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Regional Procedures

for

Planned Closures at River Crossings

PREPARED BY:

the *heartbeat* of HAMPTON ROADS TPO
TRANSPORTATION PLANNING ORGANIZATION

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TITLE
Regional Procedures for Planned Closures at River Crossings

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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.

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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

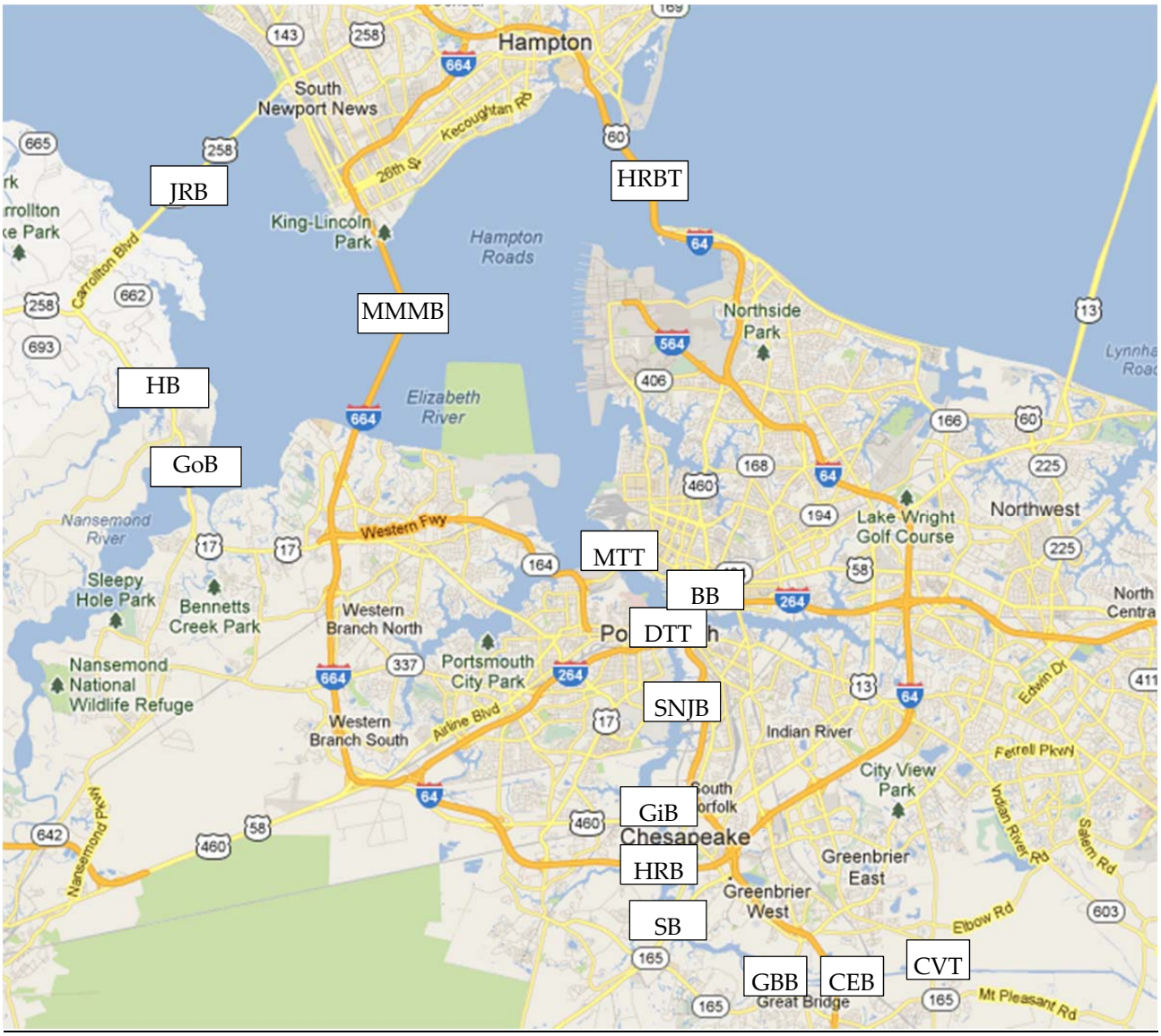
The purpose of this document is to enable Operators to periodically close river crossings as necessary without causing major disruptions to the lives of Hampton Roads residents.

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.

Operator	Responsible Position	Current Holder & Responsible Person
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 calendar[1] 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 nears[2] the capacity of any crossings, the Responsible Person will typically pick another *Desired* Closure Time and Date (and restart this step #1).

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[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 HRTO 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 HRTO 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 devises (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.**