

Traffic Signal System Modernization (P500704)

Category
Sub Category
Administering Agency
Planning Area

Transportation
Traffic Improvements
Transportation (AAGE30)
Countywide

Date Last Modified
Required Adequate Public Facility
Relocation Impact
Status

1/6/14
No
None
Ongoing

	Total	Thru FY13	Est FY14	Total 6 Years	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	Beyond 6 Yrs
EXPENDITURE SCHEDULE (\$000s)											
Planning, Design and Supervision	11,505	10,009	0	1,496	548	548	100	100	100	100	0
Land	0	0	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	29,223	11,944	9,823	7,456	1,452	1,452	1,138	1,138	1,138	1,138	0
Construction	56	56	0	0	0	0	0	0	0	0	0
Other	65	65	0	0	0	0	0	0	0	0	0
Total	40,849	22,074	9,823	8,952	2,000	2,000	1,238	1,238	1,238	1,238	0

FUNDING SCHEDULE (\$000s)											
Current Revenue: General	6,577	355	1,270	4,952	0	0	1,238	1,238	1,238	1,238	0
G.O. Bonds	15,494	14,528	966	0	0	0	0	0	0	0	0
Recordation Tax Premium	6,778	5,191	1,587	0	0	0	0	0	0	0	0
State Aid	12,000	2,000	6,000	4,000	2,000	2,000	0	0	0	0	0
Total	40,849	22,074	9,823	8,952	2,000	2,000	1,238	1,238	1,238	1,238	0

OPERATING BUDGET IMPACT (\$000s)											
Maintenance				1,745	250	295	300	300	300	300	
Program-Staff				250	50	50	50	100	0	0	
Program-Other				27	3	3	3	6	6	6	
Net Impact				2,022	303	348	353	406	306	306	
Full Time Equivalent (FTE)					1.0	1.0	1.0	2.0	2.0	2.0	

APPROPRIATION AND EXPENDITURE DATA (000s)

Appropriation Request	FY 15	2,000
Appropriation Request Est.	FY 16	2,000
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		31,897
Expenditure / Encumbrances		24,200
Unencumbered Balance		7,697

Date First Appropriation	FY 07	
First Cost Estimate		
Current Scope	FY 15	40,849
Last FY's Cost Estimate		35,106

Description

This project provides for the modernization of the County's aged traffic signal system. Phase I consisted of planning, requirements development, systems engineering, and testing. Phase II consists of acquisition of central system hardware and software, acquisition, and implementation of control equipment and communications for intersections, as well as reconfiguration of the communications cable plant. Phase I was completed in FY08. Phase II implementation commenced in FY09. As a result of the November 2009 failure of the existing system, Phase II was refined into two sub-phases, A and B, so that replacement of the existing system could be accelerated. Phase IIA encompassed critical work that is necessary to deactivate the existing system. Phase IIB will include all other work that is not critical to replacement of the existing system.

Estimated Schedule

Phase I - complete, FY07-08 Phase IIA - completed FY12, Phase IIB - FY13-16; On-Going Life Cycle Upgrades - FY17 and Beyond

Cost Change

Increase in funding reflects completion of phase IIB and the transition to maintenance and "life cycle" replacement of critical equipment as a level of effort project beginning in FY17.

Justification

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The existing traffic signal control system, though it has been highly reliable, is an aging system dependent on dated technology. Central and field communications devices are obsolete and problematic to maintain. As the technologies employed in the Advanced Transportation Management System (ATMS) have advanced, it has become increasingly difficult to interface with the existing traffic signal control system (COMTRAC). Because of the limited functionality of COMTRAC, the system is not able to take advantage of the capabilities of the current generation of local intersection controllers. These capabilities provide a greater level of flexibility to manage traffic demands. In November 2009, the existing traffic signal system experienced a failure that caused significant congestion and delays throughout the County for nearly two days. This event led to an acceleration of the schedule to replace the existing system. The following reports were developed as part of the research, planning and system engineering work on this project. These reports documented the existing condition and need to modernize the existing signal control system, as well as the evaluation and engineering of specific components of the replacement system:

- White paper on the status and future of the traffic signal system in Montgomery County, March 2001;
- Concept of operations (rev 1.4), October 2007
- TSSM requirements (rev g), October 2007
- TSSM communications master plan (rev c), February 2009
- TSSM risk assessment and analysis (rev e), April 2009.

Given the effort to modernize the signal system and its infrastructure, it is important and prudent to take steps to prevent the system from becoming outdated. A proactive program to replace equipment by its "life cycle" usefulness is required given the dependency on technology driven devices and software to maintain traffic control capabilities and full redundancy failover systems. This assumes a level of effort (LOE) designation and funding be appropriated beginning in FY17 .

Fiscal Note

The county's traffic signal system supports approximately 800 traffic signals, about 550 of which are owned by the Maryland State Highway Administration (MSHA) and maintained and operated by the County on a reimbursement basis. MSHA plans to separately fund and implement other complementary work and intersection upgrades amounting to approximately \$12.5 million that are not reflected in the project costs displayed above. Project appropriations were reduced in FY09 (-\$106,000) and FY11 (-\$269,000) to reconcile the recall of a \$375,000 federal earmark that was originally programmed in FY07. MSHA has committed to provide \$12 million in State aid to this project. This aid was originally programmed during FY09-14, but has not materialized due to the State's fiscal situation. MSHA remains committed to the full \$12 million in aid for this project, and the State aid as displayed is the best estimate of the schedule of the aid becoming available. In addition, \$2,000,000 has been moved to the TSSM project from the State Transportation Participation CIP (No. 500722) in FY 11 with repayment to that project in FY17. The project schedule and costs for Phase IIB have not been finalized due to the emphasis on Phase IIA activities and will be adjusted in the future.

The Executive asserts that this project conforms to the requirements of relevant local plans, as required by the Maryland Economic Growth, Resource Protection and Planning Act.

Coordination

Advanced Transportation Management System, Fibernet, Traffic Signals Project, Department of Technology Services, Maryland State Highway Administration