Implementation, Experience and Future of WMA in Arizona

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WMA Committee

- 2010 – AGC/ADOT Warm Mix Asphalt Committee
  - ADOT, Contractors, Suppliers, WMA Reps
  - Look into option for WMA in ADOT specifications
- Results of the Committee Work
  - Trial Specifications
  - Approval Process for WMA Technologies
  - 3 WMA Demonstration Projects were Constructed on ADOT highways in 2011

Development of WMA Specifications

- WMA defined as Production Temperatures of 215 – 275 deg F.
- WMA technology can be added to conventional HMA mix design for volumetric properties
- Mix Design Moisture Susceptibility Testing requirements - need to incorporate WMA technology

Development of WMA Specifications

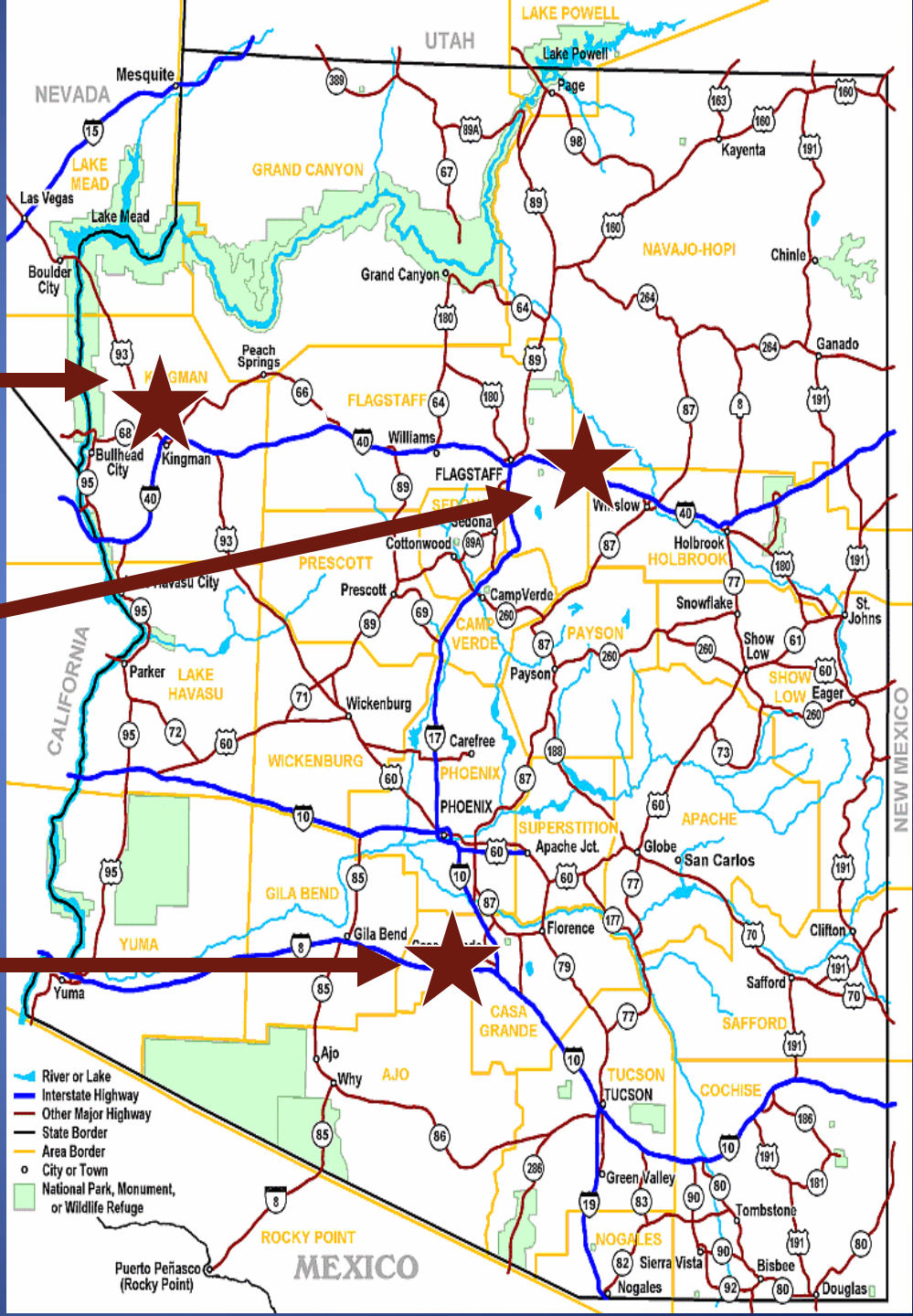
- WMA must meet ADOT's PWL for the HMA standard specifications for Acceptance
  - Asphalt content
  - Mix volumetrics
  - Gradation
  - In-place voids

Demonstration Projects

US 93 -
Kingman District

I-40 -
Flagstaff District

SR 84 -
Tucson District



2011 Demonstration Projects

- Each project consisted of 3 separate test sections with a different WMA technology in each – Contractor selected WMA technologies
- Each test section included two Lots of paving with WMA and one Lot of paving with HMA (Control)
  - Minimum of 2000 tons of WMA
  - Laboratory testing and field monitoring plan
  - WMA Representative was present for test sections

Demonstration Projects Summary

- 22,000+ Tons of WMA placed
- 30 – 55 deg F reduction in production temperature compared to HMA
- 20 – 30% fuel reduction using WMA
- Similar or better compaction for WMA with the same or less compaction effort
- Mixed results on Moisture Sensitivity Testing for IMC and TSR
- Mostly favorable Hamburg Wheel Track test results

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Requirements of WMA Technology Approval in ADOT

- Recognized WMA technology with production of at least 100,000 tons of WMA on other DOT highways
- Documentation from a minimum of 3 construction projects – mix design, test results, contact information
- Binder test results showing effect of WMA technology on the binder properties
- Partner with a Contractor and construct a test section on an ADOT project – meet all ADOT specifications during test section and show successful performance after construction

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ADOT Current Warm Mix status:

- Policy and Procedure Directive
- Warm Mix Specification
- Developed an Approved Warm Mix Technology List on ADOT website, current approved WMA technologies in AZ:

  Advera

  Sasobit

  Aquablack

  Evotherm

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Future for WMA in ADOT

- SPR-631 Evaluate Warm Mix Technology for use in Asphalt Rubber Friction Course

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Thank You

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