

Pavement Condition Measures
for Metropolitan Planning Organization
2021 Data





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DEPARTMENT OF TRANSPORTATION**

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Attached you will find the pavement condition measures report for calendar year 2021. This report aims to provide Metropolitan Planning Organizations (MPOs) with pavement condition measures in accordance with 23 CFR 490.313 - Calculation of "MAP-21" performance management measures. Performance metrics provided herein are collected according to Federal Highway Administration *Highway Performance Monitoring System (HPMS)-Field Manual (December 2016)*. The scope of this report includes the Interstates, state routes and local routes on National Highway System (NHS) that are within the boundary of MPO administration. Historical performance measures from 2017 to 2020 were also provided with the intention of assisting MPO personnel in evaluating the trend of pavement condition changes and determining the performance targets in accordance with 23 CFR 490.105 - Establishment of performance targets.

Please note that per 23 CFR 490.313, performance measures should be calculated with bridges being excluded prior to calculation. However, the performance measures in this report is calculated without removing bridge structures. The exclusion of bridge termini is conducted in Highway Performance Monitoring System (HPMS) software which is a national level highway information system. Therefore, all data provided herein are estimates. The official statewide performance measures with bridges being excluded can be found in [State Performance Dashboard-Tennessee](#). The National "MAP-21" measures differ from State of Good Repair (SOGR) measures which are based on Tennessee DOT's Pavement Quality Index (PQI) in the [Transportation Asset Management Plan \(TAMP\)](#) and the [Annual Pavement Condition Report](#).

Along with this report, the raw data of performance metrics and the corresponding performance measure with 0.1-mile increment are provided. In the "Column_Names" sheet, you will find the descriptions of each column heading in the spreadsheet. The "Category" column may be used to filter out local routes ("Category=NHS_ local Routes") that are within the boundary of each MPO administration. If you have any comments, questions, or suggestions concerning this report, please contact Mark Woods at (615) 532-3622.

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Performance Metrics

IRI – International Roughness Index

- Measurement of the number of vertical deviations over a section of road.
- Measured in inches/mile.

Cracking percent

- Visual fissure or discontinuity of pavement surface.
- For asphalt pavements, cracking percent is the percentage of the area within two wheel paths subject to fatigue type cracking over the entire lane width.
- For jointed concrete pavements, cracking percent is the percentage of slabs subject to transverse cracking. All concrete surfaced pavements are reported as jointed concrete pavement in Tennessee.
- Measured in Area and calculated in Percentage.

Rutting depth

- Permanent deformation on the surface of asphalt pavements transverse to path of travel direction.
- Measured in each wheel path and reported as the averaged value within a segment.
- Measured in inches.

Faulting

- Difference of elevation across the two adjacent concrete slabs longitudinal to travel direction in concrete pavements.
- Measured in inches.

Pavement Condition Measure

Pavement condition measures are determined in accordance with 23 CFR 490.313- Calculation of performance management measures. The thresholds for individual metric are as follows,

Metric	Good	Fair	Poor
IRI (in./mi.)	<95	95-170	>170
Cracking (%), Asphalt Pavements	<5	5-20	>20
Cracking (%), Jointed Concrete Pavements	<5	5-15	>15
Rutting, (in.)	<0.20	0.20-0.40	>0.40
Faulting (in.)	<0.10	0.10-0.15	>0.15

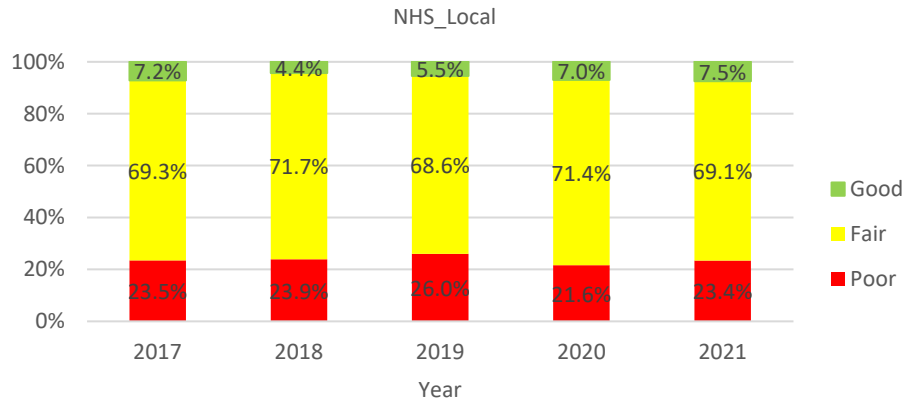
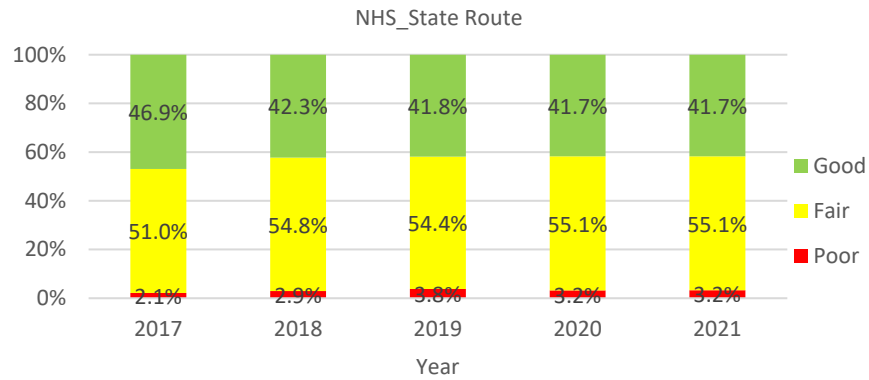
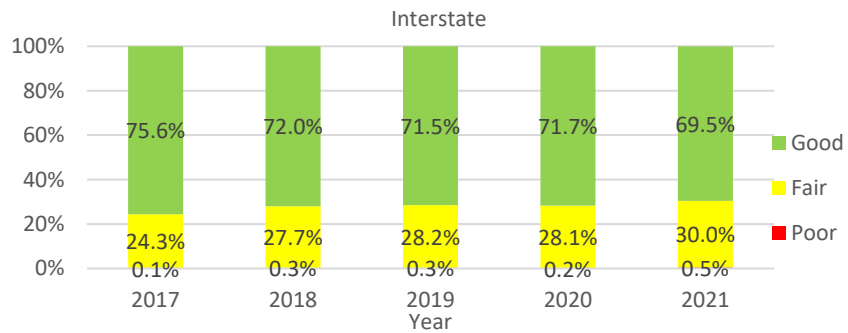
The overall section condition is determined by the following rules.

Three individual metric rating*	Overall section condition rating
All three metrics rated “Good” per threshold	Good
2 or more metrics rated “Poor”	Poor
Any other combination	Fair

* For asphalt pavements, the three metrics are IRI, rutting and cracking; for concrete pavements, the three metrics are IRI, faulting, and cracking.

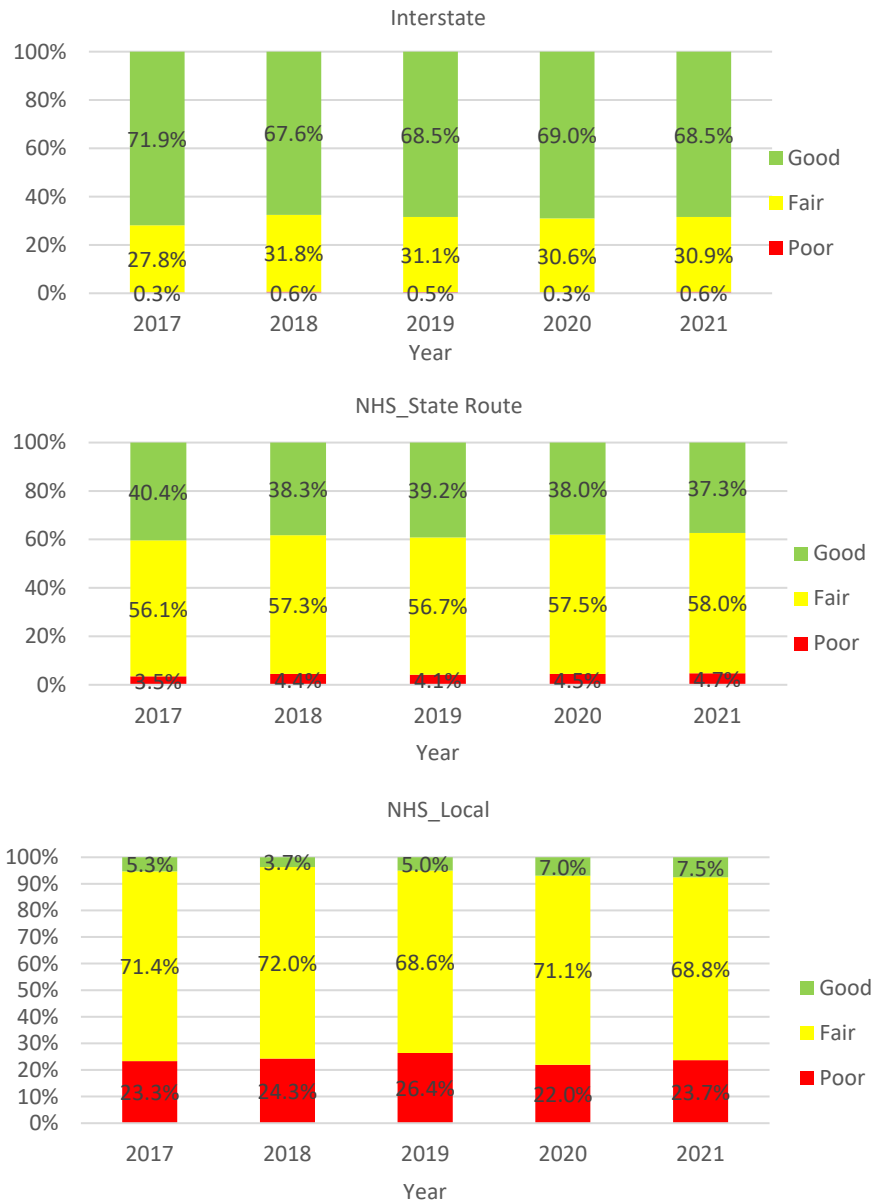
1. Summary of Statewide Pavement Conditions

Category	Lane miles	Pavement condition		
		Good	Fair	Poor
Interstates	5,794.4	69.5%	30.0%	0.5%
NHS State routes	12,675.9	41.7%	55.1%	3.2%
NHS local routes	653.7	7.5%	69.1%	23.4%



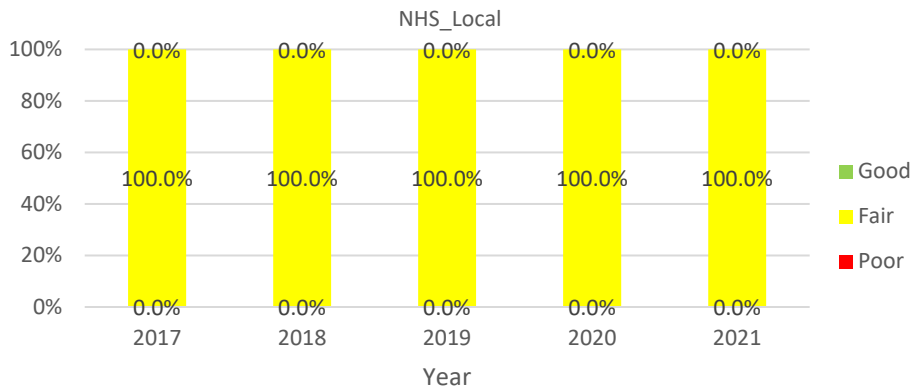
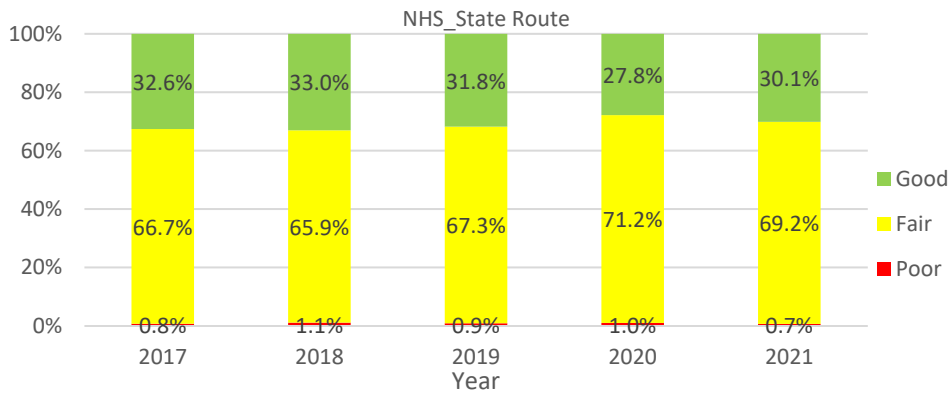
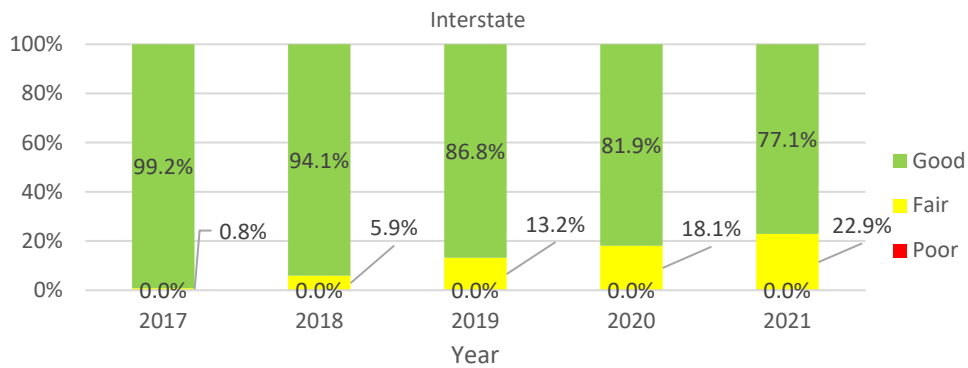
2. Summary of Statewide Pavement Conditions Within MPO Areas

Category	Lane miles	Pavement condition		
		Good	Fair	Poor
Interstates	3,494.7	68.5%	30.9%	0.6%
NHS State routes	6,075.1	37.3%	58.0%	4.7%
NHS local routes	642.8	7.5%	68.8%	23.7%



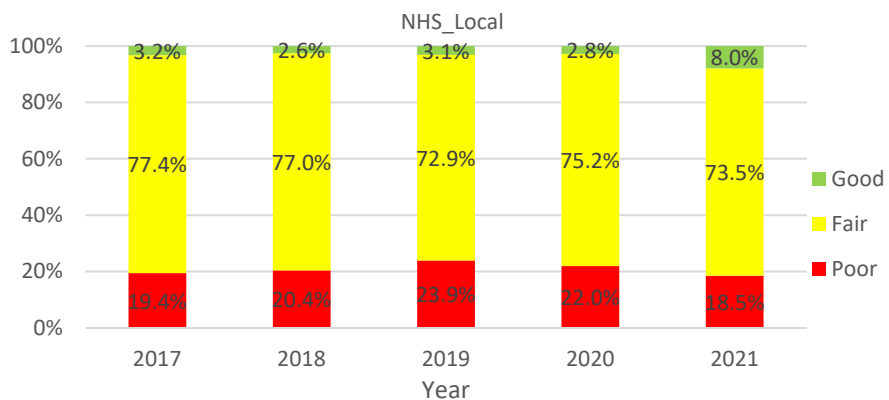
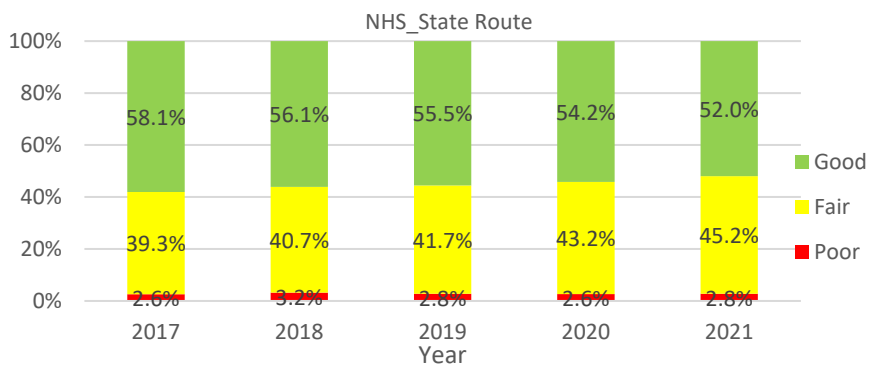
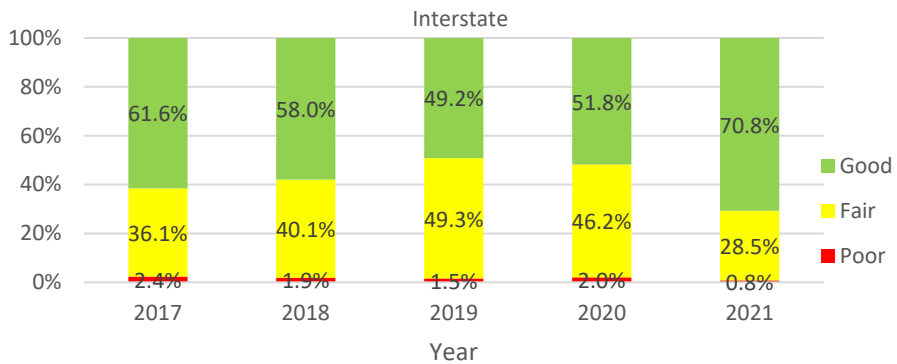
3. Pavement Conditions in Bristol

Category	Lane miles	Pavement condition		
		Good	Fair	Poor
Interstates	33.8	77.1%	22.9%	0.0%
NHS State routes	157.3	30.1%	69.2%	0.7%
NHS local routes	0.9	0.0%	100.0%	0.0%



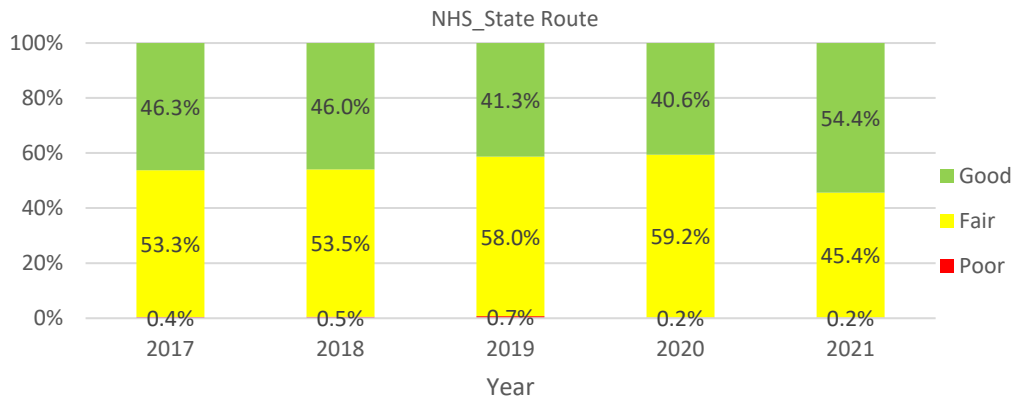
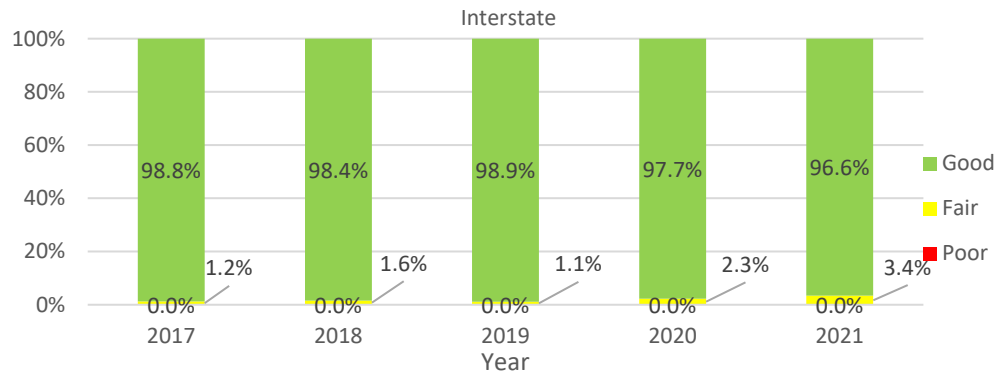
4. Pavement Conditions in Chattanooga

Category	Lane miles	Pavement condition		
		Good	Fair	Poor
Interstates	199.3	70.8%	28.5%	0.8%
NHS State routes	538.2	52.0%	45.2%	2.8%
NHS local routes	101.3	8.0%	73.5%	18.5%



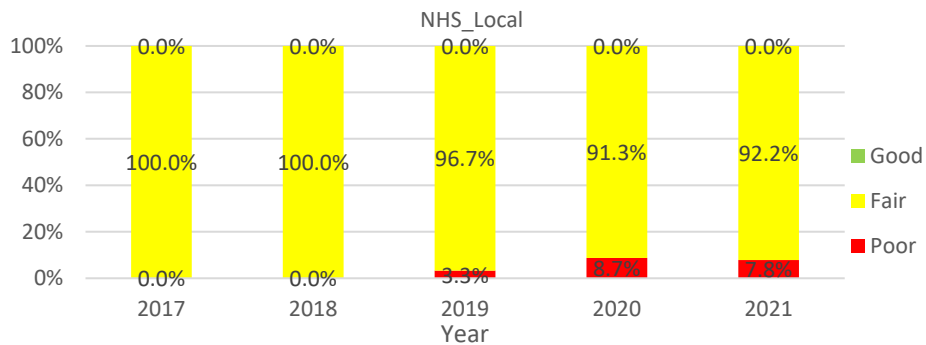
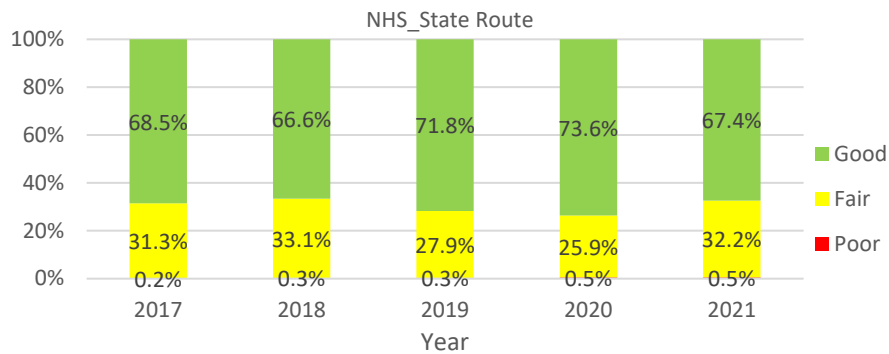
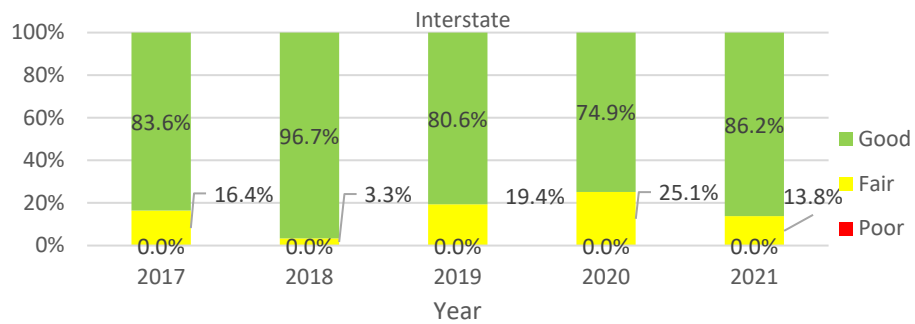
5. Pavement Conditions in Clarksville

Category	Lane miles	Pavement condition		
		Good	Fair	Poor
Interstates	70.6	96.6%	3.4%	0.0%
NHS State routes	194.7	54.4%	45.4%	0.2%
NHS local routes	N/A	N/A	N/A	N/A



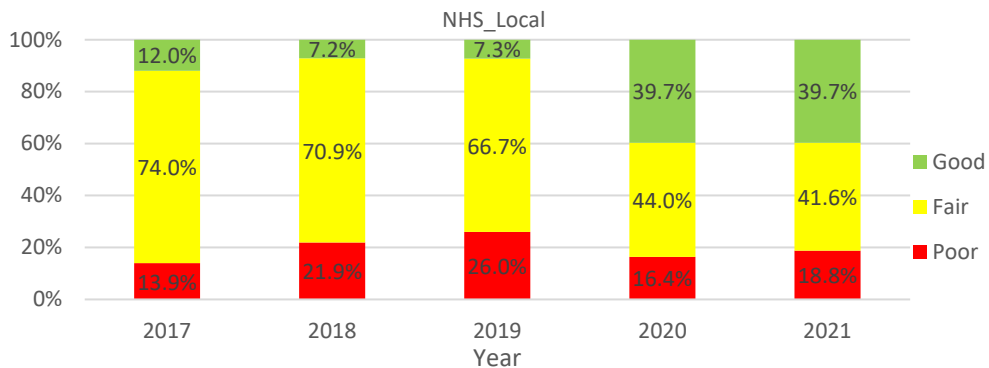
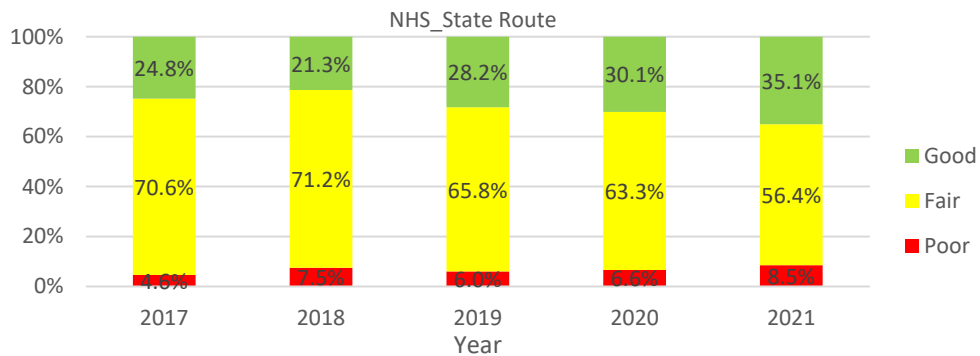
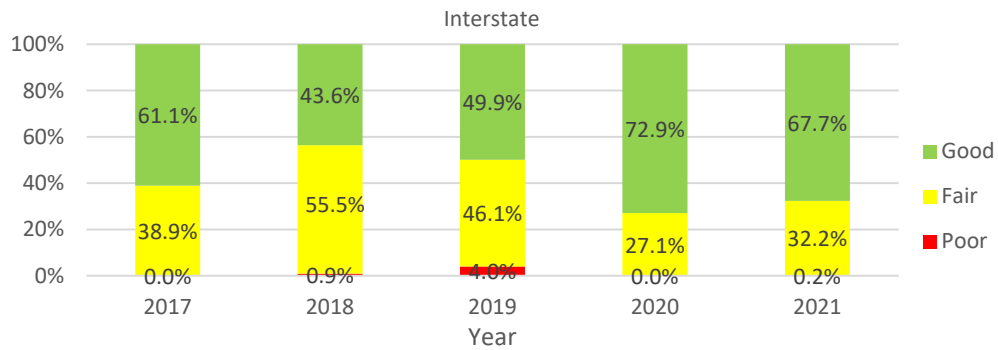
6. Pavement Conditions in Cleveland

Category	Lane miles	Pavement condition		
		Good	Fair	Poor
Interstates	84.9	86.2%	13.8%	0.0%
NHS State routes	132.2	67.4%	32.2%	0.5%
NHS local routes	9.7	0.0%	92.2%	7.8%



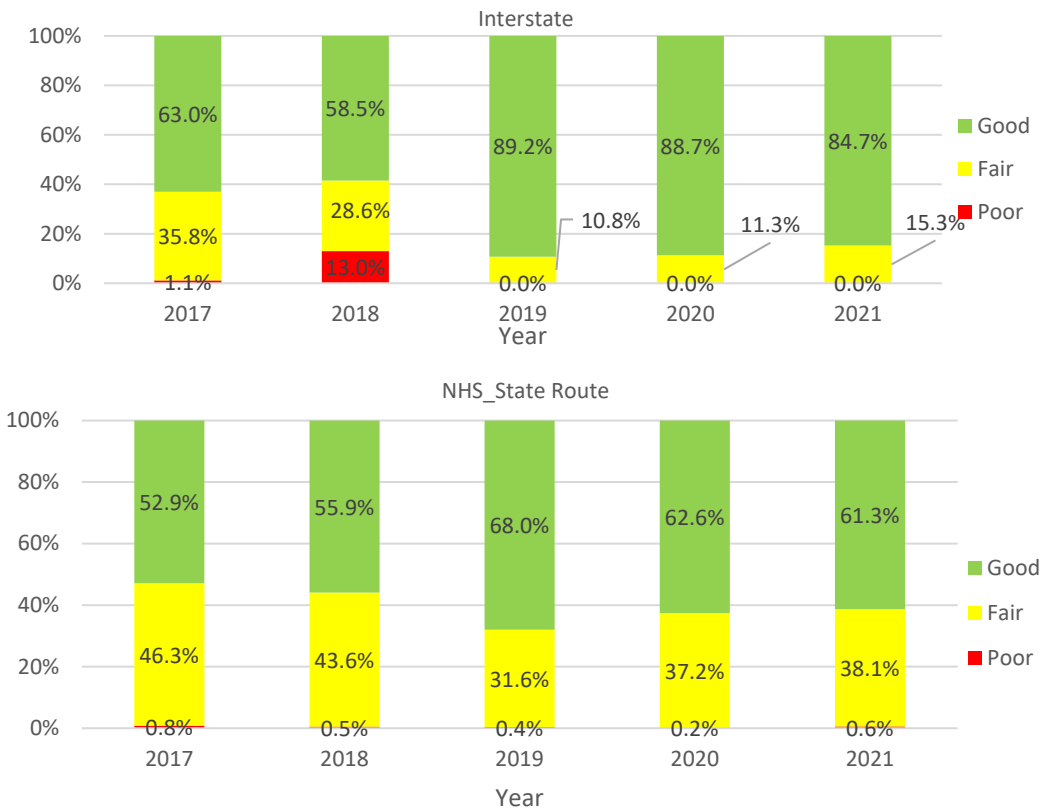
7. Pavement Conditions in Jackson

Category	Lane miles	Pavement condition		
		Good	Fair	Poor
Interstates	112.0	67.7%	32.2%	0.2%
NHS State routes	232.8	35.1%	56.4%	8.5%
NHS local routes	8.3	39.7%	41.6%	18.8%



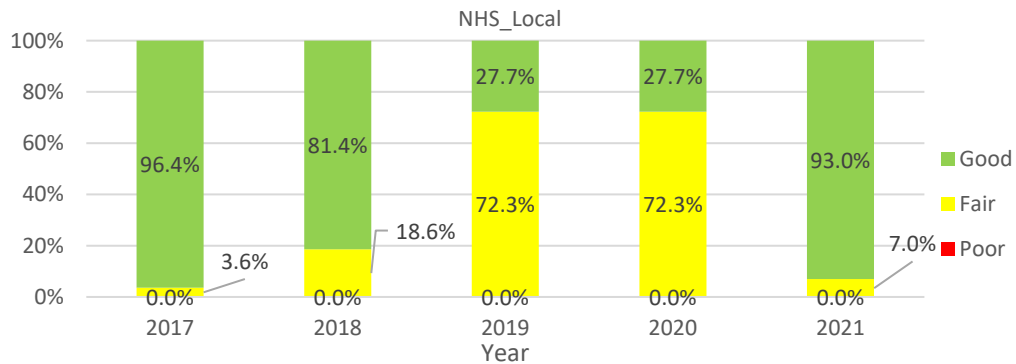
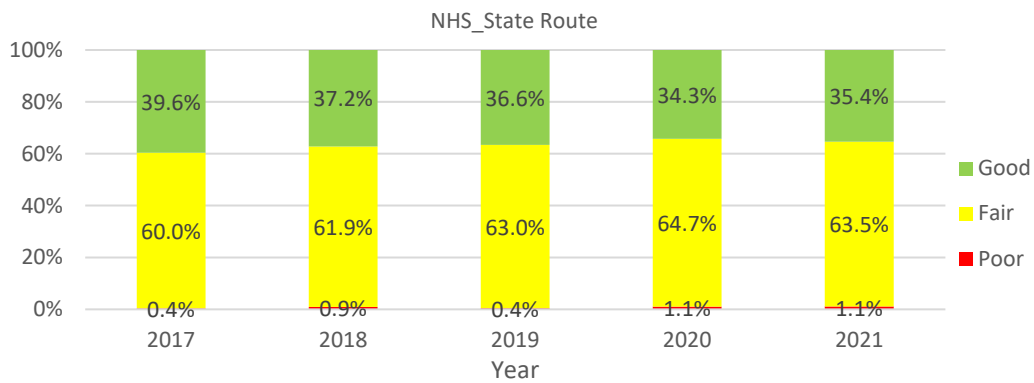
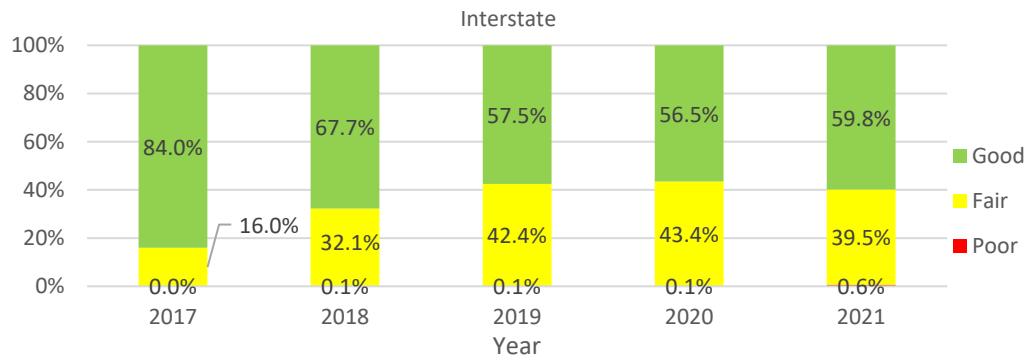
8. Pavement Conditions in Johnson City

Category	Lane miles	Pavement condition		
		Good	Fair	Poor
Interstates	78.5	84.7%	15.3%	0.0%
NHS State routes	260.8	61.3%	38.1%	0.6%
NHS local routes	N/A	N/A	N/A	N/A



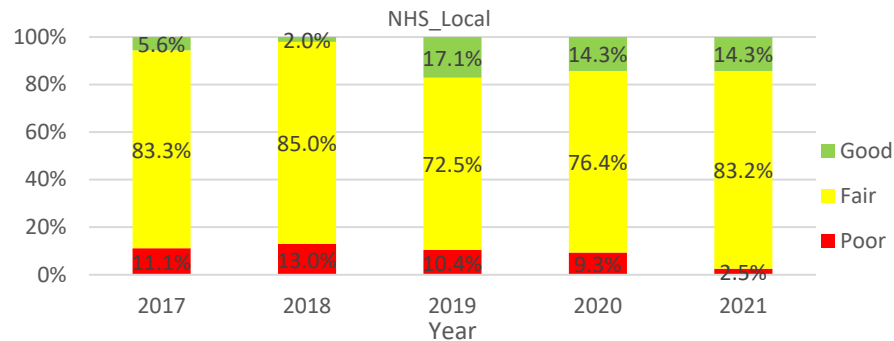
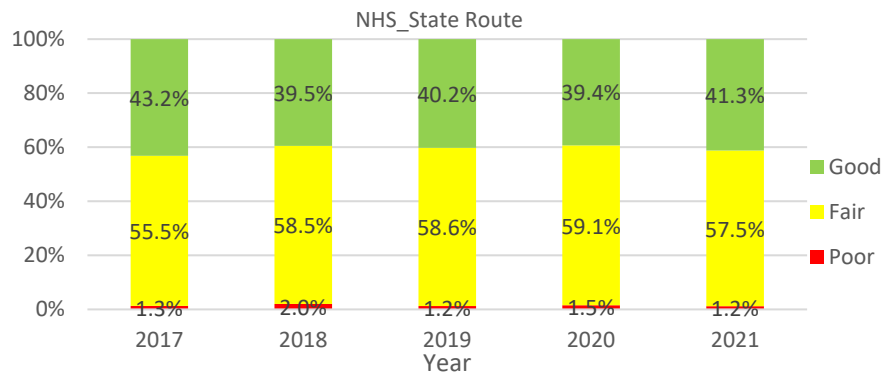
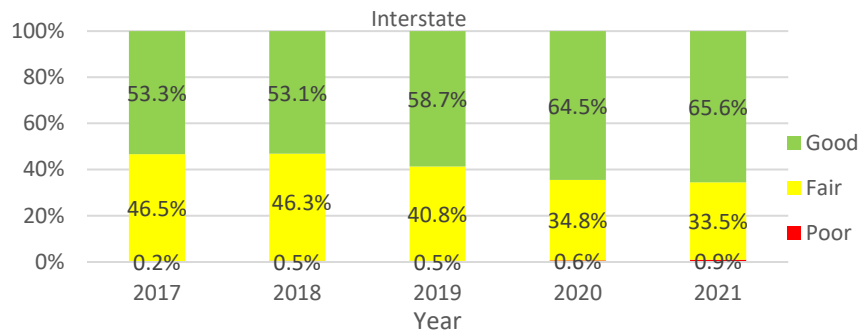
9. Pavement Conditions in Kingsport

Category	Lane miles	Pavement condition		
		Good	Fair	Poor
Interstates	125.4	59.8%	39.5%	0.6%
NHS State routes	222.9	35.4%	63.5%	1.1%
NHS local routes	3.4	93.0%	7.0%	0.0%



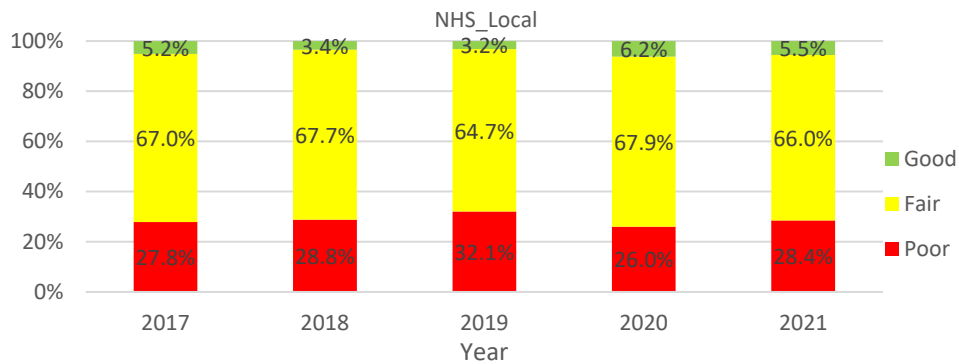
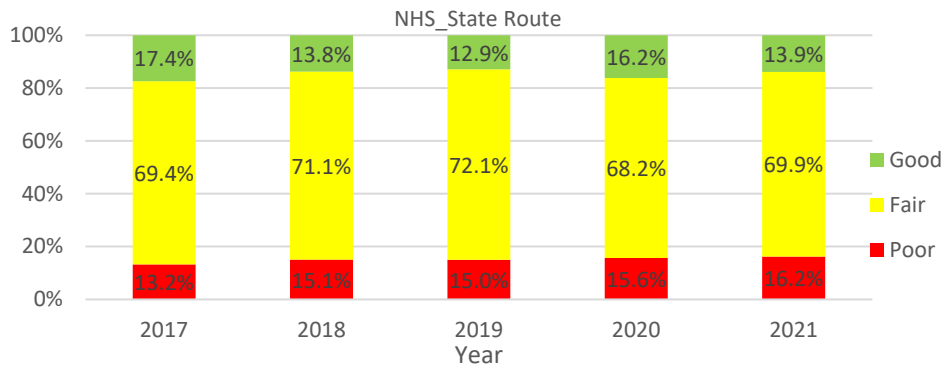
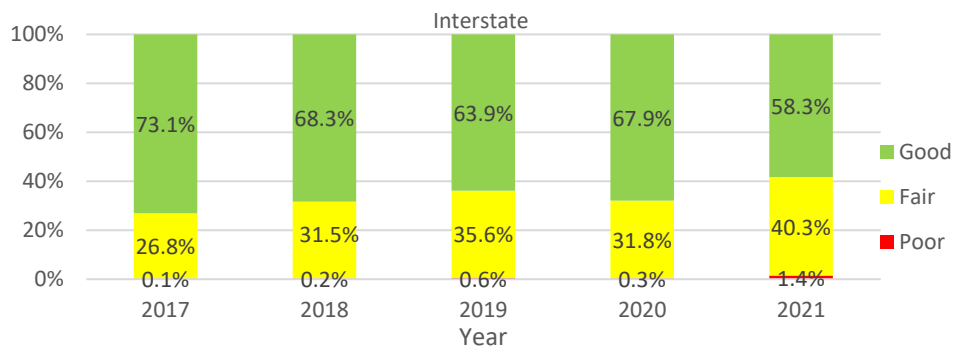
10. Pavement Conditions in Knoxville

Category	Lane miles	Pavement condition		
		Good	Fair	Poor
Interstates	529.3	65.6%	33.5%	0.9%
NHS State routes	859.0	41.3%	57.5%	1.2%
NHS local routes	20.6	14.3%	83.2%	2.5%



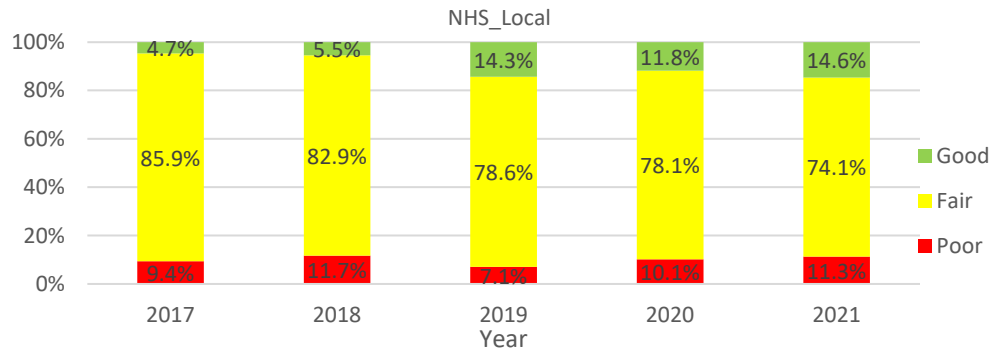
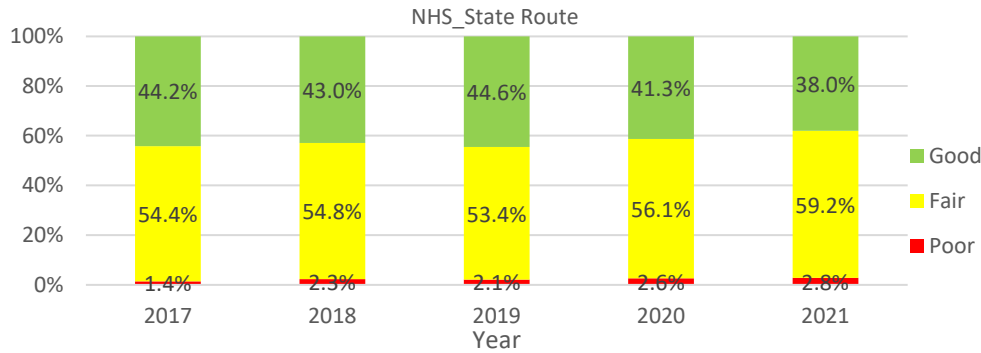
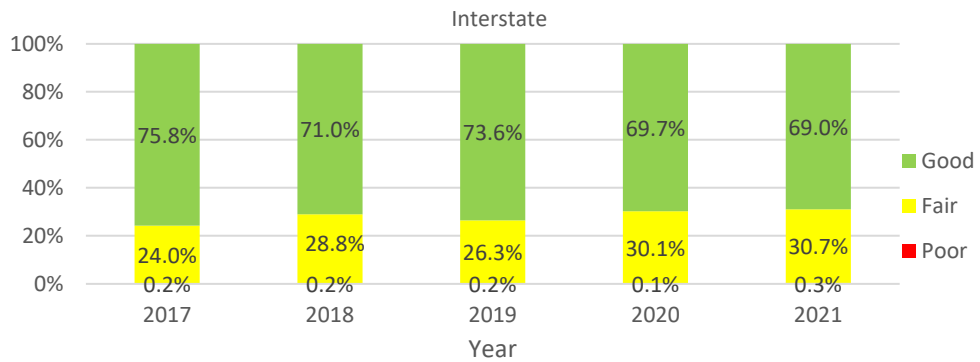
11. Pavement Conditions in Memphis

Category	Lane miles	Pavement condition		
		Good	Fair	Poor
Interstates	523.6	58.3%	40.3%	1.4%
NHS State routes	1,064.0	13.9%	69.9%	16.2%
NHS local routes	442.0	5.5%	66.0%	28.4%



12. Pavement Conditions in Nashville

Category	Lane miles	Pavement condition		
		Good	Fair	Poor
Interstates	1,654.8	69.0%	30.7%	0.3%
NHS State routes	2,244.6	38.0%	59.2%	2.8%
NHS local routes	40.9	14.6%	74.1%	11.3%



13. Pavement Conditions in Lakeway

Category	Lane miles	Pavement condition		
		Good	Fair	Poor
Interstates	82.6	88.1%	11.4%	0.5%
NHS State routes	168.6	41.0%	58.4%	0.5%
NHS local routes	15.6	2.6%	94.9%	2.6%

