



Hampton Roads District Structure & Bridge Program

November 19, 2013

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District Structure & Bridge Engineer
Hampton Roads District

Statistics

Approximately 1,700 Bridges

- Largest Deck Area within Virginia
- 10 Movable Bridges
- Longest Bridge in Commonwealth
- Rural to Urban

Underwater Tunnels

- Hampton Roads Bridge Tunnel
- Monitor Merrimac Bridge Tunnel
- Chesapeake Bay Bridge Tunnel (O&M by CBBT Auth.)
- Downtown Tunnel (operated and maintained by ERC)
- Midtown Tunnel (operated and maintained by ERC)



Hampton Roads District Bridge Inventory

Total Number of Structures – 1,692
VDOT Maintained Structures – 1,258
- Number of Bridge – 845
 - 5 Movable Bridges
- Number of Culverts – 413

- ➔ **Area of VDOT Bridge Deck = ~16,500,000 S.F.**
- ➔ **Average age of VDOT Inventory = 42 Years Old**
- ➔ **Oldest VDOT Bridge = 93 Years Old**
- ➔ **Value of VDOT Inventory = \$7 Billion**
- ➔ **Longest VDOT Bridge = 4.4 Miles (23,300 ft.)**

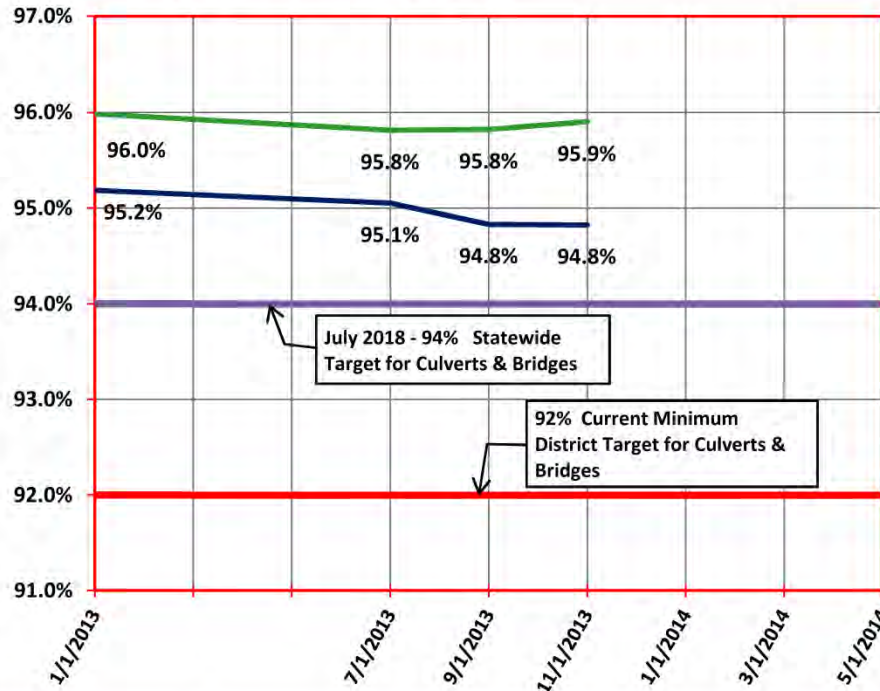
Dashboard

Bridge Condition from Dashboard				
District	Red	Yellow	Green	% Green or Yellow
NOVA	48	270	1,779	97.7%
VDOT Hampton Roads	51	189	1,003	95.9%
All Hampton Roads	88	477	1,126	94.8%
Staunton	196	796	2,510	94.4%
Lynchburg	127	475	1,512	94.0%
Culpeper	124	360	1,212	92.7%
Salem	270	666	2,130	91.2%
Richmond	237	661	1,696	90.9%
Bristol	319	956	2,150	90.7%

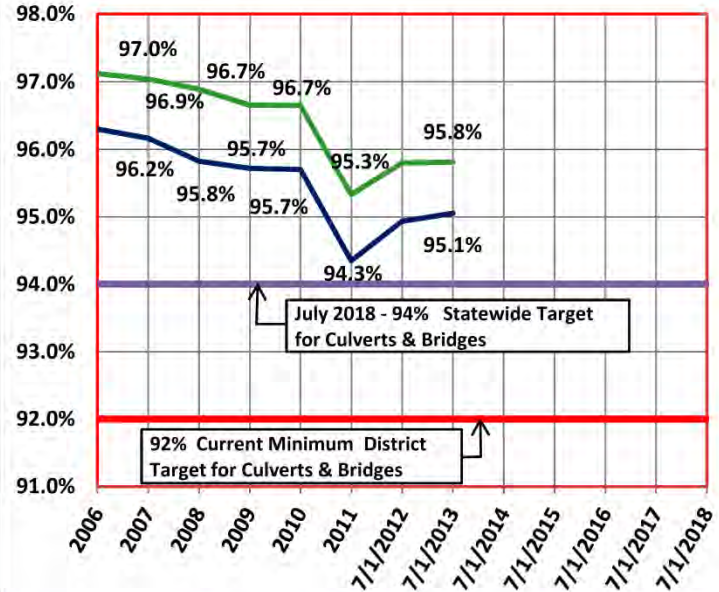
Bimonthly Report for S&B Division - Hampton Roads VDOT- Maintained Structures Only

Report Date: 11/1/2013

Percentage of Non-Deficient Structures Graph of Near -Term Progress

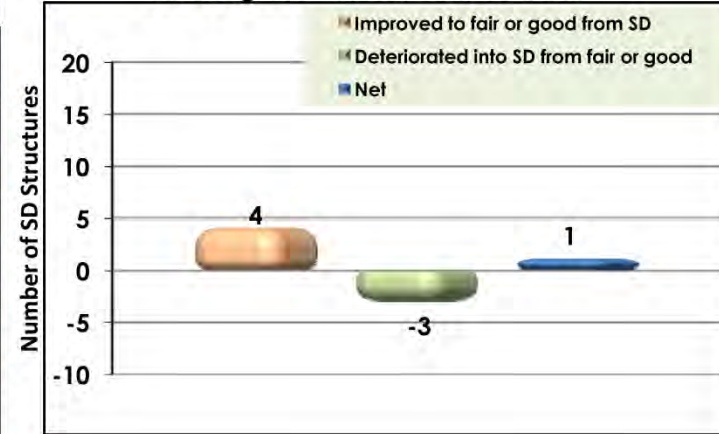


Percentage of Non-Deficient Structures Graph of Long-Term Progress



Current # of SD Structures = 51

SD Progress - Fiscal Year to Date



Percentage of Bridge and Culvert Structures in Fair or Good Condition	Description	Target Date	Target	Actual
	Interstate	Current	97%	99.1%
	Primary	Current	94%	95.8%
	Secondary	Current	89%	93.1%
	All Systems, NBI & Non-NBI Structures	July 2018	92%	95.9%
	All Systems, NBI & Non-NBI Bridges	July 2018	92%	94.8%
All Systems, NBI Structures	July 2018	92%	95.0%	

On Time Inspections	Bridges & Culverts (VDOT & Local)	Current	95%	99.6%
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TYPES OF BRIDGES IN HAMPTON ROADS

Typical Small County Bridge



Typical Small County Bridge

How Many Are in the Hampton Roads District?

- **173 Total**
 - **142 Maintained by VDOT**
 - **31 Maintained by Municipalities**

>10% of the District's Inventory

~ $\frac{1}{3}$ are Structurally Deficient

Majority of District Maintained SD Bridges

Typical Small County Bridge

Value of Inventory - ~\$20,000,000

Cost to Replace Deficient Structures - ~\$6,700,000

Typical Interstate Bridges



Typical Interstate Bridges

There are None!

**All Bridges Carrying or Over Interstate are Maintained
by VDOT**

Exceptions:

- **Cunningham Drive over I-64 in Hampton**
- **Bland Blvd over I-64 in Newport News**
- **Atkinson Blvd over I-64 in Newport News (Future)**

Large and Movable Bridges

Large Fixed Bridges

- HRBT Approaches
- MMMBT Approaches
- Willoughby Bay Bridges

Movable Bridges

- Berkley Bridges
- Coleman Bridge
- High Rise Bridge
- James River Bridge

Original Berkley Bridge



1st Berkley Bridge - 1952



Current Berkley Bridges



James River Bridge



James River Bridge Under Construction – June 1978



James River Bridge Under Construction – June 1980



James River Bridge Under Construction – June 1983



Coleman Bridge



Largest Double-Leaf Swing Bridge in US 2nd Largest in the World



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Coleman Bridge Float-In of Spans



Coleman Bridge Float-In



HAMPTON ROADS DISTRICT BRIDGE PROGRAM



Hampton Roads District Bridge Annual Allocation

- **Maintenance**

\$

- **Safety Inspection**

- State Forces \$1,000,000
- Consultant \$2,800,000
- Ratings \$50,000

- **State Force Maintenance**

- District \$2,350,000

- **UPC Projects**

- District \$13,500,000

- **Overhead**

\$460,000

- **TOTAL**

\$20,160,000

- **Construction**

- **Dedicated Bridge Fund (Average Yearly)**

- NHPP \$2,100,000 (\$12,600,000 in current SYP)
- On System \$5,350,000 (\$32,000,000 in current SYP)
- Off System \$1,570,000 (\$9,400,000 in current SYP)

- **TOTAL**

\$9,020,000

Hampton Roads District Safety Inspection Program

- **2012 Completed Inspections**
 - 601 Bridges & Culverts
 - 25 Fracture Critical Bridges
 - 1,500 Ancillary Structures (Signs, Signals, Luminaires, etc.)
 - 2,126 Inspections

- **2013 Planned & Completed Inspections**
 - 611 Bridges & Culverts
 - 25 Fracture Critical Bridges
 - 2,100 Ancillary Structures (Signs, Signals, Luminaires, etc.)
 - 2,736 Inspections

- **Cost of Inspection Program (Annually)**

• State Force Inspections	\$1,000,000
• Consultant Inspections	\$2,800,000
• Consultant Ratings	\$50,000
Total =	\$3,850,000

Bridge Maintenance Contracts

Current:

- On-Call Districtwide Structural Repair - ~\$2.5M
- Painting of Four Bridges - ~\$2.5M
- Replace Fence on 28th Street Bridge in Newport News - ~\$600k

Planned:

- Painting of Six Bridges - \$2.5M
- Painting of 28th Street Bridge in Newport News - ~\$2.5M

Future:

- On-Call Joint Repair and Overlay
- On-Call Districtwide Structural Repair
- Additional Painting Contracts

Bridge Maintenance Contracts

Ongoing Major Crossings:

- **MMMBT:**
 - South Approach Deck & Barrier Waterproofing - ~\$8M

Future Major Crossings:

- On-Call River/Harbor Crossings Structural Repair
- **HRBT:**
 - Replace Pile Jackets – ~\$19M
 - Replaced Eastbound Lanes Overlay – ~\$1M
- **MMMBT:**
 - South Approach Waterproof Deck and Substructure – ~\$16M
 - North Approach Deck & Barrier Waterproofing – ~\$3.5M
 - North Approach Painting – ~\$5M
- **JRB:**
 - JRB Overlay and Closures – ~\$12M
- **High Rise Bridge:**
 - Steel Repair and Paint Structural Steel – \$11M

\$69M in Maintenance Needs

Bridge Replacement Projects

Interstate:

- I-95 over the Meherrin River

Primary:

- Route 58 over Railroad & Secondary Road in Carrsville
- Route 35 over Tarrara Creek
- Route 134 over Kiln Creek
- Route 189 over Blackwater River (South Quay Bridge)
- Route 308 over Three Creek
- Route 301 over Nottoway River
- Route 35 over Nottoway River (Design-Build)

Secondary:

- Orbit Rd over Nuby Run – Apparent Low Bidder
- Loafers Oak over Cypress Swamp – Bids due this Month
- 14 Additional Bridges in Design

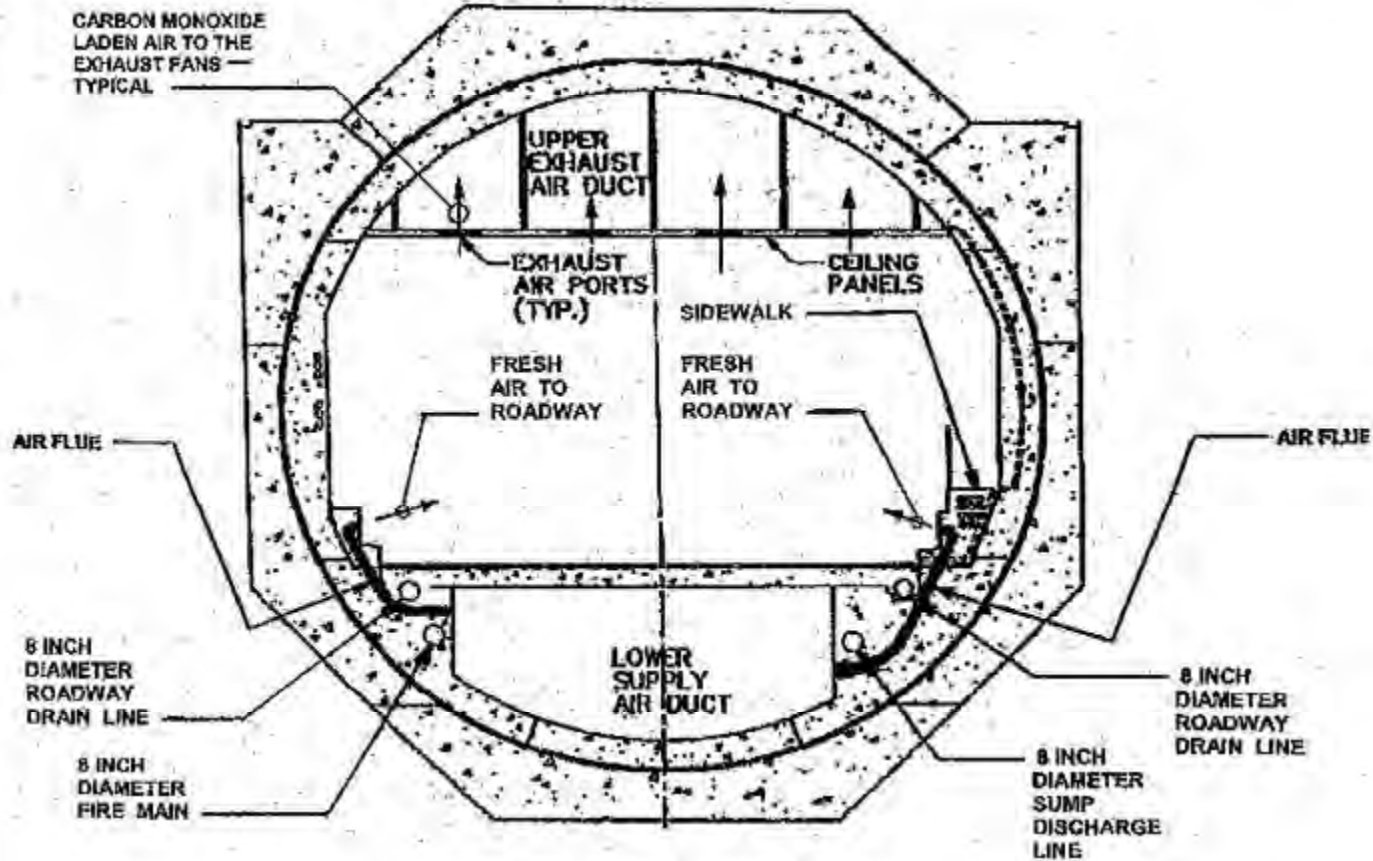
Bridge Replacement Projects

- **22 Projects Replacing 25 Bridges**
- **Two Projects in Advertisement/Award**
- **First Bridge Replacements Advertised since 2003**
 - **HRD Dedicated Bridge Fund used to fund two large projects:**
 - Chincoteague Channel Bridge Replacement
 - Gilmerton Bridge Replacement
 - No money available for smaller bridges
 - **Currently Limited to VDOT Bridge Replacements for less than \$20M**
- **Advertisements will pick up in FY15 & FY16 or sooner**

Hampton Roads Tunnels



Typical Tunnel Cross Section



MIDTOWN TUNNEL CROSS SECTION

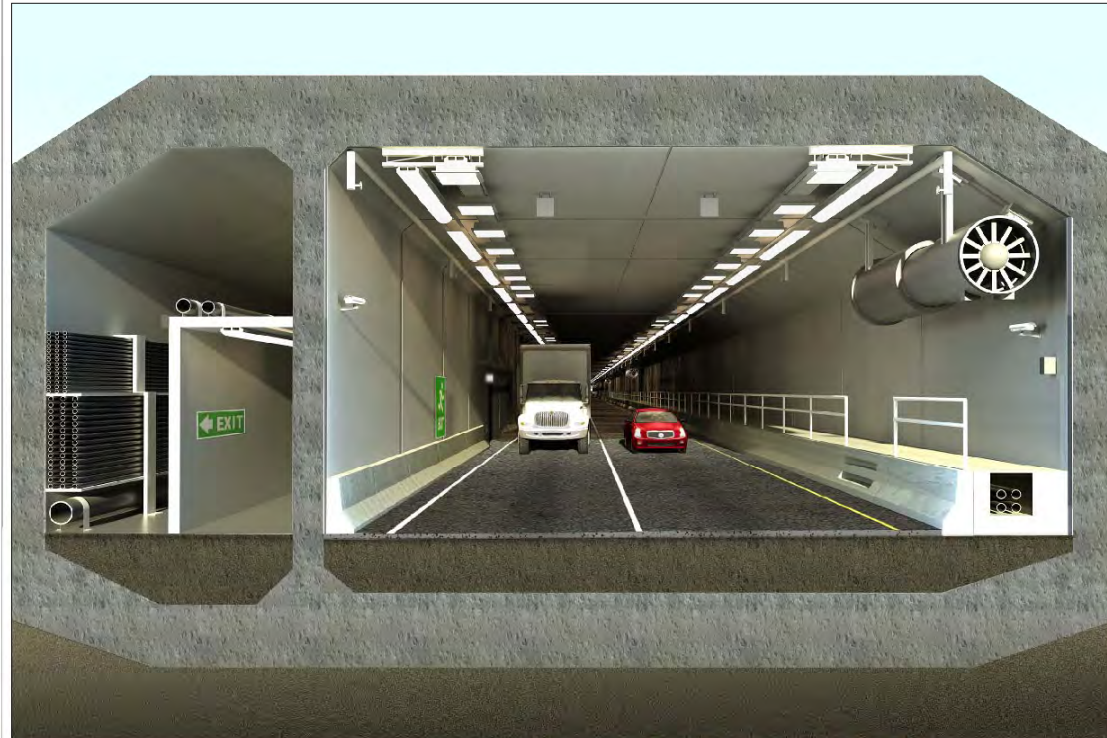
FIGURE NO. B-1

"Restricted - Protected Critical Infrastructure Information"

Project Location



**Downtown Tunnel
Midtown Tunnel
MLK Extension**



Contact Information

Frank Fabian
Project Manager
Virginia Department of Transportation
152 Tunnel Facility Drive
Petersburg, VA 23107
Comments may also be sent to:
Frank.Fabian@VDOT.Virginia.gov

**Rendering of the
Proposed
Midtown Tunnel
(Westbound)**

Downtown Tunnel / Midtown Tunnel / MLK Extension
City of Portsmouth and Norfolk, Virginia
Midtown Tunnel Study Project No. 0553-855-102
Downtown Tunnel Study Project No. 0554-855-107
MLK Extension Study Project No. 0555-855-107
UPC: 78642
Federal Project Number

PUBLIC HEARING PLANS
Additional easements for utility relocations may be required beyond the proposed right of way shown on these plans. Preliminary easement for utility relocations are approximate only and subject to change as project design is finalized. These plans are unperfected and unapproved and are not to be used for any type of construction or the acquisition of right of way.

Hampton Roads District Bridge Program Risk

- **Interstate Bridges**
 - **Maintenance Timeframe Limited**
 - **Approaching Service Life**
 - **Will these bridges be replaced with larger widening projects?**
 - **If not, how do we plan to replace these structures?**
 - HRBT WBL: 64 Years Old
 - HRBT EBL: 52 Years Old
 - **How much money and effort do we put into bridges slated for corridor improvements?**
- **Maintenance Fund Availability**
 - **Will Bridges be given Priority when Projects Are Ready?**
 - **Need to invest in Maintenance of Large Structures**
 - Repairs and Preventative Maintenance on HRBT
 - Preventative Maintenance on MMMBT, JRB and High Rise



QUESTIONS?

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