

MUNICIPAL ADVISORY COMMITTEE MEETING

MICROSOFT TEAMS ·· JULY 27, 2023

AGENDA

- **Welcome and Updates – Chris Metka** **1:00-1:05**
- **Updates** **1:05-2:00**
 - Municipal Association Updates
 - Pennsylvania State Association of Township Supervisors
 - Pennsylvania State Association of Boroughs
 - Pennsylvania Municipal League
 - Pennsylvania State Association of Township Commissioners
 - County Commissioners Association of Pennsylvania
 - Federal Highway Administration – Veronica Feliciano/Yathi Yatheepan
 - Department of Community and Economic Development – Honey Stempka
 - Municipal Research and Outreach – Chris Metka
 - Financial and Contract Services – Mike Weigel
 - Outdoor Advertising Control – Bob Pento
 - Strategic Development and Implementation – Kevin Tobias
 - Multimodal Update – Dave Bratina
- **Break – 5 Minutes** **2:00-2:05**
- **Presentations**
 - New Products – Tom Welker **2:05-2:20**
 - PennDOT’s Lane Reservation System – Brian Crossley **2:20-2:35**
 - Continued Use of Hot Mix in Municipal Projects – Lydia Peddicord **2:35-2:50**
 - ARLE Update – Steve Gault **2:50-3:05**
- **Next Meeting/Adjournment – Chris Metka** **3:05**



WELCOME

CHRIS METKA .. JULY 27, 2023

MUNICIPAL ASSOCIATION UPDATES

- Pennsylvania State Association of Township Supervisors
- Pennsylvania State Association of Boroughs
- Pennsylvania Municipal League
- Pennsylvania State Association of Township Commissioners
- County Commissioners Association of Pennsylvania



FHWA UPDATE

VERONICA FELICIANO/YATHI YATHEEPAN .. JULY 27, 2023

DCED UPDATE

HONEY STEMPKA · JULY 27, 2023

MUNICIPAL RESEARCH AND OUTREACH

CHRIS METKA .. JULY 27, 2023

MUNICIPAL RESEARCH AND OUTREACH

- PennDOT 2023 Connects Municipal Outreach
 - PennDOT Connects Municipal Resources
 - Districts, Planning Partners, and Municipalities
 - Information on the 12-Year Program, NEVI, DCED, DCNR
 - Recorded sessions on [PennDOT Connects Webpage](#)

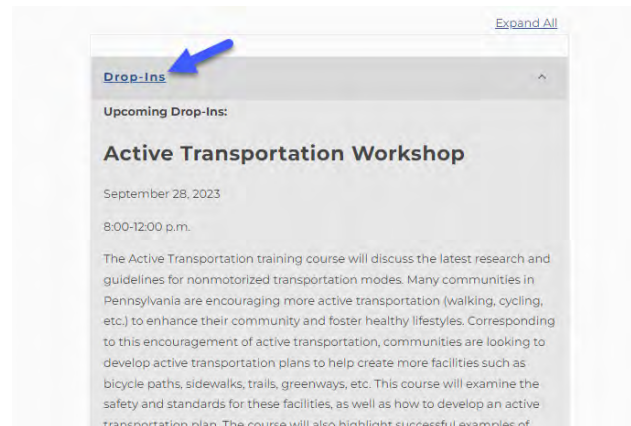


District	Date	Time	Location	Total Municipal Attendance	Virtual Municipal Attendance	In-Person Municipal	PennDOT - MPO/RPO - County	Total Attendance
District 1	April 11th		Virtual	26	26		16	42
District 2	May 4th	9-11 AM	District 2	14	7	7	30	44
District 3	May 25th	9-11 AM	Virtual	5	5		17	22
District 4	March 28th	9-11 AM	District 4	43	30	13	27	70
District 5	May 16th	1-3 PM	District 5	26	22	4	26	52
District 6	April 14th	9-11 AM	Virtual	18	18		10	28
District 8	May 23rd	1-3 PM	District 8	40	27	13	31	71
District 9	May 22nd	1-3 PM	Virtual	7	7		11	18
District 10	May 3rd	1-3 PM	Virtual	14	14		26	40
District 11	March 30th	9-11 AM	Virtual	84	84		28	112
District 12	May 24th	1-3 PM	District 12	26	16	10	9	35
Totals 2023				303	256	47	231	534
Increases				41	53	-12	76	117



MUNICIPAL RESEARCH AND OUTREACH

- PennDOT Connects Municipal Outreach
 - Upcoming Training
 - Developer Negotiation – August 10th
 - School Transportation Management – September 14th
 - Active Transportation – September 28th
 - Recorded Training
 - Transportation Impact Study Process
 - Historic Metal Truss Bridge Capital Rehabilitation Program
 - To view or register: [PennDOT Connects Webpage](#)



MUNICIPAL RESEARCH AND OUTREACH

- LTAP

- Classes

- New class this fall: Geographic Information Systems (GIS)
 - New classes in the pipeline
 - Trucks on Local Roads
 - Drones

- Drop-Ins

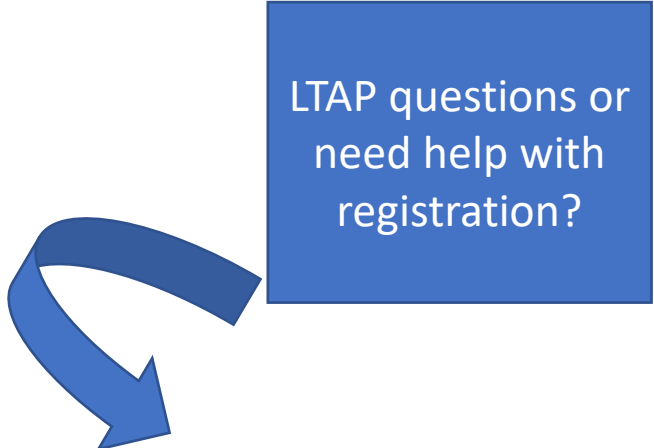
- Upcoming
 - The Safe System Approach – August 3rd
 - Recorded Training
 - Speed Data Collection—What do the numbers mean?
 - What's Invasive vs. Noxious and When to Take Action

- To view or register: [LTAP Website](#)



pennsylvania

DEPARTMENT OF TRANSPORTATION
LOCAL TECHNICAL ASSISTANCE PROGRAM

A blue rectangular box containing the text "LTAP questions or need help with registration?". A large blue curved arrow points from the box towards the contact information below.

LTAP questions or
need help with
registration?

Michael Dudrich | LTAP Director
Phone: 717.425.5672 or 1-800-FOR-LTAP
midudrich@pa.gov or ltap@pa.gov



RMC 2023

- Roadway Management Conference
 - Mid-Atlantic LTAP Centers' Annual Fall Conference
 - LTAP Centers, FHWA, DOT Staff, Local Agencies
 - Seven Springs October 17-19th
 - rmc2023.org for more information



FINANCIAL AND CONTRACT SERVICES DIVISION UPDATE

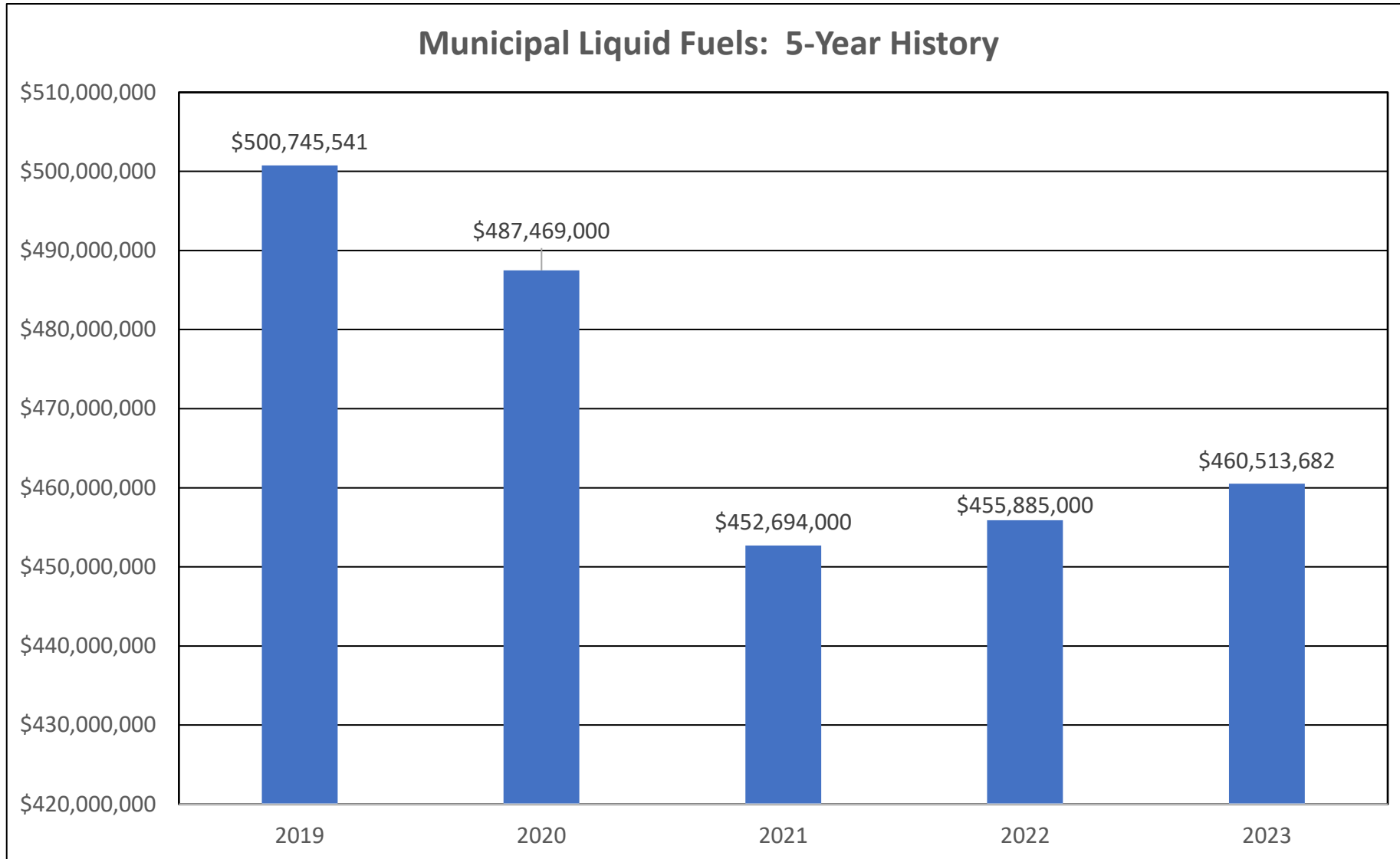
MIKE WEIGEL .. JULY 27, 2023

2023 MLF ALLOCATION

- 2023 MLF allocation - \$470,202,682
 - 2022 MLF allocation - \$455,885,000
 - \$14,317,682 (3.1%) increase
- As of July 20, 2023 - \$457,884,238.20 released to 2,468 municipalities
 - Payments released as municipalities become certified



MLF ALLOCATION HISTORY



PRIOR MLF ALLOCATION

- 2022 MLF allocation - \$455,885,000
 - \$3,191,000 (0.7%) increase
 - As of July 20, 2023 - \$453,274,306.83 released to 2,533 municipalities

- 2021 MLF allocation - \$452,694,000
 - As of June 30, 2023 - \$451,329,226.81 released to 2,554 municipalities
 - Allocation lapsed on June 30, 2023
 - One municipality had a CRP block and lost their funds
 - One municipality did not turn in required documentation and funds were never released



JUNE 2023 PAYMENTS

- The following payments were allocated on June 1, 2023
 - State Police Fines and Penalties to eligible municipalities - \$2,829,469 (\$2,472,073 to municipalities, \$357,396 to PSP for cadet classes)
 - County Liquid Fuels Tax Fund to all counties - \$13,445,538 (8 on hold)
 - Act 89 to eligible counties (61) - \$4,816,500 (8 on hold)
 - \$5 Fee for Local Use to counties who have passed the required ordinance (26) - \$17,475,070 (4 on hold)



AUGUST ALLOCATION

- 2023 Act 13 Allocation
 - \$25,910,477
 - To be paid to counties August 15, 2023



FHWA FORM 536

- Website has been opened for the 2022 report submission
- Email notifications were sent July 12, 2023
- Form will be due September 15, 2023
- Remote or in-person training available upon request



Questions?



OUTDOOR ADVERTISING CONTROL

BOB PENTO.. JULY 27, 2023

STRATEGIC DEVELOPMENT AND IMPLEMENTATION

KEVIN TOBIAS ·· JULY 27, 2023

OTHER PROJECTS

- DISTRIBUTION OF NEVI FUNDS
- ADS WORK ZONE DEMONSTRATION GRANT
- HAV MUNICIPAL GUIDEBOOK
- MEETING OF HAV ADVISORY COMMITTEE
- UPDATED CAV/HAV STRATEGIC PLAN
- FIBER AND SMART MOBILITY STRATEGIC PLAN
- HAV REGULATIONS
- AV COMMUNICATIONS AND ENGAGEMENT PLAN



AUTOMATED TRUCK MOUNTED ATTENUATOR



WORKING WITH OFFICE OF ADMINISTRATION TO DRAFT AN RFP

FORMED A SELECTION TEAM OF HIGHWAY ADMINISTRATION PERSONNEL TO WRITE THE TECHNICAL SPECIFICATIONS, STATEMENT OF WORK

ANTICIPATED TO BE READY TO ADVERTISE BY FEBRUARY/MARCH '24

HOPE TO AWARD CONTRACT BY SEPTEMBER '24 WITH TESTING AND TRIALS TO TAKE PLACE FALL OF '25. HOPE TO DEPLOY TRUCK BY SPRING '26.



AUTOMATED TRUCK MOUNTED ATTENUATOR



STRATEGIC DEVELOPMENT IMPLEMENTATION OFFICE

DIVISION OF TRANSFORMATIONAL TECHNOLOGY

KEVIN R. TOBIAS



MULTIMODAL UPDATE

DAVE BRATINA ·· JULY 27, 2023

5 MINUTE BREAK

PRESENTATIONS

- **New Products** – Tom Welker
- **PennDOT's Lane Reservation System** – Brian Crossley
- **Continued Use of Hot Mix in Municipal Projects** – Lydia Peddicord
- **ARLE Update** – Steve Gault



NEW PRODUCTS

TOM WELKER.. JULY 27, 2023

HELLO

Greetings and Welcome to all represented and Thank You for keeping our citizens informed and involved.



NEW PRODUCTS EVALUATION PROGRAM (NPEP)

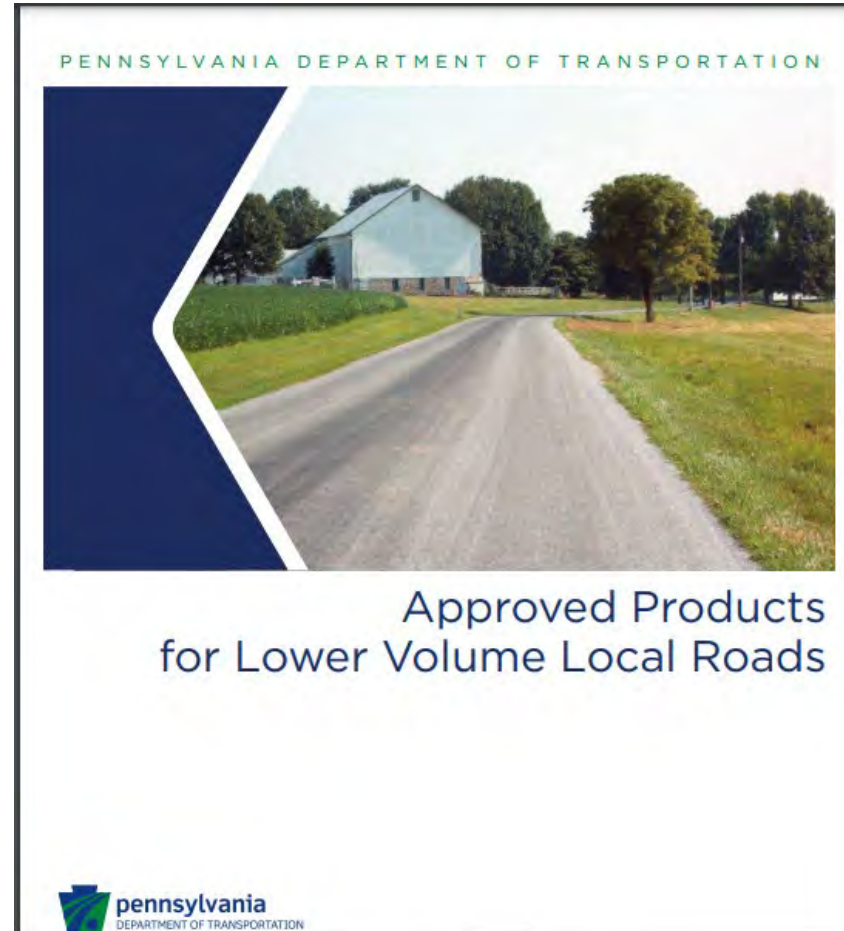
- Municipal Organizations face many challenges in keeping their roadways up to date in today's environment.
- Pavement Preservation has become very important to them in helping to keep the roadway surfaces serviceable for as long as possible between major repairs or overlays.



- Over the years several New Products have been evaluated, tested and if approved, incorporated into the PennDOT Publication 447: **Approved Products for Lower Volume Local Roads**
- Many of these products are geared specifically for use on local roads.
- Although the PennDOT Pub 408 addresses busier highways and interstate type roads (some crossover to local use also) there are some that are excellent for use in Municipal Applications.



PENNDOT PUB 447



HISTORY OF PUB 447

The Pub was generated to fill the gap on products and processes not often used in major projects but very useful to local municipalities.



AN OLDER PROJECT

MS-0320-0012



Plasphalt Project, LTD., CO. LLC

**Asphalt Concrete Containing Treated Recycled Plastic
Aggregate (Plasphalt)**

1829 Commercial Ave. NE

Albuquerque, New Mexico 87102

Project date 2002-2006



AHEAD OF ITS TIME



GROUND BOTTLES



ASPHALT MIXING PLANT



PAVED SURFACE



10/13/2021

Wolf Administration Highlights Collaborative Pilot To Pave Roadway With Recycled Plastic



APPROVED

- The use of ¼ inch aggregates (#9M) over the normal #8 aggregate in chip seals on roads with a max of 500 ADT.
- Also allowed the use of #9M as a single seal on roads with less than 350 ADT.
- This research idea was brought to PennDOT by a group of Roadmasters in Lancaster County who used the product for many years but was never approved for use with Liquid Fuels Monies.



SEE THE DIFFERENCE



RESEARCH

- A Multi-year project was instituted to study how a smaller aggregate would hold up to daily traffic.
- The first project was in the Village of Gap.



RESIDENTIAL AREA



AFTER 5 YEARS IN PLACE







DOUBLE CHIP SEAL OVER PAVING FABRIC

- We also now have an approved spec for a double chip seal over approved paving fabric

MS-0360-0020

Geofabric Reinforced Double-Layered Seal Coat



DOVER TOWNSHIP



PLACING THE AGGREGATE



DOVER TOWNSHIP 2023



FIBER IN MICROSURFACE

A Microsurfacing project with fiber is currently under study in York County.



RR CARS FOR BRIDGES



RURAL AREA CROSSINGS.



COMING AT SOME POINT

E-TICKETING INNOVATION ADVANCES IN PENNSYLVANIA



ASPHALT REJUVENATOR

- Currently studying a rejuvenator that has been applied to 2 township roads in Jefferson Township Butler County.
- A rejuvenator is touted to extend the life of a pavement when applied to the surface after 3 to 5 years.
- There are several different manufacturers of this type of product nationwide and some reports have been received of a successful outcome.
- The study of this type of product will continue until it can be determined if it does provide the benefits it claims.



BUTLER COUNTY



SURFACE



MILKY APPEARANCE



DON'T SEEM TO MIND IT



Questions?

If anyone has any ideas on New Products or processes that you believe would be beneficial to local road maintenance crews, please let me know.

Thank You



PennDOT's Lane Reservation System (LRS)

Brian Crossley

Manager, Temporary Traffic
Control

Bureau of Operations



Agenda

- Current Process for Tracking Work Zones
- Lane Reservation System Overview
- Concept of Operations and Requirements
- Publication/Policy Updates
- Deployment Timeline



Current Process For Tracking Work Zones

The screenshot displays the 'Event Administration' interface of the RCRS. The form includes the following fields and options:

- County:** <Select County for 4-Digit Routes>
- State Route:** 0083 (I - 083)
- Direction:** NORTH
- Cause:** <Select a Cause>
- Status:** <Select a Cause>
- Verification Method:** CRASH (highlighted)
- Info Reported By:** CRASH (Multi-Vehicle)
- Phone Number:** ROADWORK*
- Event Contact:** MOVING ROADWORK*
- Phone Number:** UTILITY WORK*
- Repetition:** One-Time
- Repeats From/To:** (Empty)
- Daily Start/End:** (Empty)
- Event Occurs:** 12/14/2021 12:08
- Estimated Date to Re-Open:** 12/14/2021 12:54
- Time Notified:** 12/14/2021 12:09
- Time Verified:** 12/14/2021 12:09
- Police Juris:** (Empty)
- 1st Responders Arrived:** (Empty)
- PennDOT Arrived:** (Empty)
- Checkboxes:** Fatality, School Bus Involved, Commercial Vehicle Rollover

PennDOT uses the Road Condition Reporting System (RCRS) for disseminating information about road condition status



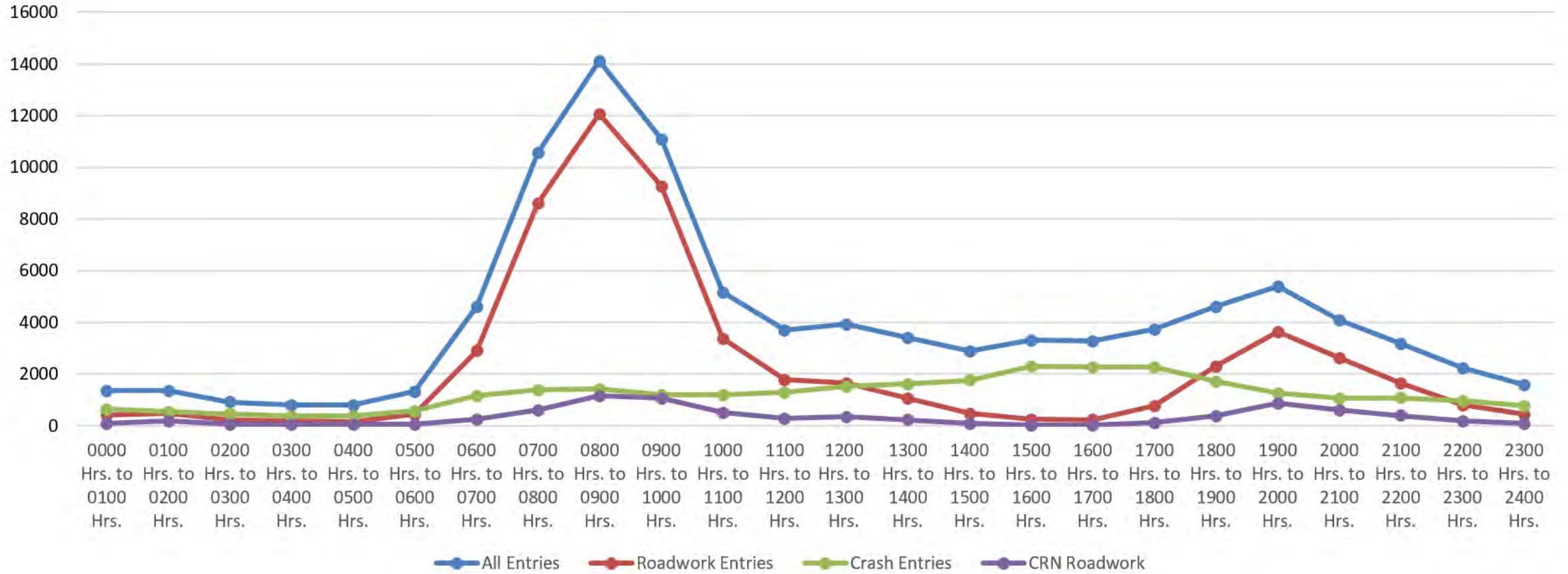
Current Process for Tracking Work Zones

- Most entries made by TMC personnel
- Contractors, maintenance crews, utilities call TMC when starting work

CAUSE	ALL ROUTES	CORE NETWORK ONLY
ROADWORK	27,635	11,866
MOVING ROADWORK	6,239	4,325
UTILITY WORK	5,114	590
TOTAL	38,988	16,781



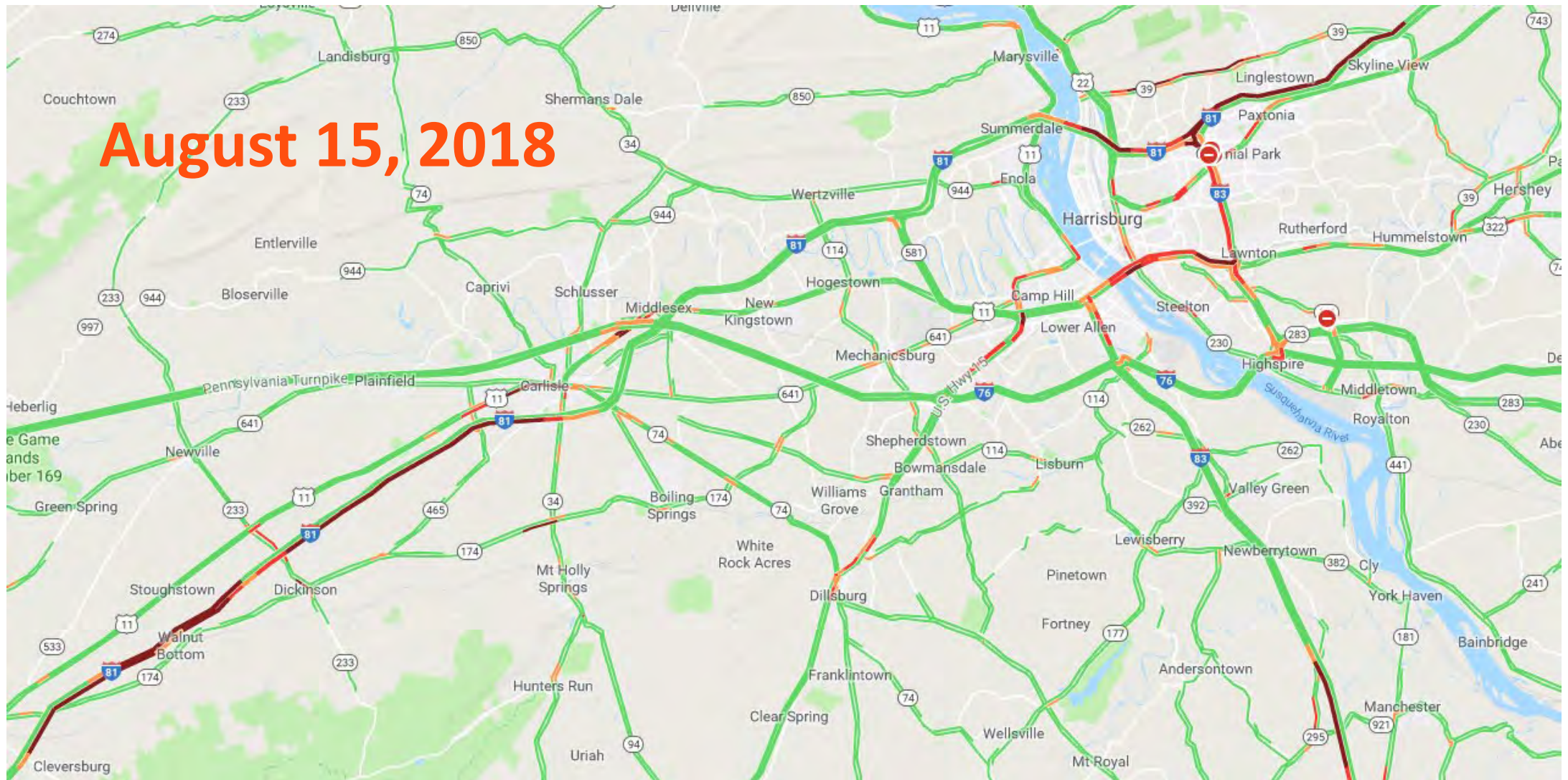
RCRS Entries by Hour





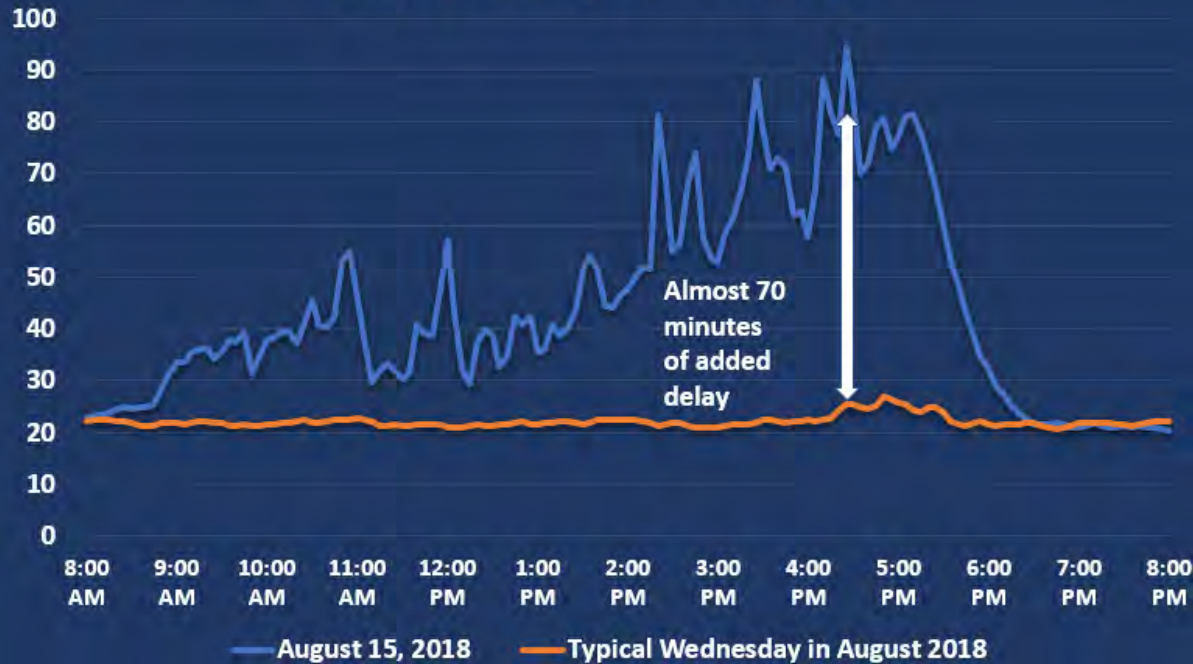
Conflict Monitoring Needs

August 15, 2018

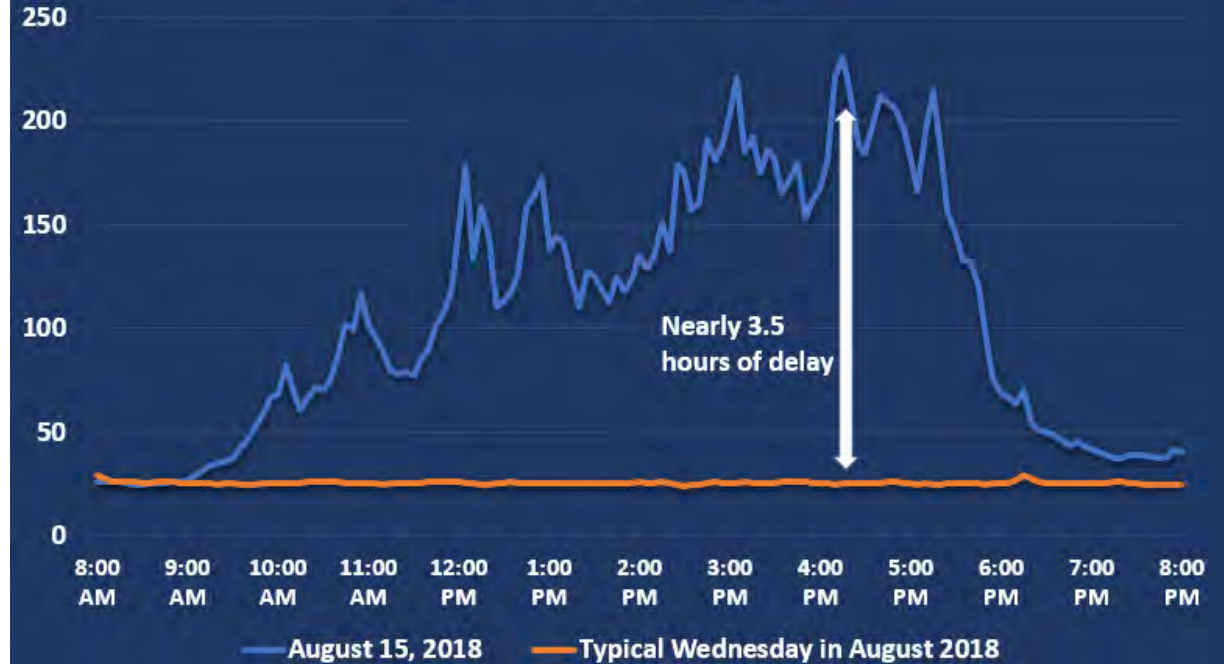


Need for a System

I-81 SB Travel Time (Minutes) I-78 to George Wade Bridge



I-81 NB Travel Time (Minutes) Shippensburg to Carlisle



Current Processing For Tracking Work Zones

Gaps/justification for changes:

- Separate, non-standard processes
- Duplication of efforts
- No automated conflict identification
- Work zones not captured
- Communication issues
- Lack of timely and accurate traveler information

PENNDOT ROAD RESTRICTION FORM

PLEASE SEND COMPLETED FORM TO THE PENNDOT PRESS OFFICE AT THE EMAIL BELOW. LANE CLOSURES AND OTHER LANE RESTRICTIONS REQUIRE **5 DAYS' NOTICE**. FULL CLOSURES REQUIRE **2 WEEKS' NOTICE**. ALL FORMS SHOULD BE SUBMITTED BY THURSDAY MORNING FOR WORK PLANNED THE FOLLOWING WEEK. FAILURE TO SUBMIT THIS FORM IN A TIMELY MANNER MAY RESULT IN POSTPONEMENT OF WORK.
E-MAIL: ra-pdd6press@pa.gov

Today's Date: _____ ECMS# _____
(if project-related)

SR# _____ Section _____
(if project-related)

Municipalities: _____ County: _____
Indicate if Borough or Township

Name of Road: _____ Direction: _____

Between Where & Where: _____
(use nearest intersections or interchanges only)

Type of Work: (provide details) _____

Type of Restriction: _____
(lane closure, periodic lane closure, full closure, etc.)

If FULLY CLOSED will detour be in effect only during working hours or 24 hours? _____

Approved Detour Route: _____

Dates of Work: (start & finish) _____

Restriction Hours: _____
(may differ from work hours, e.g. 9AM to 3PM, 8PM to 5AM, etc.)

Saturday and/or Sunday Work? _____

Name of Permittee (who you're working for) _____

Permit or Application Number if no ECMS#: _____

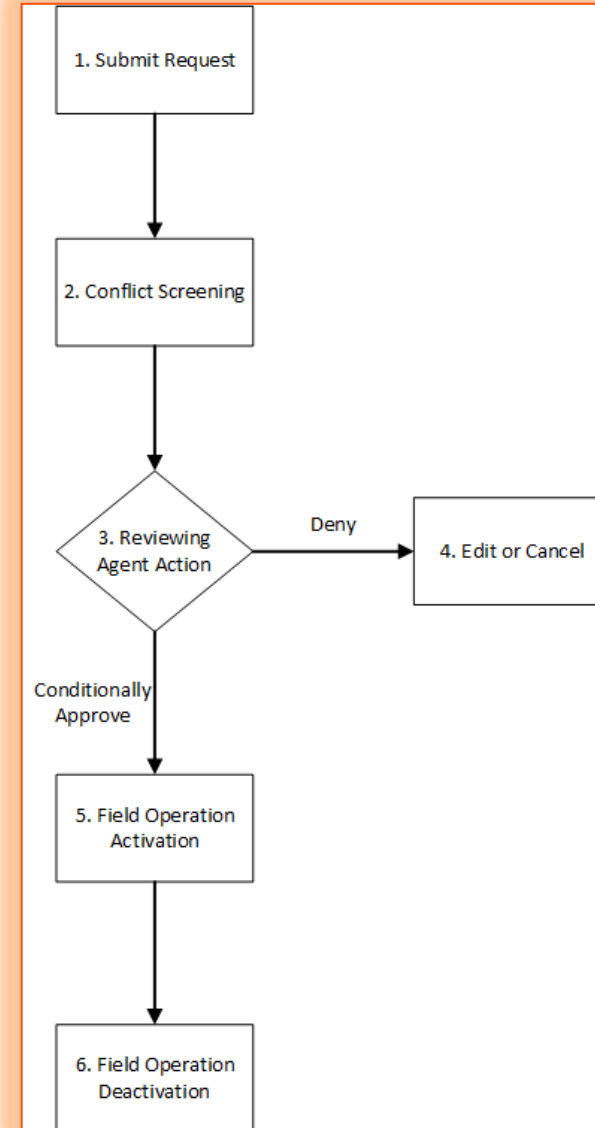
Contact Name: _____ Phone # _____ Email _____

Construction, Maintenance, Bridge and Highway Occupancy Unit(s) must notify the District Permit Office **10 "WORKING " days*** (excluding holidays) before prohibiting **oversize/overweight vehicles** from traveling through restricted area. Please contact **Daniel Wehner** at 610-205-6787, dwehner@pa.gov and copy Linda Coleman, licoleman@pa.gov.

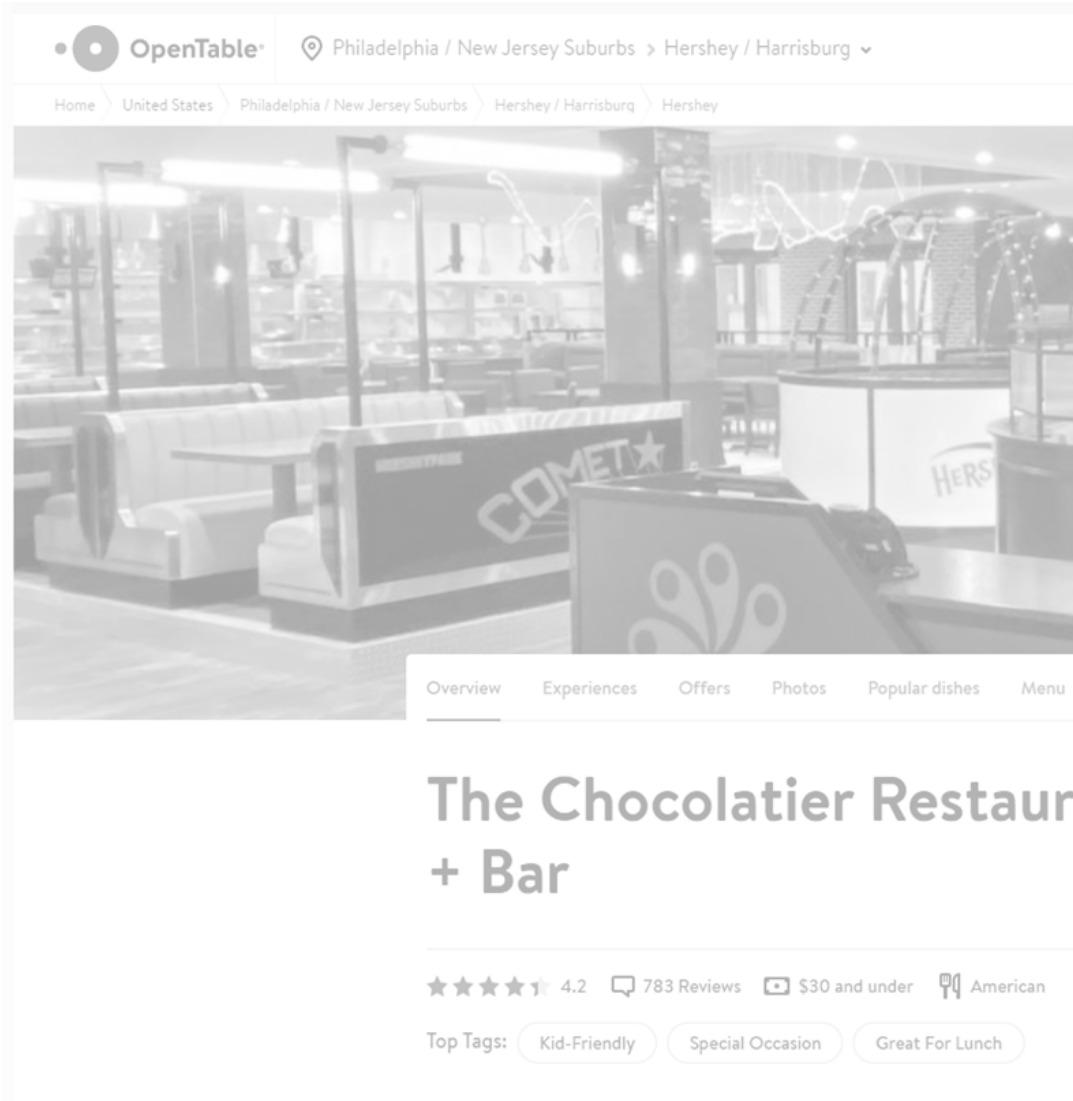


LRS Overview

LRS will be a web-based platform to schedule, coordinate, and track work zone activities on state highways



Initial Lane Reservation Concept



Make a reservation

Party Size

4 people

Date

Mar 4, 2022

Time

5:00 PM

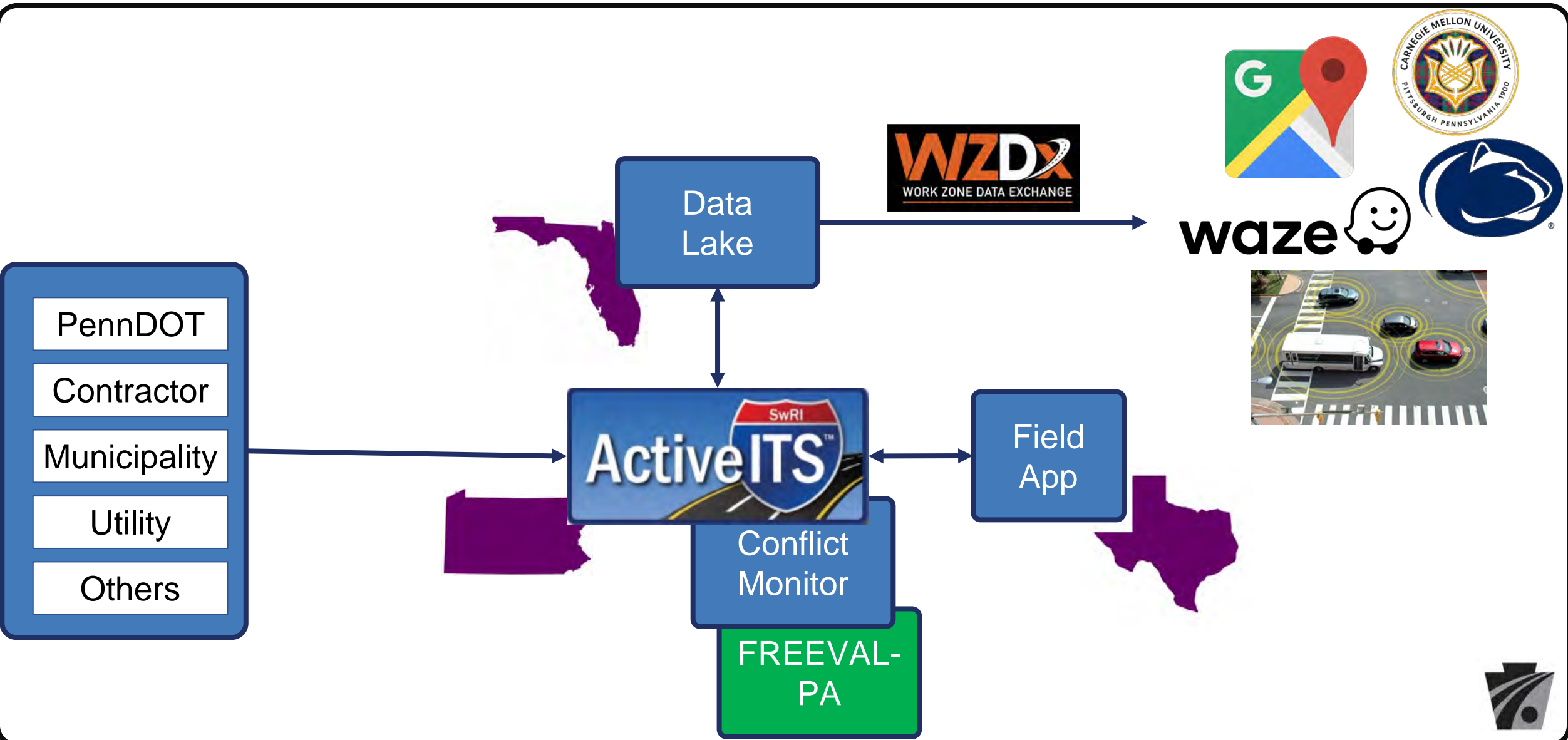
Find a time

Select a time

3:30 PM 3:45 PM



LRS and Data Exchange High Level Architecture



Business Rule Engine for Reviewing Reservations



Adding: Segment level Traffic Volume Profiles by hour of the day

FREEVAL-PA

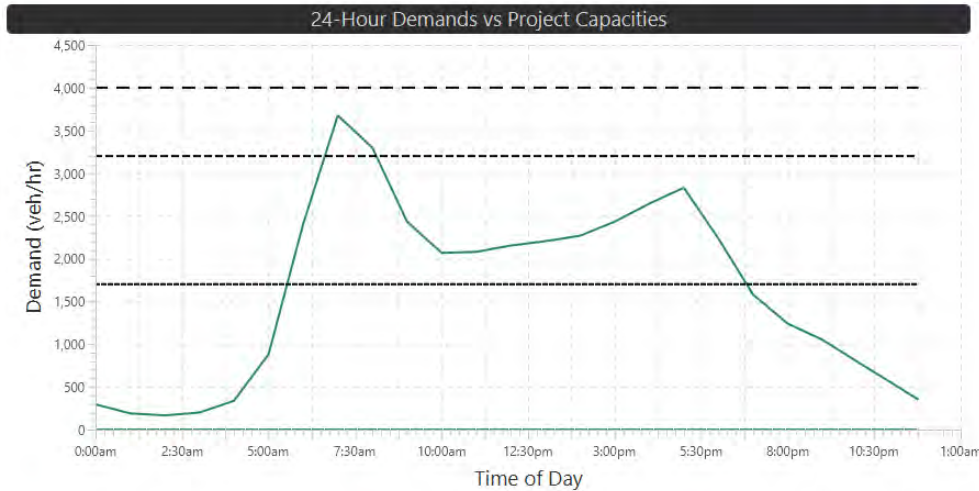
h-Planning > Work Zone Segment Staging Alternatives

2. Work Zone Configuration > 3. Diversion Scenarios

Work Zone Configuration Inputs

	Name	Type	WZ Capacity Adj.	Computed Capacity
#1	Work Zone #1	Shoulder/None	0.00 0.20 0.40 0.60 0.80 1.00	3,200 veh/hr, 2 In open
#2	Work Zone #2	1-Lane	0.00 0.20 0.40 0.60 0.80 1.00	1,700 veh/hr, 1 In open

Update Analysis



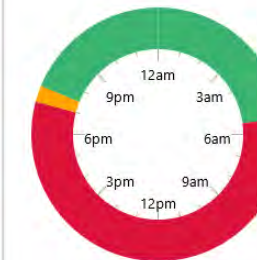
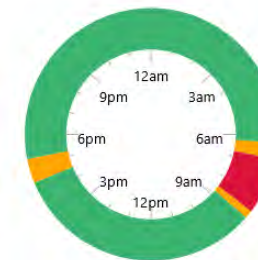
Viability Active Hours Assessment

Existing Conditions

Existing Conditions

Work Zone #1

Work Zone #2



Hover over any slice of the chart for more details

Demand to Capacity (D/C) Thresholds

Under (D/C < 0.85)

Near (D/C < 0.95)

Over (D/C >= 0.95)



LRS Overview - Project Goals

- Reduce work zone conflicts
- Reduce work zone congestion
- Improve work zone/general traffic safety
- Share work zone/incident data effectively
- Improve TMC Operations
- Standardize work zone scheduling and tracking on our roadways



Concept of Operations

3 working group meetings held over 2022

- Over 50 PennDOT personnel across the state
- Design/Construction
- Maintenance
- Traffic Engineering


3 – Working Group



2 – FREEVAL-PA
Technical Team


3 – Digital Delivery
2025 Managers

2 – Associated PA
Constructors

**Transportation Systems
Management and Operations (TSMO)**
Lane Reservation System (LRS)
Concept of Operations and Requirements

 **TSMO**





Publication Policy Updates

- Pub 213 – Temporary Traffic Control Guidelines
- Pub 46 – Traffic Engineering Manual
- Pub 23 – Maintenance Manual
- Publication 408 - Specifications
- Special Provisions



Deployment Timeline



Thank You

Ryan McNary

Chief, TSMO Operations and
Performance
Bureau of Operations

Brian Crossley

Manager, Temporary Traffic
Control
Bureau of Operations



MUNICIPAL ADVISORY
COMMITTEE MEETING
ASPHALT PAVEMENT
MATERIALS AND OTHER
PAVEMENT PRODUCTS

LYDIA PEDDICORD, P.E.

JULY 27, 2023

TOPICS TO BE DISCUSSED

- PennDOT Asphalt Mix History
- Binder Performance Grade History
- Superpave Mix Temperature
- Superpave ESAL Ranges
- Superpave Depth Thicknesses
- Pervious Pavement Systems, Hot Pour Mastics, Roller Compacted Concrete



Page 2-3 and 2-4:

Section 2.7 Expenditure of Funds

Below are examples of acceptable expenditures of Municipal Liquid Fuels Tax funds. In the case of questionable expenditures, the District Municipal Services Office should be contacted.

2.7.1 Acceptable Expenditures:

12. Road materials approved by PennDOT bulletins and specifications (Publication 408, Highway Construction Specifications,) and Publication 447, (Approved Products for Lower Volume Local Roads).

[Publication 9](#)

[Publication 408](#)

[Publication 447](#)



PENNDOT ASPHALT MIX HISTORY

Marshall Mix

- 1940s to 2000: Asphalt mix prone to rutting distress
- **Pub 408, Section 400/300:** ID-2, ID-3, FB-1, FB-2, FJ-1

Superpave Hot Mix

- 1995 - 2013: Fixed rutting but early cracking, VMA changed to 0.5% above AASHTO M 323 in 2008
- **Pub 408, Section 409/309:** 125, 100, 75, and 50 Gyration (125 dropped in 2008)
- **Wearing Course:** 9.5, 9.5 FG, 12.5 mm **Binder Course:** 19, 25 mm **Base Course:** 25, 37.5 mm NMAS

Superpave Warm Mix

- 2013 - 2020: Added Section 412 – **Wearing Course** 6.3 mm NMAS
- **Pub 408, Section 411/311:** 100, 75, and 50 Gyration
- PWL, Longitudinal Joint Density Incentive, Anti-strip required

Superpave Mix Design

- 2020 - Current: **Pub 408, Section 413/313:** 75 and 50 Gyration in 2022
- Tack every lift, spray longitudinal cold joint with PG 64S-22, overband longitudinal joint changed VMA to 1% above AASHTO M 323



PERFORMANCE GRADE HISTORY

Marshall Mix

- AC-10
- AC-20
- Polymer Modified Asphalt Cement (PMAC)

Superpave (AASHTO M 323)

- PG 58-28 (Cold weather)
- PG 64-22 (Standard)
- PG 76-22 (High truck traffic)

Superpave (AASHTO M 332)

- PG 58S-28 (S is for Standard)
- PG 64S-22
- PG 64E-22 (E is for Extreme)

*Reference Publication 242, Chapter 5, Table 5.5 for further recommendations for selecting PG-Binders



SUPERPAVE MIX TEMPERATURE

Class of Material	Hot Mix Min.	Warm Mix Min.(1)	Warm Mix Min.(2)	Maximum (All)
PG 58S-28	260F	215F	230F	310F
PG 64S-22	265F	220F	240F	320F
PG 64E-22	285F	240F	260F	330F

(1) Chemical, Organic, Foaming Additives

(2) Mechanical Foaming Equipment/Process

*Reference Pub. 408, Section 413, Table A



SUPERPAVE ESAL RANGES

PennDOT Publication 242, Pavement Policy Manual

www.penndot.pa.gov → Forms, Publications and Maps

Chapter 5, Section 5.9.C Calculating Design Life ESALs for Superpave Paving Courses

- Use the 20-year Design Life ESALs to specify the correct mix
 - < 0.3 million ESALs
 - Wearing/Binder Course uses 50 gyrations
 - Base Course uses 75 gyrations
 - 0.3 to < 3.0 million ESALs
 - 3.0 to < 10.0 million ESALs
 - 10.0 to < 30.0 million ESALs
 - 30.0 million ESALs and greater

***PennDOT ESAL Calculator available in ECMS File Cabinet for download**

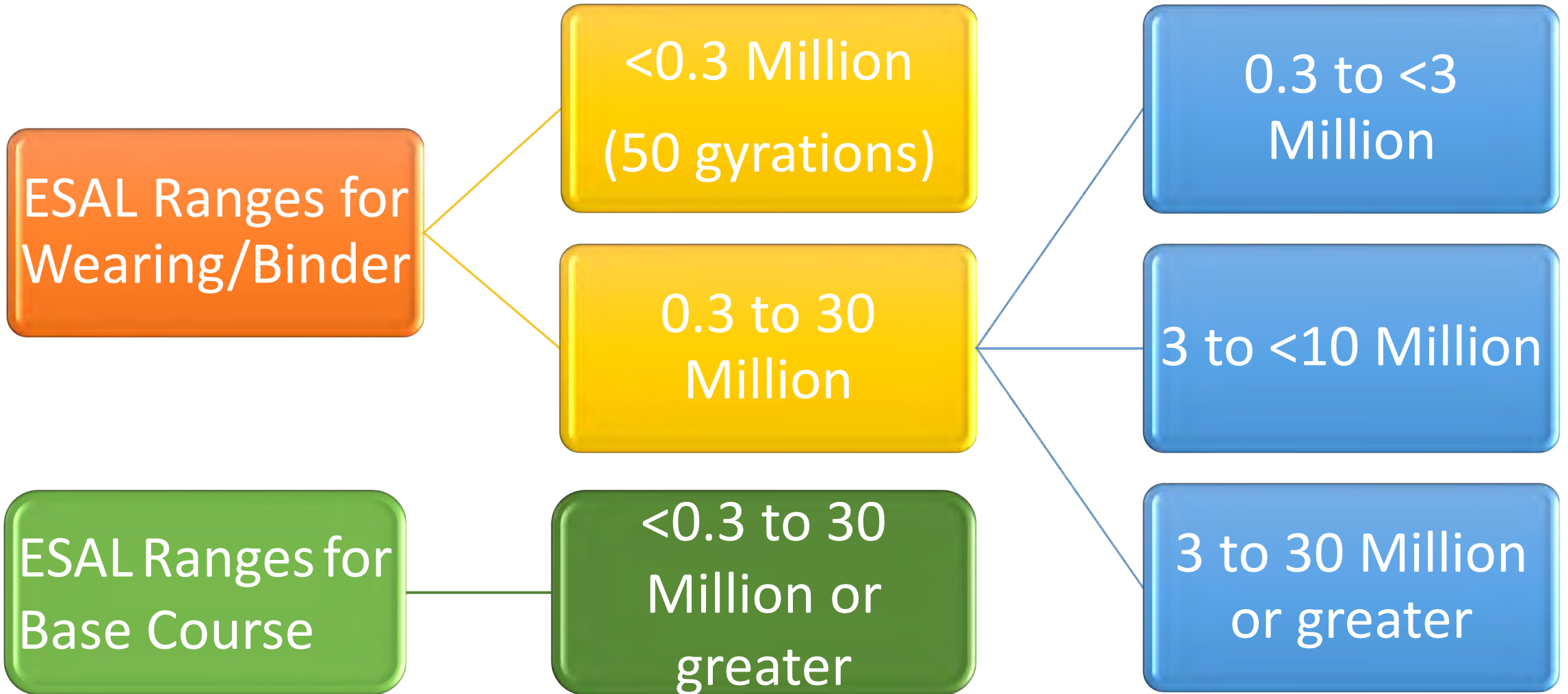
75 gyrations for **ALL** mix types



SUPERPAVE ESAL EXAMPLES

JMF

ESAL Design



PENNDOT ASPHALT THICKNESSES

Publication 242, Chapter 9

**TABLE 9.5
SUPERPAVE MATERIAL THICKNESSES**

SUPERPAVE MATERIAL	MINIMUM DESIGN THICKNESS	MAXIMUM DESIGN THICKNESS
4.75 mm Wearing Course*	0.625 in	0.75 in
6.3 mm Wearing Course*	0.75 in	1.25 in.
9.5 mm Fine Grade Wearing Course*	1 in	<1.5 in
9.5 mm Wearing Course*	1.5 in	2 in
12.5 mm Wearing Course*	2 in	3 in
19.0 mm Binder Course	2.5 in	4.5 in
25.0 mm Binder Course	3 in	5.5 in
25.0 mm Base Course	3 in	As required by design
37.5 mm Base Course**	4.5 in	As required by design
Asphalt Rich Base Course	3 in	6.0 in

*When used as a wearing course, not for scratch or leveling. Reference [Table 10.5](#) when using as a scratch or leveling course.

**Use only when material quantity requirement is greater than 5,000 tons. For Superpave Maximum Construction Lift Thicknesses reference Publication 408, *Specifications*, Section 309.3(h)1.b.

Publication 408, Section 413

**TABLE G
Mixture Minimum Compacted Depths**

Mixture	Minimum Depth
9.5 mm Wearing Course	1 1/2 in.
12.5 mm Wearing Course	2 in.
19 mm Binder Course	2 1/2 in.
25 mm Binder Course	3 in.

Publication 408, Section 313

313.3(h)1.b Spreading and Finishing (Mixture Placement Depths)

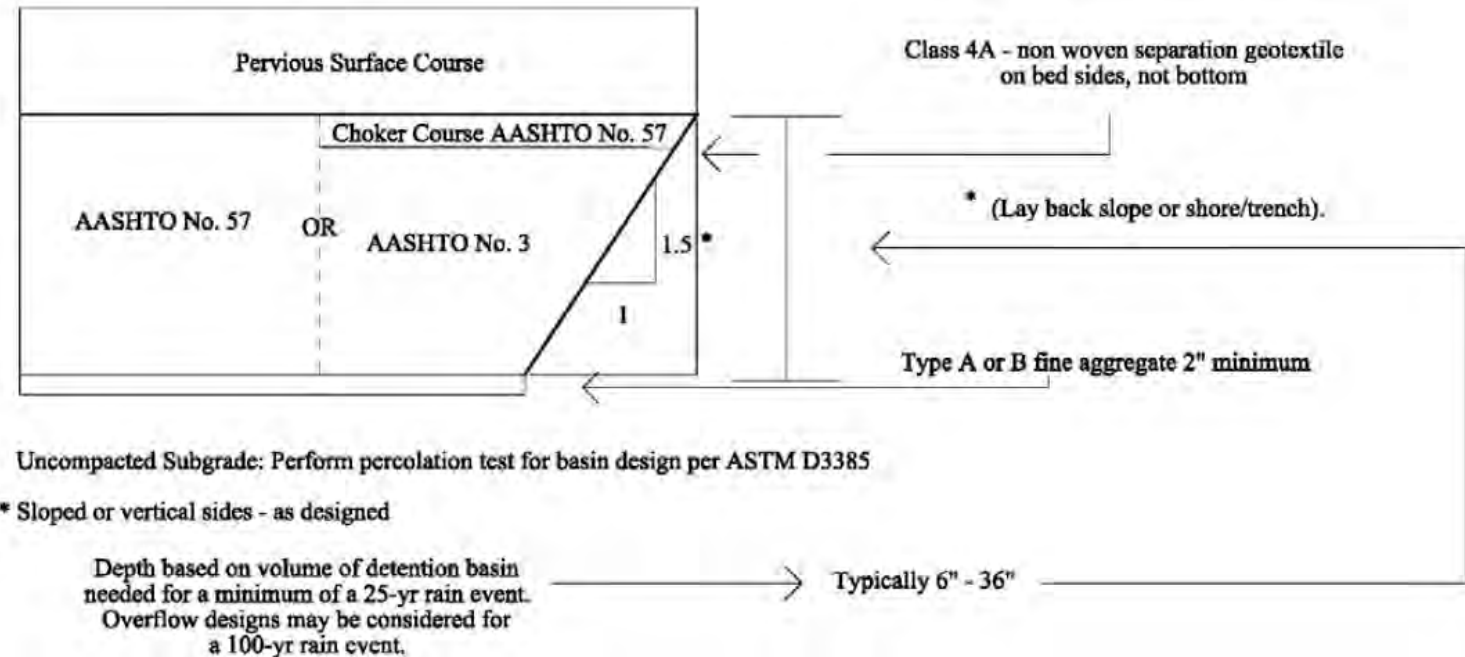
Mixture	Minimum Lift Depth	Maximum Lift Depth
25 mm Base Course	3 in.	6 in.
37.5 mm Base Course	4 in.	8 in.



PERVIOUS PAVEMENT SYSTEMS

- Refer to [Pub. 242, Pavement Policy Manual](#) for design depths of pervious asphalt and concrete surface courses
- Refer to [Pub. 584, PennDOT Drainage Manual](#) for use guidelines
- Refer to [Pub. 23, Maintenance Manual](#) for maintenance requirements
- Refer to [Pub. 888, Stormwater Control Measure Maintenance Manual](#) for stormwater guidelines
- Refer to [Pub. 408, Highway Construction Specifications](#), Section 420 for Pervious Asphalt Pavement System and Section 520 for Pervious Concrete Pavement System for construction specifications and mix design

FIGURE K.1
PERVIOUS SYSTEM DESIGN



HOT POUR MASTICS

Hot-applied pourable self-adhesive asphalt binder containing selected aggregate for load-bearing and skid-resistant characteristics

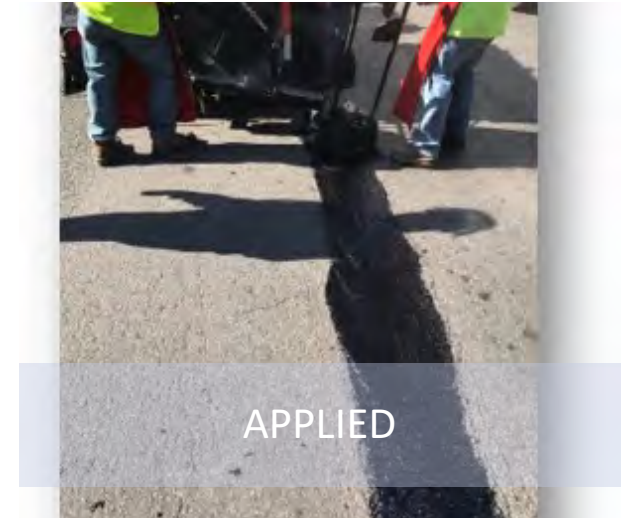
Hour-pour Mastic components

1. Polymer-modified asphalt binder
2. Specially selected aggregate
3. Mastic Melter (Kettle)

Range of Applications

- Pavement seams and shoulder joints
- Filling wide cracks (≥ 1 ")
- Filling, sealing & repairing pavement distresses
- Filling potholes and utility cuts
- Raveled pavements
- Around manholes, drains, and culvert repairs
- Rough driving surfaces (depressions, ruts & cupped pavements)
- Leveling bridge approaches and bridge deck repairs

[PennDOT Bulletin 15 \(Pub. 35\), Qualified Products List for Construction](#)



Conditionally approved in Bulletin 15 under Section MISC Hot Pour Mastics for Asphalt and Concrete Pavements.

Follow the manufacturer's recommendations and specifications.



ROLLER COMPACTED CONCRETE

Refer to Pub. 242, Section 4.11 for guidelines, and Section 8.15 for the design procedure.

Section 8.15 has design tables with thicknesses ranging from 4.5" to 6.5" RCC up to 150 ADTT for Collectors and Local roadways.

PennDOT RCC Guidelines

- For shoulders – Pub. 408, Section 658
- For roadways with ADT $\leq 2,000$ and speed limit ≤ 55 m.p.h. – Pub. 408, Sections 502 and 323
- For roadways ≥ 35 m.p.h. – diamond grind the final wearing surface



ROLLER COMPACTED CONCRETE

Roller Compacted Concrete (RCC) has an open surface texture like asphalt and the high compressive strength of concrete.

Nationally RCC pavements have been placed on various subgrade and subbase courses. All options have had successful results.

RCC has been used commercially in shipping warehouses, parking lots, ports, and areas with heavy traffic.

PennDOT, District 4 has a planned 5.5" depth placement of RCC on SR 1012 in Lackawanna County for the fall of 2023.



ROLLER COMPACTED CONCRETE

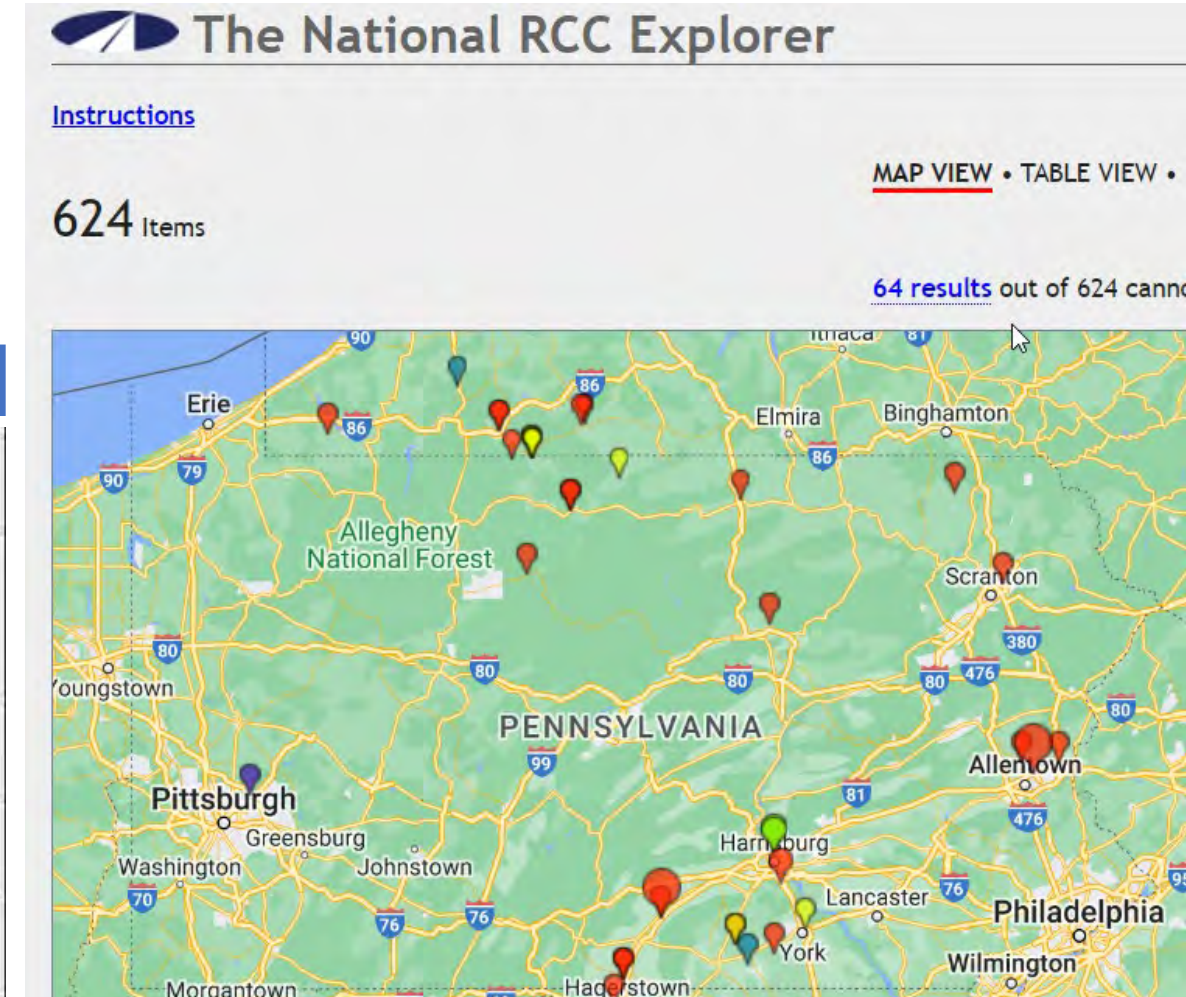
The National RCC Explorer provides project details and locations where RCC has been used in North America.

<http://rcc.acpa.org/webapps/rccexplorer/index.html>

Table View

Project	Application	State	Year Built	Thickness
Masters Concrete Step Units	Industrial/Trucking Facility	PA	2017	6
Agricultural Commodities, Inc.	Other (e.g., Logging Facility, Composting Area, Storage Yard)	PA	2016	8
Armada Supply Chain	Industrial/Trucking Facility	PA	2016	8
Compass Natural Gas	Industrial/Trucking Facility	PA	2016	7
Potter County Farms	Industrial/Trucking Facility	PA	2016	6

Map View



SUMMARY



Highly recommend specifying Superpave (Warm Mix) as per Section 413/313 instead of Marshall Mixes or Hot Mix

Refer to Pub. 447, 408, and 242 for construction items, design standards, and current practices

Specify minimum/maximum depths and ESAL ranges per Pub. 242 and Pub. 408



CONTACT INFORMATION

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Pavement Design Engineer

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AUTOMATED ENFORCEMENT SYSTEMS



ENABLING LEGISLATION

- **Automated Red Light Enforcement**

- First class city: [75 Pa.C.S. §3116](#)

- Initial legislation in 2002

- Others: [75 Pa.C.S. §3117](#)

- Initial legislation in 2012

- Sunsets July 15, 2027

- **Automated Speed Enforcement**

- Work zones: [75 Pa.C.S. §3369](#)

- Initial legislation in 2018

- Sunsets February 2024 (5 years + 120 days after 10/19/2018)

- Pilot corridor (Roosevelt Blvd): [75 Pa.C.S. §3370](#)

- Initial legislation in 2018

- Sunsets December 2023 (5 years + 60 days after 10/19/2018)



ARLE SYSTEMS ELIGIBILITY

- First class cities (§3116) – Philadelphia
- Second class cities (§3117) – Pittsburgh
- Municipalities meeting the following (§3117):
 - Located in a qualifying county:
 - Second Class A Counties – Bucks, Delaware, Lancaster, Montgomery Counties
 - Third Class County with population between 490,000 and 510,000 in 2010 – Chester County
 - Municipal population exceeded 20,000 in 2010 Census
 - Municipal police agency accredited by PA Chiefs of Police Assn.
- https://www.dot.state.pa.us/public/Bureaus/BOMO/Portal/ARLE_intersection_selection.pdf



ARLE SYSTEMS ELIGIBILITY

Exhibit 1-1 ARLE Approved Municipalities in PennDOT Engineering District 6-0

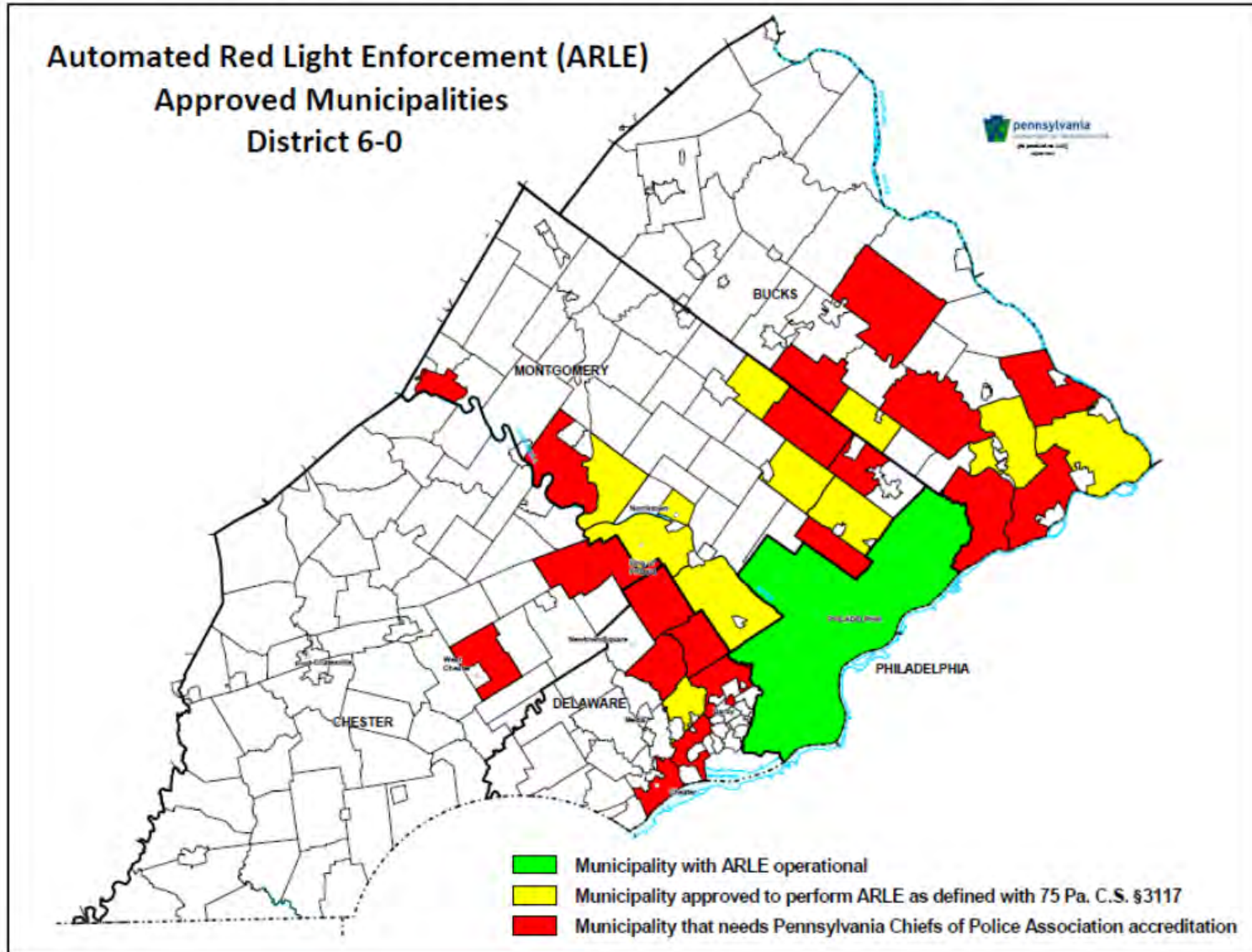


Exhibit 1-2 Status of ARLE Approved Municipalities

Municipal Name	County	Currently ARLE Eligible
Abington Township	Montgomery County	Operational
Bensalem Township	Bucks County	NO
Bristol Township	Bucks County	NO
Buckingham Township	Bucks County	NO
Cheltenham Township	Montgomery County	NO
City of Chester	Delaware County	NO
East Hempfield Township	Lancaster County	YES
Falls Township	Bucks County	YES
Haverford Township	Delaware County	NO
Horsham Township	Montgomery County	YES
Lancaster City	Lancaster County	NO
Lower Makefield Township	Bucks County	NO
Lower Merion Township	Montgomery County	YES
Lower Providence Township	Montgomery County	YES
Marple Township	Delaware County	NO
Manheim Township	Lancaster County	YES
Middletown Township	Bucks County	YES
Montgomery Township	Montgomery County	YES
Norristown Borough	Montgomery County	YES
Northampton Township	Bucks County	NO
City of Philadelphia	Philadelphia County	Operational
City of Pittsburgh	Allegheny County	YES
Pottstown Borough	Montgomery County	NO
Radnor Township	Delaware County	NO
Ridley Township	Delaware County	NO
Springfield Township	Delaware County	YES
Tredyffrin Township	Chester County	NO
Upper Darby Township	Delaware County	NO
Upper Dublin Township	Montgomery County	YES
Upper Merion Township	Montgomery County	NO
Upper Moreland Township	Montgomery County	NO
Upper Providence Township	Montgomery County	NO
Warmister Township	Bucks County	YES
Warrington Township	Bucks County	NO
West Goshen Township	Chester County	NO



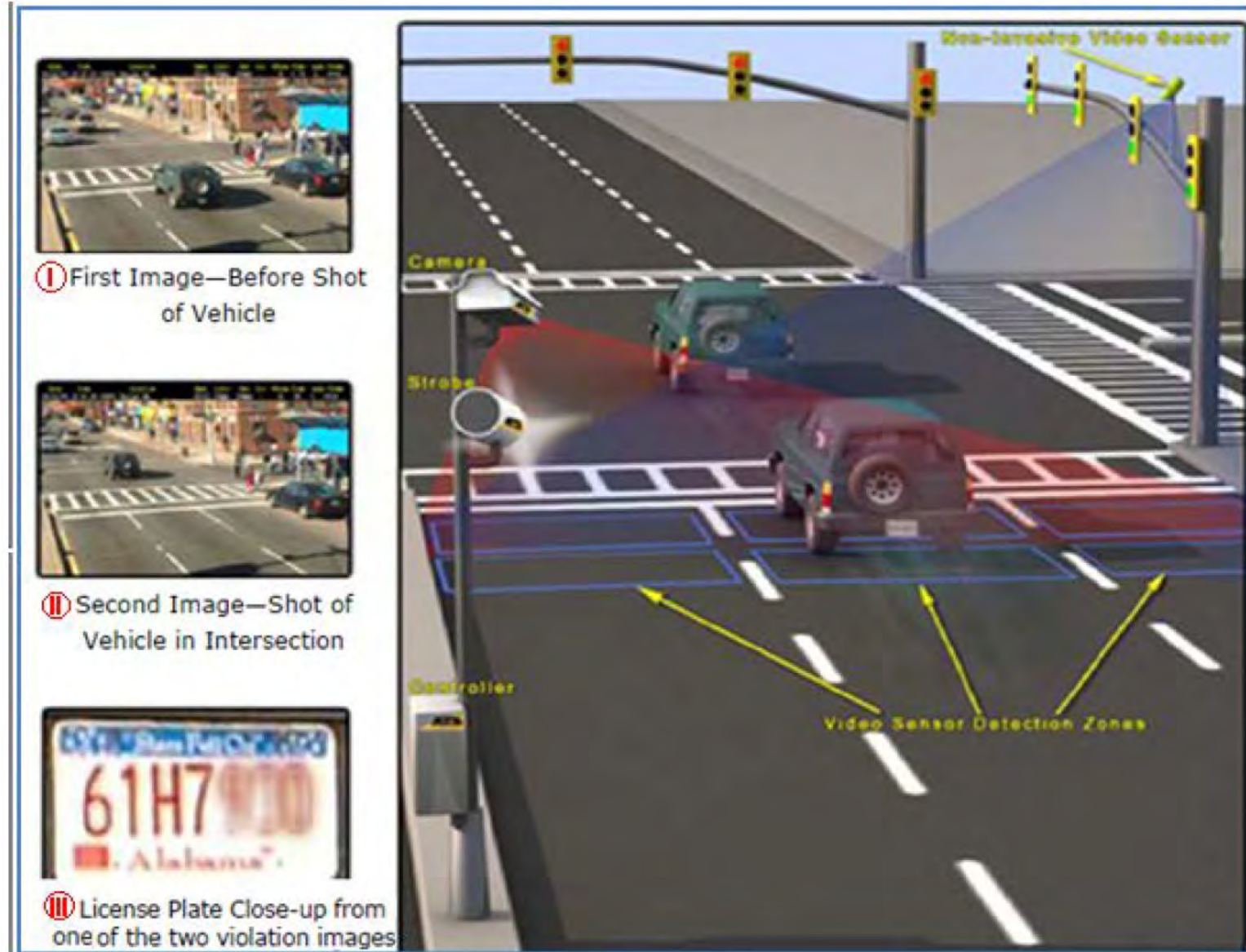
SYSTEM ADMINISTRATOR

- Must be designated (can be municipality or 3rd party)
- Supervises and coordinates administration of violations
- Receives payment for violations
- Submits fines to PennDOT
- Prepares annual report for state legislature
- Schedules hearing for contested violations before a hearing officer
- Files with magisterial district judge for violations appealed from hearing officer



NOTICE OF VIOLATION

- Prepared by system administrator
- Must be issued by police officer employed by municipality
- Violations go to vehicle owner
- Max \$100 fine, no points



REVENUE

- Revenue limited to 5% of municipality's annual budget
- All revenue after covering operation and maintenance costs is submitted to PennDOT restricted account for Transportation Enhancement Grants Program
- \$128 million grant awards from ARLE fines since 2010



OTHER REQUIREMENTS IN §3117

- Municipal ordinance required
- Compensation to vendor may not be based on number of citations issued; must be based on value of equipment and services provided
- Intersections must be approved by PennDOT before installation
- Must use PennDOT-approved signs and equipment



PENNDOT INTERSECTION APPROVAL

- Intersections where documented red light violation and/or crash problems exist
- Consider other countermeasures first
 - Check signal head visibility compliance with Pub 149/MUTCD
 - Remove obstructions which may contribute to red light violations
 - Mitigate geometric issues causing red light running
- Yellow change and All-Red clearance intervals must comply with PennDOT policy or deviate with documented engineering judgment



PENNDOT APPROVAL PROCESS

- Municipality/system administrator identifies candidate location
- Municipal resolution concurring with location
- Submit request to PennDOT
- PennDOT review and recommendation
 - Concurrence
 - Request for additional information
 - Identify alternative intersection
- Proceed in accordance with direction provided in approval letter
- System administrator notify PennDOT two weeks prior to beginning ARLE warning period



PROGRAM CONTACTS

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NEXT MEETING/ADJOURNMENT

Thursday November 2, 2023