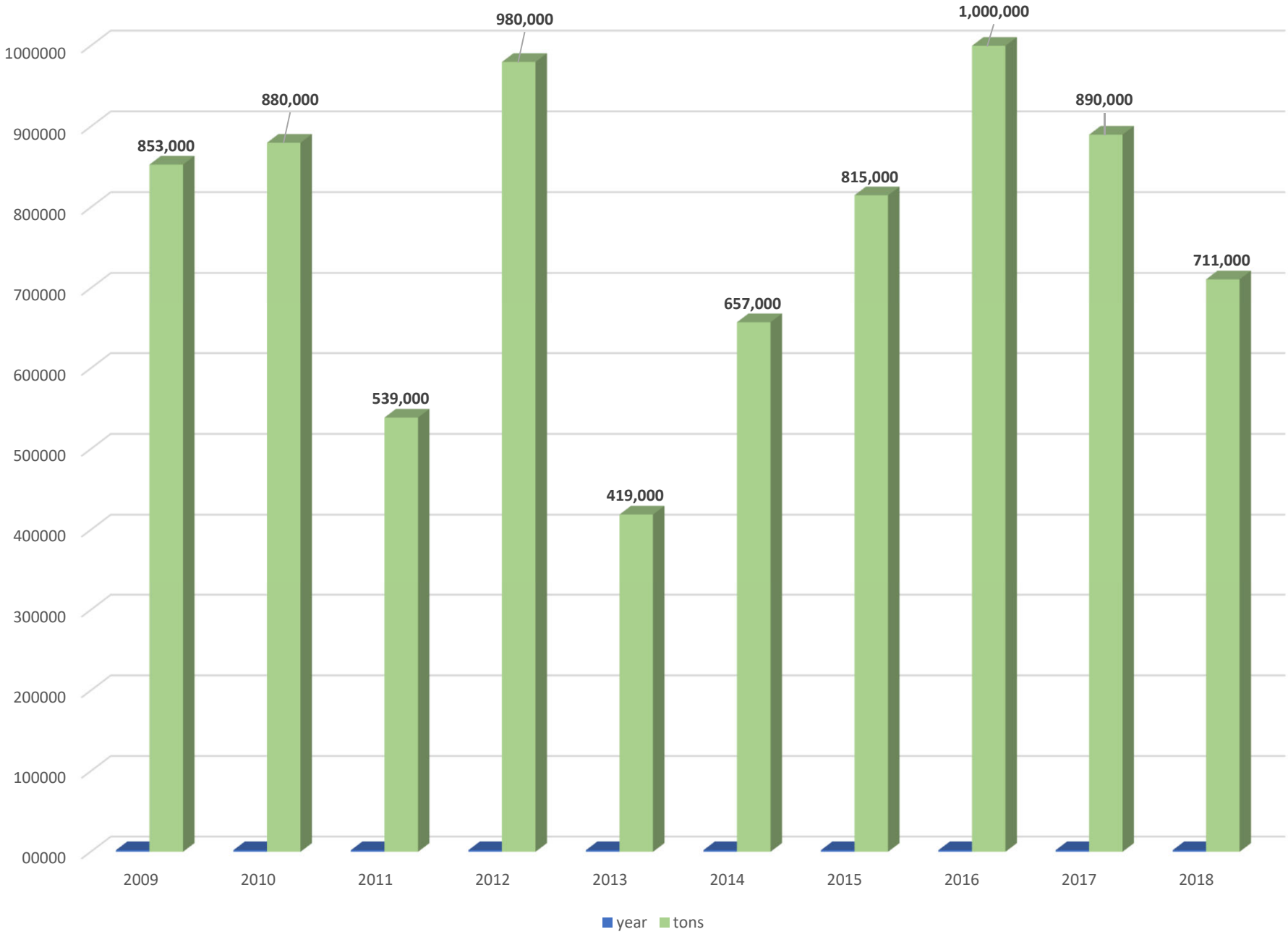
2019 PAPA Technical Meeting
Pennsylvania Turnpike Commission

➢ 2019 PTC Paving Award - Lindy

➢ Agenda

- HMA results for 2018
- Spec Changes
- HMA Designs for 2019
- Warm Mix project & Fiber Modified HMA project
- Materials Lab update
- Questions

HMA TONS PLACED



➢ Samples Tested – 590,393 ton

- 575 lots tested
- 90% of Lots receive full payment
- 56 failed Lots
  - 17 Lots were defective (14,760 ton)
    - 3 Lots were at 50% pay
    - 1 Lot at 0% pay
    - 13 Lots were removed and replaced (11,738 ton)

YEARLY HMA PAYMENT %					
	2014	2015	2016	2017	2018
# of Lots tested	602	779	844	795	575
Lots @ 100% pay	88%	90%	94%	90%	90%
% of Defective lots	4.3%	3.8%	2.6%	3.2%	3.0%
HMA FAILURES					
	2014	2015	2016	2017	2018
Low AC	5	2	2	2	2
High AC	2	5	0	9	1
Low #200	0	0	0	2	0
High #200	0	3	0	6	6
Low Voids	34	33	18	30	34
High Voids	28	38	37	21	11
Low/High Density	11/0	5/0	10/0	8/0	4/0

➢ HMA (tons) shipped by Size

- 12.5mm – 284,442
- (SMA 12.5mm – 88,734)
- 25mm – 130,552
- 19mm – 115,830
- RB25mm – 48,181
- 9.5mm – 11,388

➢ATPBC – 46,870

➢Certified – 74,027

- **TOTAL shipped – 711,290 ton**

➢ Average Density by Size

- 9.5mm – 94%
- 12.5mm – 94%
- SMA (12.5mm) - 95%
- 19mm – 95%
- 25mm – 95%
- RB25mm – 96%

➢ *Avg. Density - 95%*

(k) Joints.

1. Longitudinal Joints.

Seal all completed wearing surface transverse joints and all longitudinal joints between adjacent resurfaced lanes, medians and shoulders in the same calendar year in which the joint was completed. Seal all joints with rubberized joint sealing material meeting ASTM D6690-Type I from a manufacturer in Bulletin 15 as specified in Section 705.4(c). The sealing band must be 4” to 6” in width evenly applied by a disk or squeegee across the joint. The sealing band must be 4” to 6” in width evenly applied by a disk or squeegee across the joint.

2. Mixture Lot Acceptance (Standard Construction).

2.d. Lot Termination. The Contractor may request to terminate a lot if an issue affecting quality of the material is discovered. The request must be made in writing to the Representative, stating the reason for termination and the affected tonnage, which shall be removed and replaced at no cost to the Commission. Before paving resumes, the Contractor must provide written notification to the Representative that corrections have been made to the original cause for the lot termination. When paving resumes, a new lot number will be used. Any samples taken from the terminated lot shall be forwarded to the materials representative.

➢ HMA Designs for 2019

- No Virgin designs required in 2019
- HMA designs samples are verified at our Lab
  - PENNDOT roads need PENNDOT approved designs
- Field Core size has been a problem….
  - 4.c. Density Acceptance Samples. The Inspector will select three different sample locations in each sublot according to PTM No.1. With the Inspector present and in accordance with PTM 729, drill (1) 6-inch diameter core at each random location as soon as possible but no later than 24 hours following placement.

➢ Warm Mix Project

- A-115.00R001-3-02

  - 19mm – 27,987 ton
    - 34 Lots / 32 Lots @ 100% payment
    - 1 Lot @ 94% payment for low voids
    - 1 Lot defective for low voids
    - Density avg. was 95%

  - 12.5mm – 21,029 ton
    - 21 lots / 20 lots with 100% payment
    - 1 Lot @ 94% payment for low Voids
    - Density avg. was 94%

➢ HMA Fiber Modified 12.5mm

- A-076.00R001-3-02

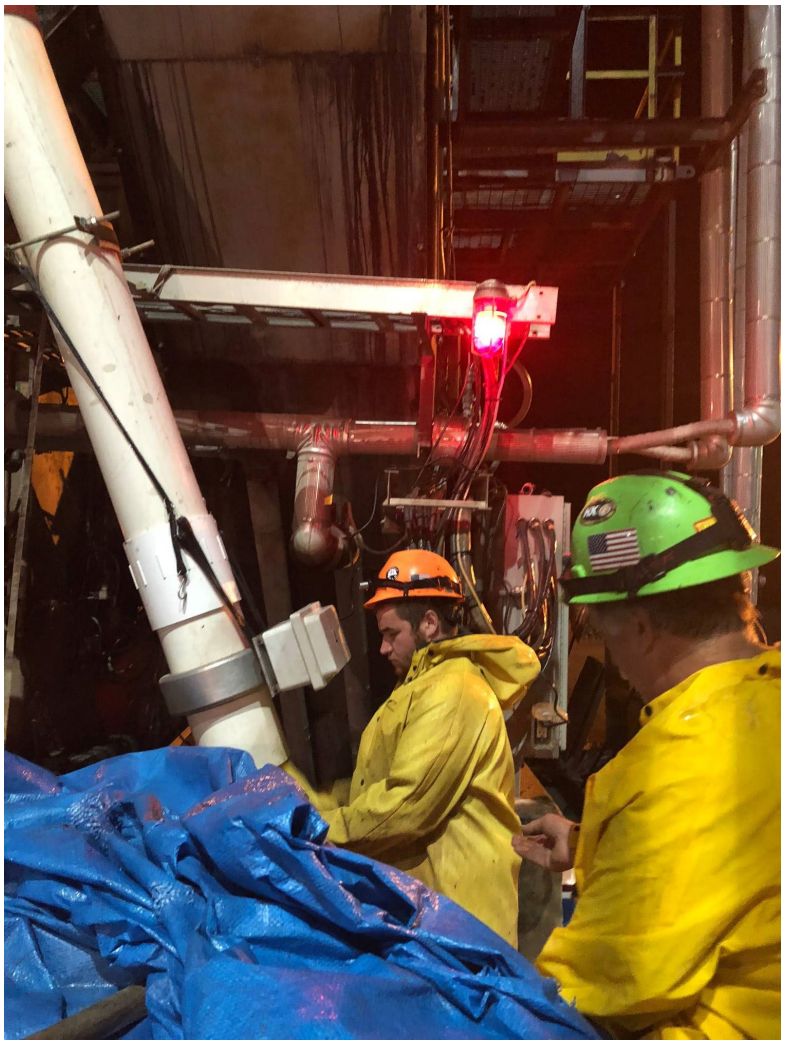
  - Forta-Fiber was added to 12.5 mm material –
    - 1 # bag per ton
    - Material will be placed on a total of 2.3 miles in *each* direction and *each* lane at specific mileposts

  - 4,466 ton required - 2,161 ton was placed in 2018

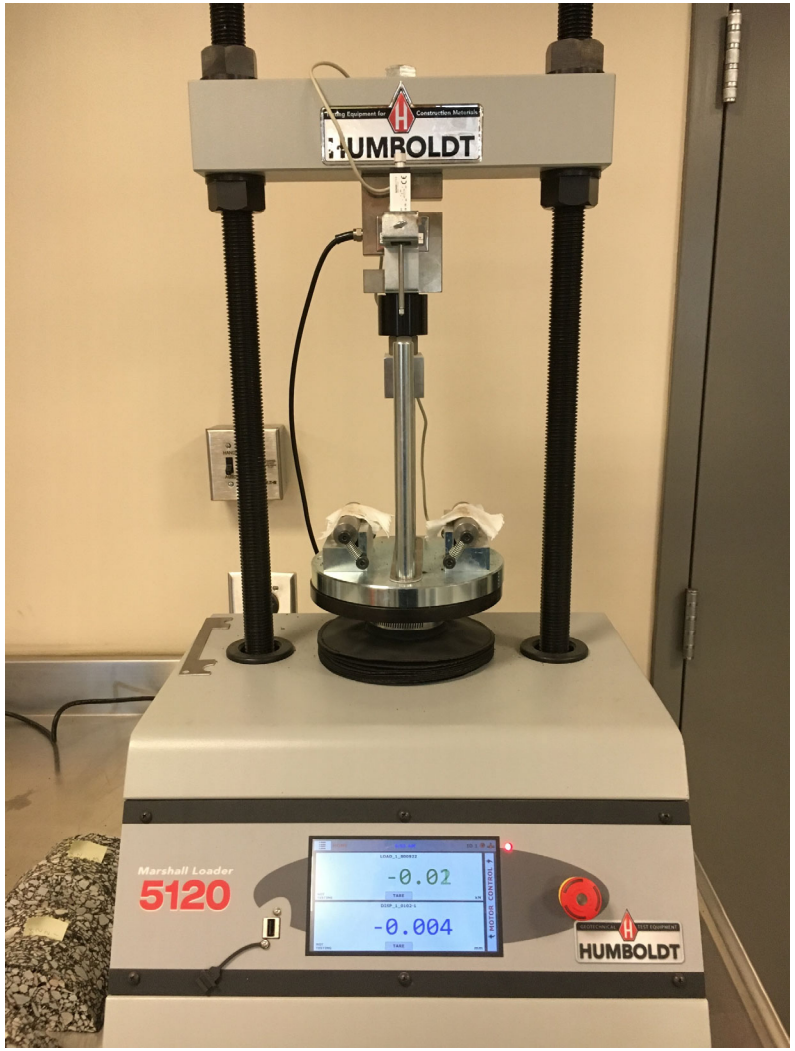
  - 2 Lots / 2 Lots @ 100% payment

  - Samples lifted for testing at PSU by the Producer/FORTA

- FORTA FIBERS (A-076.00R001-3-02) Locust Ridge Plant - 1 # Bag/ ton



➢ Performance Testing…




SMART-JIG™ | digital upgrade for older load frames

DIGITAL DATA COLLECTION FOR ASPHALT LOADING TESTS

Smart-Jig™, by InstroTek, is the first asphalt loading head with the smarts to turn your old load frame into an advanced testing system. The Smart-Jig is designed to perform three separate asphalt loading tests:

1. TSR Tensile Strength Ratio (AASHTO T 283, ASTM D4867, & D4867)
2. IDEAL-CT (ASTM WK60859)
3. MARSHALL (AASHTO T 245 & ASTM D6927)

The Smart-Jig is equipped with data acquisition electronics to collect data for the tests it performs. It's integrated high-precision load cell can collect data at a rate of 100 Hz. No printer, graphing pens, and printers are no longer required. Simply place the InstroTek Smart-Jig into your existing load frame, load the sample and start the test. The data is transferred to any Windows or an Android device via Bluetooth® or USB Cable. The Smart-Jig application collects, plots, prints, and stores the data directly on your PC, tablet or smartphone. The results can be easily emailed directly from the application or saved to your computer. The Smart-Jig app also displays fracture energy, peak tensile load, or strength information, eliminating the potential for errors from manual determination.

The InstroTek Smart-Jig is wireless and powered by a long lasting rechargeable Nickel-Metal Hydride battery. This ensures the Smart-Jig is always ready for testing and data analysis. Turn your old load frame into a Smart device using the InstroTek Smart-Jig.

Bluetooth

Smart-Jig™

Standard TSR test configuration shown above

FEATURES

Meets ASTM WK60859, AASHTO T 283, ASTM D6931, D4867, AASHTO T 245 & ASTM D6927

- Perform three tests with one jig – TSR (standard configuration), IDEAL-CT and Marshall (add-on components sold separately)
- Bluetooth enabled
- Completely integrated load cell, LVDT, data acquisition (LVDT not required for TSR test)
- Super-fast 100 Hz data collection rate
- Upgrades your current analog load frame to an advanced digital loading frame*
- Smart-Jig app displays fracture energy, peak load and strength information to reduce the potential of operator error from manual determination
- Eliminates the need for plotters and plotter pens
- Provides a digital record for printing, storage or email

Smart-Jig_1" IDEAL-CT test configuration shown

"Smart-Jig_4" Marshall test configuration shown

*Please call InstroTek for Smart-Jig compatible load frames.

SPECIFICATIONS

POWER SUPPLY	Rechargeable NiMH batteries
CHARGER	110/220V
DATA COLLECTION RATE	100 Hz (data points/second)
DATA FORMAT	PDF and CSV
BREAKING HEAD CONFIGURATIONS	100mm and 150mm
CONNECTIVITY	Bluetooth or USB Cable
LOAD CELL CAPACITY	50kN (10,000 lbs)
DIMENSIONS	8.5" x 7.5" x 10"
WEIGHT	14 lbs.

LOCATIONS: Research Triangle Park, NC phone: 919.875.8371 | Bensalem, PA phone: 215.645.1064 | Grand Rapids, MI phone: 616.725.5850
Denver, CO phone: 303.955.5740 | Austin, TX phone: 512.452.8848 | Las Vegas, NV phone: 702.270.3885 | Concord, CA phone: 925.363.9770
email: sales@InstroTek.com | visit: www.InstroTek.com

➢ Permeater Test

➢ PTC Material Managers

- East - (300 - 358 / A-20 – A-130)
  - Steve Havrilla
- Central – (146 - 300)
  - Brian Wible
- West – (0 - 146)
  - Chris Forry
- Materials Lab – (113.8 EB)
  - Brian Paroda

Thank You for your attention…
Have a SAFE Construction season!!

Any Questions ?