

**HAMPTON ROADS TRANSPORTATION PLANNING ORGANIZATION
VOTING MEMBERS**

Dwight L. Farmer
Executive Director/Secretary

CHESAPEAKE

Alan P. Krasnoff

GLOUCESTER COUNTY

Carter Borden

HAMPTON

George Wallace

ISLE OF WIGHT COUNTY

Delores Dee-Dee Darden

JAMES CITY COUNTY

Mary K. Jones

NEWPORT NEWS

McKinley Price

NORFOLK

Paul D. Fraim

POQUOSON

W. Eugene Hunt, Jr.

PORTSMOUTH

Kenneth I. Wright

SUFFOLK

Linda T. Johnson

VIRGINIA BEACH

William D. Sessoms, Jr.

WILLIAMSBURG

Clyde A. Haulman

YORK COUNTY

Thomas G. Shepperd, Jr.

MEMBERS OF THE VIRGINIA SENATE

The Honorable Thomas K. Norment, Jr.

The Honorable Frank W. Wagner

MEMBERS OF THE VIRGINIA HOUSE OF DELEGATES

The Honorable Christopher P. Stolle

The Honorable David Yancey

TRANSPORTATION DISTRICT COMMISSION OF HAMPTON ROADS

William A. Harrell, President/Chief Executive Officer

WILLIAMSBURG AREA TRANSIT AUTHORITY

Kevan Danker, Executive Director

VIRGINIA DEPARTMENT OF TRANSPORTATION

James Utterback, Hampton Roads District Administrator

VIRGINIA DEPARTMENT OF RAIL AND PUBLIC TRANSPORTATION

Thelma Drake, Director

VIRGINIA PORT AUTHORITY

Rodney Oliver, Interim Executive Director

**HAMPTON ROADS TRANSPORTATION PLANNING ORGANIZATION
NON-VOTING MEMBERS**

CHESAPEAKE

James E. Baker

GLOUCESTER COUNTY

Brenda G. Garton

HAMPTON

Mary Bunting

ISLE OF WIGHT COUNTY

Anne Seward

JAMES CITY COUNTY

Doug Powell

NEWPORT NEWS

Jim Bourey

NORFOLK

Marcus Jones

POQUOSON

J. Randall Wheeler

PORTSMOUTH

John Rowe

SUFFOLK

Selena Cuffee-Glenn

VIRGINIA BEACH

James K. Spore

WILLIAMSBURG

Jackson C. Tuttle

YORK COUNTY

James O. McReynolds

FEDERAL HIGHWAY ADMINISTRATION

Irene Rico, Division Administrator – Virginia Division

FEDERAL TRANSIT ADMINISTRATION

Brigid Hynes-Cherin, Regional Administrator, Region 3

FEDERAL AVIATION ADMINISTRATION

Jeffrey W. Breeden, Airport Planner, Washington Airports District Office

VIRGINIA DEPARTMENT OF AVIATION

Randall P. Burdette, Director

PENINSULA AIRPORT COMMISSION

Ken Spirito, Executive Director

NORFOLK AIRPORT AUTHORITY

Wayne E. Shank, Executive Director

CITIZEN TRANSPORTATION ADVISORY COMMITTEE

Shepelle Watkins-White, Chair

FREIGHT TRANSPORTATION ADVISORY COMMITTEE

William Bell, Co-Chair (Nonvoting Board Member)

Delegate Christopher P. Stolle, Co-Chair (Voting Board Member)

MILITARY LIAISONS

David A. Culler, Captain, U.S. Navy

John Little, Captain, U.S. Coast Guard

John J. Allen, Jr. Colonel, Langley

Thomas R. Wetherington, Colonel, Langley

INVITED PARTICIPANTS

Hollis D. Ellis, CTB

W. Shepperd Miller, III, CTB

HRTPO PROJECT STAFF

Camelia Ravanbakht, Ph.D.

Robert B. Case, Ph.D., P.E.

Kathlene Grauberger

Michael Long

Christopher Vaigneur

Deputy Executive Director

Principal Transportation Engineer

Senior Administrative Assistant

General Services Manager

Assistant General Services Manager

**Regional Procedures
for
Planned Closures at River Crossings**

PREPARED BY:



JANUARY 2014

REPORT DOCUMENTATION

TITLE

Regional Procedures for Planned Closures
at River Crossings

AUTHOR

Robert B. Case, PE, PhD

ABSTRACT

In response to several recent closings of multiple river crossings resulting in significant delays at remaining crossings, and in light of the fact that five (5) different organizations (below) now operate the subject (15) river crossings (following page), HRTPO staff has prepared a regional procedures document to help Operators prevent/minimize these delays.

REPORT DATE

January 2014

ORGANIZATION NAME, ADDRESS, & TELEPHONE

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

ACKNOWLEDGMENTS

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

NON-DISCRIMINATION

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

Regional Procedures for Planned Closures at River Crossings

Reason for This Document

In response to several recent closings of multiple river crossings resulting in significant delays at remaining crossings, and in light of the fact that five (5) different organizations (below) now operate the subject (15) river crossings (following page), HRTPO staff has prepared a regional procedures document to help Operators prevent/minimize these delays.

Purpose of This Document

The purpose of this document is to enable Operators to periodically close river crossings as necessary without causing major disruptions to the lives of Hampton Roads residents.

Scope of This Document

These regional procedures cover closure impact calculations and communication between—on one hand—the subject Operator and—on the other hand—the other Operators and the public. For Operators that operate multiple crossings, closing one crossing involves communication *within* that Operator organization. But because in-house procedures are best established by individual Operators, this procedures document does not cover the in-house communication necessary for those Operators that operate multiple crossings.

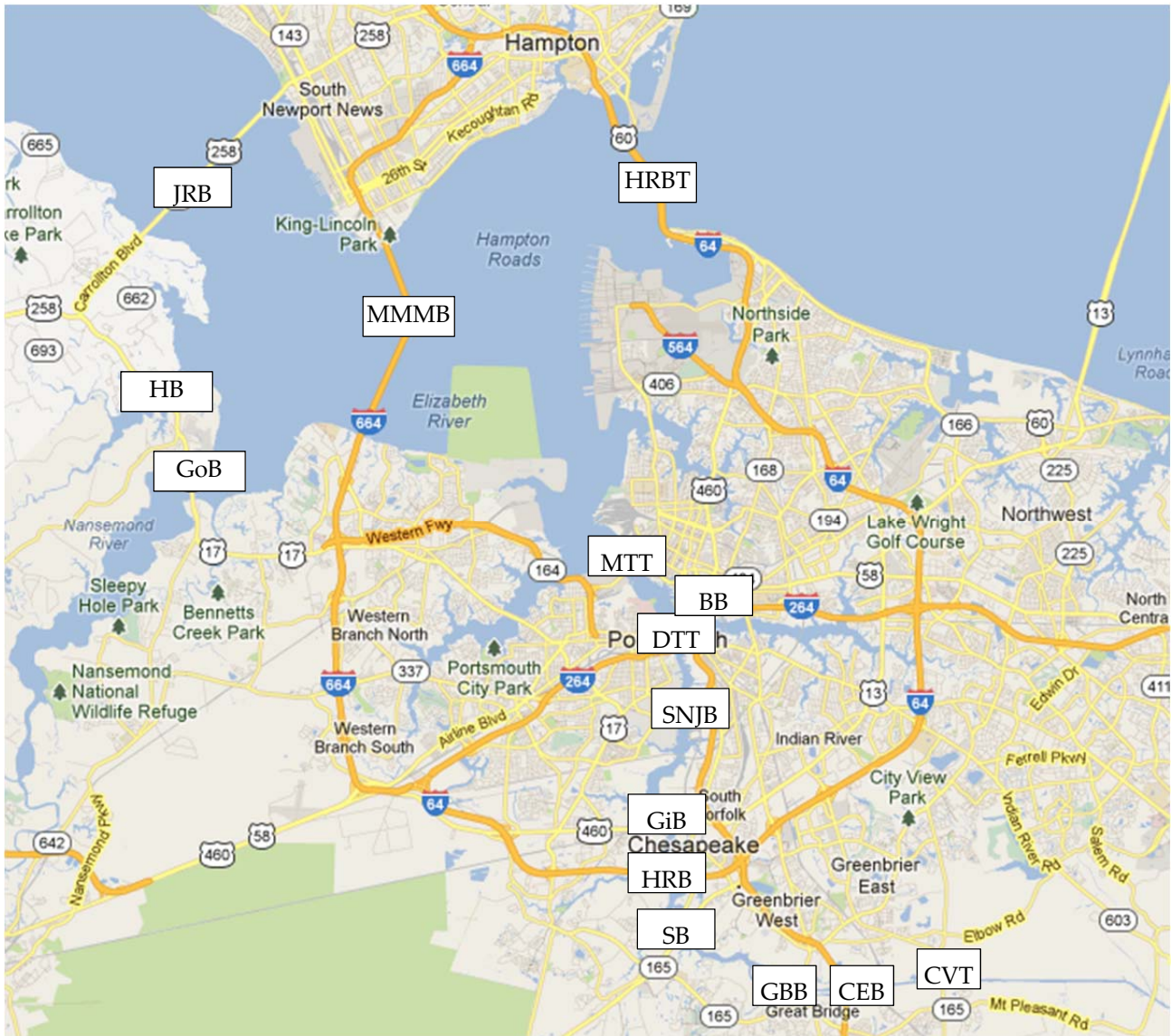
<u>Operator</u>	<u>Responsible Position</u>	<u>Current Holder & Responsible Person</u>
VDOT	District Traffic Engineer	Mike Corwin
Backup:	Regional Traffic Op's Manager	Ken Coody
Suffolk	City Traffic Engineer	Robert Lewis
Backup:	Superintendent II	Chad Oxton
ERC	Operations Manager	Ryan McLane
Backup:	Chief Operating Officer	Bruce Wilkerson
SNJB	General Manager	Kevin Crum
Backup:	Facility Manager	Tom Jenkins
Chesapeake	Traffic Engineer III	Steve Froncillo
Backup:	Traffic Engineer II	Andy Smith

Subject River Crossings

Operator

Crossing Group

1. Hampton Roads Bridge Tunnel (HRBT)	VDOT	Intracoastal, Harbor
2. Monitor-Merrimac Mem. BT (MMMBT)	VDOT	Harbor
3. Godwin Bridge (GoB)	Suffolk	Harbor
4. Hazelwood Bridge (HB)	VDOT	Harbor
5. James River Bridge (JRB)	VDOT	Harbor
6. Midtown Tunnel (MTT)	ERC	Intracoastal
7. Downtown Tunnel (DTT)	ERC	Intracoastal
8. Berkley Bridge (BB)	VDOT	Intracoastal
9. South Norfolk Jordan Bridge (SNJB)	SNJB	Intracoastal
10. Gilmerton Bridge (GiB)	Chesapeake	Intracoastal
11. High-Rise Bridge (HRB)	VDOT	Intracoastal
12. Steel Bridge (SB)	Chesapeake	Intracoastal
13. Great Bridge Bridge (GBB)	Chesapeake	Intracoastal
14. Chesapeake Expressway Bridge (CEB)	Chesapeake	Intracoastal
15. Centerville Turnpike Bridge (CVTB)	Chesapeake	Intracoastal



Application of This Document

This procedures document applies only to one (1) type of closure: closures which meet *all three* (3) of these criteria:

- 1) full closure of at least one direction,
- 2) planned in advance, and
- 3) expected to last 15+ minutes during the day (30+ minutes during the night)

This document does not apply to typical bridge lifts for marine traffic.

Because temporary bi-directional operation of open lanes (made necessary by the closure of other lanes) creates fewer problems than uni-directional or zero-directional operation, these procedures *do not apply* to temporary bi-directional operation.

The closure of a *direction* of a crossing (e.g. closing all westbound lanes without bi-directional operation of the remaining lanes) for a significant period must be handled carefully—regardless of the time or date of the closure—due to the geography of Hampton Roads. Hampton Roads is divided by water into three main areas: Peninsula, Western Southside, and Eastern Southside. Because of the expense of bridges and tunnels, the highway links between these three areas are limited in number. This limited number 1) causes, for those who reach a closed crossing, travel of significant distance to reach an open crossing, and 2) causes, during the daytime, crossings to be congested, such that daytime closures of one or more crossings can result in massive congestion at the remaining open crossings.

Although this document uses the verb “will” to describe the actions of Responsible Persons, there may be, of course, circumstances when it is impossible or unwise for such actions.

Organization of This Document

The procedures in this document are organized according to the time at which they would be executed:

- 1) identifying a *desired* closure time and date
- 2) setting a *planned* closure time and date
- 3) between setting a *planned* closure time/date and the closure event, and
- 4) during the closure event.

Note that the three key milestones [a) identifying a *desired* closure time/date, b) setting a *planned* closure time/date, and c) the closure event] are colored independently for ease of understanding.

Note that “*desired*” closure time is differentiated from “*planned*” closure time via italics.

Note that **key actions** are bold and boxed.

1. Identifying a *Desired Closure Time and Date*

Because experience has shown that closing two river crossings at the same time can result in massive congestion at the remaining crossings of the subject crossing group, prior to **setting a *Planned Closure Time and Date***, the Responsible Person will:

inspect his/her Outlook calendar¹ to see if a closure of another crossing—in the subject Crossing Group—is planned at the subject time

If another closure was previously scheduled in the same Crossing Group, the Responsible Person will typically choose a different *Desired Closure Time and Date*.

Once the Responsible Person has identified a unique *Desired Closure Time/Date*, he/she will:

estimate the impact which the subject closure would have on the other crossings.

Weekday daytime closures will typically be avoided.

One method of estimating the impact on paper/computer follows:

1. Select the key hour of the subject closure time period .
 - a. The key hour is the hour with the highest volumes.
 - b. For example, the key hour of a one-night 8pm-to-5am closure is 8-9pm.
2. For the key hour, look up the expected volume of the subject direction/crossing.
3. Spread this volume across other crossings in the subject Crossing Group.
4. Look up key-hour volumes of affected crossings and add diverted volumes to them.
5. Look up capacities of each affected crossing and compare them to above total volumes.

This method can be executed 1) manually using the aids (including volumes, diversion rates, and capacities) provided by HRTPO staff (see “A Method of Estimating the Impact of Crossing Closures in Hampton Roads”, HRTPO, August 2013), or 2) electronically using the spreadsheet provided by HRTPO staff (see “Spreadsheet to Calc River Crossing Closure Impact.xlsx”).

If the expected volume exceeds or nears² the capacity of any crossings, the Responsible Person will typically pick another *Desired Closure Time and Date* (and restart this step #1).

¹ As discussed in section 2, planned closures will have been added to the Outlook calendars of all Responsible Persons via “New Meeting” invitations from the Responsible Person of the subject closure.

² Because the hourly volumes provided by HRTPO staff to the operators are *average* hourly volumes, actual volumes may be higher. It is recommended, therefore, that Responsible Persons reconsider closures for which calculations indicate that diverted volumes will give other crossings total volumes *near* capacity.

2. Setting a *Planned Closure Time and Date*

After the Responsible Person has found a unique closing time/date that does not overtax other crossings, the Responsible Person will notify the other Responsible Persons (and HRT0 members), using an email list maintained by HRTPO staff, by:

adding the subject closure to the personal Outlook calendars of the other Responsible Persons (and HRT0 members) via a “New Meeting” invitation.

The Responsible Person will:

- 1) enter the *date and time* of the planned closure as the date and time of the “new meeting”, and
- 2) enter *a) the crossing name, and b) the closure direction* as the “location” of the “new meeting”.

Because the operation and maintenance of each facility is basically the responsibility only of its operator, each Responsible Person receiving the invitation will “accept” it, thereby adding notice of it to their calendars.

3. After **Setting a Planned Closure Time and Date** and Before **the Closure Event**

In order to prevent the public from driving to the subject crossing and finding it closed, the Responsible Person will:

alert the public of the planned closure time and date.

Responsible Persons will inform the public of the **planned closure time and date** via their Public Information Officers (PIOs) who will use various media to inform the public including:

Press releases	Paid advertisements	Mailings	Project website	Operator's website	Social media
Public meetings	Communication w/ stakeholders	Signs (including VMS)	Highway Advisory Radio	511 Virginia	On-site signage

The Responsible Person will typically alert the public of daytime closures further in advance than nighttime closures.

4. During **the Closure Event**

In order to prevent the public from driving to the crossing and finding it closed during directional closures lasting 15 minutes or more, the Responsible Person will:

- a) alert the public of the current closure,**
- b) identify any pertinent alternate routes for the public, and**
- c) alert the public of any current unusual congestion at the other crossings caused by the subject closure.**

Congestion at the other crossings can be monitored by common devices (e.g. traffic layer of the map of a smartphone). In addition, if, during the closure event, atypical congestion occurs at another crossing, the Responsible Person of the latter (newly congested) crossing will:

inform the closed crossing's Responsible Person of congestion at other crossing.

Communicating with the Public *During the Closure Event*:

For directional closures lasting 15 minutes or more, the Responsible Persons will communicate the above three (3) items to the public via various media including:

Fixed-Location Variable Message Signs (VMS)	Paid advertisements	511 Virginia
Portable VMS	Temporary Signs	Operator's website
Project website	Highway Advisory Radio	Social media

Afterword

Two types of persons have a need for the “public” alerts in sections 3 and 4 above: 1) persons with a common interest in closures (e.g. someone trying to get to work), and 2) persons with a life-or-death interest in closures (e.g. policemen, firemen, ambulance drivers, etc.). By using the media identified above, both types of persons will be informed.

Summary of Key Actions

1. Identifying a *Desired* Closure Time and Date

a) inspect his/her Outlook calendar to see if a closure of another crossing—in the subject Crossing Group—is planned at the subject time

b) estimate the impact which the subject closure would have on the other crossings.

2. Setting a *Planned* Closure Time and Date

add the subject closure to the personal Outlook calendars of the other Responsible Persons (and HRTO members) via a “New Meeting” invitation.

3. After *Setting a Planned Closure Time and Date* and Before *the Closure Event*

alert the public of the planned closure time and date.

4. During *the Closure Event*

The Responsible Person of the subject closure will:

a) alert the public of the current closure,

b) identify any pertinent alternate routes for the public, and

c) alert the public of any current unusual congestion at the other crossings caused by the subject closure.

The Responsible Person of a crossing congested by the subject closure will:

inform the closed crossing’s Responsible Person of congestion at other crossing.