



I-64 Capacity Improvements – Segment III

Financial Plan Update

October 30, 2022

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EXECUTIVE SUMMARY

This Design Build project is Segment III of the planned I-64 Capacity Improvements on the Peninsula. The project limits are from 1.26 miles west of Route 199 (Lightfoot, Exit 234) to where the Segment II project ends 1.05 miles west of Route 199 (Humelsine Parkway/Marquis Center Parkway, Exit 242). The 8.4-mile long project lies in York County.

The project is in project close out. Construction completed early on December 6, 2021, eleven days earlier than the December 17, 2021 fixed completion date, resulting an increased incentive payment.

Current project activities are:

- All construction completed.
- Right of way acquisition is complete except for 1 parcel in ongoing condemnation case (Parcel 023).

The total project cost estimate is \$244,045,973 as noted in the previous Financial Plan estimate. Fourteen change orders have been negotiated to date equaling a total contract increase in the amount of \$6,417,401. There is no apparent risk at this time of exceeding the project contingency.

This project is fully funded with HRTAC and SMART SCALE (HB1887) funds

1. PROJECT DESCRIPTION

I-64 Capacity Improvements – Segment III is located in York County. The project limits are from 1.26 miles west of Route 199, Lightfoot (Exit 234) to 1.05 miles west of Route 199, Humelsine Parkway/Marquis Center Parkway (Exit 242). This project extended the 3-lane section of I-64 from the point where the I-64 Segment II project ends to the west for approximately 8.36 miles. Interstate 64 is functionally classified as an interstate. The VDOT geometric design standard used for I-64 is GS-1 (Rural Principal Arterial System) with a minimum design speed of 75 mph. VDOT initiated this widening project to provide immediate congestion relief to the roadway corridor.

VDOT determined that the use of Design-Build contracting would expedite delivery. The Design-Builder performed final design, right of way acquisition, and utility relocation and some construction activities concurrently. This project contributes to the Preferred Alternative and to the Purpose & Need elements outlined in the Final Environmental Impact Statement (FEIS). By striving to balance environmental, scenic, aesthetic, cultural, and natural resources, as well as community and transportation needs, this project incorporated context sensitive design in accordance with the resolution of the Transportation Planning Organization (TPO).



Figure 1: Project Limits

Under the terms of the design-build contract that was awarded by the Commonwealth Transportation Board (CTB) in December 2017, the design-builder constructed the widening of I-64 from a four lane divided interstate to a six lane divided interstate from approximately state milepost 233 to state milepost 241. The proposed improvements include the reconstruction of the two existing lanes and outside shoulders, and the addition of one 12 foot-wide travel lane and one 12 foot-wide inside shoulder in each direction. On the eastern end, this four-lane section of I-64 ties into the six lane widening project, I-64 Capacity Improvements – Segment II. The widening occurred mostly in the median of the existing interstate, limiting the amount of right of way required to construct the project and avoiding impacts to existing interchanges. These improvements increase capacity, minimize geometric and structural deficiencies, provide more lanes for evacuation and improve safety by reducing congestion and improving vehicular level of service.

Four (4) existing bridges within the corridor were widened to the inside to accommodate the same typical section as the roadway and two (2) existing bridges were replaced. Three (3) major culverts were modified, extended and/or rehabilitated due to the interstate widening. Outside shoulders were widened from 10' to 12' due to the higher truck volume on this section of interstate. All deficient ramp lengths were lengthened except for two loop ramps at the Route 199 interchange. The loop ramps were not lengthened due to the need to reconfigure the interchange. The I-64 EB off-ramp to Route 143 was reconstructed to add additional capacity as needed per the traffic analysis. Improvements were made to existing median crossovers for emergency response and maintenance use, paving of all crossovers, and upgrades complied with current VDOT and AASHTO requirements. Warranted and approved noise barriers were constructed, based upon the final noise study.

This project fixed non-compliant cross slopes, superelevations and roadway alignments.

The following Design Exceptions (DE) and Design Waivers (DW) have been approved with respect to the RFP Conceptual Plans for this project:

- (DE) Existing outside shoulder width for I-64 westbound lanes (WBL) under Route 143/Camp Peary Overpass does not meet AASHTO Requirements.
- (DE) To allow the addition of bricks on the backface of the new 42" F-shape concrete parapet on the widened side of the Colonial Parkway bridges.
- (DE) Vertical bridge clearance of I-64 WB over Colonial Parkway is less than 14'-6".
- (DE) For improved but less than standard Ramp Acceleration Length for I-64 WB On-Ramp from Rte. 143 due to constraints from the downstream on-ramp.
- (DW) The proposed inside shoulder cross slope of 2% to allow the shoulder to be used as a travel lane during construction does not meet VDOT Standards.
- (DW) Left Total Shoulder Width for I-64 eastbound lanes (EBL) under Route 143 (Camp Peary) Overpass does not meet VDOT Standards.
- (DW) Left Total Shoulder Width for I-64 EBL & WBL under Route 716 (Queens Drive) Overpass does not meet VDOT Standards.

The Virginia Transportation Research Council (VTRC), the research division for the Virginia Department of Transportation (VDOT), is conducting research on Segments II and III of the I-64 Widening Projects. The research includes studying the performance of two pavement recycling techniques by placing instrumentation sensors during construction. The sensors will allow researchers to observe the pavements' performance during its service life and quantify the response to truck loading. By confirming the performance of these sections during the service life, rather than waiting until deterioration begins to develop, VDOT can more quickly implement these recycling techniques on other projects.

The pavement design used includes two pavement recycling techniques: Full-Depth Reclamation (FDR) and Cold Central-Plant Recycling (CCPR). FDR is used to create a solid foundation for the pavement while the CCPR process will create a base layer on top of the FDR.

The primary advantages to using pavement recycling techniques include the potential for cost reductions, reductions in greenhouse gas emissions, and reduced construction time. Previous studies completed by VDOT and other highway agencies have shown that pavement recycling techniques can reduce costs by 30-50% and reduce greenhouse gas emissions by more than 50%. Reusing existing paving materials result in these savings. VDOT estimates that using the recycling techniques on Segment III saved approximately \$10 million. In terms of materials reductions, existing milled pavement was reused and asphalt binder was not needed. The new pavement has a 30-year design life (VDOT MOI) with the expectation to perform re-surfacing in 12 to 15 years.

PROJECT HISTORY

On August 10, 2016, the Federal Highway Administration (FHWA) issued a Record of Decision (ROD) for the third operationally independent section to be advanced from the FEIS. This section is approximately eight miles with the termini located west of Exit 242 (Marquis Center Parkway/State Highway 199) in the east and west of Exit 234 (Lightfoot/ State Highway 199) in the west. These locations provide logical termini, as improvements will tie back into the existing facility and not significantly impact the existing interchanges. Exits 238 and 234 are the only interchanges located within this section. The ROD was issued for full build condition that added one lane in each direction.

On December 6, 2017, VDOT recommended and the CTB approved award of the I-64 Capacity Improvements – Segment III project to Shirley Contracting Company, LLC (SCC) based on their bid of \$178,281,690.

CURRENT ACTIVITIES

VDOT continues to coordinate with the contractor to close out this 8.2 mile interstate replacement and widening project.

The project was completed and accepted on December 6, 2021. Project closeout is currently underway. Right of way acquisition is complete except for 1 parcel in ongoing condemnation case (Parcel 023). The estimated cost to reach settlement or award and cover expert and legal expenses is no more than \$210,000.

PROJECT WEBSITE

Additional information on the I-64 Capacity Improvements project can be found on the project website at the following link:

http://www.i64widening.org/learn_more/segment_3.asp

The website provides additional information regarding project description, purpose, location map, implementation schedule, cost, contact information, etc.

2. SCHEDULE

On January 3, 2018, VDOT issued a Notice to Proceed to Shirley Contracting Company (SCC). Remaining right of way acquisitions and utility relocations are anticipated to be complete by January 2021. Construction activities began in August 2018. The final contract completion date is September 24, 2021, or the Offeror’s proposed early completion date.

Shirley Construction Company performed a noise analysis for this project that resulted in the need for approximately 1 mile of additional noise wall installation to be added to the project scope. As a result of this additional scope of work, VDOT granted SCC via Change Order #04, the sum of \$6,880,000 and a time extension of 84 days for the additional noise wall. The time extension shifted the contract completion date from September 24, 2021 to December 17, 2021. It also shifted the contract interim milestone completion date for EB Traffic Open from Sta. 1352+00 to End of Project from April 13, 2021 to June 22, 2021.

The baseline schedule was modified by SCC and the interim milestone completion date was moved from April 13, 2021 to June 22, 2021. The interim milestone was achieved by the Design-Builder on June 22, 2021. The early contract completion date was moved from June 26, 2021 to December 17, 2021. The contract completion date was moved from September 24, 2021 to December 17, 2021.

Chart 2.1 below is an approximate anticipated schedule for the design-build team:

Chart 2.1: Project Schedule Overview

Task		Start	Finish	YR 2018	YR 2019	YR 2020	YR 2021
Notice to Proceed		Jan-18	Jan-18				
UPC 106665	PE- Design	Jan-18	Mar-19				
	RW/Utilities	Jan-18	Jan-21				
	Construction	Jan-18	Dec-21				
Construction Complete		Dec-21	Dec-21				

3. PROJECT COST

VDOT’s Project Cost Estimating System (PCES) is the official source for all cost estimate information. The Initial Financial Plan estimate was \$311,303,819. The current total project cost estimate is \$244,045,973 primarily due to the construction proposal selected being lower than the originally estimated cost. Project costs noted in the estimate below include: preliminary design activities, right of way purchase, utility relocation, environmental and design permits/approvals, survey and geotechnical investigations, and construction.

The project was completed on 12/6/2021, eleven days earlier than the 12/17/2021 contract fixed completion date resulting an increased incentive payment in the amount of Two Million Eight Hundred Eighty Four Thousand Eighty dollars (\$2,884,080.).

TABLE 3.1: PROJECT COST ESTIMATE

Phase	Initial Financial Plan Estimate	Current Estimate
PE	\$10,000,000	\$10,000,000
RW	\$12,000,000	\$12,000,000
CN	\$289,303,819	\$222,045,973
Total	\$311,303,819	\$244,045,973

COST ESTIMATING METHODOLOGY

Work elements associated with the I-64 Capacity Improvements – Segment III project can be summarized in two components: (1) work to be carried out under the design-build contract by the design-builder and (2) work outside of the Design-Build contract for which VDOT is responsible or has already accomplished throughout the development of the project.

Design-Build Contract: The awarded Design-Build contract for the I-64 Capacity Improvements project is lump sum and includes the following major work elements to be provided by the design-builder: final design; right-of-way acquisition services; utility coordination; utility relocations; construction; and construction quality assurance and quality control (QA/QC). The estimated cost for the Design-Build contract was developed using the Request for Proposals (RFP) Plans and by adjusting a construction quantity estimate developed for those plans to account for anticipated changes to the project. The Design-Build contract payments are based upon the project physical percent of completion.

Work Outside of Design-Build Contract: VDOT is responsible for updating the EIS documentation; engineering support services; oversight of final design; oversight of right-of-way acquisition services; payment for new right-of-way acquired for the project; landscaping maintenance after project construction; Stream Restoration at a severely eroded project outfall, Design-Build risk contingency; and oversight of construction:

- **Engineering:** VDOT has executed an agreement with a professional services firm to provide engineering and technical support, specifically for reviewing final design submissions.
- **Right of Way Purchases:** In accordance with the Design-Build RFP, Part 2, Section 1.5, VDOT remains responsible for the actual cost of the purchase of right-of-way, all easements and miscellaneous fees associated with real estate closings as part of the project and oversight of the right-of-way acquisition/payment/condemnation process.
- **VDOT Project Oversight Costs:** VDOT post-award costs to manage the project and provide oversight of the project are estimated to be \$13,870,480. These costs include overall project management, contract administration and construction oversight.

In addition, other engineering expenditures associated with project development of the I-64 Capacity Improvements project are reflected in the total project estimate.

SUMMARY OF ESTIMATES AND EXPENDITURES

Table 3.2 includes the current estimate of the total cost of the project and the remaining cost-to-complete in year-of-expenditure dollars. The table below depicts the project expenditures as of July 31, 2022.

TABLE 3.2: PROJECT COST BY PHASE as of July 31, 2022

PHASE		ESTIMATE	CURRENT EXPENDITURES	BALANCE TO COMPLETE
106689	PE	\$10,000,000	\$5,723,239	\$4,276,761
	RW	0	0	0
	CN	\$112,893,996	\$88,146,314	\$24,747,682
	Total	\$122,893,996	\$93,869,553	\$29,024,443
109790	PE	0	0	0
	RW	\$12,000,000	\$900,319	\$11,099,681
	CN	\$109,151,977	\$109,153,383	(\$1,406)*
	Total	\$121,151,977	\$110,053,702	\$11,098,275
Grand Total		\$244,045,973	\$203,923,255	\$40,122,718

* On the data date for this report, July 31, 2022, the funds authorized for the CN phase of 109790 were Depleted and some expenditures came through to show that it was overspent. These expenditures will be moved from UPC 109790 to UPC 106689.

4. PROJECT FUNDS

In March 2016, the Hampton Roads Transportation Accountability Commission (HRTAC) executed a Project Agreement for Funding and Administration with VDOT that authorized \$10,000,000 of funding for PE project costs.

Project funding is demonstrated in the HRTPO’s Long Range Transportation Plan and Transportation Improvement Program (TIP), as well as the Commonwealth’s Statewide Transportation Improvement Program (STIP). The Professional Engineering (PE), Right of Way (RW), and Construction (CN) phases of the Project are include in the HRTPO’s TIP as well as the STIP. In March 2016, the Hampton Roads Transportation Planning Organization (HRTPO) amended its Transportation Improvement Program (TIP) to represent \$144,927,753 in HPP funds and \$166,376,066 HRTF funds.

In December 2016, HRTAC executed the Project Agreement for Funding and Administration with VDOT that authorized \$301,303,819 of funding for RW and CN project costs. Due to the awarded Contractor’s proposal being lower than the estimated price and the removal of Design Build Risk Management funds from the project budget, the amount of total funding was reduced to \$244,045,973 in March 2018.

SIX-YEAR IMPROVEMENT PROGRAM (SYIP) FUNDING

I-64 Capacity Improvements Project – Segment III is fully funded with HRTAC and SMART SCALE (HB1887) funds in the amount of \$244,045,973.

State and Federal Sources:

SMART SCALE (HB 1887) funds are allocated to the project in the amount of \$121,151,977.

Other Sources:

Hampton Roads Transportation Accountability Commission (HRTAC) Funds: The Final FY 2020-2025 SYIP includes \$122,893,996 in Hampton Roads Transportation Funds (HRTF) allocated by the HRTAC.

Table 4.1 summarizes the funding allocated to the I-64 Capacity Improvements – Segment III by fund source and year.

TABLE 4.1: SUMMARY OF FUNDING BY SOURCE AND YEAR

Funding Source		Prev.	2023	2024	Total
UPC 106689	Other: HRTAC	\$ 122,893,996	\$ -	\$ -	\$ 122,893,996
UPC 109790	Federal: HPP - NHPP (HF1100)	\$ 31,181,571	\$ -	\$ -	\$ 31,181,571
	Federal: HPP - NHPP Soft Match (HF1101)	\$ 7,795,392	\$ -	\$ -	\$ 7,795,392
	Federal: HPP - NHPP Exempt (HF1400)	\$ 12,677,653	\$ -	\$ -	\$ 12,677,653
	Federal: HPP - NHPP Exempt Soft Match (HF1401)	\$ 3,169,413	\$ -	\$ -	\$ 3,169,413
	Federal: HPP-STP STWD (HF2100)	\$ 49,073,181	\$ -	\$ -	\$ 49,073,181
	Federal: HPP-STP STWD Soft Match (HF2101)	\$ 12,268,295	\$ -	\$ -	\$ 12,268,295
	Federal: HPP – HIP Statewide Federal (HF8100)	\$ 1,485,724	\$ -	\$ -	\$ 1,485,724
	Federal: HPP - HIP Statewide Soft Match (HF8101)	\$ 371,431	\$ -	\$ -	\$ 371,431
	State: HPP – State (HS0100)	\$ 3,129,317	\$ -	\$ -	\$ 3,129,317
Grand Total		\$ 244,045,973	\$ -	\$ -	\$ 244,045,973

The table below demonstrates use of the advance construction (AC) provision to date.

TABLE 4.2: PROJECT AUTHORIZATION SUMMARY

Project Authorization Summary as of July 31, 2022						
Federal Project	UPC(s)	Phase Classification	Cost	Federal Funds	Advance Construction	Status
0643498	106689	PE	\$10,000,000	\$0	\$9,000,000	Active
0643498	106689	RW	\$1	\$0	\$1	Active
0643498	106689	CN	\$109,577,149	\$0	\$98,619,434	Active
0643498	109790	PE	\$1	\$0	\$1	Active
0643498	109790	RW	\$44,347,262	\$34,204,417	\$10,142,845	Active
0643498	109790	CN	\$97,949,731	\$67,452,751	\$30,496,980	Active
Total			\$261,874,144	\$101,657,168	\$148,259,261	

5. FINANCING ISSUES

There are no financing issues on this project.

6. CASH FLOW

I-64 Capacity Improvements – Segment III project annual cash expenditures are based on the project schedule. Table 6.1 below is a Cash Flow Analysis for the project. It shows the comparison of previously expended and projected expenditures by fiscal year by phase against the total annual allocations.

TABLE 6.1: CASH FLOW ANALYSIS

Expenditures		Prev.	FY2023	FY2024	
UPC 106689	PE	\$ 5,724,366	\$ 4,275,634	\$ -	\$ 10,000,000
	Right of Way	\$ -	\$ -	\$ -	\$ -
	Construction	\$ 88,768,798	\$ 24,125,198	\$ -	\$ 112,893,996
UPC 109790	PE	\$ -	\$ -	\$ -	\$ -
	Right of Way	\$ 900,386	\$ 11,099,614	\$ -	\$ 12,000,000
	Construction	\$ 109,153,383	(\$ 1,406)		\$ 109,151,977
Cumulative Expenditures		\$ 204,546,933	\$ 244,045,973	\$ 244,045,973	\$ 244,045,973
Total Annual Allocations		\$ 244,045,973	\$ -	\$ -	\$ 244,045,973
Cumulative Allocations		\$ 244,045,973	\$ 244,045,973	\$ 244,045,973	\$ 244,045,973
Cash Flow per Year		\$ 39,,499,040	\$ -	\$ -	

7. P3 ASSESSMENT

This interstate project cannot be tolled and is not a candidate for delivery via the Public Private Transportation Act (PPTA).

8. RISK AND RESPONSE STRATEGIES

VDOT's current budget in the SYIP for FY2021-2026 is \$244,045,973 for I-64 Capacity Improvements – Segment III project.

The project's \$17,828,169 contingency budget included in the project estimate sufficiently addressed all project risks related to the project budget.

9. ANNUAL UPDATE CYCLE

The submission date of the Initial Financial Plan was October 30, 2017. Annual updates will be submitted by October 30 of that year, with a "data as of" date of July 31 of that year.

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

The total project cost estimate is \$244,045,973 as noted in the previous Financial Plan estimate. Fourteen change orders have been negotiated to date equaling a total contract increase in the amount of \$6,417, 401. There is no apparent risk of exceeding the project contingency.

On the data date for this report, July 31, 2022, the funds authorized for the CN phase of 109790 were depleted and some expenditures came through to show that it was overspent. These expenditures will be moved from UPC 109790 to UPC 106689 before the next annual update.

11. COST AND FUNDING TRENDS SINCE INITIAL FINANCIAL PLAN

The project estimate is reduced from \$311,303,819 to \$244,045,973 since the Initial Financial Plan. As a result of the decreased estimate, the current HRTF funding amount is \$122,893,996 and the SMART SCALE amount is \$121,151,977.

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

The project was completed on December 6, 2021, eleven days earlier than the December 17, 2021 contract fixed completion date.

As noted in Section 2 above, Shirley Construction Company (SCC) performed a noise analysis for this project that resulted in the need for approximately 1 mile of additional noise wall installation to be added to the project scope. As a result of this additional scope of work, VDOT granted SCC a time extension of 84 days for the additional noise wall. The time extension shifted the contract completion date from September 24, 2021 to December 17, 2021. It also shifted the contract interim milestone completion date for EB Traffic Open from Sta. 1352+00 to End of Project from April 13, 2021 to June 22, 2021.

13. SCHEDULE TRENDS SINCE INITIAL FINANCIAL PLAN

There are no discernable Schedule Trends since the Initial Financial Plan except for the 84 day time extension for the additional noise wall as outlined above.