



Illinois Tollway

Open Roads for a Faster Future

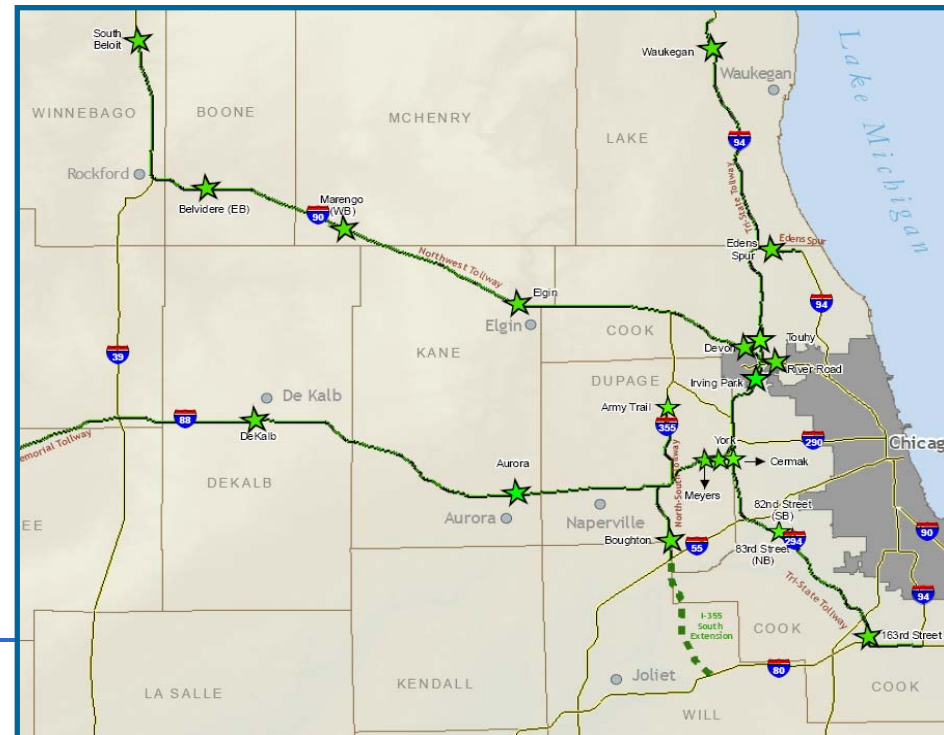
Fractionated RAP Research

North-Central Asphalt User/Producers Group

January 10, 2008

Illinois Tollway – Key Statistics

- **286-mile system comprised of four tollways**
 - Tri-State (I-294/80/94)
 - Jane Addams Memorial (I-90)
 - Reagan Memorial (I-88)
 - Veterans Memorial (I-355)
- **Opened in 1958 as a bypass around Chicago to connect Indiana and Wisconsin**
- **Carries more than 1.3 mil. vehicles per day**
- **80 percent avg. daily I-PASS/E-ZPass usage**



Congestion-Relief Program

- Illinois Tollway's Congestion-Relief Program (CRP) to reduce travel times by:
 - **Rebuilding/Restoring** nearly the entire system
 - **Widening** many miles of major roads
 - ✓ **Converting 20 barrier toll plazas to Open Road Tolling**
 - ✓ **Building 12.5 mile extension of I-355** to serve fast-growing Will County



Jane Addams Memorial Tollway (I-90)

Current and Future Projects

- ❑ **Master Planning** from the Kennedy Expressway to I-39 will be completed in 2008. Final design for Mainline Reconstruction & Widening is to be completed within the 2005-2016 program
- ❑ **Reconstruction & Widening** has started with completion scheduled in 2009 from I-39 to Rockton Road
- ❑ **I-39 Interchange reconstruction** is scheduled for 2008-2009
- ❑ **Resurfacing** from Kennedy Expressway to I-39 is scheduled between 2011-2015



Jane Addams Memorial Tollway (I-90) Reconstruction & Widen Project



Crossover paving



Tollway Hot Mix Asphalt

- Illinois Department of Transportation mix design specifications
- Increase IDOT RAP allowances with FRAP
- RAP in SMA (FRAP – fine portion only)

The FRAP Process



FRAP Research Goals

- Retain long-term performance at lower costs
- Quality Control maintained
- Fatigue analysis
 - Are mix properties compromised with higher RAP?
 - How soft for the PG? (64-22 vs. 58-22 vs. 58-28)

Tollway FRAP Specifications

■ Category 1 FRAP

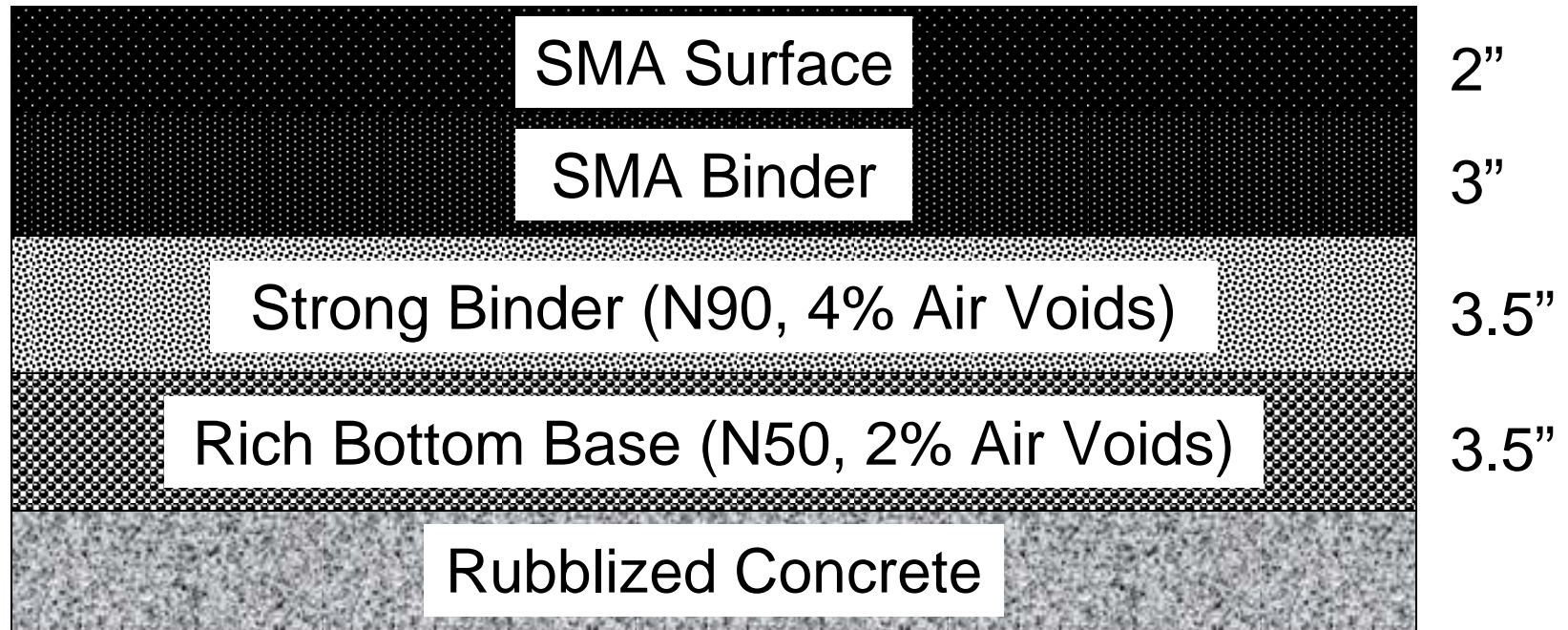
- From Tollway Mainline
- Crushed Aggregates only
- Required in SMA (fine portion only)

■ Category 2 FRAP

- From other Tollway or State projects
- Allowable in all dense graded mixtures

■ Slightly higher FRAP allowances for Category 1

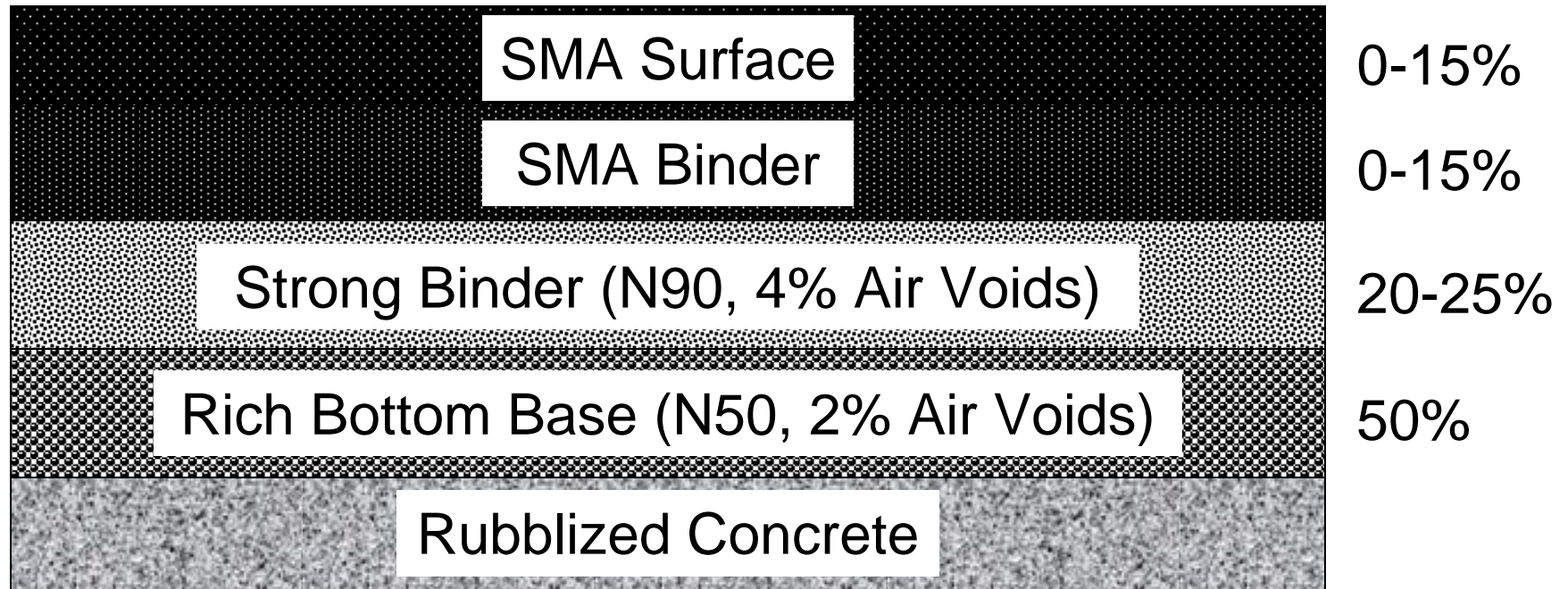
Tollway Mainline



Widened Pavement – Also Includes an
“Intermediate Binder” (N70, 4% Air Voids)

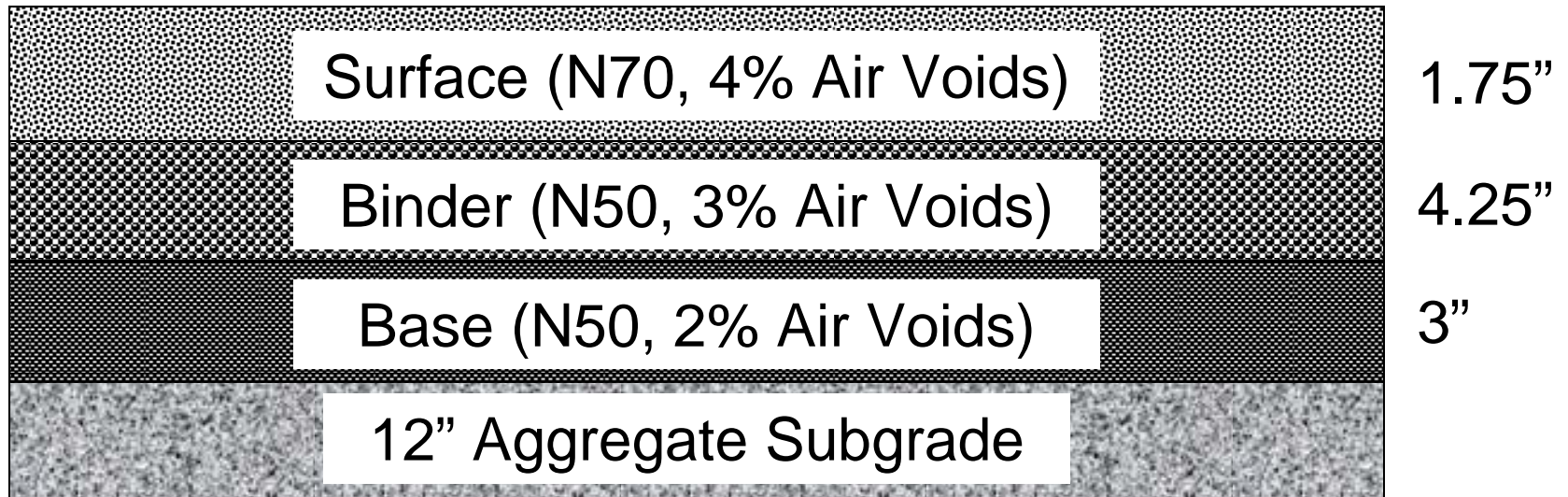
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Tollway Mainline FRAP Allowances



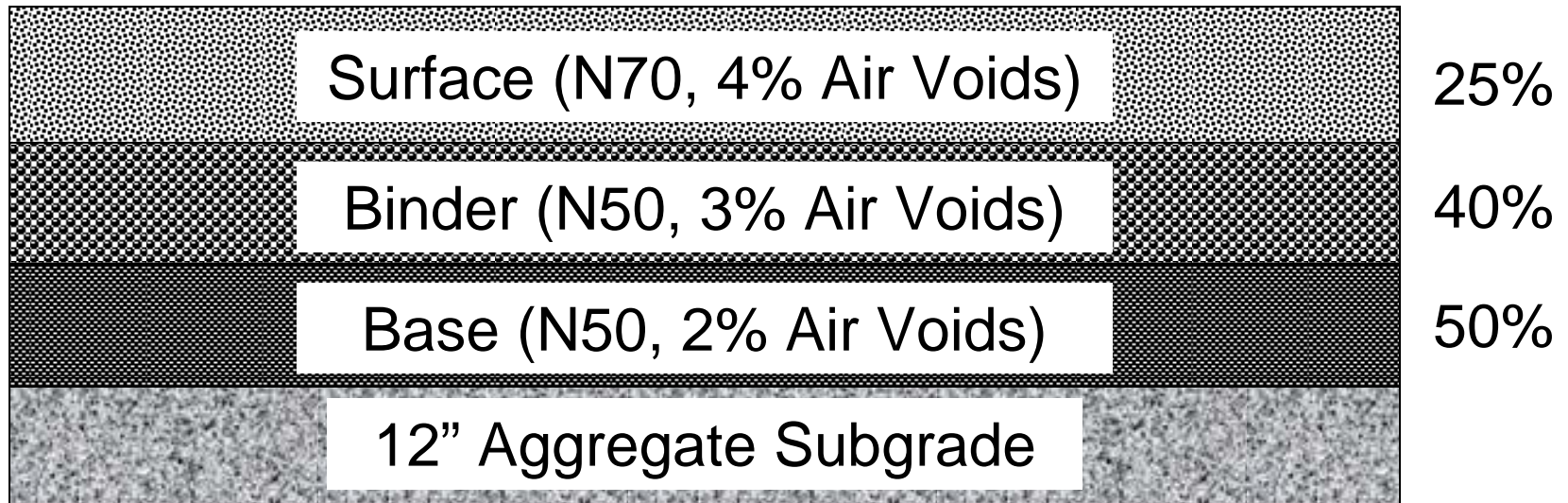
Widened Pavement – Also Includes a 3-inch “Intermediate Binder” (N70, 4% Air Voids) 35-40%

Tollway Shoulders



- Thicker Shoulder Pavement for Temporary Construction Traffic
- “Standard” shoulders are 6 inches thick.

Tollway Shoulder FRAP Allowances



Nine FRAP Research Mixtures

- 3 SMA mixtures (Steel slag, trap rock, and crushed gravel coarse aggregates).
 - Used GTR modified PG 76-22 liquid.
- N70 binder – 40% FRAP
- N70 Surface – 25% FRAP
- N50 Binder – 40% FRAP, PG 58-28 & PG 58-22
- N50 Base – 40% FRAP, PG 58-28 & PG 58-22

The FRAP Process



The FRAP Process



The FRAP Process



Initial Indications

- Mix Quality Control could be maintained
- Fatigue Resistance equivalent to virgin mixtures
- PG grading analysis incomplete



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THANK YOU