

Percent ~~Within Tolerance~~ *Limits* Acceptance of Asphalt Pavements

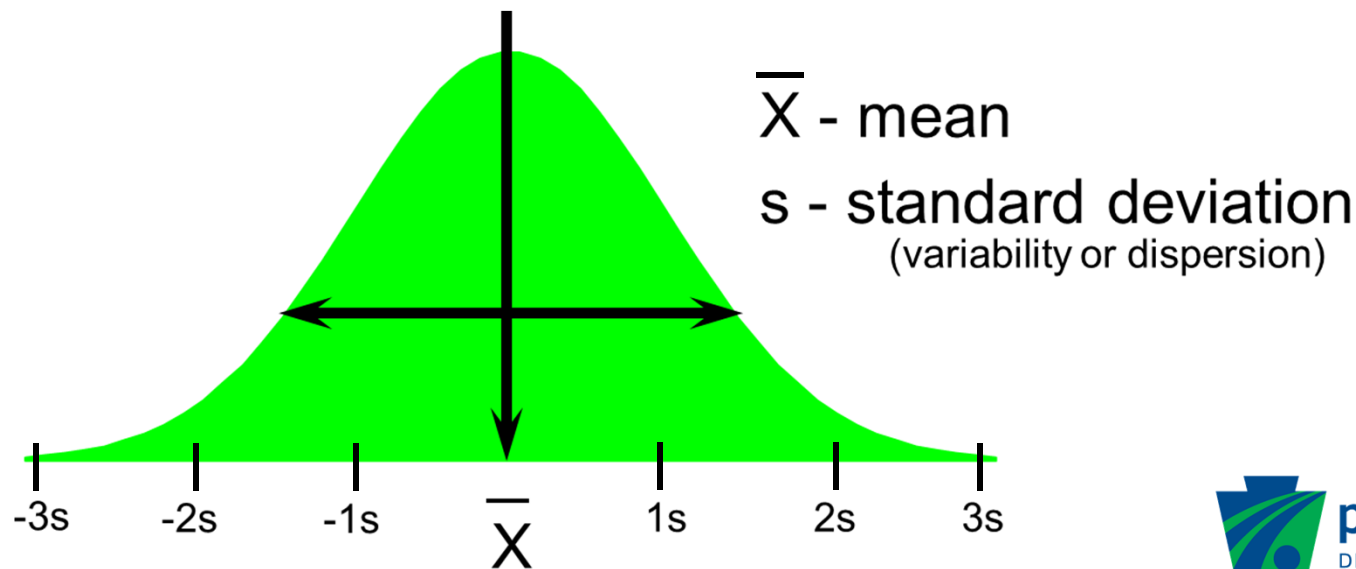
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Urban Engineers, Inc.

Quality

Continuation of the Goal of Increased Quality

- Target: Drive product consistency focused on job mix formula (JMF) (50% lot pay factor)
- Tighter adherence to field density spec. requirements (50% lot pay factor)



Two (2) Methods in Use

1. PWT-LTS (Laboratory Testing Section)

- Acceptance at LTS
- Gmm Verification included on Federally Funded and NHS Projects

2. PWT-HOLA (Hands On Local Acceptance)

- Department Acceptance, Contractor Lab
- Department Option to Witness Only on 100% State Funded and Non-NHS Projects
- Gmm Verification included on Federally Funded and NHS Projects.(Conducted at Local Lab)

Where can PWL be applied?

- Applicable to all bituminous paving items of Sections 309, 311, 316, 409, 410, and 411
- NOT applicable to:
 - Shoulders falling under Section 650 Items
 - Stone Matrix Asphalt (SMA)
 - Crumb Rubber Modified Asphalt Binder
 - Gap-Graded Asphalt Rubber Mixtures,
 - 6.3mm Thin Asphalt Overlay Courses
 - 4.75mm Asphalt Mixtures
 - Asphalt Warranty Pavements

A Group Effort



U.S. Department of Transportation
Federal Highway Administration



**NORTHEAST CENTER OF EXCELLENCE
FOR PAVEMENT TECHNOLOGY**



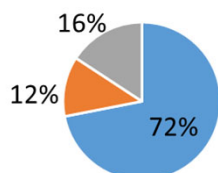
www.dot.state.pa.us

Implementation and Monitoring

2016

Contractors – 32 ea.
Plants – 57 ea.

2016 Lot Pay Factor
(% of Asphalt Plants)

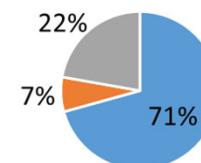


■ Incentive ■ 100% ■ Disincentive

2018

Contractors – 56 ea.
Producers – 99 ea.

2018 Lot Pay Factor
(% of Asphalt Plants)

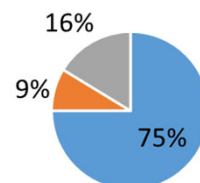


■ Incentive ■ 100% ■ Disincentive

2017

Contractors – 54 ea.
Plants – 92 ea.

2017 Lot Pay Factor
(% of Asphalt Plants)



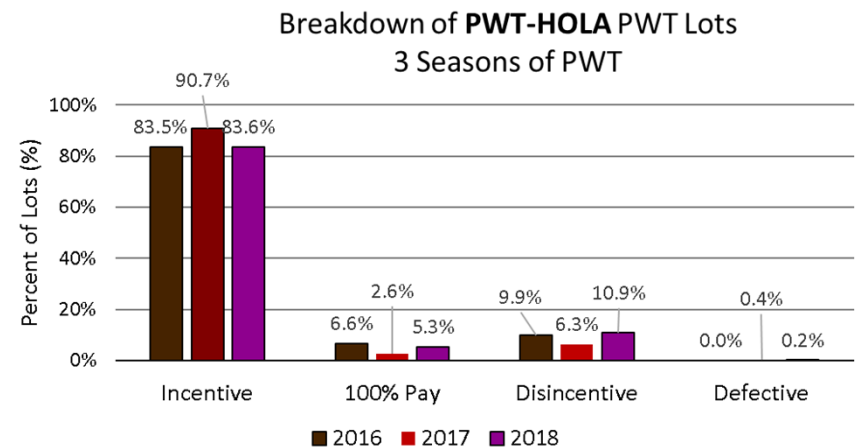
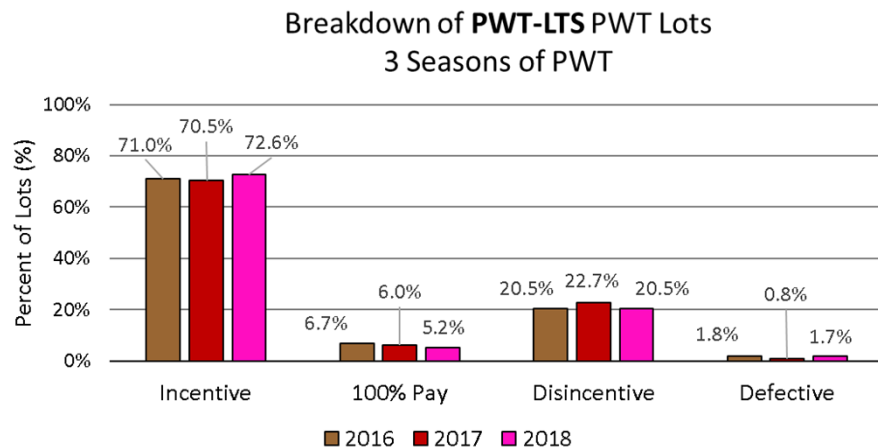
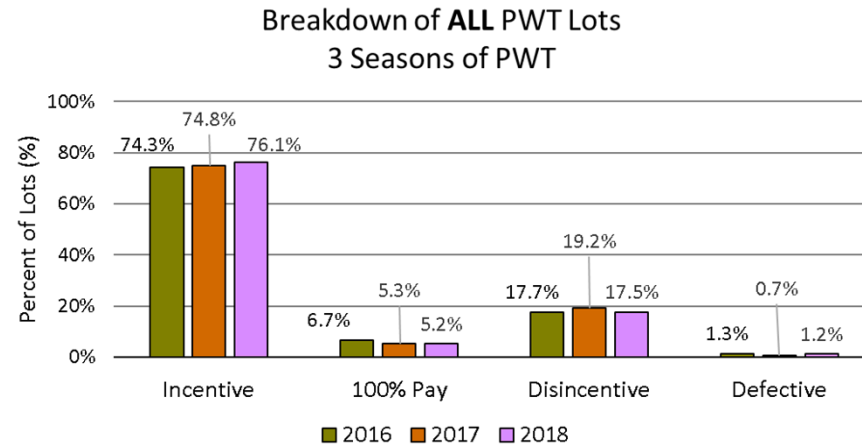
■ Incentive ■ 100% ■ Disincentive

Percent Within Limits (PWL)

3 – Year Summary

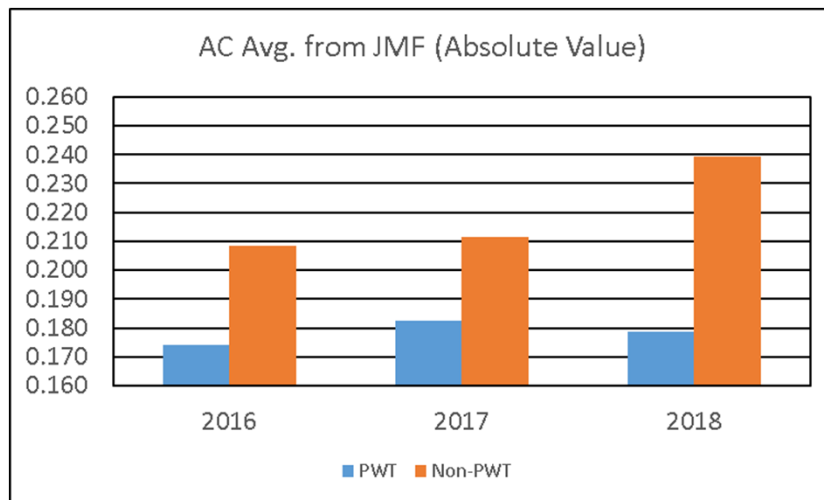
	PWT SUMMARY		
Year	2016	2017	2018
Number of PWT Projects Let	157	281	286
Number HOLA	24	48	40
Number LTS	133	233	246
Average Pay Factors (%)			
Asphalt Content	101.27	100.80	100.90
Primary Control Sieve	100.25	99.70	100.11
#200 Sieve	101.12	100.97	100.61
Density (Cores)	102.03	102.60	102.93
Average Density	94.2	94.4	94.6
Average Overall Lot Pay Factor (%)	1.01	1.01	1.02
Incentive (\$)	\$1,312,864.97	\$3,319,236.53	\$4,341,460.55
Disincentive (\$)	-\$467,422.49	-\$1,150,962.19	-\$1,335,320.49

Comparison of Lot Payments 3 – Year Summary

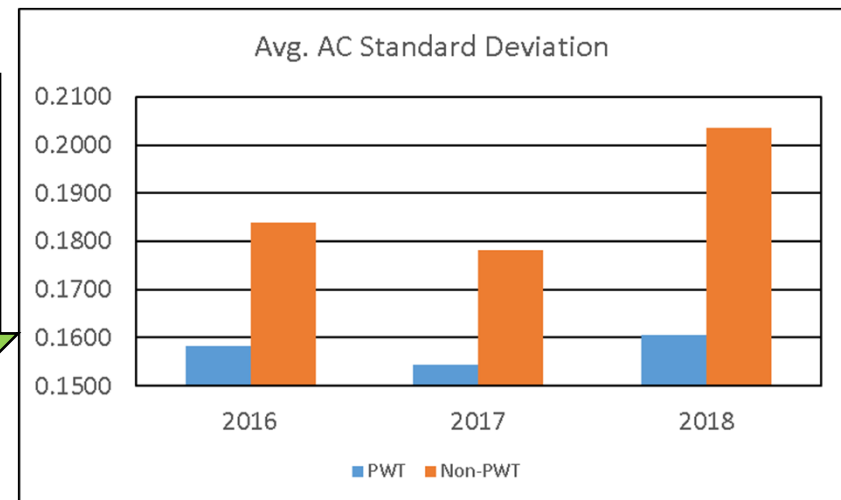


Percent Within Limits (PWL) 3 – Year Summary

Asphalt Content (AC)
(30% of Overall Lot Pay Factor)



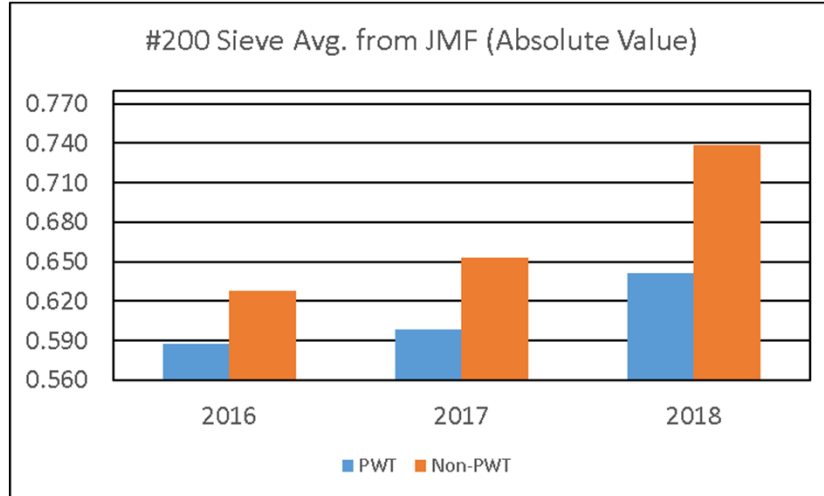
Good



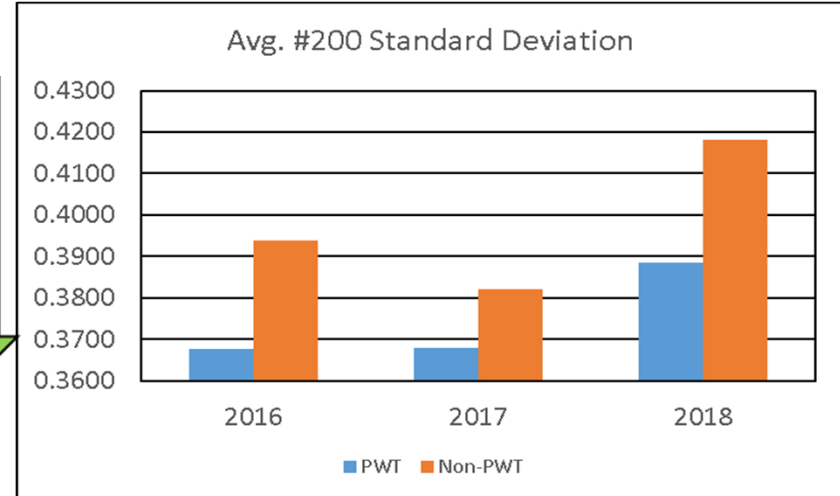
Percent Within Limits (PWL)

3 – Year Summary

#200 Sieve
(10% of Overall Lot Pay Factor)



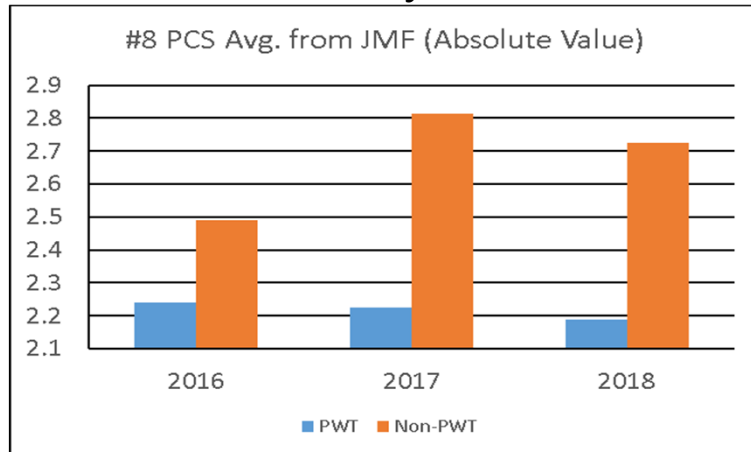
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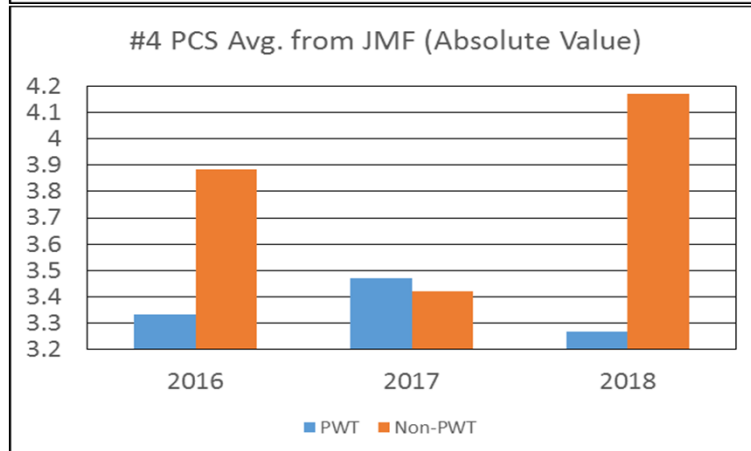
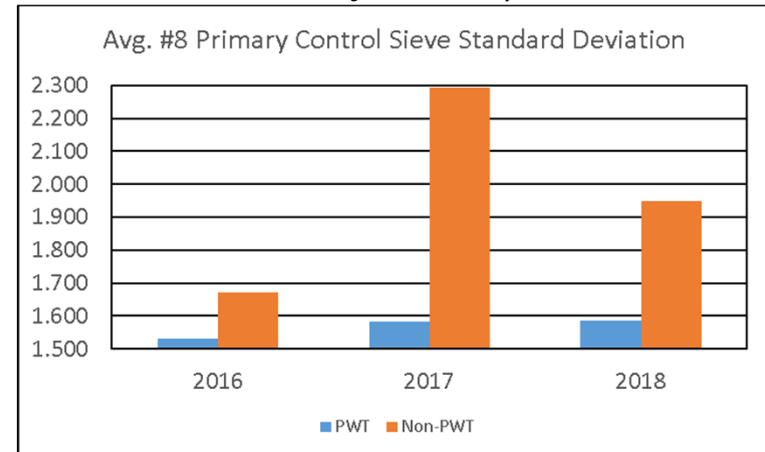
Percent Within Limits (PWL)

3 – Year Summary

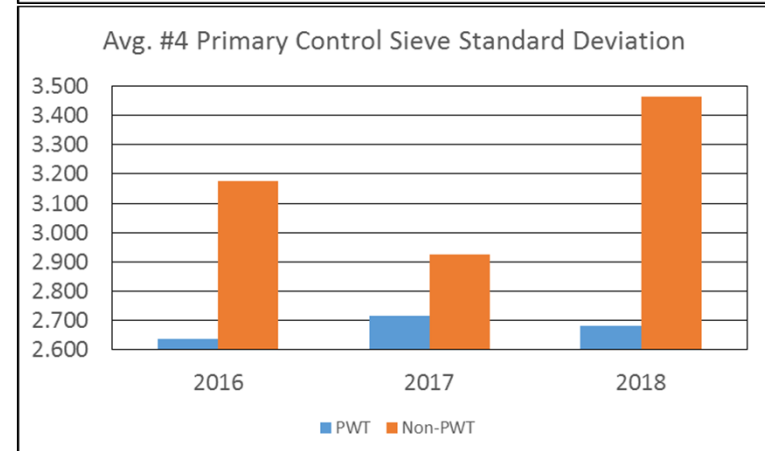
Primary Control Sieve (PCS) (10% of Overall Lot Pay Factor)



Good

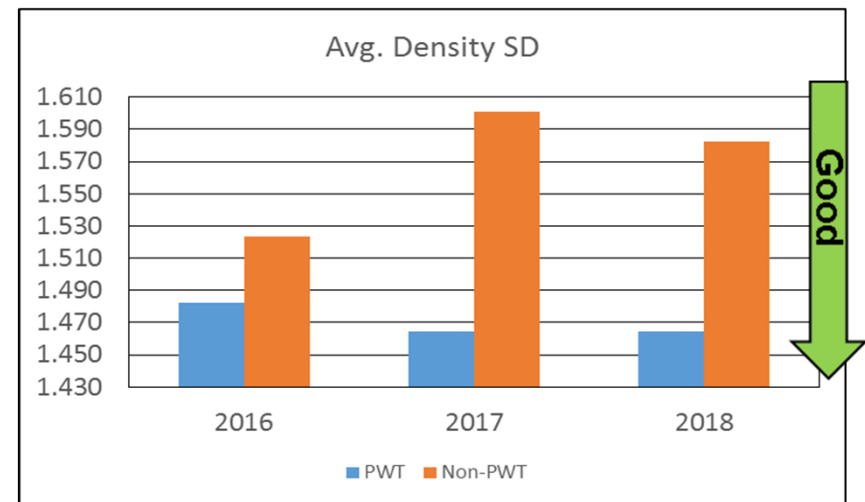
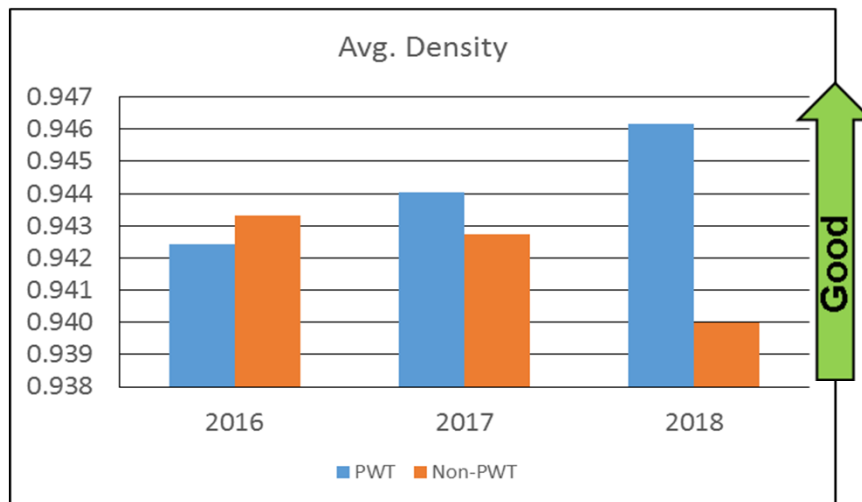


Good



Percent Within Limits (PWL) 3 – Year Summary

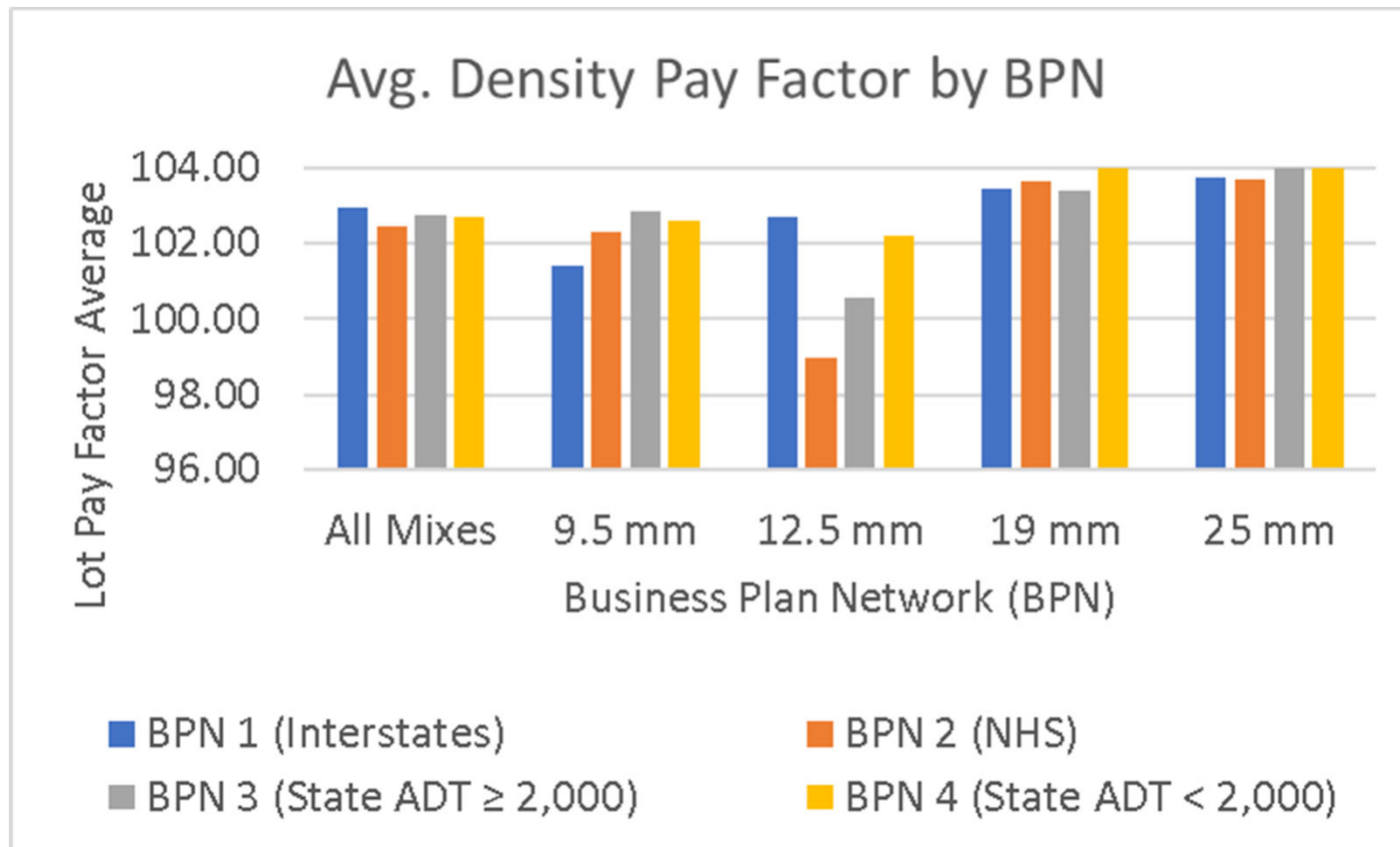
Density
(50% of Overall Lot Pay Factor)



Average Density Pay Factor by BPN

3 – Year Summary of Density Cores

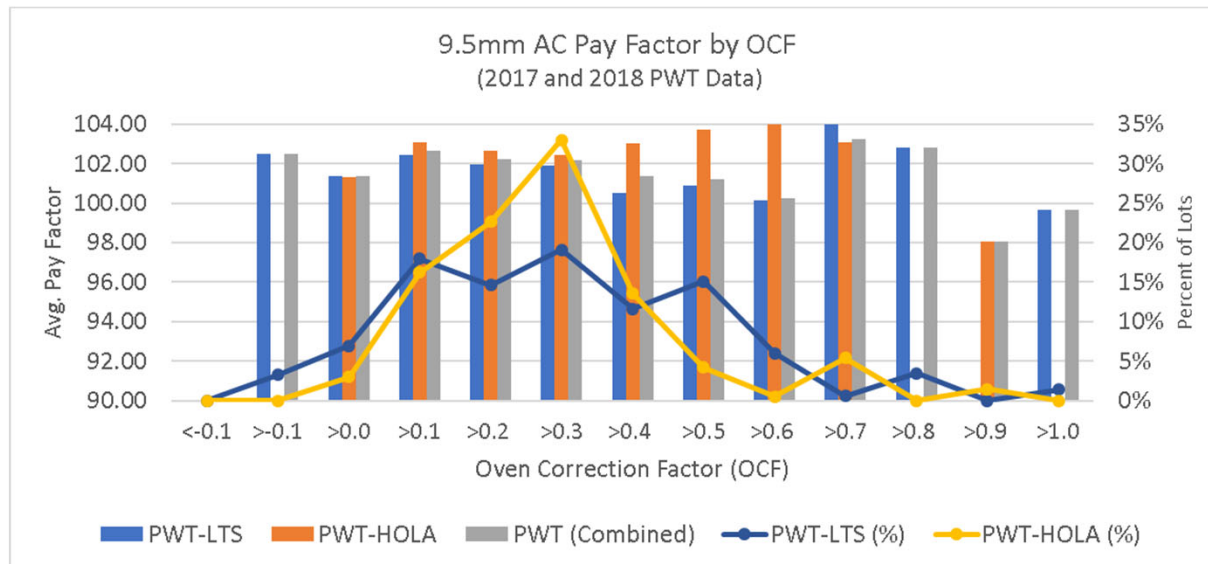
(50% of Overall Lot Pay Factor)



9.5mm

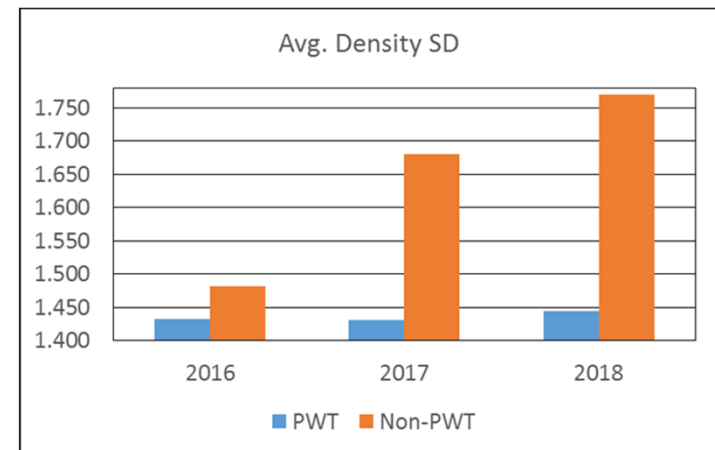
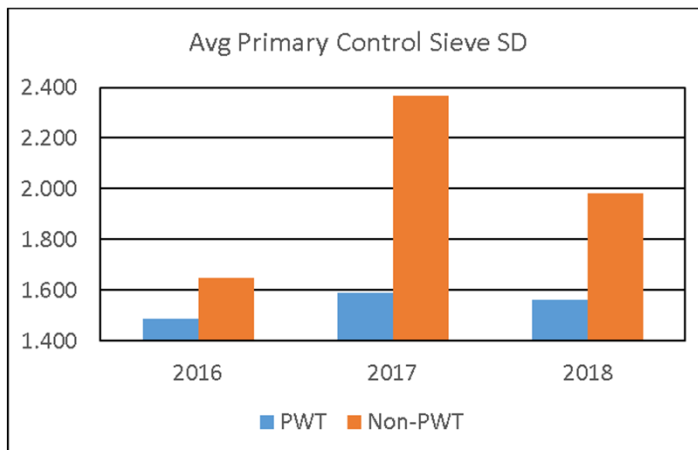
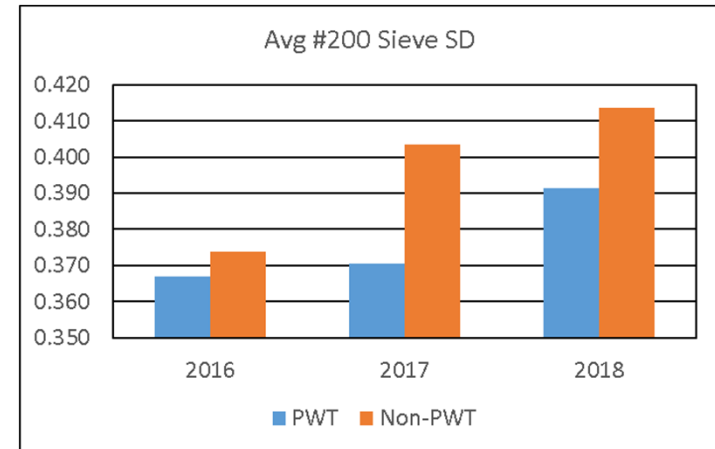
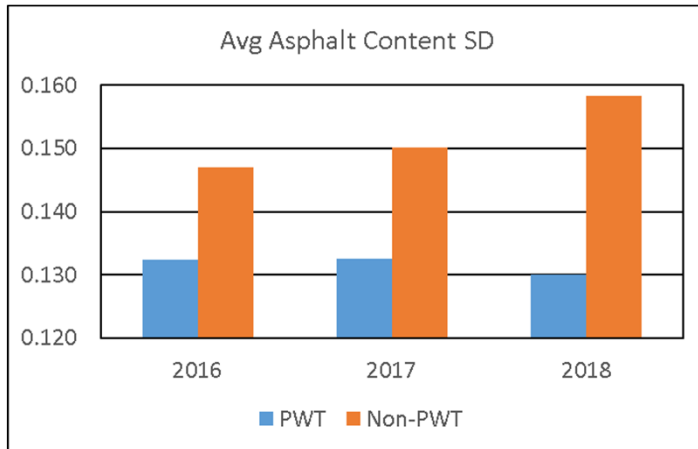
3 – Year Summary

Year	2016	2017	2018
Average PWT Pay Factors (%)			
Asphalt Content Pay Factor	101.30	101.38	101.10
Primary Control Sieve	100.19	98.90	99.36
#200 Sieve	101.76	100.42	100.29
Density (Cores)	102.44	102.66	102.68
Average Density	94.3	94.5	94.5
Average Overall Lot Pay Factor (%)	1.02	1.02	1.02



9.5mm

3 – Year Summary

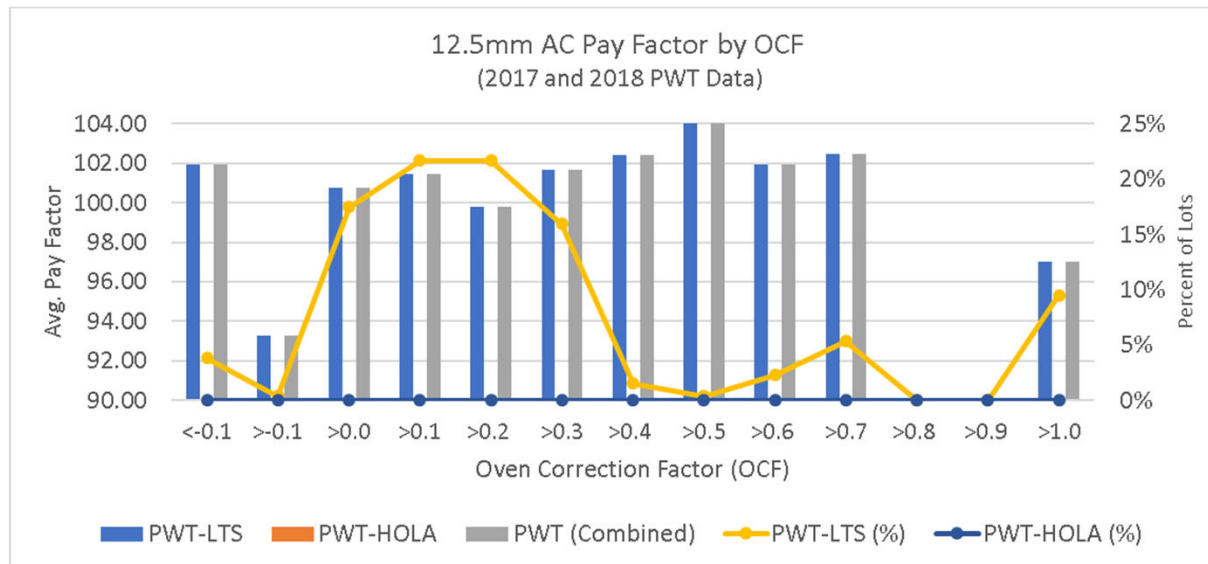


Good

12.5mm

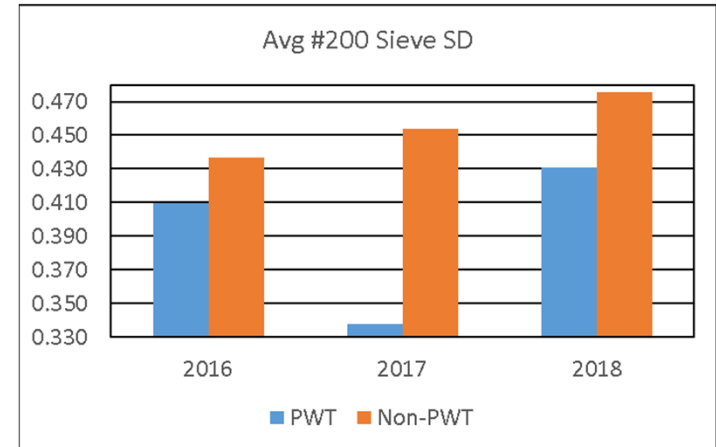
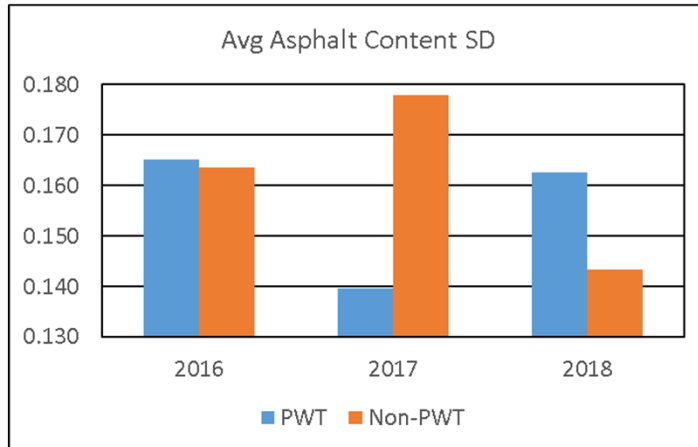
3 – Year Summary

Year	2016	2017	2018
Average PWT Pay Factors (%)			
Asphalt Content Pay Factor	100.16	98.49	98.33
Primary Control Sieve	99.06	101.56	99.18
#200 Sieve	98.00	100.38	99.87
Density (Cores)	97.84	101.10	101.30
Average Density	94.0	94.3	94.4
Average Overall Lot Pay Factor (%)	0.99	1.00	1.00

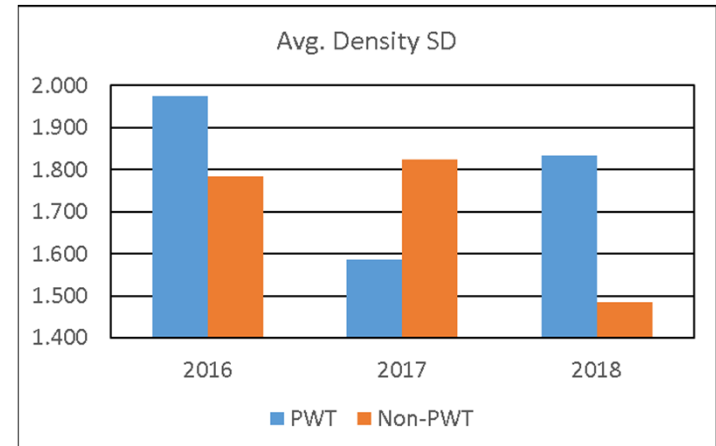
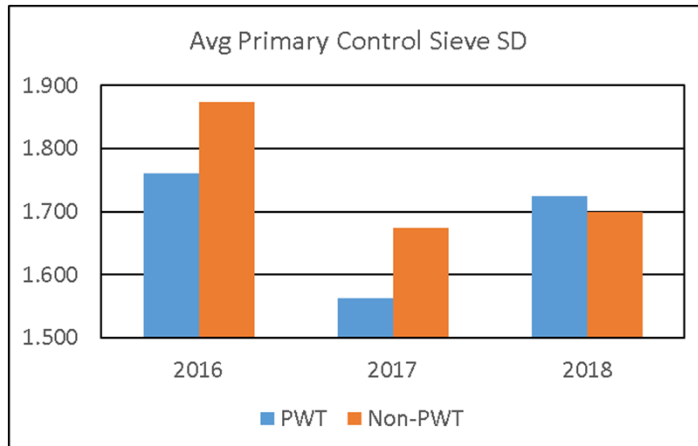


12.5mm

3 – Year Summary



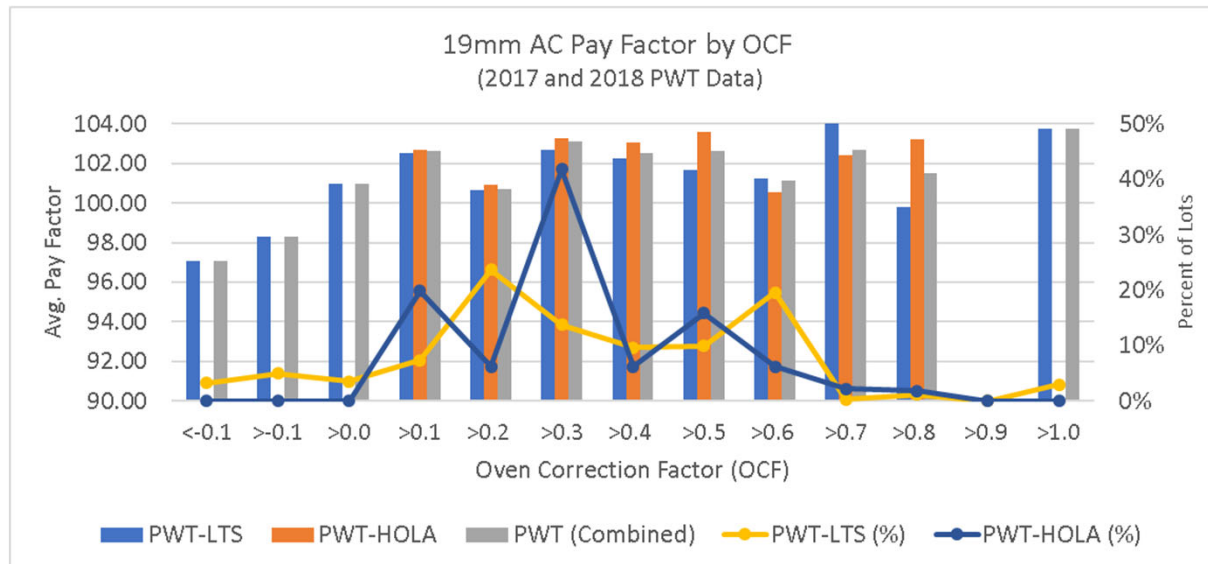
Good



19mm

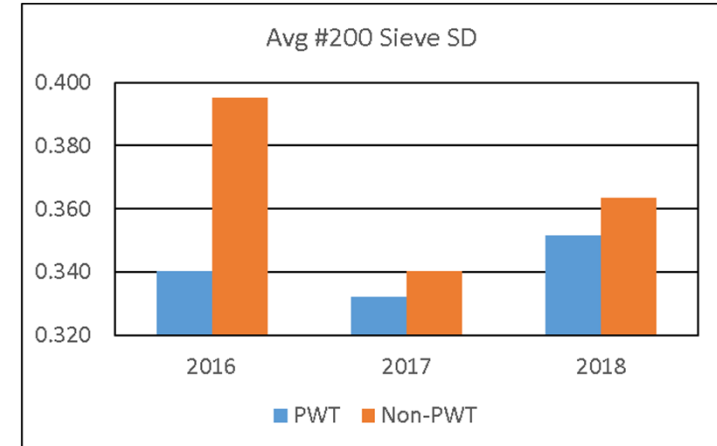
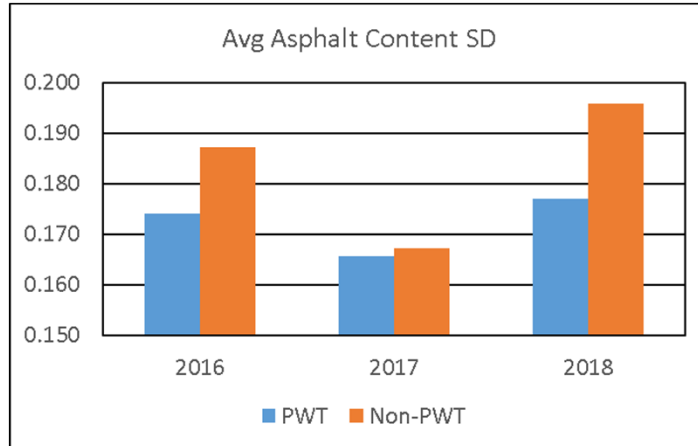
3 – Year Summary

Year	2016	2017	2018
Average PWT Pay Factors (%)			
Asphalt Content Pay Factor	102.33	101.60	101.33
Primary Control Sieve	100.60	99.63	101.30
#200 Sieve	101.75	102.46	101.38
Density (Cores)	102.58	103.66	103.70
Average Density	94.3	94.4	94.7
Average Overall Lot Pay Factor (%)	1.02	1.02	1.02

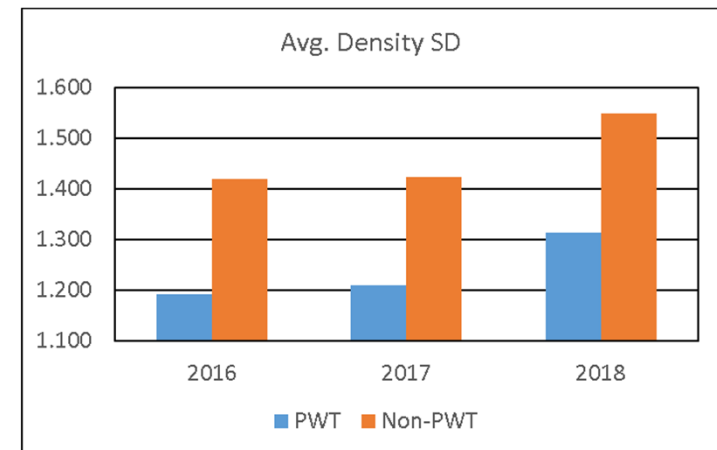
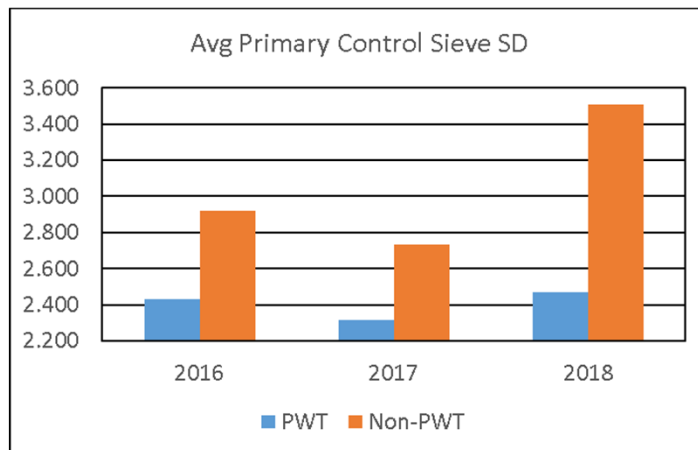


19mm

3 – Year Summary



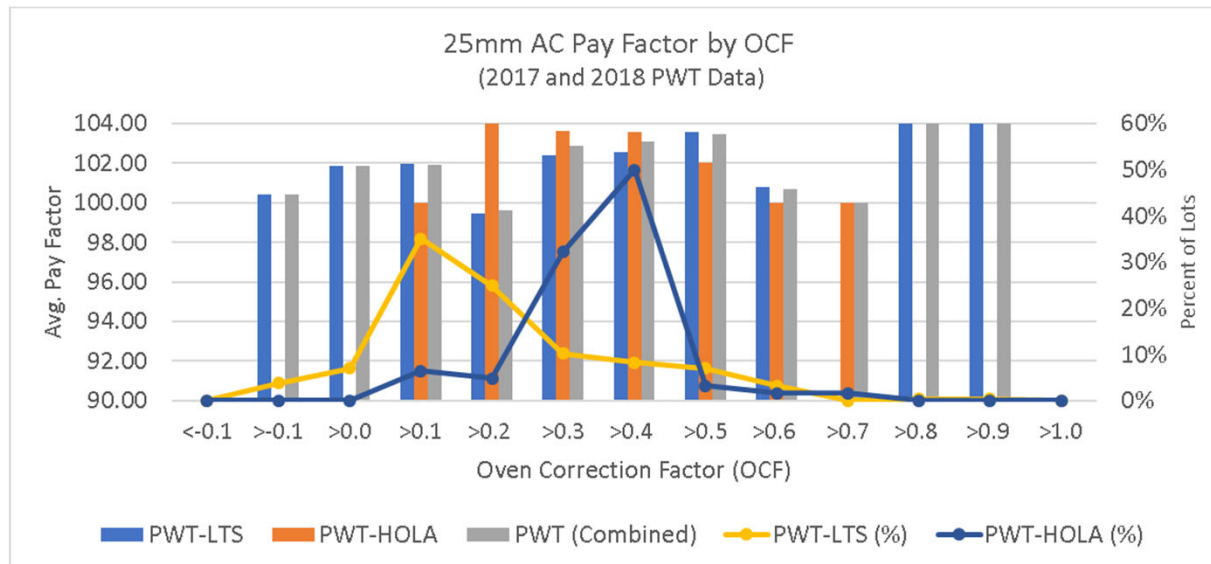
Good



25mm

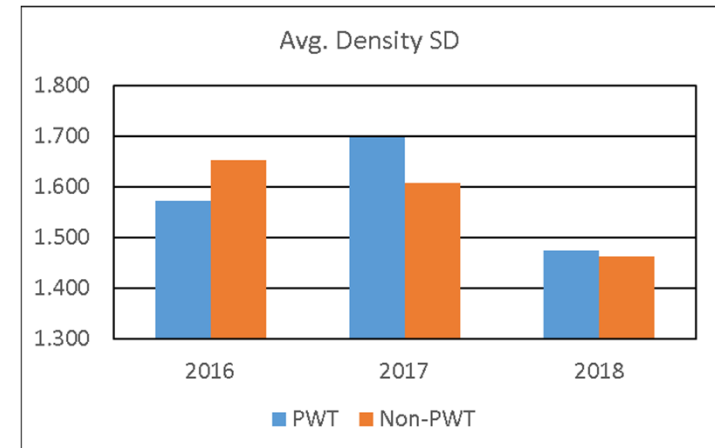
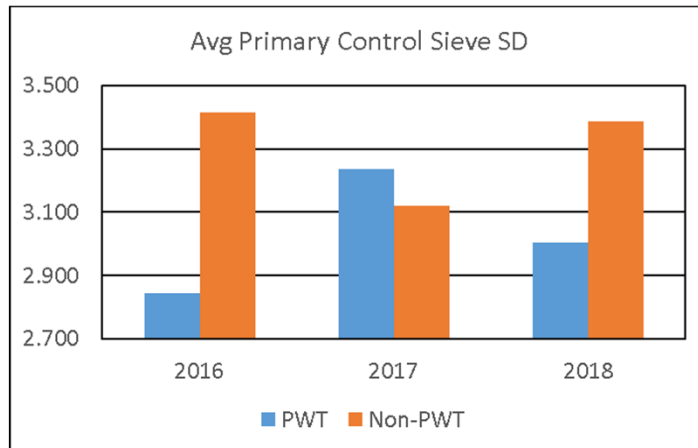
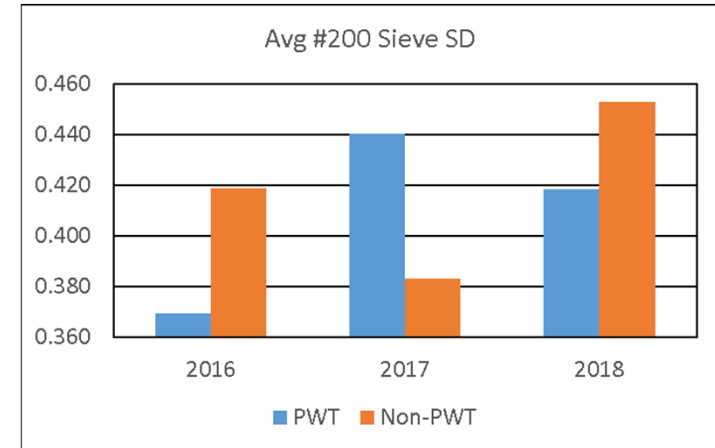
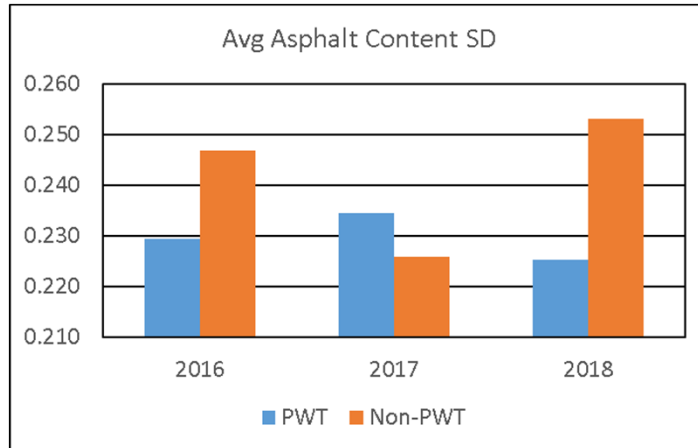
3 – Year Summary

Year	2016	2017	2018
Average PWT Pay Factors (%)			
Asphalt Content Pay Factor	100.84	99.97	100.85
Primary Control Sieve	100.88	101.00	101.46
#200 Sieve	100.41	101.89	100.73
Density (Cores)	103.51	103.67	103.90
Average Density	93.8	94.0	94.9
Average Overall Lot Pay Factor (%)	1.01	1.01	1.02



25mm

3 – Year Summary



Good

2018 After Action Review Proposed Changes to PWT

- CT 1
- Standard Special Provisions
 - Changing PWT to PWL
 - Proposed change to Dispute Resolution
 - Contractor Elected Terminated Lots Maximum Pay Factor
 - Proposed revision of Density Limits for Partial Lots
 - Proposed revision of Density Limits for Calculating PWL
 - Standard 9.5 mm & 12.5 mm – Lower Limit from 91.5 to 92.0
 - RPS and Standard 9.5 mm & 12.5 mm – Upper Limit from 98.0 to 98.5
- Use Guidelines/Field Users Guide
 - Changing PWT to PWL
- eCAMMS
 - Multiple Ignition Oven Calibration Factors (PWT-HOLA)

2019 Construction Season

- PWL on **ALL Applicable** Paving Projects
- PWT becomes PWL
- Revised SSPs
- Revised Use Guidelines
- Revised Field Users Guide

Thank You!

- Please feel free to email your comments, questions and experiences.

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Questions?

