

ADVANCED PLANNING FOR OPERATIONS:

Missouri Operations Summit

Tuesday, September 25, 2012

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Delaware
Valley
Regional
Planning
Commission



DELAWARE VALLEY REGIONAL PLANNING COMMISSION



- Federally-designated MPO for the 9-county Philadelphia region
 - Created in 1965
 - 5.5 Million People
 - 3.0 Million Jobs
 - 352 Municipalities
-
- Long-Range Plan, Transportation Improvement Program (TIP), Congestion Management Process
 - transportation operations, safety, transit, bike/ped, freight, aviation, travel/demographic forecasting, land use, open space preservation, environmental

DVRPC'S TRANSPORTATION OPERATIONS MANAGEMENT PROGRAM

- **Planning & Coordinating**
- **Incident Management**
- **RIMIS**
- **Technical Analysis**



**PLANNING &
COORDINATING**

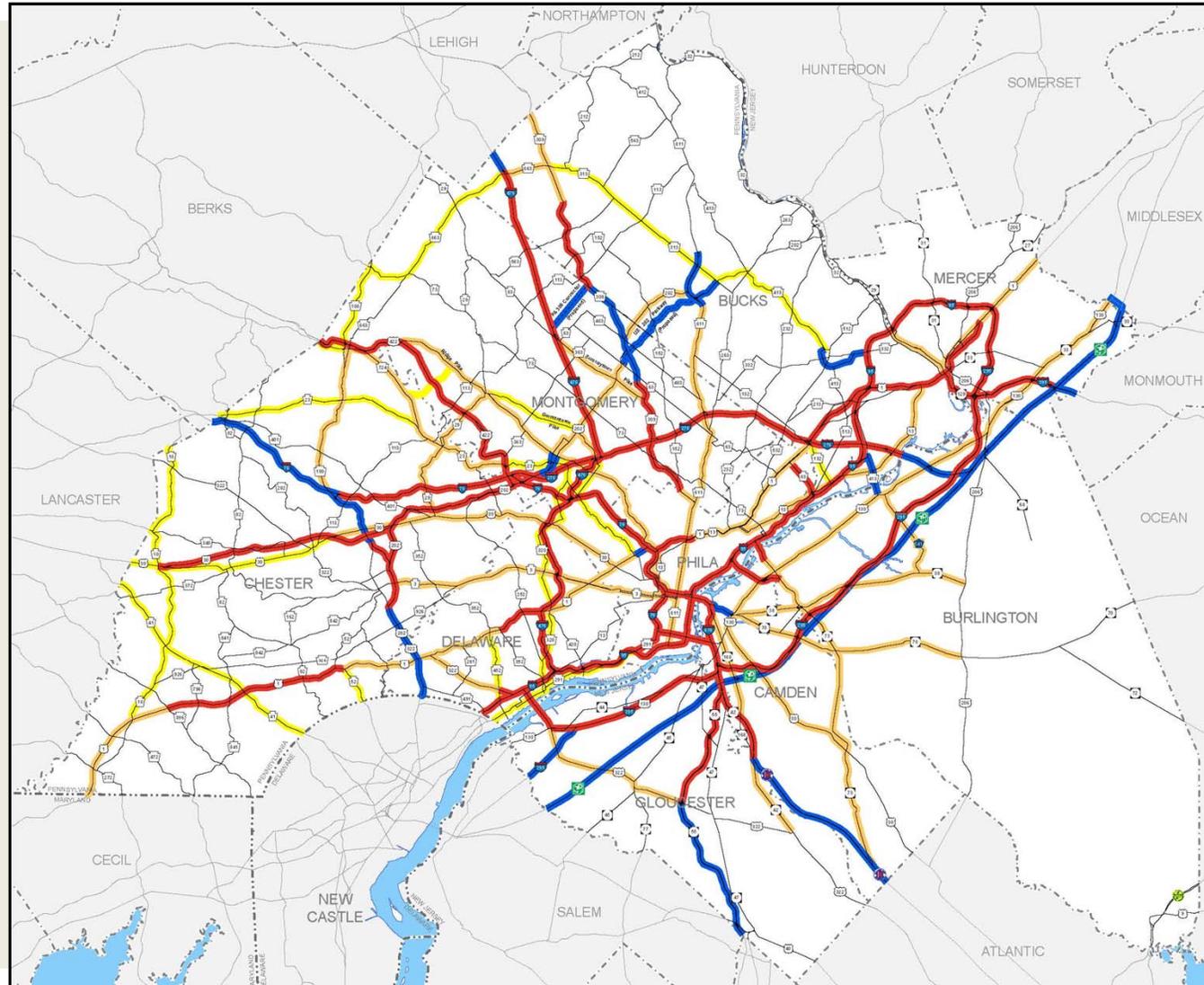
TRANSPORTATION OPERATIONS TASK FORCE

- **Formal DVRPC Committee established in 1998**
- **Meets on a quarterly basis**
- **Composed of over 35 Regional Stakeholders**
 - **Technical-level Staff**
- **Forum that provides an opportunity for agencies to share information and coordinate:**
 - *Transportation Systems & Operations, ITS Deployments, incident management programs, construction projects, etc.*
- ***Develop a consensus on Regional ITS and Operational issues;***
 - *Respond to federal initiatives; and develop an annual action plan*

TRANSPORTATION OPERATIONS MASTER PLAN

- **Operations Goals & Objectives**
- **Transportation Operations Vision**
 - ITS Infrastructure
 - Emergency Service Patrols
 - Incident Management Task Forces
 - Integrated Corridor Management Plan
 - Regional Communications Network
- **Projects & Programs**
- **Financial Plan**
 - Assessment of Needs
 - Capital Costs vs. Operations & Maintenance
 - Identifies Funding Gap
- **Linked directly to DVRPC's Regional Long Range Plan - *Connections 2035 (2009)***

TRANS OPS MASTER PLAN – INFRASTRUCTURE VISION



TRANSPORTATION OPERATIONS MASTER PLAN

2035 ITS INFRASTRUCTURE VISION

MINIMUM REQUIREMENTS

- PRIMARY COVERAGE**
 - Full CCTV Coverage
 - VMS on Mainline; Select Crossroads
 - Incident Detection
 - Travel Time Detectors
- SECONDARY COVERAGE**
 - Limited CCTV Coverage on Expressways; Mainly at Interchanges
 - Full CCTV Coverage on Arterials
 - VMS
 - Travel Time Detectors
 - All signals Part of Signal Systems
 - Signals Operated by PennDOT (In PA)
- TERTIARY COVERAGE**
 - CCTV at Major Intersections
 - VMS at Decision Points
 - Travel Time Detectors
 - All Signals Part of Signal Systems
 - Signals Operated by PennDOT (In PA)
- EMERGENCY ROUTES**
 - Limited CCTV Coverage
 - Limited VMS
 - Signals Operated by PennDOT (In PA) in Emergency Situations

0 5 10
MILES



DELAWARE VALLEY
dvrpc
REGIONAL
PLANNING COMMISSION

UPDATED: July 2009

PLANNING EFFORTS

- **Delaware Valley Regional ITS Architecture**
 - Since 2000, DVRPC develops and maintains
 - Architecture assistance on project by project basis

- **ITS & Operations Coordination**
 - **Regional Fiber Connection Effort**
 - DeIDOT — NJDOT — PennDOT
 - PennDOT — Philadelphia — Southeastern PA Transit Authority (SEPTA)
 - **Tri-State Traffic Operations Center Coordination**
 - PennDOT, NJDOT, DeIDOT

- **Training & FHWA Workshops**

PLANNING EFFORTS

- **Emergency Preparedness Planning**
 - Southeastern PA Regional Task Force Emergency Transportation Plan
 - Public works equipment inventory
- **Regional Construction Coordination**
 - New program requested by DOT's
 - Identify major construction project conflicts

Use of Archived Operations Data

**Short-Term Operations
Project Planning**
(Ex. Signal timing)

Operations
(Ex. Roadway & incident
clearance durations)

Medium-Term Planning
(Ex. ID worst bottlenecks)

Justifying
(Ex. Why is it important to
fund operations projects?)

Long-Term Planning
(Ex. CMP, Performance
measurements)

Answering Questions
(Ex. What was the effect of
the hurricane?)

Evaluating Projects
(Ex. Before & after
analysis of projects)

DVRPC'S OPERATIONS PROGRAM FUNDING AND SUPPORT

- **Funding for Transportation Operations**
 - **Annual Unified Planning Work Program**
 - \$320K - Transportation Operations Management, Incident Management
 - **Transportation Improvement Program**
 - \$1M - RIMIS, Trans Operations Management and ITS

- **Support for Transportation Operations Program**
 - Long-Range Plan
 - Transportation Operations Master Plan
 - Congestion Management Process (CMP)
 - TIP Development



TRAFFIC INCIDENT MANAGEMENT

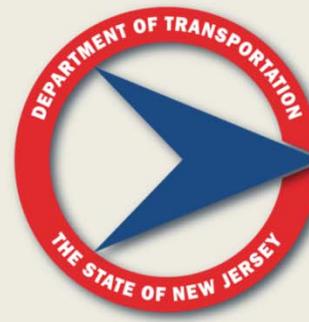
INCIDENT MANAGEMENT TASK FORCE

THE BEGINNING

- In 1998, PennDOT asked DVRPC to establish a Prototype Incident Management Task Force
- Provide a venue away from the scene of an incident for emergency responders to build relationships and identify response needs
- Determine if it is transferrable to other corridors

PURPOSE OF IMTF'S

- Improve Coordinated Response
- Foster Interaction Among Stakeholders
- Identify and Address Critical Needs
- Give Other Organizational Perspectives



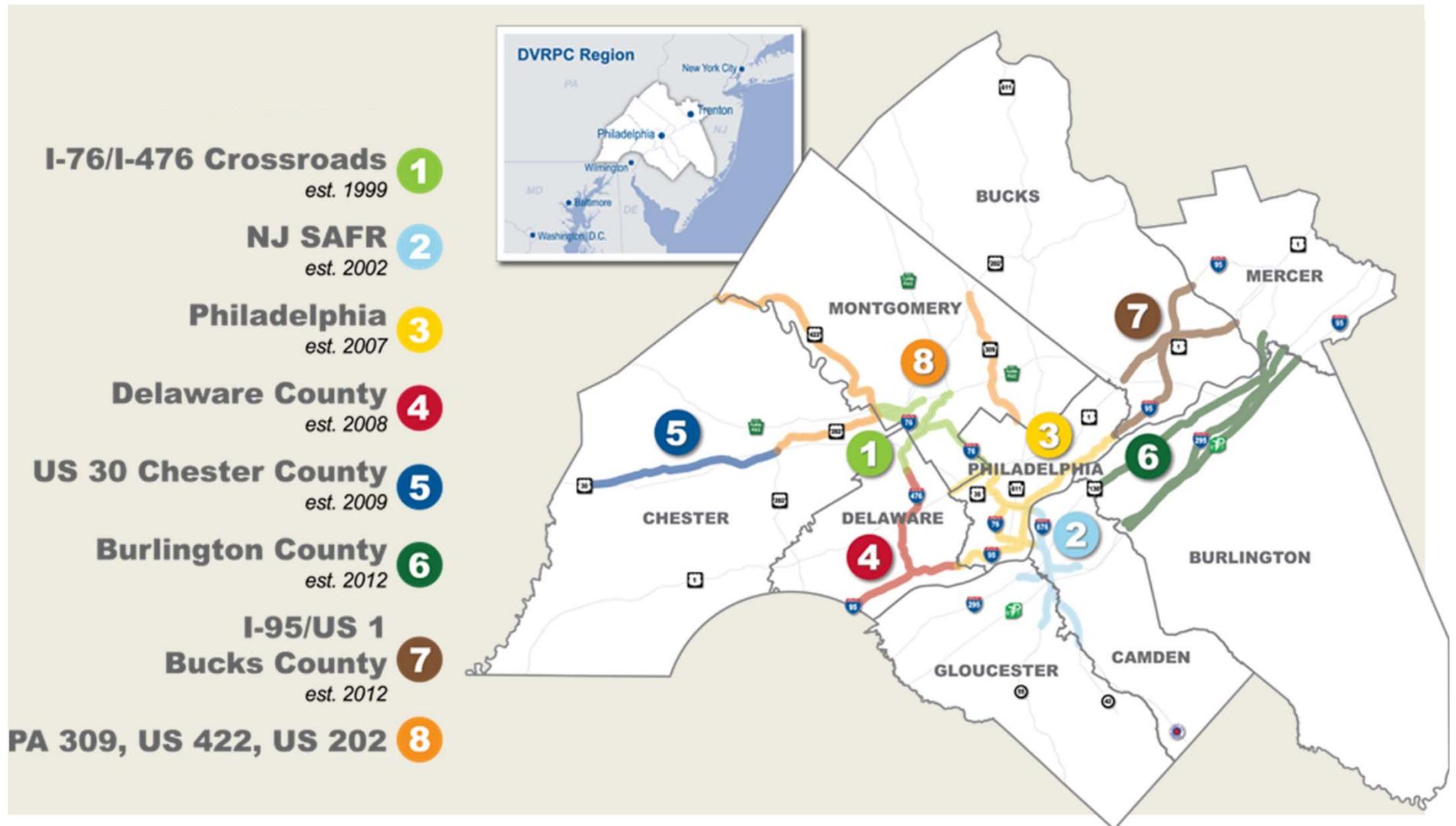
INCIDENT MANAGEMENT PROGRAM GOALS

- Promote National Unified Goal (NUG)
- Integrate Incident Management into the Metropolitan Planning Process
- Provide Cross-disciplinary Training
- Manage Incident Management Task Forces
- Serve as Liaison between Emergency Responders and State/County Agencies
- Provide Software Applications to Emergency Responders

TYPICAL STAKEHOLDERS FOR IMTF'S

- Local Police Departments
- Local Fire, Ambulance & EMS
- State Police
- DOT Traffic Operations
- DOT Maintenance Divisions
- Turnpike Authorities
- Bridge Authorities
- HAZMAT Agencies
- Dept. of Environmental Protection
- Towing Agencies
- State Towing Associations
- County 911 Communications
- County Department of Public Safety Offices
- County Coroner / Medical Examiner's Office
- Local State Legislators Offices
- Federal Highway Administration
- County Planning Departments
- Transportation Management Agencies
- Public Works Departments
- MPO

INCIDENT MANAGEMENT TASK FORCE LOCATIONS



INCIDENT MANAGEMENT TASK FORCE TYPICAL ACTIVITIES



- Quarterly Meetings
- Elected Chairperson(s)
- Rotating Venue
- Incident De-briefings
- Construction Updates
- Develop Action Plan
 - Ramp Designation Signs
 - Policy and Procedures Manual
 - Training
 - Contact List

REGIONAL SUCCESS: BUILDING RELATIONSHIPS

- Inter-agency Coordination
- Provide forum to discuss issues
- Enhance communications
- Share resources



REGIONAL SUCCESS: BUILDING RELATIONSHIPS

Post Incident Reviews

- To identify deficiencies, lesson learned, and areas for improvement to apply to future incidents
- Helps to maintain and strengthen the lines of communications between incident responders
- Multi-agency debriefing
- Formal or informal
- Meeting agenda item



REGIONAL SUCCESS: BUILDING RELATIONSHIPS

Operational Scenario Workshops

- Philadelphia IMTF
 - Mock incident scenario on I-95
 - A tractor-trailer on I-95 with retail goods
- US 30 IMTF (Chester County)
 - Incident Location on US 30 Bypass
 - Peak Hour Multivehicle Incident
 - Bus / Tractor Trailer
- Communication gaps identified
- Training needs identified



REGIONAL SUCCESS: TRAINING OPPORTUNITIES

- Over 1000 trained since 2001
- Examples of Courses
 - Incident Command System 200
 - NHI Incident Management (3)
 - I-95 CC Incident Management (2)
 - Highway Safety: Train-the-Trainer
 - I-95 CC Quick Clearance Program (2)
 - I-95 CC 3D Interactive Incident Management Training
- NJDOT / NJSP Incident Management Workshop (3)
- Developing an IMTF & Tool Box
- 2011 Delaware Valley Regional IM Conference

2011 REGIONAL TIM CONFERENCE

Vehicle Scene Placement Demonstration

REGIONAL TRAFFIC
INCIDENT MANAGEMENT
CONFERENCE

TUESDAY: 5 | 10 | 11

CITIZENS BANK PARK, PHILADELPHIA PA



REGIONAL SUCCESS: CONSTRUCTION COORDINATION

- **Final Rule on Work Zone Safety and Mobility**
 - Applies to all Federal-aid highway projects
 - Requires development of TMP's with IMP's
 - Need for coordination with local *emergency responders*
- Weave construction items into main agendas
- IMTF meeting dates need to be flexible with regard to activation or scheduling of construction stages



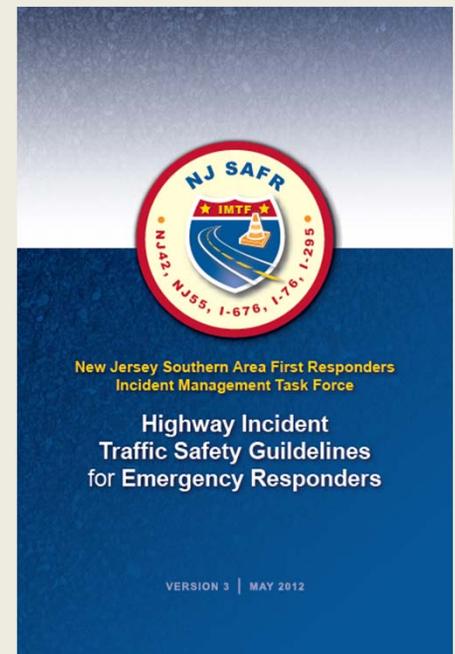
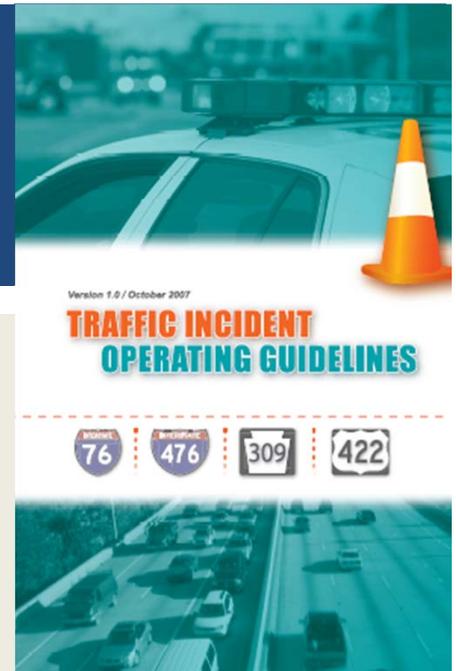
PROJECT SUCCESSES

Traffic Incident Operating Guidelines (PA)

Highway Incident Traffic Safety Guidelines for Emergency Responders (NJ)

“Provide responders uniform operational guidelines for safe operations at the scene of an incident.”

- Goal: Improve overall traffic IM process, will then:
 - Improve emergency responder safety
 - Reduce secondary incidents
 - Minimize the amount of apparatus and personnel responding to the incident



PROJECT SUCCESSES

Ramp Designation Signs I-476 / I-76 Interchange

- 60 locations (120 signs)
- Signs mounted Back-to-Back on a single post
- Distance approximately 320' apart



2000



2004

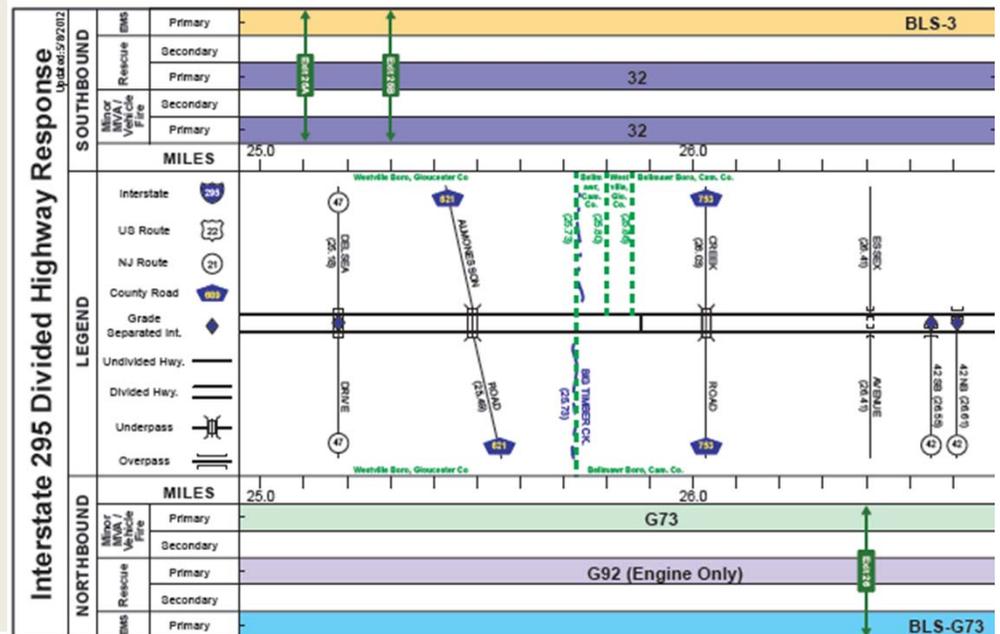


2007

PROJECT SUCCESSES

Response Boxes - NJ

- Designates specific area of highway where each Fire / EMS station responds
- Areas based on access to highway, not municipal boundaries
- MOU agreement enforces response zones



DVRPC SUPPORT SERVICES

- Regional Clearinghouse for IM Activities
- IMTF Meeting Administration and Coordination
- Mapping
- Organize Training Courses
- FHWA TIM Self Assessment
- TRAA Vehicle ID Cards
- Nextell Phones and Service

TRAA VEHICLE IDENTIFICATION GUIDE[®]

CLASS 1 • LIGHT-DUTY • (6,000 lbs. or less GVW - 4 tires)* 	Information Needed To Correctly Dispatch Towing and Recovery Units: <ul style="list-style-type: none">• Year, Make and Model of Vehicle to be Towed or Recovered• DOT Classification (Class 1 – 8 based on GVW)• Location of Vehicle• Type of Tow (impound, accident, recovery motorist assist, etc.)• Additional Vehicle Information<ul style="list-style-type: none">- 2 wheel drive, 4 wheel drive, all wheel drive- damage to vehicle, tire condition- vehicle loaded or empty- cargo contents- does the vehicle have a trailer- are the keys with the vehicle <p><i>Note:</i> Any vehicle may carry hazardous materials. Advise if placarded.</p> <p>* <i>Note:</i> The Gross Vehicle Weight Rating (GVWR) of the vehicle to be towed or recovered can be found on the identification label on the vehicle's driver's side doorframe. The number of pounds listed on the label can then be compared with the DOT Classification Vehicle Type Chart for the correct DOT class.</p>
CLASS 2 • LIGHT-DUTY • (6,001 - 10,000 lbs. GVW - 4 tires)* 	

Classes 1 and 2 include passenger vehicles, light trucks, minivans, full size pickups, sport utility vehicles and full size vans.

CLASS 3 • MEDIUM-DUTY • (10,001 - 14,000 lbs. GVW - 6 tires or more)* 
CLASS 4 • MEDIUM-DUTY • (14,001 - 16,000 lbs. GVW - 6 tires or more)* 
CLASS 5 • MEDIUM-DUTY • (16,001 - 19,500 lbs. GVW - 6 tires or more)* 
CLASS 6 • MEDIUM-DUTY • (19,501 - 26,000 lbs. GVW - 6 tires or more)* 

Classes 3 through 6 include a wide range of mid-size vehicles, delivery trucks, utility vehicles, motorhomes, parcel trucks, ambulances, small dump trucks, landscape trucks, flatbed and stake trucks, refrigerated and box trucks, small and medium school and transit buses.

CLASS 7 • HEAVY-DUTY • (26,001 - 33,000 lbs. GVW - 6 tires or more)* 
CLASS 8 • HEAVY-DUTY • (33,001 lbs. and over GVW - 10 tires or more)* 

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IDRUM: INTERACTIVE DETOUR ROUTE MAPPING

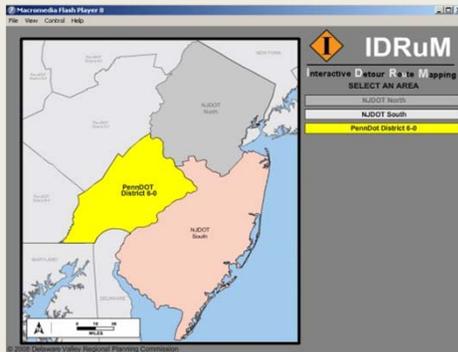
The screenshot shows the IDRUM web application interface. At the top left is a yellow diamond icon with a black 'I' and the text 'Interactive Detour Route Mapping'. Below this is a navigation bar with buttons for 'Home', 'Application', 'Download', 'Tutorial', 'Links', 'Logout', and 'On-Line Ver.2.1 - GUEST'. The main content area features a map of the Delaware Valley region with three areas highlighted: 'NJDOT North' (orange), 'NJDOT South' (orange), and 'PennDOT District 6-0' (yellow). To the right of the map is a sidebar with a yellow diamond icon and the text 'IDRuM Interactive Detour Route Mapping SELECT AN AREA'. Below this are three buttons: 'NJDOT North', 'NJDOT South', and 'PennDot District 6-0'. At the bottom left of the map is a scale bar showing 0, 10, and 20 miles, and a copyright notice: '© 2008 - 2011 Delaware Valley Regional Planning Commission'.

- DVRPC's Internet Application
- Provides Access to Official PennDOT and NJDOT Detour Routes
- Interactive Browser-based Application
- 5 PA Counties
- 8 NJ Counties, and counting!
- www.idrum.us

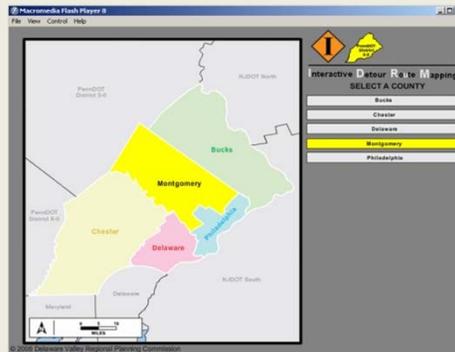
IDRUM: INTERACTIVE DETOUR ROUTE MAPPING

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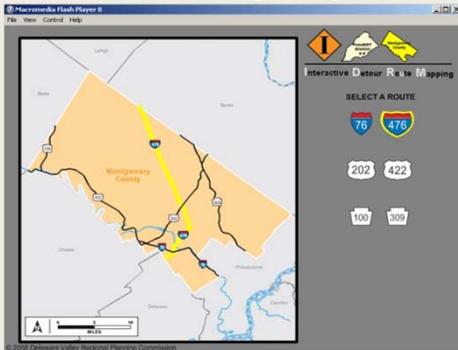
Step 1: Select Region



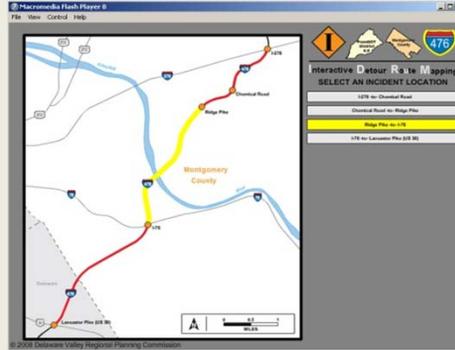
Step 2: Select County



Step 3: Select Highway



Step 4: Select Incident Location



Step 5: View/Download/Print/Email Map

Incident Location:
Chemical Road
to
Ridge Pike

Legend:

- Potential Control Point
- Incident Location
- Primary Detour Route
- Secondary Detour Route

DRIVING DIRECTIONS

Northbound:

- Exit I - 476 at Exit # 18A (Ridge Pike),
- Turn left onto Chemical Road,
- Turn left onto Germantown Pike to I - 276 or I - 476 (Northeast Extension).

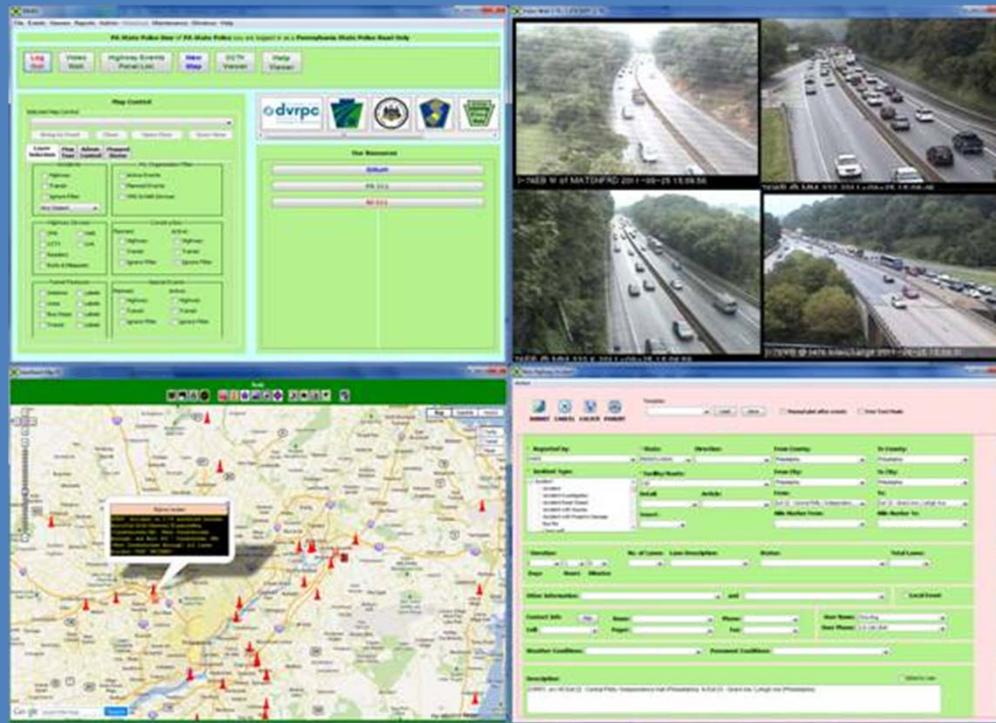
Southbound:

- Exit I - 476 at Exit #18B to Germantown Road East,
- Turn right onto Chemical Road,
- Turn right onto Ridge Pike to I - 476.

ADDITIONAL INFORMATION

PennDOT
Montgomery County Maintenance Main: (610) 275-2368
Traffic Management Center Main: (610) 205-6934

PA State Police - Belmont Station: (215) 560-6200
Norristown Dispatch Center: (484) 250-7600
PA Turnpike (Highspire): (800) 932-0586
Plymouth Township Police: (610) 279-1900



RIMIS

RIMIS:

REGIONAL **I**NTEGRATED **M**ULTIMODAL **I**NFORMATION **S**HARING

Many Partners in the DVRPC Region



RIMIS OBJECTIVES



- Provide timely and clear incident notifications and information on the transportation situation
- Broadcast situational information to a wide array of agencies
- Improve knowledge of the “big picture”
- Reduce time and cost of obtaining information during emergencies

RIMIS CONNECTIONS

■ NJDOT Swift System

- NJDOT, NJ Turnpike, Garden State Expressway, Atlantic City Expressway
- Statewide incidents, congestion, construction info, CCTV

■ PennDOT Road Conditions Reporting System

- Data interface operational as of July 2011
- Statewide incidents, construction info, CCTV

■ TRANSCOM

- Connections to NYSDOT, NYCDOT, Port Authority NY/NJ, Connecticut DOT

■ Local organizations

- City of Philadelphia, County TOC's, 9-1-1's, river crossing agencies, emergency responders

USING RIMIS

■ Video Wall

- Incident Management: location verification, incident severity, equipment dispatch, arrival tactics

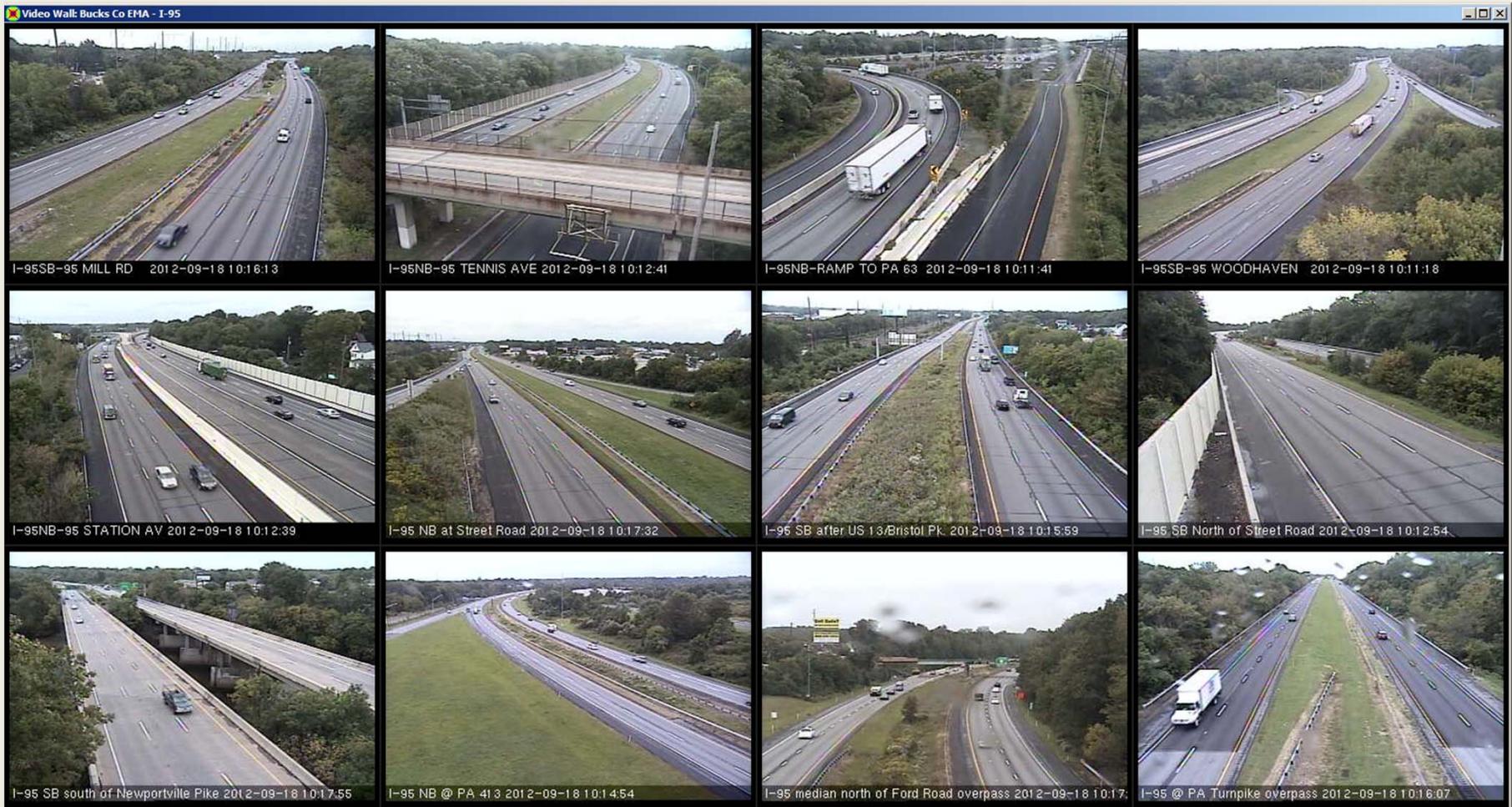
■ Situational Map

- The “big picture”: arterial network information, local construction information, minor special events
- Fills the gap between locals and DOT

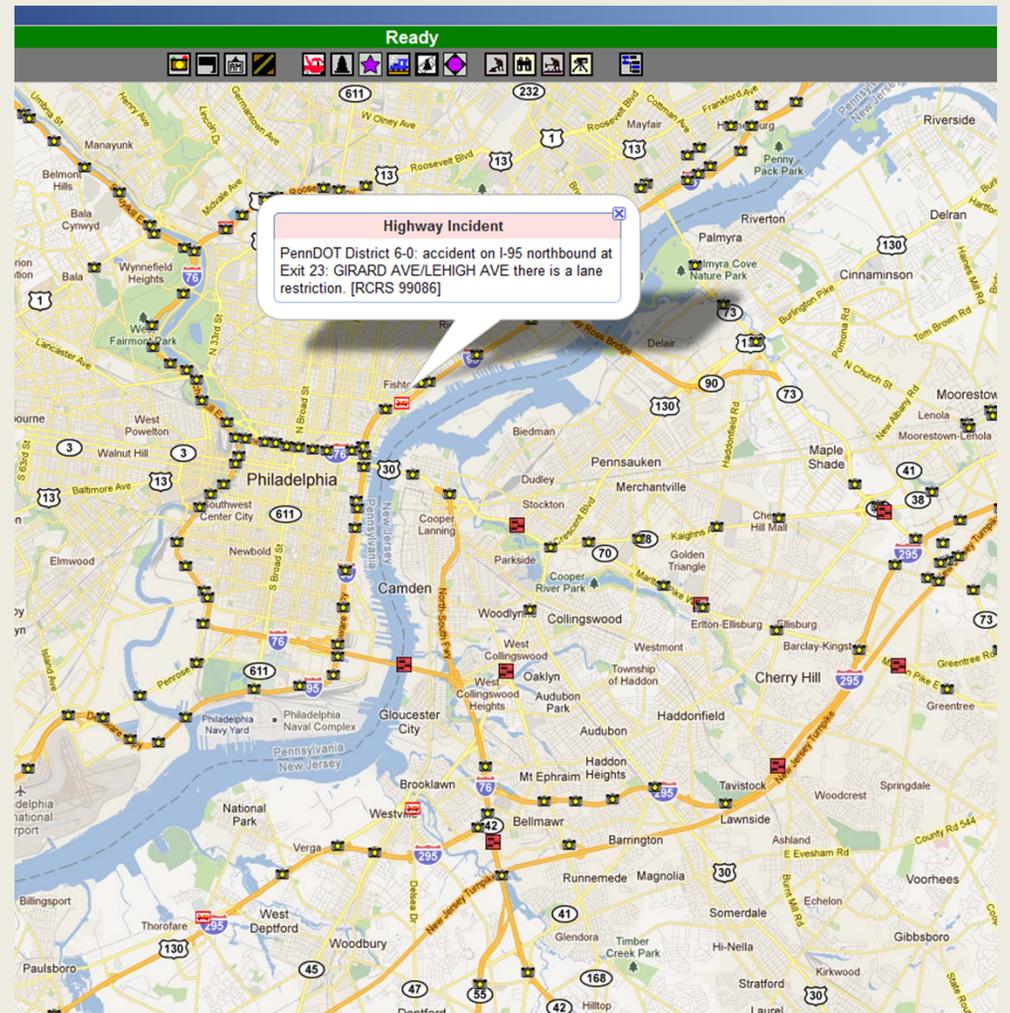
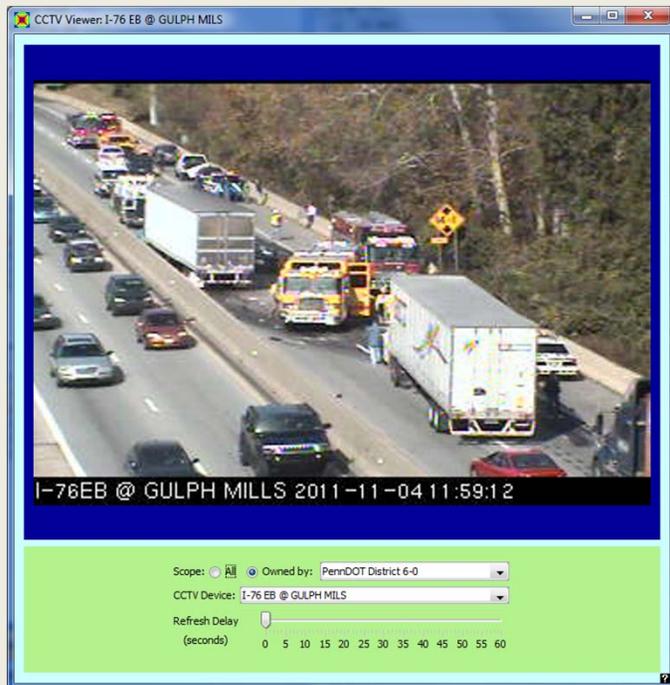
■ Operations Database

- Can be used for TOC (e.g., Philadelphia, Burlington Co)
- Log incidents and create reports (incident, monthly, construction)
- Notification distribution

RIMIS VIDEO WALL



RIMIS SITUATIONAL MAP



RIMIS USERS

- Regional County 9-1-1 & OEM Centers
- County Traffic Operation Centers
- Transportation Management Associations
- Bridge Authorities



RIMIS USERS

- Local Fire Departments
- Local Police Departments
- Local EMS Departments



TECHNICAL ANALYSIS

TECHNICAL ANALYSIS

- **Regional Traffic Signal Retiming Program**
 - Working with PennDOT acting as implementation project manager
 - Pilot Phase in Chester County
 - Project secured TIP Funding to optimize approximately 50 traffic signal locations
 - Variety of locations (single signal locations, high density signal corridor)
 - Includes before and after study
 - Project success hopes to lead to additional TIP funding for other counties
 - Initial challenges dealing with contracting scenarios



TECHNICAL ANALYSIS

- **I-295 Direct Connect Project Traffic Monitoring Program**
 - Monitoring both I-295 and Diversion Routes
 - To measure effectiveness of Traffic Management Plan
 - Before/after travel time analysis and traffic counts
- **Transit Signal Priority**
 - Choosing transit signal priority corridors for future investment within the city of Philadelphia
 - Identifying signal optimization priority corridors using same operations data
 - TSP funding not currently available

US 30 CHESTER COUNTY ITS MASTER PLAN

- **Plan for Future ITS assets**
 - Currently no programmed/planned construction
- **Identify recommended locations of future ITS assets**
 - Closed Circuit Television Cameras
 - Dynamic Message Signs
 - Incident / Travel Time Detectors
 - Communications System (Fiber)
 - Enhanced Traffic Signal Systems
 - Freeway Emergency Service Patrol
- **Phased Implementation Plan**
 - Develop priorities & estimated costs
 - Identify potential projects for implementation

FLOOD PRONE AREA MAPPING

- **Identify Flood Prone Areas**
 - Areas of annual localized, short-term, recurring events
 - Significant storms
- **Create Detour Routes**
 - Municipality / Inter-municipal
- **Explore Signage and/or Barriers**
 - Standardized signage or Site specific barrier implementation
- **Develop a Concept of Operations**
 - Deployment responsibilities
 - Chain of command/communication
 - Inter-agency coordination



TECHNICAL ANALYSIS

- **Special Projects**
 - City of Philadelphia Traffic Management Center Concept of Operations
 - City of Philadelphia ITS Master Plan

- **Traffic Signal Timing**
 - Corridor Specific Signal Optimization Projects

- **Road Safety Operations Audits**
 - RSA's adapted to limited access highways



FUTURE EFFORTS

FUTURE EFFORTS

- **Active Traffic Management**
 - Hard Shoulder Running
 - Variable Speed Limits
- **Continued Performance Measuring Monitoring**
 - Travel Time
 - Reliability Measures
 - Incident Data



FUTURE EFFORTS

- **Continue to assist the State DOT's and local stakeholders by filling in the gaps**
 - Reaching out to local jurisdictions, river crossing agencies, and other regional stakeholders
- **Continue to expand RIMIS efforts**
 - Make real time situational information available to more stakeholders and emergency responders
- **Support Operations and Incident Management needs of Emergency Responders**

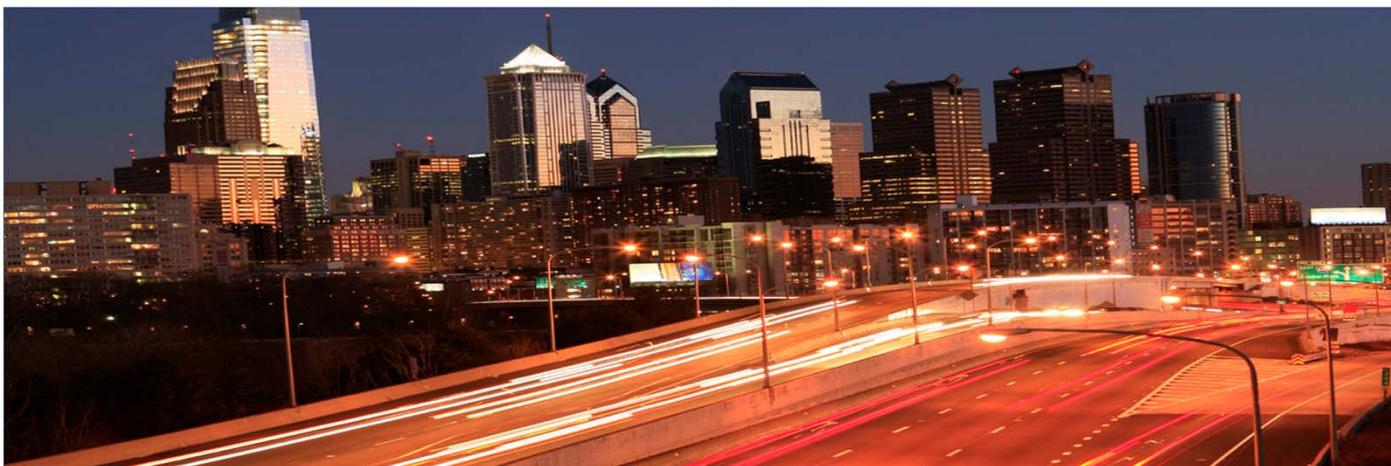


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