



Quantifying the Costs and Benefits of Pavement Retexturing as a Pavement Preservation Tool

The University of Oklahoma

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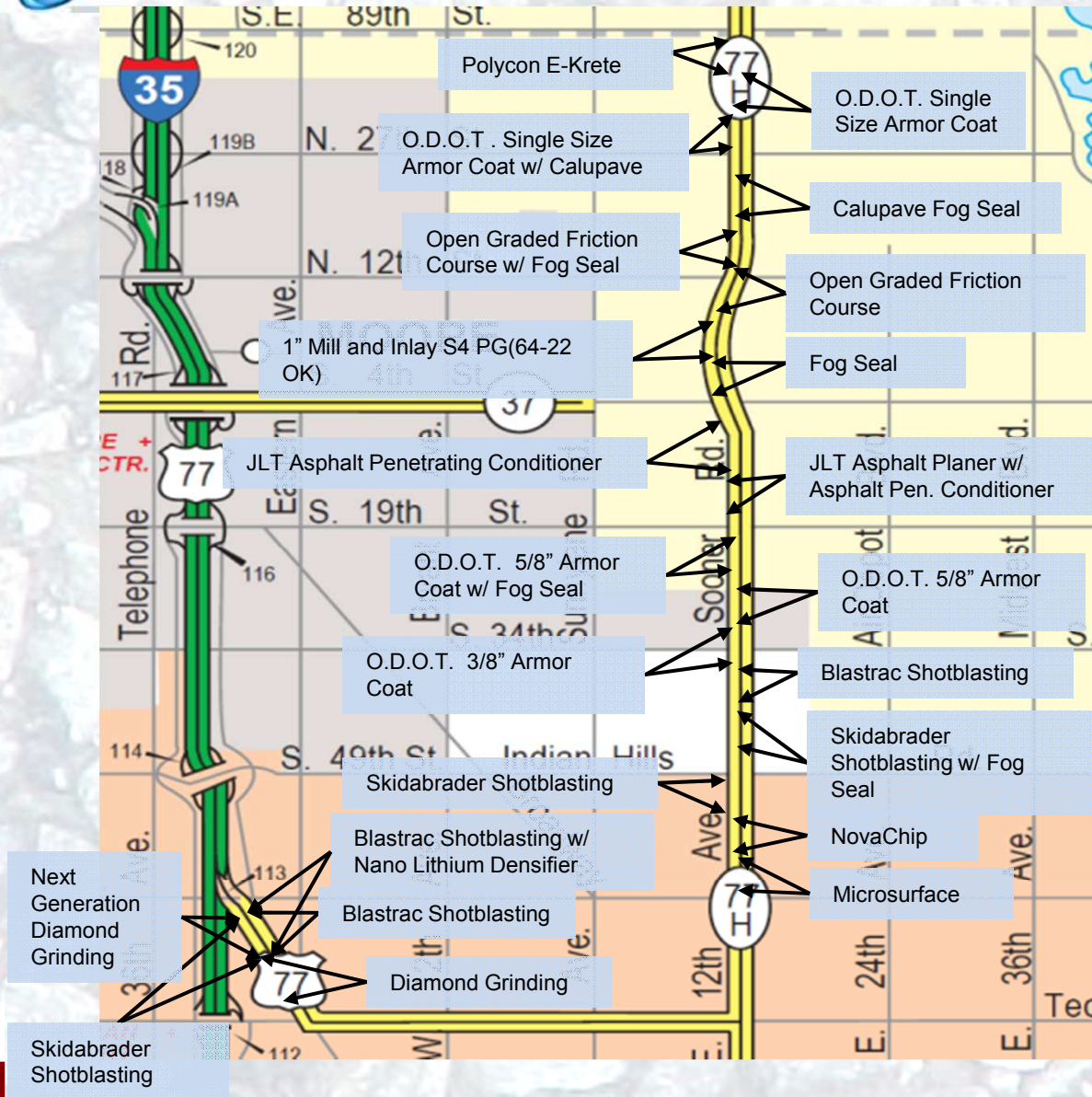


Project Objective

- Leverage Previous National Research
 - Skid Number vs. Crash Rates
 - Crash Rates vs. Road Conditions
 - Long Term Pavement Performance Program
- Leverage Previous International Research
 - Macrotexture vs. Crash Rates
 - Management of Pavement Macrotexture

**CALCULATED VALUE BASED
DECISION PROCESS!!**

OTC



- 23 TEST SECTIONS
- ¼ MILE LONG (400 M)

ASPHALT SECTIONS

- 12 Surface Treatments
- 2 Chemical Treatments
- 4 Mechanical Treatments

CONCRETE SECTIONS

- 1 Chemical Treatments
- 4 Mechanical Treatments





Test Section Sponsors



- Blastrac, Inc. Edmond, OK
- Penhall Diamond Grinding, Anaheim, CA
- JLT Corp. Cushing, OK
- Ergon Emulsions and Materials, Austin, TX
- Skidabrader, Inc. Ruston, LA
- Polycon, Madison, MS
- Haskell Lemon & Hall Brothers, OKC, OK
- Pathway Services, Tulsa, OK
- Calumet Lubricants, Shreveport, LA



Testing Protocol

- Follow change in macrotexture & skid resistance over time.
- Macrotexture tests
 - ASTM STP 583 Outflow meter
 - TNZ T/3 Sand circle
 - TNZ P/17 Performance Spec for chip seal texture
 - RoboTex (Transtec)
 - High Speed Truck Mounted Laser (Pathway)
- Skid resistance measured by ODOT skid tester
 - Ribbed tire (40 mph) & Smooth tire (40 mph and 55 mph)
- Test conducted monthly for 3 years
- Plans to extend period to surface failure, but will reduce frequency to quarterly tests



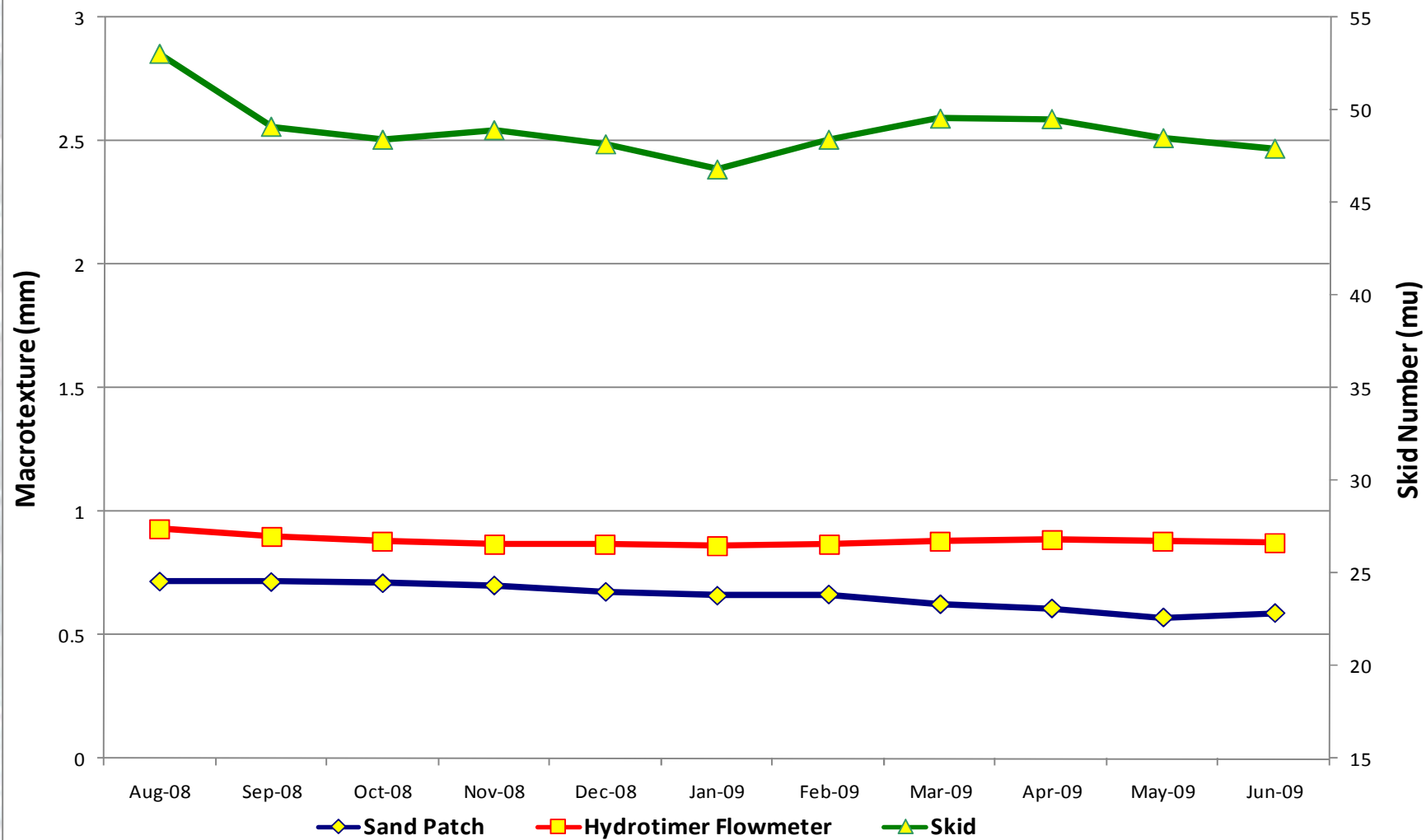
Macrotexture Testing

TNZ T3 Sand Circle

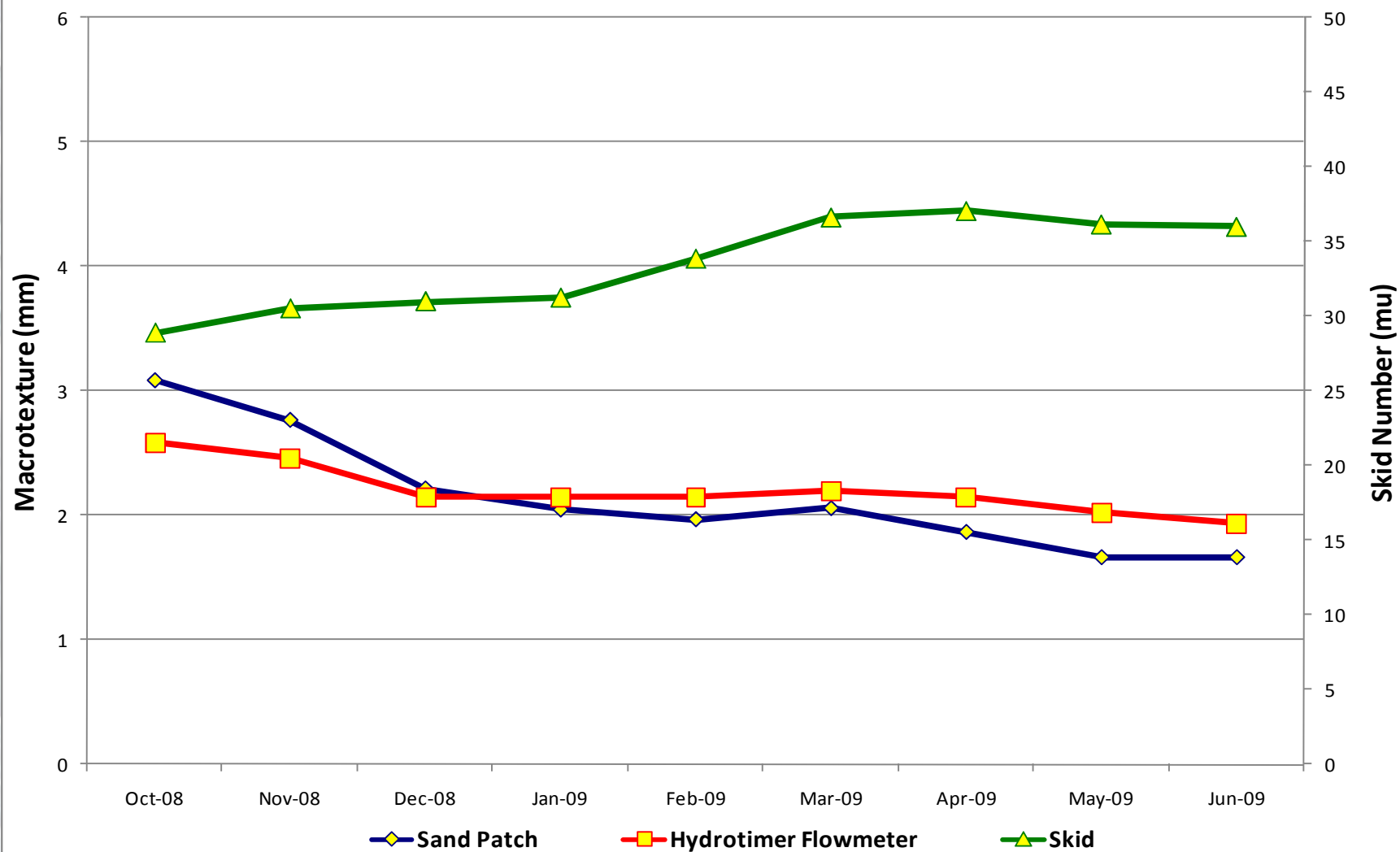
Hydrotimer Outflow Meter



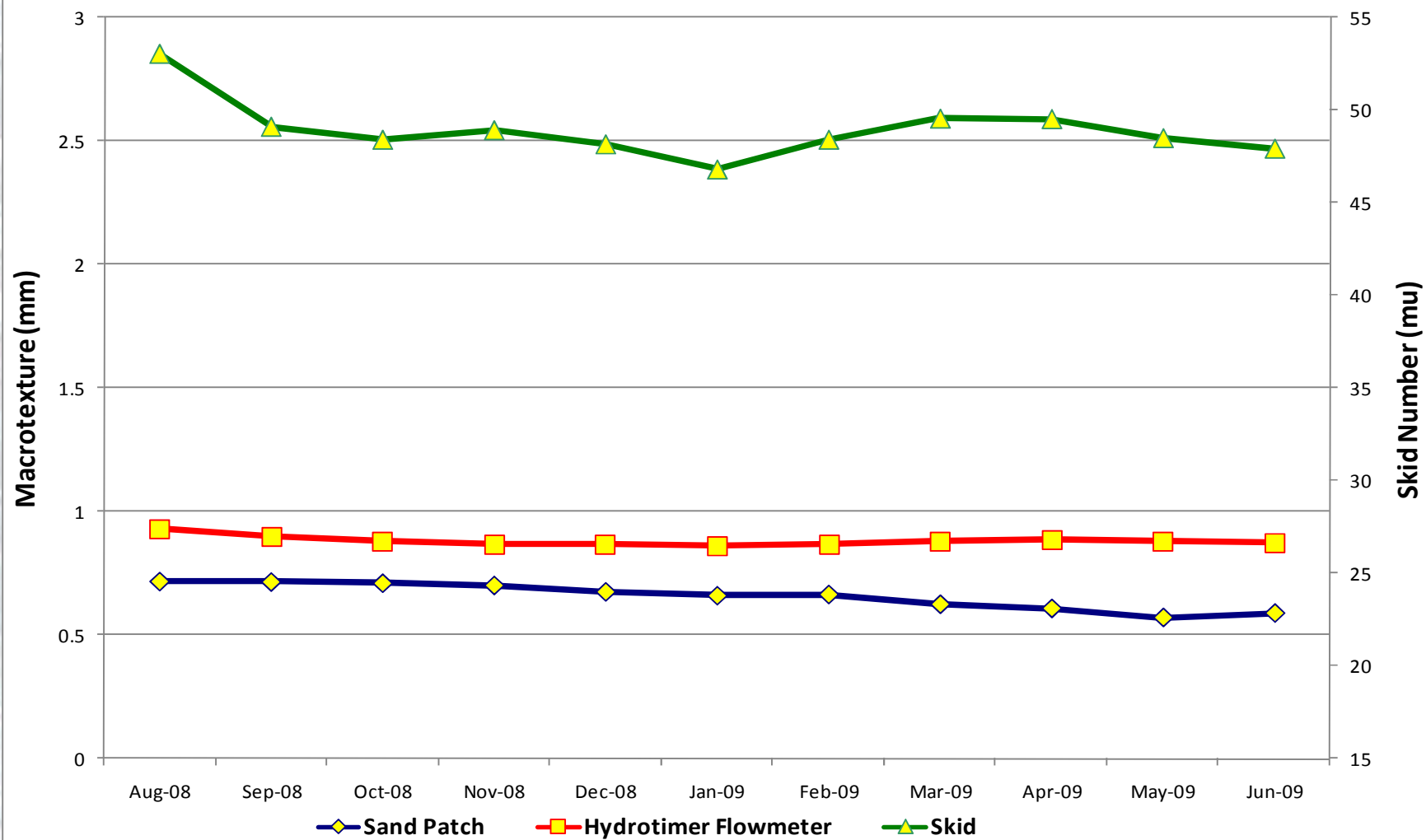
Test Section 15 - Blastrac Shotblasting



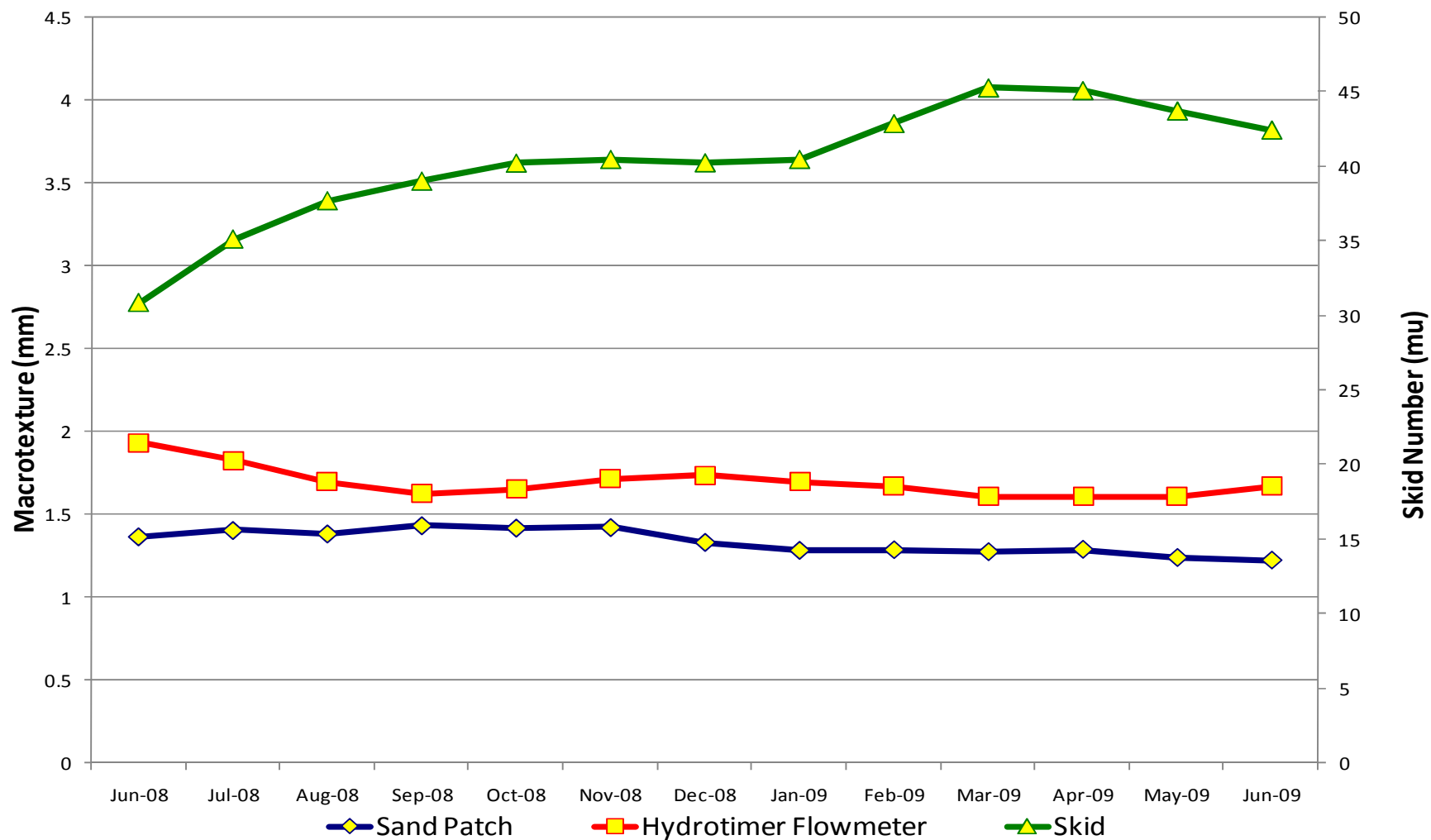
Test Section 2 - OGFC



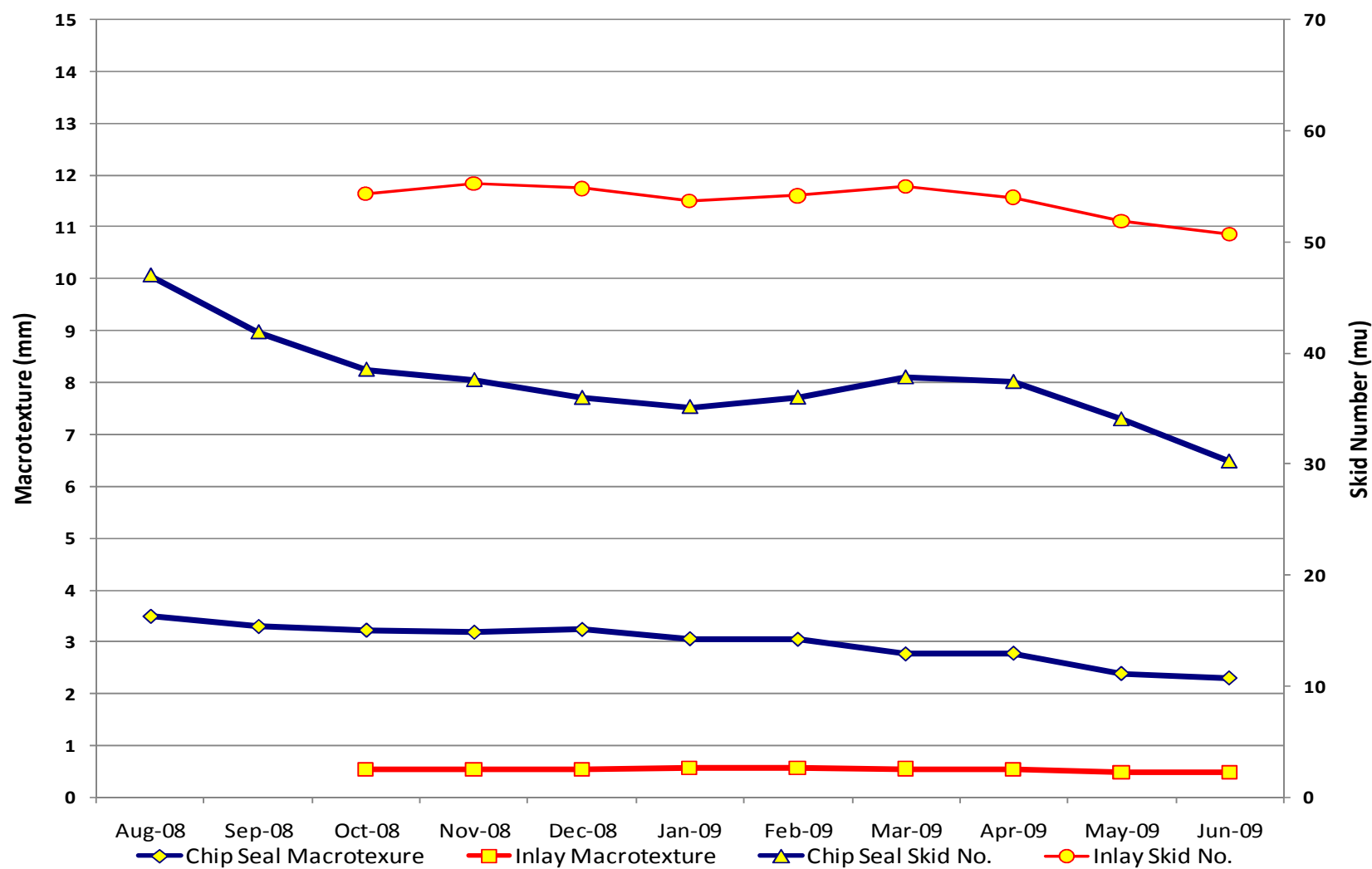
Test Section 15 - Blastrac Shotblasting



Test Section 9 - Pavement Conditioner



Mill and Inlay vs. Chip Seal



Economic Analysis

- Tracking change in engineering properties must be correlated with an analysis of the cost of supplying those properties
- Life cycle cost analysis for each tested alternative.
- Develop life cycle cost model for pavement texture over time.
- Use of Cost Index Number Theory to quantify “Bang for the Buck”



Pavement Retexturing

Questions????



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