

# **Performance Period #2 Targets and Reporting Summary**

March 2023

## Transportation Performance Measure (PM1): Safety Performance Target Setting

In compliance with the FHWA's 23 CFR Part 490, Subpart B - National Performance Management Measures for the Highway Safety Improvement Program (HSIP), the following is a summary of WILMAPCO, DelDOT and Maryland targets to meet or make significant progress toward the five required safety performance goals. The targets were set by the DOTs in late 2022 WILMAPCO has opted to adopt and support the statewide targets set both DOTs.

### Methodology:

Delaware: As part of the plan's development, several trendlines were reviewed to establish an aggressive, yet achievable, overall objective. Through a comparison of these trendlines, the reduction of combined fatalities and serious injuries ranged from 2.6 to 4.4 percent annually or 12 to 20 percent over five years. Based on these historic trends, the 2021-2025 SHSP established a five-year overall objective to reduce fatalities and serious injuries by 15 percent (a 3.2 percent annual reduction) as measured from the 2015-2019 five-year rolling average.

Maryland: Safety targets are derived from the 2021-2025 Strategic Highway Safety Plan (SHSP). Targets for measures showing a decreasing trend are based on five-year rolling averages and an exponential trend line. Those for measures showing an increasing trend are set at a 2% decrease from the 2016-2020 five-year average. These targets are updated annually by the MDOT Motor Vehicle Administration (MVA), Maryland Highway Safety Office, and MDOT State Highway Administration (SHA) Office of Traffic and Safety and are reported in the Highway Safety Improvement Program.

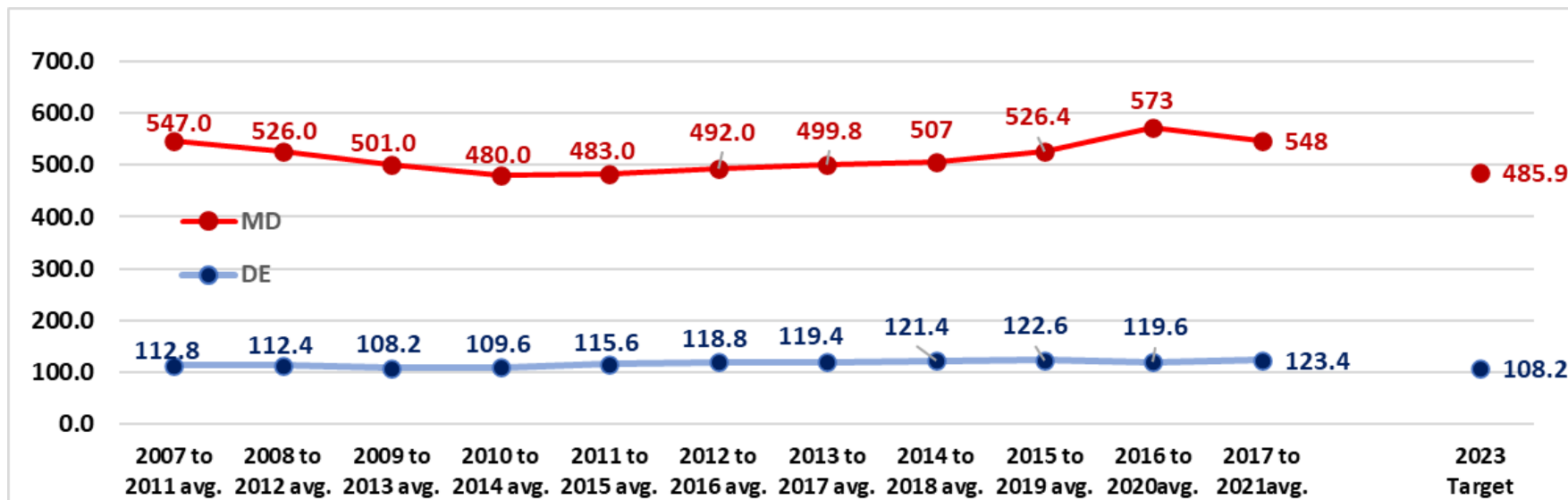
The chart shows the Delaware and Maryland established statewide targets (2019-2023, 5 year rolling averages) for each of the five measures. Once 2021 Fatality Analysis Reporting System (FARS), Highway Performance Monitoring System (HPMS), and FARS Annual Report File (ARF) data becomes finalized (December 2022) it will be compared to these targets to determine whether Delaware, Maryland, and WILMAPCO and MPOs have met or made significant progress toward our crash reduction targets. Details on the HSIP projects can be found in the New Castle County section of the TIP.

State/MPO Established 2023 Safety Targets*	Maryland	Delaware
Number of Fatalities	485.9	108.2
Rate of Fatalities per 100 million VMT	0.809	1.108
Number of Serious Injuries	2,323.8	424.3
Rate of Serious Injuries per 100 million VMT	3.815	4.350
Number of Non-motorized Fatalities and Non-motorized Serious Injuries	554.7	82.4

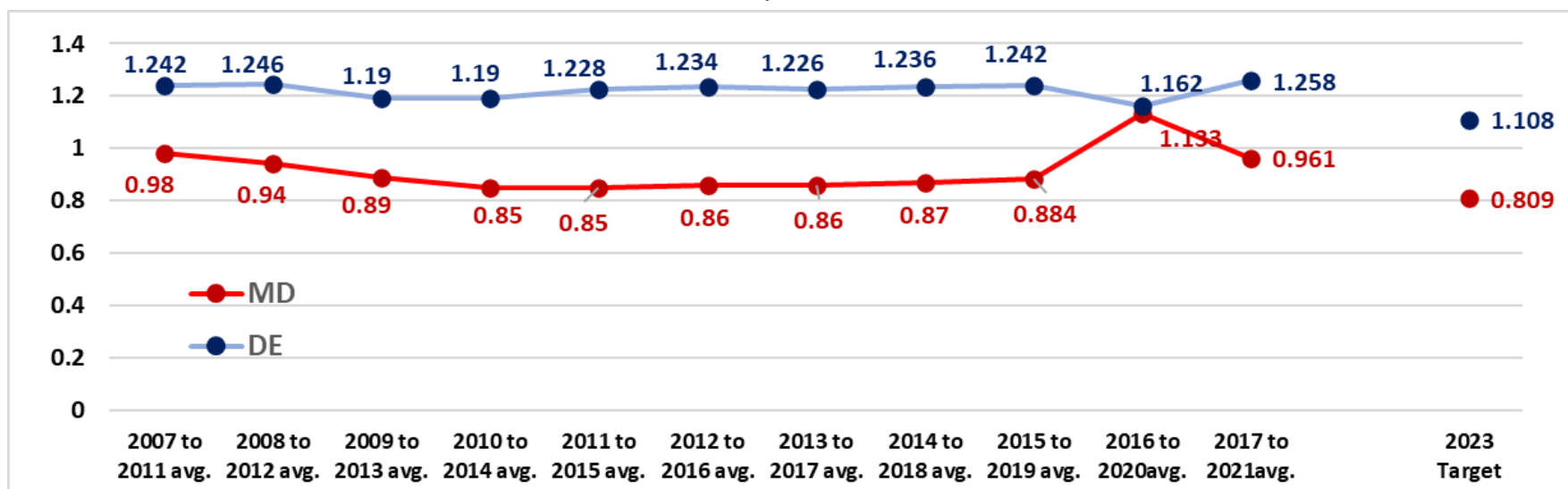
\* Projected 2019-2023 5-year rolling averages

The following charts show the historical trends composed of 5-year rolling averages, HSIP baseline figures and 2019-2023 targets for each of the safety performance measures. Figures include all injuries and fatalities which occurred on all public roads.

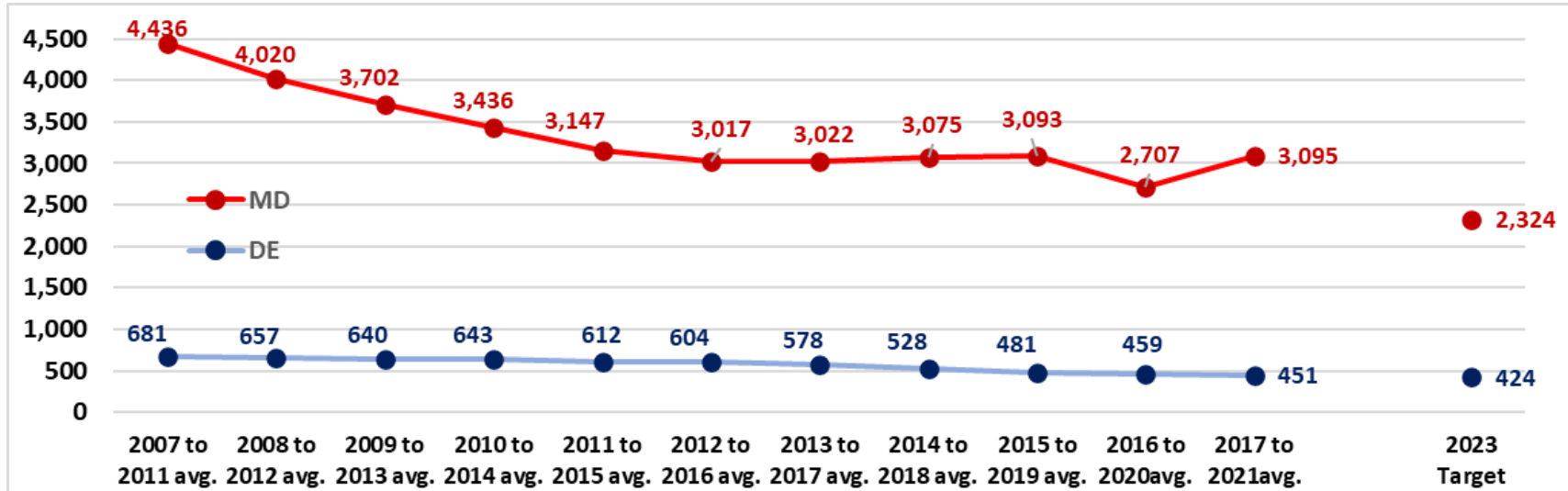
Total Number of Fatalities



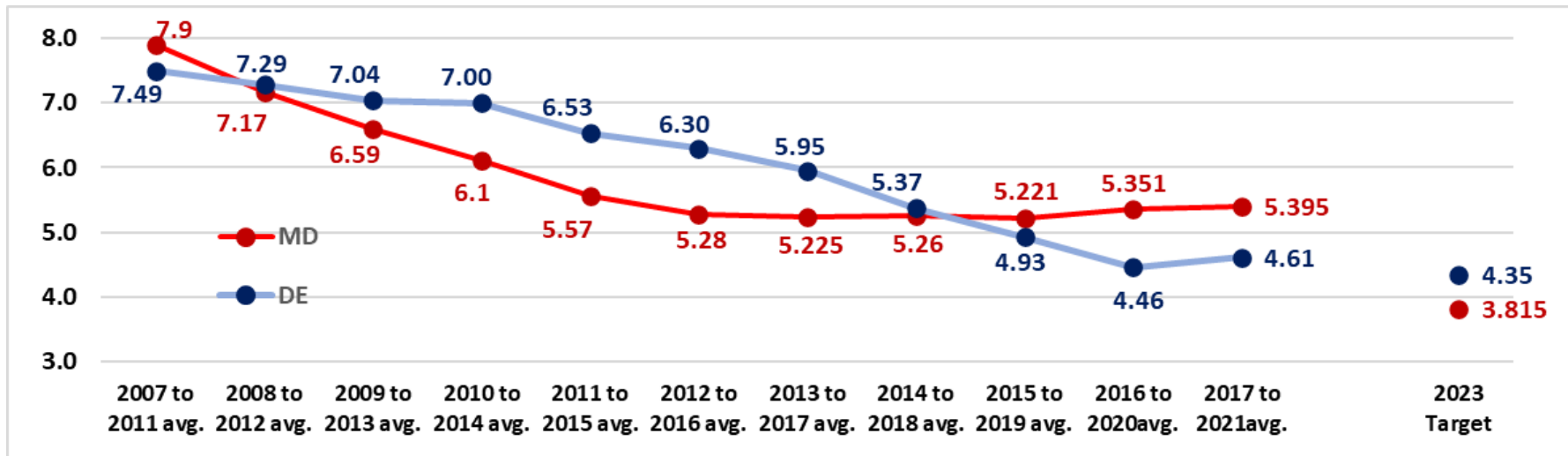
Rate of Fatalities per 100 million VMT



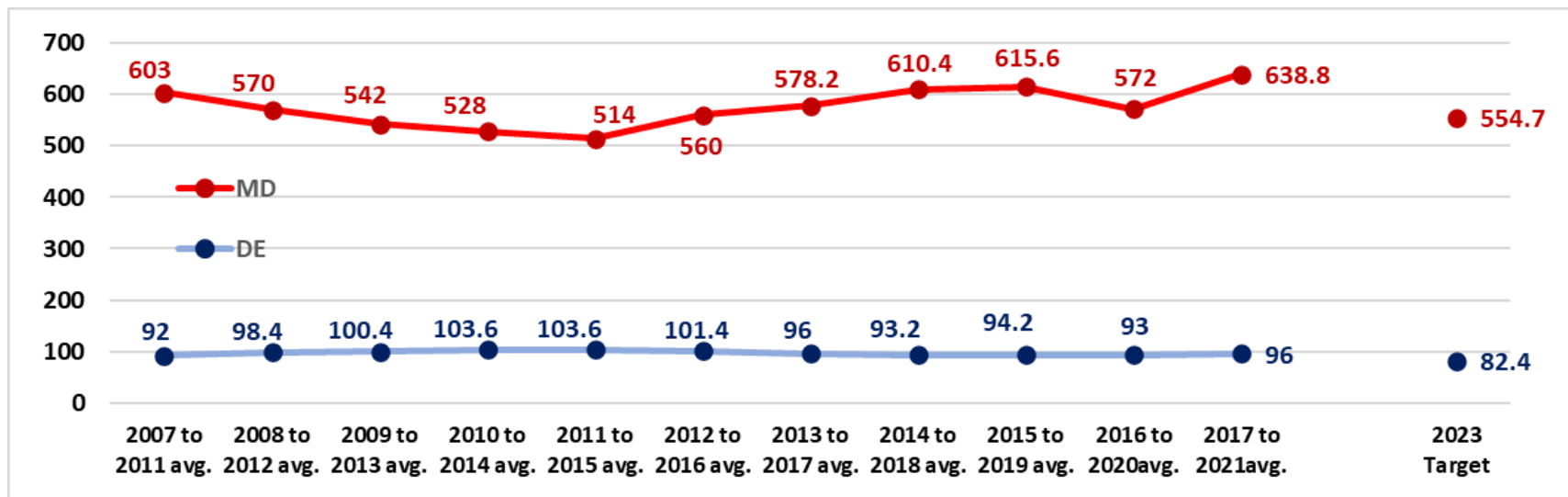
### Number of Serious Injuries



### Rate of Serious Injuries per 100 million VMT



### Non-Motorized Fatal and Serious Injuries



# Transportation Performance Measure (PM2): Infrastructure condition targets for the National Highway System (NHS) – Interstate Pavement Conditions

Pavement conditions are reported to FHWA by States through the HPMS for Federal-aid highways. The reporting agency uses the International Roughness Index (IRI) to measure the smoothness of pavement and ride quality. The following performance measures are used in assessing the condition of the NHS. Minimum pavement condition for the Interstate System is no more than 5% in Poor condition.

Performance Measures: Pavement Condition*
% of Interstate pavement in GOOD condition (4-year target only)
% of Interstate pavement in POOR condition (4-year target only)
% of non-Interstate NHS pavements in GOOD condition (2 and 4 year target)
% of non-Interstate NHS pavements in POOR condition (2 and 4 year target)

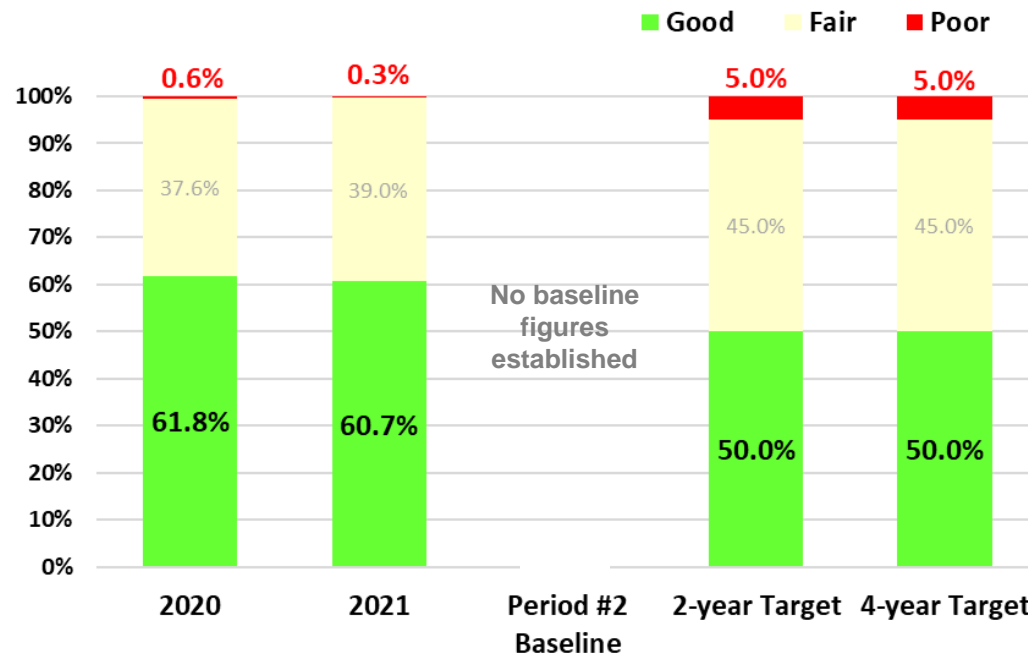
\*Good condition: Suggests no major investment is needed.

Poor condition: Suggests major reconstruction investment is needed.

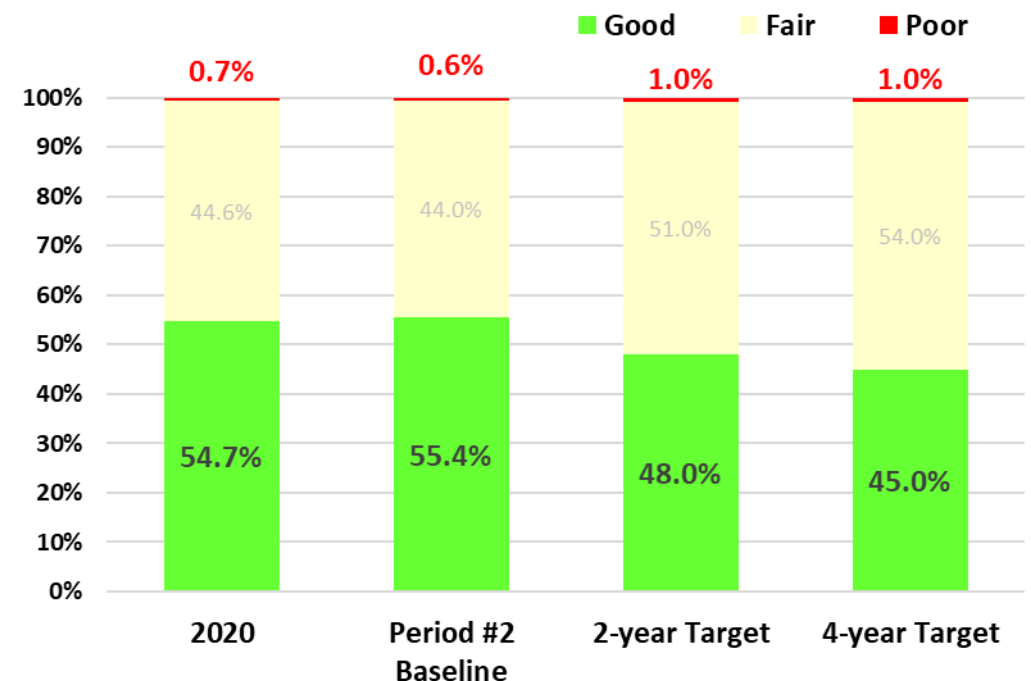
## Pavement Condition Determination Method

	Pavement Type		
	Asphalt and Jointed Concrete	Continuous Concrete	
Overall Section Condition Rating	3 metric ratings (IRI, cracking and rutting/faulting)	2 metric ratings (IRI and cracking)	Measures
Good	All three metrics rated "Good"	Both metrics rated "Good"	percentage of lane-miles in "Good" condition
Poor	≥ 2 metrics rated "Poor"	Both metrics rated "Poor"	percentage of lane-miles in "Poor" condition
Fair	All other combinations	All other combinations	

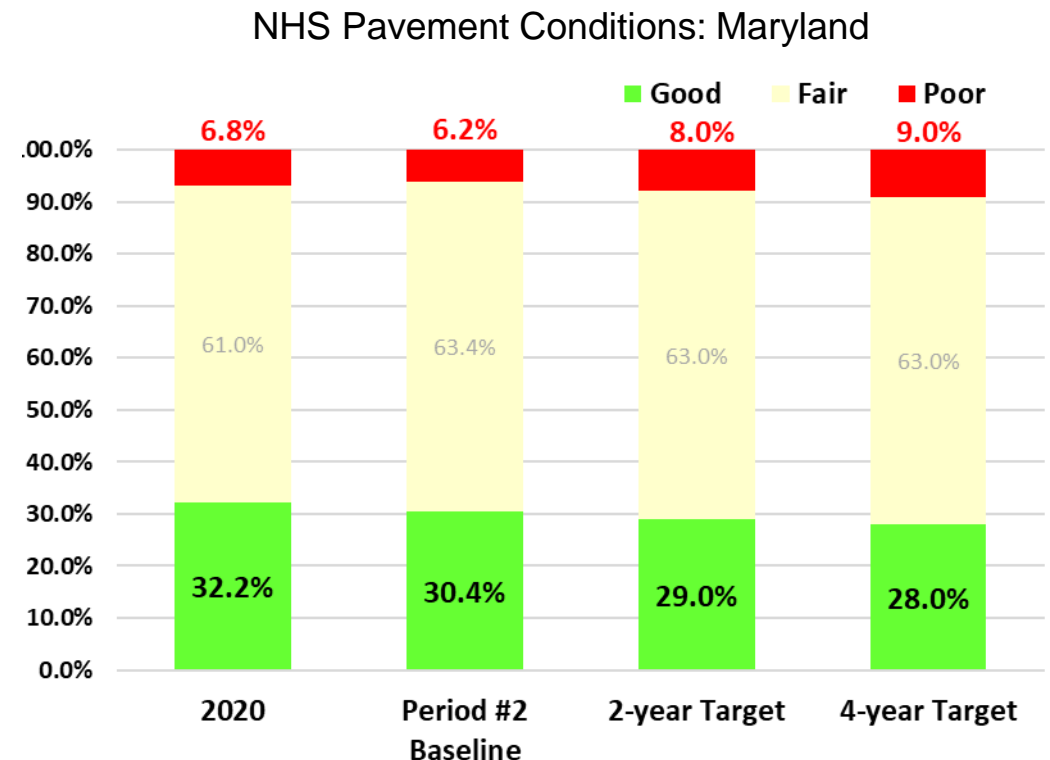
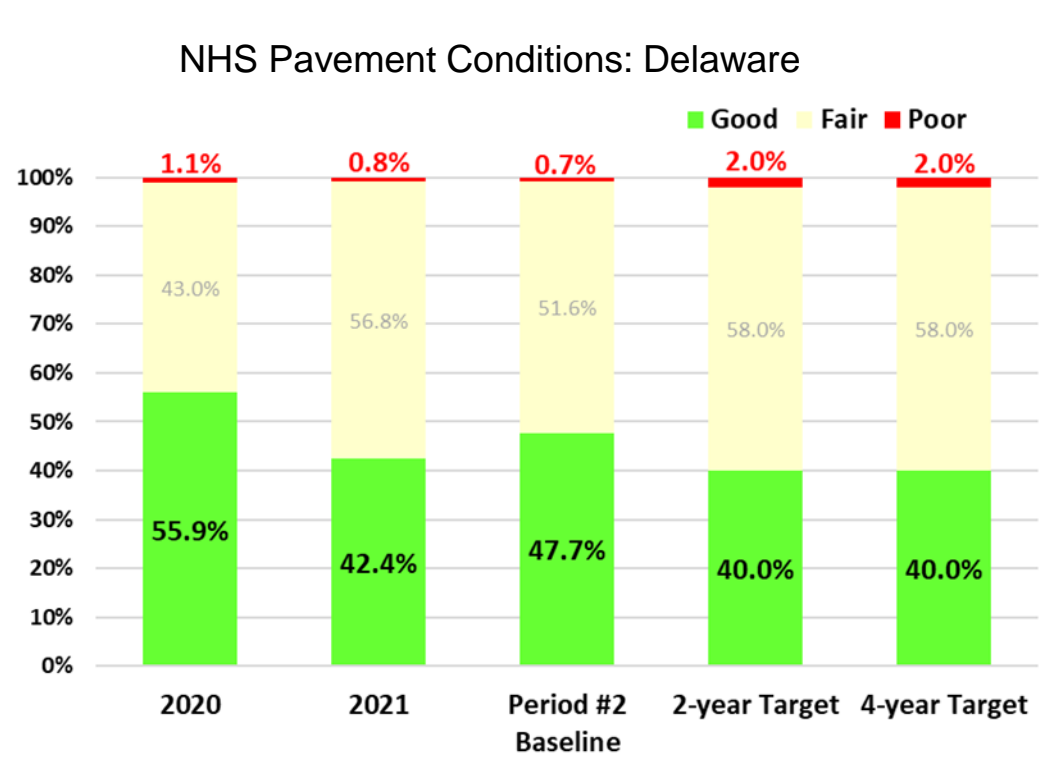
## Interstate Pavement Conditions: Delaware



## Interstate Pavement Conditions: Maryland



# Transportation Performance Measure (PM2): Infrastructure condition targets for the National Highway System (NHS) – Non-Interstate NHS Pavement Conditions



# Transportation Performance Measure (PM 2): Infrastructure condition targets for the National Highway System (NHS) – Bridge Conditions

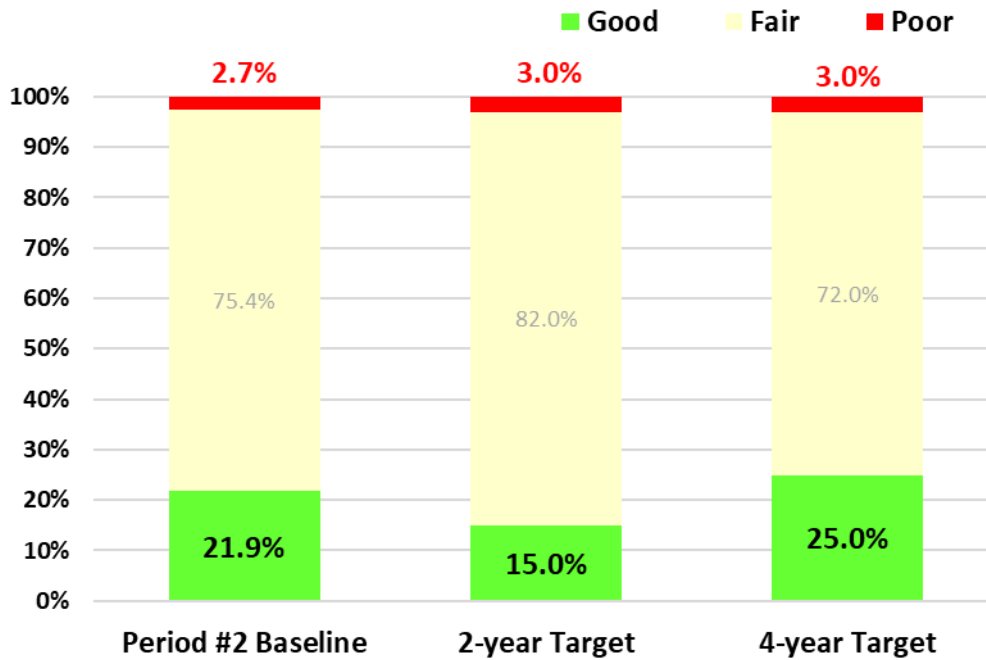
States and MPOs must establish two and four targets for all bridges carrying the NHS, which includes on-and off-ramps connected to the NHS within a State, and bridges carrying the NHS that cross a State border, regardless of ownership. States must maintain NHS bridges at less than 10.0% of deck area as structurally deficient.

**Measure:** Based on deck area based on National Bridge Inventory (NBI) condition ratings for the bridge deck, Superstructure, Substructure and/or Culvert. Condition is determined by the lowest rating of the four ratings.

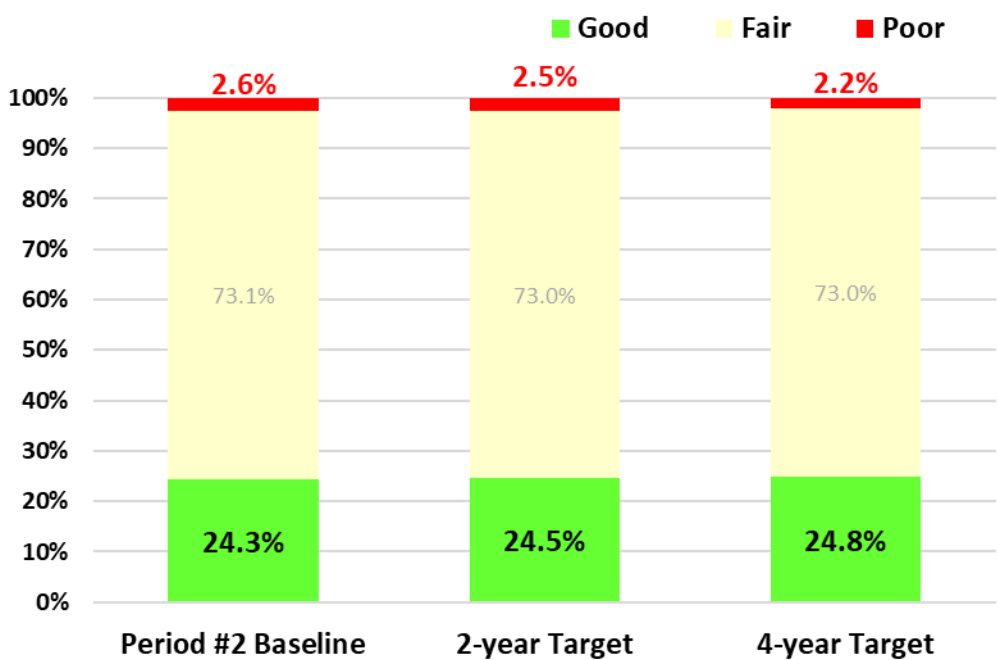
Bridge Condition Performance Measures	
% of NHS bridges classified as in GOOD condition	
% of NHS bridges classified as in POOR condition	

NBI Rating Scale <small>(from 0 – 9)</small>		9	8	7	6	5	4	3	2	1	0
		Good			Fair		Poor				
Bridge	Deck <small>(Item 58)</small>	≥ 7			5 or 6		≤ 4				
	Superstructure <small>(Item 59)</small>	≥ 7			5 or 6		≤ 4				
	Substructure <small>(Item 60)</small>	≥ 7			5 or 6		≤ 4				
	Culvert <small>(Item 62)</small>	≥ 7			5 or 6		≤ 4				

NHS Bridge Conditions: Delaware



NHS Bridge Conditions: Maryland





# Transportation Performance Measure (PM 3): Travel Time Reliability Measures - Level of Travel Time Reliability - Interstates

Level of Travel Time Reliability (LOTTR) is defined as the ratio of the longer travel times (80<sup>th</sup> percentile) to a “normal” travel time (50<sup>th</sup> percentile), using data from FHWA’s National Performance Management Research Data Set (NPMRDS). Reliability is measured during the full calendar year broken down into 4 time periods: AM Peak, Midday, PM Peak and Weekends. If any of these segments have a LOTTR above 1.50, the segment is determined not reliable. All non-reliable segments are then calculated in combination with daily traffic volumes and average vehicle occupancy to produce the total number of person-miles impacted by each unreliable segment.

Travel time reliability performance measures

**Interstate Travel Time Reliability Measure:** % of person-miles traveled on the Interstate that are reliable

**Non-Interstate Travel Time Reliability Measure:** % of person - miles traveled on the non-Interstate NHS that are reliable

## Data Sources:

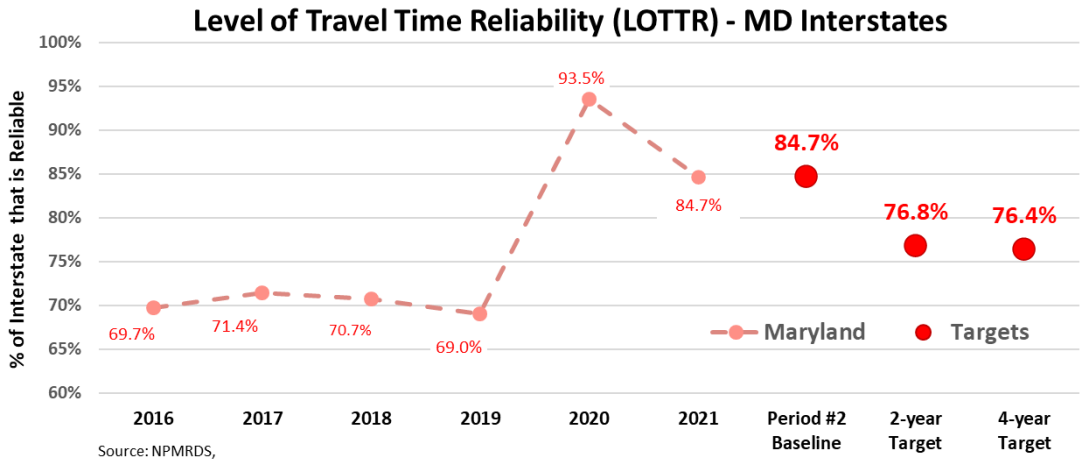
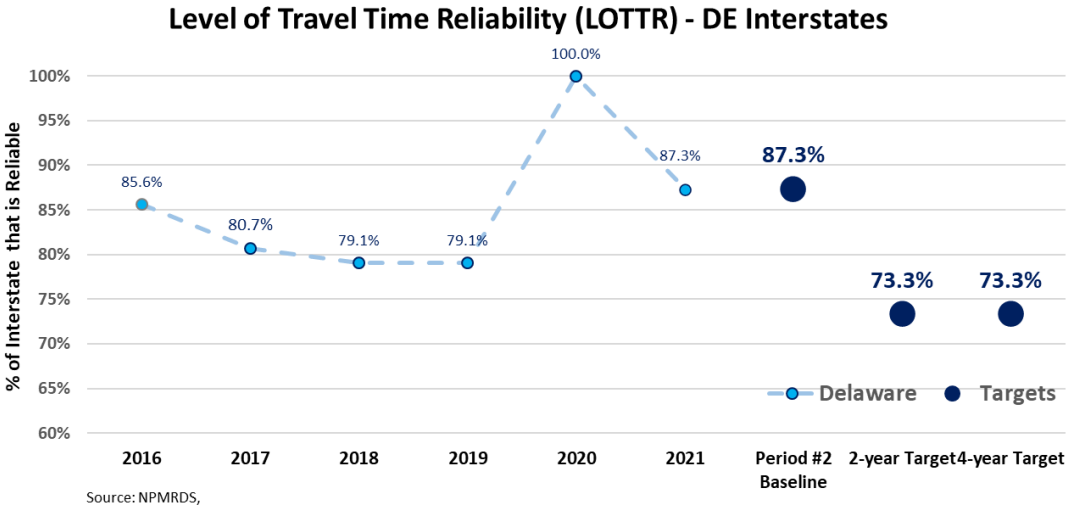
**Travel times** - Travel Time Data Set (NPMRDS)

**Travel volumes** - Annual volume calculated as: AADT x 365 days.

**Average vehicle occupancies (AVO)** data tables published by FHWA.

Illustration of Reliability Determination

Monday – Friday	6am – 10am	LOTTR = $\frac{44 \text{ sec}}{35 \text{ sec}} = 1.26$
	10am – 4pm	LOTTR = 1.39
	4pm – 8pm	LOTTR = 1.54
Weekends	6am – 8pm	LOTTR = 1.31
Must exhibit LOTTR below 1.50 during all of the time periods		Segment IS NOT reliable



# Transportation Performance Measure (PM 3): Travel Time Reliability Measures - Level of Travel Time Reliability – Non-Interstate NHS

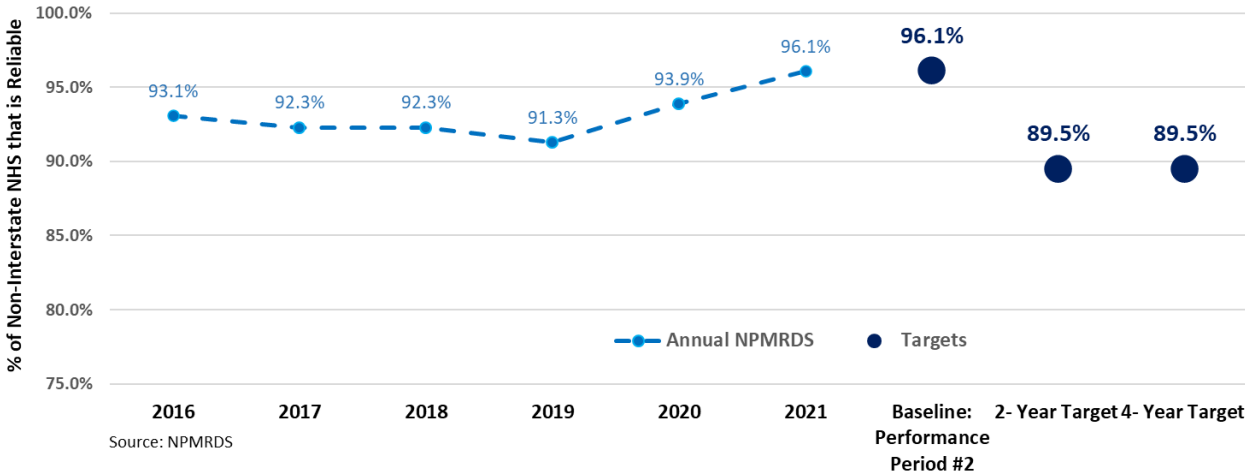
Travel time reliability performance measures

**Non-Interstate Travel Time Reliability Measure:** % of person - miles traveled on the non-Interstate NHS that are reliable

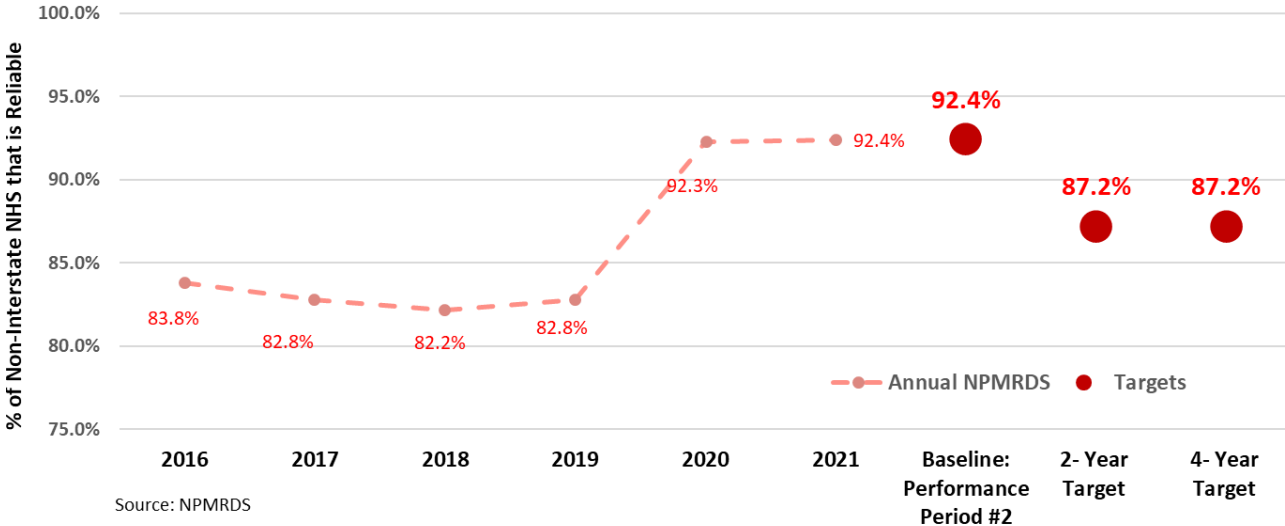
Illustration of Reliability Determination

Monday – Friday	6am – 10am	$LOTTR = \frac{44 \text{ sec}}{35 \text{ sec}} = 1.26$
	10am – 4pm	LOTTR = 1.39
	4pm – 8pm	LOTTR = 1.54
Weekends	6am – 8pm	LOTTR = 1.31
Must exhibit LOTTR below 1.50 during all of the time periods		Segment IS NOT reliable

Level of Travel Time Reliability (LOTTR) - DE Non-Interstate NHS



Level of Travel Time Reliability (LOTTR) - MD Non-Interstate NHS



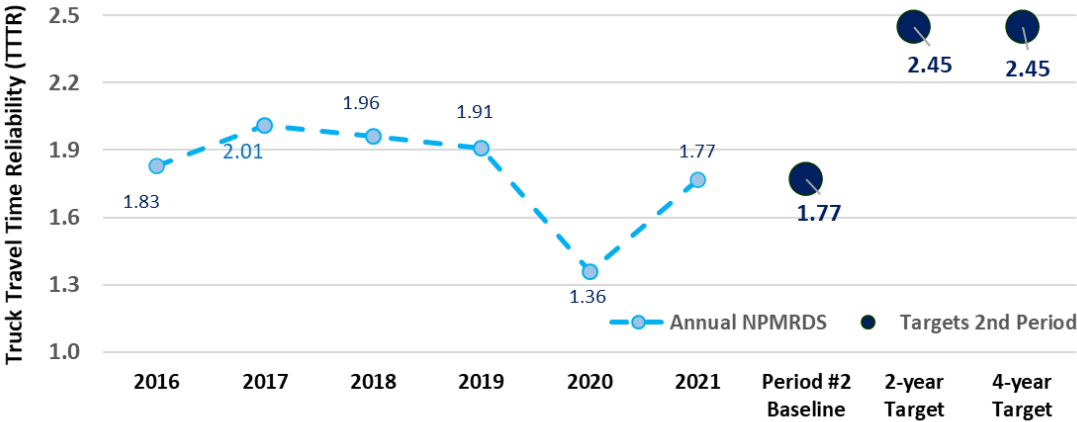
# Transportation Performance Measure (PM 3) : Travel Time Reliability Measures – Truck Level of Travel Time Reliability (TTTR)

**Measure:** The sum of maximum TTTR for each reporting segment, divided by the total miles of Interstate system ONLY. Reporting is divided into five periods: morning peak (6-10 a.m.), midday (10 a.m.-4 p.m.) and afternoon peak (4-8 p.m.) Mondays through Fridays; weekends (6 a.m.-8 p.m.); and overnights for all days (8 p.m.-6 a.m.). The TTTR ratio is generated by dividing the 95<sup>th</sup> percentile time by the normal time (50<sup>th</sup> percentile) for each segment. The measure is based on the worst performing time period for each segment, averaged together to create a single figure

Illustration of Truck Reliability Determination

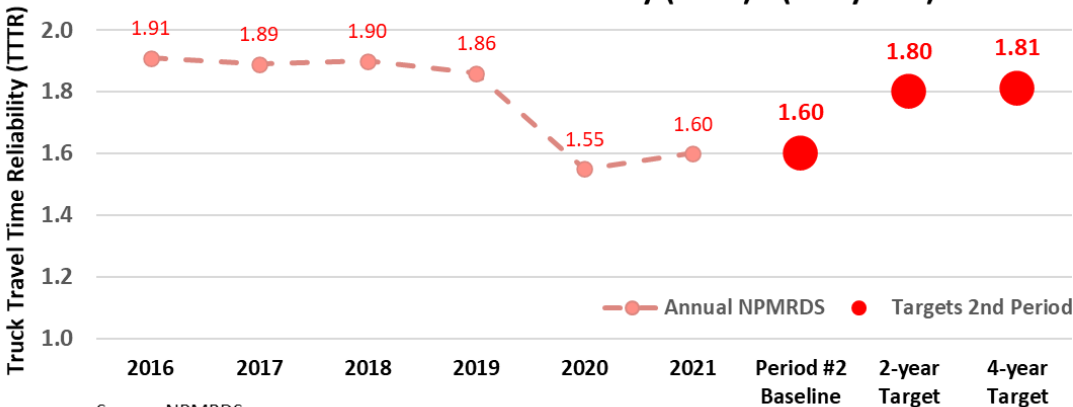
Monday – Friday	6 – 10 a.m.	$TTTR = \frac{63 \text{ sec}}{42 \text{ sec}} = 1.50$
	10 a.m. – 4 p.m.	$TTTR = \frac{62 \text{ sec}}{45 \text{ sec}} = 1.38$
	4 – 8 p.m.	$TTTR = \frac{85 \text{ sec}}{50 \text{ sec}} = \mathbf{1.70}$
Weekends	6 a.m. – 8 p.m.	$TTTR = \frac{52 \text{ sec}}{40 \text{ sec}} = 1.30$
Overnight	8 p.m. – 6 a.m.	$TTTR = \frac{46 \text{ sec}}{38 \text{ sec}} = 1.21$
Maximum TTTR		<b>1.70</b>

Truck Travel Time Reliability (TTTR) - (Delaware)



Source: NPMRDS

Truck Travel Time Reliability (TTTR) - (Maryland)



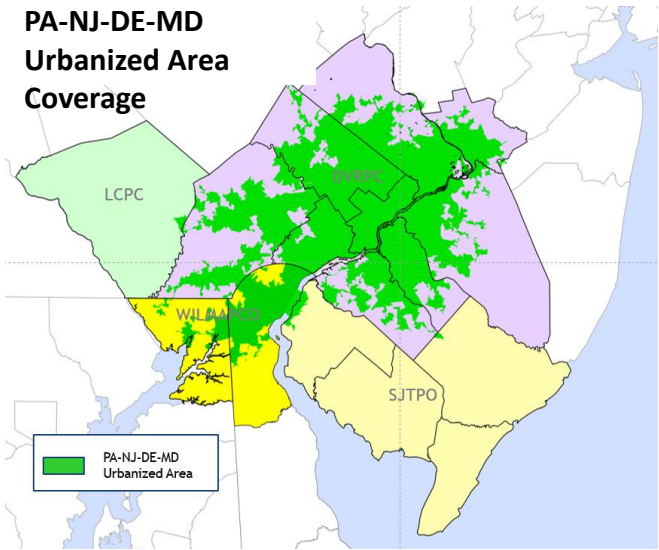
Source: NPMRDS

# Transportation Performance Measure: Annual hours of peak-hour excessive delay per capita (PHED)

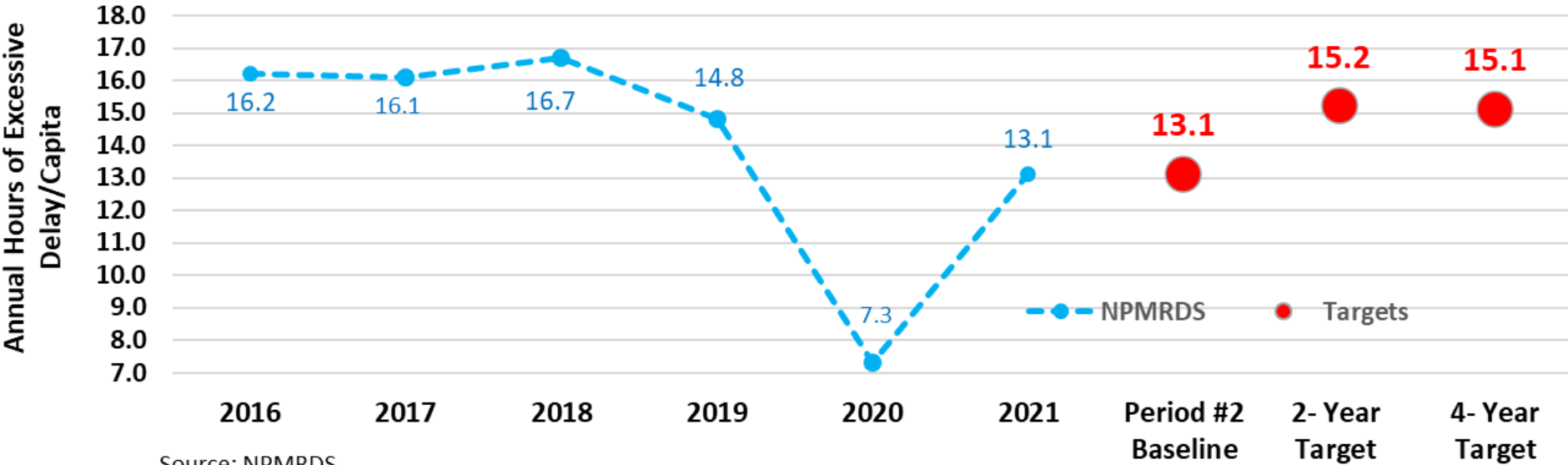
## – Philadelphia, PA/DE/MD/NJ Urbanized Area

**Excessive Delay Definition:** The extra amount of time spent in congested conditions defined by speed thresholds that are lower than a normal delay threshold (20 miles per hour (mph) or 60% of the posted speed limit, whichever is greater)

**Measure:** The annual hours of peak hour excessive delay (PHED) per capita on the National Highway System (NHS). The threshold for excessive delay will be based on the travel time at 20 miles per hour or 60% of the posted speed limit travel time, whichever is greater, and will be measured in 15-minute intervals. Peak travel hours are defined as 6-10 a.m. local time on weekday mornings; the weekday afternoon period is 3-7 p.m. or 4-8 p.m. local time, providing flexibility to State DOTs and MPOs. The total excessive delay metric will be weighted by vehicle volumes and occupancy. Measure covers the entire Philadelphia, PA/DE/MD/NJ urbanized area, with the targets selected in coordination with all four DOTs and associated MPOs.



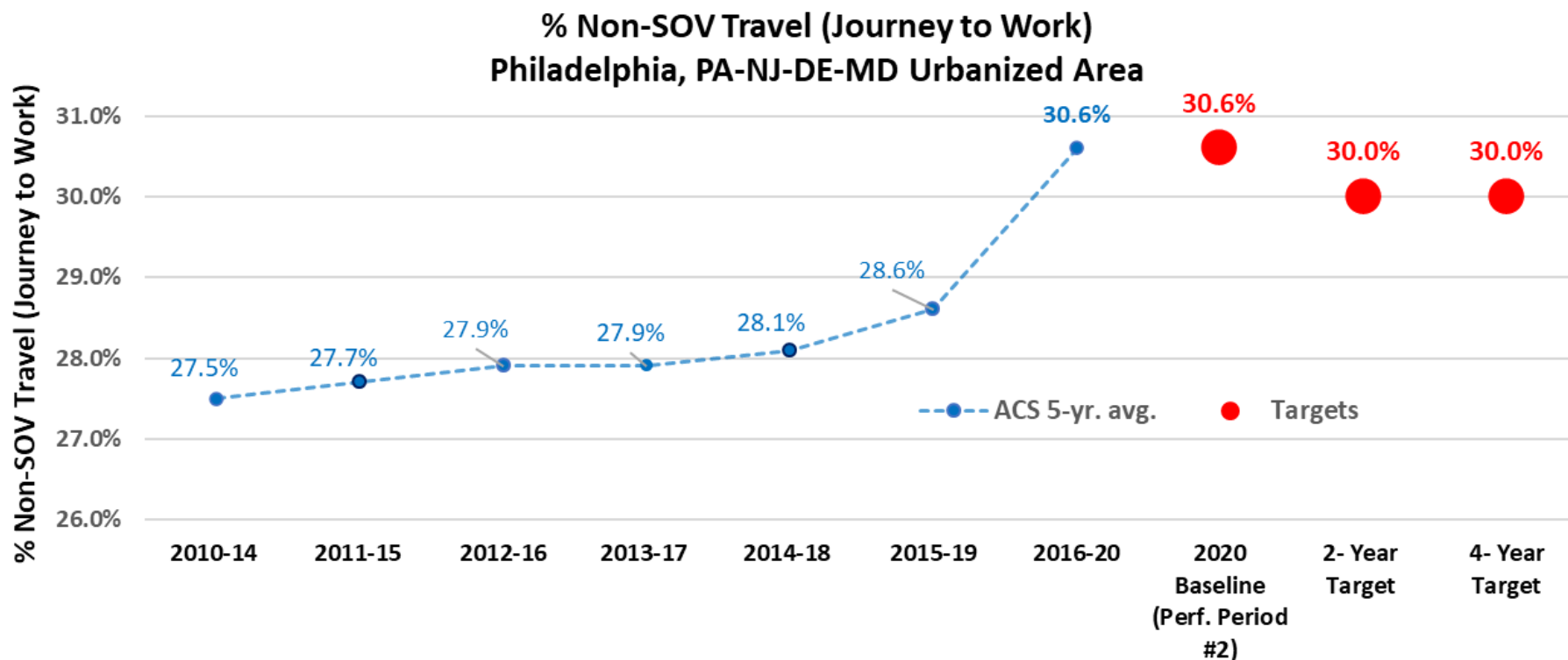
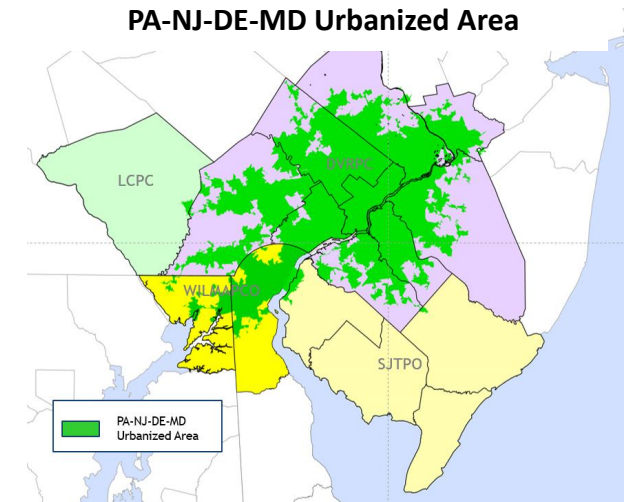
Annual PHED per Capita Philadelphia, PA-NJ-DE-MD Urbanized Area



# Transportation Performance Measure: Percent of non-single occupancy vehicle travel – Philadelphia, PA/DE/MD/NJ Urbanized Area

**Measure:** Percentage of travel that is not occurring by driving alone in a motorized vehicle according to the American Community Survey or a local survey of travel mode. The intent is to calculate the amount of non-SOV travel in specific urbanized areas. This may include travel via carpool, van, public transportation, commuter rail, walking, or bicycling as well as telecommuting.

**Data:** The American Community Survey (ACS) Commuting (Journey to Work) data from the U.S. Census Bureau 5-year average (2016-2020) was used. The measure covers the entire Philadelphia, PA/DE/MD/NJ urbanized area, with the targets selected in coordination with all four DOTs and associated MPOs.

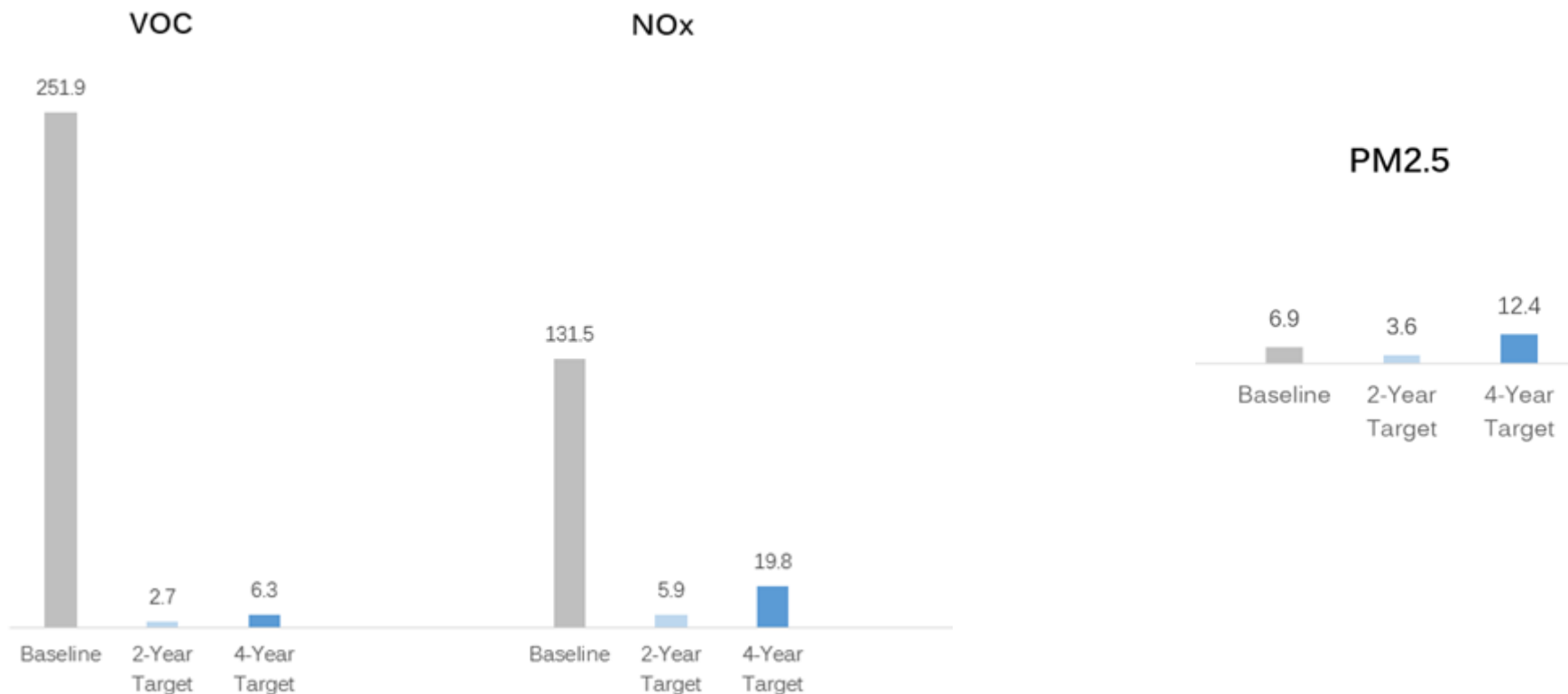


### Transportation Performance Measure 3: On-road mobile source emissions reduction (New Castle)

In New Castle County, we adopt the emissions targets set by DeIDOT for Delaware. These are presented below.

DeIDOT's methodology for developing these targets was described at WILMAPCO's July 2022 Technical Advisory Committee meeting. The baseline figure, meanwhile, is based on emissions reductions from Delaware's CMAQ projects from 2018 through 2021 placed in the FHWA CMAQ Public Access System database. Estimates for emissions reductions were developed for each year, by project, between fiscal years 2022 and 2025. The sum of emissions reductions for all projects for the years 2022 and 2023 became the 2-year target. The sum of emission reductions for all projects between the years 2022 and 2025 became the 4-year target. DeIDOT also provided WILMAPCO with estimates for PM<sub>2.5</sub> emission reductions that we include here.

Technical Advisory Committee meeting minutes, July 2022: <http://www.wilmapco.org/Tac/TAC-Minutes-7-22.pdf>



## Transportation Performance Measure: On-road mobile source emissions reduction (Cecil County)

In Cecil County, we adopt MDOT's 2- and 4-year emissions targets. The baseline figure is based on emissions reductions from Cecil County's CMAQ projects from 2018 through 2021 placed in the FHWA CMAQ Public Access System database. MDOT's targets are based on a combined approach utilizing historic project selection from the FFY 2018-2021 reporting period as well as anticipated CMAQ projects programmed in Cecil County over the next 4-years. Emissions reductions expected from anticipated projects assume generalized typical project parameters associated with pedestrian facilities and traffic flow improvements. As shown in the graph below, the 4-year emissions reduction targets of 0.07 kg/day for VOCs and 0.18 kg/day for NO<sub>x</sub> outpace the 4-year emissions reductions realized during the previous reporting period.

See the "CMAQ On-road Mobile Emissions Target Setting FFY 2022-2025" Memorandum on May 6, 2022: <https://wilmapco.sharefile.com/d-s0b8e9b964b4f4b3cac3c43ce6b0f5337>

See the "CMAQ On-road Mobile Source Emissions Reductions: FFY 2022-2025 Targets & FFY 2018-2021 Performance" presentation provided to the WILMAPCO Air Quality Subcommittee on June 16, 2022: <https://wilmapco.sharefile.com/d-sa93b097c901e450c88af9f3a1956465a>

### CMAQ ON-ROAD MOBILE SOURCE EMISSION REDUCTIONS IN CECIL COUNTY, MD (KG/DAY)



## Transit Asset Management Plans (TAMP)

On October 1, 2016 the Federal Transit Administration (FTA) published its Final Rule (49 CFR 625 and 630) on the Federal Requirements for the development of Transit Asset Management Plans (TAMP) by all transit agencies that receive federal funding. The TAM plan involves an inventory and assessment of all assets used in the provision of public transportation. The term “asset” refers to physical equipment including rolling stock, equipment and facilities. The goal of asset management is to ensure that an agency’s assets are maintained and operated in a consistent State of Good Repair (SGR).

The TAM Final Rule distinguishes requirements between larger and smaller or rural transit agencies:

- Tier I provider: “owns, operates, or manages either (1) one hundred and one (101) or more vehicles in revenue service during peak regular service or in any one non-fixed route mode, or (2) rail transit.”
- Tier II provider: “owns, operates, or manages (1) one hundred (100) or fewer vehicles in revenue service during peak regular service across all non-rail fixed route modes or in any one non-fixed route mode, (2) a subrecipient under the 5311 Rural Area Formula Program, (3) or any American Indian tribe.”

In the WILMAPCO region, DTC DelDOT is considered a Tier I provider, and Cecil County Transit (CCT) is considered a Tier II provider. As statewide transit agencies, DTC DelDOT and MDOT MTA have completed their TAMPs in 2022. Per federal regulations, MDOT MTA created a group TAMP plan on behalf of the Tier II Locally Operated Transit Systems (LOTS) in the state of Maryland will support their implementation of asset management practice and the federal requirements. This group TAMP applies only to the 23 LOTS in Maryland that are recipients of 5311 funding, operate less than 100 vehicles, or serve an American Indian tribe.

**Measures:** The TAM Rule requires that transit agencies establish state of good repair (SGR) performance measures and targets for each asset class. Tier I providers must report on the SGR measures for the following asset categories:

- Rolling stock (revenue vehicles): Percent of vehicles that have either met or exceeded their Useful Life Benchmark (ULB)
- Equipment (including non-revenue service vehicles): Percent of vehicles that have either met or exceeded their ULB
- Infrastructure (rail fixed-guideway, track, signals, and systems): Percent of track segments with performance restrictions
- Facilities: Percent of facilities rated below condition 3 on the FTA TERM scale

DTC DelDOT is not responsible for Infrastructure, as they are not a grantee that directly operates, maintains or stores rail cars, and has no associated rail infrastructure in its asset portfolio.

As Tier I providers, DTC DelDOT must develop its own TAM Plan, or TAMP, with all the elements listed below. As required by the TAM Final Rule, Tier I Provider TAMPs must:

- Include the capital asset inventory;



# Transit Asset Management Plans (TAMP)

- Provide asset condition assessment information;
- Describe the decision support tools used to prioritize capital investment needs;
- Identify project-based prioritization of investments;
- Define the TAM and SGR policy;
- Discuss the TAMP implementation strategy;
- Describe the key TAM activities to be undertaken during the plan's four-year horizon period;
- List resources needed to carry out the TAMP; and
- Outline how the TAMP will be monitored and updated to support continuous TAM improvement.

As a Tier II providers, CCT was included in MDOT MTA's group TAMP with 22 other LOTS. As required by the TAM Final Rule, Tier II Provider TAMPs must:

- Maintain an Asset Inventory that includes all vehicles, facilities, and equipment used in the delivery of transit service;
- Identify all Safety-Critical assets within the Asset Inventory and prioritize efforts to maintain those Safety-Critical assets in a SGR;
- Clearly define ownership, control, accountability, and reporting requirements for assets, including leased and third-party assets;
- Set annual asset performance targets and measure, monitor, and report on progress towards meeting those targets;
- Consider asset criticality, condition, performance, available funding, safety considerations, and the evaluation of alternatives that consider full lifecycle benefits, costs, and risks in capital project prioritization and other asset management decisions; and
- Maintain a group asset management plan, in coordination with MDOT MTA and LOTS safety policies and plans, as a means of delivering this policy.

**Data:** In this initial Tier I TAMP, DTC will use FTA ULB measures for transit assets and rolling stock. Targets for revenue/non-revenue vehicles are expressed as a percentage of the assets that are at or the ULB. Targets for equipment are expressed as a percentage of the assets that are at or beyond the ULB. Facility targets are based on the overall condition score in terms of a percentage of facilities failing to meet the target score.

## 2022 DTC Asset Performance Targets – Rolling Stock

ASSET CLASS	ASSET USE	DTC ULB	FTA ULB	TARGET %	RATIONALE
Rolling Stock - Revenue Vehicles					
Commuter Rail Car (RP)	Rail	-	39	<10%	DTC's policy is to replace at end of ULB. Less than 10% is acceptable.
Over-the-Road Bus (BR)	Commuter	12	14	<10%	
40ft/30ft Buses (BU)	Fixed-route	12	14	<10%	
Cutaway Bus (CU)	Paratransit	10	10	<10%	
Equipment - Non-Revenue Vehicles					
Car (AO)	Support Services	8	8	N/A	Since DTC does not have direct capital responsibility FTA does not require performance targets
SUV (SV)	Support Services	8	8		
Truck	Support Services	14	14		
Van (VN)	Support Services	8	8		

## 2022 DTC Asset Performance Targets – Facilities

ASSET CLASS	CONDITION BENCHMARK	TARGET %	RATIONALE
Facilities	3.0	<20%	With DTC's Facility Preventative Maintenance plan goals, a 20% target is achievable

# Transit Safety Performance Management

Federal regulations require covered Public Transportation Providers and State Departments of Transportation (DOT's) to establish Safety Performance Targets to address the Safety Performance Measures identified in the National Public Transportation Agency Safety Plan (49 CFR § 673.11(a)(3)). Additionally, once Metropolitan Planning Organizations (MPOs) receive the Transit Safety Performance Targets from the local Public Transportation Providers they are also required to establish Transit Safety Targets for the MPO Planning Area.

Public Transportation Providers, State DOTs and MPOs are required to establish seven safety performance targets for the four safety performance measures. These seven targets must also be set for each “mode” a Public Transportation Provider is responsible for. The following are the targets that must be established:

- Number of Fatalities: The total number of reportable fatalities by mode.
- Rate of Fatalities: The rate of reportable fatalities per total Vehicle Revenue Miles (VRM) (in 100 thousand VRM) by mode.
- Number of Injuries: The total number of reportable injuries by mode.
- Rate of Injuries: The rate of reportable injuries per total Vehicle Revenue Miles (VRM) (in 100 thousand VRM) by mode.
- Number of Safety Events: The total number of reportable safety events by mode.
- Rate of Safety Events: The rate of reportable safety events per total Vehicle Revenue Miles (VRM) (in 100 thousand VRM) by mode.
- System Reliability: Mean distance between major mechanical failures (MMF) by mode.

## **When do MPOs establish Transit Safety Performance Targets?**

MPO's must establish Transit Safety Targets specific to the MPO planning area within 180 days of receiving the targets from the Public Transportation Provider. When establishing Transit Safety Performance Targets, the MPO may support the Public Transportation Providers targets or establish its own targets for the metropolitan planning area.

# Transit Safety Performance Management

## 2022 Delaware Transit Corporation (DTC) Safety Performance Targets

*\*MDBF: Mean Distance Between Major Mechanical Failures (in miles)*

	Three-Year Average System Results for DTC		Performance Target
Mode of Service	FIXED ROUTE	PARATRANSIT	
Vehicle Miles (VRM)	8,518,626	6,544,790	
<b>Fatalities</b>			
Total	0	0	Maintain at 0%
Rate per 100K VRM	0	0	
<b>Injuries</b>			
Total	59	16	Reduce by 10%
Rate per 100K VRM	0.69	0.19	
<b>Safety Events</b>			
Total	26	9	Reduce by 10%
Rate per 100K VRM	0.31	0.11	
<b>System Reliability</b>			
Total MMFs	1,742	221	
VRM/MMF*	4,894	29,614	Increase by 10%

## 2022 Cecil Transit Safety Performance Targets

### Safety Performance Targets

*Specify performance targets based on the safety performance measures established under the National Public Transportation Safety Plan.*

Mode of Transit Service	Total Fatalities	Fatalities per 100K VRM	Total Injuries	Injuries per 100K VRM	Safety Events Total	Safety Events per 100K VRM	System Reliability (VRM/failures)
Deviated Fixed Route	0	0	<1	<.25	1	.32	>36,000
Demand Response	0	0	<1	0	0	0	>137,000
Micro transit/ COMPASS	0	0	<1	0	0	0	>137,000

For Cecil County Transit (CCT), based on the reported asset condition, targets have been set for each asset class taking the projected funding levels into consideration. The table below summarizes the FY 2021 performance and FY 2022 targets for Tier II LOTS assets. Targets have been set based on the anticipated funding availability and the priorities of both the LOTS and MDOT MTA.

**FY22 TARGET ASSET PERFORMANCE FOR ALL ASSETS**

**FY 2021 & 22 Target Asset Performance for All Vehicles**

<b>NTD Vehicle Type</b>	<b>FY21 Target</b>	<b>FY21 Performance</b>	<b>FY22 Target</b>
<b>Revenue Vehicles</b>			
Articulated Bus	0%	0%	60%
Automobile	64%	64%	100%
Bus	18%	21%	22%
Cutaway Bus	32%	24%	28%
Ferryboat	75%	75%	75%
Minivan	0%	13%	19%
Trolleybus	-	0%	0%
Van	28%	5%	11%
<b>Equipment</b>			
Automobile	60%	41%	47%
Trucks and Other Rubber Tire Vehicles	42%	53%	57%
<b>Facilities</b>			
Administrative/Maintenance*	0%	0%	0%
Passenger/Parking	0%	0%	0%