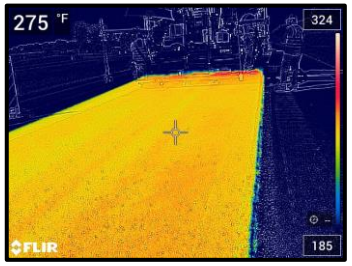
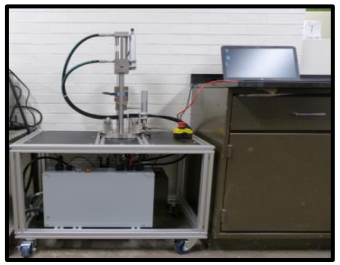


IDOT HMA Technical Update

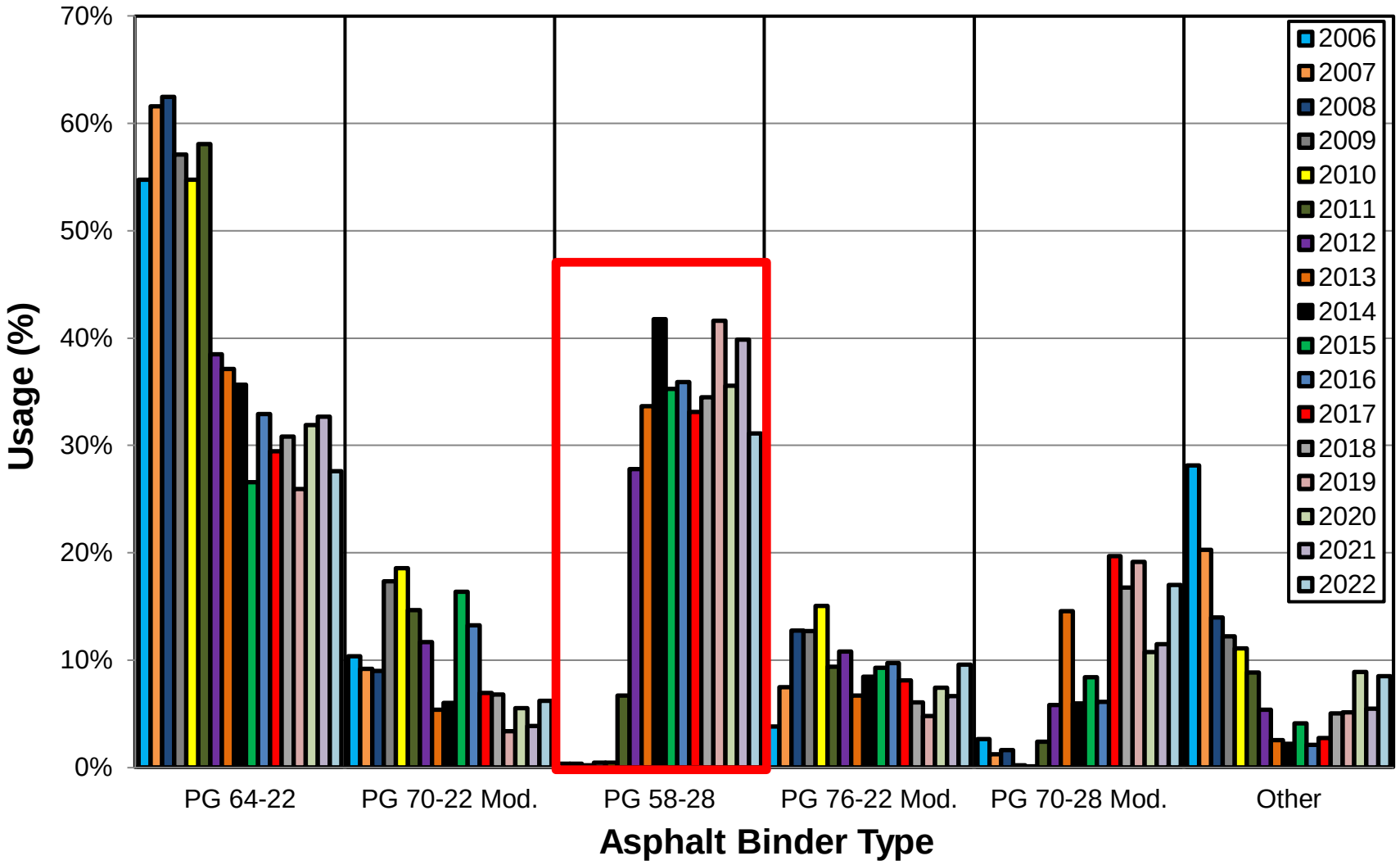
64th Annual Illinois Bituminous Paving Conference



Illinois Department of Transportation

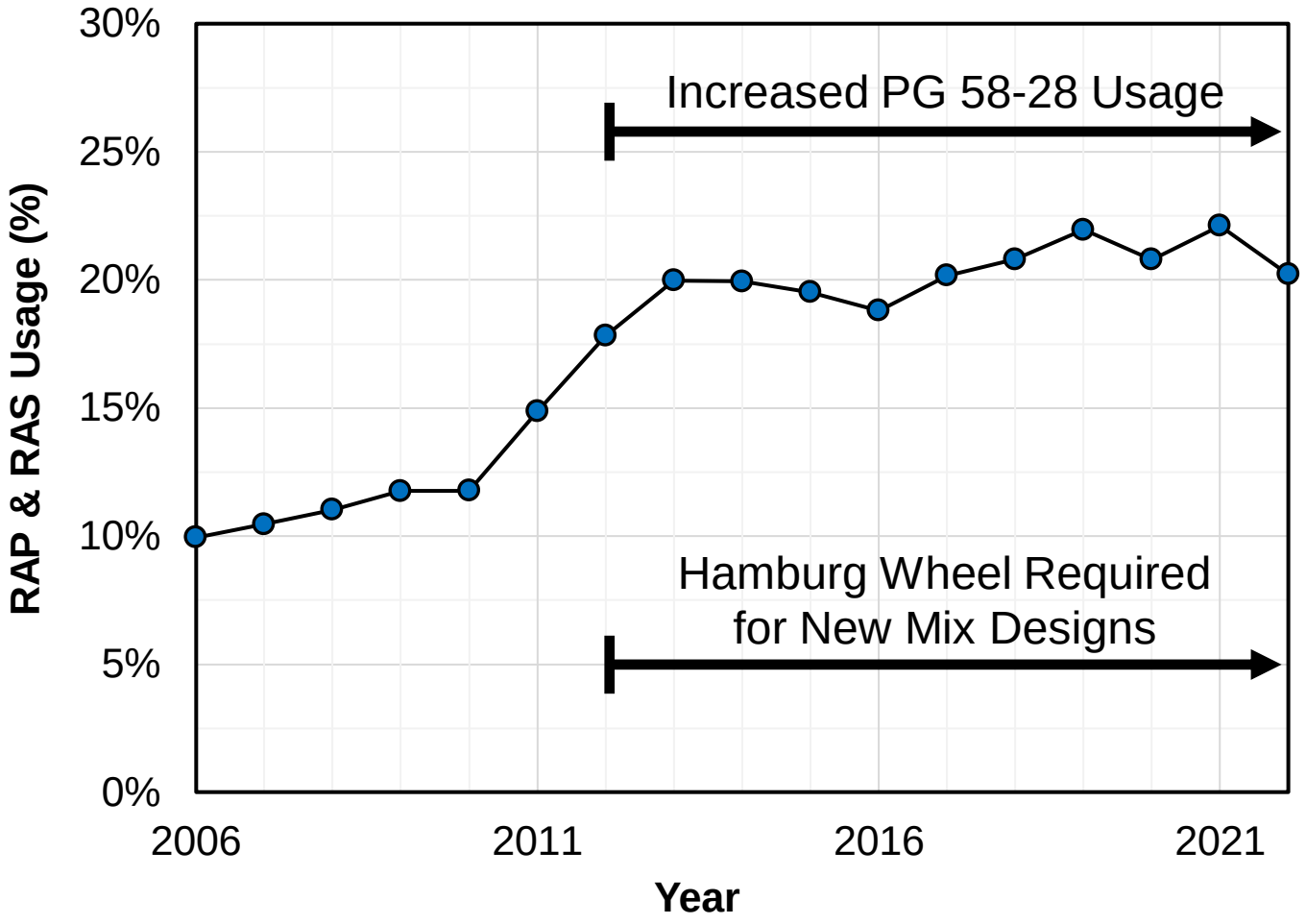
Material Usage

Asphalt Binder Usage



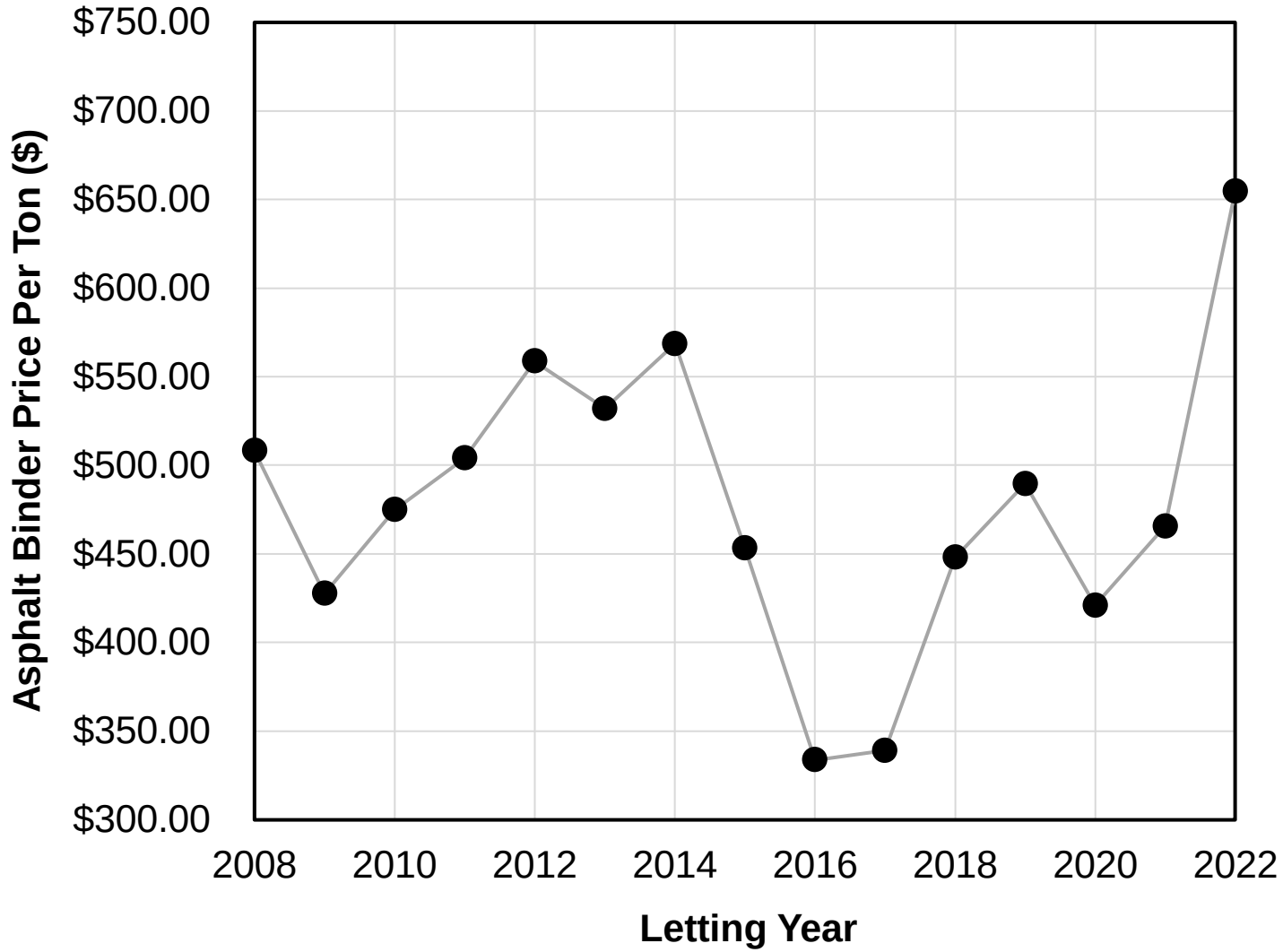
Combined RAP & RAS Usage

(By Weight of Aggregate)

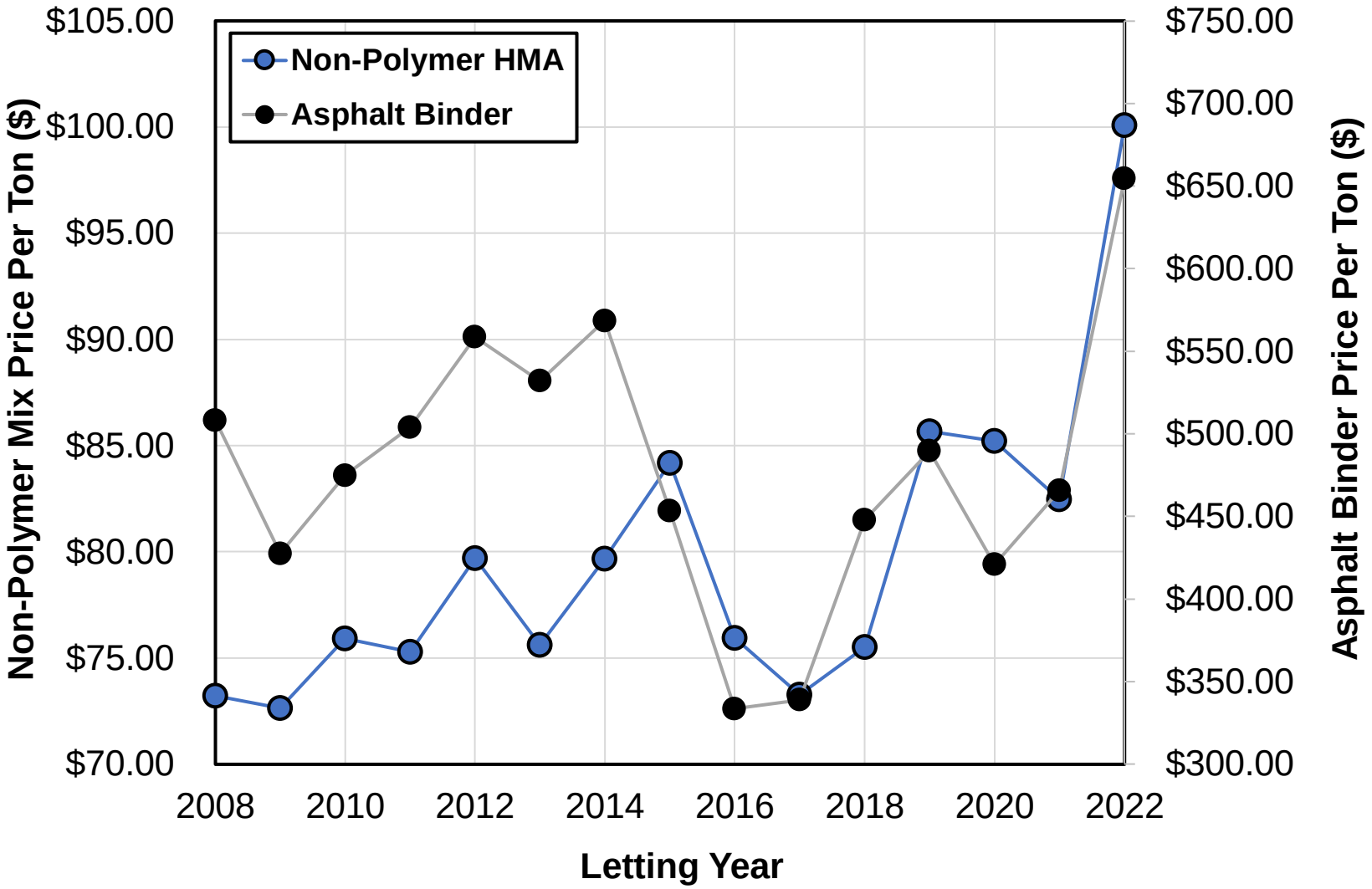


Prices

Avg Annual Bituminous Price Index (BPI)

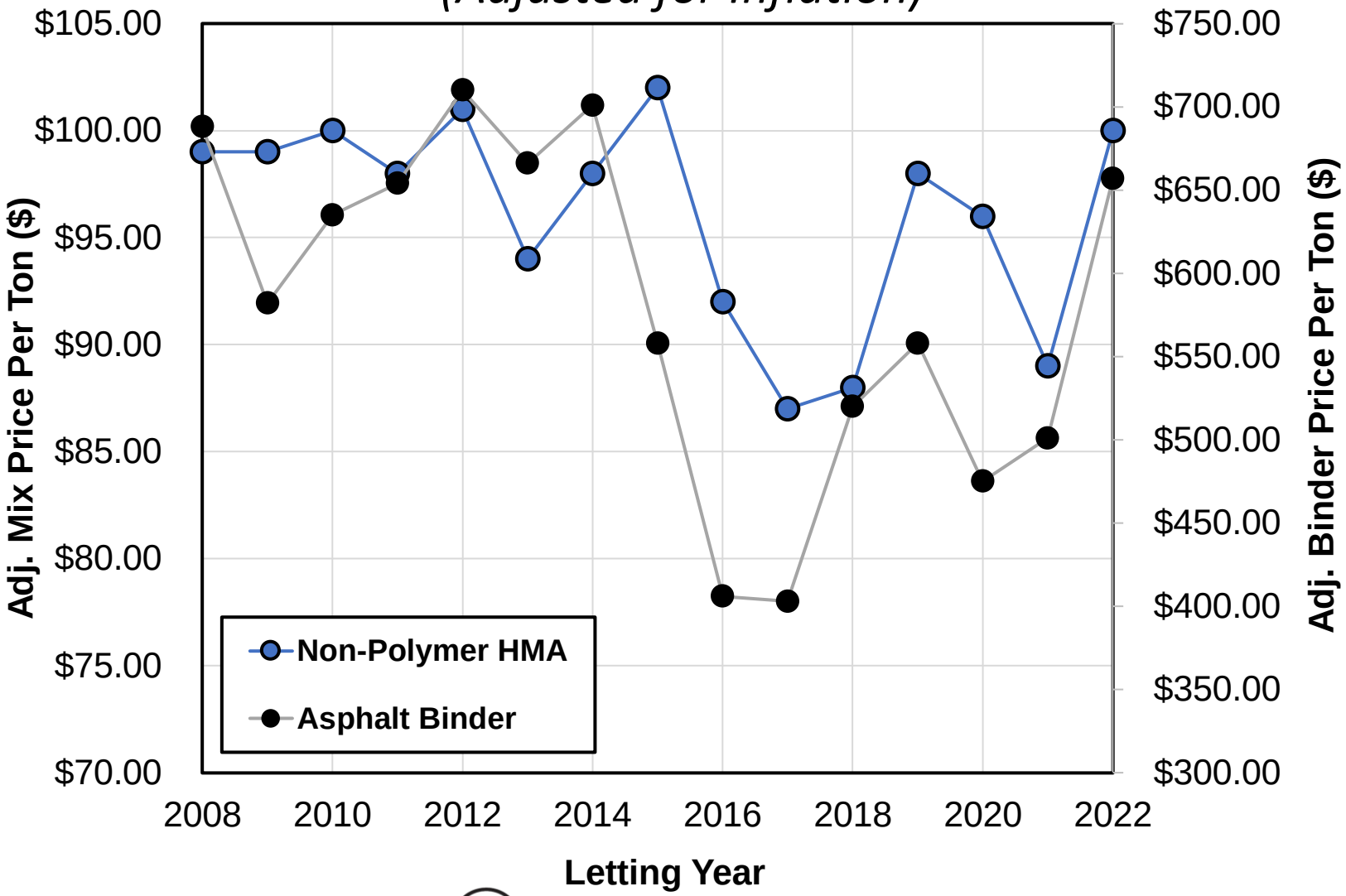


Avg Annual BPI vs. Non-Polymer HMA Price



Avg Annual BPI vs. Non-Polymer HMA Price

(Adjusted for Inflation)



Illinois Department of Transportation

HMA Density

HMA Density

- Most important parameter for HMA performance
  - Lacking density can lead to numerous distresses & reduced service life

- Can we increase HMA density in Illinois?
  - Starting Point – where are we today?
    - Specifications (PFP & QCP)
    - Data Results

Current Specification Limits

- Pay for Performance

Percent within Limits Criteria			
Pay Parameter		Upper Quality Limit	Lower Quality Limit
Density	IL-4.75	97.5	92.5
	IL-9.5/IL-9.5FG	97.5	91.5
	IL-19.0	97.5	92.2
	SMA	98.0	93.0

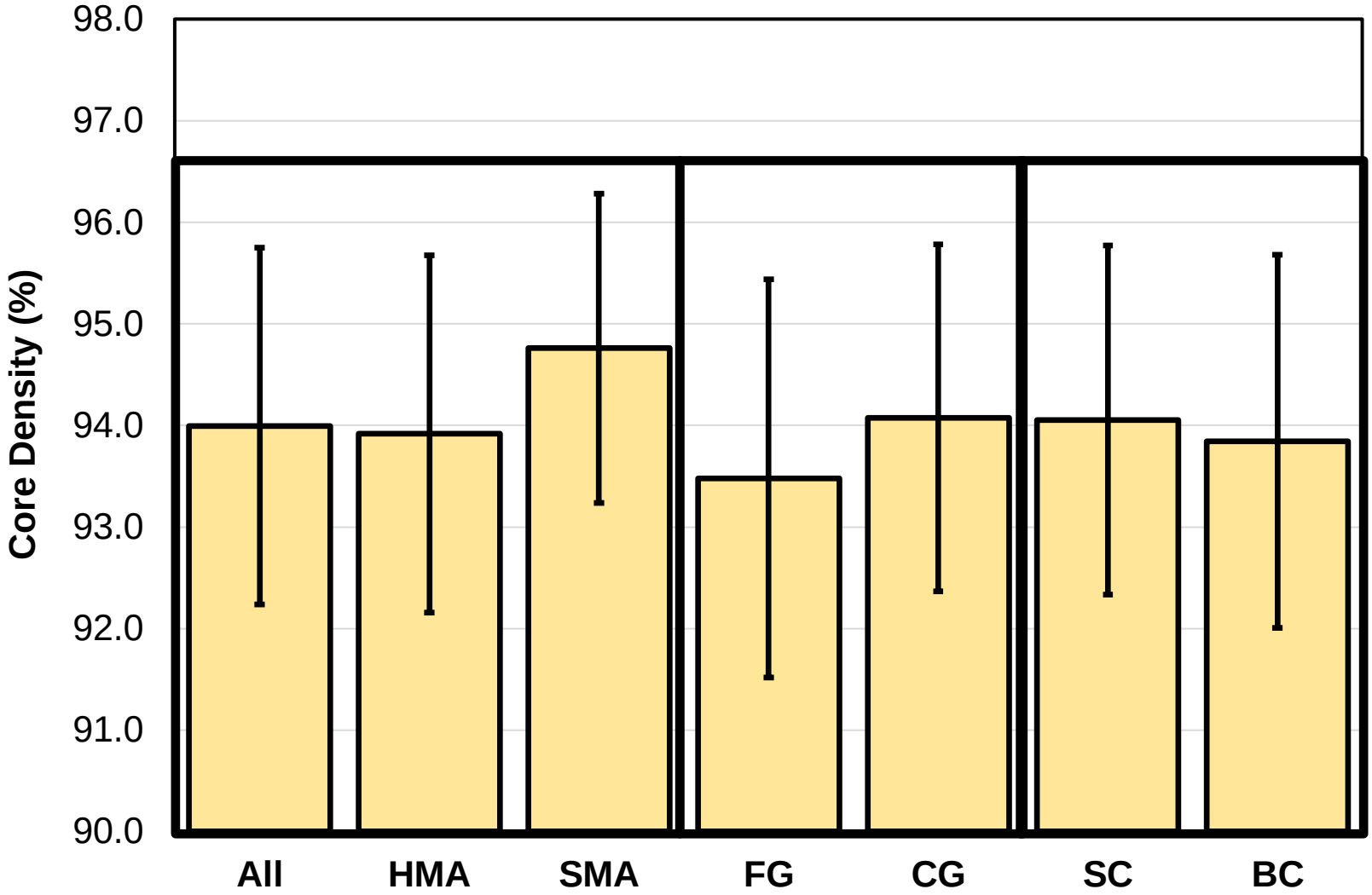
- Quality Control for Performance

Pay Factors					
Pay Parameter		105%	100%	95%	90%
Density	HMA	93.5% to 94.5%	92.5% to 96.5%	91.5% to 97.0%	90.0% to 98.0%
	SMA	94.0% to 95.0%	93.5% to 96.5%	92.5% to 97.0%	92.0% to 98.0%

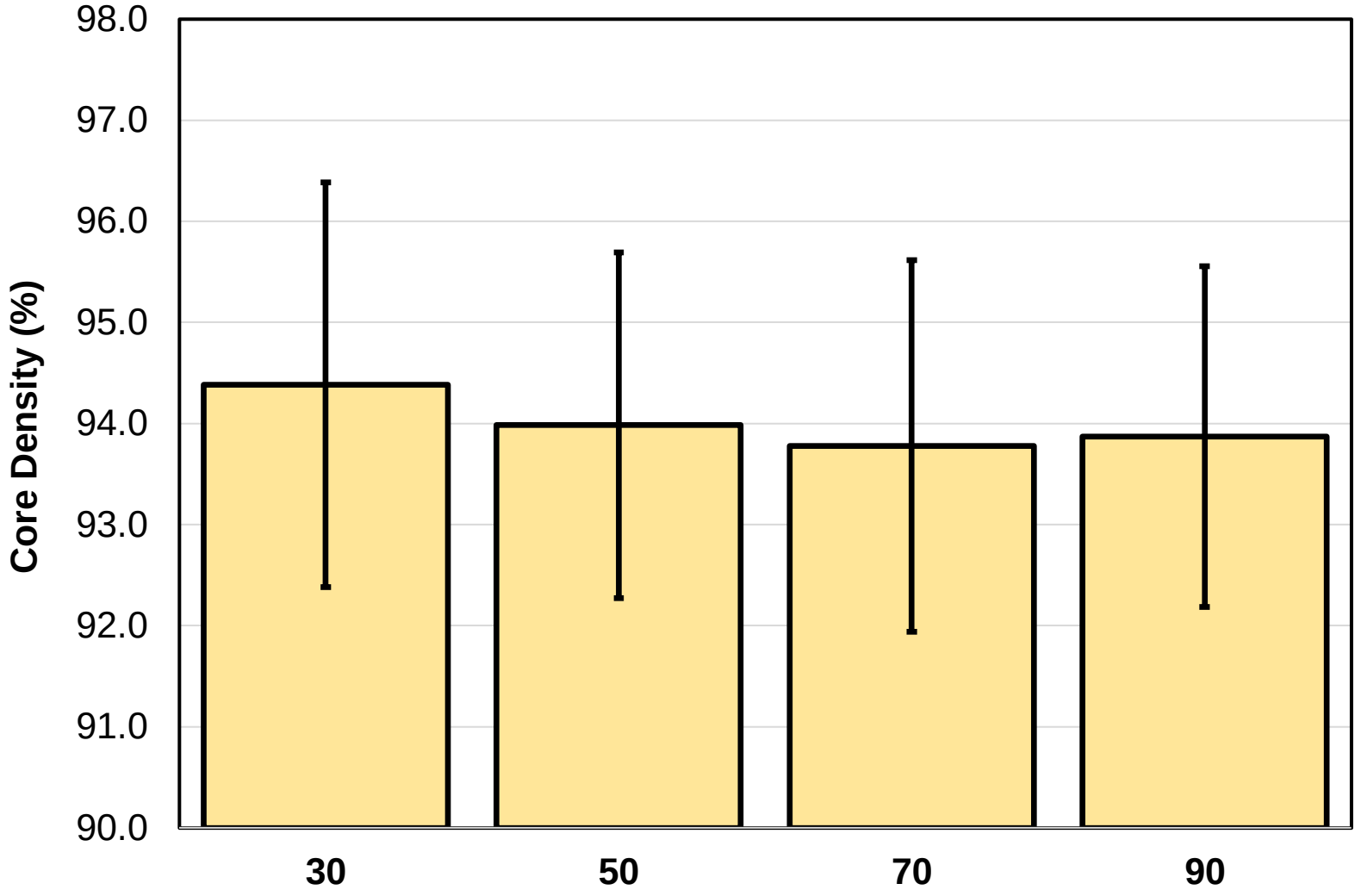
IDOT HMA Density Data Review

- Source
  - WebMISTIC
- Data Types
  - Cores Only
  - IND/INV/ACC Records
- Years Reviewed
  - 2018-2022

Avg Core Density by Mix Type



Avg Core Density by N_{des}



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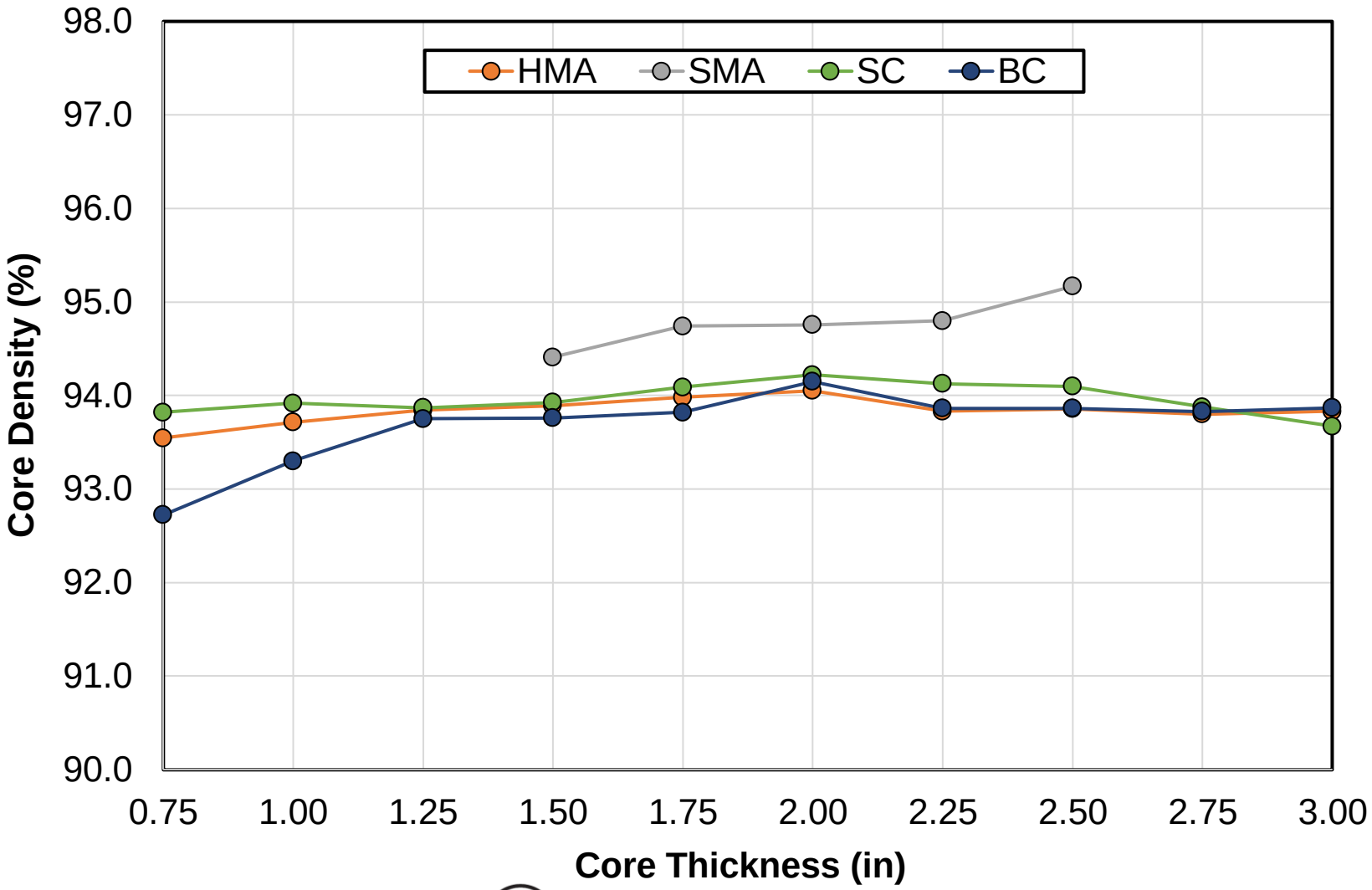
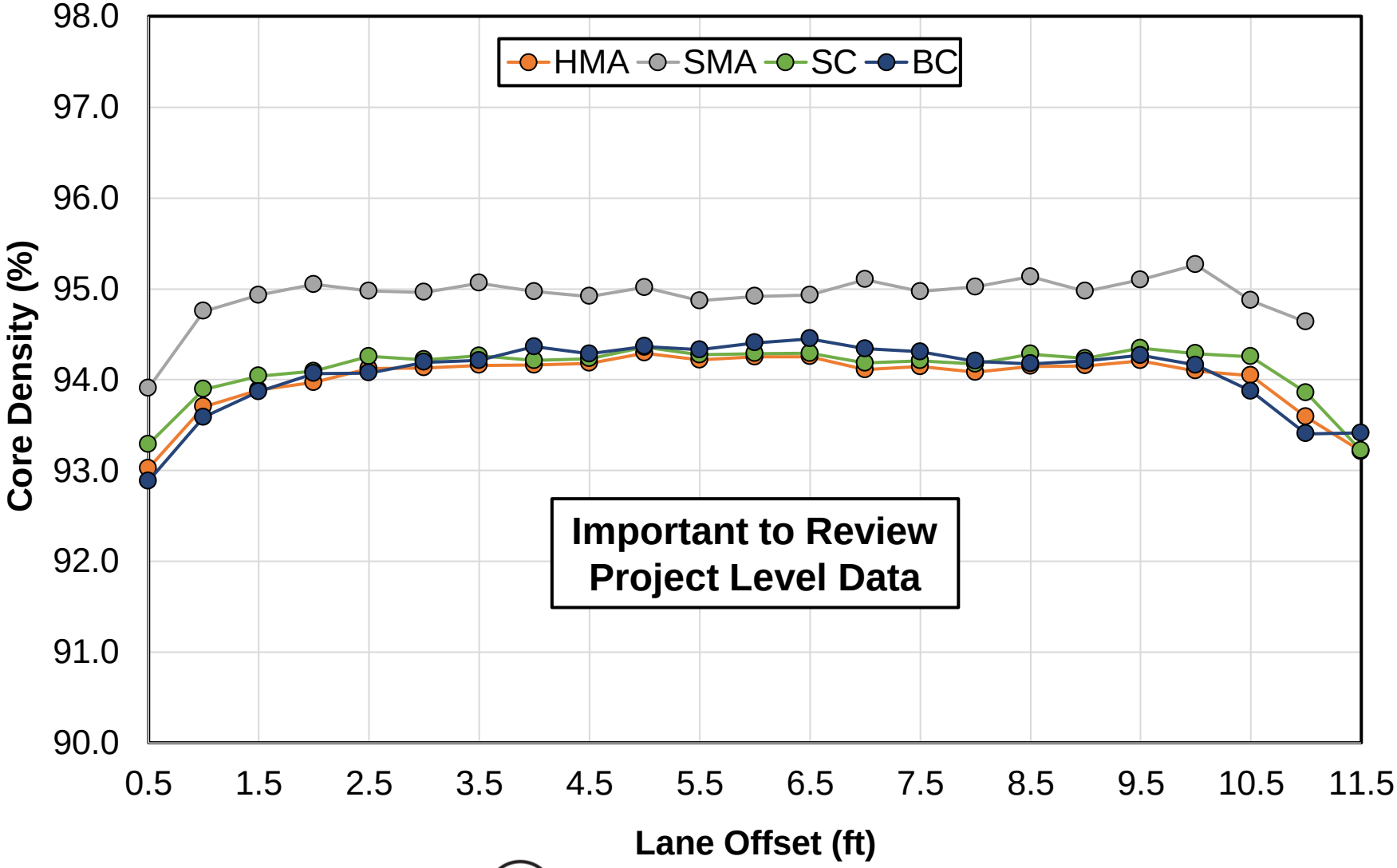
Avg Core Density vs Core Thickness



Avg Core Density vs Lane Offset



Updated Policy Memos
&
BDE Special Provisions

RAS Policy Memo

- Updated to make it compatible with 2022 Standard Specifications
- RAS Sources to send annually updated QC Plans & other documents to CBM for review
- Districts will continue to get copies of those documents, but responsibility for document review & monitoring will be shifted to CBM

“Hot-Mix Asphalt” BDE Special Provision

- Effective Date – January 2024
- G_{mm} for Establishing Target Density
  - QCP & PFP
    - Running average of 4 available Department results for that project
      - < 4 G_{mm} test results available – avg. of all available Department test results for that project
    - Initial G_{mm} - last available Department test result from QMP project
      - If no available Department test result from a QMP project, Department mix design verification test result will be used
  - QC/QA
    - G_{mm} will be Department mix design verification test result
- Test Strip Stops
  - All test strip stops a Contractor option

Updated Manual of Test Procedures Documents

Manual of Test Procedures Updates

- Illinois Modified AASHTO
  - M323 – Superpave Volumetric Mix Design
    - Editorial & Notes Re-numbered
    - Annex A1 deleted
  - T30 – Analysis of Extracted Aggregate
    - Added reference to ASTM D8159
    - When using D8159, washing in water cycle may be omitted
  - T209 – G_{mm}
    - Editorial & Notes renumbered
  - T283 – Tensile Strength & TSR
    - Minimum strength & TSR values replaced with reference to Std. Specs
    - SMA Test Specimen Air Voids set at 6.0 ± 1.0%
  - T383 - Evaluation of Asphalt Release Agents

Manual of Test Procedures Updates

- Illinois Modified AASHTO
  - R46 & M325 – Stone Matrix Asphalt
    - SMA TSR Test Specimen Air Voids set at 6.0 ± 1.0%
  - T324 – Hamburg Wheel
    - Editorial
    - Delete some references to RMSE (Root Mean Squared Error)
    - Deleted some verbiage regarding “a perfectly sinusoidal wave”
    - Deleted some verbiage regarding Thermometer Req’ts
    - Replaced min. number of passes with reference to Std. Specs.
  - T393 – I-FIT
    - Editorial & Notes renumbered

Manual of Test Procedures Updates

- IL Modified ASTM
  - D2950 – In-Place Density by Nuclear Methods
    - Added Department Verification Test Description & Diagrams
- Appendix B.4 – Test Strip
  - Contractor has option to sample mixture for Dept. Hamburg, I-FIT, Tensile Strength & TSR testing on first production day after acceptable test strip
- Appendix B.9 – Mix Design Verification
  - Added District G_{mm} verification test for Method B
- Appendix B.22 – Core Correction Factors
  - Added Core Correction Factors for SMA-9.5 & SMA-12.5 Mixes
- Appendix E.5 – Dispute Resolution
  - Added clarification & examples

Lake Land College IDOT Quality Management Training Program (QMTP) Recertification

Lake Land College QMTP Recertification

- General Information
  - Updated Plan - Will be phased in over 5-year period
  - Required every 5 years
  - Written exam at Highest Training Level
    - One Failure –> Retest
    - Two Failures -> Retake full course
  - Optional Online Review Materials
  - Lab proficiency testing for HMA Level I course
  - Test Sites - Mattoon & Thornton
    - Considering additional test sites after 1st year for non-lab proficiency courses

Lake Land College QMTP Recertification

- QMTP General Website
  - https://learn.lakelandcollege.edu/IDOT/index.jsp
- QMTP Recertification FAQ's Website
  - https://learn.lakelandcollege.edu/IDOT/faq-recertification.jsp
- Training database was sent to Materials Associations and IDOT Districts in November
- Recertification Online Registration is Live

CBM Round Robins

- Due Dates
  - Volumetric – December 11th
  - Hamburg – December 13th
  - I-FIT – December 15th
- Please send in results to: DOT.CBM.HMA@illinois.gov

Thank You for Your Attention!