



**I-264/Witchduck Road Interchange
& Ramp Extension (C-D Road)
Financial Plan Annual Update**

March 31, 2019

State Project Numbers: 0264-134-102, P101, R201,
C501, B601, B602, B603, B621, D601
UPCs: 17630, 108041

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EXECUTIVE SUMMARY

This Design-Bid-Build project is Phase 2 of the I-64/I-264 Interchange Improvements in Hampton Roads, Virginia. The adjacent Phase 1 improvements project is currently under construction, and once completed, will increase capacity, improve safety, and traffic operations along westbound I-64 and eastbound I-264 in the vicinity of the I-64/I-264 interchange in the City of Norfolk. Phase 2 will continue the proposed improvements along eastbound I-264 through the Newtown Road interchange and the Witchduck Road interchange in Virginia Beach thus improving safety, capacity and operations along the project corridor.

The project was advertised on July 25, 2017, and awarded for construction by the Commonwealth Transportation Board (CTB) on December 6, 2017. Notice to Proceed (NTP) was provided to the contractor (Lane Construction) on February 15, 2018. The project fixed completion date is September 16, 2021.

The current total project cost estimate is \$194,503,887. The project Construction phase funding is comprised of Smart Scale, Hampton Roads Transportation Accountability Commission (HRTAC) Hampton Roads Transportation Fund (HRTF), and local contributions. The project Right of Way phase is funded entirely by HRTF, and the Preliminary Engineering Phase funding is a combination of state, federal, and HRTF funds. Eight change orders have been processed from the Notice to Proceed to December 2018 equaling a total amount of \$914,843, \$779,347 of which was attributable to the contaminated ground water and spoils that were discovered as presented in Section 8 - Risk and Response Strategies.

A Value Engineering (VE) proposal was presented to the Department and has advanced through thirty percent design at an estimated savings of \$900,000. The VE is further discussed under Section 8. Risk and Response Strategies.

1. PROJECT DESCRIPTION

The I-264/Witchduck Road Interchange & Ramp Extension project is one of two adjacent projects which, when completed, will provide approximately 4 miles of interstate improvements from the Twin Bridges in Norfolk to the Witchduck Road interchange in Virginia Beach. The improvements will provide additional capacity, relieve daily congestion, reduce crash rates, and improve safety and traffic operations along the corridor.

The I-264/Witchduck project improvements include extending the new two-lane Collector-Distributor (C-D) roadway along eastbound I-264 from the adjacent I-64/I-264 Improvements project (UPC 57048) through the Newtown Road interchange to the Witchduck Road interchange, reconfiguring the south side of both interchanges to eliminate the weave movements, and constructing an overpass to connect Greenwich

Interchange Modification Report (IMR) was approved by the FHWA on November 14, 2011. A combined Location and Design Public Hearing was held on July 14, 2011.

An additional CE was prepared on August 20, 2019 that was prepared to address the permit issue.

The project website has been established and is available at the following link:
<http://www.i64i264improvements.org>.

2. SCHEDULE

The Commonwealth Transportation Board (CTB) awarded the construction contract to the lowest bidder, The Lane Construction Corporation, on December 6, 2017. Construction Notice to Proceed (NTP) was February 15, 2018. The contract fixed completion date is September 16, 2021. The final Contract Time Determination Report (CTDR) schedule reduced the total construction duration by five months. The contract also includes incentives for an interim milestone and early completion.

The initial financial plan schedule is shown in Table 1A with the current schedule shown in Table 1B.

TABLE 1A – INITIAL FINANCIAL PLAN PROJECT SCHEDULE OVERVIEW (CALENDAR YEAR)

Task	2015				2016				2017				2018				2019				2020				2021										
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
PE - Design																																			
RW/Utilities																																			
Construction																																			

TABLE 1B – CURRENT PROJECT SCHEDULE OVERVIEW (CALENDAR YEAR)

Task	2017				2018				2019				2020				2021																		
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
Pe-Design																																			
RW/ Utilities																																			
Construction																																			

3. PROJECT COST

Narrative of Project Cost

The current total project estimate is \$194,503,887. The estimates, as well as current expenditures for Preliminary Engineering (PE), Right of Way (RW), and Construction (CN) phase as of December 31, 2018, are summarized in the table below. The project currently has active PE, RW and CN phases. A portion of PE and all of RW is funded by the Hampton Roads Transportation Accountability Commission (HRTAC) Hampton Roads Transportation Fund (HRTF). On July 19, 2017 the Standard Project Agreement was

executed between VDOT and HRTAC to fund a portion of the CN phase in the amount of \$73,157,062. The remaining portion of the CN phase is funded by federal funds in the High Priority Program (HPP) through Smart Scale (\$50,000,055) and \$2,871,294 by local contributions.

PE, CN and RW expenditures as of December 31, 2018, are \$54,248,828. HRTAC funds and expenditures are summarized under a “child” UPC 108041 in the table below.

TABLE 2 – PROJECT COST BY PHASE

UPC	Phase	Estimate	Current Expenditure	Balance to Complete
17630	PE	\$13,882,900	\$13,882,900	\$0
	RW	\$0	\$0	\$0
	CN	\$52,871,349	\$14,492,557	\$38,378,792
	SUBTOTAL	\$66,754,249	\$28,375,457	\$38,378,792
108041	PE	\$199,910	\$182,630	\$17,280
	RW	\$54,392,666	\$40,183,298	\$14,209,368
	CN	\$73,157,062	\$0	\$73,157,062
	SUBTOTAL	\$127,749,638	\$40,365,928	\$87,383,710
17630 + 108041	PE	\$14,082,810	\$14,065,530	\$17,280
	RW	\$54,392,666	\$40,183,298	\$14,209,368
	CN	\$126,028,411	\$14,492,557	\$111,535,854
	SUBTOTAL	\$194,503,887	\$68,741,385	\$125,762,502

Cost Estimating Methodology

The preliminary engineering estimate includes field investigation costs for survey, geotechnical data collection, traffic counts, environmental support, and professional engineering design services to develop design plans and construction documents. Preliminary engineering estimate also includes right of way and utility charges prior to right of way notice to proceed.

The right of way phase estimate includes the actual cost of right of way and easements acquisition, miscellaneous fees associated with real estate closings as part of the project, and oversight of the right of way acquisition, payment, and condemnation process. The right of way phase also includes utility design and private utility relocation fees.

The project construction cost estimate was developed through VDOT’s TrnsPort construction cost estimating program and includes all roadway, bridge, drainage, maintenance of traffic, lighting, traffic control devices, traffic management systems, landscape, and other items.

The final construction estimate used unit price cost adjustments to reflect the most current trends specific to the Hampton Roads District. A bid analysis was completed on

the adjacent Phase 1 project bids to identify any trends considering this was a similar size and type of project. The estimate includes state forces, 10% for Construction Engineering and Inspection (CEI), and 10% contingency.

The project includes a \$3,000,000 interim milestone incentive if specific work features are completed on or before April 23, 2019. The Department will pay a no excuses early completion incentive in the amount of \$2,000,000 if the project is finished on or before May 27, 2021 (Thursday before Memorial Day weekend). The incentive will be incrementally reduced to approximately \$1,000,000 until July 1, 2021. After July 1, 2021, the early completion incentive will be incrementally reduced to \$0 until the Fixed Completion Date (FCD) of September 16, 2021. VDOT's Highway User Benefit Cost Analysis Program (HUB-CAP) was used to calculate the road user costs to the traveling public (based on added vehicle operating costs and delay costs to highway users resulting from construction activities) and to determine the incentive and disincentive amounts. The contract also includes liquidated damages and a \$50,000 per day disincentive for every day that the project is not finished after the FCD.

Three bids were received on November 15, 2017. The bids were approximately 5 to 15% over the engineer's estimate with the lowest bid of \$105,399,865 and the highest bid of \$115,180,000.

4. PROJECT FUNDS

The project is funded by multiple funding sources, including Hampton Roads Transportation Funds (HRTF). Federal funds include Interstate Maintenance (IM), National Highway System (NHS), National Highway Performance Program (NHPP), Regional Surface Transportation Program (RSTP), Statewide Surface Transportation Program (STP) and Equity Bonus (EB) funds. State funds include the match for the federal funds, FRAN Bond Proceeds, High Priority Program (HPP) Capital Projects Revenue (CPR) Bond Proceeds, HPP State, and Priority Transportation Funds (PTF). Local funds include urban contributions by the City of Virginia Beach.

On April 16, 2015, HRTAC executed an Interim Project Agreement for Funding and Administration with VDOT which authorized \$54,592,576 of funding in support of this project for PE and RW. On July 19, 2017, the Standard Project Agreement was executed between VDOT and HRTAC to fund a portion of the CN phase in the amount of \$73,157,062. HRTAC will fund costs out of the HRTF on a "pay as you go" basis. That approach is consistent with the initial funding plan approved by HRTAC.

This project was selected by the Commonwealth Transportation Board (CTB) to receive \$50,000,055 in statewide high priority funds for the construction phase through the Smart Scale prioritization process.

Table 3 summarizes the current funding allocated to this project by fund source and year.

TABLE 3 – SUMMARY OF PROJECT FUNDING BY SOURCE

	Funding Source	Previous	2020	2021	2022	2023	2024	2025	Total
UPC 17630/108041*	Interstate Maintenance	5,880,479	0	0	0	0	0	0	5,880,479
	National Highway System	610,394	0	0	0	0	0	0	610,394
	NHPP	2,280,000	0	0	0	0	0	0	2,280,000
	HB1887 **	12,635,225	0	2,756,222	7,608,946	0	0	0	23,000,393
	RSTP	1,892,000	0	0	0	0	0	0	1,892,000
	Federal Subtotal	23,298,098	0	2,756,222	7,608,946	0	0	0	33,663,266
	State Match	1,155,027		0	0	0	0	0	1,155,027
	HB1887 **Match	86,675	0	0	0	0	0	0	86,675
	Priority Transportation Funds	815,000	0	0	0	0	0	0	815,000
	HB1887**	26,912,987	0	0	0	0	0	0	26,912,987
	FRANs ***	1,250,000	0	0	0	0	0	0	1,250,000
	State Subtotal	30,219,689	0	0	0	0	0	0	30,219,689
	Local Accounts Receivable	2,654,478	216,816	0	0	0	0	0	2,871,294
	HRTAC *	103,830,173	0	23,919,465	0	0	0	0	127,749,638
	Other Subtotal	106,484,651	216,816	23,919,465	0	0	0	0	130,620,932
	TOTAL	160,002,438	216,816	26,675,687	7,608,946	0	0	0	194,503,887

* HRTAC funding is under UPC 108041.

** HB1887 is Smart Scale funding and is a mixture of NHPP, EB, STP, CPR bonds, CTB State and the associate state match funds.

*** Federal Highway Reimbursement Anticipation Notes.

Federal Fund Sources and Special Funding Techniques

The HRTPO has included all phases of this project in its Long Range Transportation Plan. The PE, RW, and CN phases of this project are included in HRTPO’s Transportation Improvement Program (TIP) as well as the Commonwealth’s FFY18-21 Statewide Transportation Improvement Program (STIP.)

Preliminary engineering associated with this project was authorized by the FHWA on December 1, 2000, under federal project number STP-5403(650). Construction was authorized on July 24, 2017, under federal project number NHPP-264-6(106). The current authorization includes federal funds totaling \$33,663,266. No federal authorization was obtained for the RW phase.

Table 4 – Project Authorization Details as of December 31, 2018

UPC 17630 Federal Project Number 5403650 PE			
Program Code	Total Estimated Cost	Federal Funds Obligated	Advance Construction
H050	\$142,754	\$114,203	-
L010	\$6,533,866	\$5,880,479	-
M001	\$776,191	\$776,191	-
Q230	2,365,000	\$1,892,000	-

L240	\$865,089	-	\$692,071
Q240	\$2,000,000	\$2,000,000	-
Z001	\$1,200,000	\$960,000	-
Total	\$13,882,900	\$11,622,873	\$692,071

*Based on federal agreement modification dated 2/17/18

UPC 17630 and 108041			
Federal Project Number 2646106			
CN			
Program Code	Total Estimated Cost	Federal Funds Obligated	Advance Construction
H240	\$73,157,115	-	\$73,157,115
L240	\$45,145,759	-	\$34,761,111
L24E	\$1,982,663	-	\$1,586,131
Z240	\$11,438,526	\$11,438,526	-
Total	\$131,724,063	\$11,438,526	\$109,504,357

*Based on federal agreement modification dated 9/13/18

5. FINANCING ISSUES

The lowest bid was approximately 5% higher than the engineer’s estimate. The contingency was temporarily reduced from 10% to 5% to stay within the budget and award the contract. To cover approximately \$5,000,000 shortfall, the District will seek additional funding from HRTAC and Smart Scale. No financing issues are anticipated at this time.

6. CASH FLOW

I-264/Witchduck Road Interchange & Ramp Extension project annual cash expenditures are based on the project schedule developed by VDOT and the design team. A \$950,000 deficit on the PE phase was addressed in 2017. Table 5 summarizes the cash flow analysis for the project and it will be updated annually as expenditures are incurred. It shows the comparison of previously expended and projected expenditures by fiscal year by phase against the total annual allocations.

TABLE 5 – CASH FLOW ANALYSIS

Expenditures		Through FY 2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	Total
17630	PE	\$13,882,900	-	-	-	-	-	-	\$13,882,900
	Right of Way	-	-	-	-	-	-	-	-
	Construction	\$42,506,181	2,756,222	\$0	7,608,946	-	-	-	\$52,871,349
108041	PE	\$199,910	-	-	-	-	-	-	\$199,910
	Right of Way	\$54,392,666	-	-	-	-	-	-	\$54,392,666
	Construction	\$17,243,819	\$31,993,778	23,919,465	-	-	-	-	\$73,157,062
Cumulative Expenditures		\$128,225,476	\$34,750,000	\$23,919,465	7,608,946	-	-	-	\$194,503,887
Total Annual Allocations		\$160,219,254	\$26,675,687	\$7,608,946	-	-	-	-	\$194,503,887
Cumulative Allocations		\$162,975,476	\$23,919,465	\$7,608,946	-	-	-	-	\$194,503,887
Cash Flow per Year		-	-	-	-	-	-	-	-

7. P3 ASSESSMENT

The Alternative Project Delivery Division reviewed the project and determined it was not a good candidate for a Design-Build procurement or a P3 delivery.

8. RISK AND RESPONSE STRATEGIES

Similar to Phase I of the 64/ 264 Project (57048), mitigation of environmental impacts were the primary risks encountered. Building on “lessons learned” from Phase I, an integrated approach to environmental impacts was employed with Hampton Roads permitting (Water Quality) and NPDES staff to lessen the risks associated with construction activities in environmentally sensitive areas.

Two particular examples included; the extension of the quad box culvert, D-601, and the western outfall stream from the project into the recently completed Phase I box culvert, 8-34. Permits required that flow rates be maintained at a 50 percent minimum as work was prosecuted “in the dry” and that necessary Erosion and Sediment Control (ESC) best practices were installed and maintained. Hampton Roads Water Quality and NPDES staff reviewed and augmented detailed construction sequences to further ensure that permits were satisfied and best practiced adhered to.

In addition, Environmental Monitors have been assigned to Construction Engineering and Inspection (CEI) staff to inspect work as it is prosecuted to hold contractors responsible for their actions.

VDOT Water Quality and NPDES have rated the project “green” as an indicator of successful environmental risk management between VDOT and the contractor.

Utility relocations have been coordinated with the City of Virginia Beach, the City of Norfolk and the Hampton Roads Sewer District to garner concurrence with proposed construction means and methods and reduce risks.

The relocation of the sewer line along southbound Newtown Road required the addition of pumps to control a higher than originally predicted runoff from outlying combined storm and sewers. The pumps were necessary to lessen the potential of raw sewage leaving from the project site and entering the nearby watershed.

Contaminated soil and ground water was discovered while excavating utility relocation at the intersection of Newtown and Greenwich. The presence of a previously undetected gas station was discovered by the aroma of petroleum and testing of water and soil samples. VDOT and the contractor are negotiating a work order to procure a separator to remove contaminated material. Prosecution and inspection of work will adhere to Hazardous Waste Operations and Emergency Response (HAZWOPER) and applicable OSHA standards.

A Value Engineering (VE) proposal was submitted by the contractor to construct a fill roadway rather than the designed pier supported bridge to span Lake “2” just west from Top Golf and north from Greenwich Road. The proposal has been advanced and approved through 30 percent design with a rough order of magnitude (ROM) estimate of \$900,000 to be shared by VDOT and the contractor. It is expected that the City of Virginia Beach is to benefit from the VE as owner maintenance and repair of the fill roadway would be less than that for a pier supported bridge structure.

9. ANNUAL UPDATE CYCLE

The submission date of the Initial Financial Plan was March 31, 2017. This annual update is based on a "data as of" date of December 31, 2018. Future annual updates will be submitted by March 31 of that year, with a "data as of" date of December 31 of the previous year.

10. SUMMARY OF COST CHANGES SINCE LAST YEAR’S FINANCIAL PLAN

The current total project estimate is \$194,503,887.

Eight change orders totaling \$914,843 have been processed from the NTP date of February 15, 2018, to December 31, 2018.

11. COST AND FUNDING TRENDS SINCE INITIAL FINANCIAL PLAN

No trends have been identified that impact the project costs. The costs will be monitored during the construction phase and any trends will be identified in the 2019 annual update.

The Standard Project Agreement was executed between VDOT and HRTAC on July 19, 2017, to fund a portion of the CN phase in the amount of \$73,157,062. The remaining construction funding includes \$50,000,055 in Smart Scale funds and \$2,871,294 in local contributions.

12. SUMMARY OF SCHEDULE CHANGES SINCE LAST YEAR’S FINANCIAL PLAN

The contract Notice to Proceed was February 15, 2018. The Fixed Completion Date is September 16, 2021. The contractor elected not to pursue the April 23, 2019, \$3,000,000 interim milestone incentive as soil conditions were too variable and the work to be accomplished in the prescribed time duration was not considered easily achievable. The early completion incentive of \$2,000,000, however, remains available.

13. SCHEDULE TRENDS SINCE INITIAL FINANCIAL PLAN

No trends have been identified that impact the project schedule at this time. The schedule will continue to be monitored during project construction.