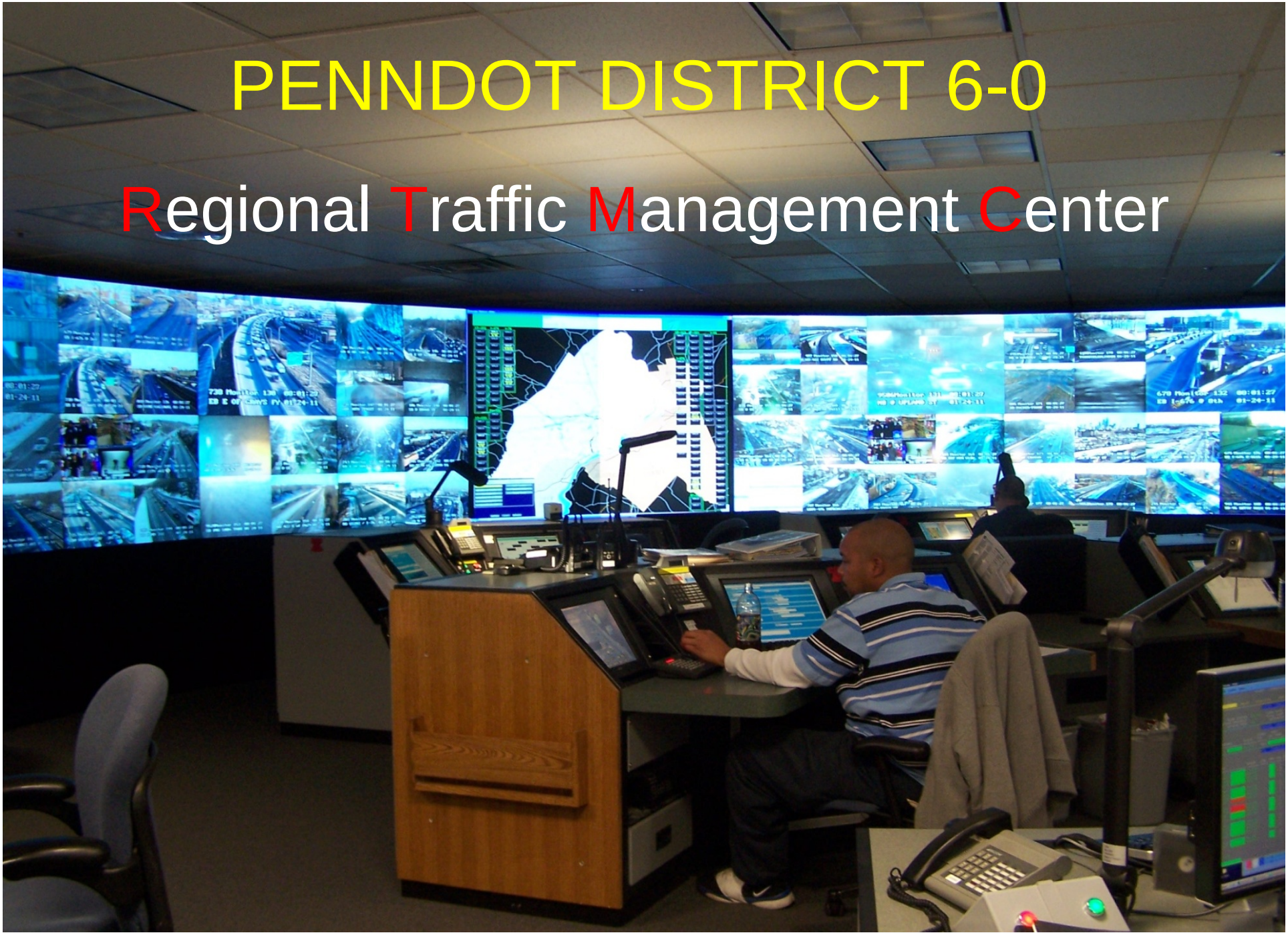
Traffic Incident Management

PENNDOT DISTRICT 6-0

Regional Traffic Management Center



ITS Operations and Maintenance

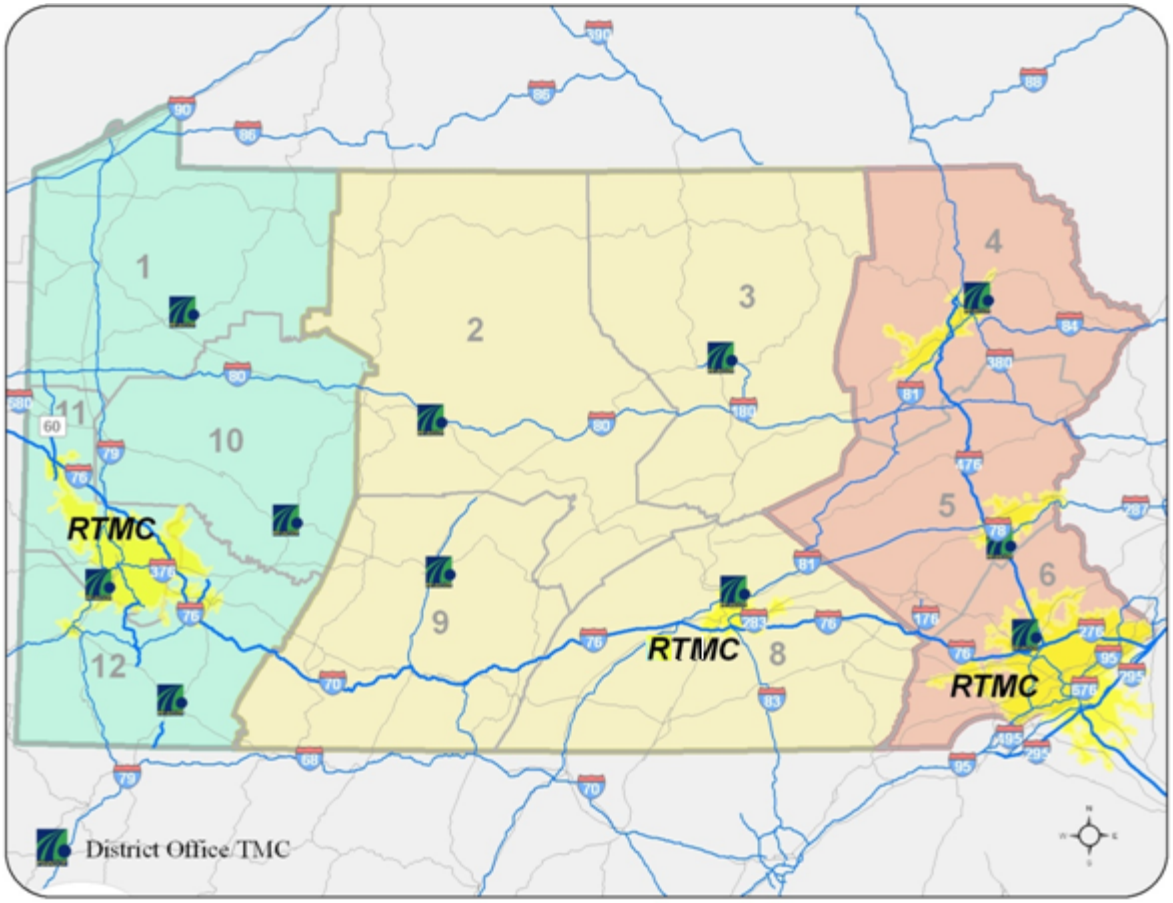
STAFF

Traffic Operations
and ITS Manager – Manny Anastasiadis

TMC Supervisor – Frank DiJoseph

2 – Traffic Control Specialists
9 – Consultant TMC Operators (full time)
5 – Consultant TMC Operators (part time)

Regional Traffic Management Centers



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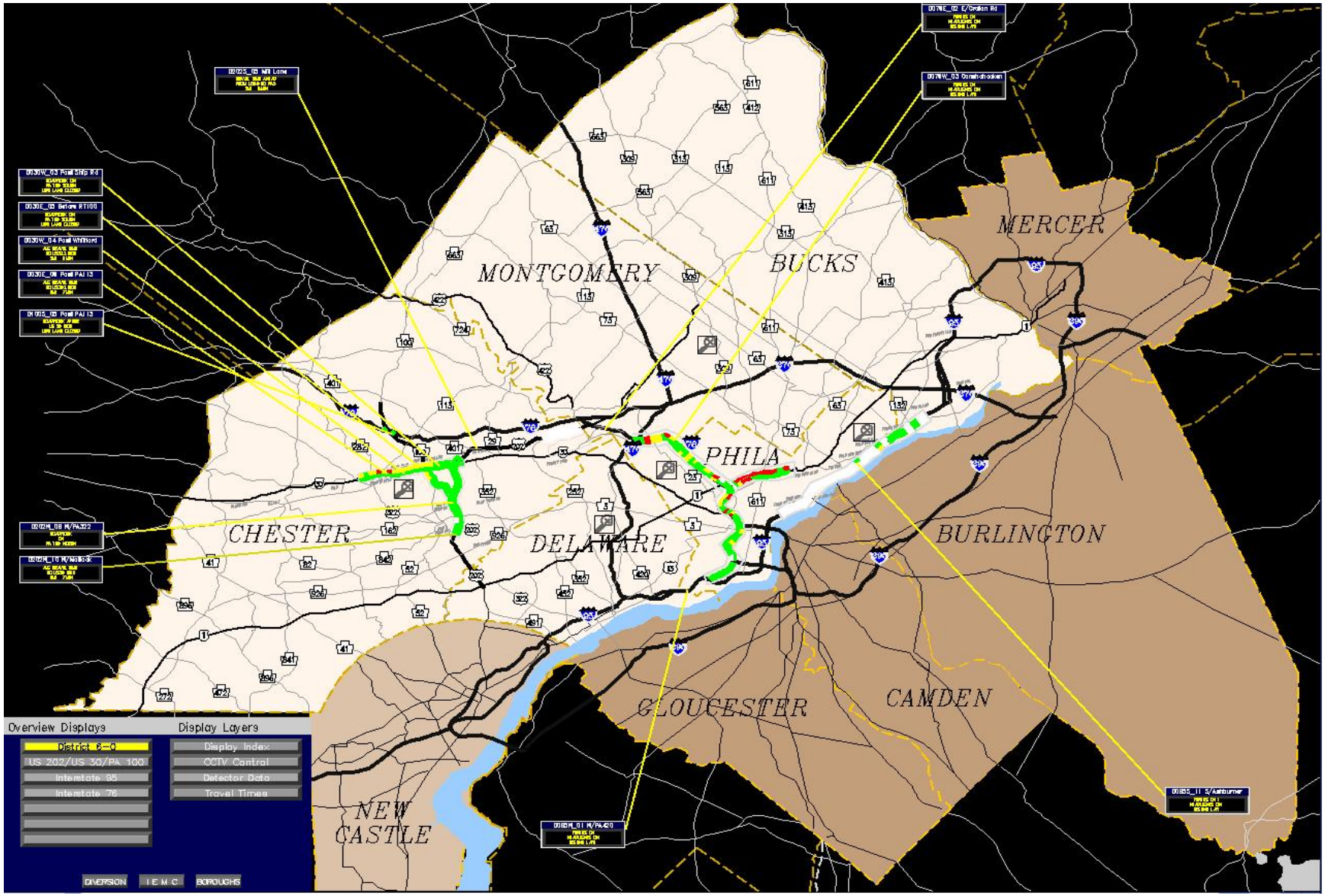
www.dot.state.pa.us



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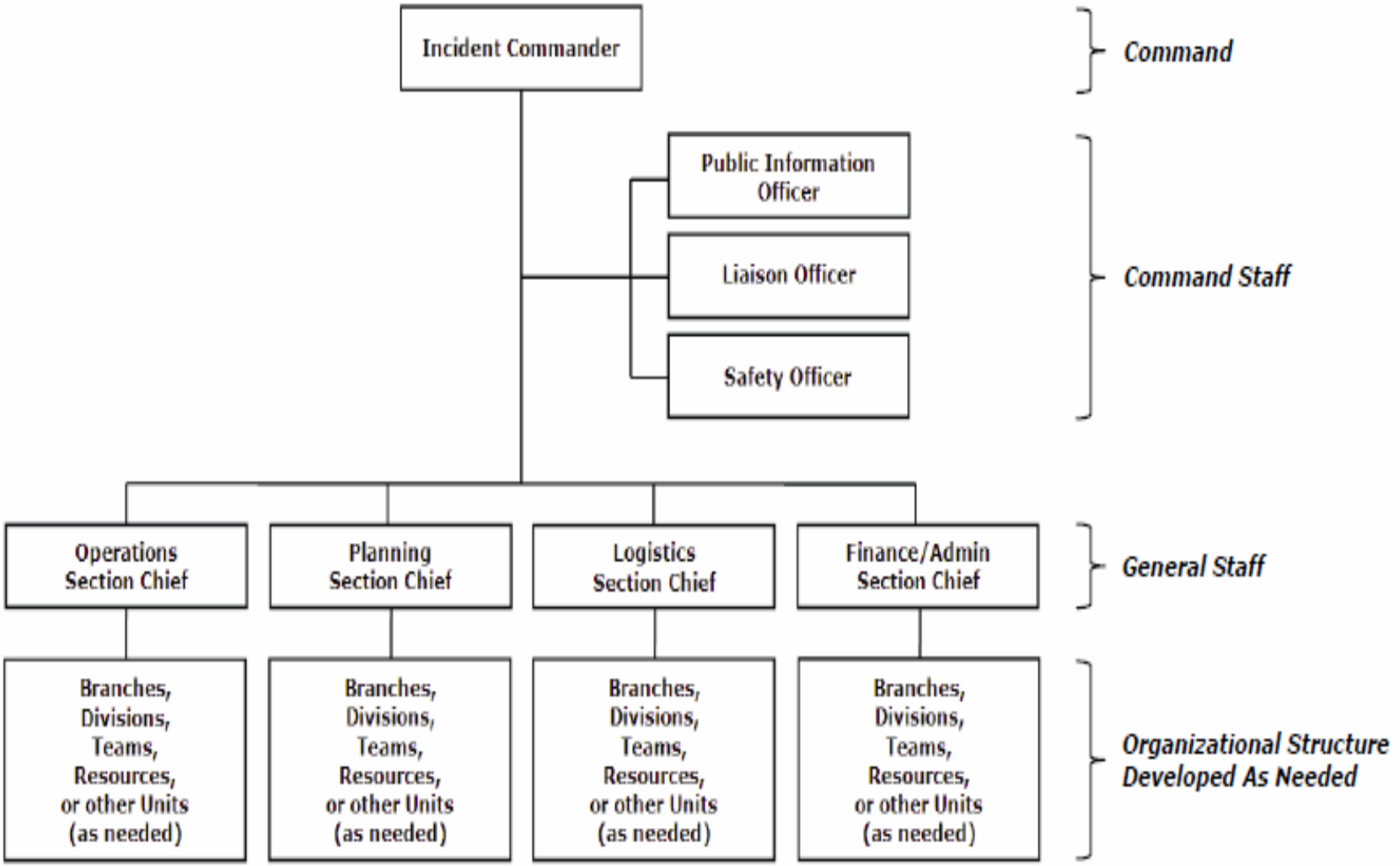
ICS Organization Structure



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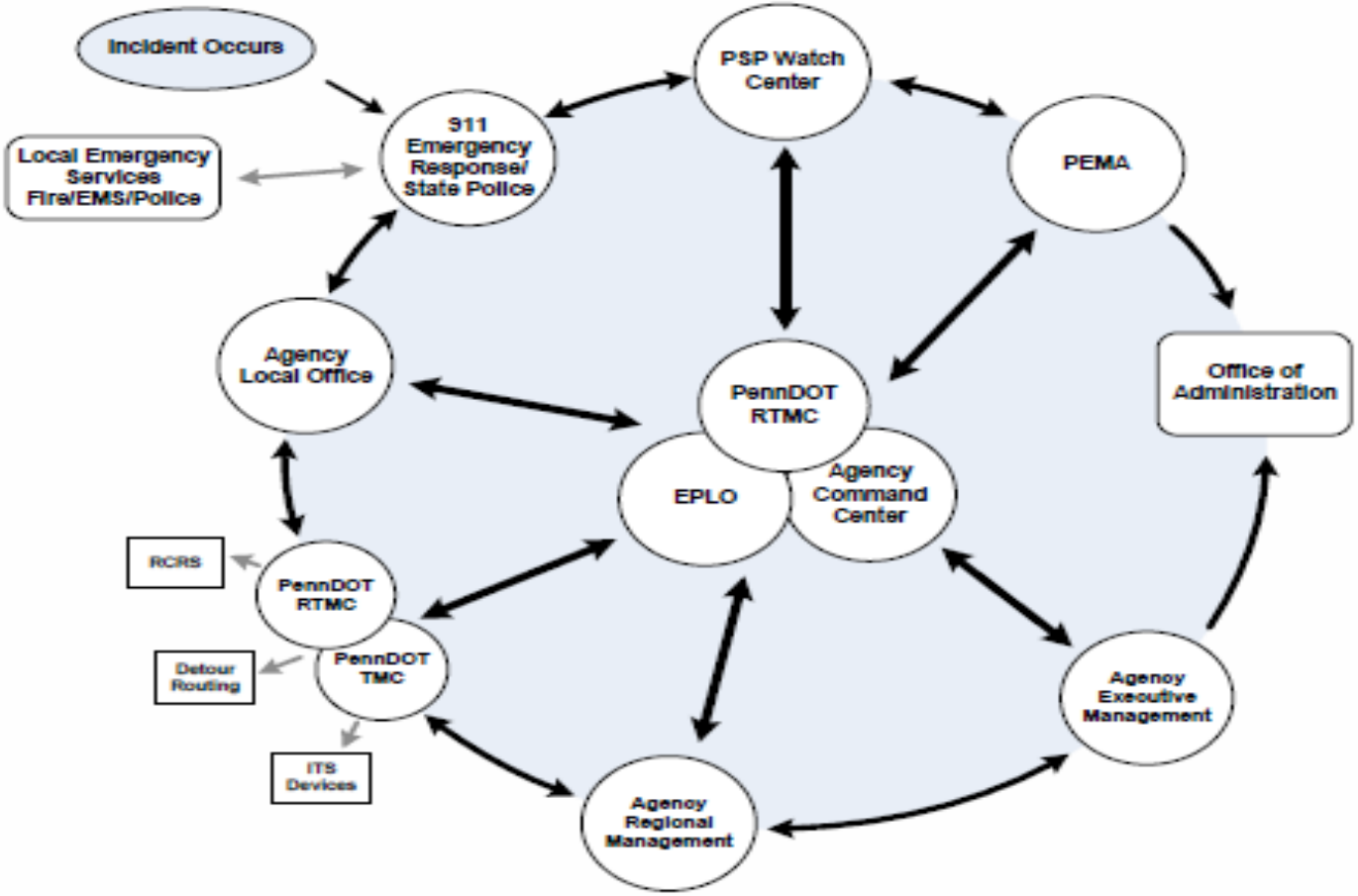
Standard Operating Guideline (SOG) for Response to Highway Closures

Incident Communication Process



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Challenges and Opportunities

- Reduce Congestion.
- Active Traffic Management.
- Inform Motorists.
- Reduce Victim Fatality.
- Minimize Back up and Secondary Crashes.
- Clear Roadway.
- Ensure Responder Safety.
- Coordinate resources.
- Communicate

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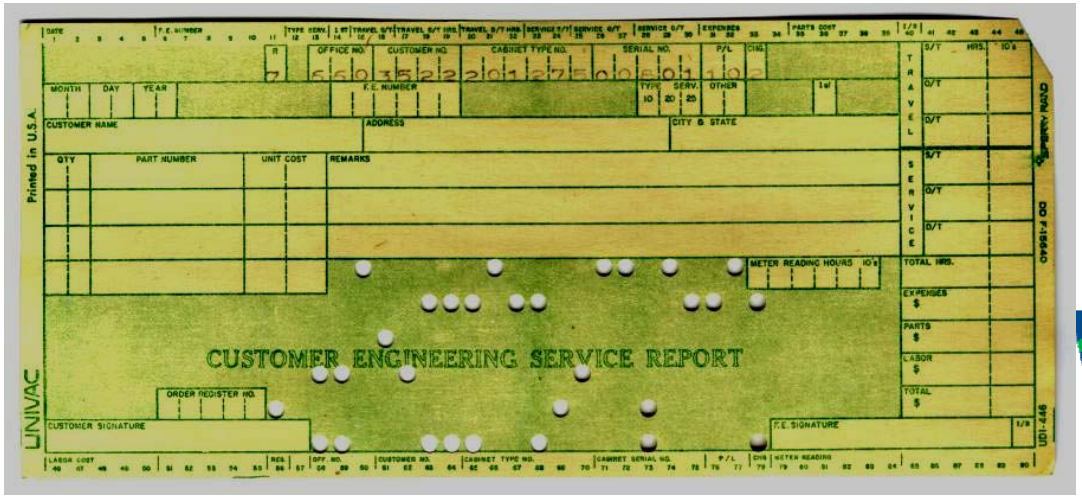
Previous World

Current World

Growing Expectations for Connectivity

- What Consumers Experience
  - Connectivity all times, every where
  - Streaming video on cell phones
- What Transportation Has To Change



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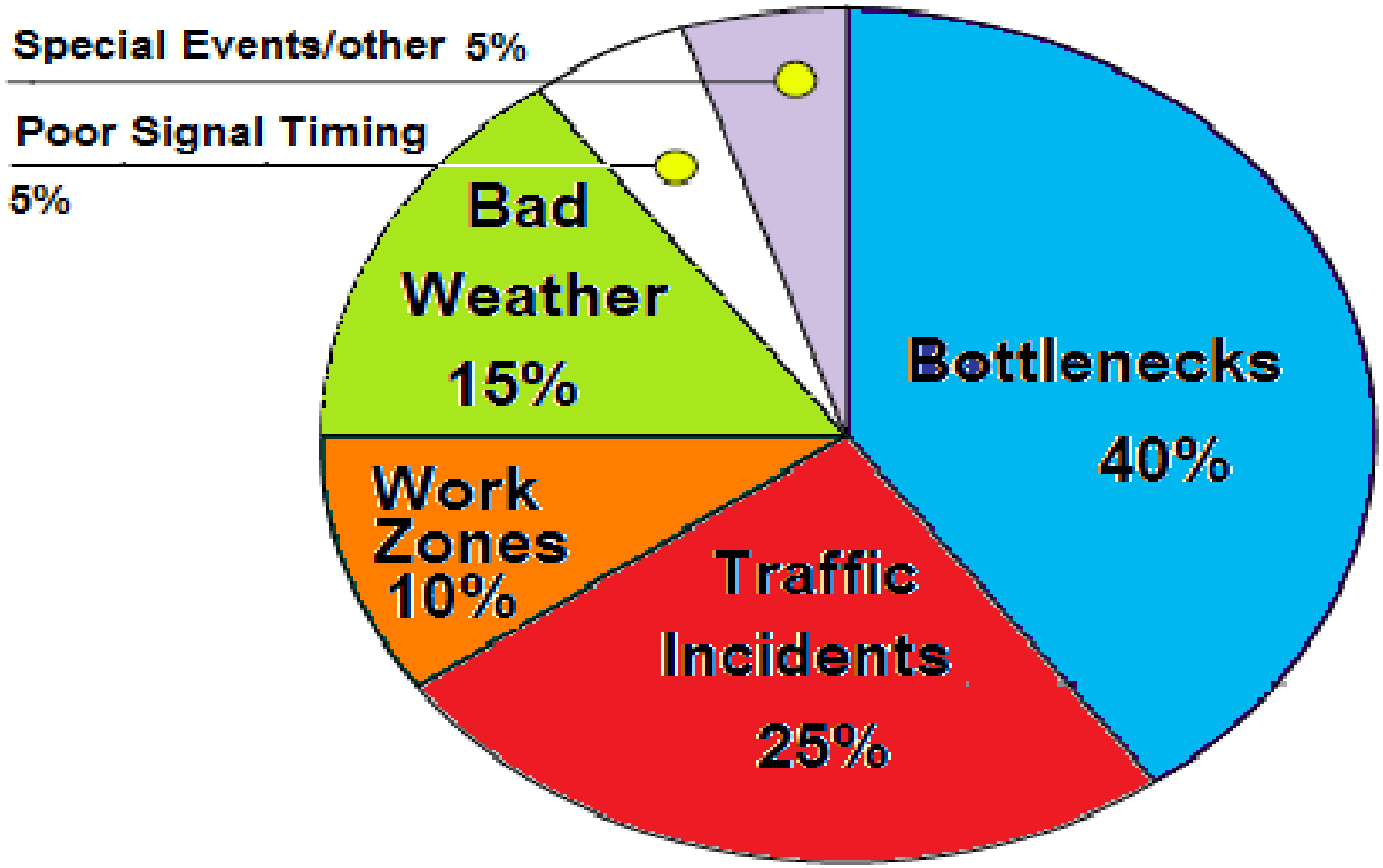
What is the problem?

Figure ES.2 The Sources of Congestion
National Summary



Source:http:www.ops.fhwa.dot.gov/aboutus/opstory.

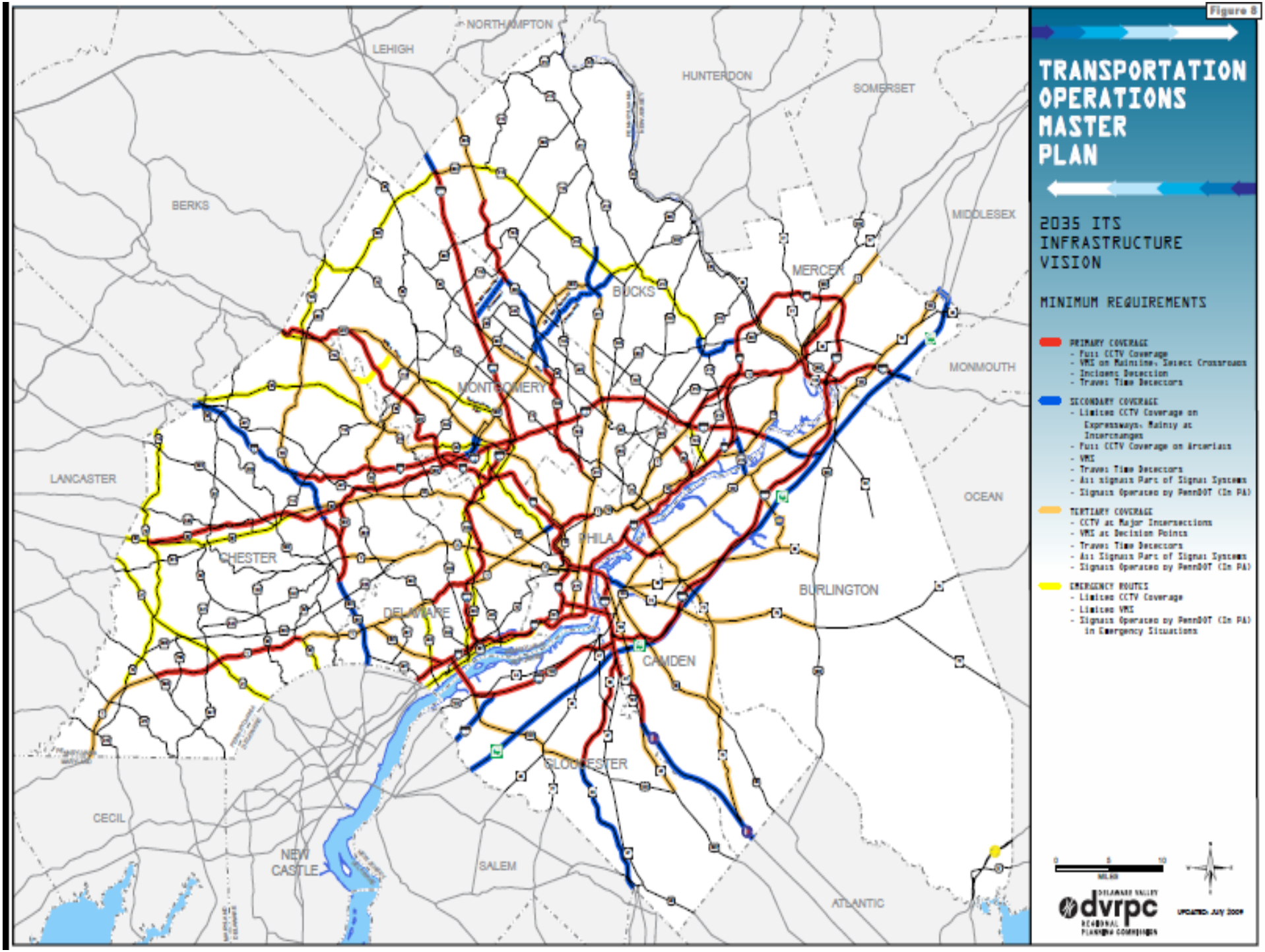


Figure 8
TRANSPORTATION OPERATIONS MASTER PLAN
2035 ITS INFRASTRUCTURE VISION
MINIMUM REQUIREMENTS
PRIMARY COVERAGE
- Full CCTV Coverage
- VMS on Mainline, Select Crossroads
- Incident Detection
- Travel Time Detectors
SECONDARY COVERAGE
- Limited CCTV Coverage on Expressways, Mainly at Interchanges
- 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
NORTHAMPTON
LEHIGH
HUNTERDON
SOMERSET
BERKS
MIDDLESEX
MERCER
BUCKS
MONTGOMERY
MONMOUTH
LANCASTER
OCEAN
PHILA
CHESTER
BURLINGTON
DELAWARE
CAMDEN
GLOUCESTER
CECIL
NEW CASTLE
SALEM
ATLANTIC
0 5 10
MILES
dvrpc
DELAWARE VALLEY REGIONAL PLANNING COMMISSION
UPDATED: July 2009

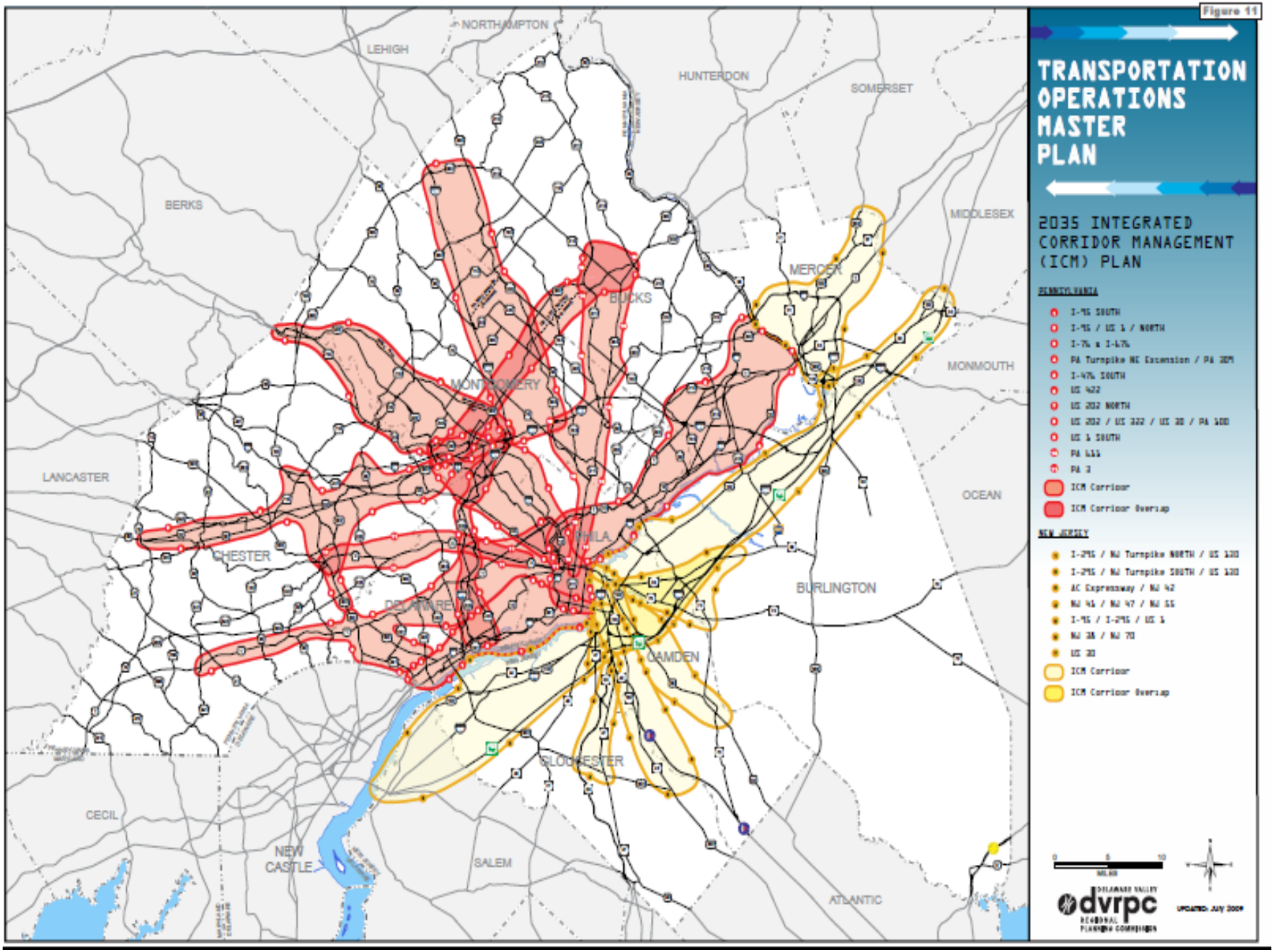


Figure 11
TRANSPORTATION OPERATIONS MASTER PLAN
2035 INTEGRATED CORRIDOR MANAGEMENT (ICM) PLAN
PENNSYLVANIA
I-95 SOUTH
I-95 / US 1 / NORTH
I-76 & I-676
PA Turnpike NE Extension / PA 309
I-476 SOUTH
US 422
US 202 NORTH
US 202 / US 322 / US 30 / PA 100
US 1 SOUTH
PA 611
PA 3
ICM Corridor
ICM Corridor Overlap
NEW JERSEY
I-295 / NJ Turnpike NORTH / US 130
I-295 / NJ Turnpike SOUTH / US 130
AC Expressway / NJ 42
NJ 41 / NJ 47 / NJ 55
I-95 / I-295 / US 1
NJ 38 / NJ 70
US 30
ICM Corridor
ICM Corridor Overlap
NORTHAMPTON
LEHIGH
HUNTERDON
SOMERSET
BERKS
MIDDLESEX
MERCER
BUCKS
MONMOUTH
MONTGOMERY
LANCASTER
OCEAN
PHILA
CHESTER
BURLINGTON
DELAWARE
CAMDEN
GLOUCESTER
CECIL
NEW CASTLE
SALEM
ATLANTIC
MILES
dvrpc
UPDATED: JULY 2009

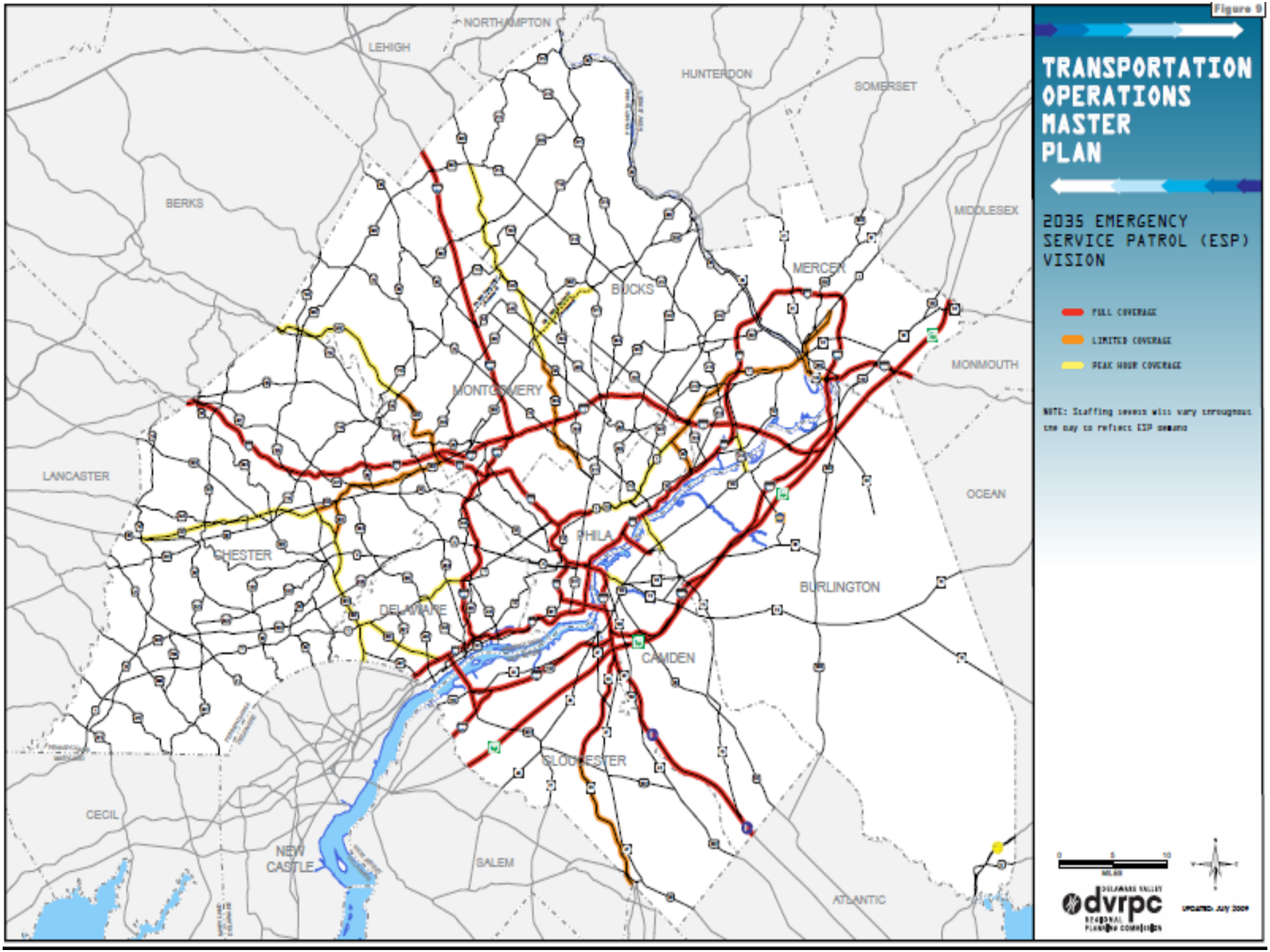
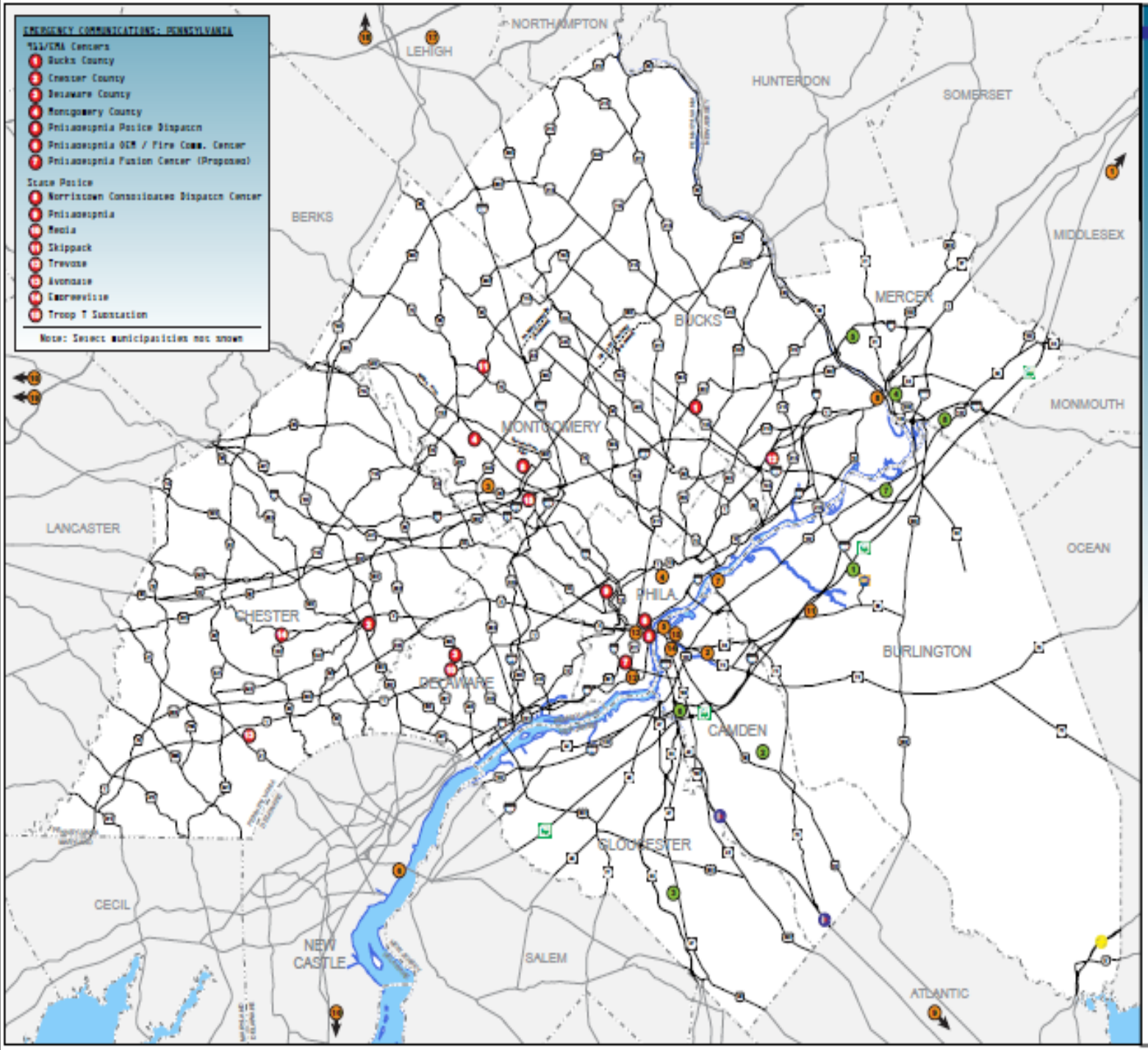


Figure 9
TRANSPORTATION OPERATIONS MASTER PLAN
2035 EMERGENCY SERVICE PATROL (ESP) VISION
FULL COVERAGE
LIMITED COVERAGE
PEAK HOUR COVERAGE
NOTE: Staffing levels will vary throughout the day to reflect ESP demand
NORTHAMPTON
LEHIGH
HUNTERDON
SOMERSET
BERKS
MIDDLESEX
MERCER
BUCKS
MONMOUTH
MONTGOMERY
LANCASTER
OCEAN
PHILA
CHESTER
BURLINGTON
DELAWARE
CAMDEN
GLOUCESTER
CECIL
NEW CASTLE
SALEM
ATLANTIC
dvrpc
UPDATED: JULY 2009

Figure 12

TRANSPORTATION OPERATIONS MASTER PLAN

2035 REGIONAL COMMUNICATIONS NETWORK



EMERGENCY COMMUNICATIONS: PENNSYLVANIA

911/EMA Centers
1. Bucks County
2. Chester County
3. Delaware County
4. Montgomery County
5. Philadelphia Police Dispatch
6. Philadelphia OEM / Fire Comm. Center
7. Philadelphia Fusion Center (Proposed)

State Police
8. Norristown Consolidated Dispatch Center
9. Philadelphia
10. Media
11. Skippack
12. Trevose
13. Avondale
14. Embreeville
15. Troop T Substation

Note: Select municipalities not shown

TRANSPORTATION COMMUNICATIONS
1. NJDOT Statewide Traffic Management Center / NJTA TMC
2. NJDOT Traffic Operations - South
3. PennDOT District 6-0 Traffic Management Center
4. City of Philadelphia (Proposed)
5. Delaware River Port Authority (DRPA) TMC (Proposed)
6. Delaware River Bay Authority (DRBA)
7. Burlington County Bridge Commission (BCBC) (Potential)
8. Delaware River Joint Toll Bridge Commission (DRJTBC) (Potential)
9. South Jersey Transportation Authority (SJTA)
10. Pennsylvania Turnpike Commission (PTC) Operations Control Center
11. Burlington County TMC
12. Philadelphia Sports Complex (Proposed)
13. Southeastern Pennsylvania Transit Authority (SEPTA)
14. NJ Transit Bus Operations - South
15. **PATCO Center Tower**
16. DelDOT TMC
17. PennDOT District 6-0 Traffic Management Center
18. PennDOT District 4-0 Traffic Management Center
19. PennDOT District 8-0 Traffic Management Center

EMERGENCY COMMUNICATIONS: NEW JERSEY

911/EMA Centers
1. Burlington County
2. Camden County
3. Gloucester County
4. Mercer County

State Police
5. ROIC
6. Delaware
7. Moorestown
8. Hamilton NJSP / NJDOT / DEP Joint Communications Center

0 5 10 MILES

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

UPDATED: JULY 2009

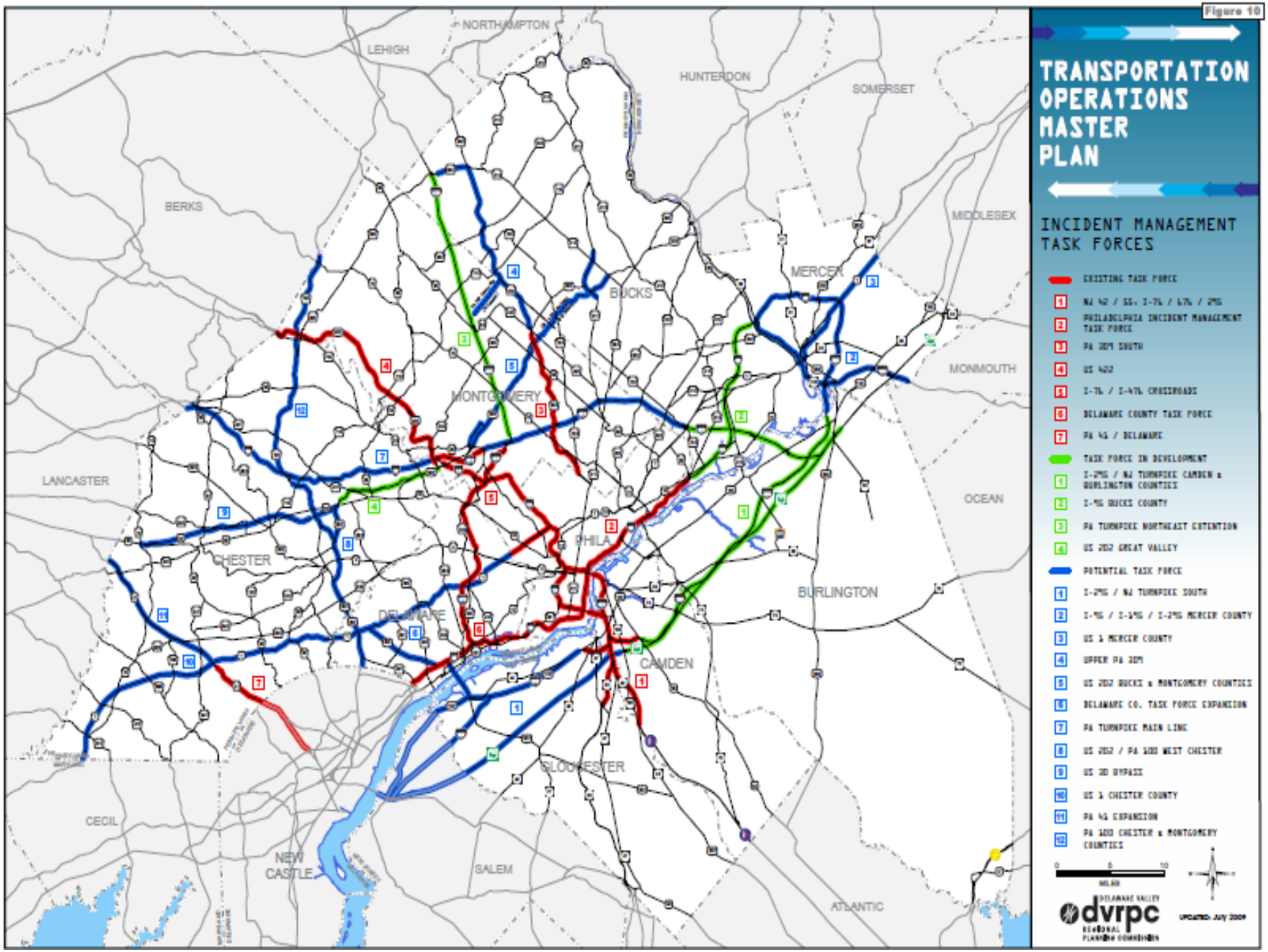


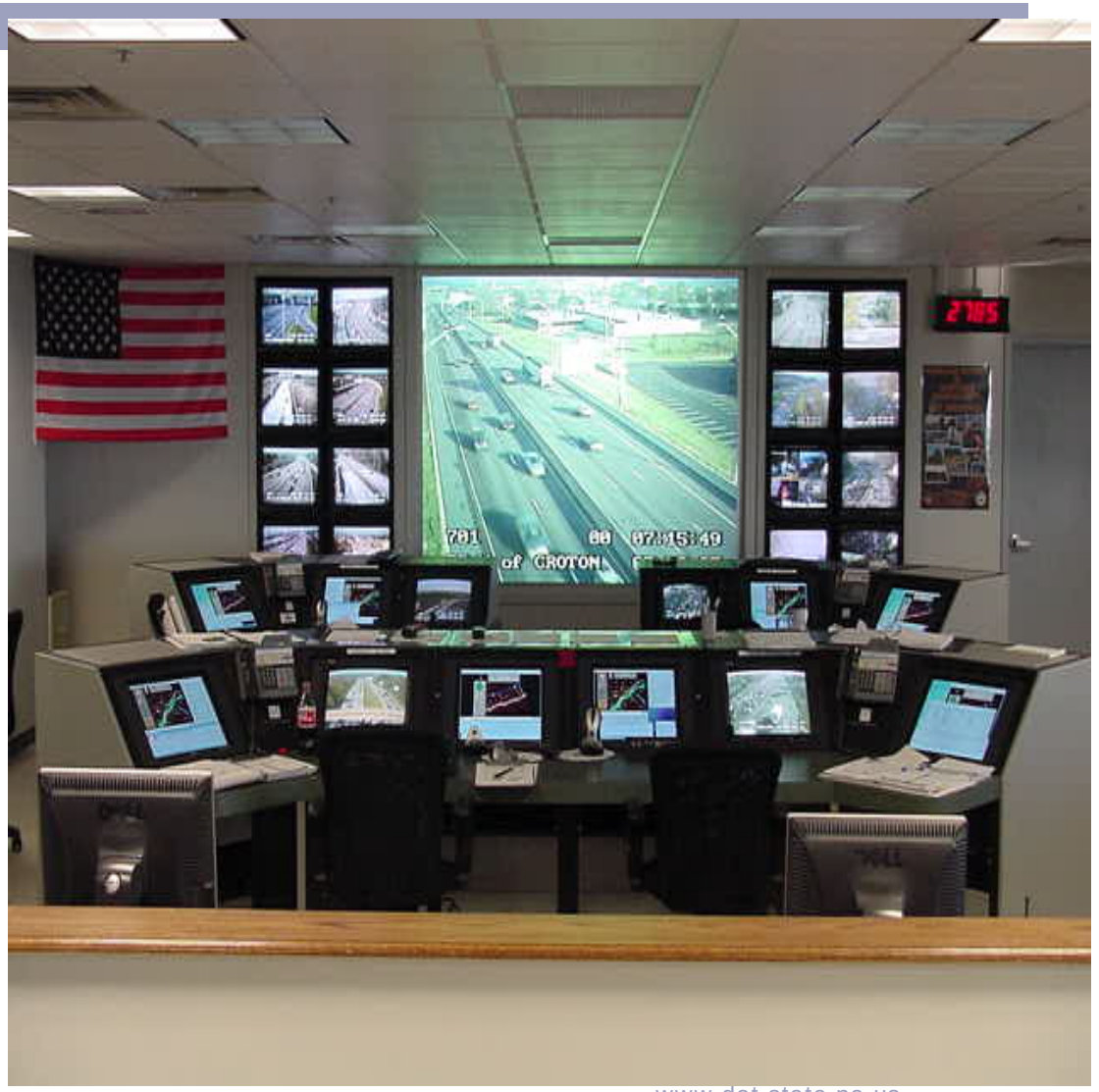
Figure 10
TRANSPORTATION OPERATIONS MASTER PLAN
INCIDENT MANAGEMENT TASK FORCES
EXISTING TASK FORCE
1 NJ 42 / 55, I-76 / 676 / 295
2 PHILADELPHIA INCIDENT MANAGEMENT TASK FORCE
3 PA 309 SOUTH
4 US 422
5 I-76 / I-476 CROSSROADS
6 DELAWARE COUNTY TASK FORCE
7 PA 41 / DELAWARE
TASK FORCE IN DEVELOPMENT
1 I-295 / NJ TURNPIKE CAMDEN & BURLINGTON COUNTIES
2 I-95 BUCKS COUNTY
3 PA TURNPIKE NORTHEAST EXTENTION
4 US 202 GREAT VALLEY
POTENTIAL TASK FORCE
1 I-295 / NJ TURNPIKE SOUTH
2 I-95 / I-195 / I-295 MERCER COUNTY
3 US 1 MERCER COUNTY
4 UPPER PA 309
5 US 202 BUCKS & MONTGOMERY COUNTIES
6 DELAWARE CO. TASK FORCE EXPANSION
7 PA TURNPIKE MAIN LINE
8 US 202 / PA 100 WEST CHESTER
9 US 30 BYPASS
10 US 1 CHESTER COUNTY
11 PA 41 EXPANSION
12 PA 100 CHESTER & MONTGOMERY COUNTIES
0 5 10
MILES
dvrpc
DELAWARE VALLEY REGIONAL PLANNING COMMISSION
UPDATED: July 2009
NORTHAMPTON
LEHIGH
HUNTERDON
SOMERSET
BERKS
MIDDLESEX
MERCER
BUCKS
MONMOUTH
MONTGOMERY
LANCASTER
OCEAN
PHILA
CHESTER
BURLINGTON
DELAWARE
CAMDEN
GLOUCESTER
CECIL
NEW CASTLE
SALEM
ATLANTIC

Tools Currently in Place

- ITS (CCTV, VMS, Detectors, Communications).
- Sharing of Incident Information with Partners.
- Inform the Motorists.
- Service Patrol Vehicles.
- Emergency Routes.
- Signal System Emergency Control.
- Traffic Management Center

Traffic Management Center

- Opened in 1993
- 24/7 Operations established in April 2005



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Traffic Management Center

Faster Detection

Verification

Quicker Response Times

Motorist Advisory

PENNDOT Coordination
Traffic Signal Emergency Pre-emption

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PennDOT RTMC Operations

- All control of devices resides in District 6-0 RTMC
- Operates 24/7 and is regional coordinator for after hours operations in Eastern PA
- All system control occurs through DYNAC central software platform developed by Transdyn, Inc.
  - CCTV
  - DMS
  - Automatic Incident Detection
  - Travel Times


25 BOSCH
16:26:30
09-06-11
DELL
DELL


PennDOT District 6-0
09:53:40
01-24-11


DMV: 800-932-4600
Outside PA: 717-412-5300
Web: DMV.STATE.PA.US
PEMA: 717-651-2100
pennsylvania
US-202
I-476
I-76
PA-100
US-030
SR-023
RT-001
I-95
I-676
US-422
PA-413
US-013
RT-309
PA-291
RT-063
MONTGOMERY
BUCKS
PHILA
CHESTER
DELAWARE
GLOUCESTER
CAMDEN
NEW CASTLE
180 Monitor 157 16:27:56
NB@PHOENIXVILLE 09-06-11
189 Monitor 159 16:27:56
SB AFT PA 113 09-06-11
003 Monitor 161 16:27:56
SB-BROAD ST. 09-06-11
122 Monitor 148 16:27:56
NB @ BUS RT 1 09-06-11
011 Monitor 152 16:27:56
SB-GIRARD AVE. 09-06-11


2490
125 Monitor 129 16:25:16
NB @ S PINE ST 09-06-11
005 Monitor 133 16:25:15
SB-PACKER/FRONT 09-06-11
674 Monitor 134 16:25:15
WB I-676 @ 18th 09-06-11
946 Monitor 135 16:25:15
SB-95 PENNY PACK 09-06-11
956 Monitor 136 16:25:15
SB @ E LNCOLN HW 09-06-11
704 Monitor 137 16:25:16
EB @ GULPH MILLS 09-06-11
701 Monitor 138 16:25:16
EB W of CROTON 09-06-11
011 Monitor 140 16:25:15
SB-GIRARD AVE. 09-06-11
944 Monitor 143 16:25:15
SB-95 DISSTON ST 09-06-11
407 Monitor 144 16:25:15
WB-422 EGYPT RD 09-06-11


9752


District 6-0
Incident Command Center

RCRS - PennDOT's Road Condition Reporting System - Microsoft Internet Explorer provided by PENNDOT

RCRS

Need Help? | Contact Us | About RCRS | Administrative Login | Back to Home Page

Road Condition Reporting System

Notes:

The RCRS may not include all road closures and conditions that occur throughout the state. PennDOT designates the types and duration of closures that are reported. The information displayed in the RCRS is a representation of what is currently known and reported by PennDOT personnel.

Please be aware that turnpikes, toll roads, toll bridges, and Federal roadways are not included in this system. Only state owned, operated, and maintained roadways are included.

This web site requires the following software/components:

Microsoft Internet Explorer 5.5 or higher
Adobe's SVG Viewer for the mapping

You must be an administrator on your computer to install these components. If you do not have these components, please visit the sites below and download them to be installed and have them installed by an administrator.

penndot | Get Adobe Reader | Get Adobe SVG | Get Internet Explorer

Required resolution: **1024 x 768 pixels or higher**. Designed to work optimally with Internet Explorer and popup blockers disabled.

Your current screen size is **1680 x 1050** pixels.

View Map

Closure List

Winter Condition List

There are currently **12** active closures being reported throughout the state.

Closures are currently being reported in the following counties:

Beaver, Bucks, Butler, Chester, Cumberland, Dauphin, Erie, Lancaster, Luzerne, Lycoming, Philadelphia, Union

---

There are currently **2** adverse winter road conditions being reported throughout the state.

Adverse Winter Road Conditions are currently being reported in the following counties:

Montgomery, Philadelphia

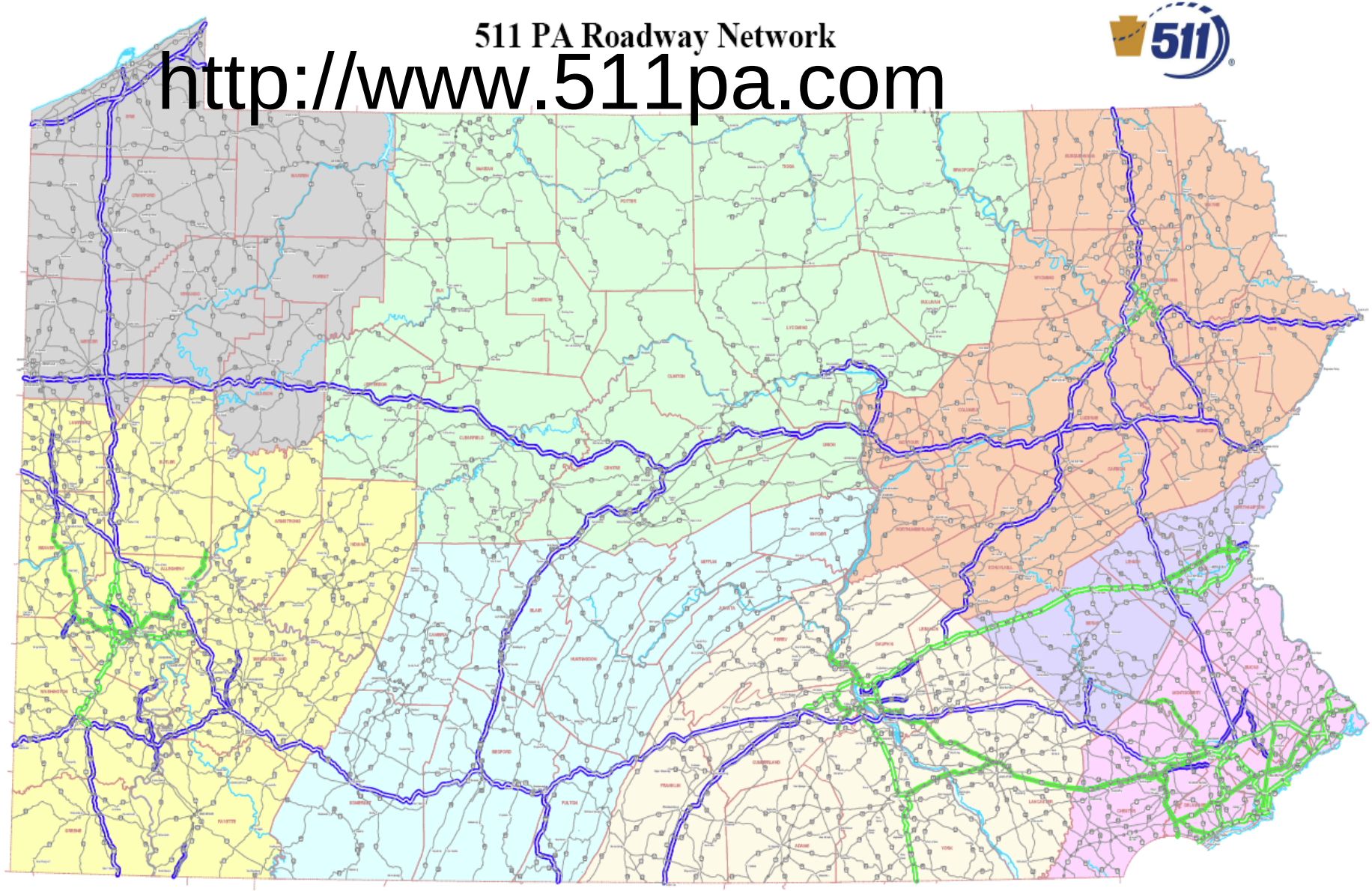
System News:

System Downtime Schedule: Daily 12:00 AM - 12:15 AM; Sundays 4:00 AM - 4:15 AM; 1st Friday of month 3:30 PM - 4:30 PM

Done | Local intranet

511 PA Roadway Network

http://www.511pa.com

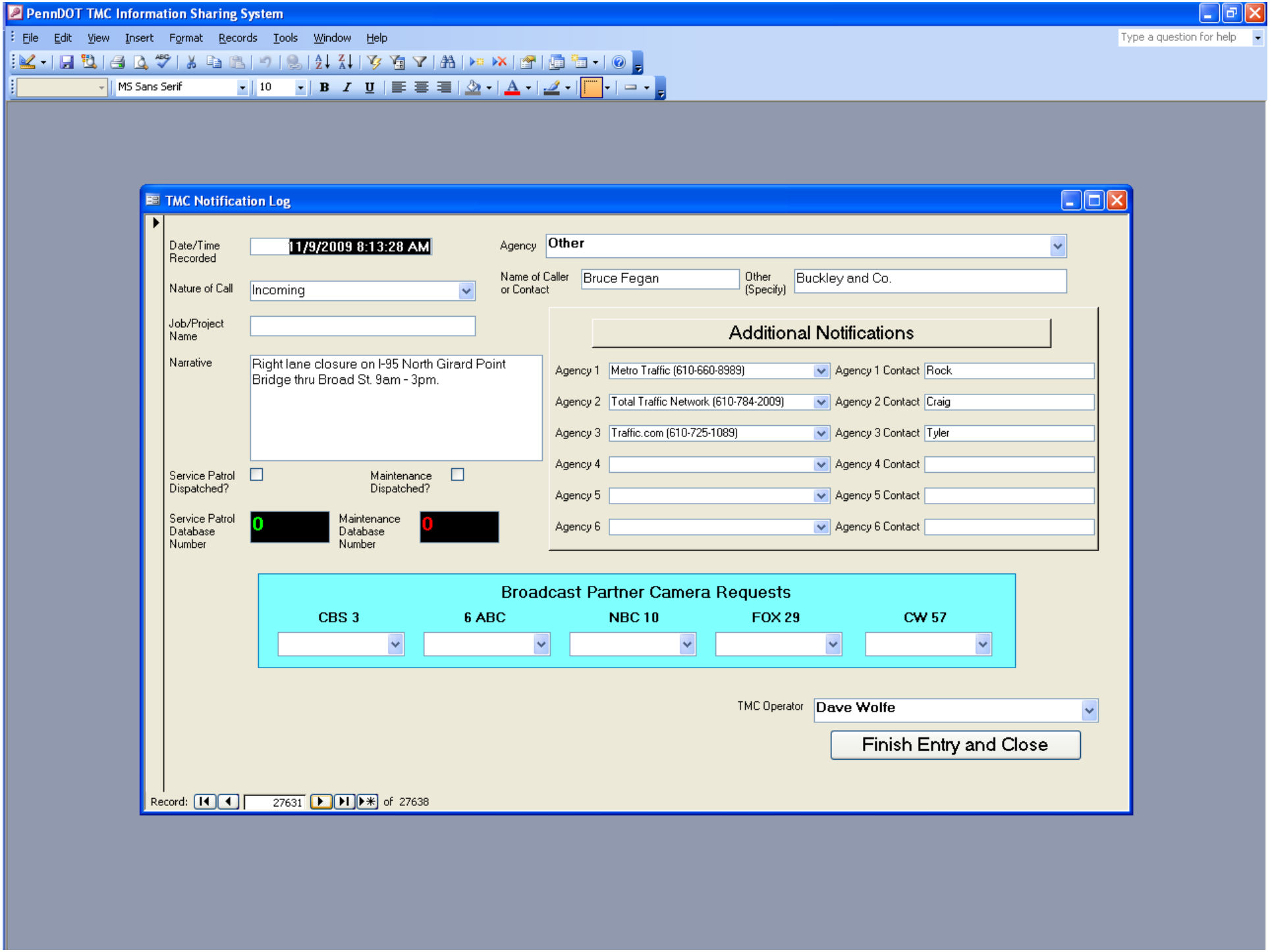


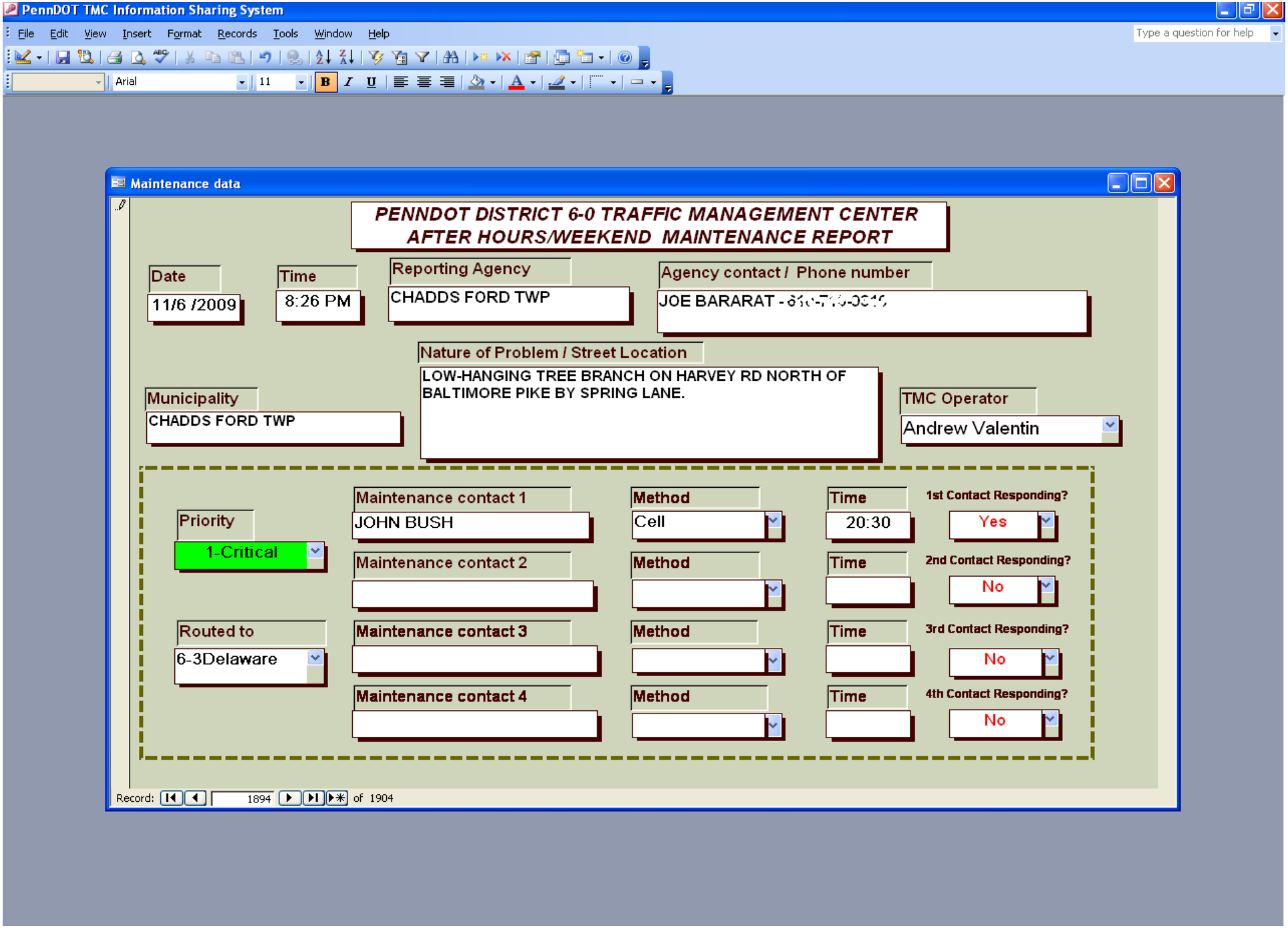
511 PA Roadway Network

- Traffic Incident Data
- Traffic Incident and Traffic Flow Data

511 PA Calling Regions

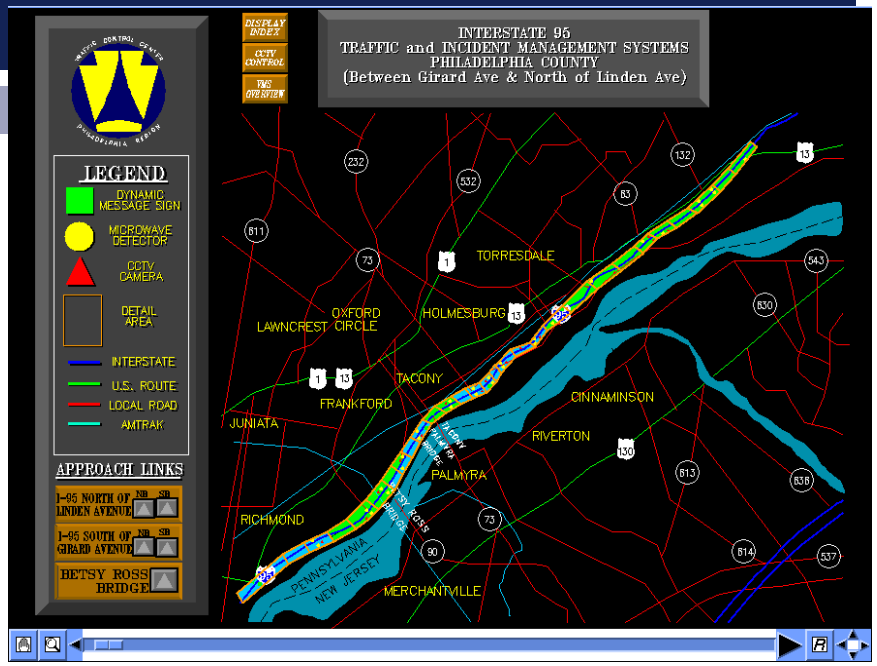
- Scranton / Wilkes-Barre / Poconos
- Allentown / Bethlehem / Easton (Lehigh Valley)
- Greater Philadelphia Region
- Harrisburg / Lancaster / York (Capital Region)
- State College / Northern Tier
- Pittsburgh / Southwestern PA
- Erie / Northwestern PA
- Altoona / Southern Alleghenies


PennDOT TMC Information Sharing System
File Edit View Insert Format Records Tools Window Help
Type a question for help
MS Sans Serif
10
TMC Notification Log
Date/Time Recorded
11/9/2009 8:13:28 AM
Agency
Other
Name of Caller or Contact
Bruce Fegan
Other (Specify)
Buckley and Co.
Nature of Call
Incoming
Job/Project Name
Narrative
Right lane closure on I-95 North Girard Point Bridge thru Broad St. 9am - 3pm.
Additional Notifications
Agency 1
Metro Traffic (610-660-8989)
Agency 1 Contact
Rock
Agency 2
Total Traffic Network (610-784-2009)
Agency 2 Contact
Craig
Agency 3
Traffic.com (610-725-1089)
Agency 3 Contact
Tyler
Agency 4
Agency 4 Contact
Agency 5
Agency 5 Contact
Agency 6
Agency 6 Contact
Service Patrol Dispatched?
Maintenance Dispatched?
Service Patrol Database Number
0
Maintenance Database Number
0
Broadcast Partner Camera Requests
CBS 3
6 ABC
NBC 10
FOX 29
CW 57
TMC Operator
Dave Wolfe
Finish Entry and Close
Record:
27631
of 27638


PennDOT TMC Information Sharing System
File Edit View Insert Format Records Tools Window Help
Type a question for help
Arial 11
Maintenance data
PENNDOT DISTRICT 6-0 TRAFFIC MANAGEMENT CENTER
AFTER HOURS/WEEKEND MAINTENANCE REPORT
Date
11/6 /2009
Time
8:26 PM
Reporting Agency
CHADDS FORD TWP
Agency contact / Phone number
JOE BARARAT -
Nature of Problem / Street Location
LOW-HANGING TREE BRANCH ON HARVEY RD NORTH OF BALTIMORE PIKE BY SPRING LANE.
Municipality
CHADDS FORD TWP
TMC Operator
Andrew Valentin
Priority
1-Critical
Routed to
6-3Delaware
Maintenance contact 1
JOHN BUSH
Method
Cell
Time
20:30
1st Contact Responding?
Yes
Maintenance contact 2
Method
Time
2nd Contact Responding?
No
Maintenance contact 3
Method
Time
3rd Contact Responding?
No
Maintenance contact 4
Method
Time
4th Contact Responding?
No
Record: 1894 of 1904

TMC Operator Software

- Centralized system.
- Regional overview map
- Pinpoints congestion trouble spots via green, yellow, and red color coding
- Interacts with CCTV which is capable of zooming in on roadway segments where congestion is present



Manages detector data and provides travel time information on DMS.

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U.S. Route 202 at PA100 - <PDOTA>
PENNDOT District 6
N
V-212 (SB) S/SR100
100
DA210 (NB&SB)
CM220
202
202
DA211 (NB&SB)
CHESTER COUNTY
District 6-0
US 202/US 30/PA 100
Interstate 95
Display Index
CCTV Control
US 202 Detectors (1/2)
US 202 Detectors (2/2)
Travel Times
Legend
N
W
E
S
100
76
202
30
202
start
1:16 PM

ITS - Tools

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CCTV: Pole Mounted Dome with Lowering Device

- CCTV lowering devices are installed for ease of maintenance

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Tag Reader: Mast Arm Mounted

- Tag readers are mounted overhead to collect point to point data from E-ZPass tag holders
- The information is used to determine travel times between interchanges

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Vehicle Detector: Structure Mounted

- Vehicle Detectors are installed at half-mile intervals.
- Traffic.com detectors provide incident data to the RTMC.

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DMS: Structure and Pole Mounted

- Dynamic Message Signs (DMS) are used to provide incident, detour, and travel time information to drivers

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PDMS: Concrete Pad Mounted

- Portable DMS can be made semi-permanent through the installation of power and communication lines and a concrete pad foundation

DISTRICT 6-0 ITS DEVICES

LOCATION	CAMERA	PERMANENT DMS	PORTABLE DMS	RTMS	E-Z PASS READER
I-95	28	13	7	36	0
I-76	46	9	0	34	18
I-476	33	2	2	0	7
I-676	9	0	0	2	0
US-1	8	2	3	12	2
US 30	14	6	2	27	0
US 202	31	12	2	21	0
US-422	10	2	2	0	0
PA-23	3	3	0	0	0
PA-63	1	1	2	0	0
PA-100	12	4	0	10	0
PA-291	4	1	0	0	1
PA-309	21	9	3	0	0
PA-413	0	0	2	0	0
PA-463	0	0	2	0	0
TOTAL:	**220**	**64**	**27**	**142**	**28**

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Device up time 98%

Ramp Meters

- Currently operating at 9 locations on I-476
- Designed to control flow of traffic entering the highway to ease congestion and increase mainline speed.

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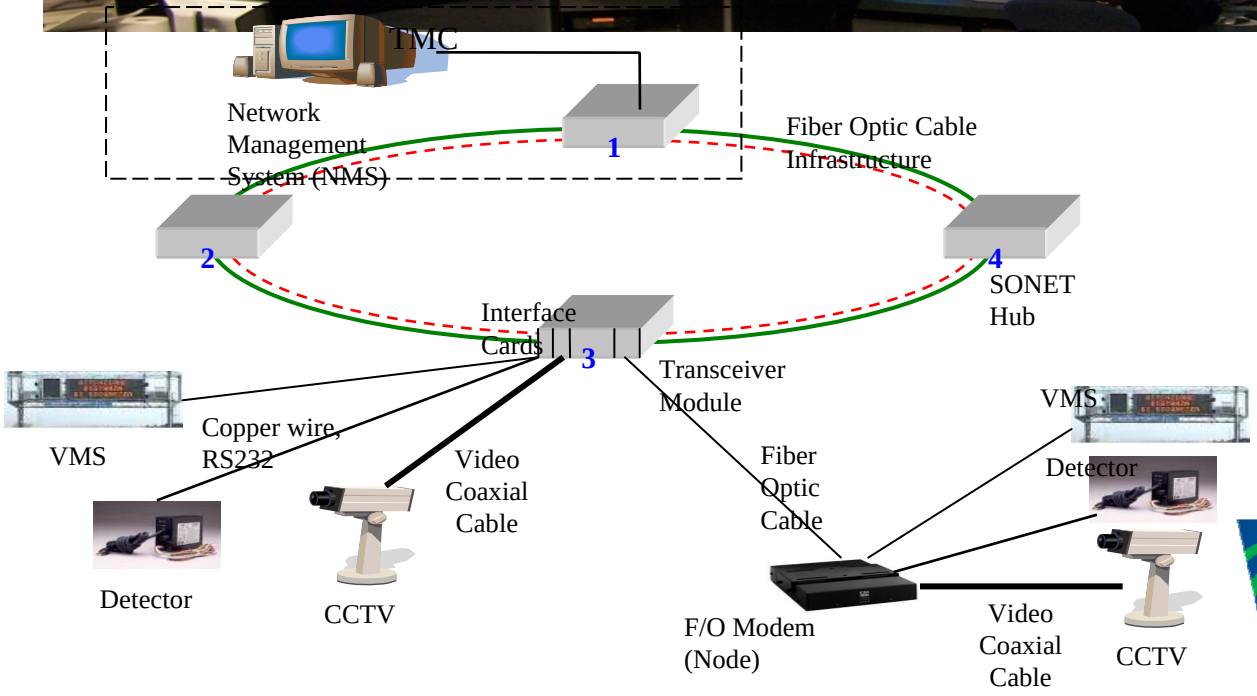
RTMC Communications

- SONET-based ring
- Over time, migrate to a purely digital system



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Video Sharing…
Partnering for Success

www.dot.state.pa.us

Video Sharing… Partnering For Success

- Partners have access to all PENNDOT CCTV images
- Creates stronger communication links between Police dispatchers, the media, and other first responders.
- Allows more immediate assessment of incident, allowing proper resources to be dispatched and directed.
- Monitors traffic queues to create efficient traffic flow patterns around incidents.
- Allows media outlets to provide true, real-time traveler information to TV viewers and radio listeners.
- Real-time traveler information available through in-car navigation systems via Sirius and XM satellite radio systems.

PennDOT District 6-0 TMC Video Sharing

Partners in Incident Management...

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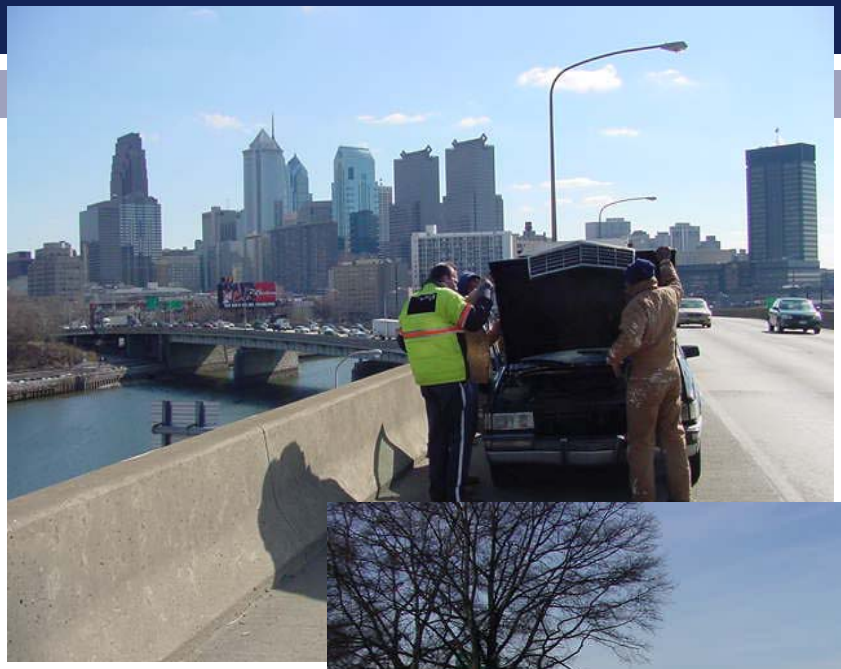
PA TURNPIKE
11-20-07
410
WB 422 app RT 29 11-20-07
706
EB app I-476
11-20-07
295

PennDOT District 6-0 TMC Video Sharing

Partners in Incident Management…

Expressway Service Patrol

PENNDOT



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Expressway Service Patrol

Dispatched Service of 9 Patrol Vehicles Provide to Motorists:

-Assist or tow stranded motorists.

-Provide traffic control during incidents.

-Remove debris.

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EXPRESSWAY
SERVICE PATROL
PENNDOT
SPV-5
EXPRESSWAY PATROL

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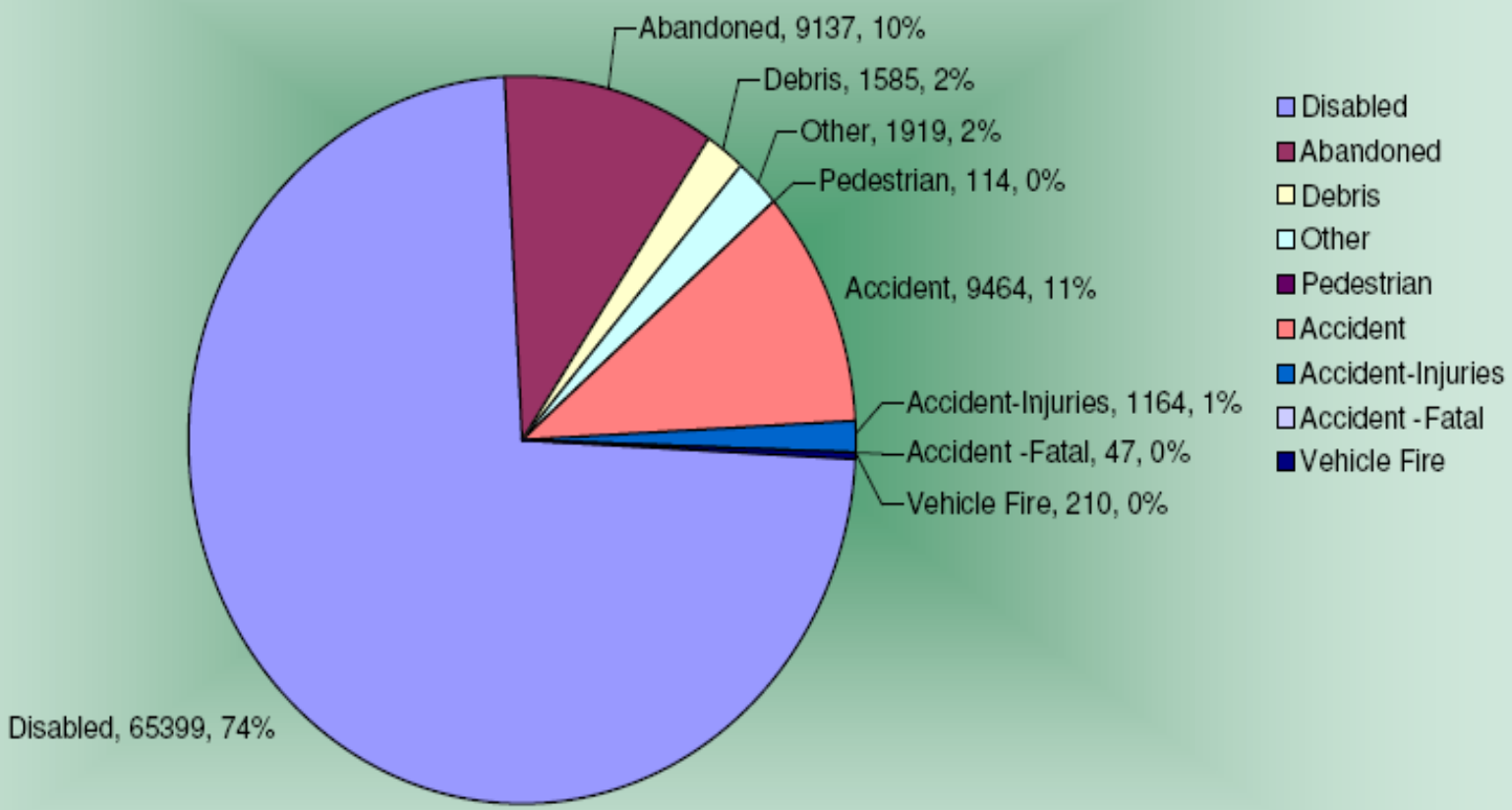
PENNDOT District 6 Service Patrol Incident Data
July 18, 2000 to December 31, 2010

Total Incidents: 103,947



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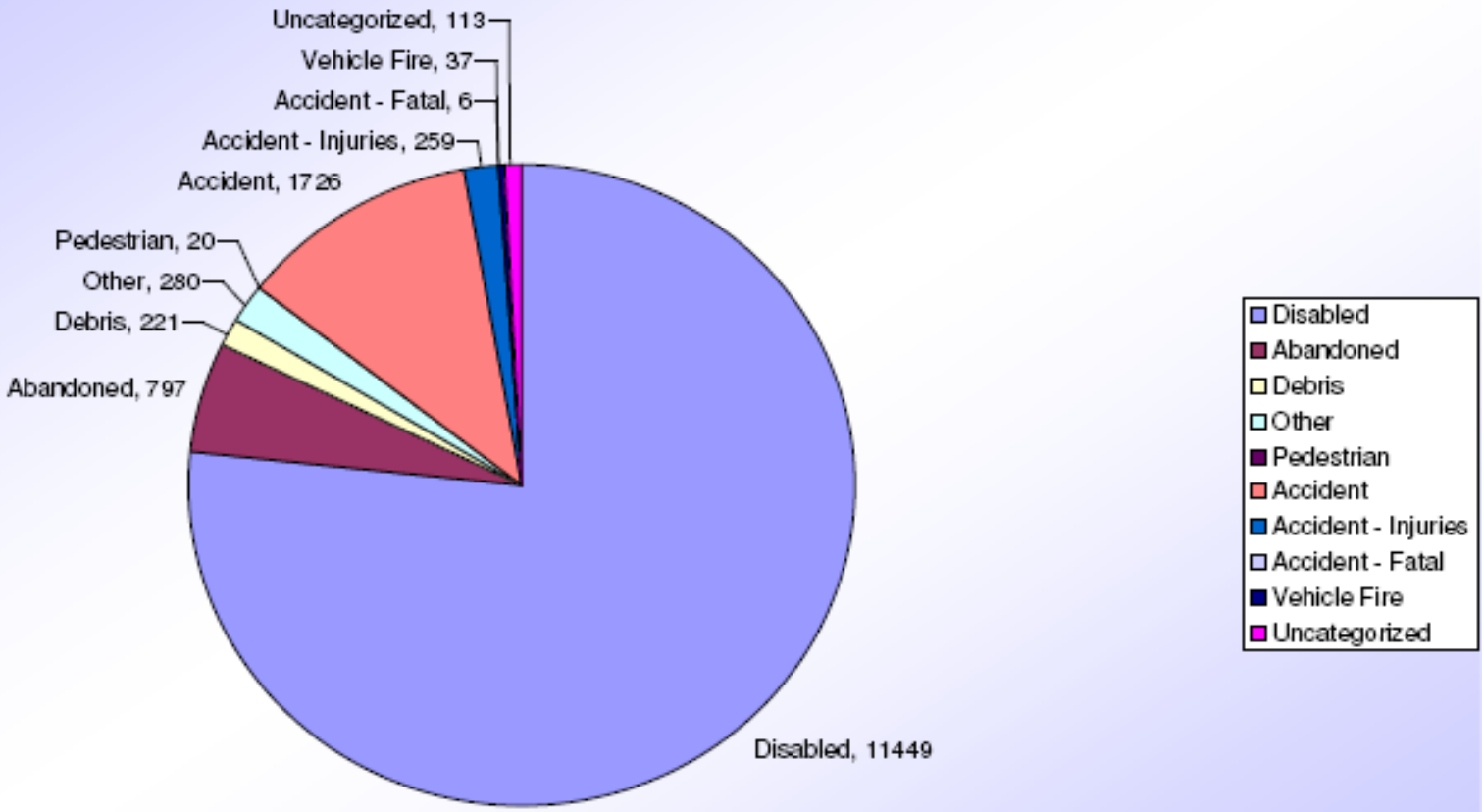
2010 Service Patrol Data

Total: 14,908



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Purpose of Incident Management Task Forces

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

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Task Force Activities

- Quarterly Meetings
- Elected Chairperson
- Rotating Venue
- Contact List
- Develop Action Plan
  - Ramp Designation Signs
  - Policy and Procedures Manual
  - Training

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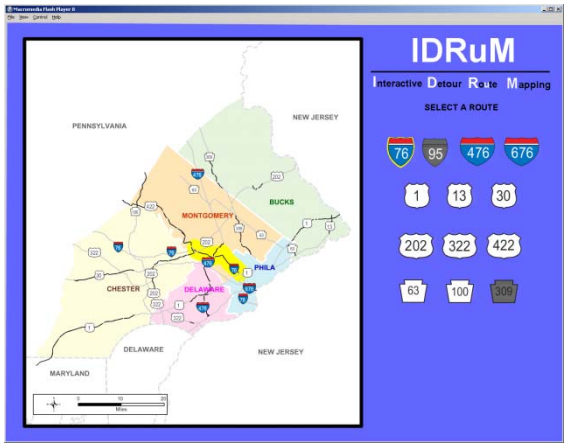
Inter-Agency Coordination

- Build Relationships
- Enhance Communications
- Provide Forum to Discuss Issues
- Share Resources

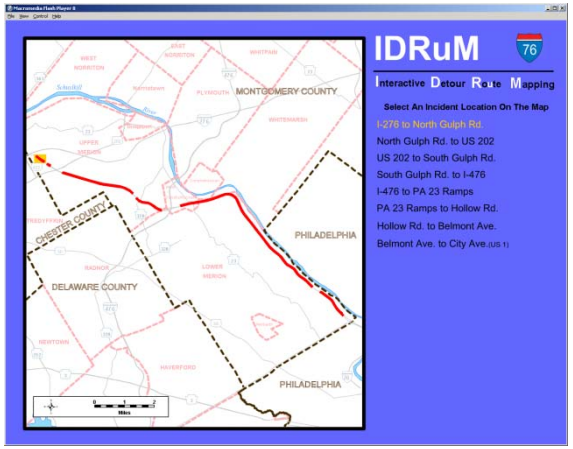
IDRuM – Interactive Detour Route Mapping

DVRPC effort to create an Internet application for accessing PennDOT detour routes

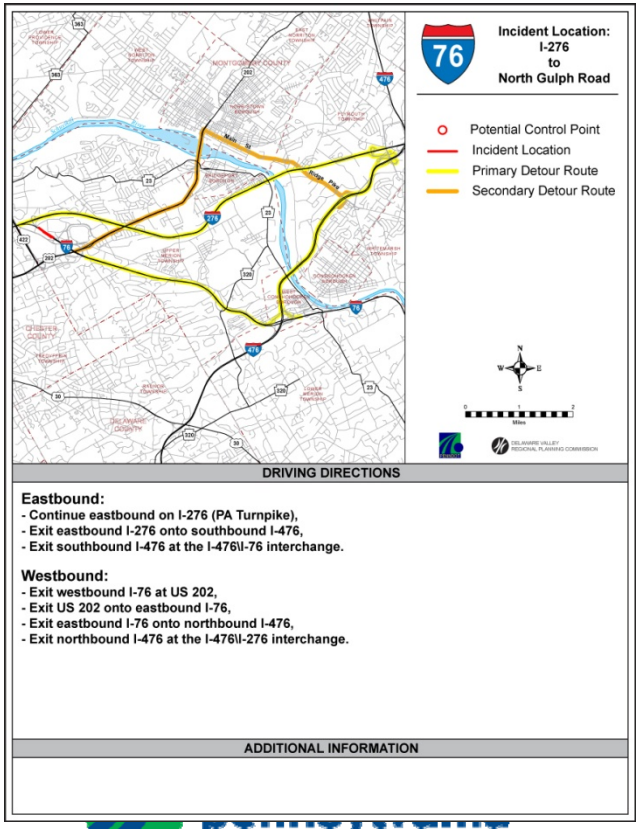
Step 1: Select Highway



Step 2: Select Incident Location



Step 3: View / Download / Print / Email Map



Formats Used:

Steps 1 & 2: Macromedia Flash
Step 3 (final map): Adobe PDF

Both formats are available for FREE download


I-476 DETOUR
FOLLOW
BLUE
BLUE
DETOUR
RED
DETOUR
EXIT
25
MPH
I-476 DETOUR
FOLLOW
RED
RIGHT LANE
MUST
TURN RIGHT
BLUE
DETOUR

DISTRIBUTION OF DIVERSION PLAN AND PROTOCOLS FOR ACTIVATION

- DVRPC already made available on the web.

  http://www.dvrpc.org/transportation/operations/IDRuM/IDRuM.htm

- Key response organizations to develop protocols to be used for activation, maintenance and deactivation of detour routes including management and communication requirements of the diversion routes.

I-95 TUESDAY MORNING
March 18, 2008

Joseph Kaczmarek / AP

The typically busy stretch of I-95 is shown Tuesday morning after lanes going both directions were closed.

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IMPACT OF I-95 CLOSURE

I-95 traffic Tuesday, March 18.

CBS 3

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IMPACT ON CITY STREETS

AP
March 18: Traffic backs up on Richmond St. in Philadelphia after a two-mile stretch of I-95 was shut down.

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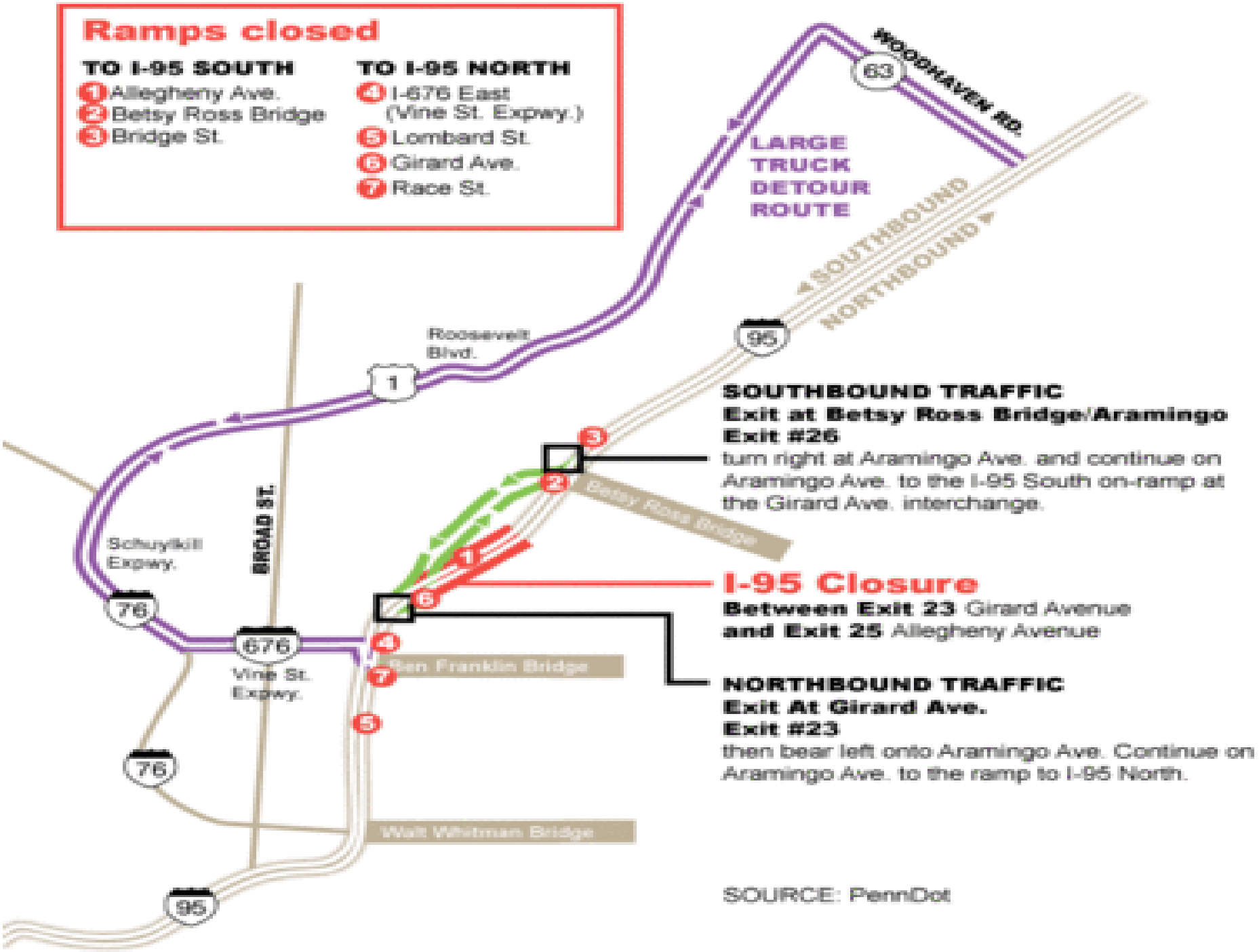
Ramps closed
TO I-95 SOUTH
1 Allegheny Ave.
2 Betsy Ross Bridge
3 Bridge St.
TO I-95 NORTH
4 I-676 East (Vine St. Expwy.)
5 Lombard St.
6 Girard Ave.
7 Race St.
WOODHAVEN RD.
63
LARGE TRUCK DETOUR ROUTE
SOUTHBOUND
NORTHBOUND
95
Roosevelt Blvd.
1
BROAD ST.
Schuylkill Expwy.
76
676
Vine St. Expwy.
Ben Franklin Bridge
Walt Whitman Bridge
SOUTHBOUND TRAFFIC
Exit at Betsy Ross Bridge/Aramingo
Exit #26
turn right at Aramingo Ave. and continue on Aramingo Ave. to the I-95 South on-ramp at the Girard Ave. interchange.
I-95 Closure
Between Exit 23 Girard Avenue
and Exit 25 Allegheny Avenue
NORTHBOUND TRAFFIC
Exit At Girard Ave.
Exit #23
then bear left onto Aramingo Ave. Continue on Aramingo Ave. to the ramp to I-95 North.
SOURCE: PennDot

RIMIS

Regional Integrated Multimodal Information Sharing

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What is RIMIS

- Web based software
  - Minimizes equipment and costs
- Based on TRANSCOM's RA Web
  - Other locations using the software
    - New York metropolitan area
    - State-wide in New Jersey
    - I-95 Corridor Coalition
- Data interfaces to automatically capture traffic operation center's information
- Systems Administrator (TRANSCOM) to perform Operations & Maintenance

Current ITS Projects

Design-Build – currently under construction:

S.R. 0309, Section 104 - Will install 21 CCTV cameras, 9 DMS and 22detectors

S.R. 95, Section ITC –

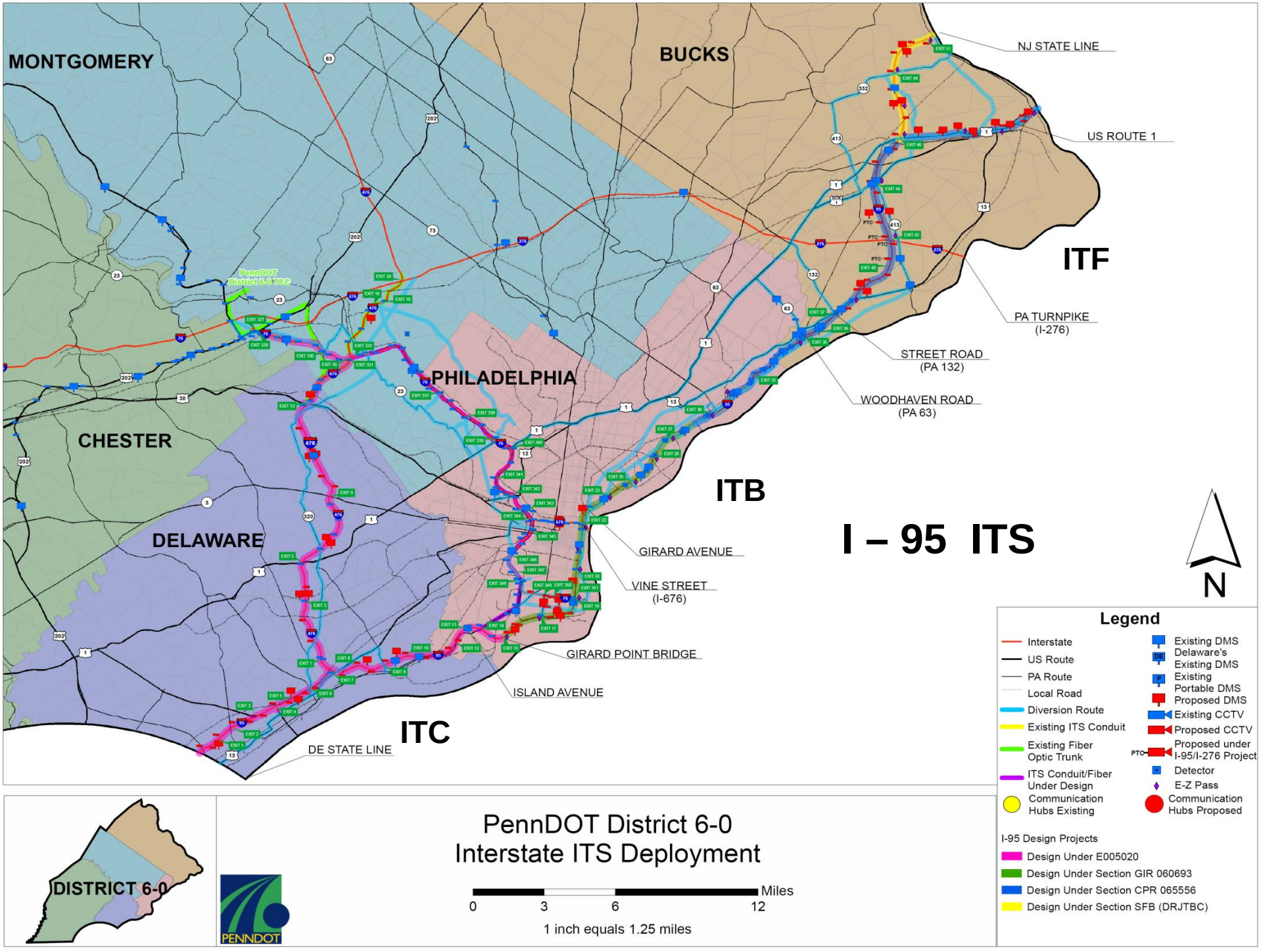
S.R. 95, Section ITF –

S. R. 95, Section ITB –

Traditional Construction Low Bid Projects Under Construction:

S.R. 476 Section RES – 6 CCTV, 15 Ramp Meters, 80 VD, Fiber Communications

S.R. 202, Section 65N – 4 CCTV, 2 DMS, 4 VD


MONTGOMERY
BUCKS
CHESTER
PHILADELPHIA
DELAWARE
NJ STATE LINE
US ROUTE 1
PA TURNPIKE
(I-276)
STREET ROAD
(PA 132)
WOODHAVEN ROAD
(PA 63)
GIRARD AVENUE
VINE STREET
(I-676)
GIRARD POINT BRIDGE
ISLAND AVENUE
DE STATE LINE
PennDOT
District 6-0 TOC
ITF
ITB
ITC
I – 95 ITS
N
Legend
Interstate
US Route
PA Route
Local Road
Diversion Route
Existing ITS Conduit
Existing Fiber Optic Trunk
ITS Conduit/Fiber Under Design
Communication Hubs Existing
Existing DMS
Delaware's Existing DMS
Existing Portable DMS
Proposed DMS
Existing CCTV
Proposed CCTV
Proposed under I-95/I-276 Project
Detector
E-Z Pass
Communication Hubs Proposed
I-95 Design Projects
Design Under E005020
Design Under Section GIR 060693
Design Under Section CPR 065556
Design Under Section SFB (DRJTBC)
DISTRICT 6-0
PENNDOT
PennDOT District 6-0
Interstate ITS Deployment
Miles
0
3
6
12
1 inch equals 1.25 miles

DISTRICT 6-0 ADDITIONAL ITS DEVICES

SECTION	LOCATION	CAMERA	PERMANENT DMS	PORTABLE DMS	RTMS	E-Z PASS READER
ITB	I-95	31	14	0	48	48
	I-676	0	3	0	0	0
	SR 0132	0	1	0	0	0
	SR 0413	0	2	0	0	0
ITC	I-95	20	4	0	30	30
	I-476	0	8	0	0	23
	US 1	0	1	0	0	0
ITF	I-95	7	4	0	14	5
	US 1	17	9	0	48	14
	PA 0063	4	2	0	12	5
	PA 0332	0	2	0	0	0
	PA-309	21	9	3	0	0
TOTAL:		100	59	3	152	125

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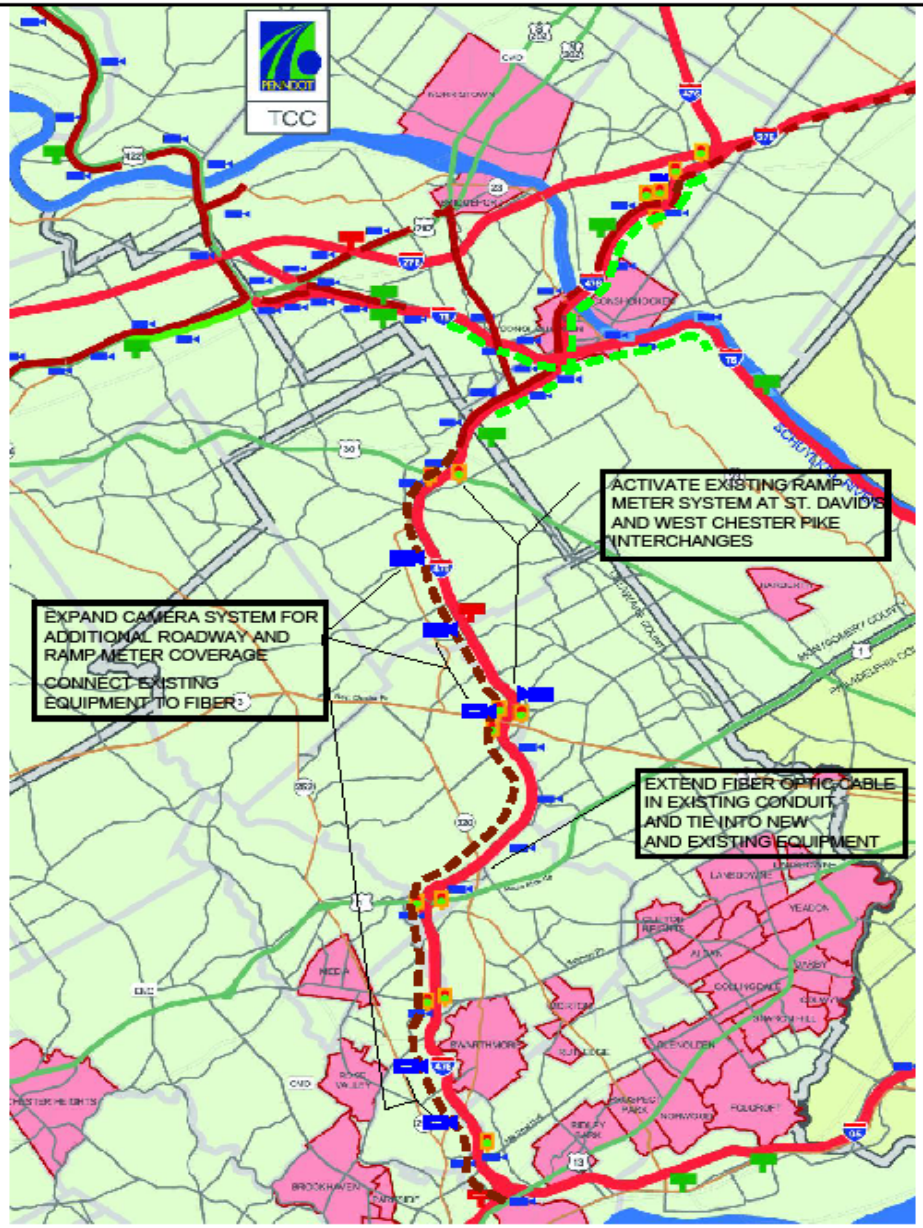


Legend

Transportation Features
- Highway
- Interstate
- US Route
- Railroad
- Major Roads

Municipal Features
- Boroughs
- Townships
- Major Rivers

TIMS Elements
- Existing Closed Circuit Television (CCTV) Camera
- Proposed Closed Circuit Television (CCTV) Camera
- Existing Dynamic Message Sign (DMS)
- Proposed Dynamic Message Sign (DMS)
- Existing Portable Dynamic Message Sign (PDMS)
- Proposed Portable Dynamic Message Sign (PDMS)
- Proposed Weather Station
- Existing Ramp Metering
- Existing Incident Detection System
- Proposed Incident Detection System
- Existing Fiber Optic Communications Link
- Proposed Fiber Optic Communications Link
- Traffic Control Center
- EMC — Emergency Management Center
- CMO — County Maintenance Office

NOTE:

Additional portable DMS will be incorporated as part of overall Traffic Control Plan

Figure 4

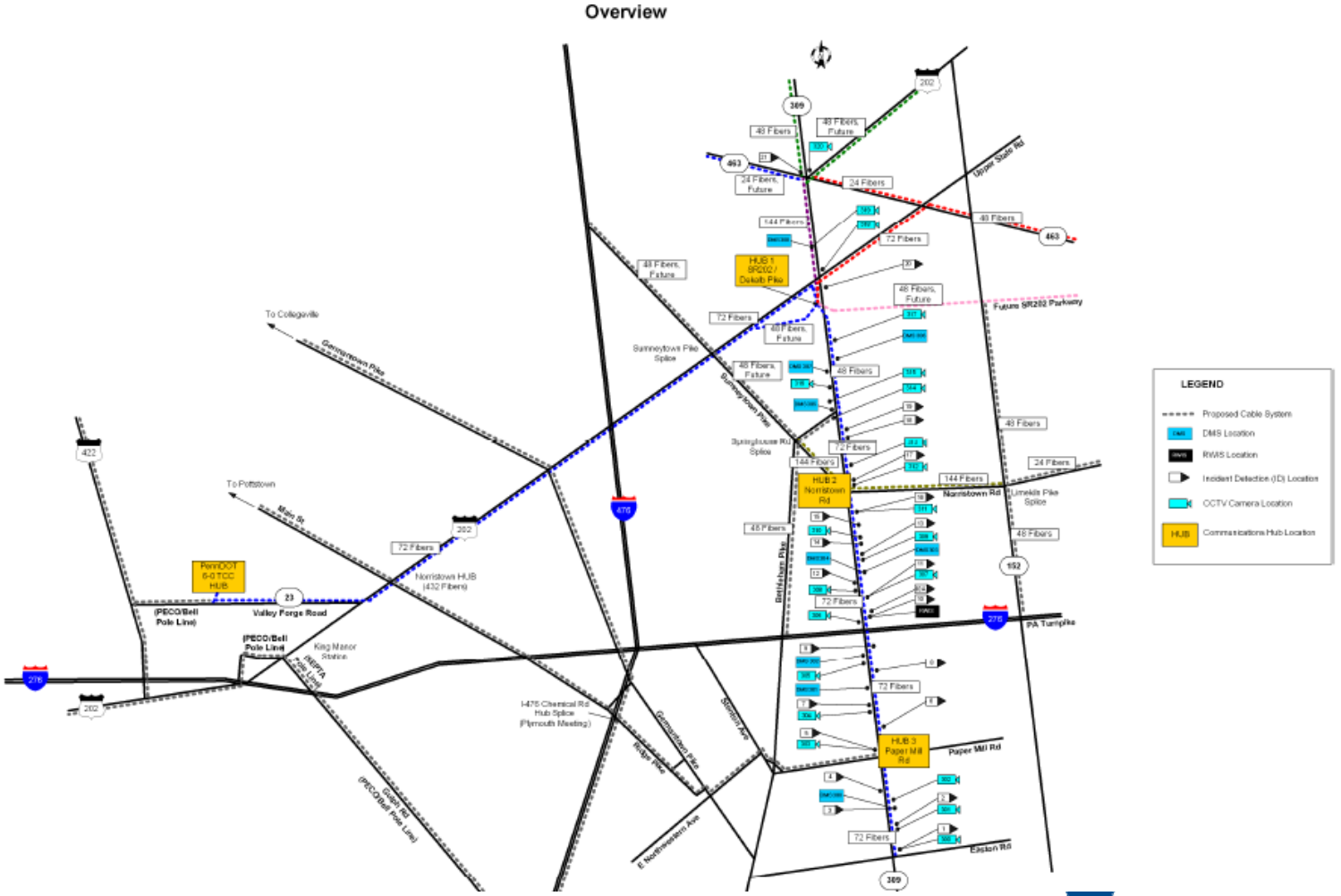
Regional Recommendations

DMJM HARRIS | AECOM

I-476 IMPROVEMENT PROJECT

www.476blueroute.com

S.R. 0309, Section 104



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S.R. 0309, Section 104

- Design-Build project to install ITS devices along 13 miles of PA309
- Project is currently undergoing construction
- Will install 21 CCTV cameras to monitor traffic conditions
- Will install 9 dynamic message signs to provide traveler information
- Will install 22 vehicle detectors to assist in detecting incidents along the roadway

Upcoming ITS Projects

Under Design:

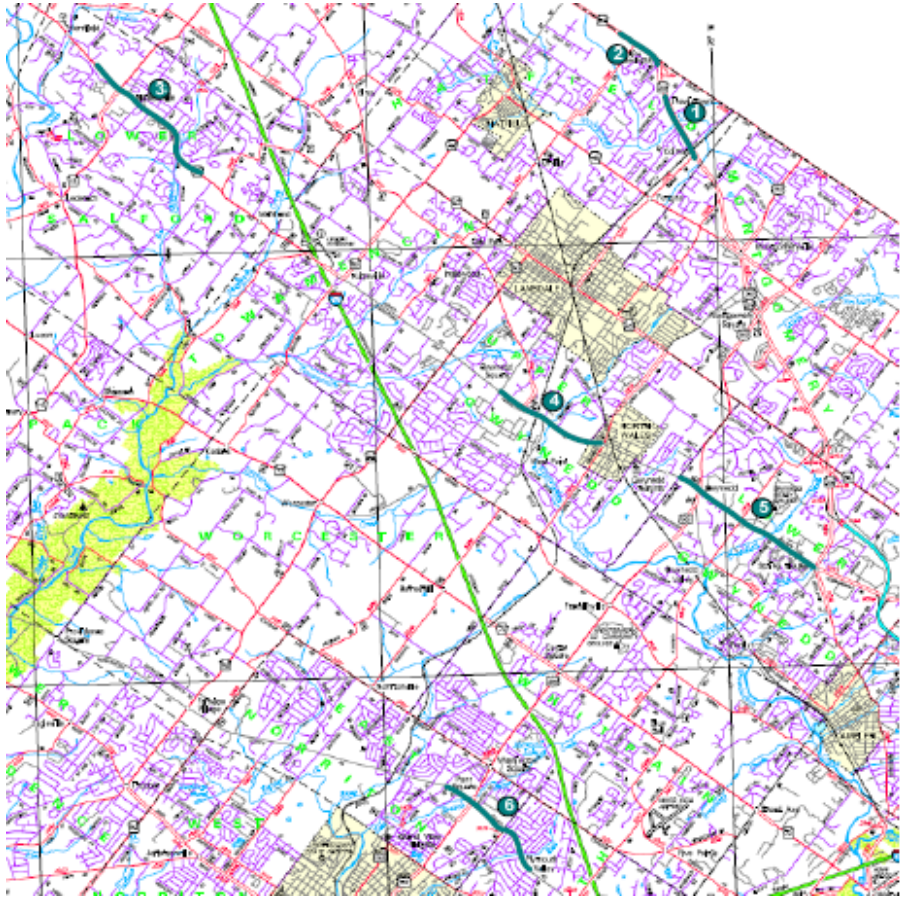
1)Northeast Extension Transportation Systems Management Project – Arterial ITS and signal interconnection. *Under Design*

Will provide ITS device coverage and communications along detour routes to NE Extension and PA 309
6 signalized corridors were selected for upgrades
- 31 interconnected traffic signals
- 5 CCTV cameras
- 2 DMS
- 6 vehicle detectors

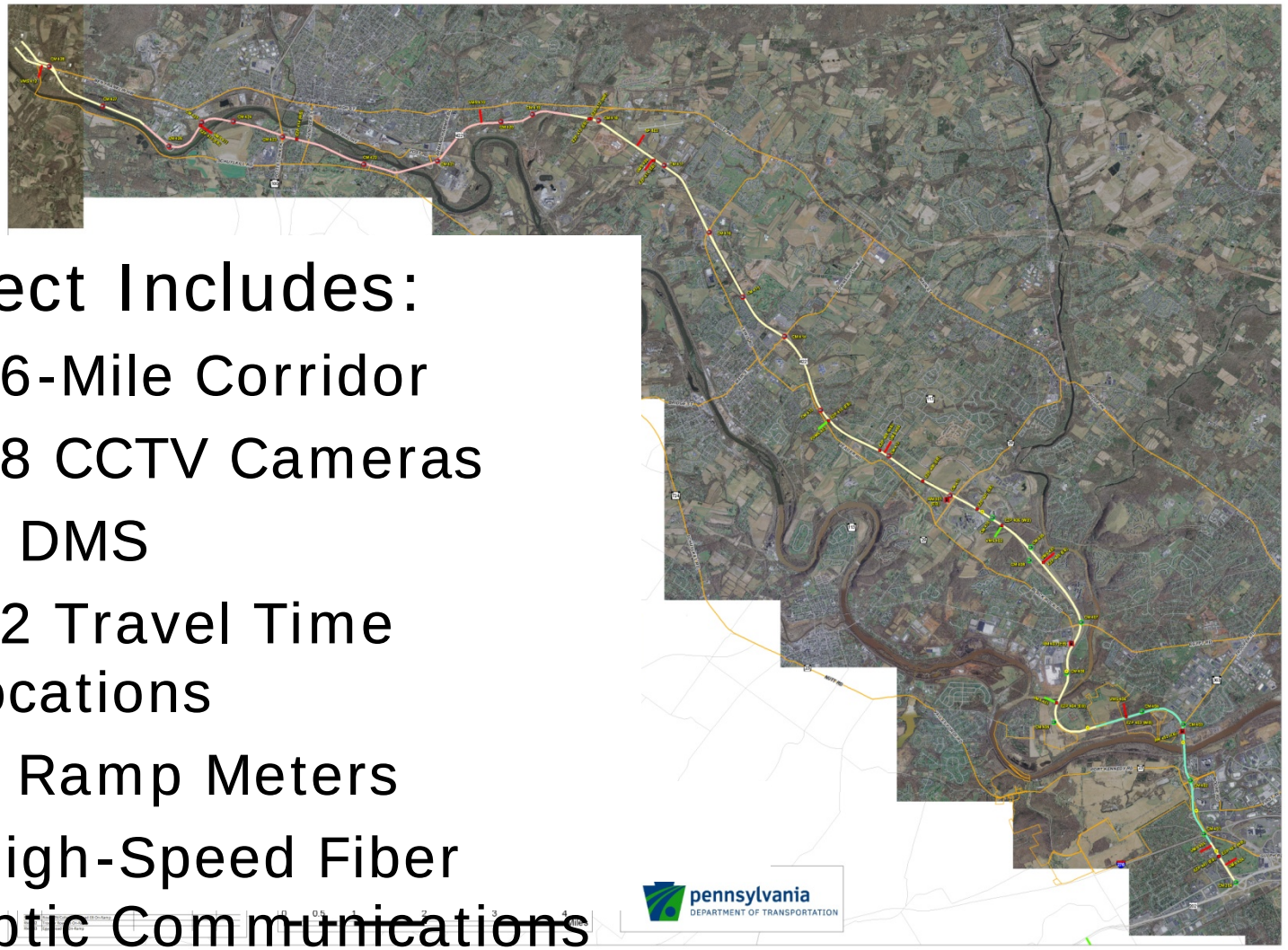
All devices/signals proposed to be connected by fiber optic communications

Northeast Extension TMS

1) Bethlehem Pike – 3 signals
2) Bethlehem Pike – 4 signals
3) Sumnytown Pike – 6 signals
4) Sumnytown Pike – 6 signals
5) Sumnytown Pike – 4 signals
6) Germantown Pike – 8 signals



2) Route 422 ITS



Project Includes:

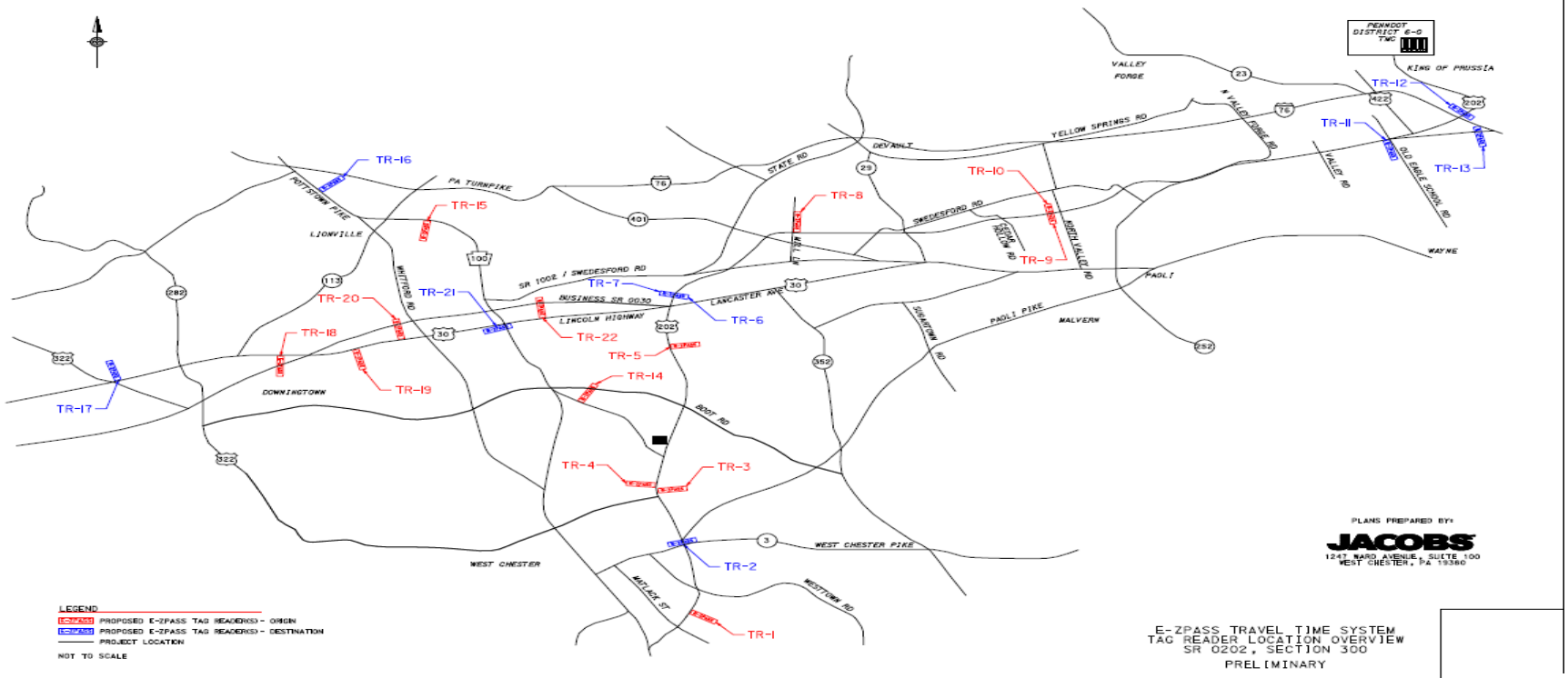
- 26-Mile Corridor
- 18 CCTV Cameras
- 9 DMS
- 12 Travel Time Locations
- 3 Ramp Meters
- High-Speed Fiber Optic Communications Network

3) S.R. 0202, Section 700

- New construction of 4-lane 8 mile parkway in Montgomery and Bucks Counties
- Future ITS includes 17 CCTV and 5 DMS
- Devices proposed to be connected by new 48-strand fiber optic cable to be buried adjacent to the roadway.
- Fiber will also bring area signals back to PennDOT RTMC and connect to existing fiber on intersecting roadways
- Construction is currently underway on Section 701, nearest to PA 309

4) S.R. 202, Section 320

- 22 Tag Readers



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5) I-95 Projects

SECTION	LOCATION	CAMERA	PERMANENT DMS	PORTABLE DMS	RTMS	E-Z PASS READER
CP1 *	SR 1004	8	0	0	0	0
	SR 1007	2	0	0	0	0
	SR 2009	2	0	0	0	0
CP2	SR 0073	0	3	0	0	0
	SR 0095	7	4	0	16	12
	SR 1004	0	3	0	0	0
	SR 1007	5	2	0	0	0
	SR 1009	0	1	0	0	0
	SR 1013	0	1	0	0	0
	SR 1016	0	1	0	0	0
	SR 2009	0	1	0	0	0
	G120	0	1	0	0	0
	G110	0	1	0	0	0
GRO	SR 2009	1	0	0	0	0
GR1	SR 0095	6	3	0	6	7
	SR 0611	2	1	0	0	0
	SR 0676	1	0	0	0	0
	SR 2001	12	6	0	0	0
	SR 2008	0	1	0	0	0
	SR 2009	6	3	0	0	0
	SR 2016	0	1	0	0	0
	G005	2	4	0	0	0
	G491	0	1	0	0	0
TOTAL:		**54**	**38**	**0**	**22**	**19**

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* Already in construction

Questions?


PENNSYLVANIA
309
INTERSTATE
95
INTERSTATE
PENNSYLVANIA
76
INTERSTATE
76
INTERSTATE
476
PENNA
TURN-
PIKE
PHILADELPHIA POLICE
HIGHWAY PATROL
PENNSYLVANIA
STATE POLICE
TROOPER
SPORTS
COMPLEX
SPECIAL SERVICES
DISTRICT
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