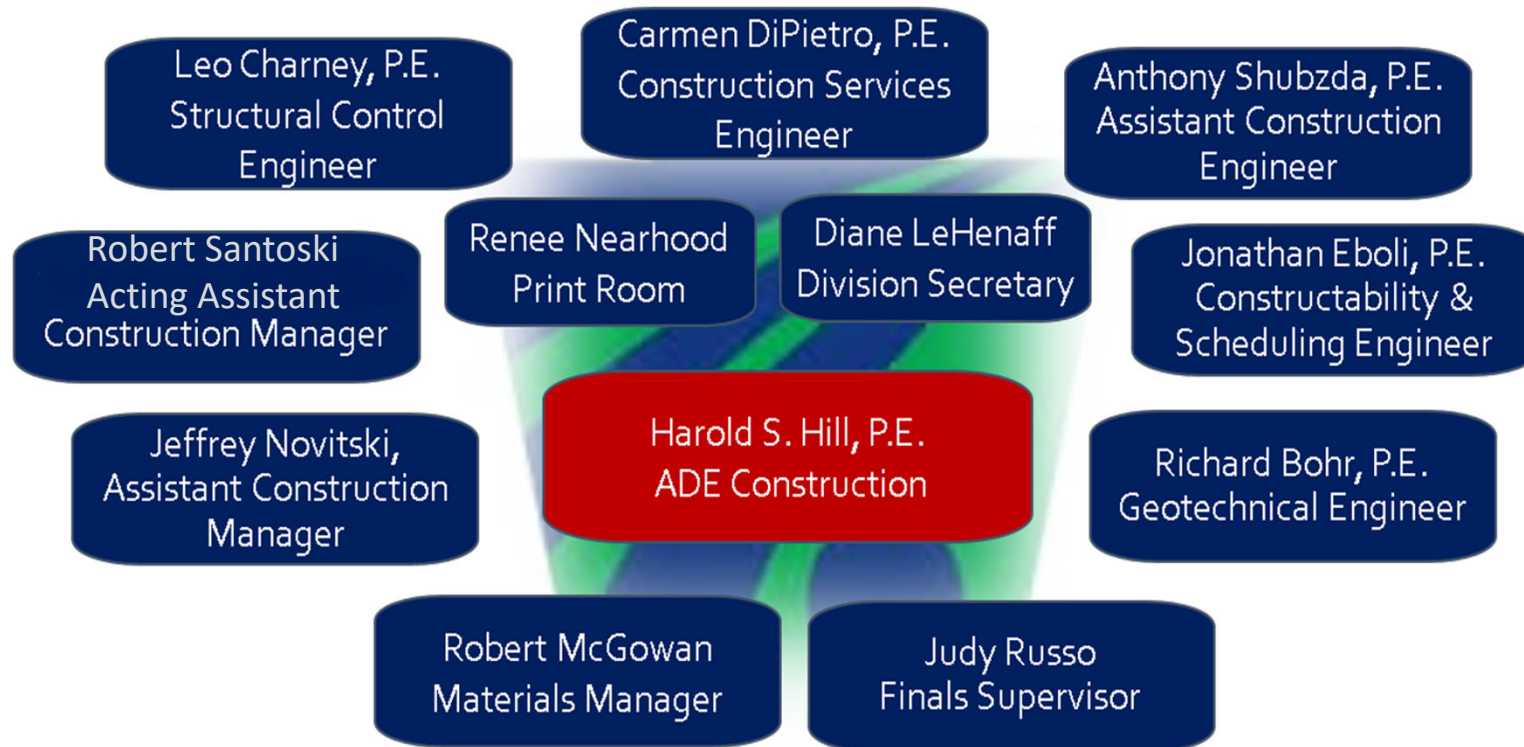


## Engineering District 4-0 Construction Division



## ► PennDOT Engineering District 4-0 Construction

### 2019 Construction Projects Dollar Value

Lackawanna – 19	\$110,032,782
Luzerne – 31	\$211,959,129
Wyoming – 5	\$8,894,068
Susquehanna – 13	\$25,741,714
Wayne – 8	\$13,831,729
Pike – 11	\$238,096,789
<i>District Total – 87 projects</i>	<i>\$608,556,211</i>



## Construction Accomplishments

### Material Totals - 2018

- Bituminous – 654,923 tons
- Concrete – 14,413 cubic yards
- Aggregates – 480,796 tons



## ➤ District 4-0 Significant Projects: \$10 Million and Over

Year	County	ECMS	Project	SR	Section	Number of Years
2018	Wayne/Pike	76861	I-84 E&W I-4R Wayne - E26	84	450	4
2019	Luzerne	98247	I-81 NB/SB Mill/Fill – Sugar Notch to Avoca	81	345	2
2018	Lackawanna	106328	I-380 Mill/Fill Lackawanna	380	245	2
2019	Lackawanna	109304	I-81 NB/SB Mill/Fill – County Line to Scranton	81	249	2
2020	Lackawanna	61813	Casey Highway Diamond Grinding	6	D04	2
2020	Pike	85766	I-84 E&W I-4R MP 40 – E46	84	494	4



## Surface Treatment

Longitudinal joints are to be sealed on all roads after the final wearing surface is placed. Added item and quantity to contracts.



## Surface Treatment

When milling provide for a scratch course, ie., mill 2", scratch  $\frac{1}{2}$ ", overlay 1  $\frac{1}{2}$ ".





## Surface Treatment

Include a note in the Construction Restrictions to record the location of existing pavement markings prior to milling and paving operations for projects that include pavement marking pay items but do not require a Pavement Marking Plan



## Surface Treatment

On mill and fill projects where the milling depth gets close to the top of the existing underlying concrete pavement, we consider milling down to the concrete surface to re-establish the joints in the underlying concrete and installing heavy duty membrane to prevent reflective cracking. Discuss with Pavement Engineer, Construction, and Plans Engineer for determination of which project this is used on.





## Surface Treatment

On mill and fill projects, when transverse joint repairs are performed include “as directed” items for transverse joint repair and base repair as indicated in the detail.



## Surface Treatment

Complete the final wearing course within 14 consecutive calendar days of placing the scratch/leveling course. The purpose is to limit the amount of time the public drives on a road with exposed manholes/drainage inlets and also to allow for water to make it into the inlets



## District 4-0 2019 Projects

### Pike- ECMS 75762- I-84-448 –First I-84 Section

- I-4R Project - SR 6 to NY State Line
- PIKE COUNTY
- WESTFALL, MILFORD AND DINGMAN TOWNSHIPS AND MATAMORAS BOROUGH
- \$65.7M
- SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, RPS, PG **76-22**, 10 TO < 30 MILLION ESALS, 12.5 MM MIX, 2" DEPTH, SRL-E
- 744,250 sy of asphalt wearing course
- Completed October 2018



## > District 4-0 2019 Projects

### Pike- ECMS 76860- I-84-449

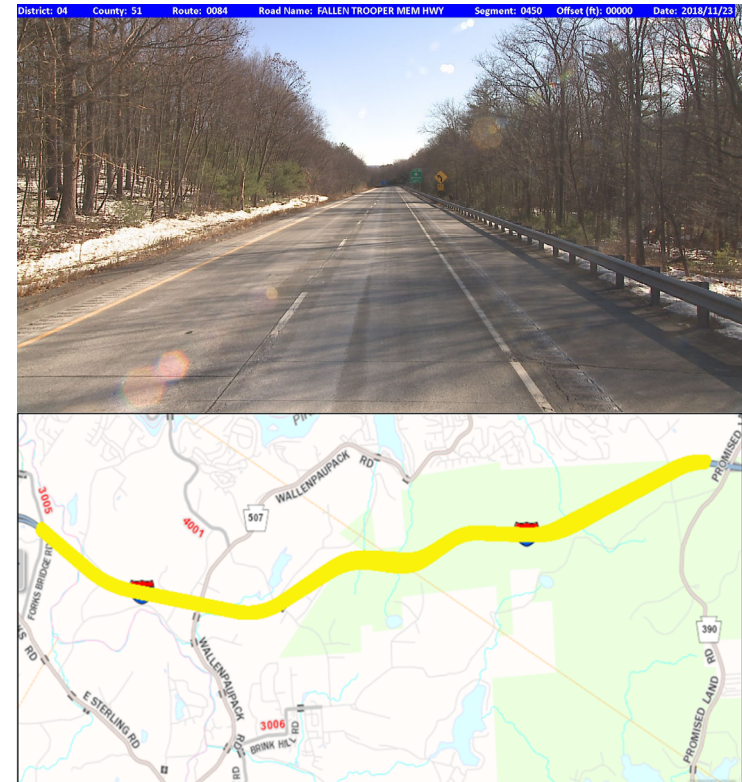
- I-4R Project - MM 34 - 40
- PIKE COUNTY
- BLOOMING GROVE AND DINGMAN TOWNSHIPS
- \$69.6M
- SUPERPAVE ASPHALT MIXTURE DESIGN, HMA WEARING COURSE, RPS, PG 76-22, 10 TO < 30 MILLION ESALS, 12.5 MM MIX, 2" DEPTH, SRL-E
- 345,595 sy of asphalt wearing course
- Under Construction – Completion May 2020



## District 4-0 2019 Projects

### Pike- ECMS 76861- I-84-450

- I-4R Project
- WAYNE and PIKE COUNTY
- BLOOMING GROVE AND DINGMAN TOWNSHIPS
- \$103.8M
- GREENE, PALMYRA AND STERLING TOWNSHIPS
  - 0419-1320 STONE MATRIX ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, RPS PG 76-22, 12.5 MM MIX, 2" depth SRL-E
  - 48,794 sy of SMA





## Progression to SMA in I-4R

### I-84 Section 448

- SUPERPAVE
  - HMA BASE COURSE
  - PG 64-22
  - 10 TO <30 MILLION ESALS
  - 25.0 MM MIX
  - 5" DEPTH
- SUPERPAVE
  - HMA BINDER COURSE RPS
  - PG 76-22
  - 10 TO <30 MILLION ESALS
  - 19.0 MM MIX
  - 2 1/2" DEPTH
- SUPERPAVE
  - HMA WEARING COURSE, RPS
  - PG 76-22
  - 10 TO <30 MILLION ESALS
  - 12.5 MM MIX
  - 2" DEPTH, SRL-E

### I-84 Section 449

- SUPERPAVE
  - BASE COURSE
  - PG 64-22
  - 10 TO <30 MILLION ESALS
  - 25.0 MM MIX
  - 5 1/2" DEPTH
- SUPERPAVE
  - BINDER COURSE, RPS
  - PG 76-22
  - 10 TO <30 MILLION ESALS
  - 19.0 MM MIX
  - 2 1/2" DEPTH
- SUPERPAVE
  - WEARING COURSE, RPS
  - PG 76-22
  - 10 TO <30 MILLION ESALS
  - 12.5 MM MIX / Minimum Effective Asphalt
  - 2" DEPTH, SRL-E

### I-84 Section 450

- LLAP, SUPERPAVE
  - WMA BASE COURSE
  - PG 64-22
  - <3 MILLION ESALS
  - 37.5 MM MIX
  - 7 1/2" DEPTH
- LLAP, SUPERPAVE
  - WMA BINDER COURSE RPS
  - PG 76-22
  - >= 30 MILLION ESALS
  - 19.0 MM MIX
  - 2 1/2" DEPTH
- LLAP, STONE MATRIX ASPHALT
  - WMA WEARING COURSE, RPS
  - PG 76-22
  - 12.5 MM MIX
  - 2" DEPTH, SRL-E

**Class-4 Geo-textile under the subbase in order to create a stronger pavement cross section**





## Long-Life Asphalt Pavements (LLAP)

### Construction Specifications

- SMA only
- Tack all layers
- MTV required
- WMA Technology Required
- Ride incentive is optional
- Joint incentive / disincentive is required



## District 4-0 2019 Projects

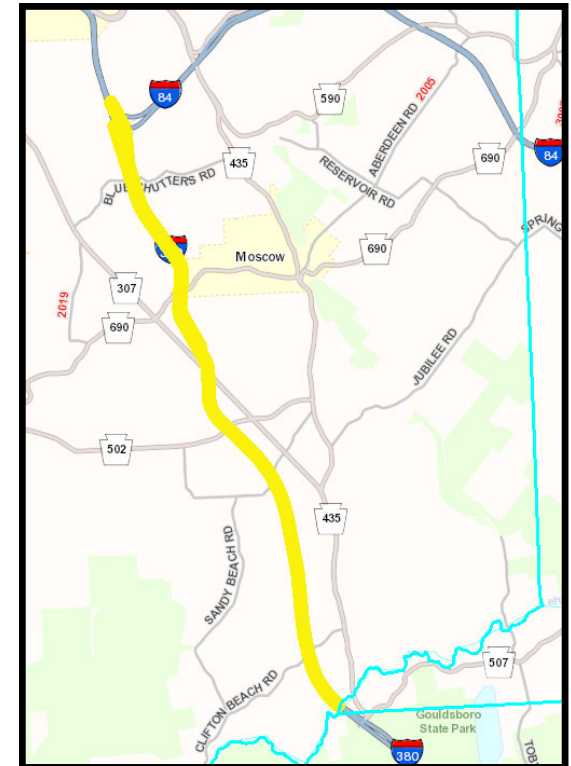
### Lackawanna - ECMS 106328 - 380/245 - I-380

#### Mill/Fill

Resurfacing on Interstate 380 in Clifton, Covington and Roaring Brook Townships and Moscow Borough

STONE MATRIX ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, RPS PG 76-22, 9.5 MM MIX, 1 ½" depth, SRL-E

SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BINDER COURSE, PG 76-22, 10 TO < 30 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH



## District 4-0 2019 Projects

### Lackawanna – ECMS 109304

- I-81 NB/SB Mill/Fill County Line to Scranton
- Interstate resurfacing and bridge preservation on I-81 (American Legion Memorial Highway) NB/SB from Luzerne County line to Mile Marker 185.5; in Moosic Borough and City of Scranton
- STONE MATRIX ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, RPS PG 76-22, 12.5 MM MIX, 2" DEPTH, SRL-E



## District 4-0 2019 Projects

### Luzerne – ECMS 98247

- I-81 Mill/Fill 2018, Sugar Notch to Avoca
- Resurfacing on Interstate 81 Northbound, Southbound, and ramps from Exit 164, Nanticoke to Exit 178, Avoca in Hanover, Newport, Plains, Wilkes Barre, Jenkins, Pittston Townships, Ashley, Dupont, Laflin Boroughs
- 0419-1306 STONE MATRIX ASPHALT MIXTURE DESIGN, HMA WEARING COURSE, RPS PG 76-22, **9.5 MM MIX**, 1 1/2" DEPTH, SRL-E





## Construction / Materials

Stone Matrix Asphalt (SMA) is a gap-graded HMA that is designed to maximize deformation (rutting) resistance and [durability](#) by using a structural basis of stone-on-stone contact. Because the aggregates are all in contact, rut resistance relies on aggregate properties rather than asphalt binder properties. Since aggregates do not deform as much as asphalt binder under load, this stone-on-stone contact greatly reduces rutting.



SMA Aggregate Structure. Notice the stone-on-stone contact of the larger aggregate particles.



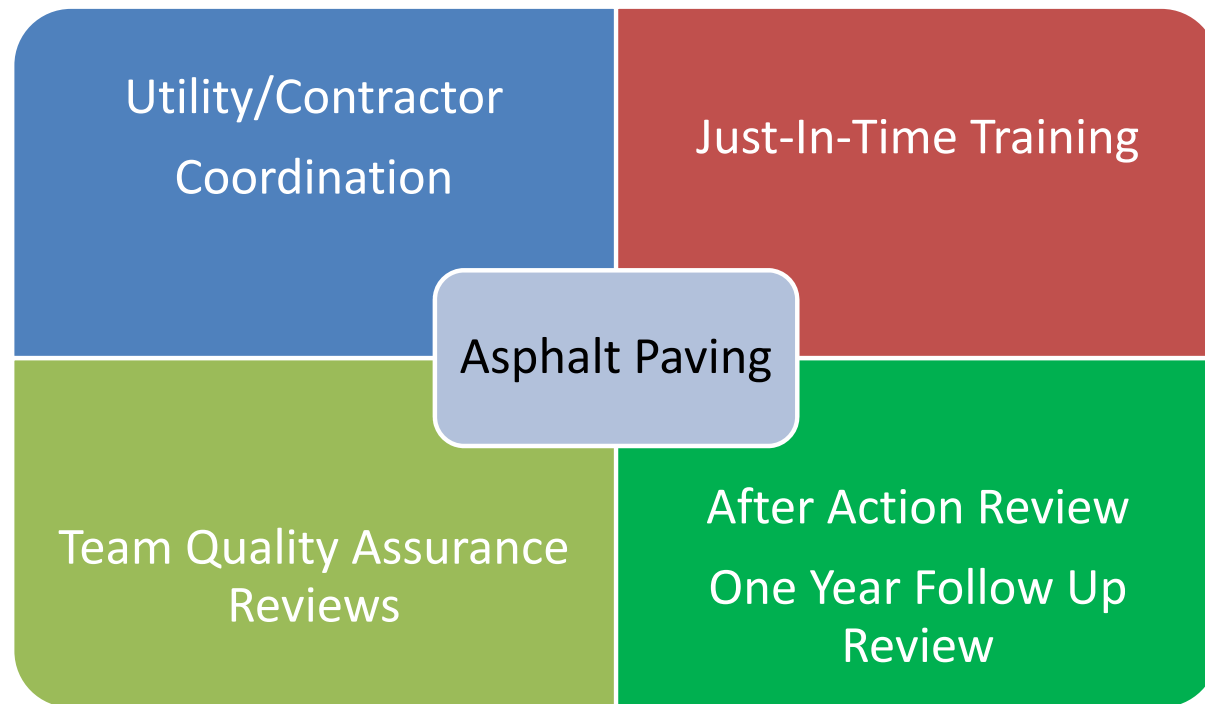
## ➤ Construction / Materials

- **Stone Matrix Asphalt will improve Pavement Life**
  - Superior to superpave mixes previous used
  - Higher rutting resistance
  - Higher asphalt content
  - Being utilized on Interstates this season





## Enhanced Quality Assurance



## ➤ Enhanced Quality Assurance

- **Utility / Contractor Coordination**

- Spring 2019 coordination meeting held with utility companies and contractors working in District 4
- Coordinate PA is a web service application developed by Pennsylvania 811 to support Public Works and utility project planning and utility coordination within the Commonwealth of Pennsylvania



## Enhanced Quality Assurance

- **Utility / Contractor Coordination Cont.**

- Coordinate PA is the next generation of utility coordination. Instead of meeting to discuss plans, or copy maps, or create a spreadsheet of projects, Utility Companies, public works directors and others describe their projects on a map. Coordinate PA then shows the projects and the project time frames for users and automatically identifies opportunities for collaboration between projects. The user can see project overlap within a geographic area and can query for overlap within a specific time frame.



## ➤ Enhanced Quality Assurance

- **Just in Time Training**

- Quality Assurance division short videos are designed to provide operation-specific training for all
- Asphalt Paving Surface Preparation
- Bituminous Pavement Longitudinal Joints



## Enhanced Quality Assurance

- **Team Quality Assurance Reviews**
  - ADE-Construction and QA representatives will perform quality assurance reviews
- **After Action Review / One Year Follow Up Review**
  - All paving projects will receive an after action review and a one year follow up review to ensure quality



**THANK YOU FOR ATTENDING THE 2019  
PENNDOT and PAPA BUS TOUR  
IN DISTRICT 4!**

**Harold S. Hill, P.E.  
ADE – Construction**

