Advanced Digital Construction Management System - Transportation

(P502711)

Category	Transportation	Date Last Modified	12/15/25
SubCategory	Parking	Administering Agency	Transportation
Planning Area	Countywide	Status	Preliminary Design Stage

EXPENDITURE SCHEDULE ($000s)

Cost Elements	Total	Thru FY25	Est FY26	Total 6 Years	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	Beyond 6 Years
Other	1,000	-	-	1,000	1,000	-	-	-	-	-	-
TOTAL EXPENDITURES	1,000	-	-	1,000	1,000	-	-	-	-	-	-

FUNDING SCHEDULE ($000s)

Funding Source	Total	Thru FY25	Est FY26	Total 6 Years	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	Beyond 6 Years
Federal Aid	1,000	-	-	1,000	1,000	-	-	-	-	-	-
TOTAL FUNDING SOURCES	1,000	-	-	1,000	1,000	-	-	-	-	-	-

APPROPRIATION AND EXPENDITURE DATA ($000s)

Appropriation FY 27 Request	1,000	Year First Appropriation	
Appropriation FY 28 Request	-	Last FY's Cost Estimate	-
Cumulative Appropriation	-		
Expenditure / Encumbrances	-		
Unencumbered Balance	-		

PROJECT DESCRIPTION

The Maryland Department of Transportation State Highway Administration (MDOT SHA) has awarded a grant to Montgomery County Department of Transportation (MCDOT) to accelerate adoption of an Advanced Digital Construction Management System (ADCMS). Since 2017, MCDOT has employed three-dimensional (3D) engineering multi-discipline design workflows that leverage Building Information Modeling (BIM) applications. These applications include Revit Models, 3D scan models of transportation assets, and Infraworks models and adjacent areas. This grant funded project will improve information sharing among stakeholders, and provide training and workforce development to better manage projects. The Precise 3D Survey and Engineering of Transportation Infrastructure (P3DSETI) is an integrated platform that features storage directories for housing 3D scans of transportation assets, 3D models used in design, two-dimensional (2D) line drawings of facility systems, as-built drawings, and other asset data necessary to manage the design, construction, operations, and maintenance of transportation infrastructure. The scope of project activities include: establishing and validating standards, processes, and workflows that can be adopted by improving infrastructure through network equipment purchases, data processing, storage, and secure online platforms and data libraries; procuring scanning equipment and teaching staff to process and load their scans into P3DSETI; and transferring knowledge through in-person and hybrid collaboration

workshops by MCDOT, MDOT SHA and other jurisdictions.

ESTIMATED SCHEDULE

The project is expected to be completed by the end of FY27.

PROJECT JUSTIFICATION

MCDOT is expanding its successful Precise 3D Survey and Engineering of Transportation Infrastructure (P3DSETI) pilot project with this grant. Each participating division of MCDOT utilizes the P3DSETI system slightly differently. MCDOT will standardize the workflow across divisions based on pilot successes and challenges. The resulting workflow, processes, and collaborative tools will allow for deployment with the Maryland DOT (MDOT), neighboring jurisdictions, and project stakeholders. The collaborative aspects of the P3DSETI system have the potential to widely expand the value of BIM across the State of Maryland.

MCDOT and MDOT SHA have committed to adopting sustainable practices that increase resilience to climate change, improve safety for transportation workers, reduce work zone congestion, and improve equity for residents who have borne disproportionate pollution and traffic burdens because of their race or socioeconomic status. Using P3DSETI can help the County and the State to ensure projects ease these burdens for disadvantaged communities. Users can automatically overlay project areas on equity analysis maps, pollution burden maps, and other Geographic Information System (GIS)-based resources to identify disadvantaged or overburdened populations for engagement. The 3D models can also identify and evaluate concerns not readily apparent in 2D drawings and maps such as shadows that impact energy, or vegetation or line of sight. P3DSETI also enables advanced modeling, such as hydrology models, to prevent negative downstream or upstream impacts on already at-risk communities from site changes.

FISCAL NOTE

Federal aid reflects the Advanced Digital Construction Management Systems grant for capital projects in Montgomery County. DOT has set aside $300,000 from appropriation in existing Level of Effort projects to support the 20 percent grant match and contingency.

COORDINATION

Maryland Department of Transportation State Highway Administration, Federal Highway Administration, Bethesda, Silver Spring and Wheaton Parking Lot Districts, Montgomery County Department of Transportation Divisions of Transit Services, Traffic Engineering and Operations, Highway Services, and Transportation Engineering