

# Traffic Signal System Modernization -- No. 500704

Category  
Subcategory  
Administering Agency  
Planning Area

**Transportation**  
**Traffic Improvements**  
**Transportation**  
**Countywide**

Date Last Modified  
Required Adequate Public Facility  
Relocation Impact  
Status

**May 17, 2012**  
**No**  
**None.**  
**Under Construction**

### EXPENDITURE SCHEDULE (\$000)

| Cost Element                      | Total         | Thru FY11     | Est. FY12     | Total 6 Years | FY13         | FY14         | FY15         | FY16         | FY17     | FY18     | Beyond 6 Years |
|-----------------------------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|----------|----------|----------------|
| Planning, Design, and Supervision | 7,940         | 5,296         | 452           | 2,192         | 548          | 548          | 548          | 548          | 0        | 0        | 0              |
| Land                              | 0             | 0             | 0             | 0             | 0            | 0            | 0            | 0            | 0        | 0        | 0              |
| Site Improvements and Utilities   | 27,841        | 6,458         | 12,803        | 8,580         | 3,112        | 2,564        | 1,452        | 1,452        | 0        | 0        | 0              |
| Construction                      | 56            | 56            | 0             | 0             | 0            | 0            | 0            | 0            | 0        | 0        | 0              |
| Other                             | 60            | 46            | 14            | 0             | 0            | 0            | 0            | 0            | 0        | 0        | 0              |
| <b>Total</b>                      | <b>35,897</b> | <b>11,856</b> | <b>13,269</b> | <b>10,772</b> | <b>3,660</b> | <b>3,112</b> | <b>2,000</b> | <b>2,000</b> | <b>0</b> | <b>0</b> | <b>0</b>       |

### FUNDING SCHEDULE (\$000)

|                          |               |               |               |               |              |              |              |              |          |          |          |
|--------------------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|----------|----------|----------|
| Current Revenue: General | 1,625         | 355           | 1,270         | 0             | 0            | 0            | 0            | 0            | 0        | 0        | 0        |
| G.O. Bonds               | 15,494        | 4,454         | 9,855         | 1,185         | 1,185        | 0            | 0            | 0            | 0        | 0        | 0        |
| Recordation Tax Premium  | 6,778         | 5,047         | 144           | 1,587         | 475          | 1,112        | 0            | 0            | 0        | 0        | 0        |
| State Aid                | 12,000        | 2,000         | 2,000         | 8,000         | 2,000        | 2,000        | 2,000        | 2,000        | 0        | 0        | 0        |
| <b>Total</b>             | <b>35,897</b> | <b>11,856</b> | <b>13,269</b> | <b>10,772</b> | <b>3,660</b> | <b>3,112</b> | <b>2,000</b> | <b>2,000</b> | <b>0</b> | <b>0</b> | <b>0</b> |

### OPERATING BUDGET IMPACT (\$000)

|                   |  |  |  |              |            |            |            |            |            |            |
|-------------------|--|--|--|--------------|------------|------------|------------|------------|------------|------------|
| Maintenance       |  |  |  | 1,745        | 250        | 295        | 300        | 300        | 300        | 300        |
| Program-Staff     |  |  |  | 450          | 50         | 50         | 50         | 100        | 100        | 100        |
| Program-Other     |  |  |  | 27           | 3          | 3          | 3          | 6          | 6          | 6          |
| <b>Net Impact</b> |  |  |  | <b>2,222</b> | <b>303</b> | <b>348</b> | <b>353</b> | <b>406</b> | <b>406</b> | <b>406</b> |
| WorkYears         |  |  |  |              | 1.0        | 1.0        | 1.0        | 2.0        | 2.0        | 2.0        |

#### 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 - in progress, FY09-12  
Phase IIB - FY13-16

#### 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 signal system in Montgomery County, March 2001;
- Concept of operations (rev 1.4), October 2007
- TSSM requirements (rev g), October 2007

| APPROPRIATION AND EXPENDITURE DATA   | COORDINATION             | MAP     |         |                             |      |        |                                    |      |        |                         |  |        |   |  |
|--|--------------------------|---------|---------|-----------------------------|------|--------|------------------------------------|------|--------|-------------------------|--|--------|---|--|
| <table border="1"> <tr> <td>Date First Appropriation</td> <td>FY07</td> <td>(\$000)</td> </tr> <tr> <td>First Cost Estimate</td> <td></td> <td></td> </tr> <tr> <td>Current Scope</td> <td>FY12</td> <td>35,897</td> </tr> <tr> <td>Last FY's Cost Estimate</td> <td></td> <td>35,897</td> </tr> </table>    | Date First Appropriation | FY07    | (\$000) | First Cost Estimate         |      |        | Current Scope                      | FY12 | 35,897 | Last FY's Cost Estimate |  | 35,897 | <p>Advanced Transportation Management System<br/>Fibernet<br/>Traffic Signals Project<br/>Department of Technology Services<br/>Maryland State Highway Administration</p> |  |
| Date First Appropriation   | FY07                     | (\$000) |         |                             |      |        |                                    |      |        |                         |  |        |   |  |
| First Cost Estimate  |                          |         |         |                             |      |        |                                    |      |        |                         |  |        |   |  |
| Current Scope  | FY12                     | 35,897  |         |                             |      |        |                                    |      |        |                         |  |        |   |  |
| Last FY's Cost Estimate  |                          | 35,897  |         |                             |      |        |                                    |      |        |                         |  |        |   |  |
| <table border="1"> <tr> <td>Appropriation Request</td> <td>FY13</td> <td>3,660</td> </tr> <tr> <td>Appropriation Request Est.</td> <td>FY14</td> <td>3,112</td> </tr> <tr> <td>Supplemental Appropriation Request</td> <td></td> <td>0</td> </tr> <tr> <td>Transfer</td> <td></td> <td>0</td> </tr> </table> | Appropriation Request    | FY13    | 3,660   | Appropriation Request Est.  | FY14 | 3,112  | Supplemental Appropriation Request |      | 0      | Transfer                |  | 0      |   |  |
| Appropriation Request  | FY13                     | 3,660   |         |                             |      |        |                                    |      |        |                         |  |        |   |  |
| Appropriation Request Est.   | FY14                     | 3,112   |         |                             |      |        |                                    |      |        |                         |  |        |   |  |
| Supplemental Appropriation Request   |                          | 0       |         |                             |      |        |                                    |      |        |                         |  |        |   |  |
| Transfer   |                          | 0       |         |                             |      |        |                                    |      |        |                         |  |        |   |  |
| <table border="1"> <tr> <td>Cumulative Appropriation</td> <td></td> <td>25,125</td> </tr> <tr> <td>Expenditures / Encumbrances</td> <td></td> <td>12,784</td> </tr> <tr> <td>Unencumbered Balance</td> <td></td> <td>12,341</td> </tr> </table>  | Cumulative Appropriation |         | 25,125  | Expenditures / Encumbrances |      | 12,784 | Unencumbered Balance               |      | 12,341 |                         |  |        |   |  |
| Cumulative Appropriation   |                          | 25,125  |         |                             |      |        |                                    |      |        |                         |  |        |   |  |
| Expenditures / Encumbrances  |                          | 12,784  |         |                             |      |        |                                    |      |        |                         |  |        |   |  |
| Unencumbered Balance   |                          | 12,341  |         |                             |      |        |                                    |      |        |                         |  |        |   |  |
| <table border="1"> <tr> <td>Partial Closeout Thru</td> <td>FY10</td> <td>0</td> </tr> <tr> <td>New Partial Closeout</td> <td>FY11</td> <td>0</td> </tr> <tr> <td>Total Partial Closeout</td> <td></td> <td>0</td> </tr> </table>   | Partial Closeout Thru    | FY10    | 0       | New Partial Closeout        | FY11 | 0      | Total Partial Closeout             |      | 0      |                         |  |        |   |  |
| Partial Closeout Thru  | FY10                     | 0       |         |                             |      |        |                                    |      |        |                         |  |        |   |  |
| New Partial Closeout   | FY11                     | 0       |         |                             |      |        |                                    |      |        |                         |  |        |   |  |
| Total Partial Closeout   |                          | 0       |         |                             |      |        |                                    |      |        |                         |  |        |   |  |

## Traffic Signal System Modernization -- No. 500704 (continued)

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- TSSM communications master plan (rev c), February 2009
- TSSM risk assessment and analysis (rev e), April 2009

### 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 complimentary 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.

### OTHER DISCLOSURES

- 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.