMOND RD	IRONBOUND RD	BYPASS RD	0.33	25,776	2007	44,000	4	4	D	F	0.62	-
WMB	RICHMOND RD	BYPASS RD	MONTICELLO AVE	0.37	19,306	2007	35,000	4	4	D	E	0.55	-
WMB	RICHMOND RD	MONTICELLO AVE	BROOKS ST	0.38	12,395	2007	23,000	4	4	A-C	D	0.37	-
WMB	RICHMOND RD	BROOKS ST	BOUNDARY ST	0.67	12,395	2007	15,000	2	2	D	E	0.70	-
WMB	ROUTE 132	ROUTE 132Y	BYPASS RD/YORK CL	0.26	9,114	2007	11,000	4	4	A-C	A-C	0.31	-
WMB	ROUTE 132Y	ROUTE 132	COLONIAL PKWY	0.30	6,115	2007	9,000	4	4	A-C	D	0.23	-
WMB	ROUTE 199	JAMES CITY CL (WEST)	JAMESTOWN RD	0.24	37,160	2007	45,000	4	4	A-C	F	0.84	-
WMB	ROUTE 199	JAMESTOWN RD	JAMES CITY CL (EAST)	0.16	37,015	2007	45,000	4	4	A-C	F	0.87	-
WMB	SECOND ST	PAGE ST	YORK CL	0.41	15,207	2007	25,000	4	4	A-C	A-C	0.42	-
WMB	TREYBURN DR	MONTICELLO AVE	IRONBOUND RD	0.73	3,000	2008	6,000	2	2	A-C	D	0.16	-
WMB	YORK ST	PAGE ST	JAMES CITY CL	0.60	10,850	2007	15,000	2	2	D	D	0.59	-
YC	BALLARD ST	COLONIAL PKWY	COOK RD	0.11	4,940	2007	8,000	2	2	D	D	0.42	-
YC	BALLARD ST	COOK RD	COAST GUARD TRAINING CENTER	1.32	2,967	2007	8,000	2	2	D	F	0.41	-
YC	BIG BETHEL RD	HAMPTON CL	HAMPTON HWY (RTE 134)	0.96	10,847	2007	17,000	2	2	A-C	D	0.59	-
YC	BIG BETHEL RD	HAMPTON HWY (RTE 134)	VICTORY BLVD (RTE 171)	1.09	6,359	2007	8,000	2	2	A-C	A-C	0.47	-
YC	BYPASS RD	WILLIAMSBURG CL	WALLER MILL RD	0.19	21,128	2007	32,000	4	4	A-C	A-C	0.43	-
YC	BYPASS RD	WALLER MILL RD	ROUTE 132/WILLIAMSBURG CL	0.88	21,128	2007	32,000	4	4	A-C	A-C	0.43	-
YC	COLONIAL NATL HIST PKWY	WILLIAMSBURG CL	BALLARD ST	11.21	6,218	2007	9,000	2	2	D	E	0.51	-
YC	COOK RD	GOOSLEY RD	BALLARD ST	0.25	6,000	2003	12,000	2	2	A-C	F	0.62	-
YC	DENBIGH BLVD	NEWPORT NEWS CL	ROUTE 17	2.18	16,225	2009	19,000	2	2	E	E	0.74	8
YC	EAST YORKTOWN RD	VICTORY BLVD	POQUOSON CL	0.29	5,681	2007	9,000	2	2	A-C	D	0.47	-
YC	FORT EUSTIS BLVD	NEWPORT NEWS CL	ROUTE 17	2.36	18,188	2007	34,000	2	4	E	A-C	0.73	13
YC	FORT EUSTIS BLVD EXT	ROUTE 17	OLD YORK - HAMPTON HWY	0.38	5,000	2008	22,000	4	4	A-C	A-C	0.14	-
YC	GEORGE WASHINGTON HWY	NEWPORT NEWS CL	VICTORY BLVD (RTE 171)	1.20	37,917	2007	49,000	4	4	D	F	0.83	-
YC	GEORGE WASHINGTON HWY	VICTORY BLVD (RTE 171)	HAMPTON HWY (RTE 134)	0.64	41,992	2007	48,000	4	4	E	F	0.98	15
YC	GEORGE WASHINGTON HWY	HAMPTON HWY (RTE 134)	DENBIGH BLVD (RTE 173)	3.45	53,184	2009	86,000	4	6	F	F	1.12	14
YC	GEORGE WASHINGTON HWY	DENBIGH BLVD (RTE 173)	FORT EUSTIS BLVD (RTE 105)	1.38	38,995	2007	54,000	4	4	A-C	F	0.83	-
YC	GEORGE WASHINGTON HWY	FORT EUSTIS BLVD (RTE 105)	GOOSLEY RD (RTE 238)	2.97	38,170	2007	53,000	4	4	A-C	F	0.94	-
YC	GEORGE WASHINGTON HWY	GOOSLEY RD (RTE 238)	GLOUCESTER CL (COLEMAN BRIDGE)	1.06	31,764	2007	52,000	4	4	F	F	1.22	14
YC	GOODWIN NECK RD	ROUTE 17	WOLF TRAP RD	1.05	10,528	2007	12,000	2	2	A-C	A-C	0.59	-
YC	GOOSLEY RD	OLD WILLIAMSBURG RD	CRAWFORD RD	0.89	6,809	2007	8,000	2	2	A-C	F	0.88	-
YC	GOOSLEY RD	CRAWFORD RD	ROUTE 17	0.30	6,809	2007	9,000	2	2	A-C	F	0.88	-
YC	GOOSLEY RD	ROUTE 17	COOK RD	0.52	1,668	2007	3,000	2	2	A-C	A-C	0.18	-
YC	HAMPTON HWY	ROUTE 17	VICTORY BLVD (RTE 171)	0.72	21,843	2007	37,000	4	4	A-C	A-C	0.52	-
YC	HAMPTON HWY	VICTORY BLVD (RTE 171)	BIG BETHEL RD (RTE 600)	1.54	29,902	2007	34,000	4	4	A-C	A-C	0.83	-
YC	HAMPTON HWY	BIG BETHEL RD (RTE 600)	NCL HAMPTON	1.77	30,486	2007	31,000	4	4	A-C	D	0.97	-
YC	MERRIMAC TRAIL	JAMES CITY CL	BUSCH GARDENS INTERCHANGE	0.66	10,282	2007	17,000	4	4	A-C	A-C	0.45	-
YC	MERRIMAC TRAIL	BUSCH GARDENS INTERCHANGE	ROUTE 199/JAMES CITY CL	1.75	16,875	2007	39,000	4	4	A-C	F	0.66	-
YC	MERRIMAC TRAIL	PENNIMAN RD/JAMES CITY CL	SECOND ST	0.50	16,543	2007	22,000	4	4	A-C	A-C	0.41	-
YC	MERRIMAC TRAIL	SECOND ST	SCL WILLIAMSBURG	0.26	8,640	2007	13,000	2	2	A-C	A-C	0.47	-
YC	MERRIMAC TRAIL	NCL WILLIAMSBURG	ROUTE 132	0.22	9,643	2007	18,000	4	4	A-C	A-C	0.25	-
YC	MOORETOWN RD	WALLER MILL RD	AIRPORT RD	1.96	5,822	2007	10,000	2	2	A-C	A-C	0.30	-
YC	MOORETOWN RD	AIRPORT RD	OLD MOORETOWN RD	1.48	8,651	2007	10,000	2	2	A-C	A-C	0.47	-
YC	MOORETOWN RD	OLD MOORETOWN RD	ROUTE 199	0.95	20,000	2009	20,000	4	4	A-C	A-C	0.51	-
YC	NEWMAN RD	I-64	FENTON MILL RD	0.46	2,755	2007	17,000	2	2	A-C	F	0.16	-
YC	OLD WILLIAMSBURG RD	NECL NEWPORT NEWS	GOOSLEY RD	2.20	10,887	2009	14,000	2	2	A-C	F	0.78	-
YC	PENNIMAN RD (RTE 641)	ROUTE 199	COLONIAL PKWY	1.19	5,517	2009	10,000	2	2	A-C	D	0.30	-
YC	POCAHONTAS TRAIL	JCC LINE @ RTE 199	KINGSMILL RD	0.66	8,600	2008	21,000	4	4	A-C	A-C	0.22	-
YC	POCAHONTAS TRAIL	KINGSMILL RD	BUSCH GARDENS INTERCHANGE	1.16	11,980	2004	24,000	4	4	A-C	A-C	0.32	-
YC	POCAHONTAS TRAIL	BUSCH GARDENS INTERCHANGE	JAMES CITY CL	0.71	10,726	2007	15,000	2	2	A-C	A-C	0.50	-

See page 121 for Legend

Appendix B – CMP Roadway Segments, Volumes, Lanes and Levels of Service – Arterials and Collectors

JURIS NAME	FACILITY NAME	SEGMENT FROM	SEGMENT TO	SEGMENT LENGTH (MILES)	WEEKDAY VOLUMES			NO. OF LANES		PM PEAK HOUR LOS		EXISTING PM HOURLY PEAK DIR V/C	CMP SEGMENT RANKING SCORE
					EXISTING	COUNT YEAR	2030 (AMENDED)	2009	2030	EXISTING	2030		
YC	RICHNECK RD	NEWPORT NEWS CL	FORT EUSTIS BLVD	0.90	1,479	2007	15,000	2	2	A-C	E	0.09	-
YC	ROUTE 132	BYPASS RD/WILLIAMSBURG CL	ROUTE 143	1.16	8,737	2007	11,000	2	2	A-C	D	0.32	-
YC	ROUTE 143	ROUTE 132	I-64	0.60	17,947	2007	29,000	4	4	A-C	A-C	0.23	-
YC	ROUTE 199	RTE 60/RTE 143/JCC LINE	I-64	1.00	30,900	2009	47,000	4	4	A-C	D	0.66	-
YC	ROUTE 199	I-64	RTE 641 (PENNIMAN RD)	0.90	10,826	2007	26,000	4	4	A-C	A-C	0.16	-
YC	SECOND ST	WILLIAMSBURG CL	MERRIMAC TRAIL	0.17	15,333	2007	25,000	4	4	A-C	D	0.55	-
YC	VICTORY BLVD	NEWPORT NEWS CL	ROUTE 17	0.85	50,111	2007	65,000	6	6	D	F	0.92	-
YC	VICTORY BLVD	ROUTE 17	HAMPTON HWY (RTE 134)	0.35	32,291	2007	36,000	4	4	D	D	0.84	-
YC	VICTORY BLVD	HAMPTON HWY (RTE 134)	BIG BETHEL RD (RTE 600)	1.02	19,853	2007	27,000	2	2	F	F	1.09	13
YC	VICTORY BLVD	BIG BETHEL RD (RTE 600)	CARYS CHAPEL RD (RTE 782)	1.25	20,895	2007	30,000	2	2	F	F	1.16	10
YC	VICTORY BLVD	CARYS CHAPEL RD (RTE 782)	POQUOSON CL	0.23	13,992	2007	19,000	2	2	A-C	F	0.77	-
YC	WALLER MILL RD	ROUTE 60	MOORETOWN RD	0.18	4,572	2007	18,000	4	4	A-C	A-C	0.13	-

LEGEND:

- **LEVEL OF SERVICE A, B, OR C (LOW TO MODERATE CONGESTION)**
- **LEVEL OF SERVICE D (MODERATE CONGESTION)**
- **LEVEL OF SERVICE E OR F (SEVERE CONGESTION)**
- **PLANNED ROADWAY CAPACITY IMPROVEMENT INCLUDED IN 2030 LRTP**

Traffic data sources: Virginia Department of Transportation, Hampton Roads jurisdictions, and other regional traffic counts.

Existing weekday volume data is from 2007-2009 when available. If count data was not available during this time period, older counts or estimates were used.
2030 Volumes and Lanes are based on the Amended Hampton Roads 2030 Long-Range Transportation Plan, dated December 2009.

The PM Peak Hour is defined as the highest hourly traffic volume within 4 consecutive 15-minute periods between the hours of 3 pm and 7 pm on typical weekdays.
For Arterials and Collectors, the PM Peak Hour Level of Service (LOS) is based on the peak direction of travel during the PM Peak Hour.
For Interstates and Freeways/Other Expressways, the PM Peak Hour Level of Service (LOS) was determined for both directions of travel.
The Existing PM Hourly Peak Direction Volume to Capacity ratio (V/C) is the ratio of the total volume in the peak direction during the PM Peak Hour to the hourly capacity of the peak direction. A V/C ratio of 1.0 or higher is over capacity.
The CMP Criteria Ranking Score is based on the methodology included in the Ranking of CMP Congested Corridors section beginning on page 32.

Historical traffic count information for these roadway segments is available at http://www.hrtpo.org.

Appendix C – Process for Ranking Congested Corridors

Roadway congestion is prevalent throughout Hampton Roads. With 597 lane-miles in Hampton Roads that are currently severely congested during the PM peak hour, additional criteria were needed to rank and differentiate between the most critical corridors in the region. This section details the methodology used to determine which congested corridors throughout Hampton Roads would be analyzed in this CMP report.

Roadway Segments

As mentioned in the Ranking of CMP Congested Corridors section of this report, each congested roadway segment in Hampton Roads (those that currently have PM peak hour levels-of-service of E or F) was assigned a CMP Segment Ranking Score based on five criteria: existing level of service, freight, safety, travel speeds, and whether the segment was part of the National Highway System or Strategic Highway Network. Each of these five criteria was weighted according to the table to the right, and the maximum CMP Segment Ranking Score that any roadway segment could achieve was 25 points. The CMP Segment Ranking Score for each roadway segment is included within the tables shown in **Appendices A and B**.

Although CMP Segment Ranking Scores were produced for each congested roadway segment in the region, these roadway segments needed to be grouped into corridors for analysis purposes. Congested corridors were created based on the location and proximity of each of the congested roadway segments. This led to a preliminary list of 41 congested corridors throughout Hampton Roads.

The next step was to rank each of the 41 congested corridors in order to determine which ones would be defined as "CMP Congested Corridors" and further analyzed in this report. For each individual

CMP Segment Ranking Criteria Weights

CMP CRITERIA	ARTERIALS		FREEWAYS	
	VALUE	SCORE	VALUE	SCORE
Existing LOS[1] (10 point max.)	LOS A-D	0	LOS A-D	0
	LOS E	8	LOS E	8
	LOS F	10	LOS F	10
Freight[2] (5 point max.)	Daily # of Trucks		Daily # of Trucks	
	≤ 500	0	≤ 1500	0
	501 - 1000	2	1501 - 3000	2
	> 1000	3	> 3000	3
	Daily % of Trucks		Daily % of Trucks	
	≤ 4%	0	≤ 4%	0
	4% - 8%	1	4% - 8%	1
	> 8%	2	> 8%	2
Safety[3] (5 point max.)	Percentile		EPDO Rate Per MVMT	
	0th - 25th	0	≤ 1	0
	25th - 50th	0	1 - 2	0
	50th - 75th	3	2 - 3	3
	75th - 100th	5	> 3	5
HRPDC 2005 Travel Time[4] (2 point max.)	LOS A-D	0	LOS A-D	0
	LOS E	1	LOS E	1
	LOS F	2	LOS F	2
NHS/Strahnet (3 point max.)	None	0	None	0
	NHS	2	NHS	2
	STRAHNET	3	STRAHNET	3

1 – Roadway segment must have an Existing LOS of E or F to be scored.
2 – Based on VDOT vehicle classification data. For those locations where truck data is not collected by VDOT, VDOT estimates were used.
3 – Based on VDOT crash data. For freeways, data from 2006-2008 was used and freeways were analyzed based on the Equivalent Property Damage Only (EPDO) Rate per million vehicle-miles of travel (MVMT). This rate takes into account the number and severity of crashes per amount of travel. For arterials, only data from 2008 was used since VDOT began including the location of all crashes within cities in 2008. Since only one year of data was available, arterials were scored based on their percentile relative to all CMP roadway segments in terms of the total number of crashes.
4 – Based on the Regional Travel Time collected by HRPDC in 2005. Levels of Service were determined based on these travel speeds by using Highway Capacity Manual methods. The direction with the lowest travel speed was used on all arterial segments.

roadway segment within the congested corridor, data was collected for the segment length, number of lanes, average daily volume, and the CMP Segment Ranking Score. This data was used to produce three factors for each roadway segment within the corridor: the average daily traffic volume, the amount of traffic in terms of average daily volume per lane of travel, and the CMP Segment Ranking Score.

Each roadway segment within the corridor was assigned points based on these three factors as shown in the table below:

Points for Based on Average Daily Volume, Average Daily Volume per Lane of Travel, and CMP Segment Ranking Score

Factor	Criteria	Points
Average Daily Volume (Freeways by direction, Arterials for both directions)	Less than 20,000 vehicles per day (vpd)	0
	Between 20,000 vpd and 40,000 vpd	1
	Between 40,000 vpd and 60,000 vpd	2
	Greater than 60,000 vpd	3
Average Daily Volume Per Lane of Travel	Less than 10,000 vpd per lane (Arterials) Less than 18,000 vpd per lane (Freeways)	0
	Between 10,000 and 12,500 vpd per lane (Arterials) Between 18,000 and 22,000 vpd per lane (Freeways)	1
	Between 12,500 and 15,000 vpd per lane (Arterials) Between 22,000 and 25,000 vpd per lane (Freeways)	2
	Greater than 15,000 vpd per lane (Arterials) Greater than 25,000 vpd per lane (Freeways)	3
CMP Segment Ranking Score (Included in Appendices A & B)	Less than 12	0
	12 or 13	1
	14 or 15	2
	16 or 17	3
	18 or 19	4
	20 or higher	5

Corridors

Once these factors were scored, they were added together for each roadway segment within the corridor, with the highest possible score being 11 points. These scores for each roadway segment were then averaged for the entire corridor by producing a weighted average based on each segment length (CMP Weighted Corridor Score). CMP Weighted Corridor Scores were calculated for all 41 congested corridors (12 freeway and 29 arterial corridors). Each of the congested corridors was ranked based on the CMP Weighted Corridor Score; freeways and arterial corridors were ranked separately. Not only do freeways and arterials operate in a different manner, possible countermeasures to relieve congestion also vary greatly between freeways and arterials. In addition, while VDOT maintains nearly all of the freeway system in Hampton Roads, arterial roadways are maintained either by the city that they are located within or by VDOT if they are located within a county.

The top 6 freeways and top 10 arterial corridors with the highest CMP Weighted Corridor Scores were selected as CMP Congested Corridors. These 16 corridors were analyzed in the Application of Strategies to CMP Congested Corridors section of this report.

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HRTPO Public Comment

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RE: Public Comment Regarding the Hampton Roads Congestion Management Process: 2010 Update Draft Report
(Public Comment Follows HRTPO Staff Response)

HRTPO Staff Response

Mr. Deitrich,

Thank you for taking the time to flip through the Hampton Roads Congestion Management Process document and providing us with your comments. As you probably know, funding for new roadway construction has been scarce in recent years and is expected to become even more so in the future. Widening I-64 between Route 199 south of Williamsburg and Jefferson Avenue and constructing a limited-access freeway parallel to Route 460 are both included in the 2030 Long Range Transportation Plan for engineering work, albeit not for construction. Route 460, however, is a priority for VDOT and they are currently soliciting proposals from the private sector and offering incentives to construct the roadway.

If you have any additional questions or comments, please feel free to submit them to us.

Name: Charles Dietrich
Date: August 3, 2010
Subject: HR Congestion Management 2010 Update

Public Comment Input (Via E-mail)

Only just today found the subject document, have not had much time to read through it. Wanted to comment on CMP CONGESTED CORRIDOR - ARTERIAL #7 Jefferson Avenue, AND I-64 in that vicinity, and beyond.

Came to this area mid-94, active duty then, assigned to Langley AFB, lived in James City County, drive hwy 60 to Ft Eustis Blvd, to I-64, to the Hampton Roads Center pkwy and back every day since. Endured the improvements to I-64 which began not so long after I arrived.

1. It was crazy to NOT continue the I-64 widening to at LEAST Ft Eustis Blvd. And yes, it needs to be widened on to Williamsburg, that stretch straightened and leveled.

2. Widening/improving hwy 460 is a better alternative to widening I-64 from I-295 to Williamsburg. The tunnels already can't handle the existing traffic, bringing more down a wider I-64 will only compound the problem. If traffic routes to a widened hwy 460, YOU DON'T NEED ANOTHER TUNNEL!

3. I told VDOT someone would get killed at I-64 west exit 255, and they have. If you'll look at where people live, there are a city full on the James River side of the rail line, there aren't so many ways for them to cross over the rail line between J Clyde and Ft Eustis Blvd (3: Bland, Denbigh and Oyster Point). Someone needs to get the clue. Five miles worth of urbanites between exits 250 and 255, they all have to cross the tracks to go anywhere. This needs to be a factor on your Arterial #7, Probable Causes of Congestion. It is certainly the reason for the "weave" from the west 255 exit to Bland Ave.

4. Overall, I suggest a significant contributor to traffic problems on the peninsula are the lack of through roads;

a. Warwick on one side of the tracks, capacity deficient and high in signals per mile
b. Jefferson in the middle, capacity deficient and high in signals per mile
c. Hwy 17 on the other side, capacity deficient and high in signals per mile
d. I-64, where everyone goes to try to get moving, capacity deficient from mile 254 west

5. And lastly, if you have NOT tried to drive hwy 60 from Williamsburg to Newport News between 4 and 6 pm on a Friday during the summer, you are ignoring the problem noted in #1 above.

Thanks for reading.

Charles Deitrich
JCC

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HRTPO Public Comment

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RE: Public Comment Regarding the Hampton Roads Congestion Management Process: 2010 Update Draft Report
(Public Comment Follows HRTPO Staff Response)

HRTPO Staff Response

Mr. Brown,

Thank you for submitting your comment in regards to our Hampton Roads Congestion Management Process report. As part of our CMP, we have analyzed congestion at all of the regional tunnels, particularly the HRBT. Based on the data we have available, each lane of the Hampton Roads Bridge-Tunnel can handle at most about 1,600 to 1,700 vehicles per lane per hour, which is about 25% lower than a normal lane of Interstate can handle. This reduced capacity is what results in the notorious backups.

There are various causes for this reduction in capacity. Some of them are physical in nature, such as the fact that trucks naturally slow down on the steep upgrade coming out of the tunnel. Others factors are due to human nature. Many people feel uncomfortable driving through tunnels with the closeness of the walls and adjacent traffic, and the lack of sight distance between them and the roadway in front of them. This causes many drivers to either slow down or leave more room between them and the vehicle in front of them. This is especially true of those drivers such as tourists that are not familiar with driving through such a facility.

In order to increase the capacity of each lane in the tunnels to the same levels as those on typical Interstate highways, these human factors would need to be mitigated in some way. One possibility is that new and upcoming vehicle technologies (the program is called Intellidrive) would allow vehicles to travel much closer to each other, with each vehicle communicating with one another to assure that speeds are maintained and crashes will not occur.

If you have any additional questions or comments please feel free to ask.

Name: Roger Brown
Date: August 3, 2010
Subject: HR Congestion Management 2010 Update

Public Comment Input (Via E-mail)

Everyone complains that the congestion at the HRBT is so terrible, but has anyone really analyzed WHY it is so congested? I have noticed that when I am sitting in traffic at the HRBT traffic slows on the approach to the tunnel. At first I assumed that there must be an

accident, disabled vehicle, or car pulled over by police in the vicinity. But after getting through the tunnel, everyone sped back up to normal speed. So I presume that the cause of the backup is people slamming on their brakes on approach. Another tube through the tunnel will not solve this problem. Has anyone come up with a solution to this?

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HRTPO Public Comment

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RE: Public Comment Regarding the Hampton Roads Congestion Management Process: 2010 Update Draft Report
(Public Comment Follows HRTPO Staff Response)

HRTPO Staff Response

Mr. McDaniel,

Thank you for your comment regarding our Congestion Management Process report. I believe what you are referring to is a Facebook viewer poll that WAVY-10 did yesterday asking viewers what they thought the worst traffic bottlenecks were in the region. According to their poll responses, the Hampton Roads Bridge-Tunnel apparently ranked 10th on their list, with I-264 in Virginia Beach being the highest ranked.

In our Congestion Management Process report, the Hampton Roads Bridge-Tunnel ranked #1 as the most congested freeway segment in our region as you expected.

Name: David McDaniel
Date: August 4, 2010
Subject: HR Congestion Management 2010 Update

Public Comment Input (Via E-mail)

Are you kidding me?? HRBT ranked 10th?? How insulting that the absolute WORST traffic nightmare in Virginia is ranked 10th locally! I've said for years only an EXPANSION will solve the HRBT traffic problem. You need 4 lanes MINIMUM each way, but you'll continue to ignore common sense. You'll continue to propose worthless 3rd and 4th crossings and waste our tax money! You'll NEVER do the right thing - EXPAND the TUNNEL!

Dave McDaniel
Yorktown

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HRTPO Public Comment

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RE: Public Comment Regarding the Hampton Roads Congestion Management Process: 2010 Update Draft Report
(Public Comment Follows HRTPO Staff Response)

HRTPO Staff Response

Mr. Bohlken,

Thank you for taking the time to send us your comments regarding the bottleneck on I-64 just west of Jefferson Avenue. As you may have noticed this area on I-64 ranked fourth highest on our regional list in the Congestion Management Process report, behind the Hampton Roads Bridge-Tunnel, Downtown Tunnel, and I-264 in Virginia Beach (in the area where all the ramps from I-64 merge together and drops to 4 lanes in each direction). We've studied this location and agree that the bottleneck area where westbound I-64 drops from 4 to 2 lanes (and as you mentioned, where the Jefferson Avenue on ramp also merges) is obviously both a roadway capacity and a safety problem, and VDOT also recognizes that this area will be a major chokepoint during an evacuation. Plans have been in place through the years to continue widening I-64 up the Peninsula to Route 199 just southeast of Williamsburg but have been put off due to a lack of funding. Currently this project is in the 2030 Hampton Roads Long-Range Transportation Plan although no funding has been identified for construction.

If you have any additional questions or comments please feel free to forward them to us.

Name: Gary Bohlken
Date: August 4, 2010
Subject: HR Congestion Management 2010 Update

Public Comment Input (Via E-mail)

As a former police officer who now commutes from Williamsburg to Hampton every day I feel I must comment on the lack of concern for the choke point at Jefferson Ave and I-64 westbound. I have lived on the Peninsula since before the interstate was even built. I have driven this section of roadway since 1995 and am fully aware of the "improvements" attempted a number of years ago. Those improvements are what actually created the problem! I can see by your title that you are an engineer. The P.E. who signed off and approved the engineering drawings for this current condition should lose his license. Not just his job, but his license. If I knew the proper steps I would file the complaint myself. I can only hope that he has been eliminated from engineering any Virginia highways.

More specifically, to design a road in such a way that 5 lanes merge into 2 lanes in ¼ mile distance is not only ludicrous but dangerous as well. To have 4 lanes of I-64 merge into 2 would be bad enough but to bring the Jefferson Avenue entrance into play only exacerbates

the problem. For years while driving this section of highway I have just shaken my head at the lack of common sense at this location.

Since no one sees fit to permanently fix this situation I suggest that the HOV lane merge into the 3rd lane before you ever get to Jefferson Avenue. This should be done by "jersey" walls which people could not drive around. The 3rd travel lane should than be merged into a two lane configuration prior to the Jefferson Avenue traffic merging into the flow. Again, this should be done by the slow migration of "jersey" walls. If this were done over a 2 – 3 mile expanse the flow would improve.

I have heard the excuse that it is tourists not familiar with the roadways. I don't buy that. If they see a concrete wall they are going to merge no matter where they are coming from. It is more likely the same local drivers who every day try to push the limit and merge at the last possible moment. If you say you haven't seen it than I say you haven't driven through that stretch of roadway. As long as that roadway is allowed to stay open that is exactly what people will do. I have even seen tractor trailer drivers force cars to either swerve to avoid a collision or see cars stop completely by the intimidation of these trucks. I myself have been involved I countless near misses.

For 6 weeks last summer I was required by my job to drive from Williamsburg to the Virginia Beach Town Center area. Yes, it is a long drive but bar none, the worst traffic situation I saw in that entire trip was the merge at Jefferson Avenue and I-64 westbound coming home from work every day and especially Fridays. How long is the HRT Planning Organization willing to ignore this traffic hazard? Does the organization truly believe that in the event of an evacuation order that the biggest problem is not going to be this 1 mile stretch of highway?

I have always voted against any issue to raise taxes to improve roads throughout the Hampton Roads area because most of the listed projects are in the Norfolk/Virginia Beach area. I will continue to do so. James City County/Williamsburg is recognized as being one of the fastest growing communities in the state and to ignore the increased traffic flow through the Peninsula is almost arrogant. Whether the organization sees fit to fix this or pass it on to those who are, is entirely at the discretion of the organization but I say to ignore this issue is to invalidate the whole purpose of this organization.

Sincerely,
Gary L. Bohlken

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HRTPO Public Comment

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RE: Public Comment Regarding the Hampton Roads Congestion Management Process: 2010 Update Draft Report
(Public Comment Follows HRTPO Staff Response)

HRTPO Staff Response

Mr. Pycior,

Thank you for providing us with your comment regarding Shore Drive. Although Shore Drive is clearly a congested corridor, it did not make our list of Top Ten congested roadways throughout the region that we analyzed in detail. We will continue to monitor regional congested roadways in our future updates to the Congestion Management Process, including the Shore Drive corridor.

Name: John Pycior
Date: August 4, 2010
Subject: HR Congestion Management 2010 Update

Public Comment Input (Via E-mail)

The worst traffic spot in Hampton Roads, in my opinion, is Shore Drive due to the recent reduction in the speed limit. It was bad enough before due to the pedestrians who consistently break the law by jaywalking and ignoring the walk/don't walk signals.

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HRTPO Public Comment

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RE: Public Comment Regarding the Hampton Roads Congestion Management Process: 2010 Update Draft Report
(Public Comment Follows HRTPO Staff Response)

HRTPO Staff Response

Karin,

Thank you for taking the time to provide us with your comments regarding traffic signal synchronization. The City of Virginia Beach is currently in the process of retiming and synchronizing traffic signals in various corridors as part of their Traffic Management System and Center that they have been constructing over the last few years. I've included a copy of their most recent newsletter that mentions a little about the system and the intersections that have recently had their signals retimed.

If you want to contact Virginia Beach officials regarding any specific intersections you think should be retimed or better synchronized, you can send them a comment through their Roads and Traffic website. The name of their website is a little long, but it's http://www.vbgov.com/vgn.aspx?vgnextchannel=db9ffd67f3ad9010VgnVCM100000870b640aRCRD&vgnextparchannel=6e5ffd67f3ad9010VgnVCM100000870b640aRCRD.

If you have any additional comments regarding transportation in Hampton Roads, please feel free to submit them to us.

Name: Karin
Date: August 4, 2010
Subject: HR Congestion Management 2010 Update

Public Comment Input (Via E-mail)

Can someone explain to me why the traffic lights in the Hampton Roads region are not synchronized? Don't waste our money on surveys and studies. Synchronizing makes sense. For instance, look at Independence Blvd in VA Beach. Cars get stuck in the intersections because either the traffic light they are at changes too quickly, or the traffic light ahead is red or changes late. The same thing goes for Indian River Road in Virginia Beach. If you want to do a study, look at what traffic lights have a lot of traffic at them and which ones do not. If there are many cars, the either it doesn't change quick enough or the one before it changes too often. Here is an example. Independence and Jeanne Street. The traffic light there changes 2-3 times more often than the one at Virginia Beach Blvd. I know this same issue occurs on some of the major streets in Hampton and Newport News as well. Thank you.

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HRTPO Public Comment

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RE: Public Comment Regarding the Hampton Roads Congestion Management Process: 2010 Update Draft Report
(Public Comment Follows HRTPO Staff Response)

HRTPO Staff Response

Mr. Throupe,

Thank you for taking the time to provide us with your comments regarding travel speeds in Hampton Roads. You may or may not know this but there are laws in place in Virginia regarding minimum speeds and speed limits, although it's vague in that it only mentions that "No person shall drive a motor vehicle at such a slow speed as to impede the normal and reasonable movement of traffic."

Regarding your comment about trucks, all trucks are currently restricted from the left-most lane of interstates with three or more lanes in each direction when the speed limit is 65 mph or higher. Trucks may also not travel in the left lane of interstates with two lanes in each direction when their speed is below the posted speed limit.

If you have any additional questions or comments, please feel free to submit them to us.

Name: Ken Throupe
Date: August 4, 2010
Subject: HR Congestion Management 2010 Update

Public Comment Input (Via E-mail)

I've read the report and commend your efforts. Traffic flow in Hamptom Roads is a problem. In my travels I have observed the main cause of congestion to be drivers unwillingness to use the excellerator and yield to faster moving traffic. Rt 64 is a good example. The speed limit ranges from 60-65MPH. Cars and trucks travel 45-75MPH in all lanes. Congestion results because numerous pockets of traffic are stuck behind the slowest moving vehicles. I suggest implementing a few new traffic rules that a time study may prove keep traffic flowing. First, ban all trucks and haulers from the left lanes. Second, change "Speed Limit" to "Required Speed" and enforce it allowing a 5MPH leeway to those exceeding it.This plan also works for secondary roads with one additional rule. Require the use of hazard lights and pull over/yeild when not able to maintain the required speed.

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HRTPO Public Comment

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RE: Public Comment Regarding the Hampton Roads Congestion Management Process: 2010 Update Draft Report
(Public Comment Follows HRTPO Staff Response)

HRTPO Staff Response

Mr. Pons,

Thank you for taking the time to send us your comments regarding I-64. Plans have been in place through the years to continue widening I-64 up the Peninsula to the Route 199 interchange just southeast of Williamsburg but have been delayed due to a lack of funding. This project is currently in the 2030 Hampton Roads Long-Range Transportation Plan but at this point no funding has been identified for construction.

Name: Philip E. Pons
Date: August 4, 2010
Subject: HR Congestion Management 2010 Update

Public Comment Input (Via E-mail)

Please do something about I64 East & West bound particularly between Jefferson Ave and Williamsburg. Also, do something about the speeding trucks on that same stretch!

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HRTPO Public Comment

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RE: Public Comment Regarding the Hampton Roads Congestion Management Process: 2010 Update Draft Report
(Public Comment Follows HRTPO Staff Response)

HRTPO Staff Response

Mr. Brown,

Just to give you a little information on the differences between the HRBT and the MMMBT, the HRBT currently handles about 92,000 vehicles each weekday while the MMMBT is much lower, around 60,000 vehicles each weekday. The differences between the two facilities during the afternoon rush hour is much smaller, with the MMMBT only handling about 12% fewer vehicles during rush hour. Volumes at the MMMBT are also growing much faster (about 5% per year historically) than they are at the HRBT (about 1% per year). It's possible that the MMMBT will one day carry more vehicles during rush hour than the HRBT since the facility has slightly wider lanes, higher vertical clearances, the tunnel itself is shorter, etc.

Name: Roger Brown
Date: August 3, 2010
Subject: HR Congestion Management 2010 Update

Public Comment Input (Via E-mail)

Thank you very much for your response!

When I first moved to this area in 1993, the (admittedly lighter) traffic flowed through the MMBT at highway speed. Is the MMBT tunnel wider than the HRBT? Or is the greater number of cars at the HRBT to blame? I do understand that the trucks will naturally slow coming out of the tunnel, but not to the 20 mph speeds that are common there. As well, that should only be the right lane anyway. And I think part of the main problem with traffic in this area is the tendency for cars to follow one another too closely. If there were more space between cars, one frightened motorist applying the brakes on approach to the tunnel would have little effect. But with current conditions, when one person slams on the brakes it creates a chain reaction that seems to last the whole rush hour.

Part of the cause of the tendency to follow too close is that many people don't want to let other cars merge, when the very act of not letting cars merge is what causes many backups in the first place!

Keep up the great work! You are in a tough spot with transportation in this region.

Take care,
Roger Brown

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HRTPO Public Comment

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RE: Public Comment Regarding the Hampton Roads Congestion Management Process: 2010 Update Draft Report
(Public Comment Follows HRTPO Staff Response)

HRTPO Staff Response

Mr. Jenkins,

Thanks for the comment and the update. Changes have been made to the CMP report per your recommendation.

Name: Tom Jenkins
Date: August 4, 2010
Subject: HR Congestion Management 2010 Update

Public Comment Input (Via E-mail)

I was reviewing the draft Hampton Roads Congestion Management Process when I noticed the description of The Former Jordan Bridge on Page 7. The second paragraph reads:

"Plans are in place for a private developer to build a replacement bridge at this site, although financing issues have delayed the project."

You may not be aware, but we have been working on the demolition of the Jordan Bridge since April 12 and we have recently completed our geotechnical investigations for the new bridge. We plan on beginning to drive test piles for the new bridge in about a month and the bridge will be open to traffic by the end of 2011. Our efforts are highlighted on the City of Chesapeake's website at:
http://www.chesapeake.va.us/services/depart/pub-wrks/bridges-jordan-faqs.shtml

Based upon the above, we suggest that the sentence be changed to more accurately reflect the project status and our current work on-site:

"Plans are in place for a private developer to build a replacement bridge at this site and the bridge is scheduled to be complete by the end of 2011."

We appreciate the opportunity to review the draft document and provide our comments to the TPO.

Thanks,
Tom

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HRTPO Public Comment

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RE: Public Comment Regarding the Hampton Roads Congestion Management Process: 2010 Update Draft Report
(Public Comment Follows HRTPO Staff Response)

HRTPO Staff Response

Mr. Eley,

Thank you for providing us with your comments regarding I-64 widening and speed limits. Plans have been in place through the years to widen I-64 on the Peninsula from where it currently narrows near Jefferson Avenue to the Route 199 interchange just southeast of Williamsburg. These plans, however, have been delayed due to a lack of funding. This project is currently in the 2030 Hampton Roads Long-Range Transportation Plan but at this point no funding has been identified for construction.

Regarding your comment about speed limits, VDOT has a process in place for determining speed limits for each individual roadway. If you would like more information, VDOT maintains a website that discusses this process at http://www.virginiadot.org/info/faq-speedlimits.asp.

If you have any additional questions or comments about transportation in Hampton Roads, please feel free to submit them to us.

Name: Chris Eley
Date: August 5, 2010
Subject: HR Congestion Management 2010 Update

Public Comment Input (Via E-mail)

If I-64 west bound beyond exit 255 could be expanded to 3 lanes to I-295 that would help alleviate traffic. Speed limits also have a significant impact on traffic flow particularly along I-64, 264, 664. Each morning I travel I-64 East bound from Lee Hall to the Shipyard's downtown exit at 35th street. I encounter a significant amount of traffic as well as two speed changes going from 65mph to 60mph to 55mph. When drivers travel at 70mph or greater there is less congestion. It is unfortunate that in 2010 we are relegated to a speed limit of 55mph on a significant amount of our VA interstates. A speed limit set by the Nixon administration.

Tunnel traffic is congested because drivers do not maintain the speed limit when entering and while driving through the tunnel. I find that you can sit in a 5 mile backup and come out the HRBT and there was no accident just drivers driving under the speed limit.

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HRTPO Public Comment

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RE: Public Comment Regarding the Hampton Roads Congestion Management Process: 2010 Update Draft Report
(Public Comment Follows HRTPO Staff Response)

HRTPO Staff Response

Mr. Quail,

Thank you for taking the time to read the Congestion Management Process report and providing your comments to us. All of the comments we receive (including yours) are provided to both our Transportation Technical Advisory Committee, which is primarily comprised of transportation planners and engineers from all of the Hampton Roads cities and counties as well as VDOT, and the Hampton Roads Transportation Planning Organization, which is primarily comprised of regional mayors, city council persons, and state legislators.

If you have any questions or concerns in the future about transportation in Hampton Roads, please feel free to submit them to us.

Name: Jim Quail
Date: August 5, 2010
Subject: HR Congestion Management 2010 Update

Public Comment Input (Via E-mail)

I just scanned over the report on line and must say what a thorough and concise report. I have lived in the tidewater area my entire life and have seen most of the road facilities built starting with the Coleman Bridge in 1952. We have a problem which goes back to the legislature. If the rural areas of this state had the same quality of transportation as the urban areas, there would be no "rural voting block" on highway funding. The urban areas have funded the highways in the rural areas for years. If we could spend the fuel tax dollars in a fairly distributed method then we would all have the same number of potholes.

I feel there are many small initiatives we could implement which would help solve some of the problems at the HRBT.

1. At the HRBT we used to have tunnel employees inside waiving motorist on to keep the speed up.

2. there used to be lighted signs saying keep the speed up.

3. We could have police patrols in the tunnels to enforce the minimum speed limits. I travel through the HRBT weekly and have never seen any type of police car drive through, there is no enforcement of any laws. They are only there to work accidents.

4. The "Tunnel-phobics" are a major part of the problem, many times we go through the tunnel in heavy traffic and see the car behind us at least a quarter mile back, sometimes out of sight. These people need to be made aware of the importance of keeping up the speed by info signs and enforcement.

5. The reckless driver and the tailgaters are causing accidents.

6. Last week we went through the HRBT at 9:00pm, they are installing lights and had one lane blocked, it took over an hour to travel from Mallory St to the tunnel, the entrance ramp just before the tunnel was open and there was a steady stream of cars coming from behind us and going through downtown Hampton and back on the interstate combined with the merge left it created a large back up. A little planning by VDOT by shutting down the ramp would help smooth the flow.

We drive the CBBT weekly also and it is a pleasure to transverse, well maintained, laws are enforced regularly and much less reckless driving but they do not enforce the tunnel phobics violations either.

The Rt 460 connector or new interstate is a great idea, much of the traffic between Richmond and Southside uses I-64, it would help reduce traffic. I-64 is at a point of no return, any construction between Newport News and Richmond would create gridlock.

Any fuel taxes collected should be spent on highways, the general assembly has stolen this money for the past 30 years for other projects, what a bunch of fools. Now they act like it is our fault we are reaching gridlock. We sit in traffic burning our fuel, the potholes are causing damage to the vehicle's suspension, which we have to pay for, last month I hit a pothole and it split the side of my tire. We cannot go to doctors, shopping or entertainment on the southside because we do not know if it will take one, two or three hours to get there.

Mass transportation is a joke, what do you do when you get to the end? I cannot walk 2 miles, The Tide and the HRT are a start but there has to be a way to connect to your destination. HRT's routes on the peninsula are a mess. I tried to ride one from Jefferson and Harpersville to Patrick Henry Mall, a straight line distance of 4 miles, it took hours and a transfer. HRT needs to use routes like Manhattan: cross town, uptown downtown routes that intersect, the Peninsula is perfect for it.

Driving in tidewater is comparable to entering combat, If you do not drive 15 to 20 miles per hour over the limit the cars are on your bumper, cutting you off, pulling out in front of you, giving you the bird, etc, no wonder road rage is gripping people. We expect a little help from our governments and what do we get, nothing.

The southside is a dead end cul-de-sac with no possibility of evacuation for a category 5 hurricane, hurricane gates, ha! All they will do is keep people on the parking lot that is I-64, four laned or not, no gas stations, no rest rooms, no medical emergency access, now there's a disaster waiting to happen. What genius in VDOT thought of that and spent millions. The southside cannot even move the daily rush hour traffic much less a hurricane evacuation.

Thank God we have a new governor who is trying to do something for us, the last idiot didn't have a clue.

We need to set priorities, number 1, build an expressway through Norfolk to Petersburg to relieve some of the congestion on I-64 in the HRBT and to Richmond. Number 2, build another tunnel across Hampton Roads. Then the smaller projects can be dealt with.

Number 3, improve mass transit to serve more of the population, buses are modern day trolleys but who knows how they run? or when.

Thanks for asking for input and thanks for your efforts, I know you have little control over the issues I brought up but you can pass my concerns on to higher ups, the people making poor decisions and wasting my tax dollars need to be held accountable.

Jim Quail

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HRTPO Public Comment

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RE: Public Comment Regarding the Hampton Roads Congestion Management Process: 2010 Update Draft Report
(Public Comment Follows HRTPO Staff Response)

HRTPO Staff Response

Mr. Brandon,

Thank you for taking the time to read the Congestion Management Process report and providing us with your insightful comments.

In regards to your first specific comment, we agree that the eastbound tube should have a higher capacity than the westbound tube for the reasons you described. However, the fact that the eastbound tube carries fewer vehicles during the afternoon peak period (and in fact even fewer than the westbound direction does) is what led us to conclude that the higher number of commuters using the facility during the morning rush hour is what primarily contributed to the additional number of vehicles that could pass though the tube during congested conditions.

Regarding your second specific comment, we were a little surprised by the step-by-step increase in backups at the HRBT throughout the week as well. However, comparing this to the average traffic volumes by day of week at the HRBT in 2009 (88,500-Monday, 90,300-Tuesday, 91,500-Wednesday, 93,300-Thursday, and 96,200-Friday), it would make sense that the backups should increase from day to day as well.

Your general comment has also been noted and will be provided to VDOT since they handle operations at the tunnels. All of the public comments for this report are provided to transportation engineers and planners from around the region, including officials from VDOT.

If you have any additional questions or concerns regarding transportation in Hampton Roads in the future, please feel free to submit them to us.

Name: Joseph Brandon
Date: August 5, 2010
Subject: HR Congestion Management 2010 Update

Public Comment Input (Via E-mail)

Thank you for the opportunity to have input into this report.

My comments are a result of having lived in the Hampton Roads area since 1969, and commuting from my home in Hampton to my office in Norfolk through the Hampton Roads

Bridge-Tunnel (HRBT) five days a week from June 1974 through October 1988, and nine out of ten days from November 1988 through May 2007.

SOME SPECIFIC COMMENTS:

1. The last paragraph on page 12 states as follows:

   It should be noted that although the eastbound Hampton Roads Bridge-Tunnel is congested during both the morning and afternoon peak travel periods, the eastbound tunnel carries a higher vehicular volume during the morning peak period. The eastbound tunnel maxes out at about 870 vehicles per 15-minute period between 6:00 am and 7:30 am, which is 10% higher than the traffic flow carried during the afternoon peak travel period. This is likely due to a higher concentration of commuter traffic during the morning, and these commuters are more familiar and more comfortable driving through the tunnel than non-commuters.

   COMMENT: The conclusion seems to ignore the likelihood that the newer, wider, brighter EB tube facilitates a higher throughput. I'm not suggesting that your conclusion is wrong; maybe only incomplete.

2. Figure 10 on page 15 shows a noticeable, steady rise in HRBT WB backups from Monday to Friday. The lower Monday backup is somewhat explainable by the large number of government, and possibly other, employees choosing to take Monday as their regular day off in nine day work period. Friday should have about the same decrease in traffic backup due to the same phenomenon of employees choosing to take Friday as their regular day off, except that a large number of out of town workers and locals tend to leave town for the weekend through the HRBT on Friday.

   COMMENT: The steady rise from Tuesday through Thursday, amounting to about 25%, is not a change that I ever recall noticing, and while it does not seem to affect the extremes that would be used for planning purposes, this makes me question all of the data presented. The rise tends to say that even commuters need to become acquainted with driving the HRBT on a weekly basis, and while it's possible, I have to believe that I would have noticed it.

GENERAL COMMENT: I could question at least a few areas of traffic counts and backups at the HRBT, but it appears that you have captured the extreme conditions fairly well, and a long as you keep those conditions in mind in planning for future changes, my concerns will be satisfied.

SUGGESTION: I have a suggestion that amounts to mostly operational changes for the purpose of lowering driver tensions at the HRBT, and possibly many other places. This suggestion involves changing the way that traffic control is performed when one lane is closed, either for maintenance or for breakdowns/incidents. While numerous states use a "merge point" scheme to converge two lanes of traffic into one temporarily, Virginia does

not seem to use this method at all. The resulting conditions tend to create two sets of driving rules on the road, with those intending to follow the rules moving into the "open" lane and others driving in the "closed" lane, typically passing many people in the "open" lane. This creates high levels of unnecessary tension, and I've seen fist fights, wrecks, and a lot of hollering and name-calling as a result.

This problem is most evident at the HRBT in the WB lanes, as there are numerous signal lights available for use (misuse) by traffic controllers. It should have been evident many years ago that displaying a red light for a lane closure a mile before the constriction does not incentivize good driver behavior without appropriate policing.

Since May 2007, I have not commuted regularly across the HRBT and I even find myself reducing visits to the Southside because of the HRBT. I have also turned down consulting work that would have required some commuting. I have reduced regular involvement in organizations that require travel through the HRBT, and I've almost completely given up any involvement in the Southside that requires travel WB on the HRBT after about 2100 hours so as to avoid the inevitable crunch of two lanes to converge to one for maintenance work.

On a recent trip to Hampton from Norfolk after the beginning of maintenance work one evening, I decided to follow the traffic signals precisely, and to count the number of vehicles that passed me in the "closed" lane. I was initially stopped at the first WB traffic signal (at the inspection station), in the right lane with a green light, and the left lane had a red light. If a defined merge point had been defined, both lanes should have moved approximately equally, but by the time I got to the required merge point, over 200 vehicles had passed me in the left lane. I stopped counting at 200 because it was just too depressing to realize that the people intending to drive legally were being so unfairly burdened. Is it any wonder that nerves are frayed, and that people do some strange things? How does society get away with incentivizing such unfair, and ostensibly unlawful, behavior?

There are many discussions on the internet about this type of situation, and the ensuing behaviors, and while the situation that I described is likely not what the Virginia Department of Transportation (VDOT) intended, it is what happens, and has been happening since the late 1970s when the tolls were removed from the HRBT. Please! Please! Please! Let's address this issue immediately as a major "tension reliever," as the backups at the HRBT are a long way from being relieved.

I volunteer to share my experiences, to research and analyze solutions, and to help develop traffic control procedures to make use of current infrastructure in a more efficient manner. At worst, I can see the need for some additional signage to help acquaint drivers with changes, but the most significant changes would likely be to operational procedures.

Sincerely,

Joseph H. Brandon
Hampton, VA

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HRTPO Public Comment

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RE: Public Comment Regarding the Midtown Tunnel
(Public Comment Follows HRTPO Staff Response)

HRTPO Staff Response

Ms. Sotherland,

Good afternoon. Thank you for your phone inquiry pertaining to the Midtown Tunnel. As a review, you inquired the following:

- *Does the Midtown Tunnel carry 40,000 vehicles a day?*
- *Is the Midtown Tunnel the most heavily traveled road east of the Mississippi? Nation?*

Per the Draft 2009 Congestion Management Process (to be approved in September 2010), the average traffic on a given weekday on the Midtown Tunnel is 41,115 vehicles (Page 66). The value you provided in your inquiry is within range by rounding. As to your second question, the Hampton Roads Transportation Planning Organization cannot verify whether the Midtown Tunnel is the most heavily traveled road east of the Mississippi or the nation. We can verify that the Midtown Tunnel is the most heavily traveled two lane facility in the State of Virginia (Page 7). If you have any further inquiries on the Midtown Tunnel or other transportation facility, please do not hesitate to contact our Congestion Management Process Team for further assistance.

Have a pleasant day.

Name: Tara Sotherland
Date: August 6, 2010
Subject: Midtown Tunnel Inquiry

Public Comment Input (Via Phone)

Does the Midtown Tunnel carry 40,000 vehicles per day?
Is the Midtown Tunnel the most heavily traveled road east of the Mississippi River?
Is the Midtown Tunnel the most heavily traveled road in the Nation?