# Traffic Signal System Modernization
(P500704)

| | | | |
|---|---|---|---|
| Category | Transportation | Date Last Modified | 10/25/22 |
| SubCategory | Traffic Improvements | Administering Agency | Transportation |
| Planning Area | Countywide | Status | Ongoing |

## EXPENDITURE SCHEDULE ($000s)

| Cost Elements | Total | Thru FY22 | Rem FY22 | Total 6 Years | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 | FY 28 | Beyond 6 Years |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Planning, Design and Supervision | 20,524 | 19,324 | - | 1,200 | 200 | 200 | 200 | 200 | 200 | 200 | - |
| Site Improvements and Utilities | 27,806 | 21,392 | 186 | 6,228 | 1,038 | 1,038 | 1,038 | 1,038 | 1,038 | 1,038 | - |
| Construction | 1,272 | 1,272 | - | - | - | - | - | - | - | - | - |
| Other | 1,516 | 1,516 | - | - | - | - | - | - | - | - | - |
| TOTAL EXPENDITURES | 51,118 | 43,504 | 186 | 7,428 | 1,238 | 1,238 | 1,238 | 1,238 | 1,238 | 1,238 | - |

## FUNDING SCHEDULE ($000s)

| Funding Source | Total | Thru FY22 | Rem FY22 | Total 6 Years | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 | FY 28 | Beyond 6 Years |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Contributions | 295 | 295 | - | - | - | - | - | - | - | - | - |
| Current Revenue: General | 11,576 | 4,069 | 79 | 7,428 | 1,238 | 1,238 | 1,238 | 1,238 | 1,238 | 1,238 | - |
| G.O. Bond Premium | 852 | 852 | - | - | - | - | - | - | - | - | - |
| G.O. Bonds | 15,680 | 15,573 | 107 | - | - | - | - | - | - | - | - |
| Recordation Tax Premium (MCG) | 10,715 | 10,715 | - | - | - | - | - | - | - | - | - |
| State Aid | 12,000 | 12,000 | - | - | - | - | - | - | - | - | - |
| TOTAL FUNDING SOURCES | 51,118 | 43,504 | 186 | 7,428 | 1,238 | 1,238 | 1,238 | 1,238 | 1,238 | 1,238 | - |

## OPERATING BUDGET IMPACT ($000s)

| Impact Type | | Total 6 Years | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 | FY 28 |
|---|---|---|---|---|---|---|---|---|
| Maintenance | | 54 | 3 | 5 | 8 | 10 | 13 | 15 |
| Program-Staff | | 600 | 50 | 50 | 100 | 100 | 150 | 150 |
| Program-Other | | 36 | 3 | 3 | 6 | 6 | 9 | 9 |
| NET IMPACT | | 690 | 56 | 58 | 114 | 116 | 172 | 174 |
| FULL TIME EQUIVALENT (FTE) | | | 1 | 1 | 2 | 2 | 3 | 3 |

## APPROPRIATION AND EXPENDITURE DATA ($000s)

| | | | |
|---|---|---|---|
| Appropriation FY 24 Request | 1,238 | Year First Appropriation | FY07 |
| Cumulative Appropriation | 44,928 | Last FY's Cost Estimate | 51,118 |
| Expenditure / Encumbrances | 43,604 | | |
| Unencumbered Balance | 1,324 | | |

## PROJECT 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 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 was necessary to deactivate the existing system. Phase IIB includes all other work that is not critical to replacement of the existing system.

## ESTIMATED SCHEDULE

Phase I - completed FY07-08; Phase IIA - completed FY12; Phase IIB - FY13-16; ongoing Life Cycle Upgrades - FY17 and beyond.

## COST CHANGE

Cost increase due to the addition of FY27 and FY28 to this ongoing project.

## PROJECT JUSTIFICATION

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 Control 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 fail-over systems. This project was designated a level-of-effort (LOE) in FY17.

## DISCLOSURES

Expenditures will continue indefinitely. The County Executive asserts that this project conforms to the requirement of relevant local plans, as required by the Maryland Economic Growth, Resource Protection and Planning Act.

## COORDINATION

Advanced Transportation Management System, Fibernet, State Transportation Participation, Traffic Signals Project, Department of Technology and Enterprise Business Solutions, and Maryland State Highway Administration.