Illinois Tollway  
Warm Mix Asphalt – Lessons Learned  

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Tollway WMA - 2012  

- 762,000+ total tons  
- SMA mainline  
  - 304,000 tons  
- N50 Shoulder Binder  
  - 204,000 tons  
- N70 Shoulder Surface  
  - 210,000 tons  
- Stabilized Subbase  
  - 8,400 tons
12/18/2012

Tollway WMA - 2012

- 10 different plants
- 2 chemicals
  - Evotherm (4)
  - Rediset LQ (3)
- 3 water injection
  - ASTEC (1)
  - MAXAM AQUAblick (1)
  - Stansteel Accu-Shear (1)

Tollway WMA - 2012

- High recycle in Tollway WMA:
  - SMA
    - All used RAS (2 GTR, 7 SBS)
    - ABR – 31 to 38%
  - Shoulder Binder and Surface
    - ≈ Half used RAS
    - Binder ABR – 33 to 50%
    - Surface ABR – 30 to 40%
  - Stabilized Subbase
    - Both used RAS; both had 64% ABR

  RAS needs higher temperature
WMA Lessons Learned

- Mix temperature ranges
  - Mix type
    - Shoulder mixes and moderate RAP: 250 - 270°F
    - Shoulder mixes with RAS: 280 – 300°F
    - SMA with RAS: 280 – 320°F
  - Plant and personnel
  - Weather (night, day, summer, fall)

WMA Lessons Learned

- Contractor Learning Curve – some: steep
- All technologies “performed” effectively
- Industry-wide: Plant Operations need reviewing to fully implement WMA
  - Flighting, air flow – for both WMA and high recycle
  - Combination of high recycle and lower temperatures
  - Stress on motors from stiff mixes (SMA + RAS + modified PG)
WMA – Moving Forward

- Contractor
  - Personnel need to become comfortable with the practice
  - Plant “optimization” to incorporate WMA and high recycle
- Investigation of benefits
  - Lower energy
  - Compaction aid

WMA – Moving Forward

- Agencies
  - Proven to Improve Performance
  - Better Definition of “Warm Mix” Needed
    - Temperature
    - “Use of the technology”
    - Mix variables (RAP, RAS, modified PG)
Specifications Needed to Better Define WMA

- Tollway specifications in 2012 provided with little control on temperature
- Better control on production temperature limits to be established for 2013 contracts
- More lessons to be learned by all

THANK YOU