Infrastructure Condition (PM2) & Travel Time Reliability (PM3)

Performance Targets

Rule Making

- Map-21 mandated FHWA to develop a rule for Pavement and Bridge Conditions (PM2) as well as Travel Time Reliability (PM3)

- Nine Performance Measures and targets covering three areas

- NHDOT PM2 & PM3 targets by May 20th, 2018

- MPO targets within 180 days after (by November 16, 2018)

- MPO Has option to support state targets or develop their own

- First full State Performance Report due to FHWA by 10/1/2018

- MPO Performance Report to be included with TIP when updated next spring

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Nine Measures in Three Areas

| Area	Measure
Pavement Condition	% of Interstate pavements in Good condition
	% of Interstate pavements in Poor condition
	% of non-Interstate NHS pavements in Good condition
	% of non-Interstate NHS pavements in Poor condition
Bridge Condition	% of NHS bridges by deck area classified as in Good Condition
	% of NHS bridges by deck area classified as in Poor Condition
Travel Time Reliability	Level of Travel Time Reliability (LOTTR) on the Interstate System
	Level of Travel Time Reliability (LOTTR) on the Non-Interstate NHS
	Truck Travel Time Reliability (TTTR) Index on the Interstate System

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National Highway System

I-93
I-95
US 1
US 1 Bypass
NH 16
NH 28
NH 101
NH 111
NH 125

NHS Interstate
NHS Non-Interstate
State Highways

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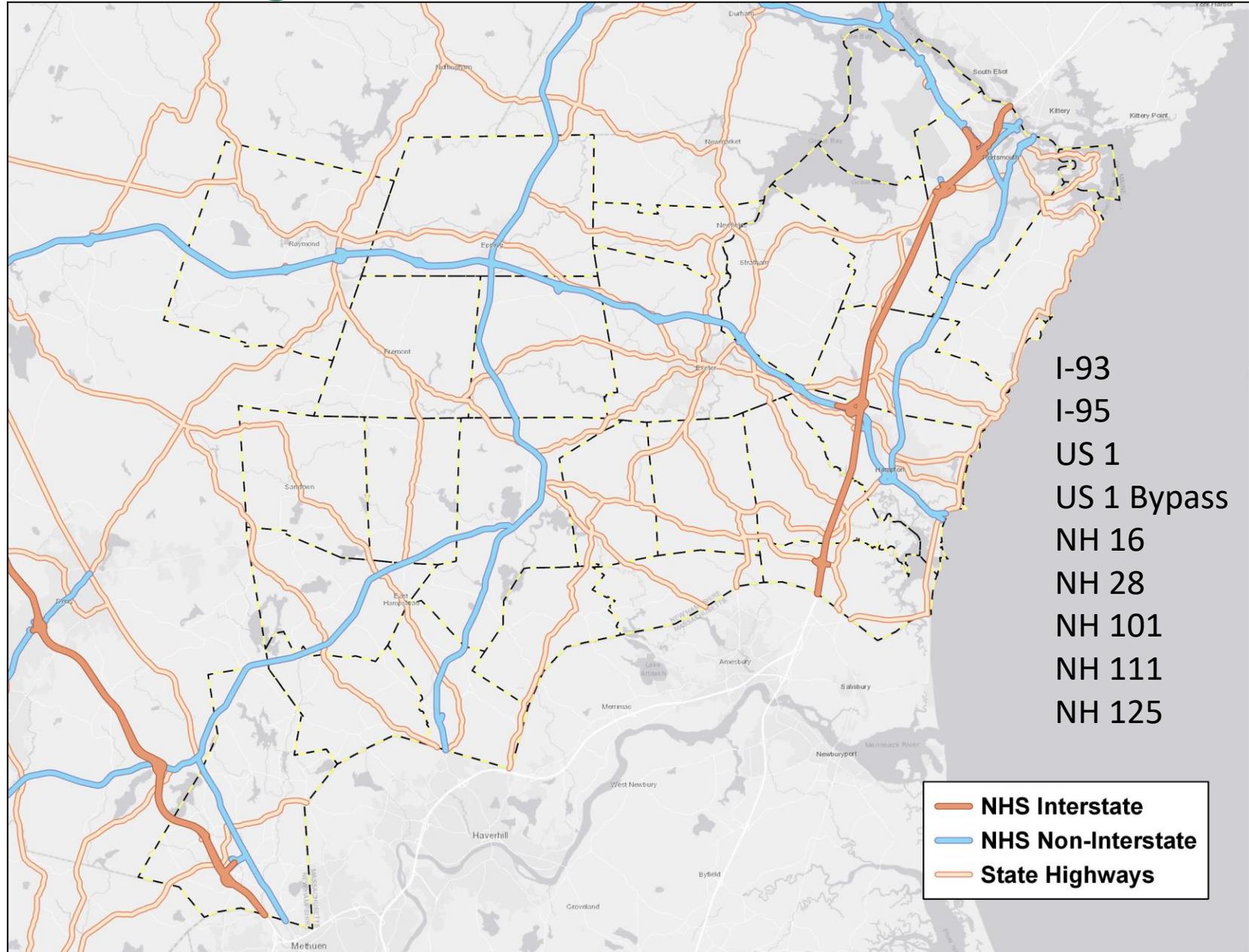
National Highway System Bridges

Legend:
- NHS Bridges
- NHS Interstate
- NHS Non-Interstate
- State Highways

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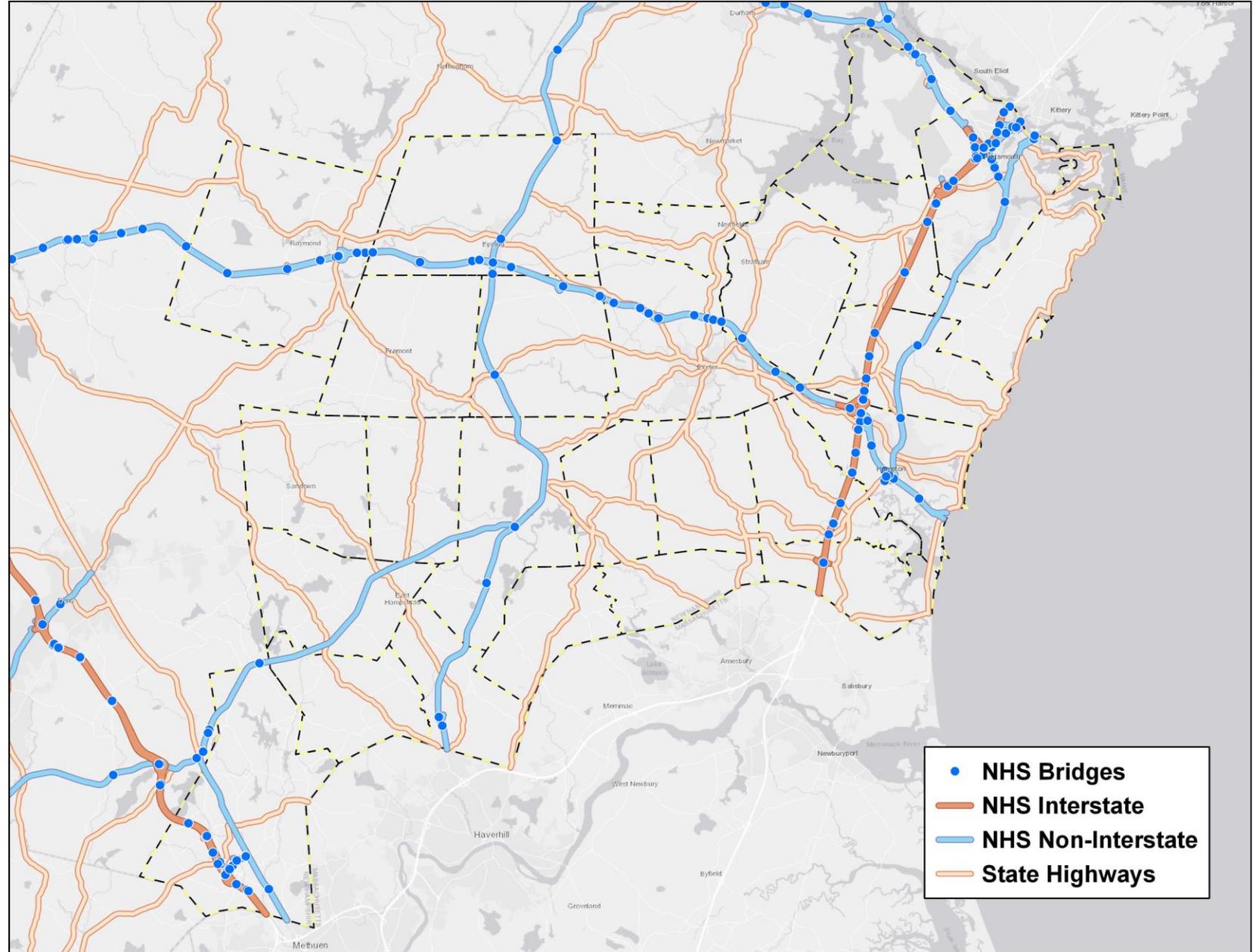
Target Setting Process

- Four Year "Performance Periods" Established by rules

- NHDOT Must set 2 and 4-Year Targets

  - There are exceptions in this first iteration

  - "Mid-Performance Period" progress report at 2-year mark

  - Opportunity to adjust targets at mid-point

- Must coordinate with MPOs to establish required statewide targets and have the option to develop metropolitan area targets

  - NHDOT has opted not to establish metropolitan area targets

- MPOs only required to set 4-Year Targets

Target Setting Process

- **Coordination With NHDOT**

  - **Multiple meetings and discussion of data and process**

- **MPO Working group used to manage data and data sharing**

- **Identified work tasks and timeline for adoption**

- **State Targets established in May, 2018 started 180 day clock**

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Pavement Condition

- DOT must set **2 & 4-Year Targets** (2-Year targets are optional for this first time only)

- MPO must set **4-Year Targets**

- Initial requirement is to utilize **International Roughness Index (IRI)**

Score	Condition
<95	Good
>= 95 and <= 170	Fair
>170	Poor

- Transition to "**Full Distress**" metrics that incorporate measures of rutting, cracking as well as special processes utilized for roadways with speed limits less than 40 MPH.

- **The next set of conditions and targets will be drastically different**

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Pavement Condition Data

Pavement Conditions
2016 IRI
— Good (<95)
— Fair (≥95 to ≤170)
— Poor (>170 to ≤350)
— Very Poor (>350)

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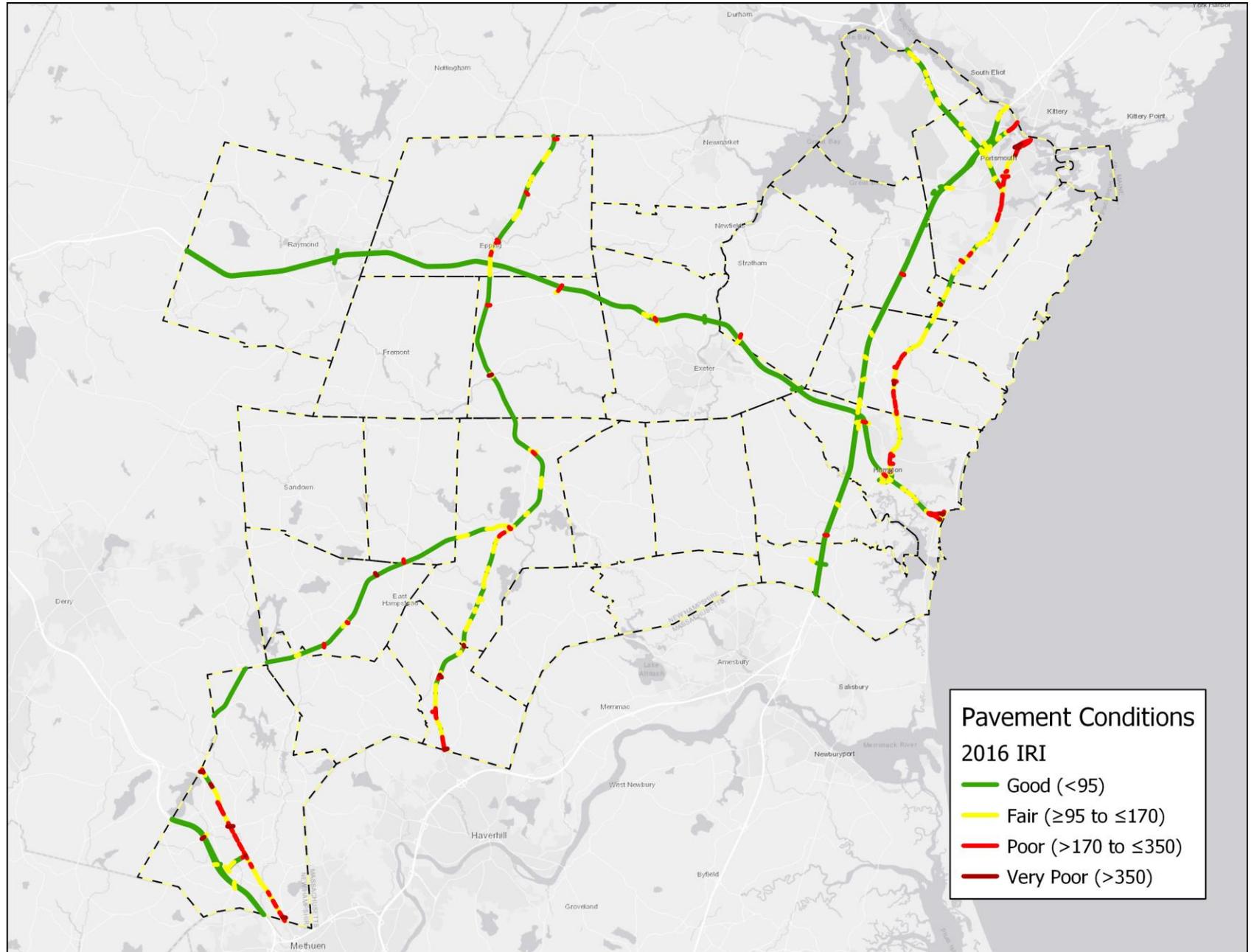
Current Pavement Conditions

Percent of Interstate Pavements in Good Condition
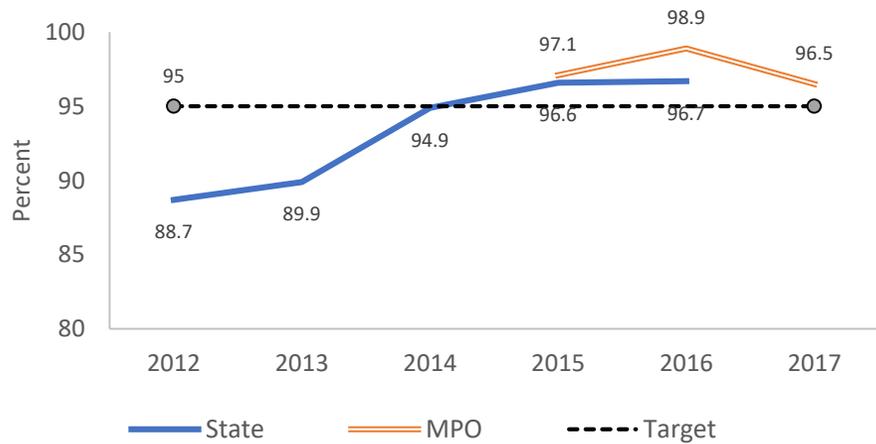
Percent of Non-Interstate NHS Pavements in Good Condition

Percent of Interstate Pavements in Good Condition

Percent of Non-Interstate NHS Pavements in Poor Condition

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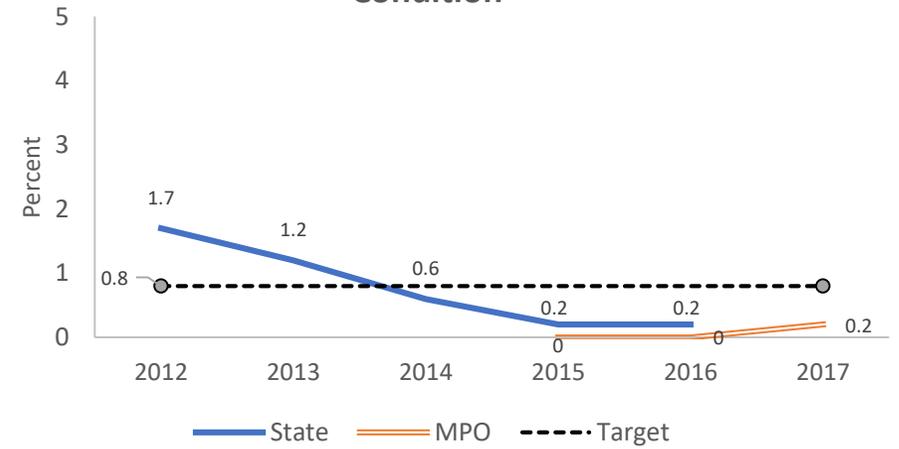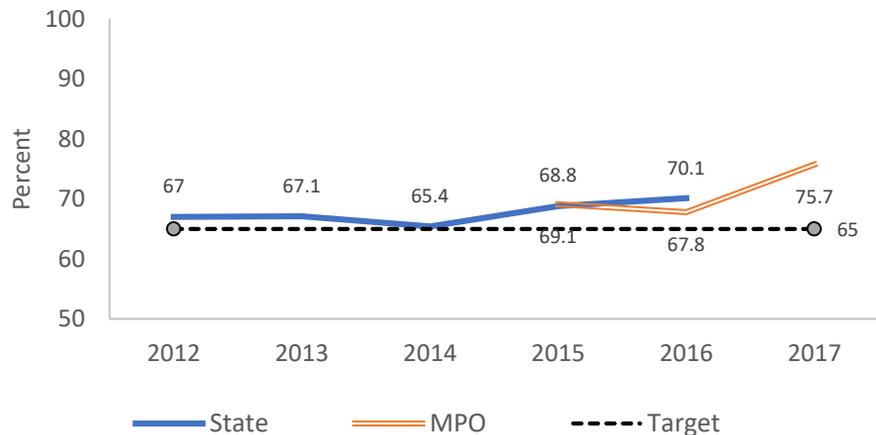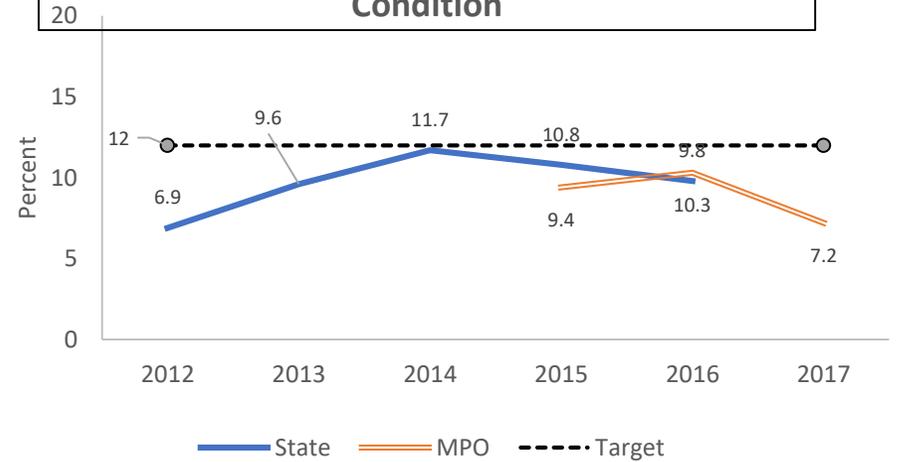
NHS Bridge Conditions

- **Data collected through NHDOT regular bridge inspections**

- **Conditions reported in square feet of deck area**

- **DOT must establish 2 & 4-Year Targets**

- **MPO must establish 4-Year Targets**

- **Based on condition of deck, superstructure, and substructure, or culvert**

- **Lowest rated component provides overall rating for structure**

Score	Condition
>= 7	Good
> 4 and < 7	Fair
<= 4	Poor

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NHS Bridge Condition Data

NHS Bridges
Condition
- 🟢 Green
- 🟡 Yellow
- 🔴 Red
- ⚫ Black
- NHS Interstate
- NHS Non-Interstate
- State Highways
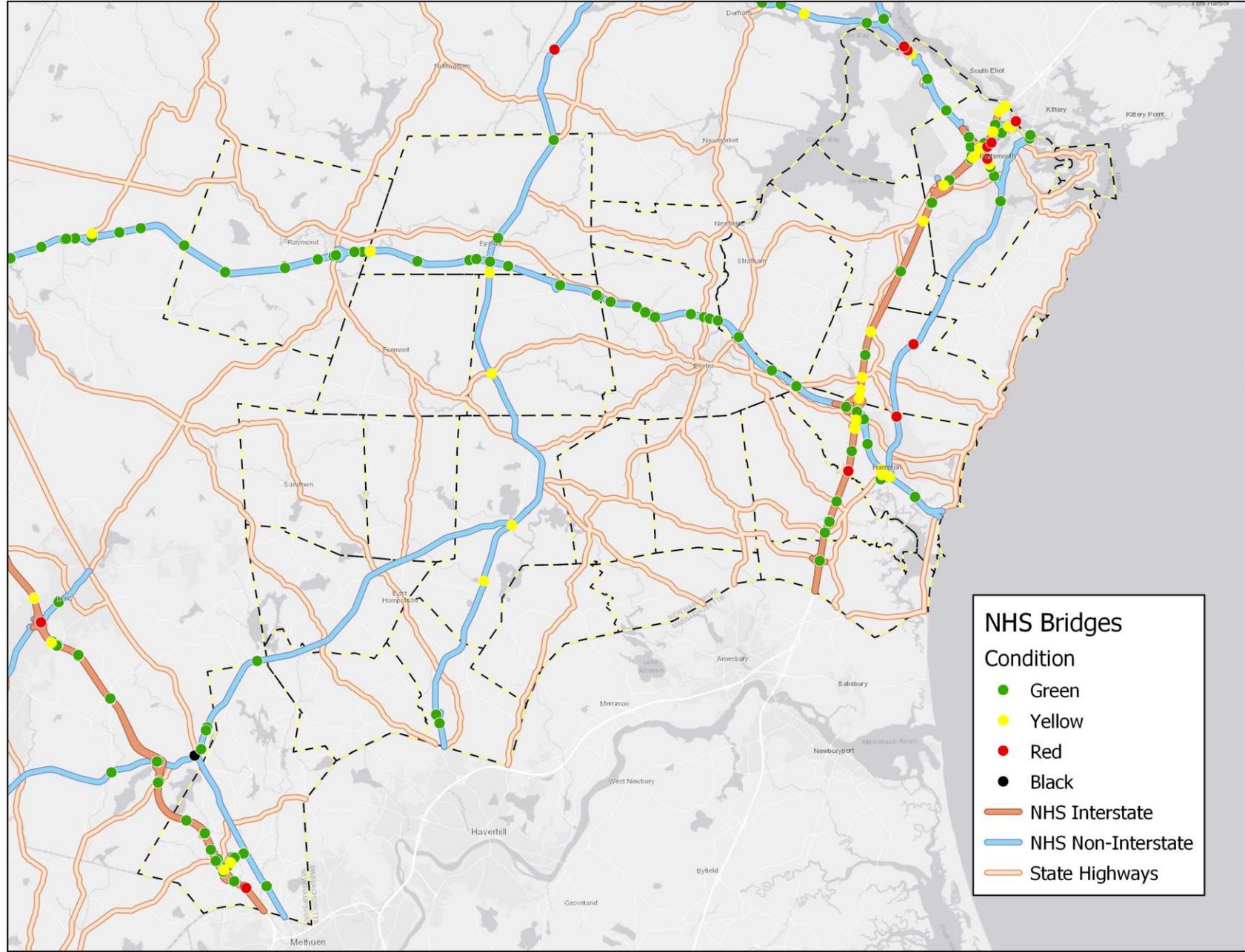
Current NHS Bridge Conditions

- Percentages of total square feet in "Good" and "Poor" Condition

Percent of NHS Bridge Area in Good Condition

State: 57.60 (2014), 60.40 (2015), 58.70 (2016), 58.80 (2017), 57.00 (2018)
MPO: 38.20 (2015), 38.70 (2016), 37.70 (2017)
Target: 57.00

Legend: State, MPO, Target

Percent of NHS Bridge Area in Poor Condition

State: 7.20 (2014), 6.70 (2015), 8.50 (2016), 7.00 (2017), 7.00 (2018)
MPO: 8.10 (2015), 8.10 (2016), 8.10 (2017)
Target: 7.00

Legend: State, MPO, Target

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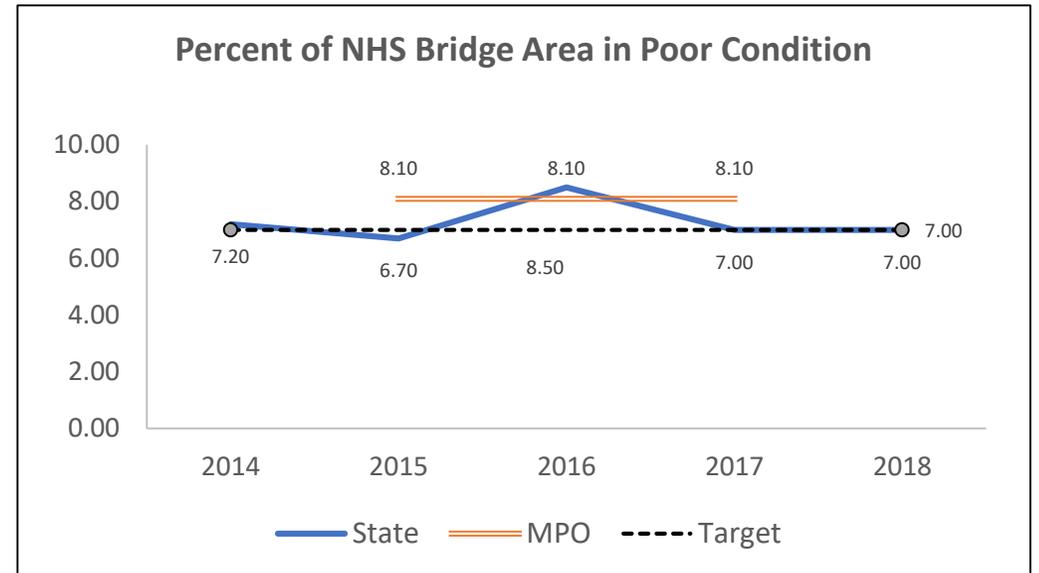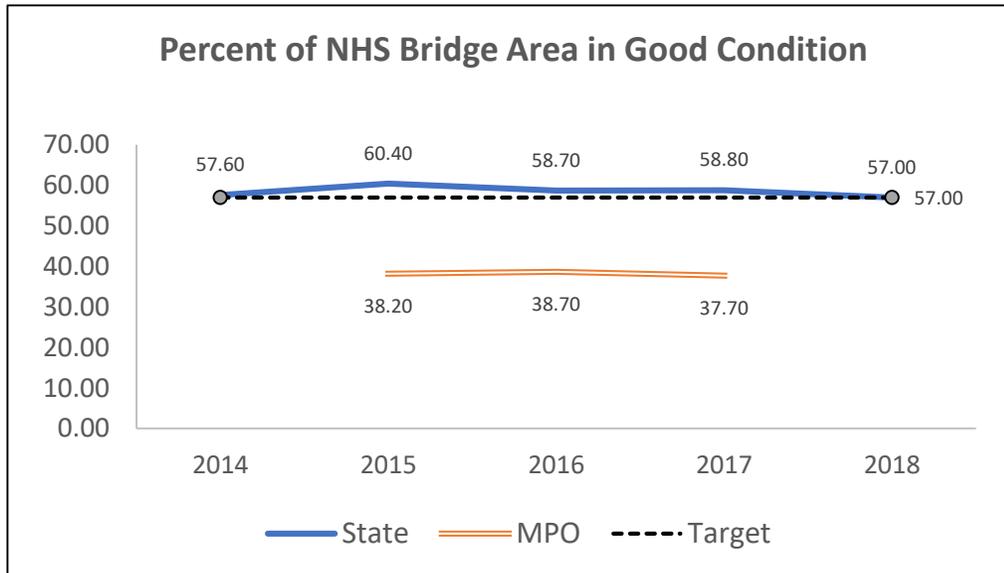
Travel Time Reliability

- **Collected from vehicle probe data nationally**
  - **Cell phone GPS**
  - **Truck transponders/GPS**

- **Collected in 15 minute increments for the NHS roadways**

- **80th Percentile Travel Time/50th Percentile Travel time for each segment for each time period over the course of the year**

- **At each time period, segments that have a ratio of less than 1.5 are considered "reliable"**

- **Total Reliable time periods/Total Periods = % Reliable**

Travel Time Reliability Data

Travel Time Index
2014-2017
- ≤1.5
- ≤2.0
- ≤2.5
- >2.5
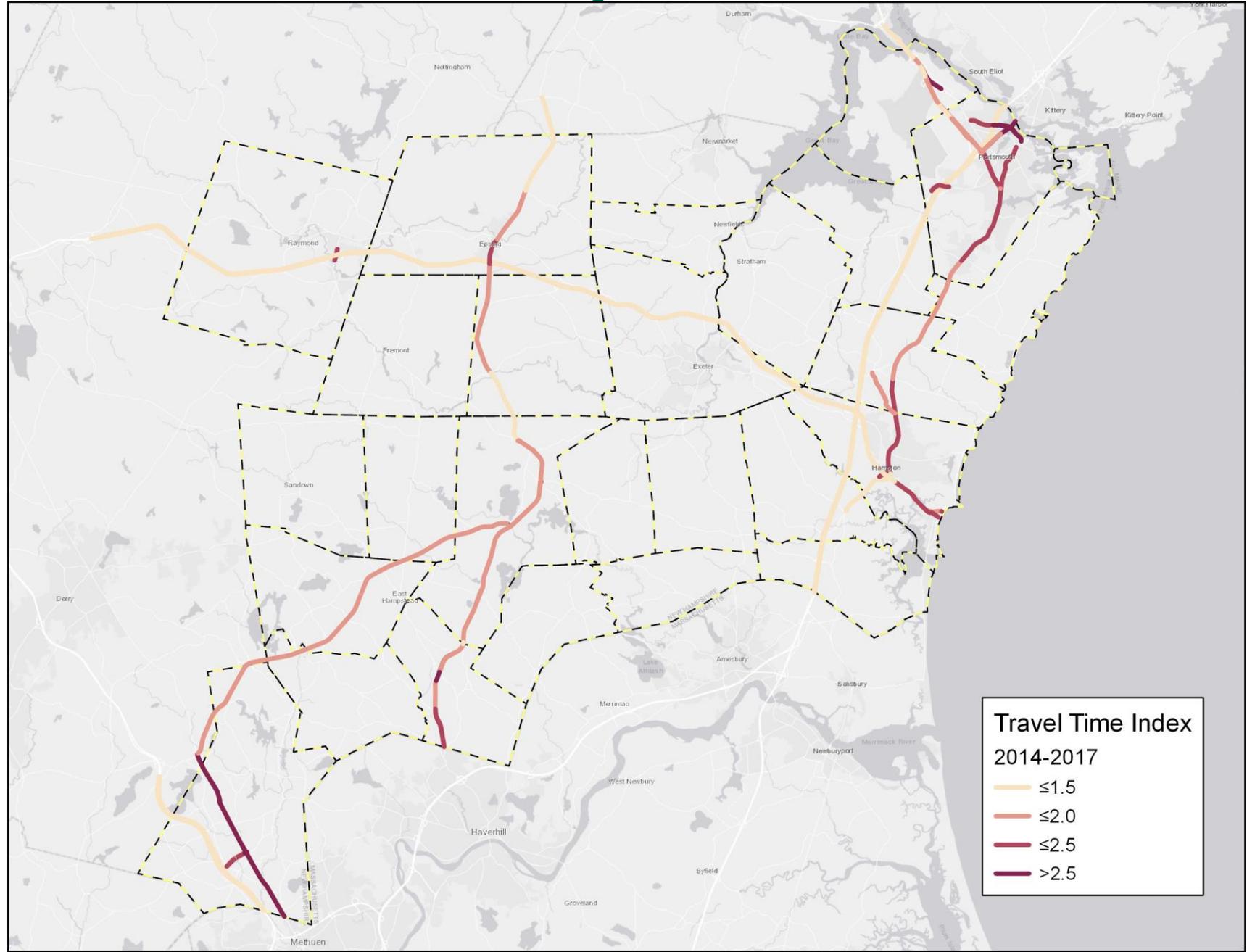
Interstate Travel Time Reliability

- Target: At least **95%** of the Interstate System should have a LOTTR of less than 1.5

RPC Interstate 2017 TTR: **100.0%**
RPC Interstate 2018 TTR: **100.0%**

Target, 95

Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18
100	100	100	100	100	100	66.7	77.8	100	100	100	100	100	100	100	100	100	100	82.5

Months Meeting Target   Months Not Meeting Target   - - - Target

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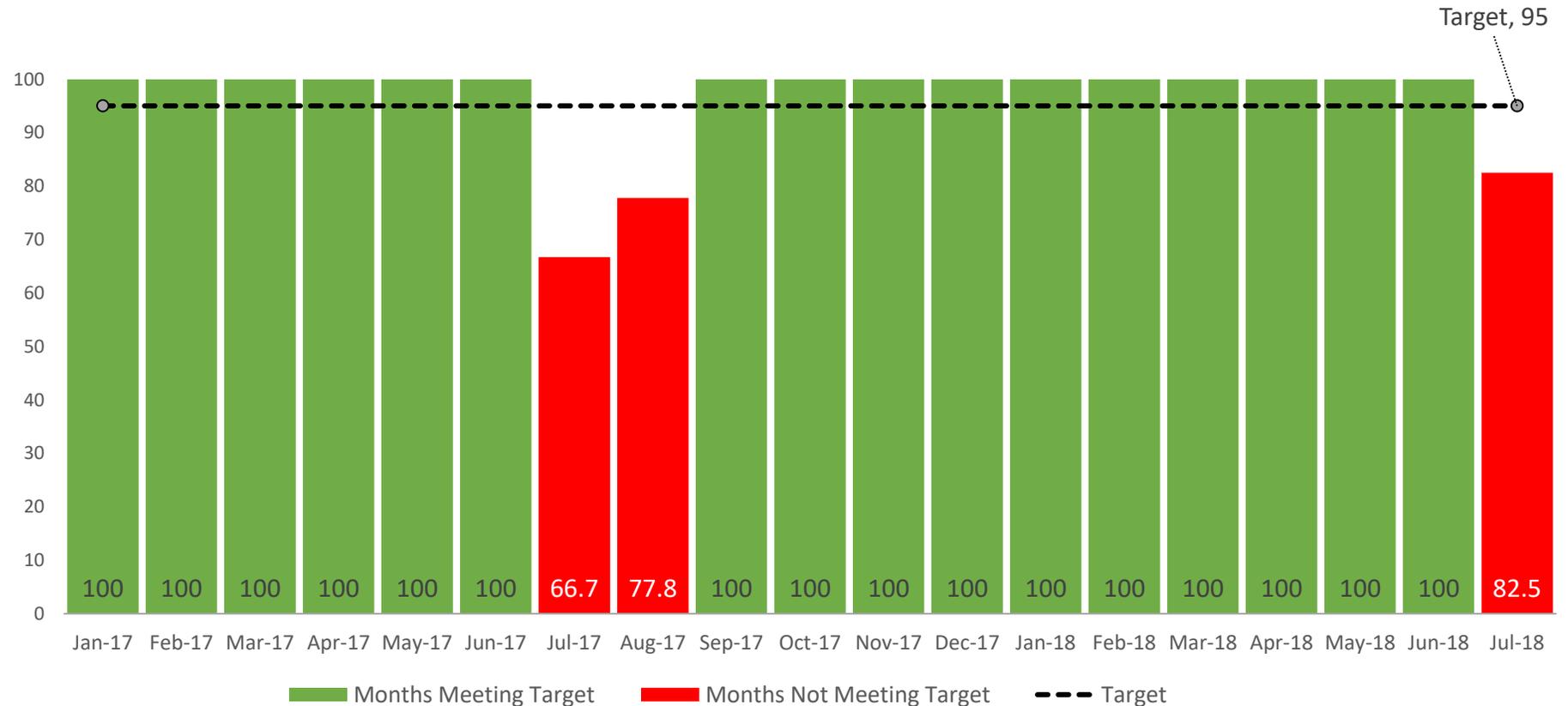
Non-Interstate NHS Travel Time Reliability

- Target: At least 85% of the system should have a LOTTR of less than 1.5

RPC Non-Interstate NHS 2017 TTR: **89.8%**
RPC Non-Interstate NHS 2018 TTR: **92.4%**

Target, 85

Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18
88.8	90.8	90.3	88.6	87.9	88.2	90	89.3	90.3	90.8	91	92	92.4	93.2	91.2	92.7	92.3	91.9

■ Months Not Meeting Target   ■ Months Meeting Target   ---- Target

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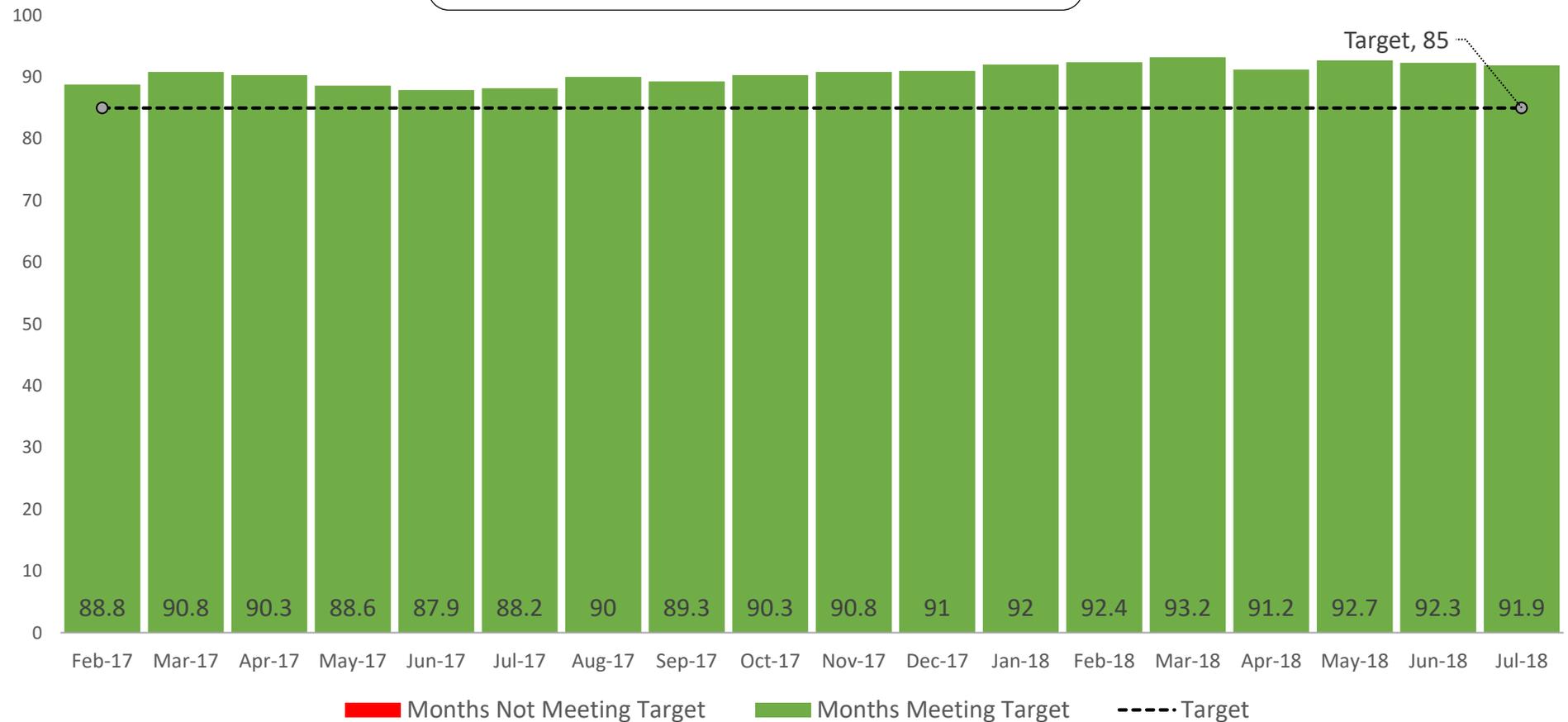
Truck Travel Time Reliability

- Target: The Interstate System should have a TTTR of less than 1.5

RPC 2017 TTTR: **1.41**
RPC 2018 TTTR: **1.23**

Target, 1.5

Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18
1.28	1.56	1.31	1.25	1.19	1.52	2.48	2.19	1.27	1.22	1.13	1.4	1.35	1.21	1.34	1.15	1.19	1.31	2.11

Months Meeting Target   Months Not Meeting Target   ----- Target

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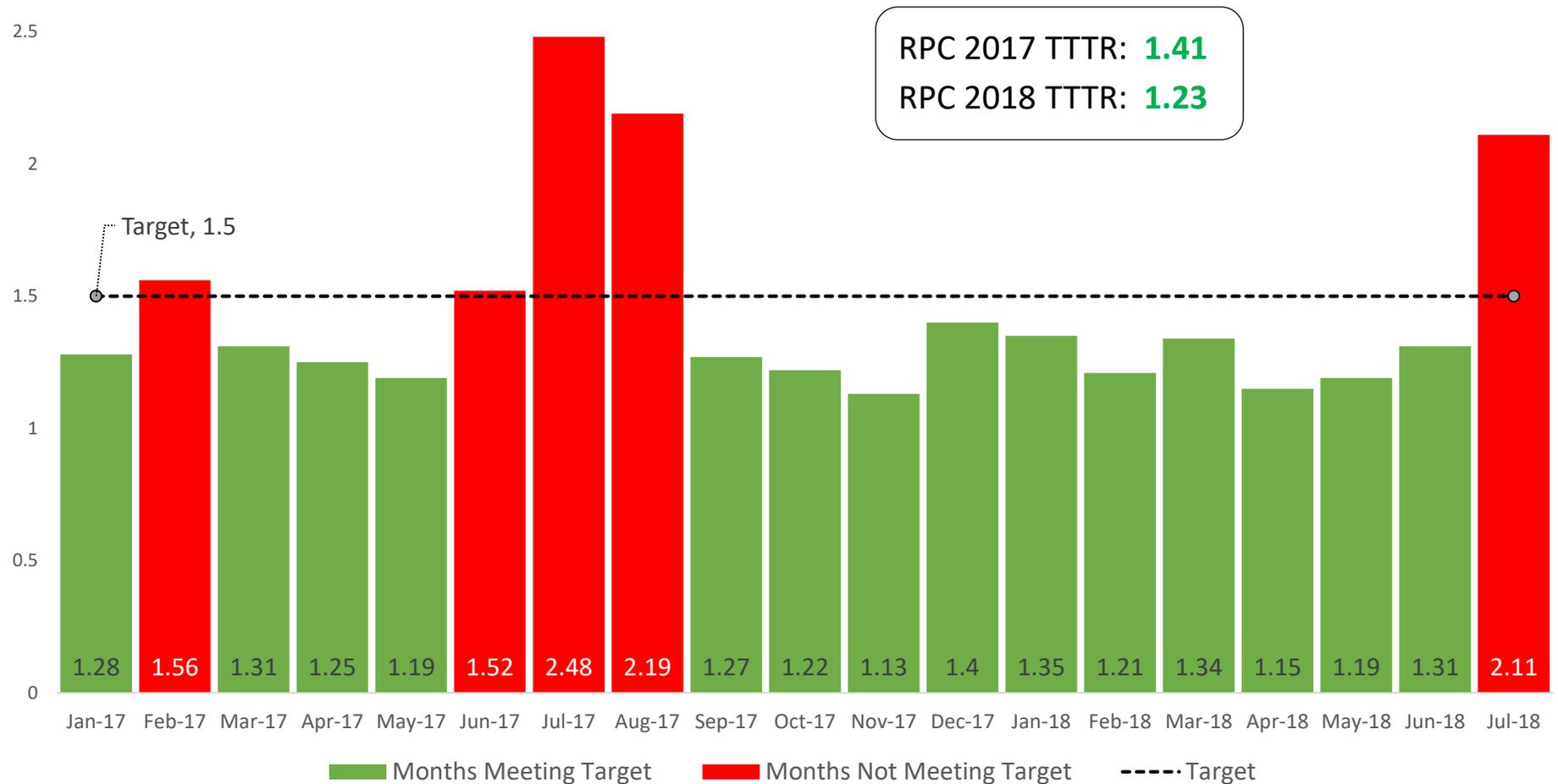
Baseline Estimates & Targets

Area	System & Measure	NHDOT			MPO		
		Baseline Estimate[1]	2-Year Target	4-Year Target	Baseline Estimate[1]	2-Year Target	*4-Year Target*
Pavement Condition	Interstate: Good Condition	96.7%	N/A	95.0%	96.5%	N/A	*95.0%*
	Interstate: Poor Condition	0.2%	N/A	0.8%	0.2%	N/A	*0.8%*
	Non-Interstate NHS: Good	70.1%	65.0%	65.0%	75.7%	N/A	*65%*
	Non-Interstate NHS: Poor	9.8%	12.0%	12.0%	7.2%	N/A	*12%*
Bridge Condition	NHS: Good Condition	57.0%	57.0%	57.0%	37.7%	N/A	*37.7*
	NHS: Poor Condition	7.0%	7.0%	7.0%	8.1%	N/A	*8.1*
Travel Time Reliability	Interstate: Person Miles	99.4%	95.0%	95.0%	100%	N/A	*95%*
	Non-Interstate NHS: Person Miles	87.8%	85.0%	85.0%	89.8%	N/A	*85%*
	Interstate: TTTR	1.35	1.50	1.50	1.41	N/A	*1.50*

[1]NHDOT utilizes 2016 as the base year for Pavement and Bridge Condition while RPC utilizes 2017 values for baseline estimates. Both RPC and NHDOT utilize 2017 values as the baseline for Travel Time Reliability measures.

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Comments and Action

- **Comments/Questions?**

- **MPO needs to approve PM2 & PM3 targets**

- **Need TAC Endorsement of targets to take to MPO Policy for approval**

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