

# HAMPTON ROADS REGIONAL BRIDGE STUDY – PART II



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September 17, 2008

Hampton Roads  
Regional Bridge Study – Part II



## PRESENTATION OUTLINE

- **Today's Presentation: Part II**
  - **Bridge Funding**
  - **Bridge Projects**
  - **Major Regional Bridge Analysis**
  - **Conclusions & Recommendations**
- **July Presentation: Part I**
  - **Regional Bridge Summary**
  - **Bridge Inspections & Ratings**
  - **Sufficiency Rating**
  - **Structurally Deficient & Functionally Obsolete Bridges**
  - **Bridges Needing Repair or Rehabilitation**

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## PART I CONCLUSIONS

- Hampton Roads has more lane-miles of bridges than other metropolitan areas.
- Bridges in HR are on average slightly older than those in other metropolitan areas, but not as old as national and statewide averages.
- 54 bridges in Hampton Roads are classified as structurally deficient, and 284 bridges are classified as functionally obsolete.
- 75 of the 1,237 bridges in Hampton Roads have a sufficiency rating < 50.

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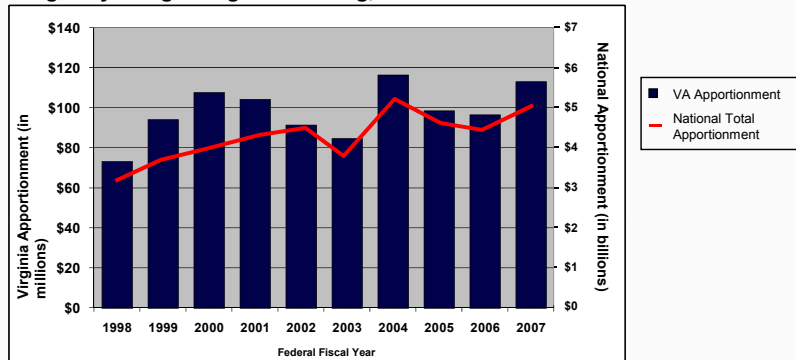
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## BRIDGE FUNDING

- In FY 2007, Virginia received a total of \$113 million from the Highway Bridge Program.

Highway Bridge Program Funding, Federal FY 1998 - 2007



Data source: FHWA.

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## BRIDGE FUNDING

- The decision on how Highway Bridge Program funds are spent is left up to each state.
- VDOT allocates Highway Bridge Program funds through the Dedicated Bridge Fund.
- As part of the Dedicated Bridge Fund, deficient bridges are prioritized using a multitude of factors related to each bridge.

## BRIDGE FUNDING

- Bridges must meet the following criteria to be eligible for Dedicated Bridge Fund allocations:
  - Structurally deficient or functionally obsolete
  - Sufficiency rating < 50
  - Must not be part of the Interstate system.
  - Must have a project cost < \$20 million.
  - 15% of allocations must go to bridges not on the federal-aid highway system.

# BRIDGE FUNDING

## Dedicated Bridge Fund Priority List Hampton Roads VDOT District

Bridges on Federal-Aid Highway System (Top 20)

#	FEDERAL BRIDGE ID	JURISDICTION	FACILITY
1	9057	GREENSVILLE	ROUTE 301 over CSX R/R
2	17751	ISLE OF WIGHT	CAMP PKWY over BLACKWATER RIVER
3	21879	CHESAPEAKE	22nd STREET over SEABOARD AVENS R/R
4	18282	SUSSEX	ROUTE 301 over NOTTOWAY RIVER
5	21834	CHESAPEAKE	GW HWY OVER DEEP CREEK (LONG BRIDGE)
6	17724	SOUTHAMPTON	ROUTE 35 OVER NOTTOWAY RIVER
7	10365	ISLE OF WIGHT	CARRSVILLE HWY OVER ROUTE 632/CSX R/R
8	21217	PORTSMOUTH	VICTORY BLVD OVER PARADISE CREEK
9	20679	NEWPORT NEWS	WARWICK BLVD OVER LAKE MAURY
10	22159	SUFFOLK	TURLINGTON RD OVER BR. KILBY CREEK
11	17757	SOUTHAMPTON	THREE CREEK RD OVER THREE CREEK
12	21811	CHESAPEAKE	BELLS MILL RD OVER BELLS MILL CREEK
13	10383	ISLE OF WIGHT	LONGVIEW DR OVER PAGAN CREEK
14	10402	ISLE OF WIGHT	MILL SWAMP RD OVER PASSENGER SWAMP
15	21827	CHESAPEAKE	MILITARY HWY OVER BAINBRIDGE BLVDNS R/R
16	22091	SUFFOLK	NANSEMOND PKWY OVER BEAMONS MILL POND
17	21797	CHESAPEAKE	CENTERVILLE TPKE OVER CHES. & ALBE. CANAL
18	10443	ISLE OF WIGHT	JAMESTOWN LN OVER CSX R/R
19	10476	JAMES CITY	JAMESTOWN RD OVER POWHATAN CREEK
20	21825	CHESAPEAKE	BLACKWATER RD OVER POCATY CREEK

Bridges not on Federal-Aid Highway System (Top 10)

#	FEDERAL BRIDGE ID	JURISDICTION	FACILITY
1	20294	HAMPTON	BRIDGE ST over SALTERS CREEK
2	10415	ISLE OF WIGHT	ORBIT RD over GREAT SWAMP BRANCH
3	20659	NEWPORT NEWS	WASHINGTON AVE over NNS R/R
4	10438	ISLE OF WIGHT	STALLING CREEK RD over STALLINGS CREEK
5	17849	SOUTHAMPTON	VICKS MILLPOND RD over FLAT SWAMP
6	17813	SOUTHAMPTON	TUCKER SWAMP RD over NS R/R
7	17768	SOUTHAMPTON	MILL NECK RD over RACON SWAMP
8	10427	ISLE OF WIGHT	GARRISON RD over BURNT MILL SWAMP
9	21801	CHESAPEAKE	SAINT BRIDES RD over LEAD DITCH
10	22122	SUFFOLK	HARVEST DR over KINGSALE SWAMP

Source: VDOT. Current as of May 2008.

# OTHER BRIDGE FUNDING

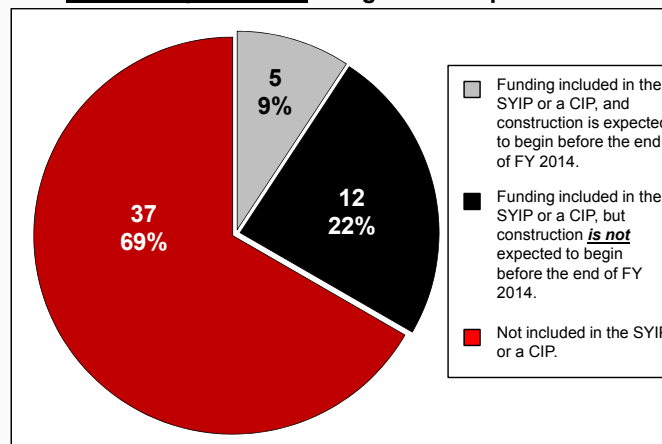
- Congressional earmarks
- State funds, including those funds allocated to cities through the Urban Program
- Local and regional funds
- Tolls

## BRIDGE PROJECTS

- According to VDOT, 361 bridges in Hampton Roads are in need of repair or rehabilitation.
- Only 25 bridges are included in the VDOT FY 2009-14 Six-Year Improvement Program.
  - The total cost to complete all 25 bridges is estimated at \$785 million. Only \$345 million is currently allocated to those bridges.
  - Only six of these bridge projects are expected to begin construction over the next six years.

## STRUCTURALLY DEFICIENT BRIDGES

Funding Availability and Construction Timelines for  
Structurally Deficient Bridges in Hampton Roads



Source: VDOT.

# MAJOR BRIDGE ANALYSIS

- This study looks at what the effect would be if major bridges in Hampton Roads were taken out of service.

**James River Bridge**

4-lane, Movable (L&B) Bridge  
 Average Traffic Volume (2007): 28,000 (Daily), 10,000 (Weekdays)  
 Existing PM LOS = C

Deficiencies:  
 Needs Repair (VDOT)  
 Fracture Critical

**BRIDGE RATINGS AND CHARACTERISTICS**

Sufficiency Rating = 54.2  
 Deck Condition = 5  
 Superstructure Condition = 5  
 Substructure Condition = 6  
 App. Roadway Alignment = 8  
 Weight Limit = N/A  
 Bridge Span Width = 407'  
 Pedestrian Facilities = No

Structural Evaluation = 5  
 Waterway Adequacy = 8  
 Deck Capacity = 4  
 Underclearance = N/A  
 Detour Length = 22 miles  
 Vertical Clearance = 40'

**BRIDGE FACTS/HISTORY**

- The original James River Bridge was opened in 1928. At the time the bridge was the longest in the world over water. The original bridge was a narrow 2-lane, 20' wide approach.
- The current four-lane bridge was completed in 1982. Part of the original bridge was torn down, but a portion of the section of the Newport News waterfront remains as a bridge pier.
- The James River Bridge was a toll bridge from it's opening until tolls were removed in 1975.
- The James River Bridge opens on demand. There are no cues when bridge openings are requested.

**WEEKDAY BRIDGE CLOSURE EFFECTS**

- Closure of the James River Bridge would lead to congested conditions in the Merrimack/Pleasant Bridge Tunnel. 26,000 more vehicles would be expected to go on and use the PORTT each weekday.
- Other congested facilities that would be expected to carry additional traffic include the Hampton Roads Bridge-Tunnel and portions of I-64.
- Roadways that would be expected to become congested due to the closure of the James River Bridge include the Merrimack/Pleasant Bridge-Tunnel and Route 17 in Northern Suffolk.

**Changes in Weekday Volumes Due to Closure of the James River Bridge**

# MAJOR BRIDGE ANALYSIS

- 16 of the 26 major bridges analyzed in this study are classified as needing repair or rehab.

## Major Bridges in Hampton Roads with Deficiencies

Structurally Deficient (4)	In Need of Repair or Rehabilitation (16)
Churchland Bridge	Berkley Bridge
Gilmerton Bridge	Centerville Turnpike Bridge
Jordan Bridge	Churchland Bridge
North Landing Bridge	Coleman Bridge
	Gilmerton Bridge
	Godwin Bridge
	Hampton Roads Bridge-Tunnel (2 bridges)
	Hazelwood Bridge
	High Rise Bridge
<b>Functionally Obsolete (3)</b>	Hodges Ferry Bridge
Centerville Turnpike Bridge	James River Bridge
Chesapeake Bay Bridge-Tunnel (6 bridges)	Jordan Bridge
Twin Bridges	North Landing Bridge
	Route 168 Bridge
	Steel Bridge
	West Norfolk Bridge

Data sources: VDOT, FHWA.

## PART II CONCLUSIONS

- A majority of structurally deficient bridges in Hampton Roads do not have funding allocated for rehabilitation or reconstruction.
- Current bridge funding levels are not nearly enough to meet bridge maintenance needs.
- Cities are not directly provided funding from the Urban Program based on the quantity or condition of their bridges.
- Over 60% of the major bridges in Hampton Roads are in need of repair or rehabilitation.

## RECOMMENDATIONS

- Approval of the Hampton Roads Regional Bridge Study final report.
- Authorize the staff to forward the report for consideration to the Secretary of Transportation, VDOT Commissioner, Federal partners, and CTB members.



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