



Department of
Transportation

Federal Pavement Performance Measures and Target Setting

July 16, 2019

Outline

- ➔ Federal Pavement Performance Measures
- ➔ Pavement Target Setting
- ➔ Key Takeaways



23 CFR Part 490 Subpart C

- ➔ Applies to NHS on 0.1 mile Segments
- ➔ Requires Developing 2 yr and 4 yr Targets
 - ❑ % of Interstate in Good Condition
 - ❑ % of Interstate in Poor Condition
 - ❑ % of non-Interstate NHS in Good Condition
 - ❑ % of non-Interstate NHS in Poor Condition

23 CFR Part 490 Subpart C

➔ Annual Requirement

- ❑ Poor Interstate lane miles shall not exceed 5%
- ❑ **Consequence** - more NHPP and STP funds obligated to Interstate Program next fiscal year



Concerns with Federal Requirements

- ➔ Responsible for Entire System – not just NHS
 - ❑ Apply Asset Management at a System Level
 - ❑ Concerned with Focus on just NHS
 - ❑ “Penalty” could Lead to Focus on Interstate Pavement
- ➔ 0.1 mi Reporting Requirement
 - ❑ Does Not Align with Pavement Management Sections
 - ❑ Does Not Align with current DOT Pavement Measures

NYSDOT Pavement Surface Rating

**10-9 Excellent
No Cracking**



**8-7 Good
Infrequent
Minor Cracking**



**5- Poor
Very Frequent
Severe Cracking**



**6 Fair
Frequent
Mid Level Cracking**



Federal Pavement Performance Metrics



Pavement Condition Thresholds

| | Good | Fair | Poor |
|------------------------------|-------|---|--|
| IRI (inches/mile) | <95 | 95-170 | >170 |
| Rutting (inches) | <0.20 | 0.20-0.40 | >0.40 |
| Faulting (inches) | <0.10 | 0.10-0.15 | >0.15 |
| Cracking (%) | <5 | 5-20 (asphalt) 5-15 (JCP) 5-10 (CRCP) | >20 (asphalt) >15 (JCP) >10 (CRCP) |

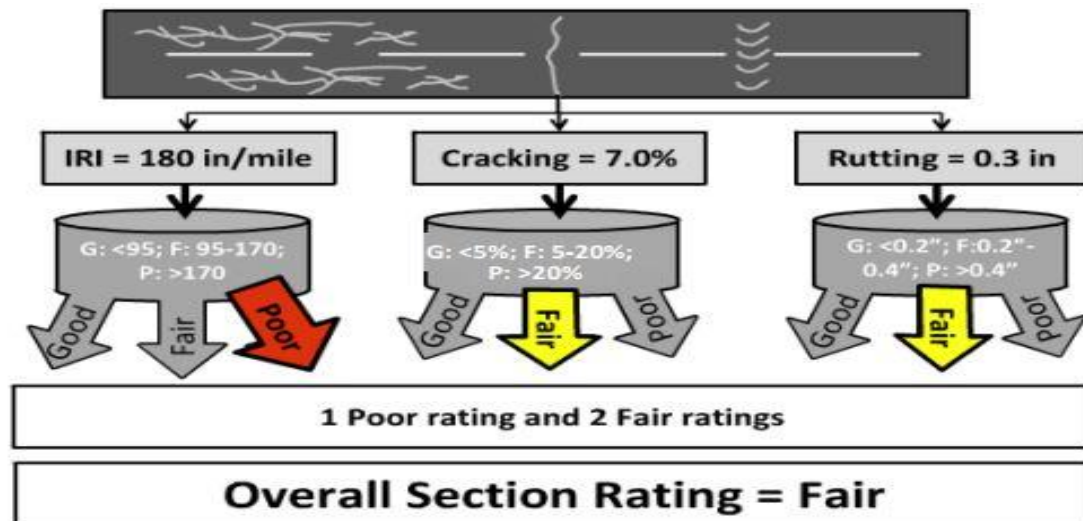


Federal Pavement Performance Measures

⇒ How are Good and Poor defined for the NHS?

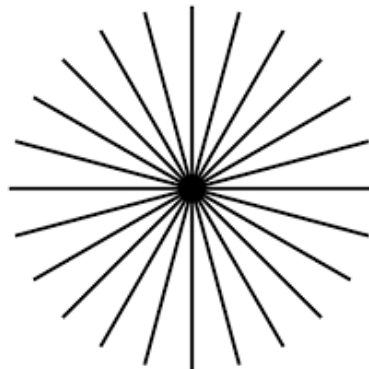
- ❑ Good = 3 metrics rated good
- ❑ Poor = 2 or more metrics rated poor
- ❑ Fair = all other combinations

> 5% missing data = poor



Target Setting – Modeling Complications

- ➔ Surface Score vs Federal Cracking Metric
 - ❑ NYSDOT Score – total cracking and dominant distress
 - ❑ Federal Crack Metric
 - HMA – % area with **fatigue cracking in the wheel path**
 - PCC – % of slabs with **transverse cracking**
- ➔ Only 1 yr History Calculating Federal Measures



Target Setting – Modeling Complications

- ➔ Need to Model Entire NHS and Only NHS
 - ❑ Interstate
 - ❑ Non-Interstate
- ➔ NYSDOT Sections vs 0.1 mile Segments

| | | | | | | | | | | |
|--------|------|------|------|------|------|------|------|------|------|------|
| NYSDOT | Fair | | | | | | | | | |
| FHWA | Good | Fair | Good | Fair | Good | Poor | Fair | Fair | Good | Good |

Target Setting – Approach

- ➔ Early Efforts – Complications Proved Real
- ➔ Correlate Federal Measures to State Rating

Difference Between Federal Baseline and State Surface Rating

| NHS Type | Baseline Federal Report | | NYSDOT Score | | Delta (Federal Report - NYSDOT) | |
|----------------|-------------------------|------|--------------|---------|---------------------------------|-----|
| | % G | % P | %VG&E (≥8) | %P (≤5) | % G | % P |
| Interstate | 52.24 | 2.74 | 45.2 | 1.5 | 7.0 | 1.2 |
| non-Interstate | 20.4 | 8.3 | 26.2 | 4.0 | -5.8 | 4.3 |

- ➔ Use Information from Planning
 - ❑ Minimum Expected Funding for NHS - \$250M (const.)
 - ❑ Committed Paving Projects from TIP/STIP
- ➔ Use Standard Pavement Management Approach

Target Setting

- ➔ Standard Pavement Model Results
- ➔ Federal Measure % = State Rating % + Δ
- ➔ MPOs Reviewed
- ➔ Opportunity to Adjust 4 yr Target in 2020

| Federal Measure | Baseline (%) | 2 Year Interim Target (%) | 4 Year Target (%) |
|-----------------------|--------------|---------------------------|-------------------|
| Interstate % Good | 52.24 | 46.4 | 47.3 |
| Interstate % Poor | 2.74 | 3.1 | 4.0 |
| Non-Interstate % Good | 20.4 | 14.6 | 14.7 |
| Non-Interstate % Poor | 8.3 | 12.0 | 14.3 |

Key Takeaways

- ⇒ Federal Measures **≠** NYSDOT Measures
 - 3 Federal Metrics **≠** 1 NYSDOT Metric
 - Federal Cracking **≠** NYSDOT Cracking
 - %G/P 0.1 mi. segments **≠** Avg %G/P of longer sections
- ⇒ Only “Penalty” for Interstate $>5\%$ Poor_{Federal}
- ⇒ Targets Set by Modeling Standard Practices
- ⇒ Targets Should **Not** Change Current Practices
- ⇒ Continue Standard Pave. Mngmnt. Practices

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