Southeastern Conference

Warranty - Past, Present, and Future

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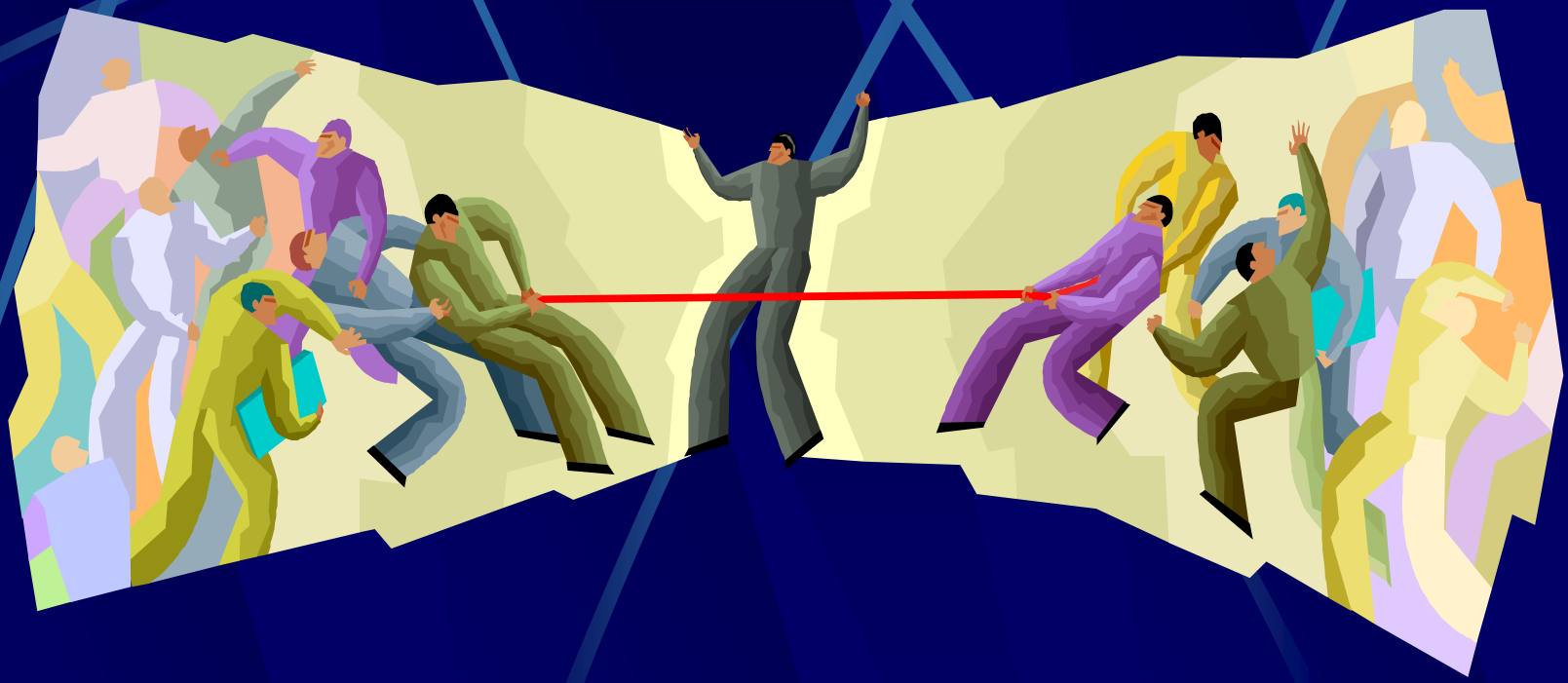
Panama City - May 7-10

How we got started



Pavement Management Data

- It’s the pavement management data that provides the information to develop the criteria and of equal importance, the means to defend the criteria.

Pavement Condition Data

- The Department annually determines the condition of the pavements by surveying the outside lane of their entire system and reporting ride, rut and cracking for HMA pavements

Pavement Condition

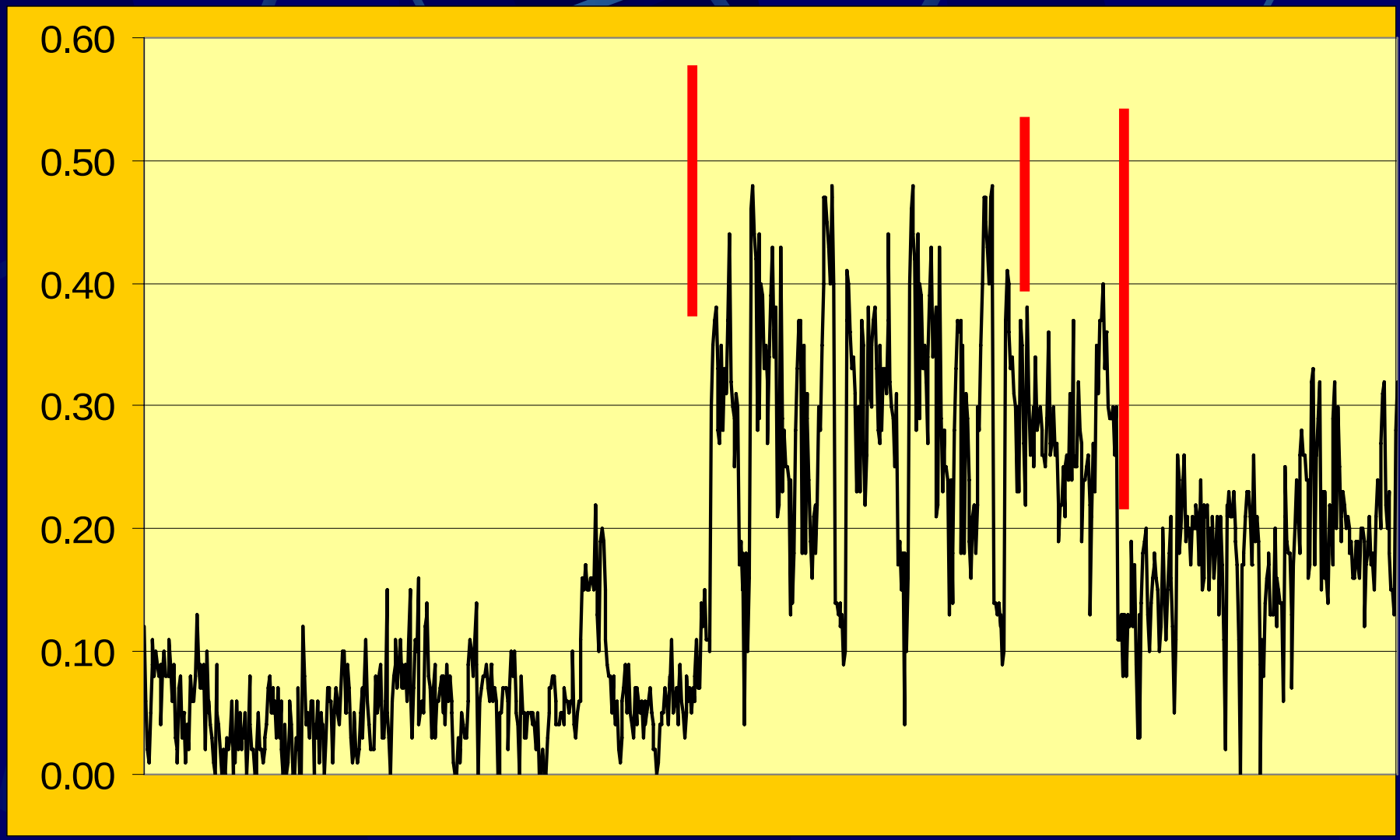
- Annual Pavement Condition survey
  - Worst lane, normally outside lane
  - Rut and ride are automated data collection
  - Cracking, potholes, bleeding, etc., are by observation

Performance Analysis

- Marshall
- Superpave
- Superpave with PWL
- Superpave with PWL and PG 76-22

Known poor performers

- Established a criteria to ensure that the projects which had premature failures would be detected


0.60
0.50
0.40
0.30
0.20
0.10
0.00

Cracking

- Normally no cracks appear in a pavement that is less than five years old
- Field surveys and engineering judgment

FDOT Involvement -JMF verification

Sampling
& Testing

Long Range Plan

	Full time Plant Inspector	FDOT sampling and testing	Accepted based on contractor certification
3 Year VAAP HMA (5 yr DB)	X	X	
10-15 year warranty (TBD)			X

History

- First warranty was SR 60 in 1999
- US 27 in 2000
  - Marshall mix
  - Less RAP
  - Less local sand
  - Both anticipated returning

Contractor Guaranteed Asphalt Pavement (CGAP)

- No job mix verification by the department
- Basically no acceptance testing by the Department
- No pay incentive or disincentives

Where we are now

- Since January of 2004 all structural HMA is covered by a three year warranty
- All PCC is covered by a five year warranty
- Except….

Specification - PCC

- Five year warranty
- Ride
- Cracking
- Spalling (wheel path and BWP)
- Shattered slabs

PCC Pavements

DEFICIENCY TYPE	THRESHOLD LEVEL	REMEDIAL ACTION
Rideability	Ride Number < 3.70	Grind all deficient LOT(s) in accordance with Section 352

PCC

Spalling in the wheel path	Four areas in any Lane Mile exceeding 1 inch in width and exceeding 6 inches in length OR any single area exceeding 3 inches in width.	Full depth slab replacement for a minimum of 6 feet in length and the full width of the slab.

PCC

Spalling outside the wheel path	Four areas in any Lane Mile exceeding 1 1/2 inches in width and 12 inches in length OR any single area exceeding 3 inches in width and 12 inches in length.	Full depth slab replacement for a minimum of 6 feet in length and the full width of the slab.

PCC

- Cracking and shattered slabs were also included in the distress tables
- Assignment of “Responsible Party” not allowed

HMA

- Use the present specification which uses the contractor's quality control data in the acceptance decision

Specification - HMA

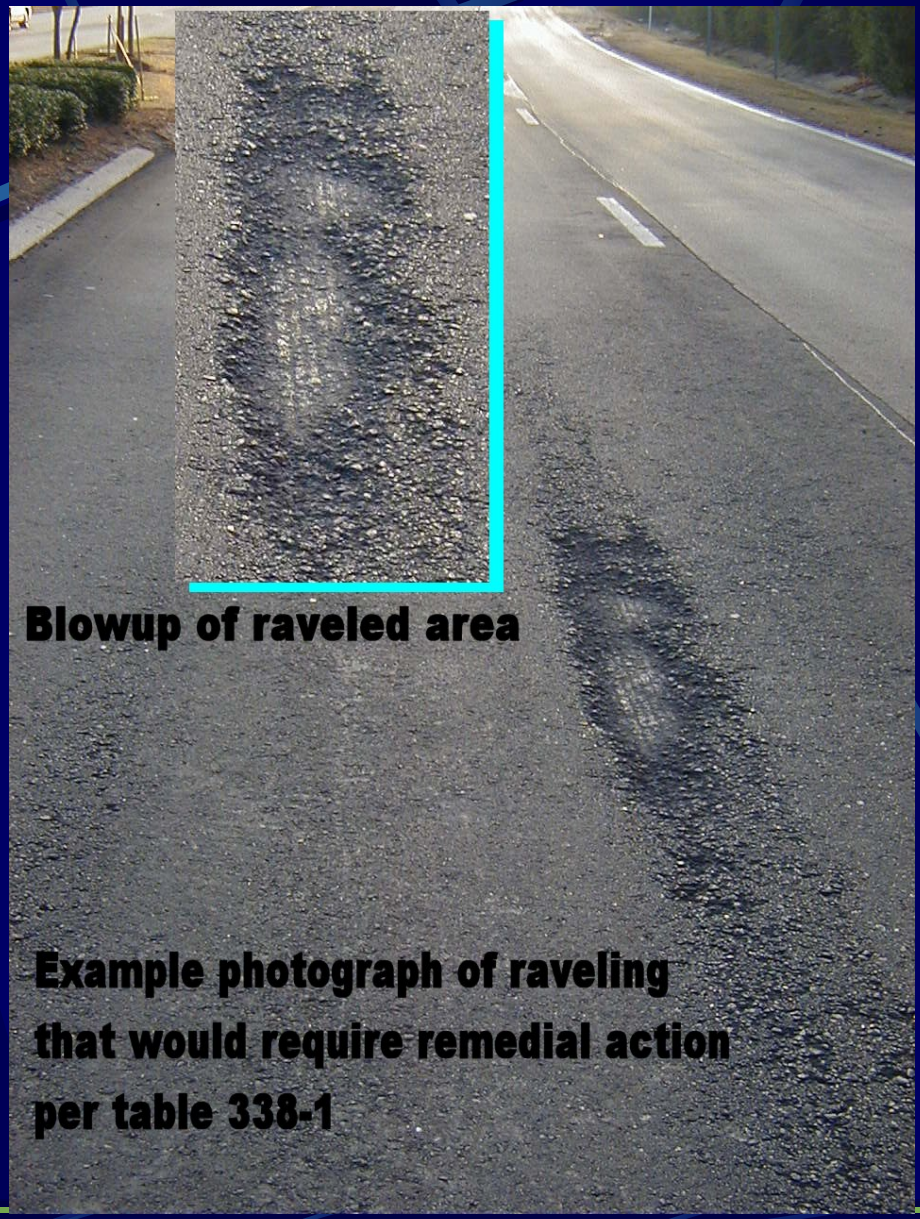
- Three year warranty
- Rut 0.25”
- Ride 3.5 RN
- Cracking 30’ over 1/8” in width
  (tenth mile lots)

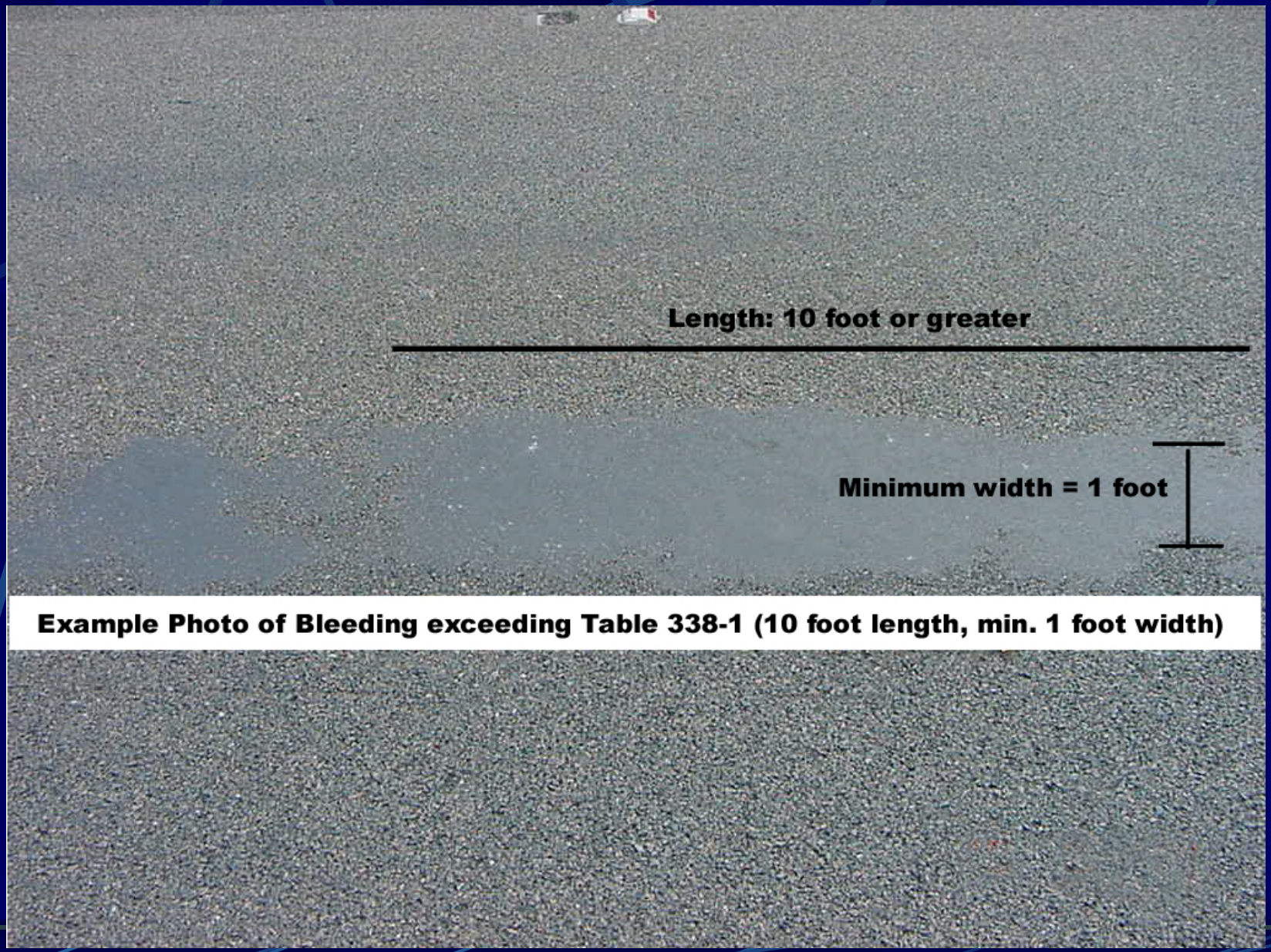
HMA continued

- Surface defects (bleeding, raveling, potholes, etc.)
- Responsible Party
- No Bond is required for the warranty
- Must repair or lose prequalification to bid

Surface deficiencies

- Raveling, Delamination, Pot holes, Slippage: As defined and determined by the Engineer in accordance with the examples displayed at the following URL: http://www11.myflorida.com/specificationsoffice/pavement.htm


Blowup of raveled area
Example photograph of raveling
that would require remedial action
per table 338-1



Example Photo of Bleeding exceeding Table 338-1 (10 foot length, min. 1 foot width)

Controlling factors
(contractor not responsible)

- Pavement design
- Traffic
- Underlying layers
- Third Party

Threshold Levels

- The amount and type of distress is dependent on the category of pavement

Category of roadways

- Mainline with design speed of 45 mph and greater and access roads, frontage roads, etc., are category one
- Category 2 are < 45 mph and rest areas, parking areas, etc.
- Category 3 includes median crossovers, shoulders, etc.

District Warranty Coordinator

- Manage projects for which a warranty was required. Including pavement markings, signalization, lighting, etc., in addition to pavements.

Warranty Procedures

- Outlines the roles and responsibly of the District Coordinators and Project Administrators
  - Contact for projects with warranty features
  - Manage/monitor projects with warranty items

Warranty Procedures

- Flowchart to describe the means of assessing the distress
  - The District Bituminous Engineer is a critical aspect and their involvement in determining the potential contractor liablility

Last Survey

- Final Survey will be run 45 days before the of the warranty period
- All lanes are presently run by the Pavement Evaluation Section

Tracking

- Pavement Management Office has developed a program where the Districts can check on the status based on the annual pavement condition survey results. *Sort by rut depth and number of contiguous sections*

Tracking

- SiteManager, the Department's construction manage system is used to keep track of the features covered by the warranty
- Once construction is complete the PM will enter info into the system

Tracking

- Districts will perform a final inspection prior to the end of the warranty period.
- The District may request the Pavement Evaluation Section to run the automated survey for ride and rut
- District Bituminous Engineer review

Tracking

- Performance concerns can be brought to the Warranty Coordinators attention by anyone, construction, maintenance and the traveling public

DRB

- Statewide Warranty Dispute Board
  - Experts selected jointed by Department and Industry

Design/Build

- Five Year HMA VAAP option
  - Five year w/o ride
  - Rutting at 0.30”
  - Settlement
- Higher technical score on the Firm’s proposal

Five Year Analysis

- Performance differed based on speed
- Facilities with posted speeds greater than or equal to 50 mph had less rutting than those with slower speeds
- Average rut depth >= 50 mph was 0.1”
- Average rut depth < 50 mph was 0.15”

How is it working?

- In 1999 and 2000 two pilots projects were let with the CGAP
- SR 60 completed and no remedial work required as a result of the warranty
- US 27 completed with twelve lots out of 304 or 4% required remedial work.

US 27

- One lot with rutting (9 mm or 0.35”)
- Two lots with slippage
- Two lots with raveling
- Seven lots with cracking
  (lot is 0.2 km or 656’)

How is it working?

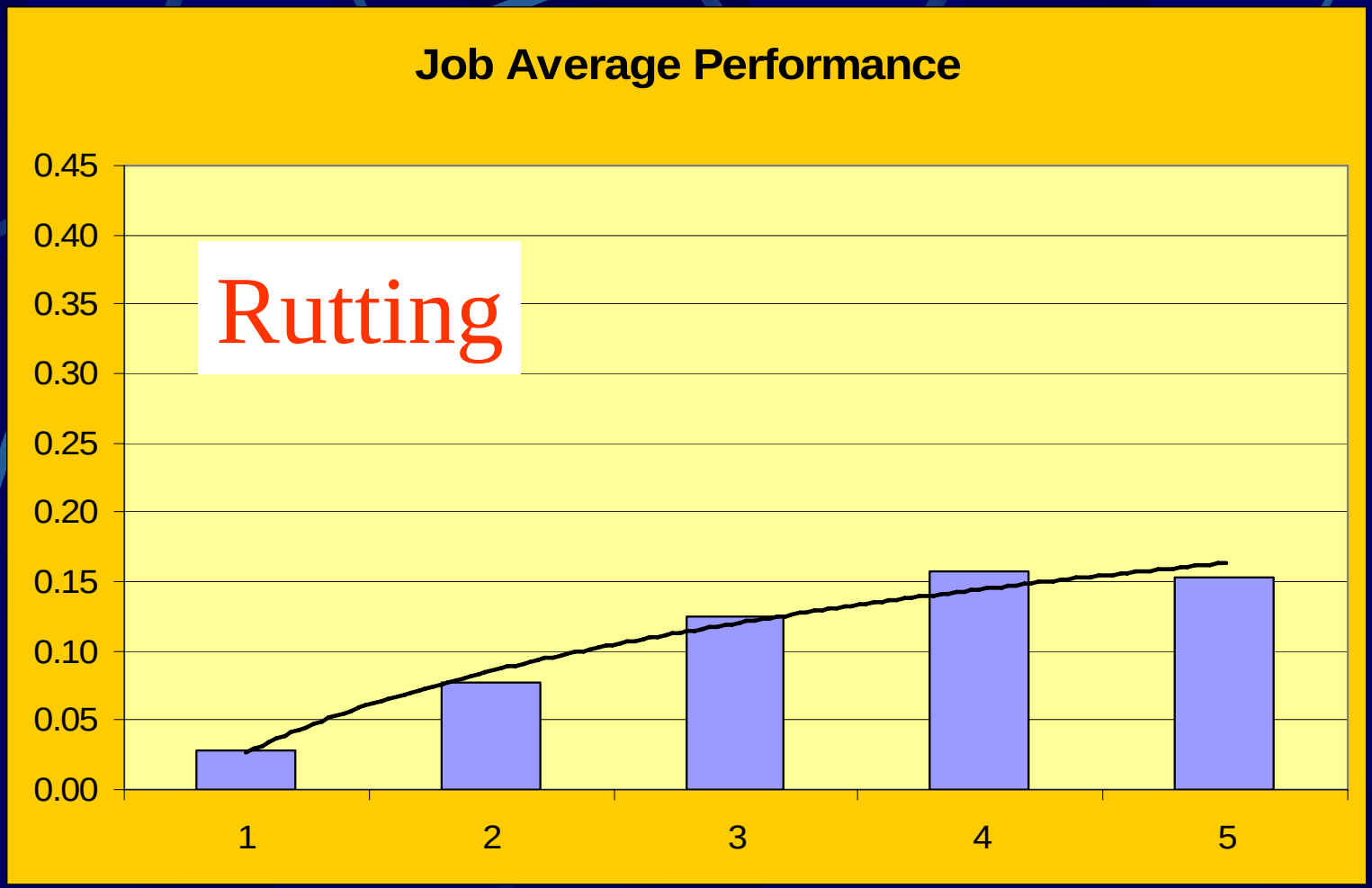
- SR 16 warranty without any formal request
- I-75 agricultural inspection station

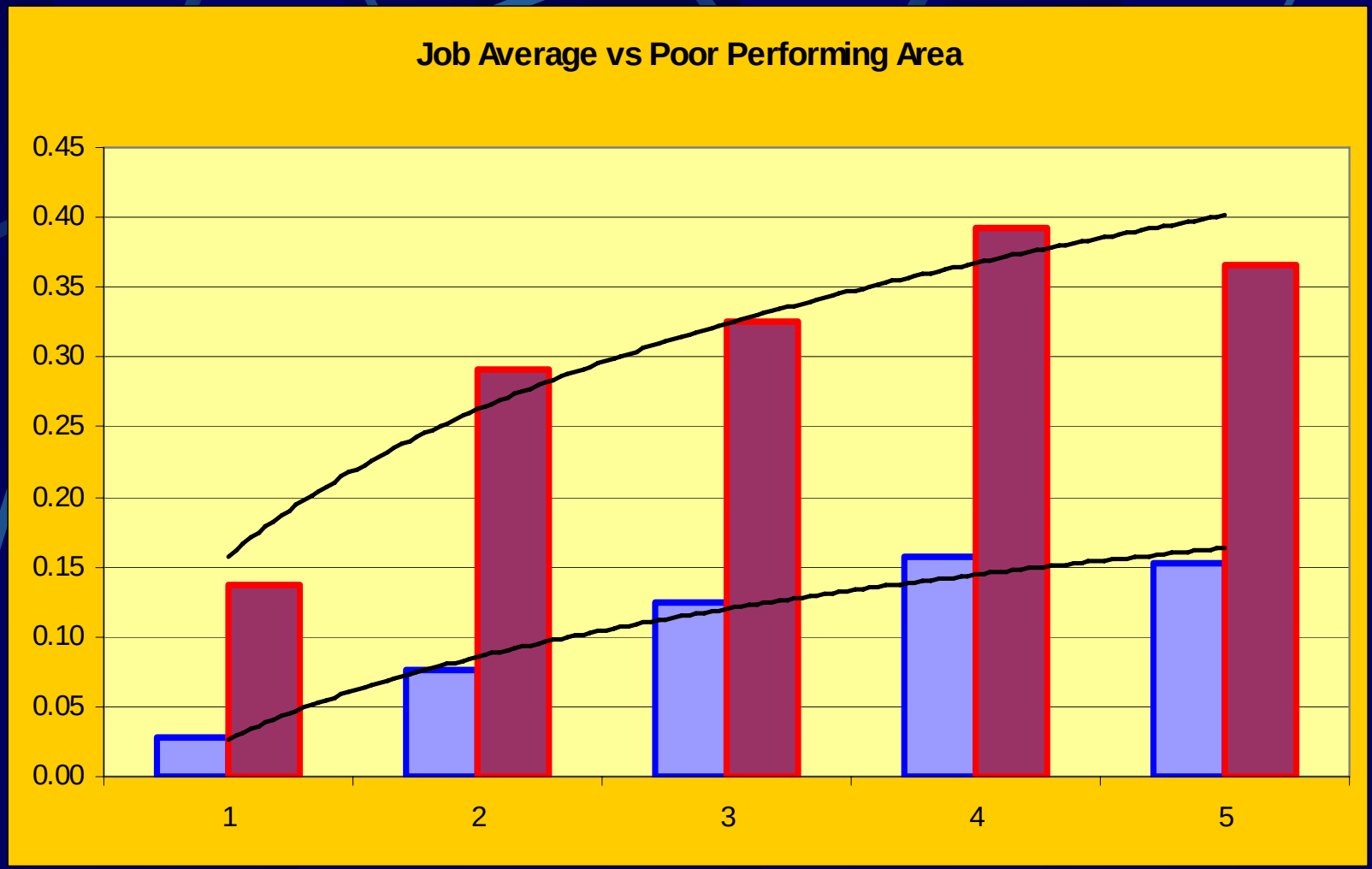
Why is it working?

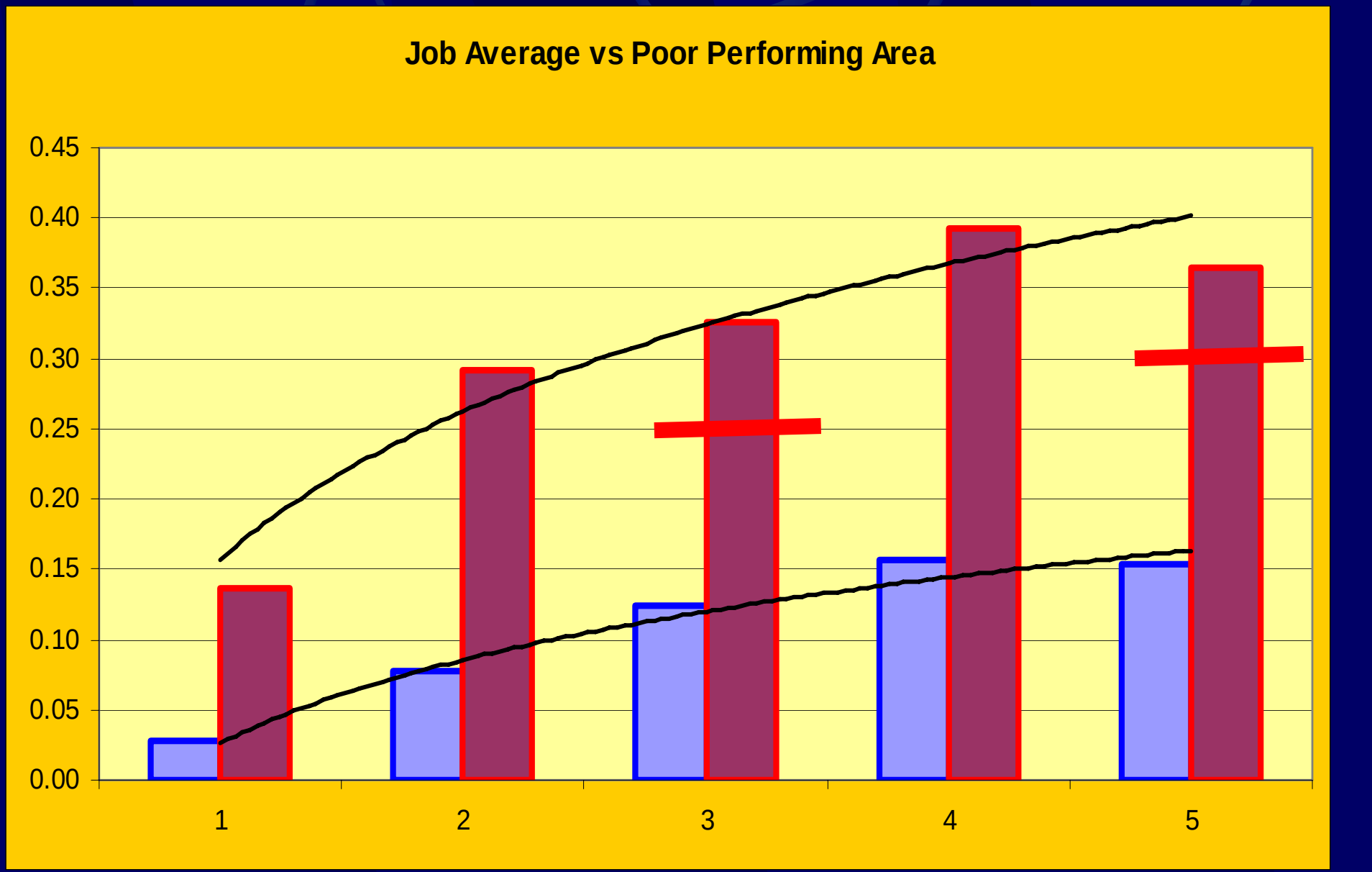
- Defendable criteria
  - Many Years of pavement condition survey
  - Peers capable of producing and therefore the workmanships and contractor's means ands methods are responsible of poor performance
- Other factors (skid, prequalification)

Recent Analysis

- The five year criteria for rutting should be 0.30” (Previous requirement was 0.35”)


Job Average Performance
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Rutting
1
2
3
4
5


Job Average vs Poor Performing Area
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
1
2
3
4
5


Job Average vs Poor Performing Area
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
1
2
3
4
5

Projects with PWL

- Implementation of a PWL specification
- “This difference is considered to be extremely statistically significant” using the t test and a 95 % confidence interval

Future

- Develop warranties of equal length (10-15 years) to go along with bidding alternate pavement types.
- Reduce or eliminate acceptance sampling and testing and have a five year warranty


Thank you