FEDERAL PERFORMANCE MEASURES UPDATE

SYSTEM PERFORMANCE, FREIGHT, AIR QUALITY (PM3), TRANSIT ASSET MANAGEMENT, and PUBLIC TRANSPORTATION AGENCY SAFETY PLAN

JENNY NARVAEZ

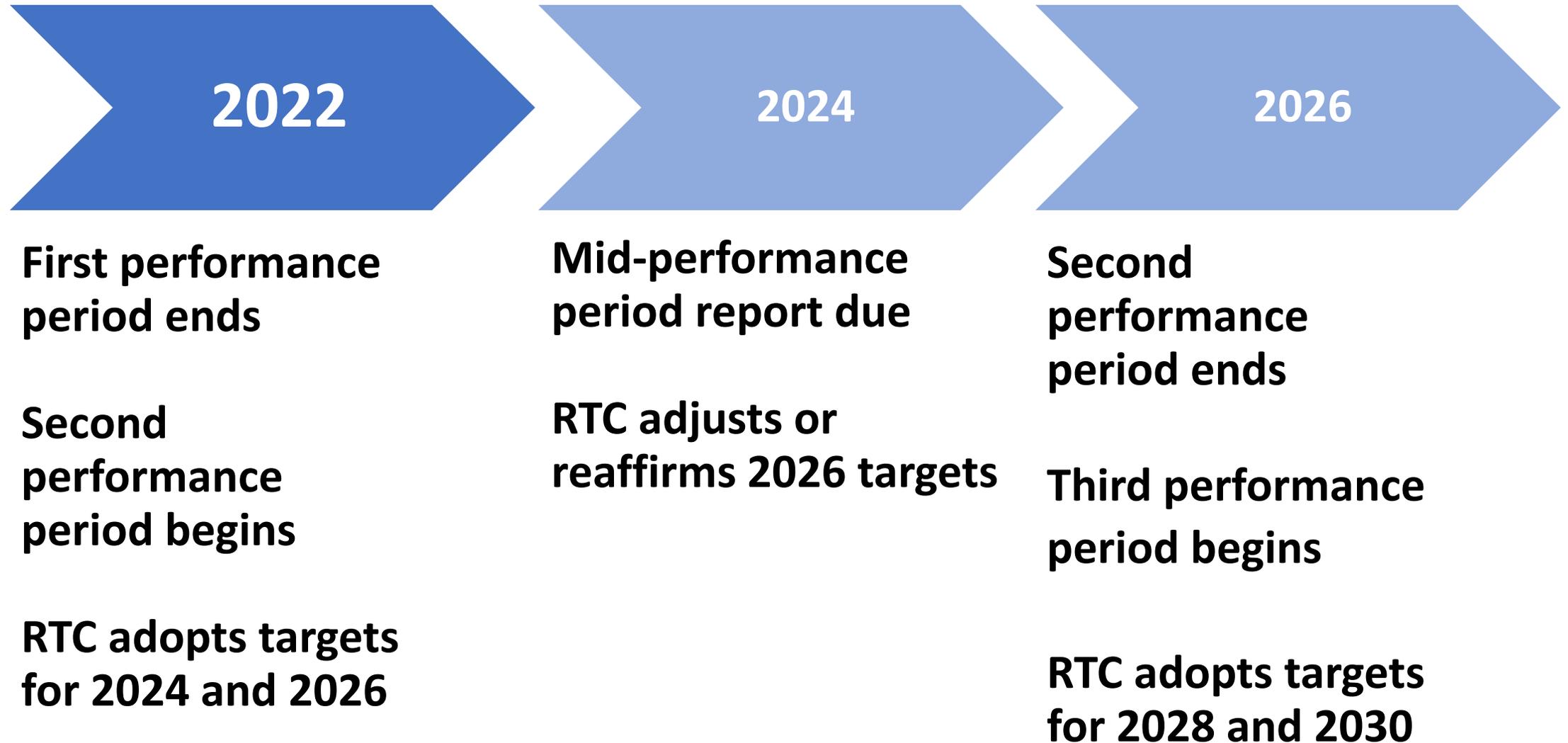SURFACE TRANSPORTATION TECHNICAL COMMITTEE

7.22.2022

Federal Performance Measure Rules

Rulemaking	Next Anticipated STTC Action	Next Anticipated RTC Action	Upcoming Measure Milestone
PM1 – Roadway Safety	Late 2022	Late 2022 Early 2023	February 27, 2023 180-day mark for MPOs to agree with DOT targets or establish their own
PM2 – Pavement and Bridge	Early 2023	Early 2023	April 2023 180-day mark for MPOs to agree with DOT targets or establish their own
PM3 – System Performance, Freight, and CMAQ	August 26, 2022	September 8, 2022	September 19, 2022 MPOs submit Planning Management Forms to DOT
Transit Safety (PTASP)	Early 2025	Early 2025	Early 2025 Provide targets to TxDOT and FTA
Transit Asset Management	August 26, 2022	September 8, 2022	October 2022 Provide targets to TxDOT and FTA

PM3: System Performance, Freight, and CMAQ

PM3 Schedule

2022

First performance period ends

Second performance period begins

RTC adopts targets for 2024 and 2026

2024

Mid-performance period report due

RTC adjusts or reaffirms 2026 targets

2026

Second performance period ends

Third performance period begins

RTC adopts targets for 2028 and 2030

Interstate Reliability

Percentage of travel on Interstates in the MPA meeting federal threshold for reliability measures predictability of travel times

Higher values indicate improvement

Measure has been steadily improving over time

Somewhat impacted by COVID-19 pandemic

2021 values returned to near normal

The RTC continues to implement policies and programs aimed at maximizing the existing system capacity, reducing demand through implementation of travel demand management strategies, and strategically adding new Interstate capacity.

Interstate Reliability

Measure	Desired Trend Indicating Improvement	Original Targets (Updated 2020)		Baseline (2021 Observed)	New Targets Forecast/Trend	
		2020	2022		2024	2026
Interstate Reliability	↗	78.6%	79.5%	78.9%	80.9%	82.1%
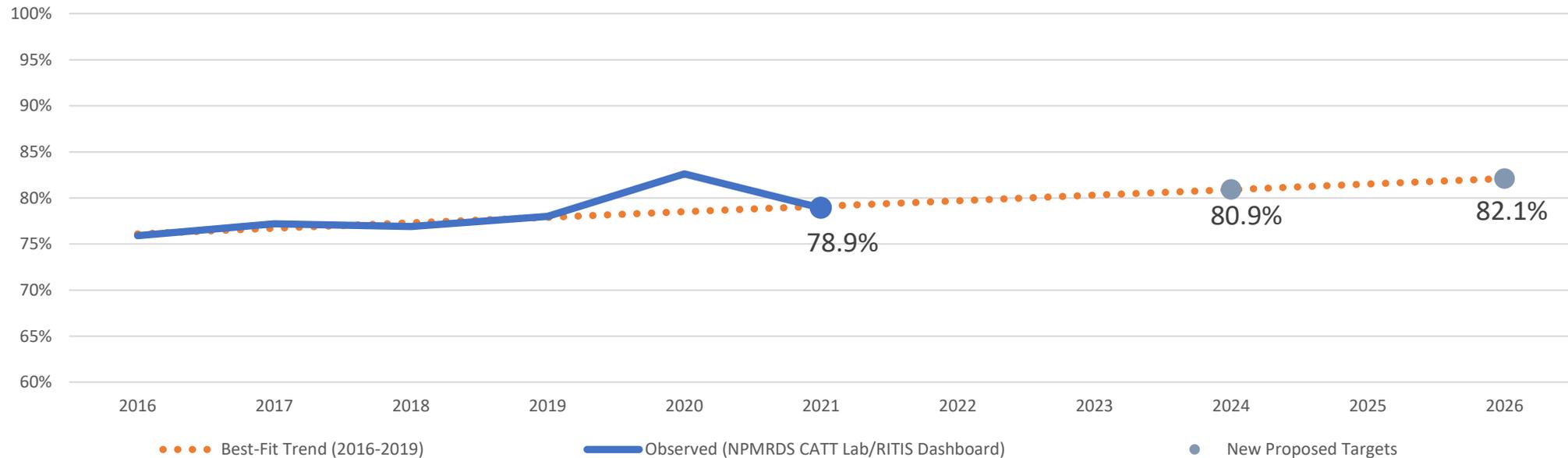
Non-Interstate Reliability

Percentage of travel on Non-Interstates in the MPA meeting federal threshold for reliability

Higher values indicate improvement

Measures predictability of travel times

Measure has been steadily improving over time

More significantly impacted by COVID-19 pandemic

2021 values remain high, but expected to return to normal patterns over time similarly to Interstates
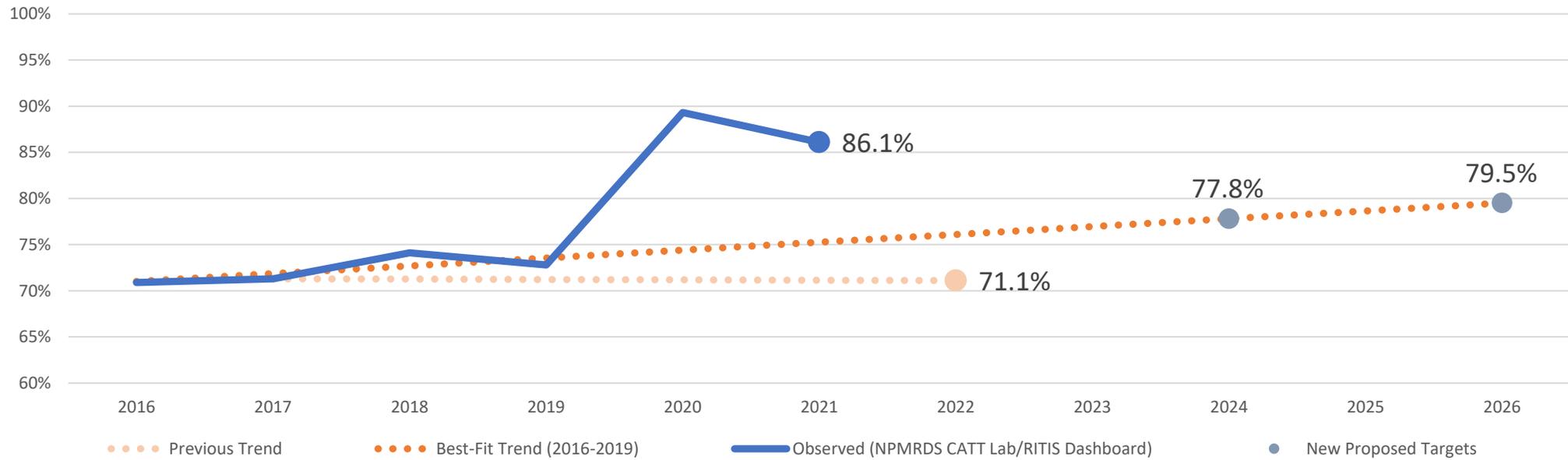
The RTC continues to implement policies and programs aimed at increasing traffic flow through signal timing coordination, implementing travel demand management strategies, and strategically adding new arterial street capacity.

System Performance Measure
Non-Interstate Reliability

Measure	Desired Trend Indicating Improvement	Original Targets (Updated 2020)		Baseline (2021 Observed)	New Targets Forecast/Trend	
		2020	2022		2024	2026
Non-Interstate Reliability	↗	N/A	71.1%	86.1%	77.8%	79.5%

Legend: Previous Trend · Best-Fit Trend (2016-2019) · Observed (NPMRDS CATT Lab/RITIS Dashboard) · New Proposed Targets

Peak Hour Excessive Delay

Hours of "excessive" delay experienced per capita on the NHS in an urbanized area

Now required for Dallas-Fort Worth-Arlington, Denton-Lewisville, and McKinney Urbanized Areas (**2010 boundaries**) - Less data and stability for newer reporting areas

Lower values indicate improvement

Measure has been slightly improving over time

Strongly impacted by COVID-19 pandemic

2021 values remain lower, but analysis of 2022 data to date indicates a return to previous trends for Dallas-Fort Worth-Arlington
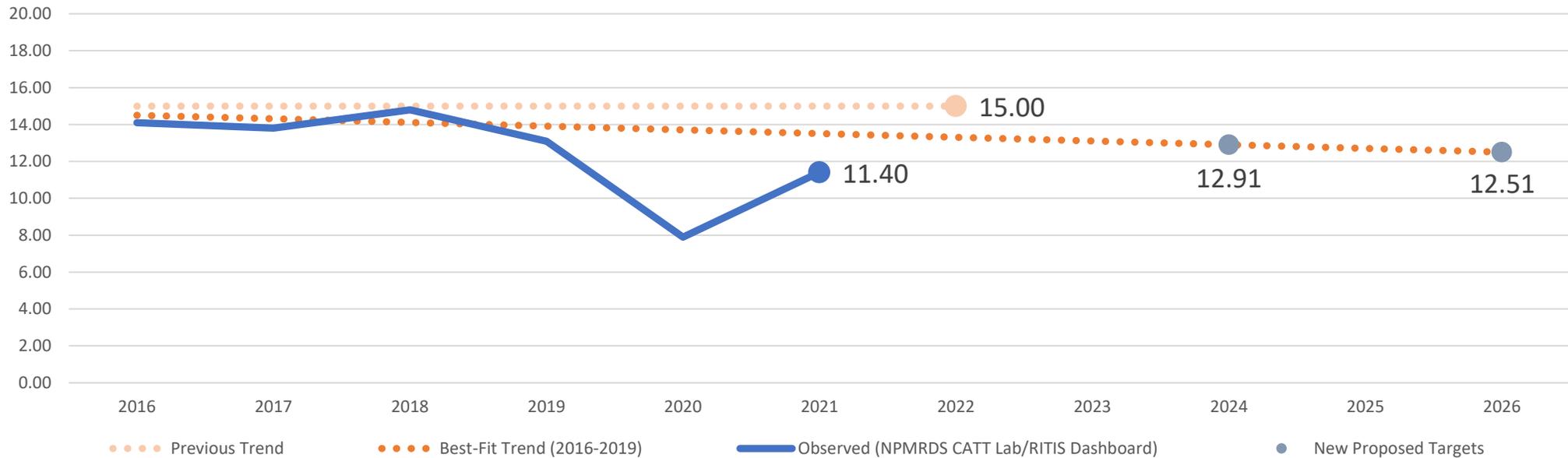
The RTC continues to implement policies and programs such as robust incident management during peak hours, as well as providing other travel options such as express managed lanes, regional rail, and express bus service

Peak Hour Excessive Delay
Dallas-Fort Worth-Arlington

Measure	Desired Trend Indicating Improvement	Original Targets (Updated 2020)		Baseline (2021 Observed)	New Targets Forecast/Trend	
		2020	2022		2024	2026
Peak-Hour Excessive Delay (Dallas-Ft. Worth-Arlington)	⬊	N/A	15.00 hrs.	11.40 hrs.	12.91 hrs.	12.51 hrs.

Regional Performance Measures Update

Peak Hour Excessive Delay
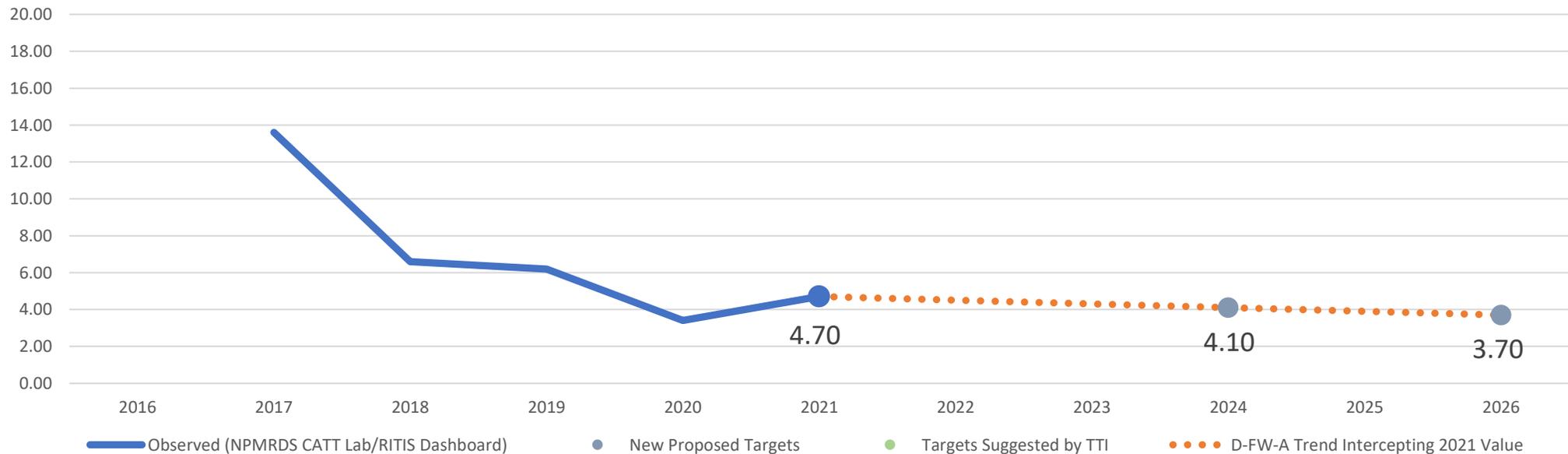## Denton-Lewisville

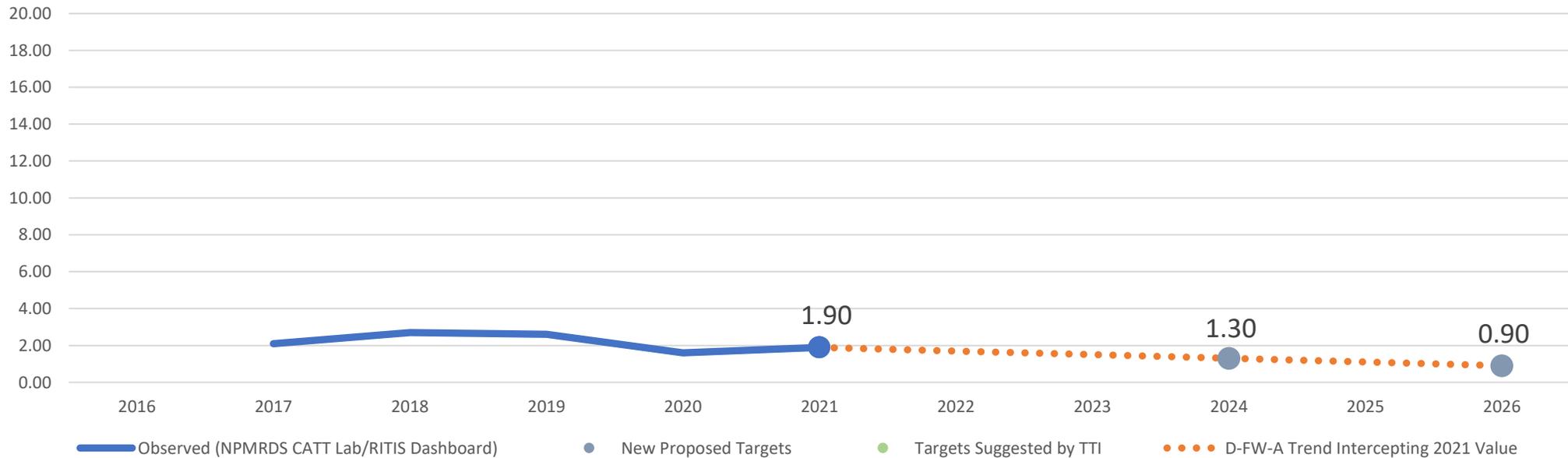| Measure	Desired Trend Indicating Improvement	Original Targets (Updated 2020) 2020 2022		Baseline (2021 Observed)	New Targets Forecast/Trend 2024	2026
Peak-Hour Excessive Delay (Denton-Lewisville)	↘	New Measure		4.70 hrs.	4.10 hrs.	3.70 hrs.

Peak Hour Excessive Delay
McKinney

Measure	Desired Trend Indicating Improvement	Original Targets (Updated 2020) 2020	2022	Baseline (2021 Observed)	New Targets Forecast/Trend 2024	2026
Peak-Hour Excessive Delay (McKinney)	↘	New Measure		1.90 hrs.	1.30 hrs.	0.90 hrs.

Legend: Observed (NPMRDS CATT Lab/RITIS Dashboard) — New Proposed Targets — Targets Suggested by TTI — D-FW-A Trend Intercepting 2021 Value

Truck Travel Time Reliability

Index value indicating the reliability of truck travel on Interstates

Measures predictability of travel times for trucks

Lower values indicate improvement

Measure has been worsening over time

Addressed by Freight Policies and Programs:

- **FP3-007:** Improve efficiency by promoting safety, mobility, and accessibility on the freight networks.

- **FP3-002:** Encourage the freight industry to participate in freight system planning and development to improve air quality and delivery time reliability
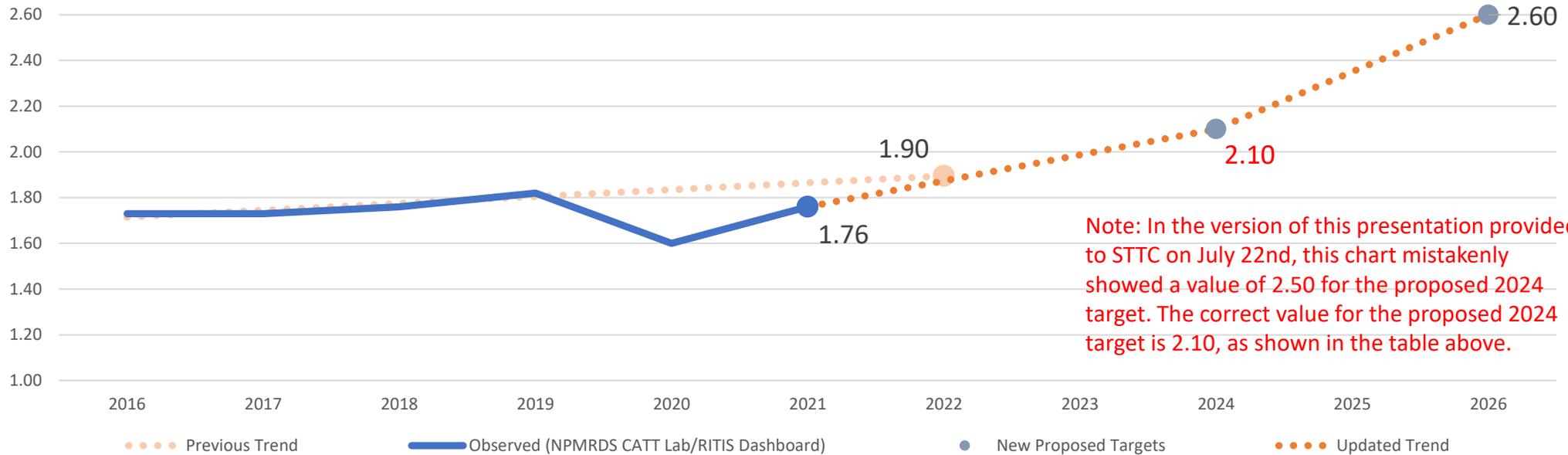
- **FP2-120**: Freight System/Network Planning

Somewhat impacted by COVID-19 pandemic

Analysis indicates a return to previous pre-pandemic trends

Truck Travel Time Reliability

Measure	Desired Trend Indicating Improvement	Original Targets (Updated 2020) 2020	2022	Baseline (2021 Observed)	New Targets Forecast/Trend 2024	2026
Truck Travel Time Reliability	↘	1.83	1.90	1.76	2.10	2.60

Note: In the version of this presentation provided to STTC on July 22nd, this chart mistakenly showed a value of 2.50 for the proposed 2024 target. The correct value for the proposed 2024 target is 2.10, as shown in the table above.

Legend: Previous Trend · Observed (NPMRDS CATT Lab/RITIS Dashboard) · New Proposed Targets · Updated Trend

Percent Non-SOV Travel

Percentage of commuters who use a mode other than "Drove Alone" as reported by the American Community Survey (ACS)

Includes telecommute, transit, carpool, bicycle, walking, etc.

Now required for Dallas-Fort Worth-Arlington, Denton-Lewisville, and McKinney Urbanized Areas (2010 boundaries)

Higher values indicate improvement

Recent trends:

- Changes to travel patterns during the COVID-19 pandemic
- Census Bureau data collection issues in 2020
- Year-to-year variation muted by multi-year sampling
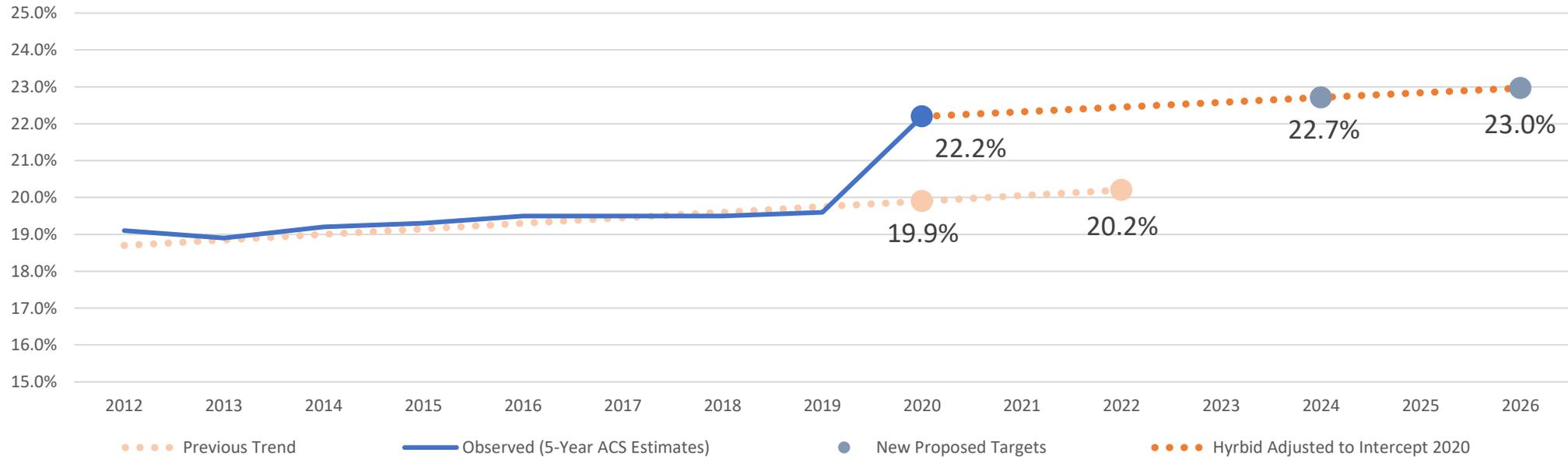- Assumption that some changes to travel patterns will persist

Addressed by Regional Trip Reduction Program, implementation of additional Transit service and infrastructure, implementation of bicycle-pedestrian connections

Regional Performance Measures Update

Percent Non-SOV Travel

Dallas-Fort Worth-Arlington

Measure	Desired Trend Indicating Improvement	Original Targets (Updated 2020)		Baseline (2020 5-Year Estimate)	New Targets Forecast/Trend	
		2020	2022		2024	2026
Non-SOV Travel (Dallas-Ft. Worth-Arlington)	↗	19.8%	20.2%	22.2%	22.7%	23.0%

Legend: Previous Trend — Observed (5-Year ACS Estimates) — New Proposed Targets — Hybrid Adjusted to Intercept 2020

Percent Non-SOV Travel
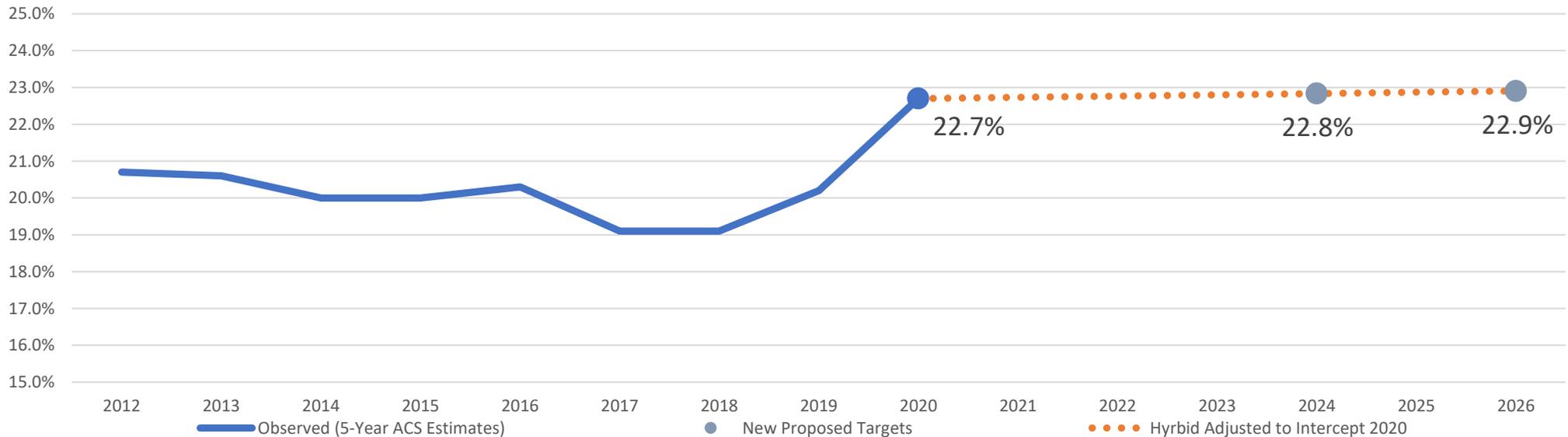## Denton-Lewisville

Measure	Desired Trend Indicating Improvement	Original Targets (Updated 2020) 2020 2022		Baseline (2020 5-Year Estimate)	New Targets Forecast/Trend 2024	2026
Non-SOV Travel (Denton-Lewisville)	↗	NEW		22.7%	22.8%	22.9%

Legend:
— Observed (5-Year ACS Estimates)   ● New Proposed Targets   ••• Hyrbid Adjusted to Intercept 2020

Percent Non-SOV Travel
McKinney

Measure	Desired Trend Indicating Improvement	Original Targets (Updated 2020)		Baseline (2020 5-Year Estimate)	New Targets Forecast/Trend	
		2020	2022		2024	2026
Non-SOV Travel (McKinney)	↗	NEW		22.7%	22.8%	22.9%

Legend: Observed (5-Year ACS Estimates) ● New Proposed Targets ····· Hyrbid Adjusted to Intercept 2020

Total Emissions – NO_X and VOC

Total emission reductions for carbon monoxide (CO), nitrogen oxides (NO_X), volatile organic compounds (VOC), and Particulate Matter (PM_{10} and $PM_{2.5}$) for CMAQ-funded projects in designated nonattainment areas

Established for National Performance Management Measures to Assess the CMAQ Program – On-Road Mobile Source Emissions

CMAQ-funded projects that fall within Dallas-Fort Worth Ozone 10-County Nonattainment Area
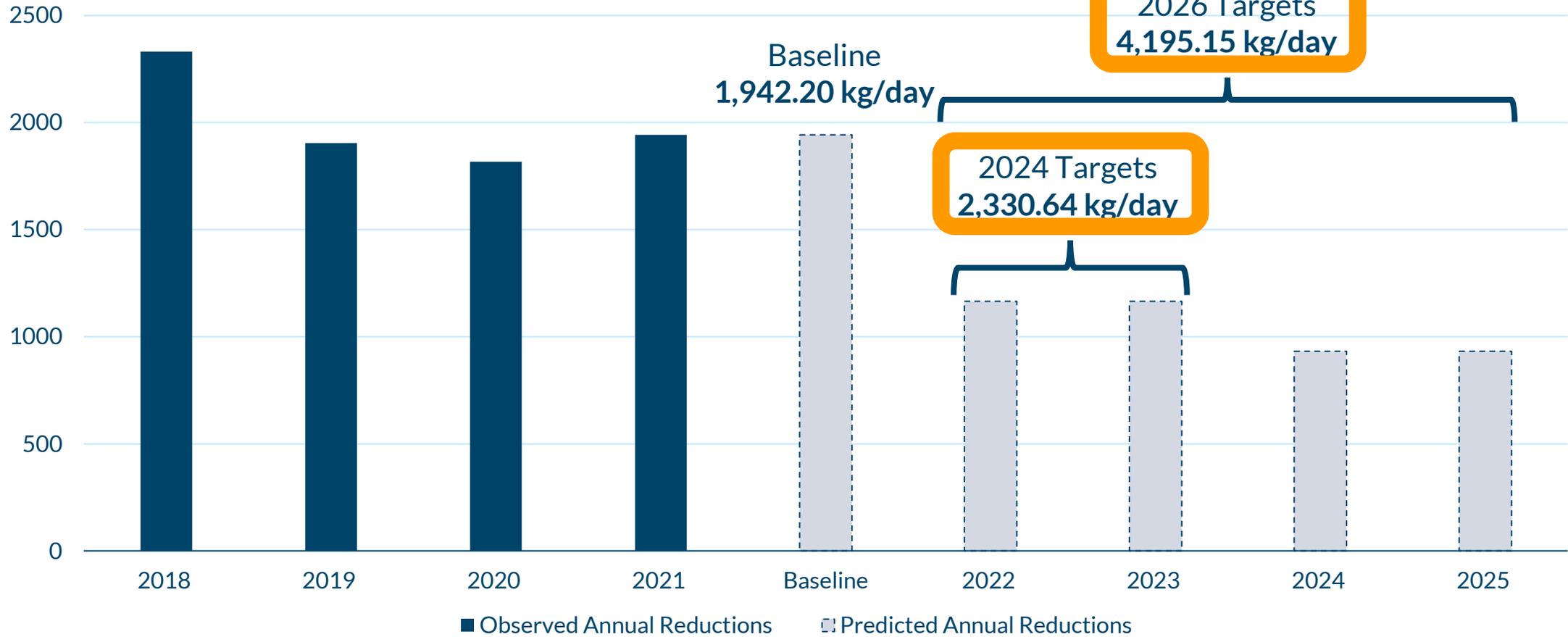
Higher values indicate improvement

Total NO$_X$ Emissions

Desired Trend of Improvement

Baseline
1,942.20 kg/day

2026 Targets
4,195.15 kg/day

2024 Targets
2,330.64 kg/day

Legend: ■ Observed Annual Reductions ⬚ Predicted Annual Reductions

	2018	2019	2020	2021	Baseline	2022	2023	2024	2025
Observed Annual Reductions (kg/day)	2,300.46	1,903.59	1,817.24	1,747.50					
Predicted Annual New Reductions (kg/day)					1,942.20	1,165.32	1,165.32	932.25	932.25

Total VOC Emissions

Desired Trend of Improvement

Baseline
466.9

2026 Targets
1,035.83

2024 Targets
599.90

■ Observed Annual Reductions   ▢ Predicted Annual Reductions
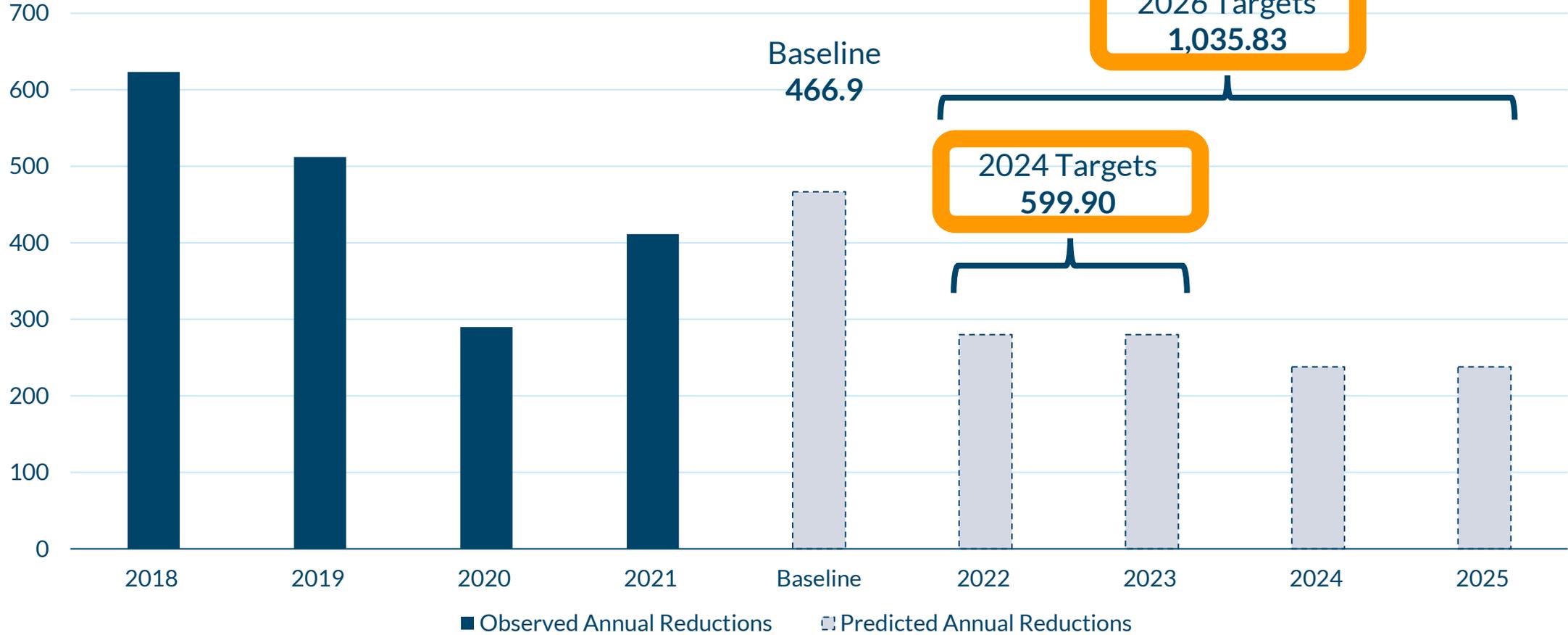
	2018	2019	2020	2021	Baseline	2022	2023	2024	2025
Observed Annual Reductions (kg/day)	623.10	511.91	290.01	411.33					
Predicted Annual New Reductions (kg/day)					466.59	279.95	279.95	237.96	237.96

TAM: Transit Asset Management

PTASP: Public Transportation Agency Safety Plans

TAM: Performance & Target Update

Transit Asset Management (TAM): Business model that prioritizes funding based on the condition of transit assets to achieve or maintain transit networks in a state of good repair.

As required, regional targets were set in coordination with providers

- RTC adopted initial regional TAM targets on December 14, 2017
- Regional targets need to be either reaffirmed or updated targets need to be adopted for FY2023-2026

NCTCOG is actively working with providers to meet targets through the Cooperative Vehicle Procurement Program

TAM: Targets & Regional Performance (Large Agencies)

Asset Category	Metric	Desired Trend Indicating Improvement	Target	Performance		
				FY 2018	FY 2019	FY 2020
Rolling Stock (Transit Vehicles)	Vehicles that meet or exceed the industry standard, defined as either the Federal Transit Administration (FTA) Default Useful Life Benchmark (ULB) or custom agency benchmarks	↘	0%	2%	5.7%	5.8%
Infrastructure (Rail Track)	Rail track segments with performance restrictions	↘	0%	0.34%	0.14%	3.39%
Equipment (Support Vehicles)	Vehicles that meet or exceed the industry standard, defined as either the FTA Default ULB or custom agency benchmarks	↘	0%	23%	50.4%	59.8%
Facilities (Buildings, Stations, Park & Rides)	Transit facilities rated below "Adequate" (3.0) on the industry standard Transit Economic Requirements Model (TERM) scale	↘	0%	0%	2.2%	1.7%

Regional Performance Measures Update

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TAM: Targets & Regional Performance (Small Providers)

Asset Category	Metric	Desired Trend Indicating Improvement	Target	Performance		
				FY 2018	FY 2019	FY 2020
Rolling Stock (Transit Vehicles)	Vehicles that meet or exceed the industry standard, defined as either the Federal Transit Administration (FTA) Default Useful Life Benchmark (ULB) or custom agency benchmarks	↘	0%	24%	24%	14.7%
Infrastructure (Rail Track)	Rail track segments with performance restrictions	↘	0%	0%	0%	0%
Equipment (Support Vehicles)	Vehicles that meet or exceed the industry standard, defined as either the FTA Default ULB or custom agency benchmarks	↘	0%	56%	64.9%	62.2%
Facilities (Buildings, Stations, Park & Rides)	Transit facilities rated below "Adequate" (3.0) on the industry standard Transit Economic Requirements Model (TERM) scale	↘	0%	0%	0%	0%

Regional Performance Measures Update

TAM: Various Target Setting Methods

Providers in the region employ a variety of methods to set targets and measure performance

> Most set targets based on overall performance of each individual asset category and type and use a mix of FTA and custom definitions for Useful Life Benchmarks

TXDOT (Transit Division) Group Plan contains 15% targets

NEW: 2021 Bipartisan Infrastructure Law added that USDOT now requires project sponsors for Fixed Guideway CIG applications to have made progress toward TAM targets. This is also a consideration for SGR Grant rail vehicle replacement applications.

REGION	METHODOLOGY
Houston (H-GAC)	Weighted Average of Asset Condition Scores
Phoenix (MAG)	Targets Set to Current Performance
Atlanta (ARC)	Lowest Common Denominator of Provider Targets in Region
Philadelphia (DVRPC)	Adopted and supports the respective transit agency targets in the region
Boston Region MPO	Targets reflect those provided by agencies in the region
Denver (DRCOG)	Targets are tied to the single provider in the region

TAM: Targets Recommendation (Large Agencies)

Recommend maintaining previous targets for all asset categories and types, except Equipment, for FY2023-2026

Goals for Maintained Targets

- Continue the consistent approach from the original adopted targets
- Encourage continued improvement for individual providers and the overall region
- Provide an aspirational goal to guide regional coordination and assistance in keeping critical transit assets and infrastructure in a State of Good Repair

Rolling Stock Target	0%
Infrastructure Target	0%
Equipment Target	25%
Facilities Target	0%

TAM: Targets Recommendation (Small Providers)

Recommend new targets for all asset categories and types be adopted for FY2023-2026

Goals for Proposed Targets
- Maintain strong performance in Infrastructure and Facilities asset categories
- Provide targets that are closer to regional performance, while still encouraging continued improvement for individual providers
- Reflect the challenges transit providers face in replacing vehicles at or past ULB amidst supply chain and operational struggles

Rolling Stock Target	5%
Infrastructure Target	0%
Equipment Target	25%
Facilities Target	0%

Public Transportation Agency Safety Plan (PTASP) Annual Progress Update

Targets have four-year time horizon, adopted in 2021 by RTC, to be met by 2025

Most recent year of available data (FY 2020, "Year 1") has been calculated to determine progress toward the targets

Measure	Desired Trend Indicating Improvement	Target*	FY 2020
1. Fatalities - Total Number	⬊	0.00	10
2. Fatalities - Rate per 100k Miles	⬊	0.00	0.015
3. Injuries - Total Number	⬊	142.98	293
4. Injuries - Rate per 100k Miles	⬊	0.22	0.445
5. Safety Events - Total Number	⬊	490.20	148
6. Safety Events - Rate per 100k Miles	⬊	0.77	0.22
7. System Reliability - Miles Between Major Mechanical Failures	⬈	19,841	16,328

*Except Fatalities, all targets are a 5% Improvement over initial baseline average (2016-2019)

Regional Performance Measures Update

Committee Schedule

Date	Committee Meeting
July 22	STTC Information Item - Performance Measures and Draft Targets
August 11	RTC Information Item - Performance Measures and Draft Targets
August 26	STTC Action Item - Recommend Approval of Final Targets
September 8	RTC Action Item - Approval of Final Targets
October 1	Deadline for Targets

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US Census Bureau Urbanized Areas and Urban Clusters (2010)

Legend:
- Dallas - Fort Worth - Arlington
- Denton - Lewisville
- McKinney
- Urban Clusters

North Central Texas Council of Governments
Map 103 - June 2022