



AOT Paving Audit Follow-Up

Senate Transportation Committee Presentation

April 2, 2025

Audit Issued: March 15, 2023

Follow-Up: January 29, 2025

Vermont State Auditor's Office

January 29, 2025

Performance Audit
Recommendations and
Corrective Actions for Audit
23-02:

VERMONT AGENCY OF
TRANSPORTATION
PAVING PROJECTS

Significant Deviations in Cost
and Schedule Estimates for
Complex Projects Underscores
the Need for Performance
Measures

Dated: March 15, 2023

Audit looked at whether projects were coming in on budget and on time, and whether AOT was using performance measures to analyze their work in order to improve.

Exhibit 6: Comparison of Overall Project Delays to Cost Variance

Project Name	Years Exceeded Original Projected Completion	Actual Cost More/Less Than Original Estimate and By How Much	
Jamaica-Winhall	6	74%	\$5,847,442
Manchester-Peru	5	174%	\$4,587,586
Waterbury-Stowe	4	136%	\$14,186,411
Brandon-Goshen	3	11%	\$1,050,959
Essex & Jericho-Richmond ^a	3	201%	\$8,280,819
Waterbury-Richmond	2	59%	\$2,983,895
Bethel-Royalton	0	27%	\$624,857
Essex-Underhill	0	17%	\$977,737
Brighton	0	7%	\$173,205
Springfield-Hartland	0	-21%	-\$885,085
Williston	0	-22%	-\$436,515
Morristown	0	-23%	-\$776,149
Rutland-Pittsford	0	-27%	-\$925,053

* Some cost increases/decreases resulted from changed # of miles paved.

We made three
recommendations to AOT.

Rec #	Recommendation	Follow-Up Year	Status	SAO Review Comments
1	Develop and implement a process to consistently record what caused cost and schedule deviations. If any of the delays are due to reallocating the funds to another project, inform the Legislature as required by State law.	2024	Partially Implemented	VTrans developed a form to record cost and schedule changes over a project's life and the reasons for those changes. VTrans is continuing to standardize the format and the use of the tracking form. VTrans plans to transition to a new scheduling software by July 1, 2025, and expects that this will result in process changes to how they track and document schedules.
		2026	The three-year recommendation follow-up for this audit will be conducted in 2026.	
2	Develop and implement performance measures to assess cost deviations for paving projects in the preliminary engineering and construction phases. Report the measures to the Legislature and the public at least annually.	2024	Partially Implemented	VTrans is in the process of developing performance measures to assess cost deviations throughout the life cycle of a paving project. As previously mentioned, VTrans developed a form that they are continuing to standardize to capture cost changes of a project's life. However, VTrans has yet to establish which cost baseline(s) to compare deviations against, and VTrans has not established a reporting mechanism that it will use to report the performance measures. In 2024, the Legislature required VTrans to include more reporting on cost deviations that exceed certain amounts during their budget request (i.e., in the transportation program submitted to the Legislature). While this will show paving projects with significant cost deviations, it will not show a complete picture of how well VTrans completes paving projects within expected costs.
		2026	The three-year recommendation follow-up for this audit will be conducted in 2026.	

Rec #	Recommendation	Follow-Up Year	Status	SAO Review Comments
3	Develop and implement performance measures to assess schedule deviations for paving projects in the preliminary engineering and construction phases. Report these measures to the Legislature and the public at least annually.	2024	Partially Implemented	VTrans has instructed its project managers to establish an initial schedule baseline for paving projects to be able to compare the status against in their current schedule. However, VTrans has not developed a mechanism to report this information publicly for each paving project. In December 2024, VTrans provided a plan to the Legislature as to how they will report which projects, including paving project, in the transportation program that missed the originally anticipated bid advertisement date by more than 12 months. In addition to providing this report to the Legislature, VTrans intends to provide a copy to each Regional Planning Commission and to also post the report on their website.
		2026	The three-year recommendation follow-up for this audit will be conducted in 2026.	

The Killington-Stockbridge paving project is a good example of the importance of the Legislature having timely, complete information. PE funds were being expended as far back as FY13. Construction was to commence in FY15...

		Estimated Total Cost	Actual Expended Thru	Estimated Current Year	Estimated Budget Year	Projected	Projected	Projected
Fiscal Year	Phase	Total Estimate	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
2015	PE	620,928	266,529	354,399				
	ROW	35,000		35,000				
	Const	11,490,715			1,600,000	9,890,715		
	Other							
	Total	12,146,643	266,529	389,399	1,600,000	9,890,715	-	-
Fiscal Year	Phase	Total Estimate	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
2016	PE	792,752	550,556	210,000	32,196			
	ROW	85,000			85,000	9,000,000	4,304,076	
	Const	13,304,076						
	Other							
	Total	14,181,828	550,556	210,000	117,196	9,000,000	4,304,076	-
Fiscal Year	Phase	Total Estimate	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
2017	PE	1,000,000	789,337	151,219	59,444			
	ROW	85,000		45,000	40,000			
	Const	13,304,076				1,000,000	9,000,000	3,304,076
	Other							
	Total	14,389,076	789,337	196,219	99,444	1,000,000	9,000,000	3,304,076
Fiscal Year	Phase	Total Estimate	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
2018	PE	1,000,000	797,919	52,081	75,000	75,000		
	ROW	85,000			40,000	45,000		
	Const	13,304,076				1,000,000	9,000,000	3,304,076
	Other							
	Total	14,389,076	797,919	52,081	115,000	1,120,000	9,000,000	3,304,076

... but in FY22,
construction still hadn't
commenced...

		Estimated Total Cost	Actual Expended Thru	Estimated Current Year	Estimated Budget Year	Projected	Projected	Projected
Fiscal Year	Phase	Total Estimate	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
2019	PE	1,424,794	1,024,794	275,000	75,000	50,000		
	ROW	85,000		40,000	45,000			
	Const	13,304,076				1,000,000	9,000,000	3,304,076
	Other	-						
	Total	14,813,870	1,024,794	315,000	120,000	1,050,000	9,000,000	3,304,076
Fiscal Year	Phase	Total Estimate	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
2020	PE	1,400,000	1,187,923	150,000	62,077			
	ROW	85,000		85,000				
	Const	13,304,076				1,000,000	9,000,000	3,304,076
	Other							
	Total	14,789,076	1,187,923	235,000	62,077	1,000,000	9,000,000	3,304,076
Fiscal Year	Phase	Total Estimate	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
2021	PE	1,480,000	1,338,450	80,000	61,550			
	ROW	20,000		5,000	15,000			
	Const	13,304,076				4,000,000	9,304,076	
	Other							
	Total	14,804,076	1,338,450	85,000	76,550	4,000,000	9,304,076	-
Fiscal Year	Phase	Total Estimate	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
2022	PE	1,480,000	1,407,420	35,080	37,500			
	ROW	20,000		15,000	5,000			
	Const	13,304,076				7,500,000	5,804,076	
	Other							
	Total	14,804,076	1,407,420	50,080	42,500	7,500,000	5,804,076	-

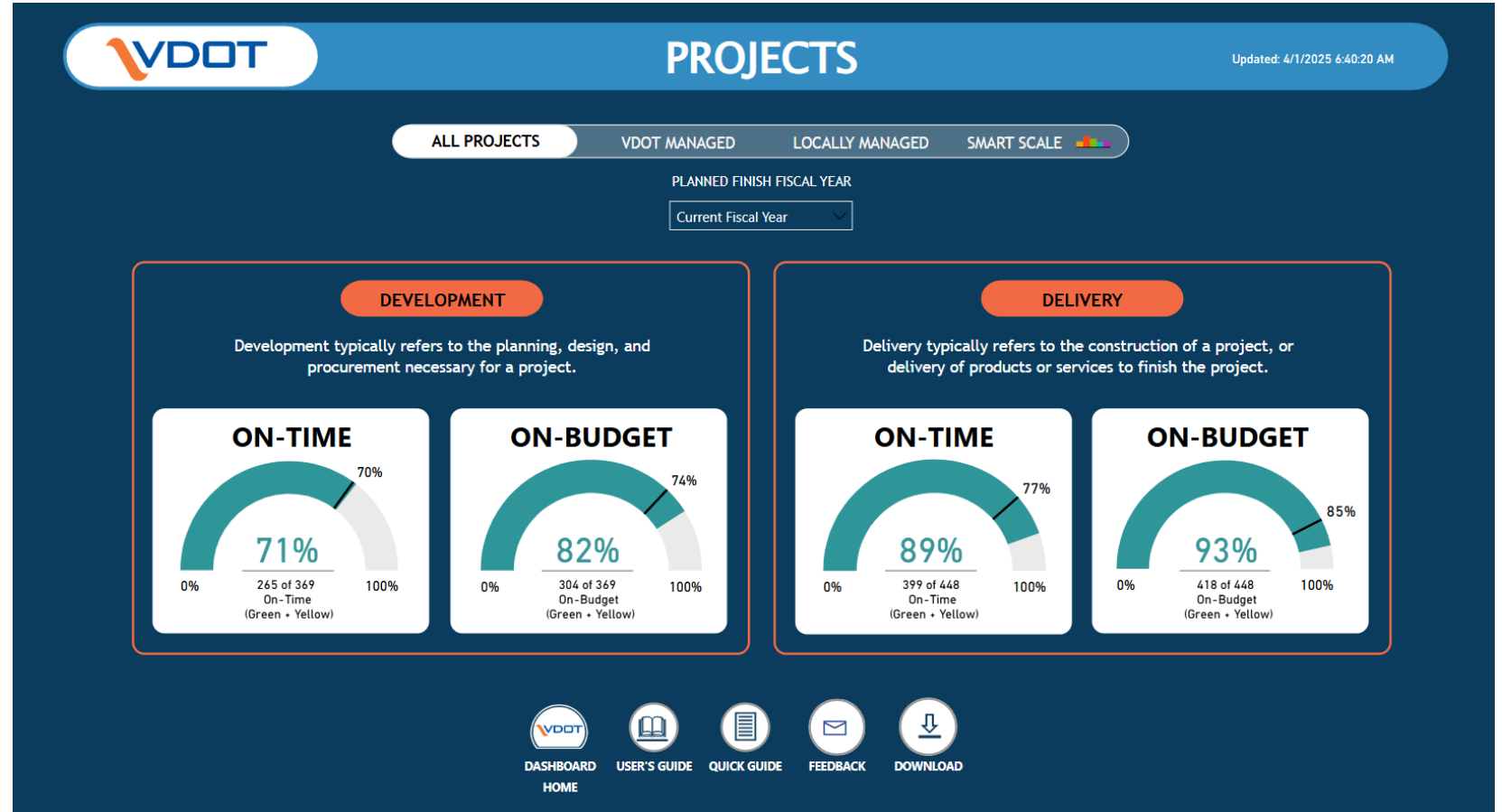
... and despite budgeting \$3M last year for construction there's still been no construction. To date, the Leg has appropriated \$9.6M for construction. Importantly, note the increase in total project cost: from approx. \$15M in FY23 to approx. \$33M in FY26.

		Estimated Total Cost	Actual Expended Thru	Estimated Current Year	Estimated Budget Year	Projected	Projected	Projected
Fiscal Year	Phase	Total Estimate	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
2023	PE	1,650,000	1,437,203	160,000	52,797			
	ROW	20,000		20,000				
	Const	13,304,076			3,000,000	10,304,076		
	Other							
	Total	14,974,076	1,437,203	180,000	3,052,797	10,304,076	-	-
Fiscal Year	Phase	Total Estimate	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
2024	PE	1,650,000	1,523,161	100,000	26,839			
	ROW	20,000	3,433	16,567				
	Const	17,011,695			2,000,000	7,750,000	7,261,695	
	Other							
	Total	18,681,695	1,526,594	116,567	2,026,839	7,750,000	7,261,695	-
Fiscal Year	Phase	Total Estimate	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
2025	PE	1,820,000	1,656,056	113,944	50,000			
	ROW	10,117	10,087	30				
	Const	25,381,451			3,000,000	10,000,000	12,381,451	
	Other							
	Total	27,211,568	1,666,143	113,974	3,050,000	10,000,000	12,381,451	-
Fiscal Year	Phase	Total Estimate	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
2026	PE	1,900,000	1,753,144	65,000	81,856			
	ROW	11,647	11,647					
	Const	30,929,196			3,500,000	15,000,000	12,429,196	
	Other							
	Total	32,840,843	1,764,791	65,000	3,581,856	15,000,000	12,429,196	-

Killington-Stockbridge Summary

Project has been in 12 Transportation Programs						
Amount received as of 2025		10,362,403				
Actual expended including 2025 estimate		1,829,791				
Received Less Expended		8,532,612				
Originally planned to be completed in 2016. The new completion date is in 2028, which is 12 years later.						
PE was supposed to be completed in 2014 but it is still ongoing 12 years later.						
Original PE estimate		620,928				
Expected spend on PE		1,900,000				
		306% Increase				
FIRST APPEARANCE IN 10G Report - FY25						

Good example of use of performance measures for transportation projects comes from Virginia DOT.



Development On-Time Performance Measure System

Activity	Activity Code	Early Finish			Late Finish		
Local Agreement	10	> 30 days early	≤ 30 days early	Baseline Finish Date	> 0 days late		
Start Development (Authorize PE)	12						
Determine Requirements (Scope Project)	22/70R						
Engage Public (Approve Willingness, Adopt Location/Design)	47, 49						
Start Purchasing Right-of-Way (Authorize R/W & UT Funds)	52						
Utility Relocation	67U	> 60 days early	≤ 60 days early		> 0 days* * Beyond baseline finish month for FY23 and later projects		
Complete Purchasing Right-of-Way (Acquire Right-of-Way)	69						
Obtain Permits	70						
Solicit Bids (Advertise Project)	80	> 30 days early	≤ 30 days early				
Start Delivery (Award Contract)	84						

Development On-Budget Performance Measure System

Approved Budget	Current Estimate		
< \$5 million	≤ 0	> 0 to < 20%	$\geq 20\%$
\$5 million to \$10 million	≤ 0	> 0 to \$1M	$\geq \$1M$
> \$10 million (*whichever is less)	≤ 0	> 0 to < 10% or < \$5M*	$\geq 10\%$ or $\geq \$5M^*$

Delivery (Construction Phase) On-Time Performance Measure System

Milestones	Early Finish			Late Finish
Project Specific Interim Milestones	> 14 days	≤ 14 days	Baseline End Date	> 0 days
Complete Delivery	> 0 days			> 0 days * * Beyond baseline finish <i>month</i> for FY23 and later projects

Delivery (Construction Phase) On-Budget Performance Measure System

Status	Projects have not been executed: no status		
Active	Neither the current contract amount, nor the cost of work to date, exceed the award amount by more than 3%	Either the current contract amount, or the cost of work to date, exceeds the contract award amount by 3% to 10% for construction contracts, or by 3% to 25% for paving work contracts.	Either the current contract amount, or the cost of work to date, exceeds the contract award amount by more than 10% for construction contracts, or 25% for maintenance contracts
Completed	Un-audited final cost is less than or equal to 10% of award amount for construction contracts, or less than or equal to 25% for paving work contracts	n/a	Un-audited final cost is not known; Either the cost of work to date, or the current contract amount is greater than 10% of the construction contract award amount, or greater than 25% of paving work contract award amount

Suggestions for Legislative Considerations

- Amend statute to require VTrans to report when estimated project costs exceed the original projections by more than 50 percent even if this happens across more than one year.

Current 10g Reporting Shows:

All Projects for which total estimated costs have increased by more than \$5,000,000.00 or by more than 75 percent from the estimate in FY2025

All Projects for which total estimated costs have increased by more than \$10,000,000.00 from the Preliminary estimate or by more than 100 percent from the Preliminary estimate

- Amend statute to require VTrans to report significant project delays for funded paving projects, and the causes of those delays, in a manner that is transparent, timely, and accessible to Legislators.

Current 10g Reporting Shows:

No Schedule Delay Information