



*New Mexico* DEPARTMENT OF  
**TRANSPORTATION**  
MOBILITY FOR EVERYONE

# Transportation Asset Management & Highway Conditions

Transportation Infrastructure Revenue Subcommittee

September 11, 2020

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Capital Programs and Investments Division Director

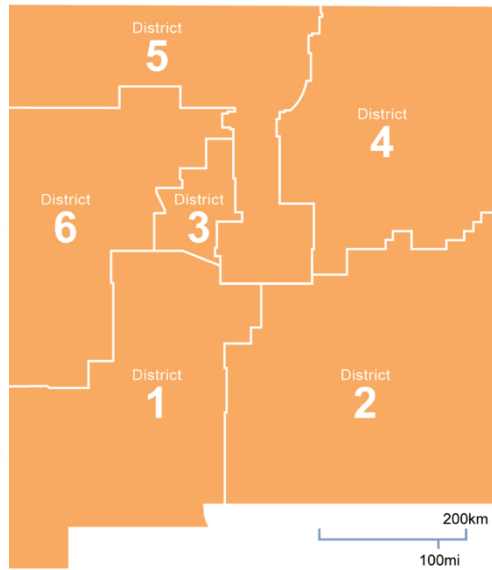
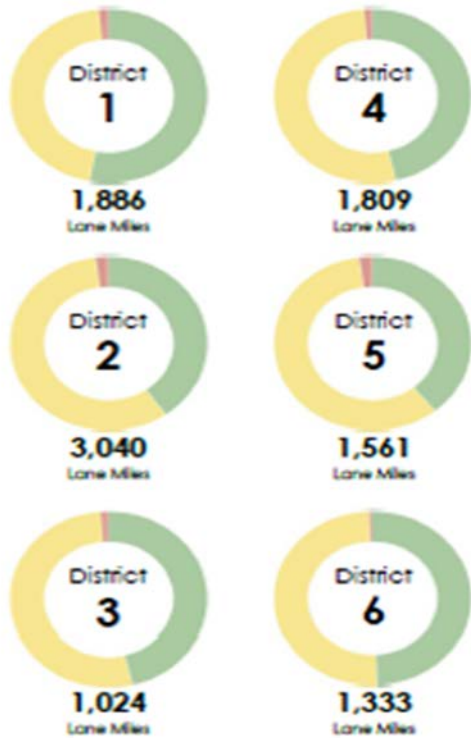
# PAVEMENT AND BRIDGE ASSETS ON THE NHS

## CURRENT CONDITION BY DISTRICT



### NHS PAVEMENT

Condition and total NMDOT-owned lane miles by district.

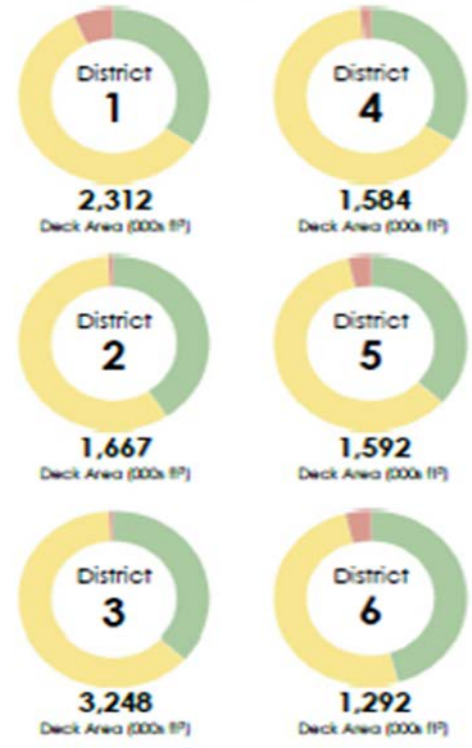


■ GOOD CONDITION  
■ FAIR CONDITION  
■ POOR CONDITION



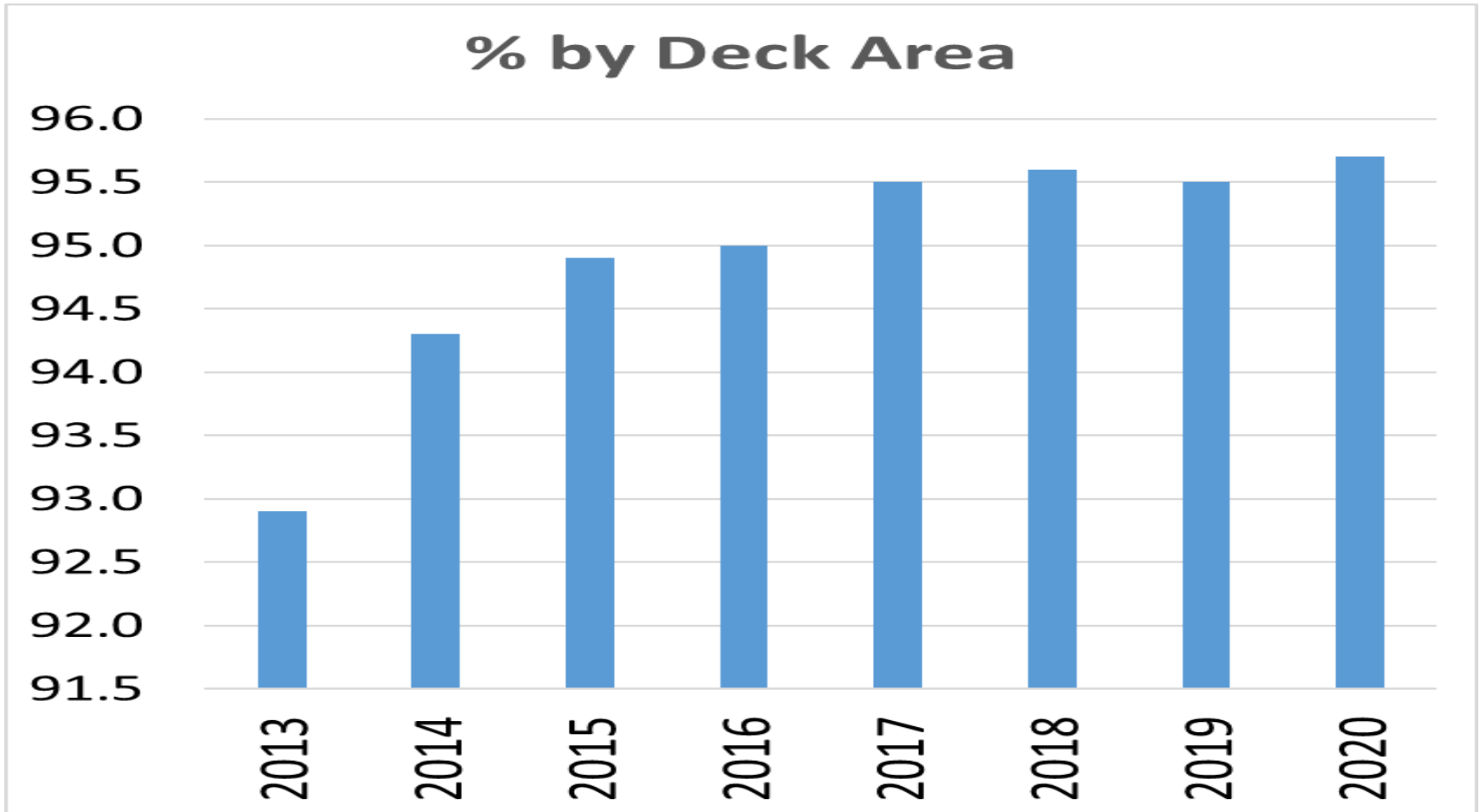
### NHS BRIDGES

Condition and total NMDOT-owned bridge deck area by district.



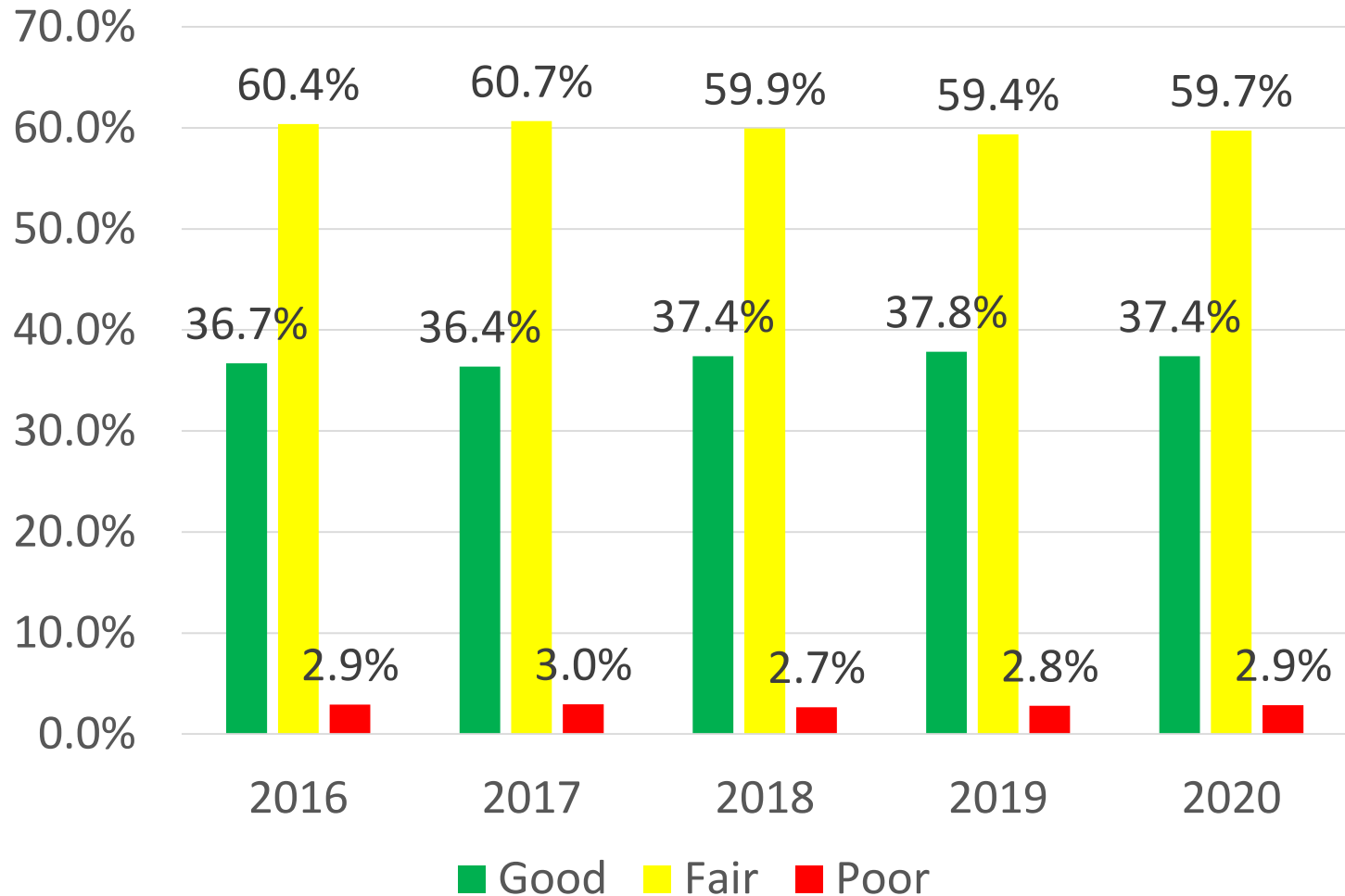
Pavement and Bridge Conditions are based on the FHWA measures in 23 CFR 490.

# Bridge Condition – Fair or Better



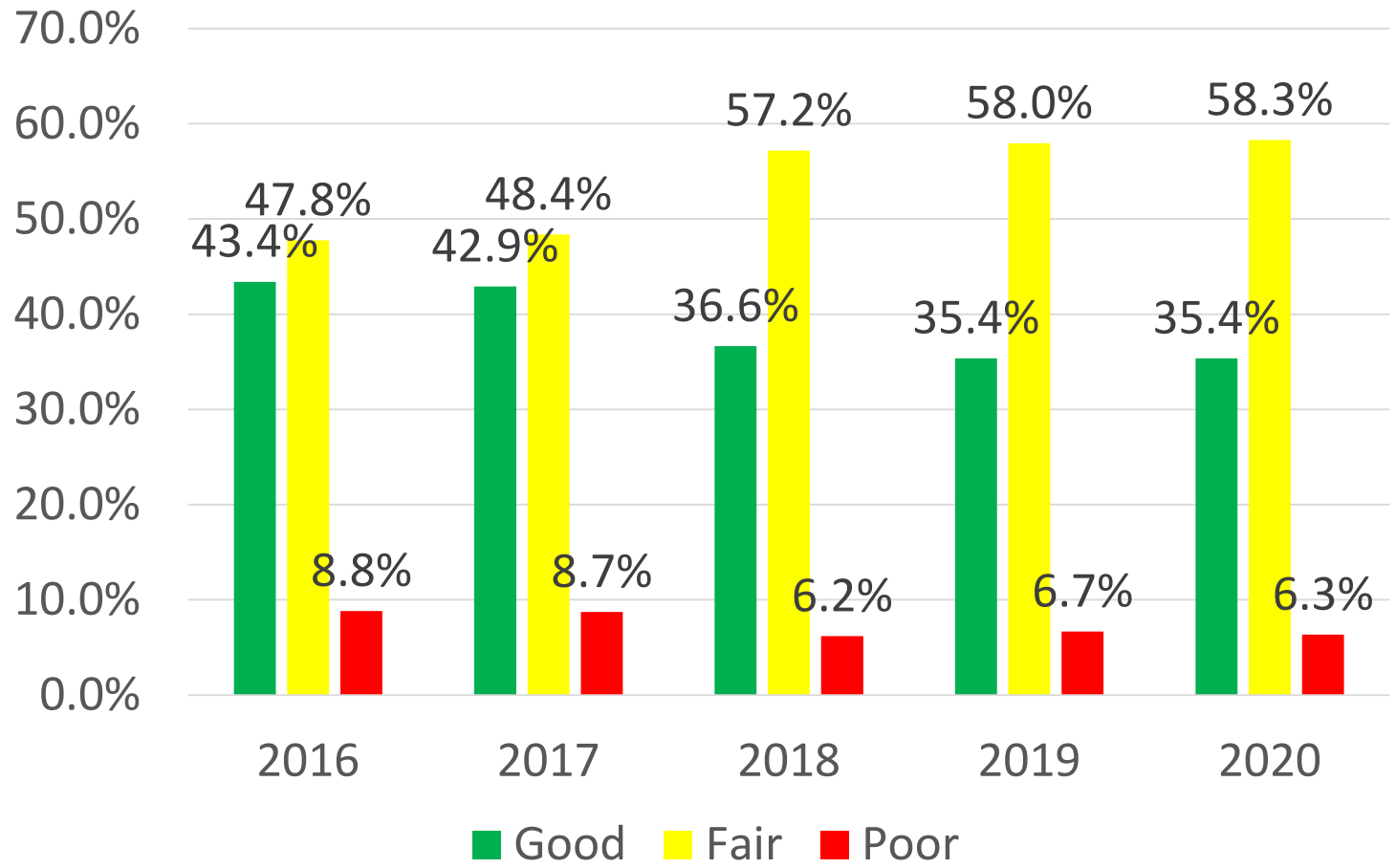
# NHS Bridges 2016 – 2020 (2<sup>nd</sup> Quarter)

## NHS Bridges Percent Good, Fair, Poor

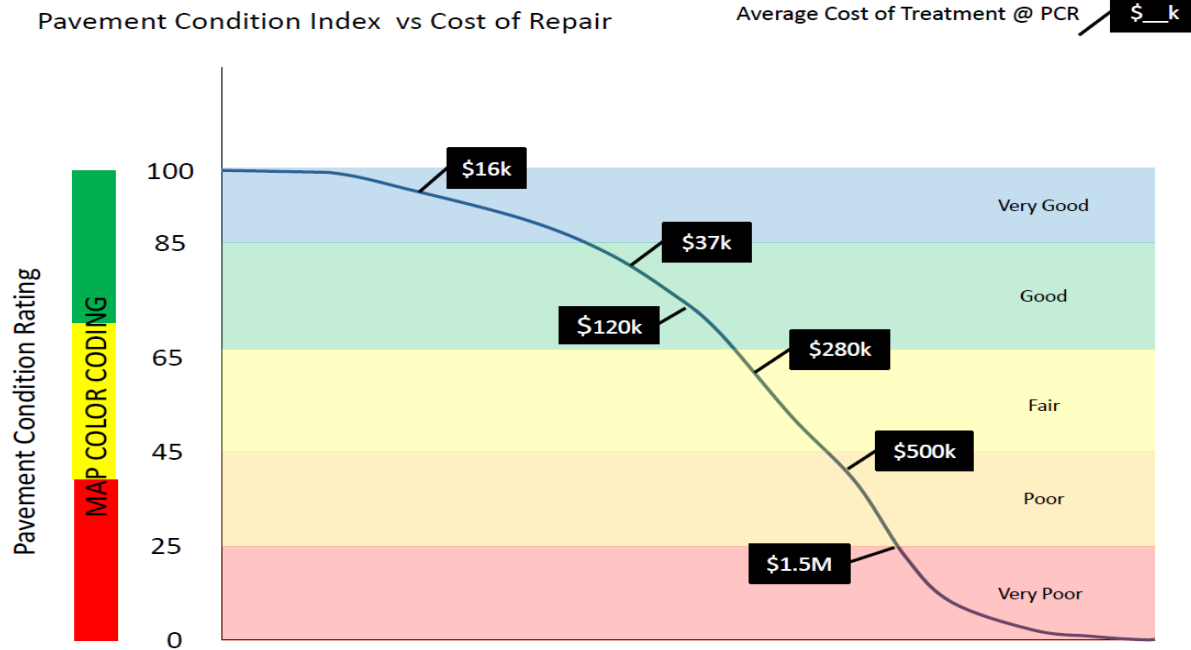


# Non-NHS State Owned Bridges 2016 – 2020 (2<sup>nd</sup> Quarter)

## Non-NHS NMDOT Owned Bridges Percent Good, Fair, Poor



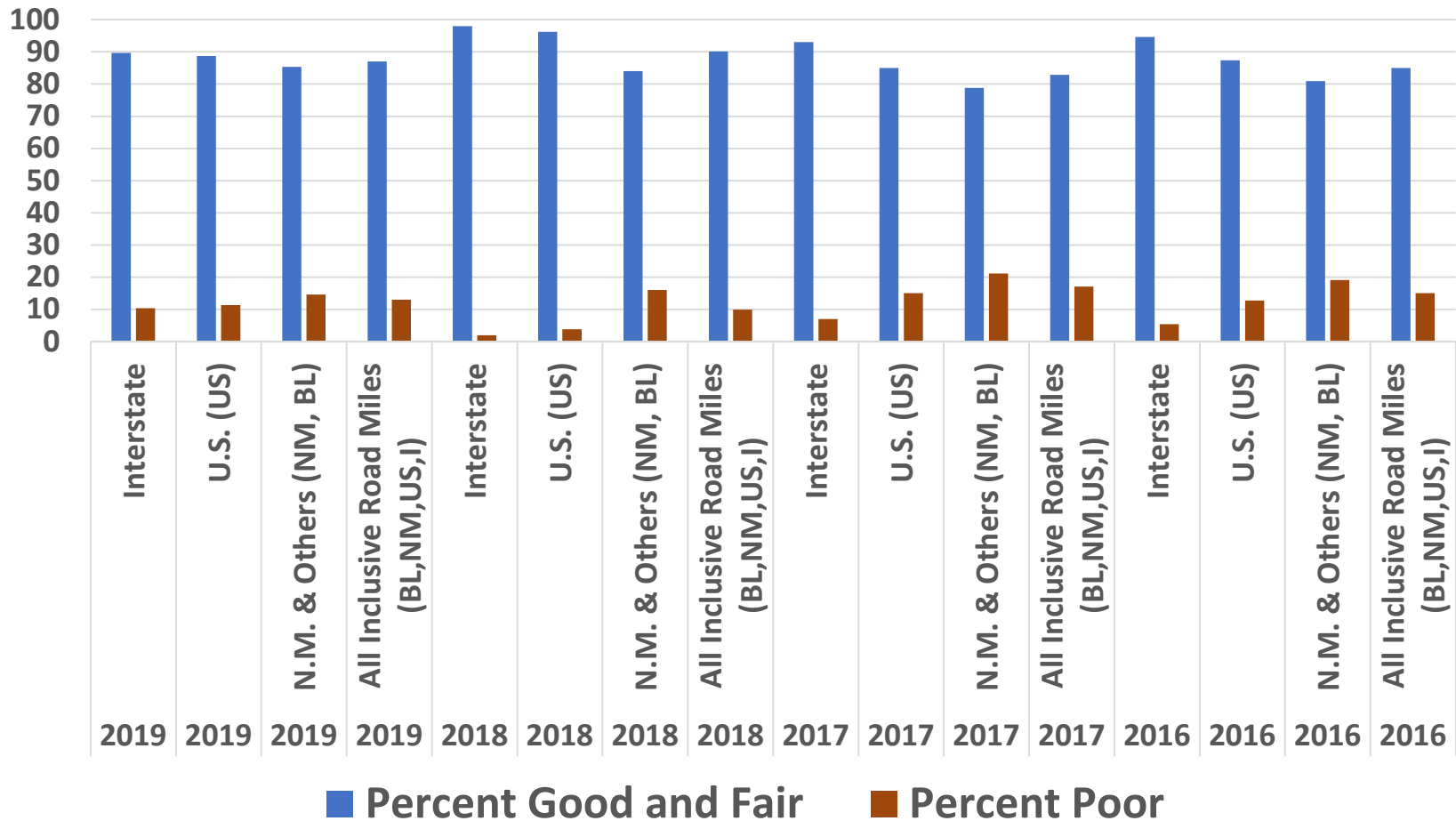
# Pavement Condition Rating (PCR)



Time in Service, Traffic Loads, etc

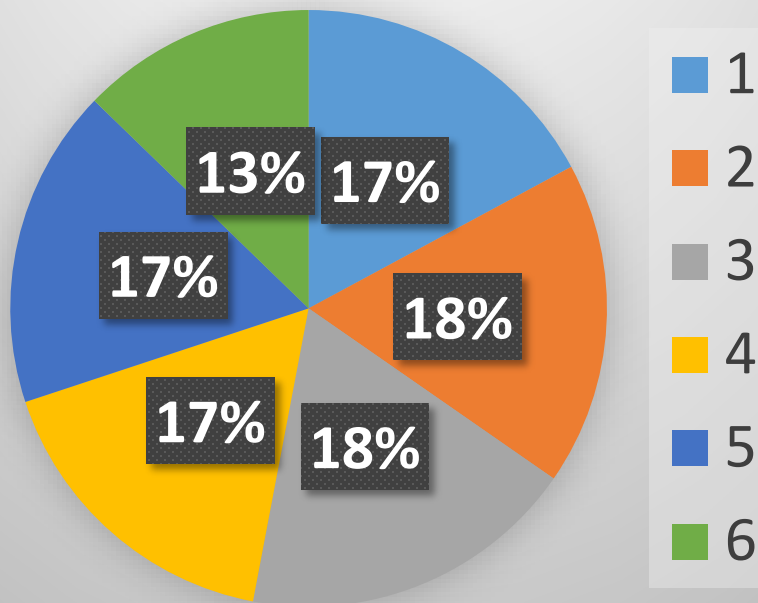
PCR Range	Condition	Suggested Treatment
100-86	Very Good	Monitor – Minor preservation: monitor, fog seals, surface coats, chip seal
85-66	Good	Major preservation: thin hot in-place recycling, thin mill and inlay
65-51	Fair	Minor – Major preservation: mill and inlay between, hot in-place recycling 2.5-4"
50-46	At Risk	Minor – Major rehabilitation
45-26	Poor	Major rehabilitation – 5 inches deep to PPC, FDR
25-0	Very Poor	Reconstruction

# Pavement Condition by Route Designation

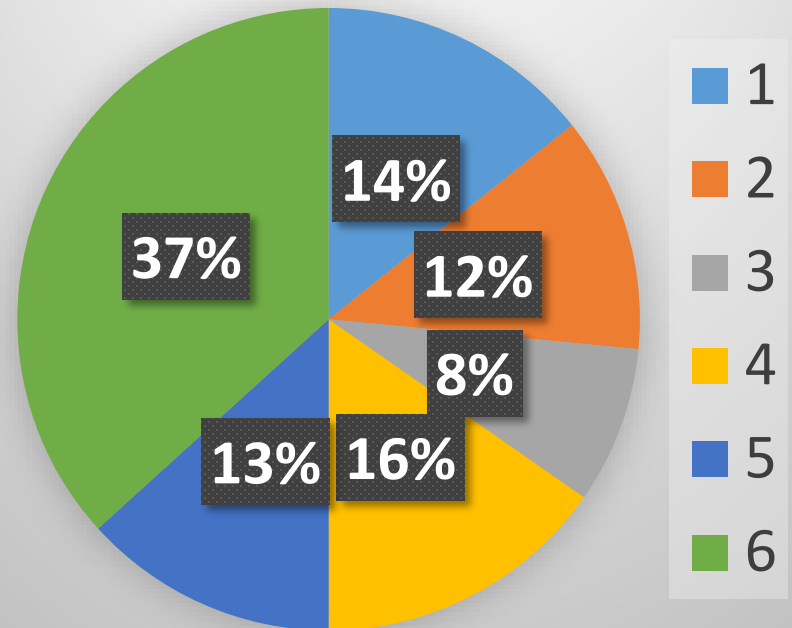


# All State Maintained Routes

By District All Inclusive  
Routes Good and Fair  
Percent

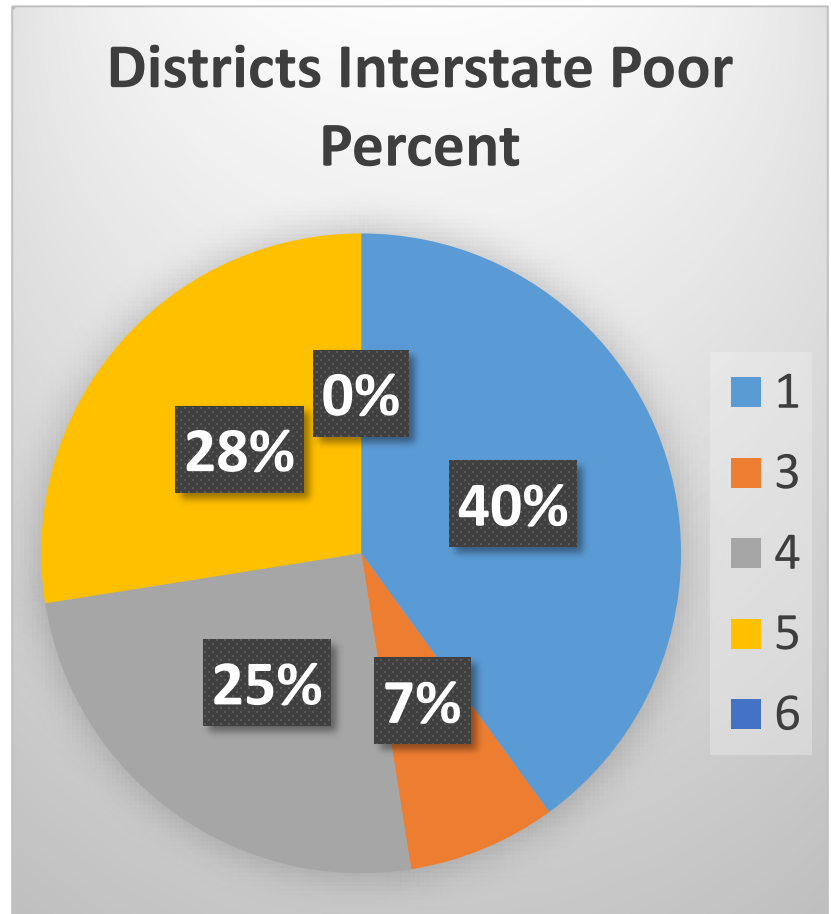
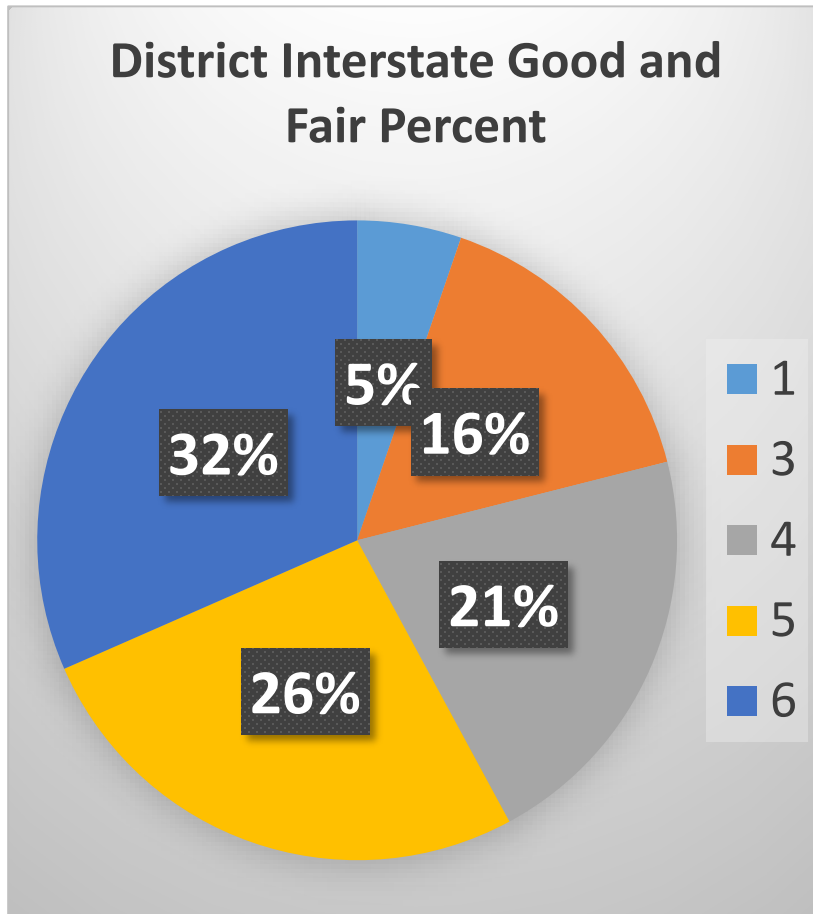


By District All Inclusive  
Routes Poor Percent



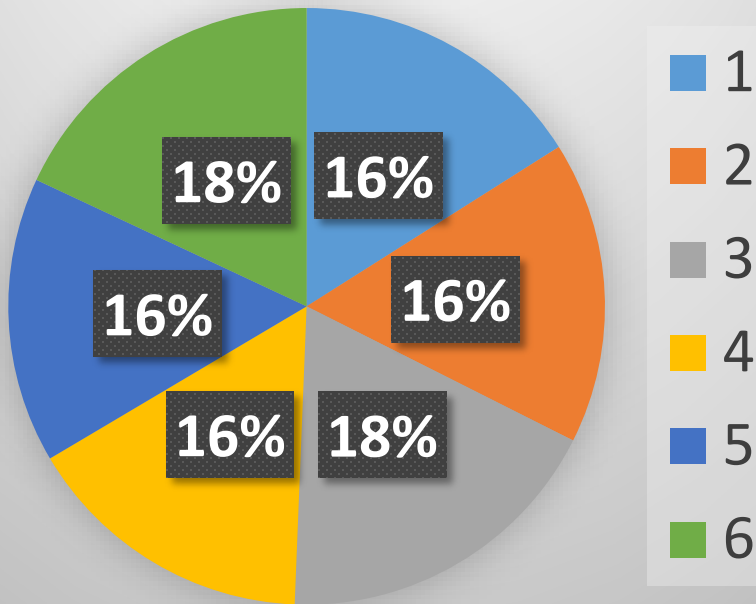


# District Percentages - Interstate

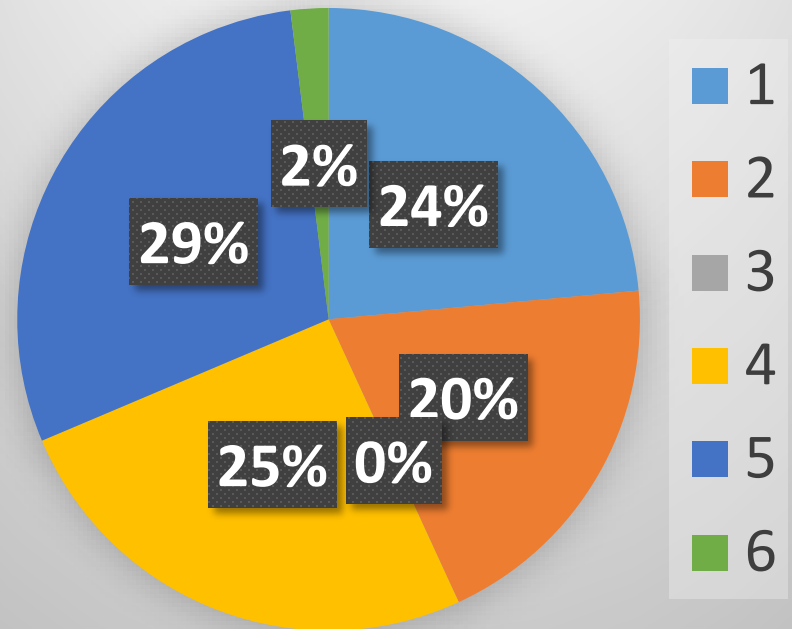


# District Percentages – US Routes

**By District U.S.  
Highways Good and  
Fair Percent**

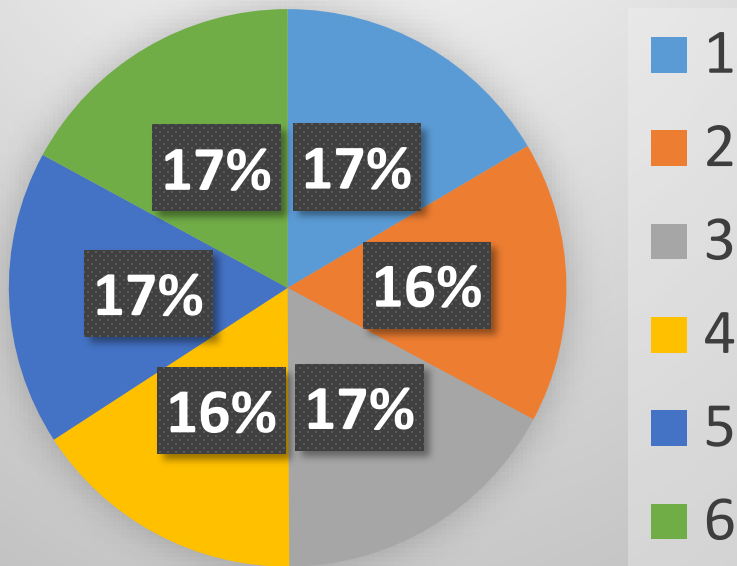


**By District U.S.  
Highways Poor Percent**

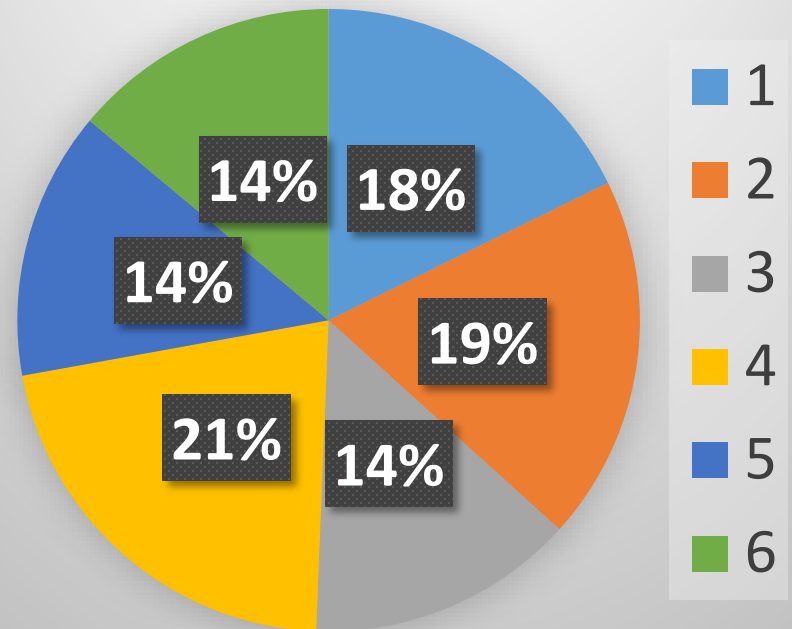


# District Percentages – NM Routes

**By Districts NM & BL  
Routes Good and  
Fair Percent**



**By Districts NM & BL  
Routes Poor Percent**



# State of Good Repair (SOGR) for TAMP

## Bridges

- The NMDOT defines the State of Good Repair for bridges to be at or above a condition rating (CR) of 6, and the goal is to maintain at least 75% of the bridges on a statewide basis at or above a CR of 6.

## Pavements

- The NMDOT defines a State of Good Repair on **Interstate** pavements to be an Overall Condition Index (OCI) greater than or equal to a 70 and the goal is to maintain at least 65% of our **Interstate** Pavements at an OCI at or above 70.
- The NMDOT defines a State of Good Repair for **Non-Interstate National Highway System** (NHS) pavements to be an Overall Condition Index (OCI) of greater than or equal to 60 and the goal is to maintain at least 50% of our Non-Interstate NHS pavements at an OCI at or above 60.
- The NMDOT defines a State of Good Repair for **non-NHS** pavements to be an Overall Condition Index of greater than or equal to 50 and the goal is to maintain at least 35% of our **non-NHS** pavements at an OCI at or above 50

# State of Good Repair (SOGR)

## Bridges

- The NMDOT defines the State of Good Repair for bridges to be at or above a condition rating (CR) of 6, and the goal is to maintain at least 75% of the bridges on a statewide basis at or above a CR of 6.

## Pavements

- The NMDOT defines a State of Good Repair on Interstate pavements to be an Overall Condition Index (OCI) greater than or equal to a 70 and the goal is to maintain at least 65% of our **Interstate** Pavements at an OCI at or above 70.
- The NMDOT defines a State of Good Repair on **US routes** to be an OCI greater than or equal to a 55 and the goal is to maintain at least 40% of our US Routes at an OCI at or above 55.
- The NMDOT defines a State of Good Repair on **NM routes** to be an OCI greater than or equal to a 50 and the goal is to maintain at least 40% of our NM Routes at an OCI at or above 50.

# State of Good Repair Bridge Costs

- Average Condition Rating (CR)  $\geq 7$  After 10 Years
  - NHS: \$45,202,000/Year for Next 10 Years
  - Non-NHS: \$36,749,000/Year for Next 10 Years

Bridge Needs = \$0 or All BCR's Have Been Worked on

- NHS: \$50,316,142/Year for Next 10 Years
- Non-NHS: \$40,093,320/Year for Next 10 Years

TAMP determined average spending on bridges was approximately \$60 million per year



# NMDOT TAMP

## FEDERAL REGULATIONS

A healthy transportation system is essential in forging a strong economy and improving the quality of life in New Mexico. The transportation system managed by the New Mexico Department of Transportation (NMDOT) connects people to jobs, schools, healthcare, recreation, and their communities, as well as to the rest of the world. NMDOT is responsible for operating, managing, maintaining, and improving this transportation system to provide safe and convenient travel for citizens, visitors, and carriers.

**New Mexico's Transportation Asset Management Plan (TAMP) establishes the condition of highway and bridge facilities, referred to as assets, across the state and provides a strategy for efficiently maintaining these assets in good condition over the long term. This document provides an introduction to the federal requirements of the TAMP.**

Federal Requirement	Description
<p><b>Asset Inventory &amp; Condition</b> <i>Where are assets located and in what condition are they in?</i></p>	<p>NMDOT maintains a summary listing of the pavement and bridge assets regardless of jurisdiction on the National Highway System (NHS), the network of strategic roadways across the nation. The inventory includes a description of the condition of those assets based on the performance measures established by federal regulations [23 U.S.C. 150(c)(3)(A)(ii)].</p>
<p><b>Objectives</b> <i>How does asset management align with the mission of the DOT?</i></p>	<p>Asset management aligns with the objectives of NMDOT by achieving and sustaining bridges and pavement in a desired state of good repair over the life cycle of the assets at a minimum practicable cost.</p>
<p><b>Measures &amp; Targets</b> <i>How are the conditions of the assets measured &amp; what are the DOT's measures for success?</i></p>	<p>NMDOT uses a series of performance measures to track progress and conditions of assets over time. To meet federal requirements [23 U.S.C. 150], NMDOT must maintain roads on the NHS to a certain average condition, or target.</p>
<p><b>Gap Analysis</b> <i>Where does the actual condition of the assets not align with the DOT's goals for the assets?</i></p>	<p>NMDOT analyzes the gaps between the current condition of assets and their targets, or desired asset conditions. The gaps in system condition and performance guide the highway and bridge improvement projects to be performed by NMDOT.</p>

## Federal Requirement

## Description

### Life Cycle Planning

*What are the expected costs over the life of the assets and how does the DOT plan to minimize costs while maintaining these assets?*

Life cycle planning refers to the process of estimating the cost of managing assets over their whole life with consideration for minimizing cost while preserving or improving the condition. This process includes (1) targets, (2) deterioration models, (3) potential work types and unit costs, and (4) strategies for managing each type of asset.

### Financial Plan

*What are the long-term financial resources & expected costs associated with asset management?*

NMDOT must produce a long-term (10+ years) plan that estimates available financial resources and predicts the expenditures by type of asset (e.g. pavement and bridge) that will be used to achieve NMDOT targets during the plan period. The financial plan must also highlight how resources are expected to be allocated based on needs, shortfalls, and agency policies.

### Investment Strategies

*What are the DOT's strategies for funding to achieve the desired goals for asset improvement?*

Based on evaluation of funding levels, NMDOT identifies funding strategies that can achieve targets for asset condition and overall transportation system performance. These strategies must minimize cost while managing risks to assets.

### Risk Management Analysis

*How will the DOT minimize the risks associated with their investments & locate assets prone to damage?*

NMDOT must develop a process for identifying, analyzing, evaluating, and addressing risks to assets and overall system performance. Analysis and periodic evaluations take place for pavement and bridge conditions for locations that are repeatedly damaged by emergency events (per 23 U.S.C part 667).

**ASSET MANAGEMENT:** A strategic and systematic process of operating, maintaining, and improving physical assets effectively throughout their life cycles. Asset management involves moving beyond reactive repairs to a proactive approach that anticipates costs and maximizes investments.



**11,132**

**NHS Highway Lane Miles**  
Owned by NMDOT



**1,595**

**NHS Bridges**  
Owned by NMDOT



# Questions?

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