
HAMPTON ROADS TRANSPORTATION ACCOUNTABILITY COMMISSION



Hampton Roads Crossing Study SEIS Potential Funding Scenarios

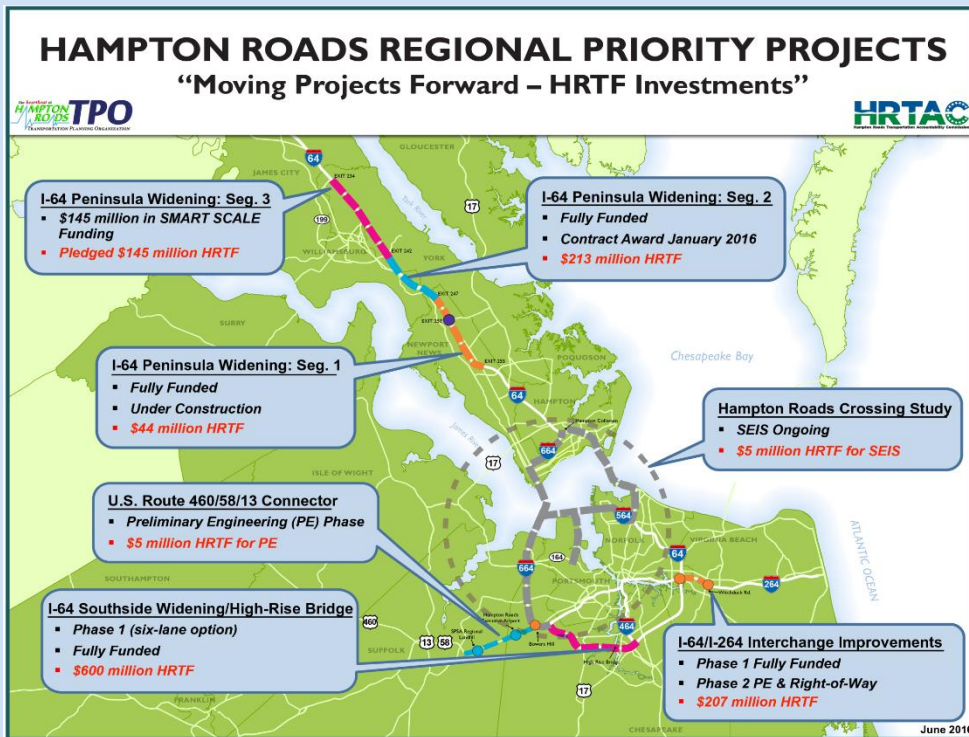
Kevin B. Page

HRTAC February 2016 Analysis

- In February 2016, the HRTAC 2016 - 2022 Funding Plan was approved. Approved Projects to be completed prior to 2022 include:
 - I-64 Widening Projects (Segment 1, 2, & 3)
 - I-64/I-264 Interchange (Phase I & II)
 - I-64 Widening/High Rise Bridge (“High Rise Bridge”) Phase I
 - SEIS Study expense
- In February 2016, the HRTPO set project sequencing and adopted the 2040 CLRP
- Current analysis of the alternatives and development of concept plans of finance for the alternatives has used the project sequencing set by the HRTPO

2040 LRTP: Regional Priority Projects

'Sequencing Based on Project Readiness'



- I
 - I-64 Peninsula Widening
 - I-64/I-264 Interchange
- II
 - I-64 Southside Widening/High-Rise Bridge - Phase 1
- III
 - Hampton Roads Crossing: Locally Preferred Alternative - Phase 1
- IV
 - I-64 Southside Widening/High-Rise Bridge - Phase 2
- V
 - I-64/Fort Eustis Blvd Interchange
 - US Route 460/58/13 Connector

❖ Approved by the HRTPO Board at its February 18, 2016 Meeting.

HRTAC Funding Plan

HRTAC 2016-2022 Funding Plan HRTAC Program Level Spreadsheet Approved March 17, 2016

Project Drawdowns	Project Cost	HRTAC Funding	HB2 Funding	VDOT Funding	Previous	Jan-Dec 2016	Jan-Dec 2017	Jan-Dec 2018	Jan-Dec 2019	Jan-Dec 2020	Jan-Dec 2021	Jan-Dec 2022
I-64 Seg I- UPC 104905	\$122,551,685	\$22,551,685		\$100,000,000	(\$28,429,982)	(\$54,657,495)	(\$26,976,631)	(\$12,487,577)	\$0	\$0	\$0	\$0
I-64 Seg II- UPC 106665	\$189,707,675	\$134,803,520	\$54,904,155	\$0	(\$6,000,000)	(\$41,286,868)	(\$69,160,055)	(\$58,831,351)	(\$14,429,401)	\$0	\$0	\$0
I-64 Seg III- UPC 106689	\$311,303,820	\$221,207,975	\$90,095,845	\$0	\$0	(\$800,000)	(\$4,400,000)	(\$19,958,448)	(\$93,367,598)	(\$101,050,838)	(\$84,916,017)	(\$6,810,919)
I-64/264 - UPC 57048 (Phase I)	\$157,142,416	\$152,094,716		\$5,047,700	(\$5,054,702)	(\$18,201,817)	(\$49,211,271)	(\$58,130,306)	(\$26,544,320)	\$0	\$0	\$0
I-64/264 - UPC 17630 (Phase II)	\$190,031,747	\$178,428,847		\$11,602,900	(\$14,240,679)	(\$18,162,221)	(\$32,199,910)	(\$38,592,666)	(\$31,000,000)	(\$31,000,000)	(\$24,836,271)	\$0
I-64 Southside-High Rise Br- UPC 106692 (Phase I)	\$600,000,000	\$600,000,000		\$0	(\$341,708)	(\$19,658,292)	(\$150,000,000)	(\$190,000,000)	(\$190,000,000)	(\$50,000,000)	\$0	\$0
Hampton Roads Crossing Study- UPC 106724 (SEIS)	\$6,352,527	\$0		\$6,352,527	\$0	(\$1,875,000)	(\$2,500,000)	(\$1,977,527)	\$0	\$0	\$0	\$0
Future Projects												
Harbor Crossing Project (Phase I)	\$266,647,109	\$266,647,109		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$266,647,109)
Ft Eustis Interchange- UPC 106700	TBD*	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
I-64 Southside-High Rise Br- Phase II	TBD**	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Rte 460/58/13 Connector	TBD	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
I-64/I-264 Interchange (Phase III)	TBD	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$1,843,736,979	\$1,575,733,852	\$145,000,000	\$123,003,127	(\$54,067,071)	(\$154,641,693)	(\$334,447,867)	(\$379,977,875)	(\$355,341,319)	(\$182,050,838)	(\$109,752,288)	(\$273,458,028)
Total Yearly Costs					(\$54,067,071)	(\$154,641,693)	(\$334,447,867)	(\$379,977,875)	(\$355,341,319)	(\$182,050,838)	(\$109,752,288)	(\$273,458,028)
Previous year carryover					\$0	\$366,645,457	\$509,377,420	\$406,629,992	241,823,684	78,163,113	86,812,275	174,609,987
VDOT SYIP funding					\$32,376,717	\$81,000,000	\$9,626,410	\$0	\$0	\$0	\$0	\$0
HB2 Funding***					\$0	\$50,073,656	\$50,174,030	\$37,221,566	\$7,530,748			
Projected HRTAC Revenue****	Total: \$1,677,560,513				\$388,335,811	\$166,300,000	\$171,900,000	\$177,950,000	\$184,150,000	\$190,700,000	\$197,550,000	\$200,674,702
Total Funding					\$420,712,528	\$664,019,113	\$741,077,859	\$621,801,559	\$433,504,432	\$268,863,113	\$284,362,275	\$375,284,689
Residual Cash Flow					\$366,645,457	\$509,377,420	\$406,629,992	\$241,823,684	\$78,163,113	\$86,812,275	\$174,609,987	\$101,826,662

* Planning Level Cost Estimate- \$180M to include 8 lane widening

** Planning Level Cost Estimate- \$800M - \$1.0B

*** Anticipated HB2 Funds Pending CTB approval and award of funding June 2016

**** Previous revenues reflect HRTF ending balance on 12/31/2015

Latest HRTF revenue forecast from FY 2016 to FY 2022 received February 26, 2016

Assume equal amounts of revenues collected in two semi-annual periods for each FY.

Updated Cost Based Upon Contract Award
Construction Phase
Estimate Still Under Development
Added by PFM
Adjusted to VDOT Comments 3/4/2016

HRTPO Designation of Project Sequencing in 2040 CLRP

	I-64 Seg. I	I-64 Seg. II	I-64 Seg. III	I-64/I-264 Interchange (Phase I)	I-64/I-264 Interchange (Phase II)	High Rise Bridge (Phase I)	HRC Study (SEIS)	Harbor Crossing Project (Phase I)	High Rise Bridge (Phase II)	Ft. Eustis Interchange	Rt 460/58/13 Connector
2040 CLRP with HOT											
Inflated Costs (MM)	\$123	\$190	\$311	\$157	\$190	\$600	\$5	\$4,848	\$1,396	\$267	\$334
Fiscally Constrained Construction End Year	2018	2019	2022	2019	2021	2020	2018	2028	2029	2031	2032
2040 CLRP without HOT											
Inflated Costs (MM)	\$123	\$190	\$311	\$157	\$190	\$600	\$5	\$4,848	\$1,396	\$267	\$334
Fiscally Constrained Construction End Year	2018	2019	2022	2019	2021	2020	2018	2028	2029	2031	2032

	Harbor Crossing Project (Phase II)	Harbor Crossing Project (Phase III)	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go (see Notes 5&6)
Post 2040 Vision Plan with HOT							
Inflated Costs (MM)	\$12,143	\$9,675					
Fiscally Constrained Construction End Year	2061	2066	\$21,818	\$15,010	\$922	\$5,136	\$750

One operationally independent component of Harbor Crossing Project and all other HRTAC projects completed by 2040.

HRTAC FSAC August-September 2016 Updated Analysis

- In August 2016, VDOT released the Draft Hampton Roads Crossing Study SEIS. Four Harbor Crossing alternatives were identified.
- The objective of the updated 2016 analysis is to determine the financial-constrained construction timeline for the four SEIS Alternatives following the construction of the Approved Projects.
- The HRTF estimate stream utilized in the February analysis were adjusted based on FY 2016's actuals.
- Two tolling scenarios are analyzed:
 - HOT – all Harbor Crossing projects are HOT except fixed rates on I-564/I-664 Connectors (Patriots Crossing)
 - No Toll – no tolling on Harbor Crossing project except fixed rates on I-564/I-664 Connectors
 - High Rise Bridge is tolled in the HOT scenario only

HRTAC FSAC Analysis - Modified Project Sequence

- Approved projects, i.e. I-64 Peninsula, I-64/I-264 Interchange, High Rise Bridge Phase I (HRB I)
- First Harbor Crossing Project (HCP) – either HRBT or the I-564/I-664 Connector project segments as applicable for SEIS Alt B or D
 - In Alt B, VA 164 are finished at the same time with the I-564/I-664 Connectors to create an independently operable project.
- HRB II
 - The goal is to ensure HRB II is completed by 2040
 - If a second HCP can be constructed ahead of HRB II and HRB II is still completed by 2040, then allow the second HCP ahead of HRB II
- Ft Eustis Interchange
- Rt 460/58 Connector
- The remaining HCP segments

HRTF Revenue Update

- HRTF revenue received in FY 2016 is \$157,457,280, 4.5% lower than the estimated amount of \$164,800,000 (updated in December 2016 by VDOT)
 - \$2.4M HRTAC Operating and Admin Expenses approved for FY 2017 – increase @ 2.5% annually

State Sales and Use Tax	\$126,536,775
<u>Local Fuels Tax</u>	<u>26,654,471</u>
Sub Totals	\$153,191,246
<u>Investment/Interest</u>	<u>4,266,034</u>
Total	\$157,457,280

- The 4.5% reduction rate is applied to the HRTF revenue stream assumed in the February analysis.
 - \$271M nominal dollar reduction in total from FY 2016 to FY 2040 (\$196M PV dollar reduction at a 2.5% discount rate).
- For purposes of sizing HRTF Bonds, only tax revenues are used, while interest earnings are used for pay-go capital investment.
- Without a “floor” to the tax rate, the fuels tax fluctuates and causes unreliability of the HRTF revenues.

Draft HRCS SEIS Alternatives' Map

Alt. A



Alt. B



Alt. C



Alt. D



Draft HRCS SEIS Alternatives' Alignment Segments Map



SEIS Alternatives' Segments and Costs

I-664 MMBT

Seg.	Description
1	from US 58 (Bowers Hill) to I-264
2	from VA 164 to US 58 (Bowers Hill)
3	I-664 and VA 164 Interchange
4	from I-664 Connector to VA 164
5	from Terminal Avenue Interchange to I-664 Connector
6	Terminal Avenue Interchange
7	from I-64 to and including Terminal Avenue Interchange

I-64 HRBT

Seg.	Description
8	North of HRBT
9	From HRBT to I-564

VA 164

Seg.	Description
13	VA 164 Connector
14	VA 164

I-564/I-664 Connectors (Patriots Crossing)

Seg.	Description
10	I-564 and I-664 Connector
11	I-664 Connector including I-664 interchange
12	I-564 Connector, I-664 Connector, and VA 164 Connector Interchange

Note: The segments included in each of these four project systems are assumed by PFM based on the segments' location.

Alt. A

Seg.	Cost
8	\$64
9	\$3,200

Alt. B

Seg.	Cost
8	\$64
9	\$3,200
10	\$2,600
12	\$229
13	\$408
14	\$120
3	\$123

Alt. C

Seg.	Cost
7	\$511
6	\$356
5	\$3,900
11	\$1,500
4	\$424
3	\$123
2	\$195
1	\$54
13	\$408
12	\$577
10	\$4,500

Alt. D

Seg.	Cost
8	\$64
9	\$3,200
7	\$433
6	\$285
5	\$2,500
11	\$1,100
4	\$424
3	\$123
2	\$195
1	\$54
14	\$120
13	\$408
12	\$514
10	\$2,600

- Data source: Draft Supplemental Environmental Impact Statement by VDOT, August 2016
- Costs are in \$2016 dollars (in millions) with 40% contingency; 2.5% inflation rate
- Assume segment 12C & 13 are not funded by HRTAC in Alt. C; assume segment 12D, 13 & 14 are not funded by HRTAC in Alt. D
- The \$123M Segment 3 cost in Alt. B was later removed by VDOT.

Capital Cost Update

- All Projects other than Harbor Crossing: Inflated costs same as the February analysis
- Harbor Crossing Projects
 - Costs in the February analysis - provided by CH2M Hill in October 2015 assuming no direct connectors; these costs are used for HOT scenarios and used as a proxy for General Purpose lanes in No Toll scenarios.
 - Costs in the August Analysis – provided by VDOT’s Draft Supplemental Environmental Impact Statement dated July 2016 – Appendix A
 - Assume Segments 12C & 13 are not funded by HRTAC in Alt. C;
 - Assume Segments 12D, 13 & 14 are not funded by HRTAC in Alt. D

Harbor Crossing Projects

All costs in 2016 dollars

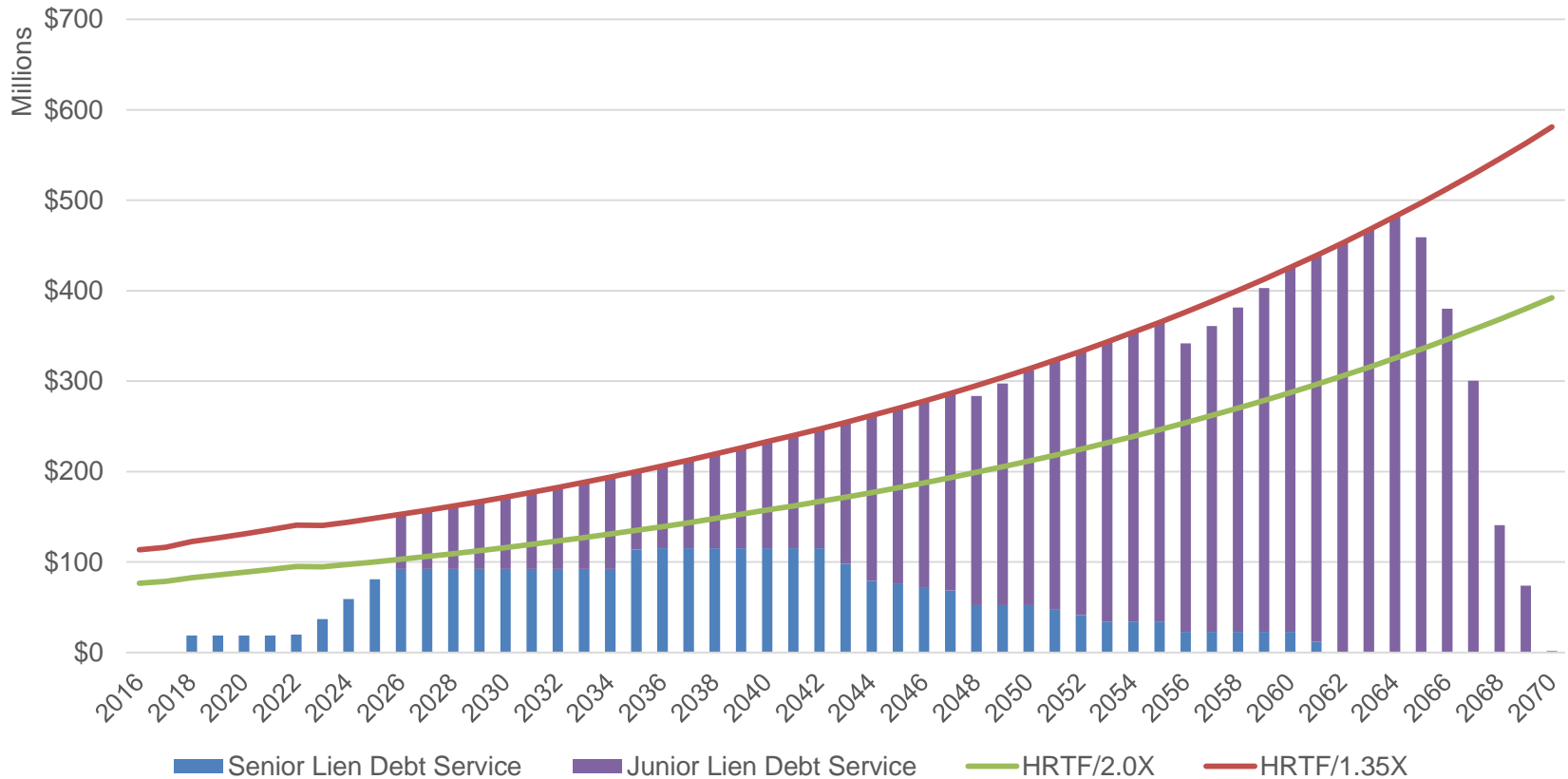
in millions	February	Alt. A	Alt. B	Alt. C	Alt. D
HRBT	\$3,832	\$3,264	\$3,264		\$3,264
I-564/I-664 Connectors	\$4,222		\$2,829	\$6,000	\$3,700
MMBT	\$2,981			\$5,563	\$4,013
VA 164			\$527		
Total	\$11,035	\$3,264	\$6,620	\$11,563	\$10,977

HRTF Bond Financing

- AA category credit rated senior lien
 - 20-30 year term
 - Current Interest Bonds only
 - Level or moderately ascending annual debt service
 - 2.0x additional bonds test based on MADs and historical revenues
- A category credit rated junior lien
 - Up to 40 year term
 - Current Interest Bonds and deferred interest bonds
 - Ascending annual debt service
 - 1.35x ABT test based on annual debt service and projected revenues
- In the August analysis, no HRTF bonds were assumed prior to 2022, but for this September update HRTF bonds are issued when considered advantageous

HRTF Bond Debt Service Illustration

HRTF Bonds Debt Service Example



Toll Revenue Financing

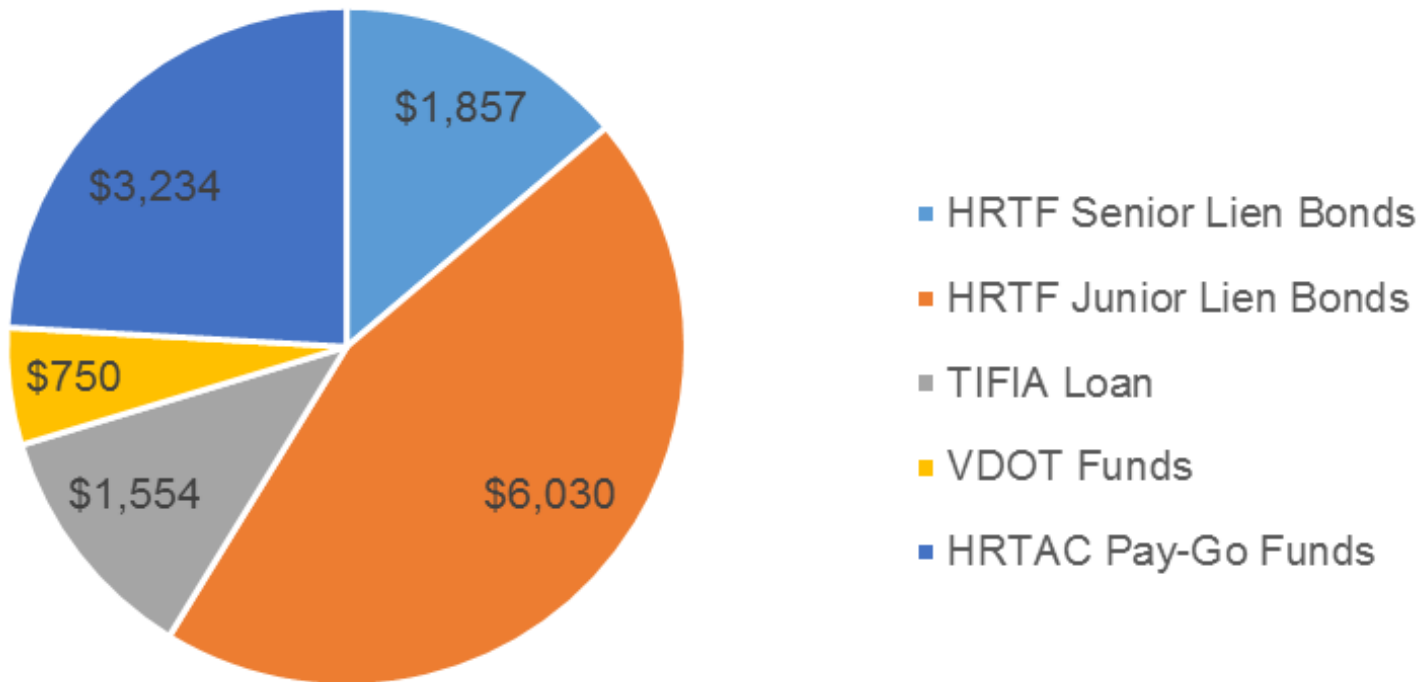
- Toll revenue debt for new toll project is typically BBB category credit rated
 - Uncertainty of projected traffic & toll revenue
 - 1.90x minimum projected coverage on annual debt service assumed
- HOT revenues plus I-564/I-664 Connectors' fixed toll revenues are not relatively significant
 - In Alt A, HRTAC project HOT revenues support approximately 4.9% of associated project costs
 - In Alt B & D, the I-564/I-664 Connector toll revenues support approximately 10.0% of associated project costs
- Transportation Infrastructure Finance and Innovation Act (TIFIA) allows for a loan in an amount of up to 33% of eligible project costs.
- Therefore, all toll revenues conceptually can be leveraged with TIFIA loans
 - a lower cost of debt than any other alternative.
- Thus, the plan of finance assumes all toll financing is via TIFIA loans
 - 35-year term after project construction completion
 - TIFIA interest rate is approximately the 30 year US Treasury rate

HRTAC Analysis – Sequencing Alt B & D Segments

- For Alternative B&D, the financing analyses look at both constructing HRBT first and constructing the I-564/I-664 Connectors first
 - Alternative B includes costs of Segment 10 &12 of the I-564/I-664 Connectors (plus VA 164 Segments 13 & 14)
 - Alternative Alt D includes costs of Segment 10 &11 of the I-564/I-664 Connectors (Segment 12 interchange excluded until VA 164 is constructed later)
 - I-564/I-664 Connectors impose fixed-rate tolls – it generates much higher toll revenues that can be utilized either in the form of pay-go cash or toll revenue bonds
- Alternative B-1 & Alternative D-1: Build the I-564/I-664 Connector project first, segments as applicable for B & D, and then HRBT
- Alternative B-2 & Alternative D-2: Build HRBT first and then the I-564/I-664 Connectors project, segments as applicable for B & D
- Alternative D-3: Build I-564/I-664 Connectors (Segment 10 and 11) first, i.e. connect I-564 across the water straight with I-664, and then HRBT

Alternative B-1 Funding (HOT)

Project completed by 2040 including the Approved Projects



HRTAC Analysis - SEIS Alternative A

	Approved Projects	HRBT (seg. 8&9)	I-564/I-664 Connectors	MMBT	VA 164	High Rise Bridge (Phase II)	Rt 460/58/13 Connector	Ft. Eustis Interchange	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
2040 CLRP with HOT													
Inflated Costs (MM)	\$1,576	\$4,031				\$1,386	\$342	\$267					
Fiscally Constrained Construction End Year	2022	2024				2028	2032	2032	\$7,602	\$4,505	\$295	\$2,052	\$750
2040 CLRP without HOT													
Inflated Costs (MM)	\$1,576	\$4,131				\$1,420	\$351	\$288					
Fiscally Constrained Construction End Year	2022	2025				2029	2034	2034	\$7,766	\$4,606		\$2,410	\$750

	Approved Projects	HRBT (seg. 8&9)	I-564/I-664 Connectors	MMBT	VA 164	High Rise Bridge (Phase II)	Rt 460/58/13 Connector	Ft. Eustis Interchange	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
Post 2040 vision plan with HOT													
Inflated Costs (MM)													
Fiscally Constrained Construction End Year													
Post 2040 vision plan without HOT													
Inflated Costs (MM)													
Fiscally Constrained Construction End Year													

- HRBT is the only Harbor Crossing component in Alternative A.
- Alt A can be completed under the approved 2040 CLRP without impact to other projects.
- HRBT, HRB II, the Rt 460/58/13 and the Ft. Eustis Interchange can all be completed by 2040.
- Results consistent with the February analysis.

HRTAC Analysis - SEIS Alternative B – Non-Aggressive Financing

	Approved Projects	HRBT (seg. 8&9)	I-564/I-664 Connectors (seg. 10&12)	I-664/VA 164 Interchange (seg. 3)	VA 164 (seg. 8&9)	High Rise Bridge (Phase II)	Rt 460/58/13 Connector	Ft. Eustis Interchange	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
2040 CLRP with HOT													
Inflated Costs (MM)	\$1,576	\$4,357	\$5,057	\$238	\$997								
Fiscally Constrained Construction End Year	2022	2027	2039	2040	2040				\$12,225	\$6,290	\$1,470	\$3,715	\$750
2040 CLRP without HOT													
Inflated Costs (MM)	\$1,576	\$4,357	\$5,057	\$238									
Fiscally Constrained Construction End Year	2022	2027	2039	2040					\$11,228	\$6,189	\$1,041	\$3,248	\$750

	Approved Projects	HRBT (seg. 8&9)	I-564/I-664 Connectors (seg. 10&12)	I-664/VA 164 Interchange (seg. 3)	VA 164 (seg. 8&9)	High Rise Bridge (Phase II)	Rt 460/58/13 Connector	Ft. Eustis Interchange	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
Post 2040 vision plan with HOT													
Inflated Costs (MM)						\$2,019	\$485	\$396					
Fiscally Constrained Construction End Year						2045	2047	2047	\$2,900	\$1,187	\$629	\$1,084	
Post 2040 vision plan without HOT													
Inflated Costs (MM)					\$1,128	\$2,328	\$548	\$449					
Fiscally Constrained Construction End Year					2045	2049	2052	2052	\$4,453	\$2,798		\$1,655	

- SEIS Alt B can be completed by 2040 in the HOT scenario. In the No-HOT scenario, the VA164 improvements and related interchange are deferred past 2040.
- Two main Harbor Crossing components, HRBT and I-564/I-664 Connectors, are constructed. This causes High Rise Bridge Phase II, Rt 460/58/13 Connector, and the Ft. Eustis Interchange to be deferred past 2040.
- With HOT, \$11.5M (6.8%) HRTF increase in FY 2018 and same % increase thereafter are needed for HRBII to be completed by 2040.

HRTAC Analysis - September Analysis Result – Alternative B-1 - Sequence Flip - HRBT Constructed Ahead of I-564/I-664 Connectors

	Approved Projects	I-564/I-664 Connectors (seg. 10&12)	VA 164 (seg. 13&14)	HRBT (seg. 8&9)	HRB II	Ft. Eustis Interchange	Rt 460/58/13	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
2040 CLRP with HOT												
Inflated Costs (MM)	\$1,576	\$3,579	\$689	\$5,717	\$1,864							
Fiscally Constrained Construction End Year	2022	2025	2025	2038	2040			\$13,425	\$7,887	\$1,554	\$3,234	\$750
2040 CLRP without HOT												
Inflated Costs (MM)	\$1,576	\$3,579	\$689	\$6,156								
Fiscally Constrained Construction End Year	2022	2025	2025	2040				\$12,000	\$8,283	\$602	\$2,365	\$750

	Approved Projects	I-564/I-664 Connectors (seg. 10&12)	VA 164 (seg. 13&14)	HRBT (seg. 8&9)	HRB II	Ft. Eustis Interchange	Rt 460/58/13	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
Post 2040 vision plan with HOT												
Inflated Costs (MM)						\$377	\$461					
Fiscally Constrained Construction End Year						2045	2045	\$838		\$191	\$647	
Post 2040 vision plan without HOT												
Inflated Costs (MM)					\$1,958	\$406	\$497					
Fiscally Constrained Construction End Year					2042	2048	2048	\$2,861	\$310		\$2,551	

- I-564/I-664 Connector project is constructed ahead of HRBT
- With HOT, the SEIS Alt. B-1 plus HRB II can be finished by 2040.
- Without HOT, HRB II would be finished in 2042.

HRTAC Analysis - Alternative B-2 – Sequence as Proposed in SEIS - HRBT Constructed Ahead of I-564/I-664 Connectors

	Approved Projects	HRBT (seg. 8&9)	I-564/I-664 Connectors (seg. 10&12)	VA 164 (seg. 13&14)	HRB II	Ft. Eustis Interchange	Rt 460/58/13	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
2040 CLRP with HOT												
Inflated Costs (MM)	\$1,576	\$4,251	\$5,184	\$997	\$1,864							
Fiscally Constrained Construction End Year	2022	2026	2040	2040	2040			\$13,872	\$8,308	\$1,603	\$3,211	\$750
2040 CLRP without HOT												
Inflated Costs (MM)	\$1,576	\$4,357										
Fiscally Constrained Construction End Year	2022	2027						\$5,933	\$3,031		\$2,552	\$350

	Approved Projects	HRBT (seg. 8&9)	I-564/I-664 Connectors (seg. 10&12)	VA 164 (seg. 13&14)	HRB II	Ft. Eustis Interchange	Rt 460/58/13	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
Post 2040 vision plan with HOT												
Inflated Costs (MM)						\$387	\$473					
Fiscally Constrained Construction End Year						2046	2046	\$860		\$49	\$811	
Post 2040 vision plan without HOT												
Inflated Costs (MM)			\$5,313	\$1,022	\$1,958	\$427	\$522					
Fiscally Constrained Construction End Year			2041	2041	2042	2050	2050	\$9,243	\$5,975	\$1,186	\$1,682	\$400

- When I-564/I-664 Connectors are constructed after HRBT and its revenues are received later, with HOT, the SEIS Alt. B-2 plus HRB II can still be finished by 2040.
- Without HOT, only HRBT can be finished by 2040.

HRTAC Analysis - SEIS Alternative C

	Approved Projects	HRBT (seg. 8&9)	I-564/I-664 Connectors (seg 10&11)	MMBT	VA 164	High Rise Bridge (Phase II)	Rt 460/58/13 Connector	Ft. Eustis Interchange	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
2040 CLRP with HOT													
Inflated Costs (MM)	\$1,576		\$11,088						\$12,664	\$4,673	\$1,094	\$6,147	\$750
Fiscally Constrained Construction End Year	2022		2040										
2040 CLRP without HOT													
Inflated Costs (MM)	\$1,576		\$11,088						\$12,664	\$4,974	\$1,094	\$5,846	\$750
Fiscally Constrained Construction End Year	2022		2040										

	Approved Projects	HRBT (seg. 8&9)	I-564/I-664 Connectors (seg 10&11)	MMBT	VA 164	High Rise Bridge (Phase II)	Rt 460/58/13 Connector	Ft. Eustis Interchange	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
Post 2040 vision plan with HOT													
Inflated Costs (MM)				\$17,542		\$3,722	\$831	\$680	\$22,094	\$12,883	\$3,343	\$5,868	
Fiscally Constrained Construction End Year				2063		2068	2068	2068					
Post 2040 vision plan without HOT													
Inflated Costs (MM)				\$19,363		\$4,108	\$899	\$735	\$24,370	\$15,917		\$8,453	
Fiscally Constrained Construction End Year				2067		2072	2072	2072					

- Only I-564/I-664 Connectors can be completed by 2040. MMBT is deferred until after 2040.
- HRB II, Rt 460/58/13 Connector and the Ft. Eustis Interchange are deferred past 2040 until after the entire SEIS Alt C is completed.

HRTAC Analysis - SEIS Alternative D

	Approved Projects	HRBT (seg. 8&9)	I-564/I-664 Connectors (seg. 10&11)	MMBT (seg. 1-7)	VA 164 (seg. 12, 13&14)	High Rise Bridge (Phase II)	Rt 460/58/13 Connector	Ft. Eustis Interchange	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
2040 CLRP with HOT													
Inflated Costs (MM)	\$1,576	\$4,449											
Fiscally Constrained Construction End Year	2022	2028							\$6,025	\$2,439	\$186	\$2,650	\$750
2040 CLRP without HOT													
Inflated Costs (MM)	\$1,576	\$4,449											
Fiscally Constrained Construction End Year	2022	2028							\$6,025	\$2,873		\$2,402	\$750

	Approved Projects	HRBT (seg. 8&9)	I-564/I-664 Connectors (seg. 10&11)	MMBT (seg. 1-7)	VA 164 (seg. 12, 13&14)	High Rise Bridge (Phase II)	Rt 460/58/13 Connector	Ft. Eustis Interchange	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
Post 2040 vision plan with HOT													
Inflated Costs (MM)			\$7,184	\$12,654		\$3,631	\$814	\$666					
Fiscally Constrained Construction End Year			2042	2063		2067	2068	2068	\$24,283	\$13,776	\$4,705	\$5,802	
Post 2040 vision plan without HOT													
Inflated Costs (MM)			\$7,736	\$12,971		\$3,815	\$904	\$739					
Fiscally Constrained Construction End Year			2045	2064		2069	2072	2072	\$25,426	\$18,318	\$1,302	\$5,805	

- Only HRBT can be completed by 2040. I-564/I-664 Connectors & MMBT are deferred until after 2040.
- High Rise Bridge Phase II, Rt 460/58/13 Connector and the Ft. Eustis Interchange are deferred past 2040 until after the entire SEIS Alt D is completed.
- However, High Rise Bridge Phase II could be completed by 2040 if the I-564/I-664 Connectors & MMBT components of Alt D were deferred.

HRTAC Analysis Result – Alternative D-1

	Approved Projects	I-564/I-664 Connectors (seg. 10)	HRBT (seg. 8&9)	HRB II	Ft. Eustis Interchange	I-564/I-664 Connectors (seg. 11)	MMBT	VA 164 (seg 12, 13 & 14)	Rt 460/58/13	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
2040 CLRP with HOT														
Inflated Costs (MM)	\$1,576	\$3,236	\$5,288	\$1,864	\$333			n.a.						
Fiscally Constrained Construction End Year	2022	2024	2035	2040	2040			n.a.		\$12,297	\$6,011	\$1,509	\$4,027	\$750
2040 CLRP without HOT														
Inflated Costs (MM)	\$1,576	\$3,236	\$5,983	\$1,864				n.a.						
Fiscally Constrained Construction End Year	2022	2024	2040	2040				n.a.		\$12,659	\$5,602	\$578	\$5,729	\$750

	Approved Projects	I-564/I-664 Connectors (seg. 10)	HRBT (seg. 8&9)	HRB II	Ft. Eustis Interchange	I-564/I-664 Connectors (seg. 11)	MMBT	VA 164 (seg 12, 13 & 14)	Rt 460/58/13	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
Post 2040 vision plan with HOT														
Inflated Costs (MM)						\$2,427	\$11,227	n.a.	\$570					
Fiscally Constrained Construction End Year						2049	2058	n.a.	2058	\$14,224	\$8,655	\$1,975	\$3,594	
Post 2040 vision plan without HOT														
Inflated Costs (MM)					\$341	\$2,679	\$13,345	n.a.	\$678					
Fiscally Constrained Construction End Year					2041	2053	2065	n.a.	2065	\$16,365	\$9,890		\$6,475	

- With HOT, the I-564 Connector (Segment 10), HRBT, HRB II and Ft Eustis Interchange can be finished by 2040, but this excludes VA 164 (Segments 13 &14).
- I-564/I664 Connector Segment 11 is post 2040.
- Some party other than HRTAC has to fund VA 164 (segments 13 & 14) to develop an independently operable I-564/I-664 Harbor Crossing component.

HRTAC Analysis – Alternative D-2

	Approved Projects	HRBT (seg. 8&9)	I-564/I-664 Connectors (seg. 10)	HRB II	Ft. Eustis Interchange	I-564/I-664 Connectors (seg. 11)	MMBT	VA 164 (seg 12, 13 & 14)	Rt 460/58/13	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
2040 CLRP with HOT														
Inflated Costs (MM)	\$1,576	\$4,030	\$4,804	\$1,864	\$333			n.a.						
Fiscally Constrained Construction End Year	2022	2024	2040	2040	2040			n.a.		\$12,607	\$7,511	\$1,629	\$2,717	\$750
2040 CLRP without HOT														
Inflated Costs (MM)	\$1,576	\$4,448	\$4,804	\$1,864				n.a.						
Fiscally Constrained Construction End Year	2022	2028	2040	2040				n.a.		\$12,692	\$6,615	\$1,274	\$4,053	\$750

	Approved Projects	HRBT (seg. 8&9)	I-564/I-664 Connectors (seg. 10)	HRB II	Ft. Eustis Interchange	I-564/I-664 Connectors (seg. 11)	MMBT	VA 164 (seg 12, 13 & 14)	Rt 460/58/13	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
Post 2040 vision plan with HOT														
Inflated Costs (MM)						\$2,614	\$12,393	n.a.	\$629					
Fiscally Constrained Construction End Year						2052	2062	n.a.	2062	\$15,636	\$8,538	\$2,332	\$4,766	
Post 2040 vision plan without HOT														
Inflated Costs (MM)					\$386	\$2,679	\$13,679	n.a.	\$695					
Fiscally Constrained Construction End Year					2046	2053	2066	n.a.	2066	\$16,744	\$12,540		\$4,204	

- With HOT, the I-564 Connector (Segment 10), HRBT, HRB II and Ft Eustis Interchange can be finished by 2040, but this excludes VA 164 (Segments 13 &14).
- I-564/I664 Connector Segment 11 is post 2040.
- Some party other than HRTAC has to fund VA 164 (segments 13 & 14) to develop an independently operable I-564/I-664 Harbor Crossing component.

HRTAC Analysis Result – Alternative D-3 (HOT) – I-564/I-664 Straight Across

	Approved Projects	I-564/I-664 Connectors (seg. 10&11)	HRBT (seg. 8&9)	HRB II	Ft. Eustis Interchange	MMBT	VA 164 (seg 12, 13 & 14)	Rt 460/58/13	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
2040 CLRP with HOT													
Inflated Costs (MM)	\$1,576	\$4,960	\$5,983				n.a.		\$12,519	\$7,182	\$1,360	\$3,227	\$750
Fiscally Constrained Construction End Year	2022	2027	2040				n.a.						

	Approved Projects	I-564/I-664 Connectors (seg. 10&11)	HRBT (seg. 8&9)	HRB II	Ft. Eustis Interchange	MMBT	VA 164 (seg 12, 13 & 14)	Rt 460/58/13	Total FV Cost	Funded by HRTF Bonds	Funded by Toll Bonds	Funded by HRTF Pay-Go	Funded by Other Pay-Go
Post 2040 vision plan with HOT													
Inflated Costs (MM)				\$2,109	\$377	\$12,346	n.a.	\$677	\$15,509	\$8,392	\$2,353	\$4,764	
Fiscally Constrained Construction End Year				2045	2045	2062	n.a.	2062					

- With HOT, the I-564/I-664 Connectors (Segment 10 & 11) and HRBT can be completed by 2040. But HRB II is pushed back to 2045.
- In order to complete HRB II by 2040, additional funds would be needed:
 - Either 8.5% HRTF revenue increase, equal to \$14M, in FY 2018 and thereafter
 - or**
 - \$456 million grant in future dollars needed for I-564/I-664 Connectors (Segments 10 & 11), HRBT, and HRB II

HRTAC Analysis Conclusions

- The accelerated HRTF bonding and bi-furcated credit structure improves financial feasibility.
- SEIS Alt A can be completed under the approved 2040 CLRP without impact to other projects
- As applicable for SEIS Alternative B&D, building the I-564/I-664 Connectors project before HRBT improves financial feasibility because it generates more toll revenue sooner
- SEIS Alt B-1 & B-2 can be completed as well as HRB II by 2040 to keep constrained
- SEIS Alternative D, the complete HCP can not be completed by 2040, but some segments can
 - In SEIS Alt D-1 & D-2 the I-564 & I-564 Connector (Segment 10 of the I-564/I-664 Connectors), HRBT & HRB II can be completed by 2040
 - In SEIS Alt D-3 Segment 10 and 11 of the I-564/I-664 Connectors and HRBT can be completed by 2040, but HRB II is after 2040
 - If Alternative D is chosen, the Alternative B scenario can be completed by 2040 - two operable Harbor Crossing projects plus HRB II - if the Segment 11 component of the I-564/I-664 Connectors is deferred until after 2040.



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