JORDAN BRIDGE CLOSURE

TRAFFIC ANALYSIS

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Prepared for

City of Chesapeake

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Introduction

At the request of the City of Chesapeake, the HRMPO staff conducted an analysis of the impact of the closure of the Jordan Bridge. The analysis includes impacts on the Gilmerton Bridge assuming 2 lanes remain open for travel during its upcoming reconstruction. Other facilities analyzed include the I-64 High Rise Bridge, Downtown Tunnel, the Midtown Tunnel, and the Hampton Roads Bridge Tunnel.

This analysis estimates the change in traffic volumes at each of the above facilities as well as estimates the change in the length of backups during peak periods.

Background

VDOT and the City of Chesapeake are currently in the process of moving forward to reconstruct the Gilmerton Bridge along Military Highway in the City of Chesapeake. It is anticipated that reconstruction will require approximately three years. During this time, the travel lanes along the Gilmerton Bridge will be reduced from 4 lanes to 2 lanes.

A recent City of Chesapeake inspection of the Jordan Bridge has revealed additional deterioration in the structure. Chesapeake staff have recommended that the combination of safety and risk factors as well as the cost to repair warrant the closure of the Jordan Bridge. Chesapeake staff have therefore requested HRMPO staff evaluate the implications of the Jordan Bridge closure in concert with the loss of two travel lanes at the Gilmerton Bridge. The following is a summary of the technical analysis.

Daily Traffic Volume Changes

The following chart summarizes the estimated change in weekday traffic volumes at various locations with the Jordan Bridge closed during the Gilmerton Bridge reconstruction, in comparison to the Jordan Bridge being open during the Gilmerton Bridge reconstruction.

Location	Change in Daily Traffic Volume
Gilmerton Bridge	+1,100
High Rise Bridge	+1,400
Downtown Tunnel	+4,000
Midtown Tunnel	+1,000
HRBT	+250

The above information essentially indicates where the 7,500 daily vehicle trips will move to when the Jordan Bridge is closed. Note that the Hampton Roads Bridge Tunnel will also be affected, with an estimated 250 additional trips per day using it as an alternate to the Monitor Merrimac Memorial Bridge Tunnel.

<u>Existing</u> Peak Hour Traffic Backups

The Gilmerton Bridge is currently 4 lanes and the Jordan Bridge is fully functional. The following chart summarizes the length of typical backups each work day during the afternoon peak period.

Location	Typical PM Peak Period Backups
Gilmerton Bridge	0.0 miles
High Rise Bridge	0.2 miles
Downtown Tunnel	2.1 miles
Midtown Tunnel	2.8 miles
HRBT	3.5 miles

Peak Hour Traffic Backups <u>With the Gilmerton Bridge Under Construction</u>

As previously indicated, VDOT and the City of Chesapeake will require that the number of through lanes along the Gilmerton Bridge during reconstruction be reduced from 4 lanes to 2 lanes. The following chart summarizes the length of typical backups each work day during the afternoon peak period.

Location	Typical PM Peak Period Backups *
Gilmerton Bridge	1.7 miles
High Rise Bridge	0.7 miles
Downtown Tunnel	2.2 miles
Midtown Tunnel	3.3 miles
HRBT	3.6 miles

* During Gilmerton Bridge reconstruction and with the Jordan Bridge fully functional.

The above table represents significant backups and congestion at all four facilities. Several of these locations will impact not only the facility itself but also interchanges, intersections along those facilities and nearby major city arterials.

Peak Hour Traffic Backups <u>With the Jordan Bridge Closure and the Gilmerton Bridge Under Construction</u>

If the Jordan Bridge is closed during the reconstruction of the Gilmerton Bridge, additional significant backups along the major facilities under analysis will occur. The following chart summarizes the length of typical backups each work day during the afternoon peak period under these conditions.

Location	Typical PM Peak Period Backups
Gilmerton Bridge	2.3 miles
High Rise Bridge	1.0 miles
Downtown Tunnel	3.0 miles
Midtown Tunnel	3.9 miles
HRBT	3.7 miles

Summary

The previous analysis clearly reveals that extremely serious backups and congestion will occur during the reconstruction of the Gilmerton Bridge. The closure of the Jordan Bridge during the Gilmerton Bridge reconstruction will cause additional backups and congestion. The backups shown above represent delays to the typical commuter of the highest magnitude. It is strongly suggested that alternatives be developed to ameliorate the above conditions. This will require an aggressive dialogue and strong commitments from all local, state, and federal stakeholders.