



Virginia Department of Rail and Public Transportation

## CTB Rail Subcommittee Meeting

### Agenda

January 19, 2016 at 9 a.m.

VDOT Central Auditorium  
1221 East Broad Street  
Human Resources Training Room – 1<sup>st</sup> Floor  
Richmond, Virginia 23219

#### CTB Members present:

Jennifer Mitchell  
Court Rosen  
Shannon Valentine  
Jim Dyke  
Scott Kasprowicz

Director Mitchell called the meeting to order at 9:04 am. She stated that during today's meeting there would be a few things, such as the REF Task Force scheduled for January 27<sup>th</sup>. REF applications will begin to be reviewed in March and go into the SYIP cycle with overall transportation funding.

1. Discuss REF performance handout – Mike Todd (DRPT) – please see presentation
2. Presentation of the updated Benefit-Cost model (beta version) – Mike Todd (DRPT) – please see presentation
  - Next Steps
    - Draft Model to be presented to the Task Force on 1/28/16 – Invitation was made to CTB members and the public to attend
    - Court Rosen asked that the Task Force meeting be summarized and provide feedback prior to the next CTB meeting on 2/16
3. Presentation on SYIP revenues and funding availability for FY17 – FY22 – Steve Pittard (DRPT) – please see presentation
4. Public Comment
  - Bill Hamilton – Buckingham Branch Business Development/VRRRA – Mr. Hamilton expressed his thanks for the all the work that has been done to date. He had no specific comments but did stress that the Rail Preservation is most

important to the short lines and asked that we continue to keep everyone informed and involved in the process.

Director Mitchell stated that a lot of the General Assembly focus is on prioritization because of HB2 and HB599 and how the Commonwealth prioritizes projects and making the process as transparent as possible.

Shannon Valentine asked if there were any comments made to the REF report that was submitted to General Assembly. There were none.

Meeting adjourned at 9:49 am.

# Rail Enhancement Fund Review: Performance Reporting

January 19, 2016

Commonwealth Transportation  
Board



Virginia Department of Rail and Public Transportation

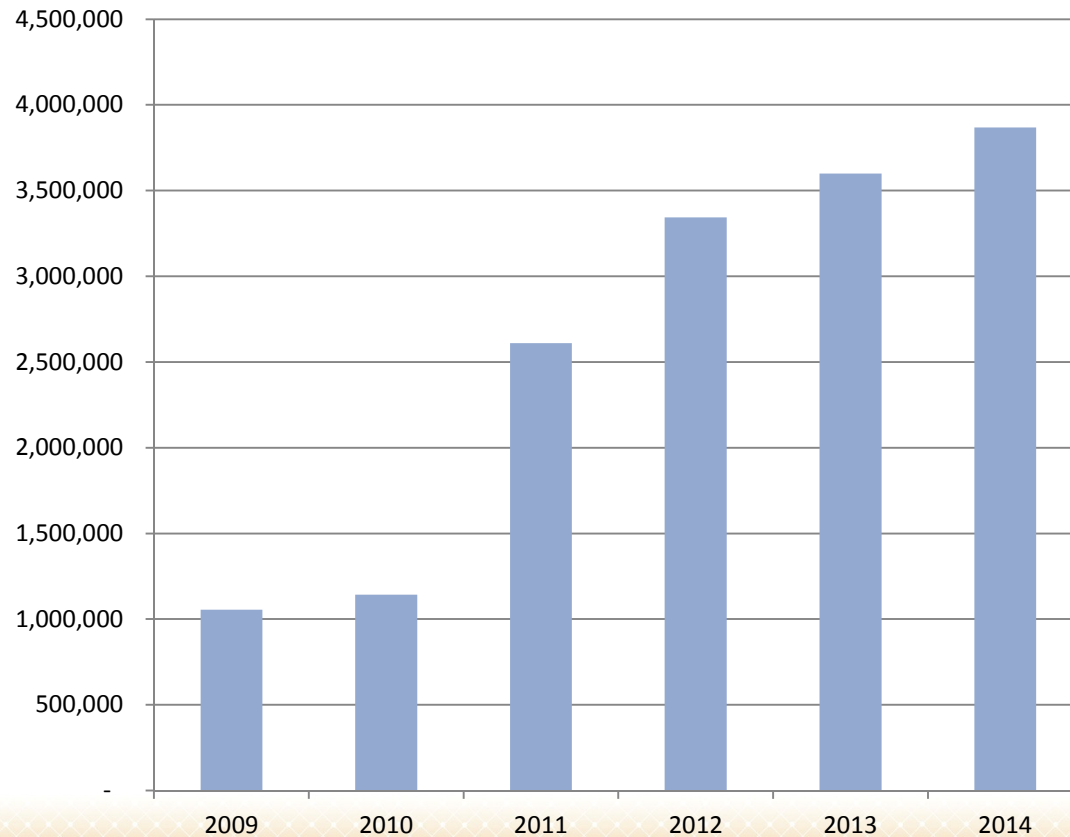
# REF Projects in Performance

Project	Reporting Period	Total Project Budget	REF Allocation
Heartland Corridor Improvements	2011-2025	\$ 38,386,673	\$ 31,936,673
Commonwealth Railway Line Purchase	2009-2023	\$ 3,750,000	\$ 2,205,000
APM Terminals On-Dock Rail	2009-2023	\$ 18,600,000	\$ 9,300,000
Suffolk Connection From CSX to CWRY	2011-2025	\$ 5,135,875	\$ 3,595,113
North Acca Switches	2007-2021	\$ 3,993,000	\$ 2,795,100
Crewe to Suffolk Connection NS to CWRY	2009-2023	\$ 7,470,000	\$ 4,229,000
Crescent Corridor (Phase I)	2015-2029	\$ 57,142,857	\$ 40,000,000
VRE Automatic Train Control System	2011-2025	\$ 1,260,000	\$ 882,000
Kilby Yard Sidings, Crossovers and Signals	2015-2029	\$ 15,523,400	\$ 10,866,380
<b>TOTAL</b>		<b>\$ 151,261,805</b>	<b>\$ 105,809,266</b>

# Freight Performance

(Aggregate of Projects)

## Total Truckloads

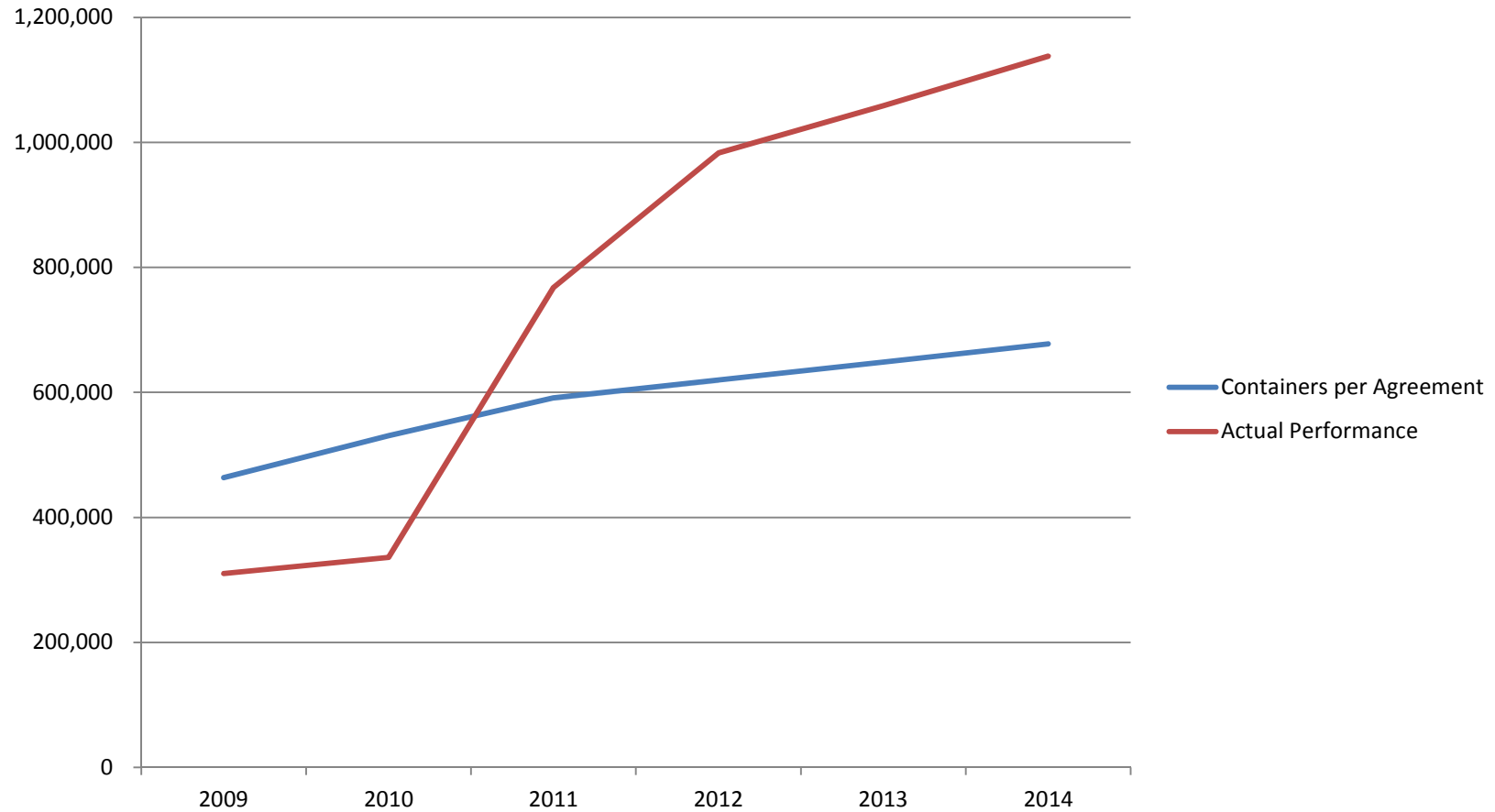


- Approx. 15.6M Total Truckloads Diverted
- 6 year reporting period

\*\*Used 3.4 trucks per railcar as calculated by the updated BCA model

# Freight Performance

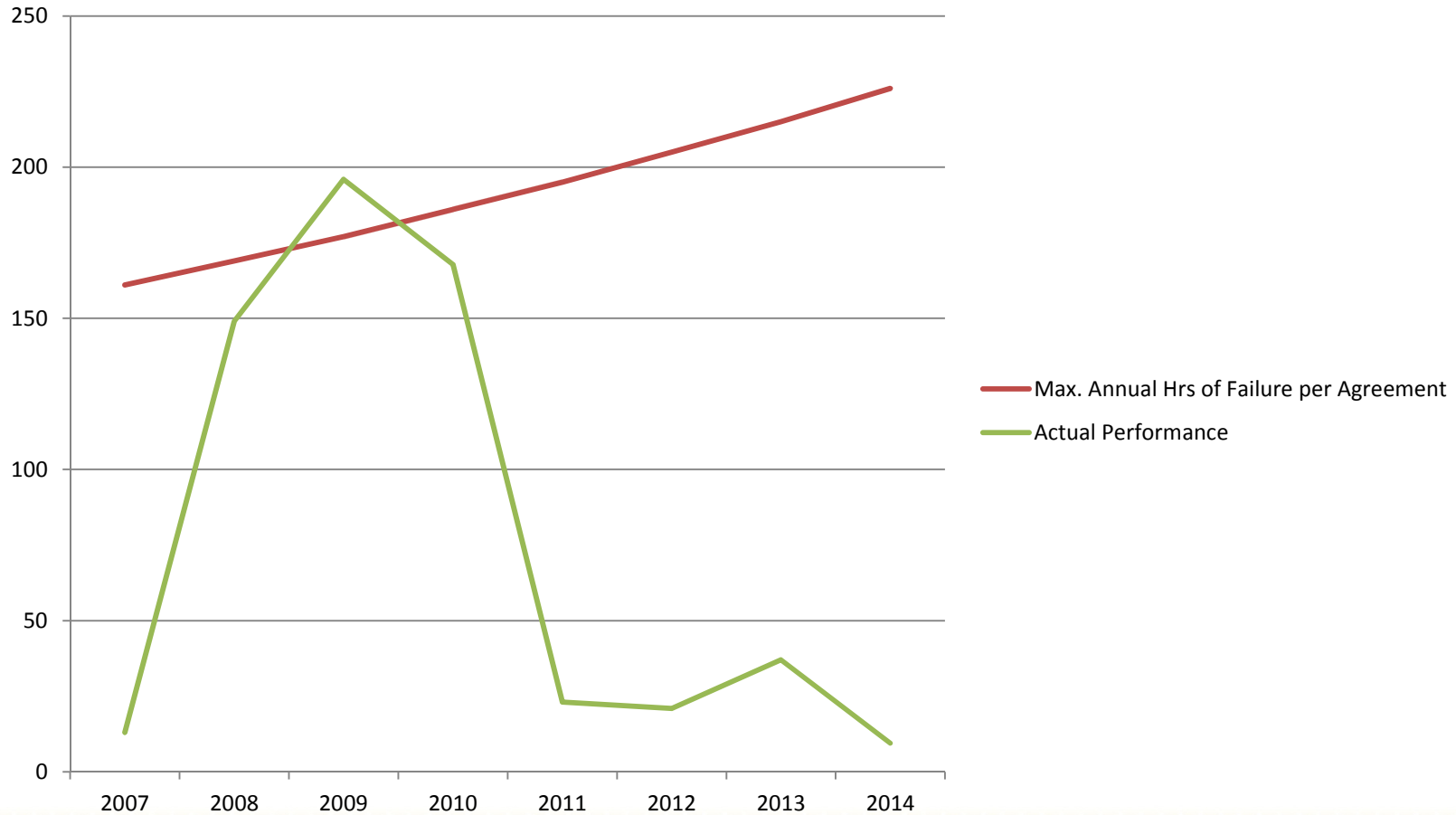
(Aggregate of Projects)



\*\*In aggregate, projects outperforming commitment per grant agreement

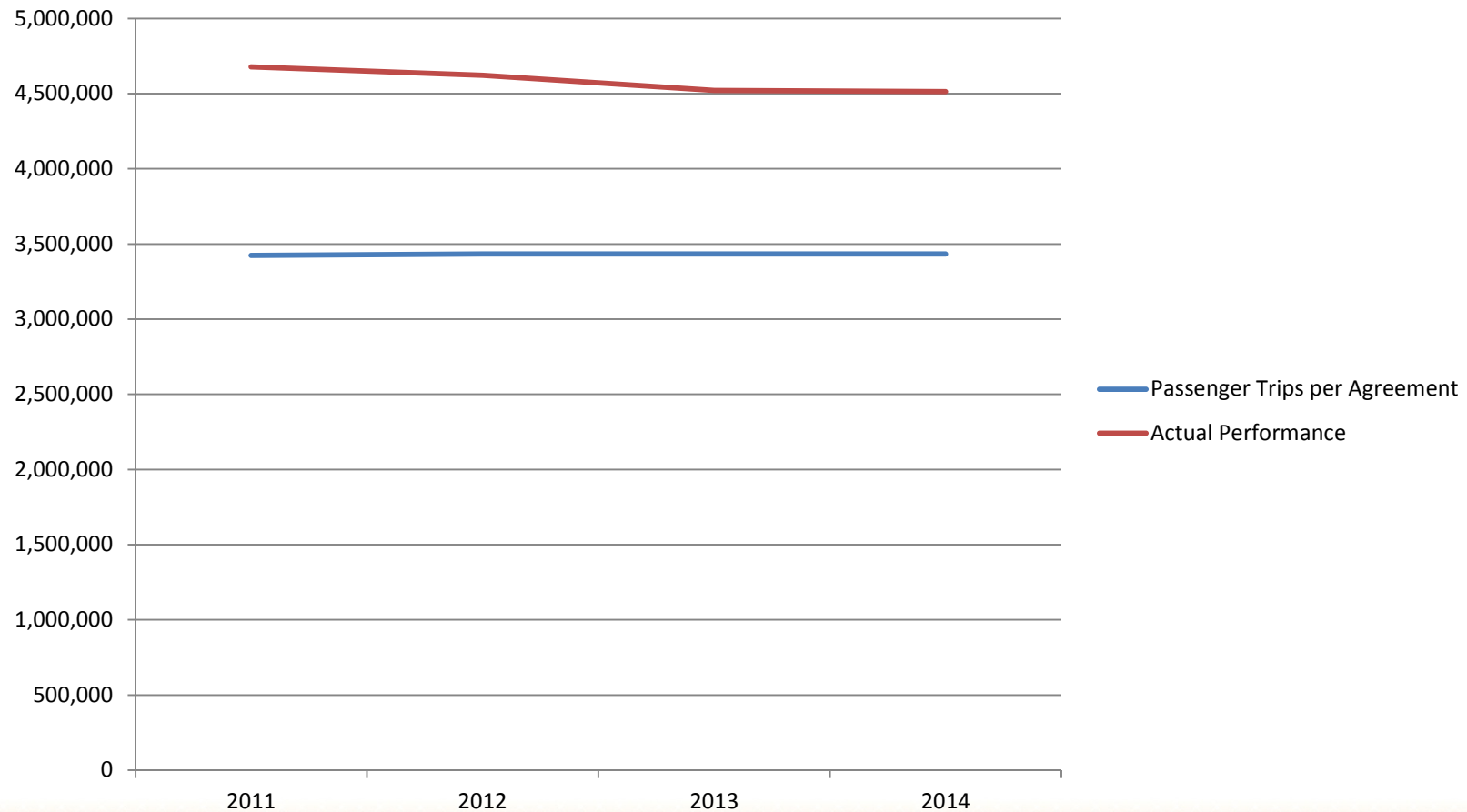
# Freight Reliability

(North Acca Switches)



\*\*Reliability outperforming commitment per maximum authorized by grant agreement

# Passenger Performance (VRE ATC)



\*\*Project outperforming commitment per grant agreement



# Future REF Performance



# Rail Enhancement Fund: Benefit Cost Analysis Update

January 19, 2016

Commonwealth Transportation  
Board



Virginia Department of Rail and Public Transportation

# Purpose

## Update the BCA Model

- Update Metrics
  - last update 2005
- Follow Guiding Principles
  - Transparency and Simplicity
  - Scarcity of Funds
  - Public/Private and State/Local
  - Clear Policy Goals

# Prioritization Checklist

BCA	<ul style="list-style-type: none"><li>• Pass/fail test based on the cost of REF investment vs public benefit</li></ul>
Project Readiness	<ul style="list-style-type: none"><li>• Projects should be ready for construction and not remain in the SYIP for more than 3 years</li></ul>
Funding	<ul style="list-style-type: none"><li>• Leverage matching funds beyond the 30% requirement</li></ul>
Performance	<ul style="list-style-type: none"><li>• VA will maintain a contingent interest to claw-back funds if performance is not met</li></ul>
Planning Process	<ul style="list-style-type: none"><li>• Prioritize projects that align with existing State, local and regional planning efforts</li></ul>
Multimodal	<ul style="list-style-type: none"><li>• Projects should benefit both passenger and freight service to spur economic development</li></ul>
Planning and Design	<ul style="list-style-type: none"><li>• Allow 25% of fund for planning and design work to promote project readiness</li></ul>
SoGR	<ul style="list-style-type: none"><li>• Capital renewal projects can be considered</li></ul>
TIGER	<ul style="list-style-type: none"><li>• Projects that use the Federal TIGER grant guidelines can be used as an alternative to the BCA (especially for multi-state projects)</li></ul>

# Inputs



## Project Description

- Timeline
- Location
- Cost



## Freight Data (Current/Future)

- Tons
- Railcars
- Route Length



## Passenger Data (Current/Future)

- Passengers
- Travel Time
- Route Length



## Truck Trip

- Length
- Tons/Truck
- Trucks/Railcar



## Car Trip

- Lengths
- Passengers/Car



# Public Data Sources

Source	Location
2009 NHTS VA add-on survey	<a href="http://nhts.ornl.gov/2009/pub/usersguidev2.pdf">http://nhts.ornl.gov/2009/pub/usersguidev2.pdf</a>
2014 California High-Speed Rail Benefit Cost Analysis	<a href="http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2014_Sec_7_CaHSR_Benefit_Cost_Analysis.pdf">http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2014_Sec_7_CaHSR_Benefit_Cost_Analysis.pdf</a>
AAA, Your driving costs 2015	<a href="http://exchange.aaa.com/wp-content/uploads/2015/04/Your-Driving-Costs-2015.pdf">http://exchange.aaa.com/wp-content/uploads/2015/04/Your-Driving-Costs-2015.pdf</a>
Amtrak	<a href="https://www.narprail.org/our-issues/ridership-statistics/">https://www.narprail.org/our-issues/ridership-statistics/</a>
VRE	<a href="http://www.vre.org/service/rider/consist/">http://www.vre.org/service/rider/consist/</a>
Association of American Railroads (2013)	<a href="https://www.aar.org/data-center">https://www.aar.org/data-center</a>
Census Bureau	<a href="http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml">http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml</a>
DAT Solutions, DAT Trendlines, Southeast Regional Van Rates, (Spring 2015)	<a href="http://www.dat.com/resources/trendlines">http://www.dat.com/resources/trendlines</a>
EPA - "Regulatory Impact Analysis: Control of Emissions of Air Pollution from Locomotive Engines and Marine Compression Engines Less than 30 Liters per Cylinder" (2008)	<a href="http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P10024CN.TXT">http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P10024CN.TXT</a>
Federal Highway Cost Allocation Study (1997)	<a href="http://www.fhwa.dot.gov/policy/hcas/addendum.cfm">http://www.fhwa.dot.gov/policy/hcas/addendum.cfm</a>
Forkenbrock (2001)	<a href="http://nexus.umn.edu/Courses/ce8214/papers/Forkenbrock2001.pdf">http://nexus.umn.edu/Courses/ce8214/papers/Forkenbrock2001.pdf</a>
FRA Office of Safety, Accident Reports (2010-2015)	<a href="http://safetydata.fra.dot.gov/officeofsafety/default.aspx">http://safetydata.fra.dot.gov/officeofsafety/default.aspx</a>
Muller and Mendelsohn, "Measuring the Damages of Air Pollution in the United States" (2007)	Not publicly available
Public Waybill Sample	<a href="http://www.stb.dot.gov/stb/industry/econ_waybill.html">http://www.stb.dot.gov/stb/industry/econ_waybill.html</a>
TIGER Benefit-Cost Analysis Resource Guide (2014)	<a href="https://www.transportation.gov/sites/dot.gov/files/docs/TIGER%20BCA%20Resource%20Guide%202014.pdf">https://www.transportation.gov/sites/dot.gov/files/docs/TIGER%20BCA%20Resource%20Guide%202014.pdf</a>
US Department of Environmental Protection: Motor Vehicle Emission Simulator (MOVES2014a)	<a href="http://www3.epa.gov/otaaq/models/moves/">http://www3.epa.gov/otaaq/models/moves/</a>
USDOT Bureau of Transportation Statistics 2015	<a href="http://www.rita.dot.gov/bts/sites/rita.dot.gov/bts/files/publications/national_transportation_statistics/index.html">http://www.rita.dot.gov/bts/sites/rita.dot.gov/bts/files/publications/national_transportation_statistics/index.html</a>
USDOT, FHWA, Freight Analysis Framework (2012)	<a href="http://ops.fhwa.dot.gov/FREIGHT/freight_analysis/faf/index.htm">http://ops.fhwa.dot.gov/FREIGHT/freight_analysis/faf/index.htm</a>
VDOT, Accident, Fatality and Injury Frequency (2014)	<a href="http://www.dmv.state.va.us/safety/#crash_data/crash_facts/index.asp">http://www.dmv.state.va.us/safety/#crash_data/crash_facts/index.asp</a>
VDOT, Investigation of Speed-Flow Relations and Estimation of Volume Delay Functions for Travel Demand Models in Virginia (2009).	<a href="http://trbappcon.org/2009conf/TRB2009presentations/s12/TRB_App_Conf_12_100_Lee_Munn_0519_2009.ppt">http://trbappcon.org/2009conf/TRB2009presentations/s12/TRB_App_Conf_12_100_Lee_Munn_0519_2009.ppt</a>
VDOT, Rail Crossing Injuries (2010-2015)	<a href="http://www.virginiadot.org/sitemap/default.asp">http://www.virginiadot.org/sitemap/default.asp</a>





# Outputs - Freight



## Congestion Cost

- Total reduction in truck VMT \* congestion cost per truck mile



## Environmental Improvement

- (Truck VMT \* air and noise pollution cost per truck) – (train ton miles \* air and noise pollution cost per train ton mile)



## Shipping Distance Reduction

- Reduced freight mileage \* annual rail ton shipments \* shipping rate per ton



## Shipping Cost Reduction

- (Truck VMT \* shipping rate) – (train ton miles \* shipping rate)



## Pavement Maintenance Savings

- Truck VMT reduction \* maintenance cost per truck mile



## Accident Cost Savings

- (Truck ton miles \* accident cost per mile) – (train ton miles \* accident cost) + (accident cost per rail crossing \* rail crossings removed)

# Outputs - Passenger



## Congestion Cost

- Total reduction in passenger VMT \* congestion cost per vehicle mile



## Environmental Improvement

- (Reduction in passenger VMT \* air pollution cost per vehicle) – (additional train passengers \* train trip length \* air pollution cost per train mile)



## Passenger Cost Reduction

- (Reduction in passenger VMT \* operating cost per mile) – (increased rail passenger cost \* fare per mile)



## Travel Time Savings

- Travel time savings per trip \* annual passengers \* average value of time



## Pavement Maintenance Savings

- VMT reduction \* maintenance cost per mile



## Accident Cost Savings

- Reduction in passenger VMT \* accident cost per vehicle + removal of crossings



## Wider Economic Benefits

- (Value of time savings + safety benefit + reduced vehicle operating cost) \* 0.05



# Important Model Updates

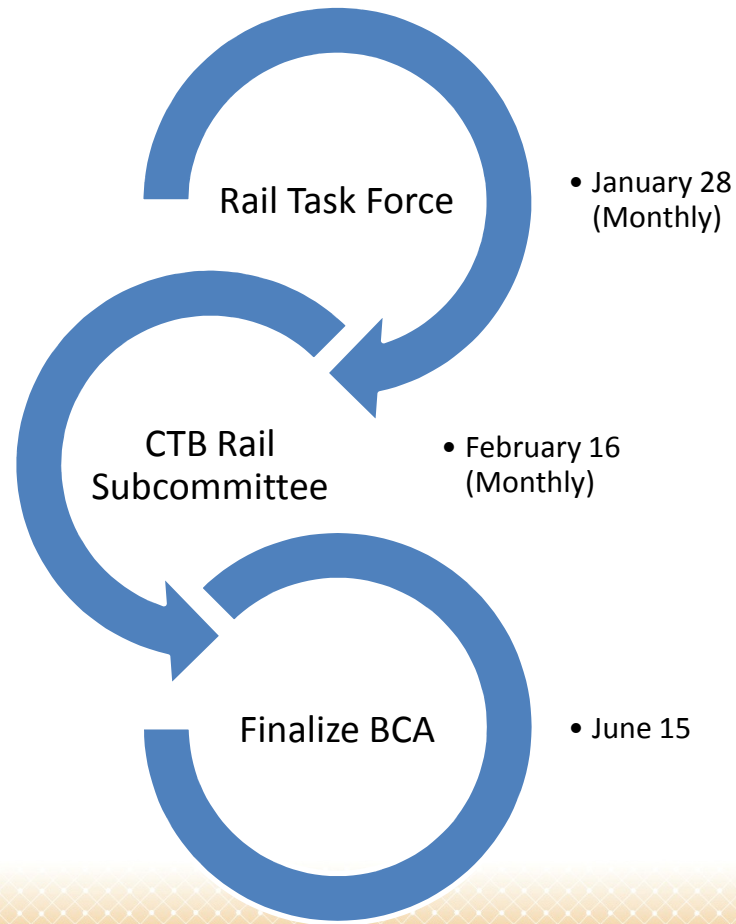
Improve transparency through public data sources

Improve transparency by providing model for grantee experimentation

Update data sources and improve focus on Virginia metrics

Establish BCA as one element of overall project evaluation checklist

# Next Steps



**DRPT**  
**Rail Revenues by Fund**  
**FY 2017 - FY 2021**

(\$ in millions)

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	TOTAL
\$	19.5	20.3	21.0	21.7	22.4	104.9
	17.8	18.1	18.6	19.1	19.5	93.1
	1.7	2.2	2.4	2.6	2.9	11.8

**Rail Enhancement Fund - Vehicle Rental Tax**

December 2015  
 FY 2016-2021 SYIP (June 2015)  
 Difference

**Rail Preservation Fund - Highway Maintenance**

December 2015  
 FY 2016-2021 SYIP (June 2015)  
 Difference

\$	3.9	3.9	3.9	3.9	3.9	19.5
	2.9	2.9	2.9	2.9	2.9	14.5
	1.0	1.0	1.0	1.0	1.0	5.0

**IPROC Fund - Retail Sales and Use Tax**

December 2015  
 FY 2016-2021 SYIP (June 2015)  
 Difference

\$	54.0	56.6	58.7	60.9	63.2	293.4
	53.5	55.8	57.8	59.8	61.9	288.8
	0.5	0.8	0.9	1.1	1.3	4.6

**Federal Highway Funds - Lynchburg 2nd Train**

\$	5.6	3.4	3.2	5.8	3.7	21.7
----	-----	-----	-----	-----	-----	------

**DRPT**  
**Rail Enhancement Program - SYIP Planning**  
**FY 2017 - FY 2022**  
(\$ in millions)

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>Total</b>
<b>Unobligated - 12/31/15</b>							
REF Revenues	\$19.1						
B	19.5	20.3	21.0	21.7	22.4	23.1	23.1
CPR Bonds	9.8	5.1	-	-	-	-	-
<b>Total Resources</b>	<b>48.4</b>	<b>25.4</b>	<b>21.0</b>	<b>21.7</b>	<b>22.4</b>	<b>23.1</b>	<b>\$162.0</b>
<b>FY 2016 - FY 2021 SYIP</b>							
Planned Allocations	37.6	13.8	4.9	-	25.3	-	\$81.6
<b>Difference</b>	<b>\$10.8</b>	<b>\$11.6</b>	<b>\$16.1</b>	<b>\$21.7</b>	<b>(\$2.9)</b>	<b>\$23.1</b>	<b>\$80.4</b>

**Notes:**

- A The planned allocations utilized in this SYIP planning schedule come from the SYIP approved last June with needs assessments performed during February through May of 2015. Potential new projects as well as last years' planned projects will be evaluated this spring as part of the annual SYIP process. The timing by year of the allocations and the actual projects recommended will be adjusted in this years' SYIP process so that no planned, annual deficits exist.
- B The revenue data used for this analysis is based on information received in December 2015. The current proposed Budget Bill for FY 2017 and FY 2018 includes language that will allow up to 20% of the annual revenues of the Rail Enhancement Fund to be allocated to the Rail Preservation program, if needed. This is not reflected in the schedule above.
- C The 2017 through 2021 planned allocations will be reviewed / analyzed for potential changes based on current conditions. The planned allocations for FY 2022 are currently under development.

**DRPT**  
**Rail Preservation Program - SYIP Planning**  
**FY 2017 - FY 2022**  
(\$ in millions)

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	Total
Unobligated - 12/31/15	\$ 0.3						
RPF Revenues	3.9	3.9	3.9	3.9	3.9	3.9	3.9
CPR Bonds	3.0	2.4	-	-	-	-	-
<b>Total Resources</b>	<b>7.2</b>	<b>6.3</b>	<b>3.9</b>	<b>3.9</b>	<b>3.9</b>	<b>3.9</b>	<b>29.1</b>

	FY 2016 - FY 2021 SYIP
Planned Allocations	23.4

Difference	A	B	C
	\$ -	\$ -	\$ -
	\$ 0.1	\$ 0.5	\$ 1.2
	\$ 3.9	\$ 3.9	\$ 5.7

- Notes:**
- A The planned allocations utilized in this SYIP planning schedule come from the SYIP approved last June with needs assessments performed during February through May of 2015. Potential new projects as well as last years' planned projects will be evaluated this spring as part of the annual SYIP process. The timing by year of the allocations and the actual projects recommended will be adjusted in this years' SYIP process so that no planned, annual deficits exist.
  - B The revenue data used for this analysis is based on information received in December 2015. The current proposed Budget Bill for FY 2017 and FY 2018 includes language that will allow up to 20% of the annual revenues of the Rail Enhancement Fund to be allocated to the Rail Preservation program, if needed. This is not reflected in the schedule above.
  - C The 2017 through 2021 planned allocations will be reviewed / analyzed for potential changes based on current conditions. The planned allocations for FY 2022 are currently under development.

**DRPT**  
**IPROC Program - SYIP Planning**  
**FY 2017 - FY 2022**  
(\$ in millions)

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>Total</b>
<b>Unobligated - 12/31/15</b>	\$52.6						
<b>B IPROC Revenues</b>	54.0	56.7	58.7	60.9	63.2	65.5	
<b>Total Resources</b>	<u>106.6</u>	<u>56.7</u>	<u>58.7</u>	<u>60.9</u>	<u>63.2</u>	<u>65.5</u>	<u>\$411.6</u>
<b>FY 2016 - FY 2021 SYIP</b>							
<b>C Planned Allocations</b>	81.8	73.1	64.3	46.6	59.0	-	\$324.8
<b>Difference</b>	<u>\$24.8</u>	<u>(\$16.4)</u>	<u>(\$5.6)</u>	<u>\$14.3</u>	<u>\$4.2</u>	<u>\$65.5</u>	<u>\$86.8</u>

- Notes:**
- A The planned allocations utilized in this SYIP planning schedule come from the SYIP approved last June with needs assessments performed during February through May of 2015. Potential new projects as well as last years' planned projects will be evaluated this spring as part of the annual SYIP process. The timing by year of the allocations and the actual projects recommended will be adjusted in this years' SYIP process so that no planned, annual deficits exist.
  - B The revenue data used for this analysis is based on information received in December 2015.
  - C The 2017 through 2021 planned allocations will be reviewed / analyzed for potential changes based on current conditions. The planned allocations for FY 2022 are currently under development.