

# APPENDIX A: SHORT-TERM PROJECT DEPLOYMENTS

## ST-01: I-95 ITS DEPLOYMENT (DE STATE LINE TO AIRPORT)

**PROJECT DESCRIPTION AND SCOPE:** Project will address gaps in ITS device coverage on I-95 from the Delaware State Line to the Philadelphia International Airport. Deployment includes the following ITS devices:

- 19 CCTV Cameras
- 5 DMS
- 40 Vehicle Detectors

**PROJECT LEAD:** PennDOT District 6-0

**PERTINENT TSOP PROJECTS:** TSOP-03

**ESTIMATED SCHEDULE:** 2-4 yrs. (programming for FY 2009)  
Design: 1-2 yrs.  
Deployment: 1-2 yrs. immediately following design

**ESTIMATED COSTS:**  
Capital: \$13,000,000  
Annual O&M: \$650,000 (2011)

**PROJECT TYPE:** Deployment

**LEVEL OF EFFORT:** Complex

**TECHNOLOGY COMPONENTS** (if applicable): CCTV, DMS, vehicle detection, fiber-optic communications.

**PREREQUISITES AND DEPENDENCIES:** Completion of the statewide Interstate ITS Deployment Plan.

**PERFORMANCE MEASURES:** % of lane-miles of facilities (by classification) covered by CCTV, detection devices, etc.; reduction in non-recurring hours of delay.

**BENEFITS:** Improved surveillance, detection, verification and notification of incidents and emergencies along I-95.

**OTHER CONSIDERATIONS AND ISSUES:** ITS deployment could possibly be programmed as part of the I-95/US-322 Interchange project.

## ST-02: SERVICE PATROL COVERAGE PHASE I

**PROJECT DESCRIPTION AND SCOPE:** Existing service patrol coverage has been shown to have very positive feedback from motorists. A high priority need is to increase coverage to include all Interstates. Phase I of this project includes implementations to be made within the next two years. Elements of this project include:

- Maintain funding for all existing coverage
- Expand I-95 coverage to include all of Bucks County on a rush hour basis
- Continue rush hour coverage on PA-309 following completion of construction project

**PROJECT LEAD:** PennDOT 6-0

**PERTINENT TSOP PROJECTS:** TSOP-03

**ESTIMATED SCHEDULE:** 0-2 years

Study: N/A

Design: N/A

Deployment: 0-2 years

**ESTIMATED COSTS:**

Capital: N/A

Annual O&M: \$570,000 (2008)

**PROJECT TYPE:** Program Development

**LEVEL OF EFFORT:** Complex

**TECHNOLOGY COMPONENTS** (if applicable):

**PREREQUISITES AND DEPENDENCIES:** None

**PERFORMANCE MEASURES:** Number of motorists served; Reduction in time necessary to clear incidents.

**BENEFITS:** Will complete rush hour service patrol coverage on the region's interstates. Service Patrol coverage helps to keep corridors safe and reduce delay resulting from incidents.

**OTHER CONSIDERATIONS AND ISSUES:** Annual operations costs vary as they are driven by the fluctuations in costs for fuel and insurance. It was suggested that this project be incorporated as an additional element to the renewal of the existing service patrol contract when it expires at the end of 2008.

**ST-03: CITY OF PHILADELPHIA LAST MILE FIBER CONNECTIONS**

**PROJECT DESCRIPTION AND SCOPE:** Construction of a fiber connection and deployment of additional software and equipment to the following locations in the City of Philadelphia:

- Philadelphia Streets Department – G and Ramona St.
- Philadelphia Sports Complex Operations Center – Wachovia Center
- Philadelphia Emergency Operations Center – 240 Spring Garden St.
- Philadelphia Police Dispatch Center – One Franklin Square

**PROJECT LEAD:** PennDOT 6-0

**OTHER STAKEHOLDERS:** Philadelphia Streets Department, Philadelphia Sports Complex, Philadelphia Fire Department, Philadelphia Police.

**PERTINENT TSOP PROJECTS:** TSOP-01, TSOP-13

**ESTIMATED SCHEDULE:** 1-2 yrs  
Study: N/A  
Design: 0-1yrs  
Deployment: 0-1 yrs

**ESTIMATED COSTS:**  
Capital: \$1,000,000  
Annual O&M: \$60,000 (2009)

**PROJECT TYPE:** Deployment

**LEVEL OF EFFORT:** Moderate

**TECHNOLOGY COMPONENTS** (if applicable): Fiber-optic communications, video sharing equipment and software.

**PREREQUISITES AND DEPENDENCIES:** Selection of connection locations and completion of fiber construction on I-76.

**PERFORMANCE MEASURES:** Improved incident management and coordination; Reduction in incident response time.

**BENEFITS:** Access to video footage and other information will help to enhance the Police and EOC’s abilities to respond to incidents and 911 calls. Direct connection to PennDOT will allow the Streets department to better manage city roadways and allow the Sports Complex to better manage congestion resulting from large scale events.

**OTHER CONSIDERATIONS AND ISSUES:** N/A

## ST-04: COMPLETION AND IMPLEMENTATION OF RIMIS SYSTEM

**PROJECT DESCRIPTION AND SCOPE:** The Regional Integrated Multi-modal Information Sharing (RIMIS) program has been developed as a collaborative effort between the DVRPC and multiple regional transportation stakeholders. RIMIS will consist of web based software centered on Transcom's RA Web. Once implemented, the software will incorporate data interfaces which automatically capture information and distribute it to regional transportation and emergency operations agencies. Information distributed will include incident notifications, maintenance and construction activities, congestion levels, travel speeds and VMS information. Current progress includes development of concept of operations and functional requirements. The system is scheduled to begin implementation in Fall 2007.

Funding had been put in place to purchase the license, purchase equipment and software, construct two data interfaces and operate the system for the first year. Additional funding will be required in FY 2009 to add additional data interfaces and continue operations of the system.

**PROJECT LEAD:** DVRPC

**OTHER STAKEHOLDERS:** PennDOT 6-0, Counties, DRPA, FHWA, PTC, SEPTA, City of Philadelphia, NJDOT

**PERTINENT TSOP PROJECTS:** TSOP-01, TSOP-05

**ESTIMATED SCHEDULE:** 0-2 yrs

Study: N/A

Design: N/A

Deployment: 0-2 yrs

**ESTIMATED COSTS:**

Capital: \$250,000/Data Interface

Annual O&M: \$350,000 (2009)

**PROJECT TYPE:** Deployment

**LEVEL OF EFFORT:** Moderate

**TECHNOLOGY COMPONENTS** (if applicable): RIMIS software and data interfaces.

**PREREQUISITES AND DEPENDENCIES:** TIP funding is required for the operations of the system beyond FY 2008 as well as the cost of adding additional data interfaces.

**PERFORMANCE MEASURES:** Improvement in inter-agency coordination; access to real-time traffic and transit information.

**BENEFITS:** The RIMIS system will provide a single interface with which to distribute and receive information from multiple stakeholders and provide a "big picture" of events occurring throughout the region. This information exchange will help to facilitate improved inter-agency coordination.

**OTHER CONSIDERATIONS AND ISSUES:** Additional data interfaces will be funded through TIP amendments as needed whenever agencies are ready to construct the data interface. TIP funding will be shared by NJDOT and PennDOT.

## ST-05: DEVELOP REGIONAL STRATEGIC CORRIDOR INVESTMENT PLAN

**PROJECT DESCRIPTION AND SCOPE:** This project focuses on the creation of a GIS-based Signal Asset Management System to better assist in identifying key corridors for developing a signal upgrade and integration plan. The Plan will include:

- Identifying key arterial corridors to be evaluated and prioritized according to regional function.
- Compiling data along these corridors for the Traffic Signals Asset Management System.
- Identifying specific needs in each corridor, such as signal locations, Closed-Loop Signal Systems, CCTV, and DMS.
- Establishing system of weighing criteria to be used in the evaluation of priority.
- Identify the type of interconnect, signals included in interconnection, locations of master controllers, and type of communications (Should be coordinated with statewide TSAMS effort)

**PROJECT LEAD:** DVRPC

**OTHER STAKEHOLDERS:** PennDOT 6-0, Counties

**PERTINENT TSOP PROJECTS:** TSOP-03, TSOP-08

**ESTIMATED SCHEDULE:** 0-1 yrs

Study: 0-1 yrs

Design: N/A

Deployment: N/A

**ESTIMATED COSTS:**

Capital: \$75,000

Annual O&M: \$20,000

**PROJECT TYPE:** Planning

**LEVEL OF EFFORT:** Moderate

**TECHNOLOGY COMPONENTS** (if applicable): Traffic signals GIS database.

**PREREQUISITES AND DEPENDENCIES:** Identification of significant regional corridors. Further development of TSAMS through TSOP-08.

**PERFORMANCE MEASURES:** Signal delay; Travel time (during both normal and incident conditions).

**BENEFITS:** As a repository for of traffic signal information this tool can also improve traffic signal planning, design, installation, maintenance and operation.

**OTHER CONSIDERATIONS AND ISSUES:** Planning should be coordinated with statewide TSAMS effort. Corridor prioritization will serve as an input into other corridor signal system and ITS deployment projects. Plan will work together with the Signal Inspection/Revision and Signal System Upgrade Programs to create a comprehensive asset management system for the region's traffic signals.

## ST-06: STRATEGIC ARTERIAL CORRIDOR SIGNAL INSPECTION AND REVISION PROGRAM

**PROJECT DESCRIPTION AND SCOPE:** This program is to be applied to corridors identified as high priority through the Strategic Corridor Investment Plan. It will include contracting vendors to provide signal inspections, traffic counts, and signal retiming at 3-5 year intervals.

**PROJECT LEAD:** PennDOT 6-0  
**OTHER STAKEHOLDERS:** DVRPC, Counties, Municipalities

**PERTINENT TSOP PROJECTS:** TSOP-08

**ESTIMATED SCHEDULE:** Continuous Updating  
Study: N/A  
Design: N/A  
Deployment: N/A

**ESTIMATED COSTS:**  
Capital: \$3,000/signal  
Annual O&M: None

**PROJECT TYPE:** Policy and Program Development **LEVEL OF EFFORT:** Moderate

**TECHNOLOGY COMPONENTS** (if applicable): None

**PREREQUISITES AND DEPENDENCIES:** Identification and prioritization of regional corridors through Strategic Corridor Investment Plan.

**PERFORMANCE MEASURES:** Implementation of a systematic process for the periodic updating of traffic signal timings along the region's priority arterials.

**BENEFITS:** Regular signal retiming will assure that all signals on priority corridors are operating efficiently, which will, in turn, reduce travel times.

**OTHER CONSIDERATIONS AND ISSUES:** This program will work together with the Strategic Corridor Investment Plan and Signal System Upgrade Program to create a comprehensive asset management system for the region's traffic signals.



## ST-08: ESTABLISH INCIDENT MANAGEMENT TASK FORCES ON KEY CORRIDORS

**PROJECT DESCRIPTION AND SCOPE:** Incident management task forces currently exist for the I-76/I-476, US-422, and PA-309 corridors. Additional task forces would improve the coordination and communication between incident responders. I-95, I-76 and I-476 corridors are good candidates for initial deployment. Elements of this project include:

- Holding periodic meetings with transportation organizations and incident responders.
- Conducting table top exercises as practice for incident response
- Instituting training programs for incident responders
- Developing Pre-defined Emergency Response Plans
- Conduct periodic incident reviews between responders and transportation agencies

**PROJECT LEAD:** DVRPC

**OTHER STAKEHOLDERS:** PennDOT 6-0, PSP, Local Police/Emergency Responders, County TMA's

**PERTINENT TSOP PROJECTS:** TSOP-01, TSOP-03, TSOP-05

**ESTIMATED SCHEDULE:** 0-2 yrs

Study: N/A

Design: N/A

Deployment: 0-2 yrs

**ESTIMATED COSTS:**

Capital: \$100,000

Annual O&M: \$20,000/corridor (2008)

**PROJECT TYPE:** Program Development

**LEVEL OF EFFORT:** Simple

**TECHNOLOGY COMPONENTS** (if applicable): None

**PREREQUISITES AND DEPENDENCIES:** Selection of appropriate corridors.

**PERFORMANCE MEASURES:** Number of emergency response plans; Number of emergency response exercises conducted per year; Improvement in incident clearance; Number of secondary crashes.

**BENEFITS:** Will bring together incident responders and transportation agencies and facilitate greater communications and cooperation. Incident reviews and table-top exercised will help identifying procedures for more efficient and coordinated incident clearance and mitigation.

**OTHER CONSIDERATIONS AND ISSUES:** N/A

## ST-09: FIBER CONNECTION TO DELDOT

**PROJECT DESCRIPTION AND SCOPE:** Project includes the construction of a fiber connection and integration to the Delaware Department of Transportation. The connection can be made through fiber installed on US-202

**PROJECT LEAD:** PennDOT District 6-0  
**OTHER STAKEHOLDERS:** DelDOT

**PERTINENT TSOP PROJECTS:** TSOP-13

**ESTIMATED SCHEDULE:** 1-2 yrs  
Study: N/A  
Design: N/A  
Deployment: 1-2 yrs

**ESTIMATED COSTS:**  
Capital: \$250,000  
Annual O&M: \$15,000 (2009)

**PROJECT TYPE:** Deployment

**LEVEL OF EFFORT:** Moderate

**TECHNOLOGY COMPONENTS** (if applicable): Fiber-optic communications

**PREREQUISITES AND DEPENDENCIES:** Placement of fiber to be deployed as part of planned I-95 ITS projects in Delaware County.

**PERFORMANCE MEASURES:** Improved traveler information across state borders; Reduction in delay resulting from major incidents.

**BENEFITS:** Will allow for better response to and coordination of incidents that impact both Delaware and Pennsylvania, most specifically on I-95.

**OTHER CONSIDERATIONS AND ISSUES:** N/A

**ST-10: CONTINUE TO UPDATE AND PROVIDE PENNDOT DETOUR ROUTES VIA THE INTERNET**

**PROJECT DESCRIPTION AND SCOPE:** The DVRPC is currently in the process of updating and posting detour routes to the web. This project expands on that effort to:

- Continue to update existing detour routes
- Institute a web based detour routing program accessible to incident responders
- Possible future integration with Roadway Closure Reporting System
- Expand detour routes to include PA Turnpike and DRPA facilities

**PROJECT LEAD:** DVRPC  
**OTHER STAKEHOLDERS:** PennDOT 6-0

**PERTINENT TSOP PROJECTS:** TSOP-02, TSOP-05, TSOP-12

**ESTIMATED SCHEDULE:** Ongoing  
Study: N/A  
Design: N/A  
Deployment: N/A

**ESTIMATED COSTS:**  
Capital: N/A  
Annual O&M: TBD

**PROJECT TYPE:** Program Development      **LEVEL OF EFFORT:** Simple

**TECHNOLOGY COMPONENTS** (if applicable): GIS database

**PREREQUISITES AND DEPENDENCIES:** Updating of existing detour routes and GIS database.

**PERFORMANCE MEASURES:** Easy access to up-to-date detour routes via the internet for transportation agencies and incident responders.

**BENEFITS:** Detour routes in an electronic format will make them more accessible to all stakeholders as well as being easier to update or change.

**OTHER CONSIDERATIONS AND ISSUES:** N/A

## ST-11: LIMITED ACCESS HIGHWAY RAMP CLOSURES

**PROJECT DESCRIPTION AND SCOPE:** Planning and implementation of a pilot program to deploy ramp closure devices to a limited access highway in the District 6-0 region. Plan will address multiple alternatives including swinging arm gates and DMS. A recommended candidate for initial project deployment was I-476, as it has relatively simple interchanges that are well spaced. Any upgrades to parallel routes will be addressed through the Strategic Corridor Investment Planning Process (ST-4). Project should be coordinated with similar statewide efforts.

**PROJECT LEAD:** PennDOT 6-0  
**OTHER STAKEHOLDERS:** DVRPC

**PERTINENT TSOP PROJECTS:** TSOP-03, TSOP-05

**ESTIMATED SCHEDULE:** 0-2 years  
Study: N/A  
Design: 0-2 years  
Deployment: Later

**ESTIMATED COSTS:**  
Capital: \$50,000 for plan development  
Annual O&M: N/A

**PROJECT TYPE:** Planning

**LEVEL OF EFFORT:** Moderate

**TECHNOLOGY COMPONENTS** (if applicable): Fiber-optic Communications

**PREREQUISITES AND DEPENDENCIES:** None

**PERFORMANCE MEASURES:** Improved incident response; Reduction in delay following incidents.

**BENEFITS:** Ability to close highways quickly and efficiently following major incidents will aid emergency responders in clearing incidents.

**OTHER CONSIDERATIONS AND ISSUES:** Additional funding will need to be investigated once deployment location and method of closure have been determined. Stakeholders have suggested that a pilot program be coordinated through the I-76 TSM and identified the Gladwyne Interchange as an appropriate location for a feasibility study.

## ST-12: SIGNAL PRIORITY FOR TRANSIT VEHICLES

**PROJECT DESCRIPTION AND SCOPE:** Project includes the deployment of signal priority for SEPTA transit vehicles to critical intersections along select corridors. There will be a focus on corridors which have already installed signal preemption for emergency vehicles. Corridor selection will also be tied into Strategic Corridor Investment Planning Process (ST-04).

**CO-LEAD AGENCIES:** SEPTA, PennDOT 6-0, Municipalities

**PERTINENT TSOP PROJECTS:** TSOP-17

**ESTIMATED SCHEDULE:** 1-2 years  
Study: N/A  
Design: 0-2 years  
Deployment: 1-2 years

**ESTIMATED COSTS:**  
Capital: \$10,000/signal, \$5,000/vehicle  
Annual O&M: \$1,000/signal.  
\$500/vehicle(2009)

**PROJECT TYPE:** Deployment

**LEVEL OF EFFORT:** Moderate

**TECHNOLOGY COMPONENTS** (if applicable): Traffic signal priority

**PREREQUISITES AND DEPENDENCIES:** Completion of Strategic Corridor Investment Plan.

**PERFORMANCE MEASURES:** Improvement in travel time for SEPTA vehicles; Reduction in delays.

**BENEFITS:** Will allow for SEPTA busses to run routes with fewer stops at signalized intersections, reducing travel times and fuel consumption.

**OTHER CONSIDERATIONS AND ISSUES:** N/A

**ST-13: DEVELOP RECOMMENDATIONS FOR NHS CONNECTORS**

**PROJECT DESCRIPTION AND SCOPE:** The DVRPC Goods Movement Task Force has identified key National Highway System (NHS) corridors and connectors in the District 6-0 region and has recommended improvements to be made to these roadways. Under this project, regional stakeholders will develop cost estimates and implement the operational improvements recommended in the report.

**PROJECT LEAD:** DVRPC Goods Movement Task Force  
**OTHER STAKEHOLDERS:** PennDOT 6-0, Bucks County, Chester County, Delaware County, Montgomery County, City of Philadelphia

**PERTINENT TSOP PROJECTS:** TSOP-18

**ESTIMATED SCHEDULE:** 1-2 years  
Study: N/A  
Design: 1-2 years  
Deployment:

**ESTIMATED COSTS:**  
Cost estimates for deployments are to be determined as part of planning effort.

**PROJECT TYPE:** Planning/Programming      **LEVEL OF EFFORT:** Moderate

**TECHNOLOGY COMPONENTS** (if applicable): Traffic Signal Systems, ITS

**PREREQUISITES AND DEPENDENCIES:** Finalization of NHS Connector Report and Recommendations.

**PERFORMANCE MEASURES:** Implementation operational recommendations from NHS Connector Report.

**BENEFITS:** Upgrading the operations of primary goods movement routes will help in increasing the efficiency of goods movement throughout the region.

**OTHER CONSIDERATIONS AND ISSUES:** N/A

