

# Chapter V

## Regional Performance

### INTRODUCTION

NCTCOG uses a performance-based planning and programming process to develop its long- and short-range plans, including the Transportation Improvement Program (TIP). Performance measurement is particularly important in short-range planning processes like the TIP, because the projects it funds can meaningfully improve key performance measures relatively quickly.

### WHAT IS PERFORMANCE-BASED PLANNING AND PROGRAMMING?

In the context of regional transportation planning, performance-based planning and programming is the process of using quantitative observations of the state of the transportation system to drive the planning process and ultimately inform funding decisions. These quantitative observations are often collected and formally adopted as performance measures, which are typically observed over time and may be associated with target values. Performance measures can assess progress toward meeting goals (particularly when coupled with realistic targets) and are often directly associated with adopted goals. Performance-based planning processes exist at the federal, state, and regional levels and NCTCOG is an active participant in these processes at all levels.

A typical framework for performance measurement includes the following core components:

- Goals: Visionary, long-term statements of priorities
- Objectives: Measurable, specific strategies for achieving goals
- Measures: Repeatable, quantitative measurement of how the system is performing
- Targets: Specific milestones for measures that represent the desired future condition

### ADDRESSING PERFORMANCE IN THE 2025-2028 TIP

NCTCOG has used a performance-based approach to its planning processes for some time, but recent federal transportation funding legislation created a framework for Transportation Performance Management (TPM) at the federal level. Subsequent TPM-related federal rules require MPOs to incorporate performance-based planning and programming into the development of Metropolitan Transportation Plans (MTPs) and TIPs. This chapter outlines the performance measures and targets considered and tracked when conducting transportation planning and programming activities in the region, grouped by the categories established by the federal government. It will also highlight current and future efforts that consider these measures and work toward achieving established targets in the current and future TIPs. Performance measurement played an integral role in project selection and prioritization for

Mobility 2045: 2022 Update and the 2025-2028 TIP. Examples of projects that were programmed fully or partially in response to these measures are listed as well.

## **NATIONAL PERFORMANCE REQUIREMENTS**

Five Transportation Performance Management rules released by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) are now effective. Each rule lists required measures, data sources, and calculation procedures. The rules are:

- Highway Safety Improvement Program, known as PM1 (81 FR 13881, 23 CFR 490)
- Assessing Pavement Conditions for the National Highway Performance Program and Bridge Conditions for the National Highway Performance Program, known as PM2 (82 FR 5886, 23 CFR 490)
- Assessing the Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program (CMAQ), known as PM3 (82 FR 5970, 82 FR 22879, 23 CFR 490)
- Transit Asset Management (81 FR 48889, 49 CFR 625, 49 CFR 630)
- Public Transportation Agency Safety Plans (83 FR 34418, 49 CFR 673)

Each of these rules establishes deadlines for target setting and reporting processes. For the measures identified in each rule, MPOs are required to report adopted targets, baseline performance measures, and progress toward the targets in TIPs adopted two years after the final rule's effective date. Each of the performance measure final rules were established at different times; and therefore, have different target-setting and implementation deadlines, as seen in Exhibit V-1.

As of this writing, NCTCOG has adopted targets and established update processes for every performance measure rule as required. Updates on these measures, including assessments of progress towards achieving adopted targets, are reported regularly to the Regional Transportation Council (RTC) and the Surface Transportation Technical Committee (STTC).

**Exhibit V-1. Implementation and Target-Setting Schedules for Federal Performance Measures**

| Final Rule  | Rule Effective Date | Required to be Included in TIPs <sup>1</sup> | Last Target-Setting Action | Next Target-Setting Action | Target-Setting Schedule                              |
|---|---------------------|--|----------------------------|----------------------------|--|
| Highway Safety (PM1)                              | 4/14/2016           | 4/14/2018                                    | 2/08/2024                  | Early 2028                 | Annually (Targets are reductions over 5-year period) |
| Pavement and Bridge Condition (PM2)               | 5/20/2017           | 5/20/2019                                    | 7/13/2023                  | Early-Mid 2025             | Biennially (Four-year performance periods)           |
| System Performance, Freight, and CMAQ (PM3)       | 5/20/2017           | 5/20/2019                                    | 9/08/2022                  | Late 2024                  | Biennially (Four-year performance periods)           |
| Transit Asset Management (TAM)                    | 10/01/2016          | 10/01/2018                                   | 7/13/2023                  | Late 2026                  | Every four years                                     |
| Public Transportation Agency Safety Plans (PTASP) | 07/19/2018          | 7/20/2021                                    | 5/13/2021                  | Early 2025                 | Every four years                                     |

**REGIONAL FOCUS ON PERFORMANCE MEASURES AND MONITORING**

The RTC has a long history of measuring the performance of the Dallas-Fort Worth surface transportation system. For over a decade, the RTC has produced an annual state of the region report, Progress North Texas, which includes statistics showing regional performance in terms of congestion, safety, project delivery, and many more criteria. The current report and the last several documents are available online at: [www.nctcog.org/trans/about/publications/pnt](http://www.nctcog.org/trans/about/publications/pnt). Information on additional RTC performance measurement activities is available online at: [www.nctcog.org/trans/data/info/measures](http://www.nctcog.org/trans/data/info/measures).

Since March 2018, NCTCOG has been tracking the applicability of items being presented to the RTC against various performance categories. Items on all RTC agendas include a category designator to indicate which aspects of performance are impacted by the policy, program, or project presented. This strategy keeps performance measurement fresh in the minds of NCTCOG staff and the RTC policy board members.

**HIGHWAY SAFETY (PM1)**

The safety performance measure rule includes five measures related to the safety of the transportation system, including:

- Number of traffic fatalities
- Rate of fatalities per 100 million vehicle miles traveled

<sup>1</sup> 23 CFR 450.340(f)

- Number of serious injuries
- Rate of serious injuries per 100 million vehicle miles traveled
- Number of non-motorized fatalities and non-motorized serious injuries

This rule establishes an annual reporting and target-setting schedule. The RTC initially adopted targets for these measures in December 2017, along with a policy that even one death on the transportation system is unacceptable. Subsequently, the RTC directed NCTCOG staff to work with regional and state partners to develop projects, programs, and policies that assist in eliminating serious injuries and fatalities across all modes of travel. The TIP has incorporated these measures in project selection processes and includes many projects intended to lead directly to improvements in these measures.

In 2019, the Texas Transportation Commission (TTC) directed TxDOT to work toward a similar goal of reducing traffic fatalities by 50% by 2035 and zero fatalities by 2050. Due to this goal, TxDOT has updated its fatality performance measures to be in line with this vision zero goal. This more aspirational target may be difficult to achieve, but the best way to achieve aspirational goals is to first set them. NCTCOG will support TxDOT’s targets for 2023-2027 by adopting the same 50% reduction in the number of fatalities by 2035 and to zero by 2050 target for fatalities. For serious injuries, both TxDOT and NCTCOG adopted a 2% reduction from the trendline each year. The serious injury target is less aggressive than the fatality targets due to the assumption that if a fatal injury is prevented, that same crash may instead produce a serious injury. For the bike and pedestrian combined fatal and serious injury target, fatalities are calculated using the 50% reduction by 2035 methodology, and serious injuries are calculated using the 2% reduction from the trendline each year methodology. Reduction schedules are listed in Exhibit V-2.

**Exhibit V-2. Growth Reduction Percentages for PM1 Measures**

| Percentage Reduction |               |                     |
|----------------------|---------------|---------------------|
| Year                 | Fatality Rate | Serious Injury Rate |
| 2023                 | 3.40%         | 2%                  |
| 2024                 | 3.60%         | 2%                  |
| 2025                 | 3.70%         | 2%                  |
| 2026                 | 3.80%         | 2%                  |
| 2027                 | 4.00%         | 2%                  |

**Number of Traffic Fatalities**

The 2024 target seeks to reduce the number of fatalities through 2027. This target expressed as a five-year rolling average would reduce the projected number of fatalities in the region to 653.3.

**Exhibit V-3. Five-Year Rolling Average for the Number of Traffic Fatalities**

| Year                                       | Source | Regional |
|--|--------|----------|
| 2020                                       | FARS   | 631      |
| 2021                                       | FARS   | 726      |
| 2022                                       | CRIS   | 644      |
| 2023                                       | Target | 640      |
| 2024                                       | Target | 646.5    |
| ** 2024 Target expressed as 5-year average |        | 653.3    |

\* Based on a 50% reduction in fatalities by 2035. 2020-2022 data is observed and 2023–2024 data is projected.

\*\* Calculated by applying a 50% reduction trendline from 2020 to 2035 for projected data for 2023 and 2024.

FARS: National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System

CRIS: TxDOT Crash Records Information System

**Rate of Fatalities per 100 Million Vehicle Miles Traveled**

The 2024 target seeks to reduce the expected increase in deaths per 100 million vehicles miles traveled (MVMT) in 2024 to not more than 0.840 per 100 MVMT region wide, expressed as a five-year rolling average. The regional target is less than one death per 100 MVMT.

**Exhibit V-4. Five-Year Rolling Average for the Rate of Fatalities**

| Year                                       | Source | Regional Actual or Target Data |
|--|--------|--------------------------------|
| 2020                                       | FARS   | 0.825                          |
| 2021                                       | FARS   | 0.9088                         |
| 2022                                       | CRIS   | 0.769                          |
| 2023                                       | Target | 0.863*                         |
| 2024                                       | Target | 0.835*                         |
| ** 2024 Target expressed as 5-year average |        | 0.840                          |

\* Based on a 50% reduction in fatalities by 2035. 2020–2022 data is observed and 2023–2024 data is projected.

\*\* Calculated by applying a 50% reduction trendline from 2020 to 2035 for projected data for 2023 and 2024.

**Number of Serious Injuries**

The 2024 target seeks to reduce the expected increase in serious injuries to not more than 3,959.1 at the regional level expressed as a five-year rolling average. The 2024 target expressed as a five-year rolling average is shown in Exhibit V-5.

**Exhibit V-5. Five-Year Rolling Average for the Number of Serious Injuries**

| Year                                       | Source | Regional Actual or Target Data |
|--|--------|--------------------------------|
| 2020                                       | CRIS   | 3,104                          |
| 2021                                       | CRIS   | 4,356                          |
| 2022                                       | CRIS   | 4,037                          |
| 2023                                       | Target | 3,916*                         |
| 2024                                       | Target | 4,382.5*                       |
| ** 2024 Target expressed as 5-year average |        | 3,959.1                        |

\* Based upon linear trend analysis from 2020-2022 CRIS data. 2020–2022 data is observed and 2023–2024 data is projected.

\*\* Calculated by applying a 2% reduction to regional projection or actual data 5-year average.

**Rate of Serious Injuries per 100 Million Vehicle Miles Traveled**

The 2024 target seeks to reduce the expected increase in the rate of serious injuries per 100 MVMT in 2024 region wide to 4.970 expressed as a five-year rolling average. The 2024 target expressed as a five-year rolling average is shown in Exhibit V-6.

**Exhibit V-6. Five-Year Rolling Average for the Rate of Serious Injuries**

| Year                                       | Source | Regional Actual or Target Data |
|--|--------|--------------------------------|
| 2020                                       | CRIS   | 4.110                          |
| 2021                                       | CRIS   | 5.449                          |
| 2022                                       | CRIS   | 4.818                          |
| 2023                                       | Target | 5.189                          |
| 2024                                       | Target | 5.2824                         |
| ** 2024 Target expressed as 5-year average |        | 4.970                          |

\* Based upon linear trend analysis from 2020-2022 CRIS data. 2020–2022 data is observed and 2023–2024 data is projected.

\*\* Calculated by applying a 2% reduction to regional projection or actual data 5-year average.

**Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries**

The 2024 target seeks to reduce the expected increase in non-motorized fatalities and serious injuries in 2024. The target expressed as a five-year rolling average would reduce the regionwide non-motorized fatalities and serious injuries to 674.4. The 2024 targets expressed as a five-year rolling average are shown in Exhibit V-7.

**Exhibit V-7. Five-Year Rolling Average for the Number of Non-Motorized Fatalities and Serious Injuries (Regional)**

| Year                                       | Source    | Actual or Target Data |                  |  |
|--|-----------|-----------------------|------------------|--|
|  |           | Fatalities            | Serious Injuries | Combined Fatalities and Serious Injuries |
| 2020                                       | FARS-CRIS | 191                   | 379              | 570                                      |
| 2021                                       | FARS-CRIS | 190                   | 453              | 643                                      |
| 2022                                       | CRIS      | 208                   | 480              | 688                                      |
| 2023                                       | Target    | 208                   | 498              | 706                                      |
| 2024                                       | Target    | 216.5                 | 548.5            | 765                                      |
| ** 2024 Target expressed as 5-year average |           | 202.7                 | 471.7            | 674.4                                    |

\* Based upon a 50% reduction in fatalities by 2035 and a linear trend analysis from 2020-2022 CRIS data. 2020-2022 data is observed and 2023-2024 data is projected

\*\* Calculated by applying a 50% reduction trendline from 2020 to 2035 for projected data for 2023 and 2024 for fatalities and by applying a 2% reduction to regional projection or actual data 5-year average.

## ADDRESSING HIGHWAY SAFETY IN THE TIP

The TIP directly addresses many of the measures in the PM1 rulemaking and the Dallas-Fort Worth region has selected projects using criteria that improve the safety of the region's transportation system for many years. Safety is one of the major considerations when conducting project evaluation and selection. When evaluating projects being considered for inclusion in the region's 10-Year Plan (and eventually the TIP), safety (i.e., fatal and incapacitating crash rate) is part of the Technical Selection criteria used to score the projects. Safety is also considered when evaluating projects outside of the 10-Year Plan. Crash data from TxDOT is gathered and corridors with high numbers of fatalities and serious injuries receive greater consideration.

In addition to these efforts, several recent funding initiatives focused specifically on safety issues. Most recently, in October 2022, the RTC approved \$50 million of additional federal funding for the Management and Operations, Air Quality, and Regional Safety Program implemented by NCTCOG. This funding will provide continued and additional support for programs that address education, enforcement, and engineering solutions to enhance regional safety. Also in 2022, the RTC approved the 2022 Incident Management Freeway Blocking Equipment Call for Projects. This initiative awarded approximately \$1.4



million in regional funds to local government entities responsible for providing protection to incident responders responding to traffic crashes (e.g., crash attenuators, crash barriers, crash cushions, etc.) that will also help first responders clear incidents in a more efficient and safe manner. Earlier, the 2020 Traffic Incident Management Equipment Purchase Call for Projects was completed which also

improved incident clearance times and reduced the potential for secondary crashes to occur (e.g., cones, traffic barriers, signage, flares, lighting, etc.). Safety was also a consideration in the RTC's response to the 2020-2021 COVID-19 pandemic. The COVID #097 Infrastructure Program funded approximately \$146 million in roadway and pedestrian safety improvements (e.g., traffic calming, shared use paths, and intersection improvements) throughout the region. Previously, the RTC approved the 2017-2018 CMAQ/STBG Funding Program: Safety, Innovative Construction, and Emergency Projects Funding Program. This effort was dedicated to funding projects and programs that sought to mitigate safety issues and/or improve system resilience or include benefits for incident management and first responders. The program included funding for two projects that address flooding issues in the region, improvements near a major airport that aim to reduce roadway crashes, and for a region-wide program that will focus on mitigating safety issues (e.g., wrong-way driving, and dangerous intersections). Safety was a technical criterion used to evaluate projects in several other programs that were part of the larger 2017-2018 CMAQ/STBG Funding Program, including Strategic Partnerships (Round 3) and the Sustainable Development Phase 4: Turnback Program, Context Sensitive, Transit Oriented Development (TOD) Projects. Most recently, projects that will address safety issues were selected through the RTC's 2024 Strategic Transportation Funding Program. This program included deceleration lanes and projects that will address flooding issues in the region.

To mitigate non-motorized fatalities and serious injuries, safety benefits are a significant component of NCTCOG's Transportation Alternatives (TA) Set Aside Call for Projects' scoring criteria. Projects that address areas with high numbers of crashes involving pedestrians and/or bicyclists by implementing countermeasures such as bicycle/pedestrian signalization, traffic calming, and separate facilities for non-motorized modes of travel are prioritized. Projects that improve the ability to traverse roadways or other obstacles, such as grade-separated crossings, are also given higher priority during project selection. Some examples of specific programs and projects included in the TIP that may directly address the PM1 measures are listed in Exhibit V-8.



**Exhibit V-8. Performance Impacts of Selected Programs and Projects**

| TIP Code         | Program/Project Name   | PM1 Measures Addressed | Potential Impact  |
|------------------|--|------------------------|---|
| 14038.2          | Management and Oversight of Regional Safety Program                      | All                    | Providing roadway analysis, traffic incident management support, and safety campaigns targeting aggressive driving.                       |
| 16004            | Northwest and Southwest Fort Worth Subarea Studies                       | All                    | Subregional transportation studies to identify needed safety improvements in specified areas of Fort Worth.                               |
| 13003            | IH 30 from SS 580 (E. of Linkcrest) to IH 820 Asset Optimization Project | All                    | Strategic improvements to the roadway and interchanges along this corridor will include safety upgrades                                   |
| 11618.2, 11619.2 | Mobility Assistance Patrol   | All                    | Mobility Assistance Patrols lead to reduced safety hazards by shortening the time that disabled vehicles disrupt through traffic movement |

**PAVEMENT AND BRIDGE CONDITION (PM<sub>2</sub>)**

The Pavement and Bridge Condition measures (collectively known as PM<sub>2</sub>) are six measures related to roadway infrastructure conditions. As with the System Performance, Freight, and CMAQ (PM<sub>3</sub>) measures discussed below, the final rule for these measures established a cycle of four-year performance periods, the first of which began on January 1, 2018, and the second of which began on January 1, 2022. Most measures require a target for both the midpoint and end of the performance period. In the case of this current second performance period, the relevant target years are 2024 and 2026. The TIP has incorporated these measures in project selection processes and includes many projects that may directly lead to improvements in these measures.

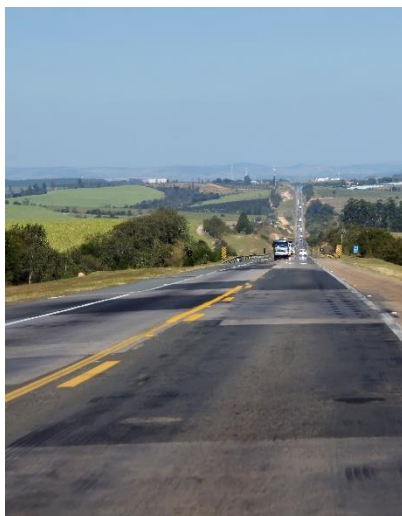
Measures in this rulemaking include:

- Percentage of Pavements on the Interstate System in “Good” Condition
- Percentage of Pavements on the Interstate System in “Poor” Condition
- Percentage of Pavements on the Non-Interstate National Highway System (NHS) in “Good” Condition
- Percentage of Pavements on the Non-Interstate NHS in “Poor” Condition
- Percentage of Bridge Deck Area on the NHS in “Good” Condition
- Percentage of Bridge Deck Area on the NHS in “Poor” Condition

“Good” and “Poor” condition are defined using specific infrastructure condition metrics in the rulemaking. With these and most other measures, MPOs have the option to either support the state department of transportation’s (DOT) targets or to adopt their own quantitative targets. In 2023, NCTCOG chose to continue supporting the state’s targets for these measures for the second performance period, with policy statements related to certain pavements and bridges in poor condition.

The National Highway System (NHS) network within the 12-county North Central Texas region is the largest of the 25 metropolitan areas in Texas, with over 12,000 lane-miles of pavement. Approximately 70 percent of the NHS network in this region are state highways under the jurisdiction of TxDOT (“on-system” roadways) and about 30 percent are county roads, city streets, and non-TxDOT toll roads managed by other agencies (“off-system” roadways). The NHS network in the region also includes more than 3,600 bridges with about 87 percent maintained by TxDOT and about 13 percent maintained by other agencies. Managing the condition of these assets is a priority for NCTCOG, TxDOT, local governments, and other agencies that fund and/or maintain the region’s transportation system.

Related rulemaking requires each state DOT (including TxDOT) to develop a risk-based transportation asset management plan that includes an assessment of existing infrastructure conditions; identification of asset management objectives, measures, and performance gaps; and a lifecycle cost and risk management analysis, financial plan, and identification of investment strategies. In recognition of the importance of holistic asset management planning to the region’s transportation system, NCTCOG supports and is working with TxDOT on its asset management process.



### **Pavement Condition**

NCTCOG has chosen to support the pavement performance targets set by TxDOT, as detailed in Exhibit V-9. The NHS Local Off-System Arterials only represent about 24 percent of DFW’s NHS network but carry a disproportionately high “poor” rating of about 7.6 percent. Because of this situation, NCTCOG approved a policy statement to work with local governments to focus on the improvement of NHS Local Off-System

Arterials in “poor” condition. NCTCOG initially adopted this policy statement in 2018 and reaffirmed it along with its affirmation of support for the state’s 2024 and 2026 targets.

#### Exhibit V-9. TxDOT Statewide Pavement Condition Targets

| Condition | NHS Roadway Categories | 2022 Baseline Condition | 2024 Statewide Target | 2026 Statewide Target |
|-----------|------------------------|-------------------------|-----------------------|-----------------------|
| Good      | Interstates (NHS)      | 64.5%                   | 63.9%                 | 63.6%                 |
| Good      | Non-Interstate NHS     | 51.7%                   | 45.5%                 | 46.0%                 |
| Poor      | Interstates            | 0.1%                    | 0.2%                  | 0.2%                  |
| Poor      | Non-Interstate NHS     | 1.3%                    | 1.5%                  | 1.5%                  |

#### Bridge Condition

NCTCOG has chosen to support the bridge performance targets set by TxDOT, as detailed in Exhibit V-10 while approving a policy statement to expedite the programming of funding to improve NHS bridges in “poor” condition.



#### Exhibit V-10. TxDOT Statewide Bridge Condition Targets

| Condition | NHS Roadway Categories | 2022 Baseline Condition | 2024 Statewide Target | 2026 Statewide Target |
|-----------|------------------------|-------------------------|-----------------------|-----------------------|
| Good      | All NHS Facilities     | 49.2%                   | 48.5%                 | 47.6%                 |
| Poor      | All NHS Facilities     | 1.1%                    | 1.5%                  | 1.5%                  |

## ADDRESSING PAVEMENT AND BRIDGE CONDITION IN THE TIP

Many of the roadway projects programmed in the 2025-2028 TIP will improve the condition of the region's roadway infrastructure, reflecting NCTCOG's response to these measures and commitment to holistically managing transportation assets. As previously discussed, most NHS facilities in the region are TxDOT facilities. NCTCOG is seeking to reduce the number of deficient pavement lane miles and bridges on these facilities by incorporating pavement and bridge condition as a criterion in the Regional 10-Year Plan, as that funding is reserved for roadways on the TxDOT system. Corridors that have poorer pavement conditions and/or a lower Bridge Sufficiency Rating are given more priority during project selection. Pavement and bridge conditions are also improved when roadway capacity is increased, and the project includes the reconstruction of the existing pavement.

NCTCOG has also pursued other sources of funding to improve pavement and bridge conditions in the region. A specific example is NCTCOG's partnership with TxDOT on the submittal of a grant application to the Infrastructure for Rebuilding America (INFRA) program for the North Texas Strategic NHS Bridge Program, which involves the reconstruction or replacement of multiple NHS bridges in the counties of Dallas, Denton, Hunt, Johnson, Kaufman, Parker, and Tarrant. As a result of this effort, a total of \$8,775,000 was awarded and will be utilized on a \$45 million overall project addressing seven bridges identified for the program. NCTCOG continues to work with TxDOT to ensure that bridges rated in poor condition are targeted for approval. All but three of the 49 bridges rated as being in poor condition in the 2022 bridge condition report have been funded, scheduled for construction, under construction or completed. As NCTCOG receives additional reports of bridges in poor condition, efforts will be made to improve the affected bridges. These projects and additional examples are listed in Exhibit V-11.

### *Exhibit V-11. Performance Impacts of Selected Programs and Projects*

| TIP Code(s)    | Program/Project Name          | PM2 Measures Addressed               | Potential Impact  |
|----------------|-------------------------------|--------------------------------------|---|
| 24011          | Village Drive Bridge          | Pavement Condition, Bridge Condition | Reconstruct and widen 2 lane to 4 lane bridge over DGNO Railroad  |
| 53110, 53110.2 | US 80 – Dallas/Kaufman County | Bridge Condition                     | Reconstructing portions of this corridor built in the 1960s will replace multiple "Poor" condition bridges, some of which include the IH 635/US 80 direct connector ramps |

## SYSTEM PERFORMANCE, FREIGHT, AND CMAQ (PM<sub>3</sub>)

The System Performance, Freight, and CMAQ measures (collectively known as PM<sub>3</sub>) cover a broad variety of observed measures across multiple modes of the transportation system. As with the Pavement and Bridge Condition (PM<sub>2</sub>) measures, the final rule for these measures establishes a cycle of four-year performance periods, the first of which began on January 1, 2018, and the second of which began on January 1, 2022. Most measures require a target for both the midpoint and end of the performance period. In the case of the current 2022-2026 performance period for these measures, the relevant target years are 2024 and 2026. NCTCOG has been monitoring these measures continuously since the initial target adoption and adopted 2024 and 2026 for these measures as required in late 2022. NCTCOG will have the option to revise its 2026 targets for these measures in 2024, which may be useful as the region exits the COVID-19 pandemic and long-term changes to traveler behavior become clearer. With these and most other measures, MPOs have the option to either support the state DOT's targets or adopt their own quantitative targets.

For most PM<sub>3</sub> measures, NCTCOG chose to adopt its own targets. The TIP has incorporated these measures in project selection processes and includes many projects that may directly lead to improvements in these measures.

Measures in this rulemaking include:

- Percent of Person Miles of Travel on the Interstate System that is Reliable (Interstate Reliability), and Percent of Person Miles of Travel on the Non-Interstate National Highway System that is Reliable (Non-Interstate Reliability)
- Truck Travel Time Reliability (TTTR)
- Percent Non-Single Occupant Vehicle (Non-SOV) Travel
- Peak-Hour Excessive Delay (PHED)
- Total Emissions Reductions

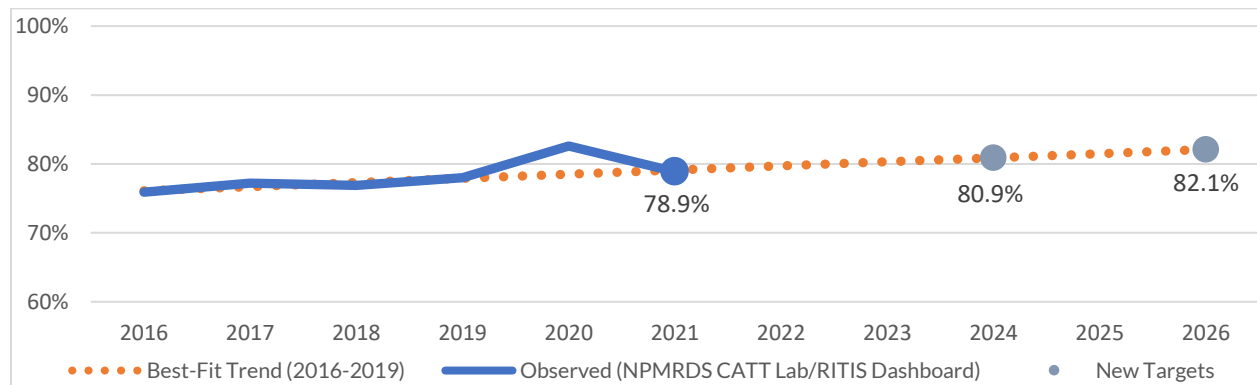
### Interstate and Non-Interstate Reliability

These measures quantify the proportion of travel occurring on Interstate and Non-Interstate NHS segments where travel times are reliable throughout the day. Reliable travel is predictable, though it may be consistently congested or consistently free flowing. Unreliable travel is unpredictable; on some days it may be congested while on others it may be free flowing. Reliability can be influenced by operational inefficiencies, bottlenecks, crashes, weather, and other factors.

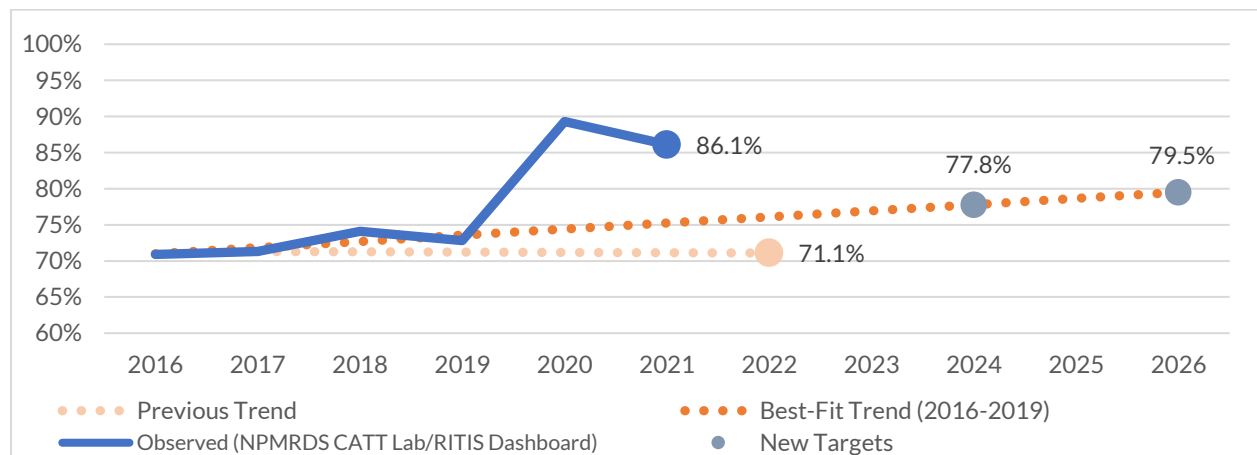
As seen in Exhibits V-12 and V-13, these measures have been improving during the time period for which reliable data is available, and the region appears to currently be on track to meet or exceed existing targets. Recent changes to travel behavior due to the COVID-19 pandemic are reflected in the latest available data

and are having a substantial impact on these measures. As a result, observed values for 2020 greatly exceeded NCTCOG’s original 2020 targets. These measures will be monitored to track the long-term impacts of the pandemic and resulting changes to traveler behavior, and any lasting impacts may be reflected in the next round of target adjustments for these measures. The latest observed values for these measures and adopted targets are listed in Exhibit V-14.

**Exhibit V-12. Observed Data, Trends, and Targets for Interstate Reliability**



**Exhibit V-13. Observed Data, Trends, and Targets for Non-Interstate Reliability**



**Exhibit V-14. Latest Observations and Targets for Interstate and Non-Interstate Reliability**

|                            | Latest Observed Value (2021) | 2024 Target | 2026 Target |
|----------------------------|------------------------------|-------------|-------------|
| Interstate Reliability     | 78.9%                        | 80.9%       | 82.1%       |
| Non-Interstate Reliability | 86.1%                        | 77.8%       | 79.5%       |

While most person miles of travel on both the Interstate System and Non-Interstate NHS are reliable in the region, reliability can be increased by implementing programs and projects that reduce non-recurring

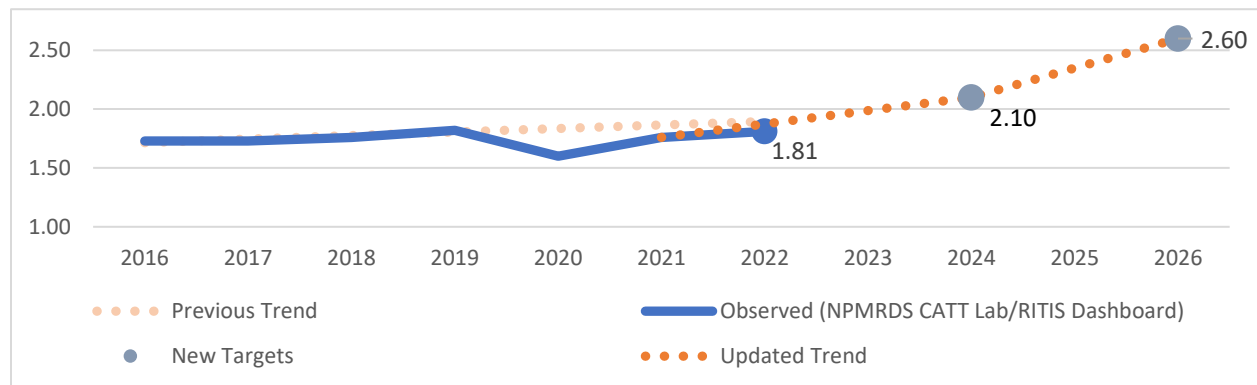
congestion and boost the overall reliability of the system. Improvements in these measures seen because of changes to traveler behavior in response to the COVID-19 pandemic reflect the strong influence that traveler behavior has on these measures as well. NCTCOG is actively using these performance measures to select programs and projects for the TIP. See “Addressing System Performance, Freight, and CMAQ (PM3) Measures in the TIP” below for more information.

### Truck Travel Time Reliability

Efficient and predictable freight movement in the region is key to the region’s economic health. This measure quantifies the reliability of the region’s Interstate system for freight movement. It is calculated as an index representing the amount of extra travel time that drivers and logistics planners need to factor into trips in the region to consistently arrive on time. Higher values indicate worsening reliability and less predictable travel times. As with the preceding Interstate and Non-Interstate Reliability measures, Truck Travel Time Reliability is influenced by operational inefficiencies, bottlenecks, crashes, and weather, but operational issues for trucks near freight hubs and other freight-specific issues can contribute to this measure.

As seen in Exhibits V-15 and V-16, this measure has been worsening in the Metropolitan Planning Area (MPA) for the time period for which reliable data is available. Recent changes in travel behavior due to the COVID-19 pandemic caused a significant improvement during 2020 and 2021. An analysis of 2022 and preliminary 2023 data suggests a potential return to the previous worsening trend. However, the NCTCOG 2022 Target of 1.90 was met with an observed Truck Travel Time Reliability of 1.81.

#### Exhibit V-15. Observed Data, Trends, and Targets for Truck Travel Time Reliability



**Exhibit V-16. Latest Observations and Targets for Truck Travel Time Reliability**

| Measure                       | Latest Observed Value (2022) | 2024 Target | 2026 Target |
|-------------------------------|------------------------------|-------------|-------------|
| Truck Travel Time Reliability | 1.81                         | 2.10        | 2.60        |

This measure will be monitored closely during the recovery from the COVID-19 pandemic. As one of the few required Federal performance measures that show a worsening trend for the region, NCTCOG's TIP, Metropolitan Transportation Plan (MTP), and other planning processes will need to pay special attention to freight movement and continue to develop, recommend, and fund projects and programs that prioritize freight reliability. In addition to utilizing the updated data sets, the 2025-2028 TIP incorporates this measure into selection processes and includes several specific projects that address it. See "Addressing System Performance, Freight, and CMAQ (PM3) Measures in the TIP" below for more information.

**Percent Non-Single Occupant Vehicle (Non-SOV) Travel**

Driving alone is an inefficient use of resources and the transportation system when compared to other modes. This measure quantifies the proportion of commute travel that uses modes other than driving alone in the Dallas-Fort Worth-Arlington, Denton-Lewisville, and McKinney-Frisco Urbanized Areas<sup>2</sup>, including transit, carpooling, telecommuting, bicycling, walking, and other modes.

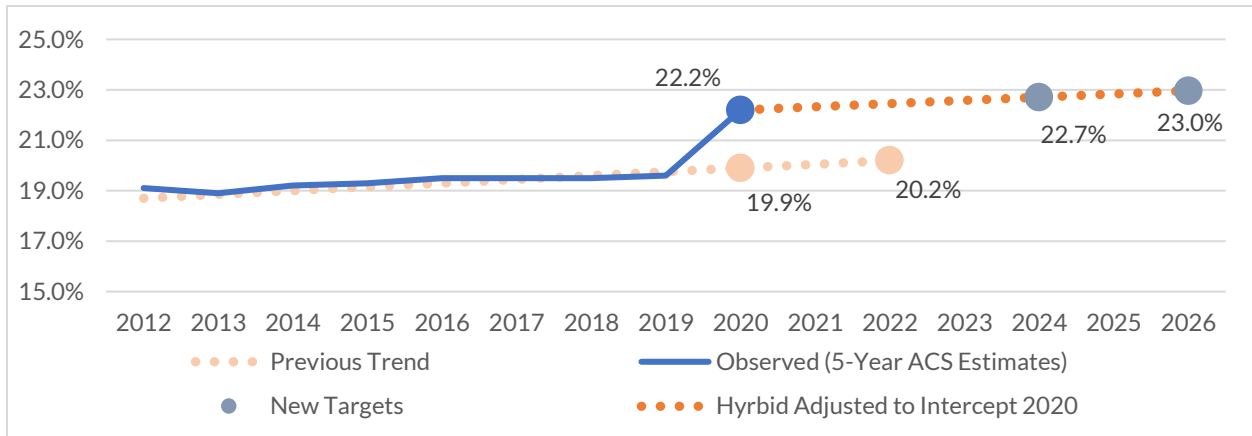
During the time period for which reliable data is available, this measure has been either steady or slightly improving, as seen in Exhibit V-17. Recent changes to traveler behavior due to the COVID-19 pandemic have significantly increased the share of non-SOV commutes, and some non-SOV modes like telecommuting are likely to remain higher for many years, due to both lasting impacts of the pandemic and multi-year aggregation of the Census Bureau's American Community Survey (ACS) data used for this measure<sup>3</sup>. The latest observed value and adopted targets are listed in Exhibits V-17 through V-20.

<sup>2</sup> Federal rules for this measure require that MPOs adopt and set targets for urbanized areas meeting specified population thresholds. For the first (2018-2022) performance period, urbanized areas over 1 million population were included. For the current (2022-2026) performance period, urbanized areas over 200,000 population are now included, which means that NCTCOG now needs to consider the Denton-Lewisville and McKinney-Frisco Urbanized Areas for the Non-SOV and PHED measures.

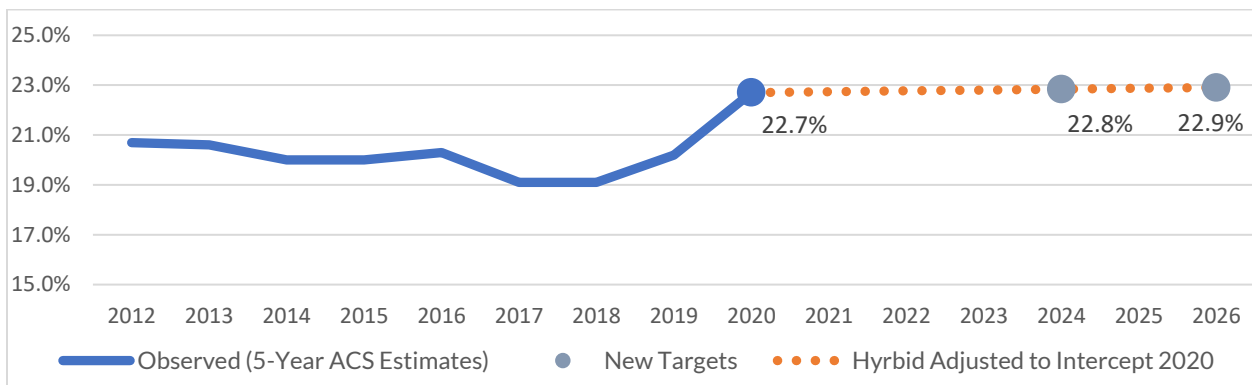
<sup>3</sup> Federal rules require the use of 5-Year American Community Survey (ACS) estimates when using Census data as the data source for this measure. 5-Year estimates are a rolling average of data collected over a five-year period, meaning the initial impact of the COVID-19 pandemic will be reflected in 5-Year estimates through at least 2025-2026.



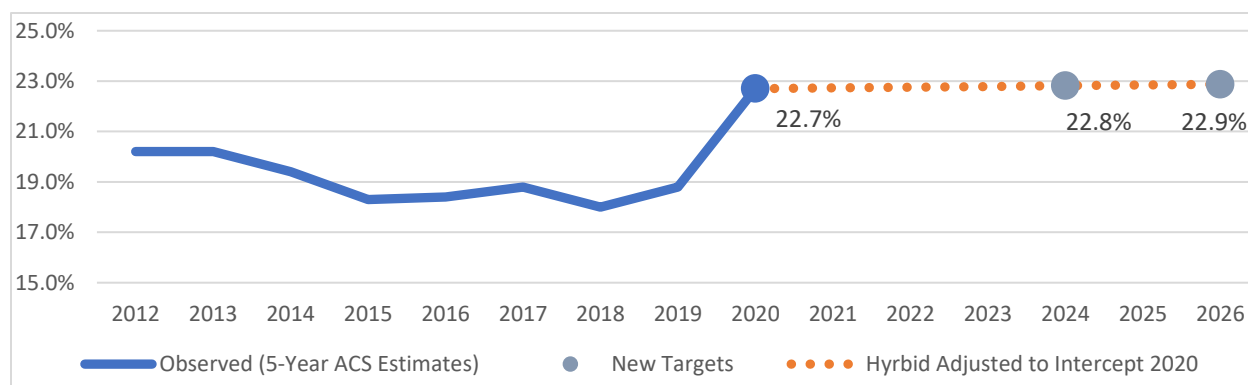
**Exhibit V-17. Latest Observed Data and Targets for Non-SOV Travel (Dallas - Fort Worth - Arlington)**



**Exhibit V-18. Latest Observed Data and Targets for Non-SOV Travel (Denton - Lewisville)**



**Exhibit V-19. Latest Observed Data and Targets for Non-SOV Travel (McKinney-Frisco)**



**Exhibit V-20. Latest Observations and Targets for Non-SOV Travel (All Urbanized Areas)**

| Urbanized Area                  | Latest Observed Value (2020) | 2024 Target | 2026 Target |
|---------------------------------|------------------------------|-------------|-------------|
| Dallas – Fort Worth - Arlington | 22.2%                        | 22.7%       | 23.0%       |
| Denton - Lewisville             | 22.7%                        | 22.8%       | 22.9%       |
| McKinney-Frisco                 | 22.7%                        | 22.8%       | 22.9%       |

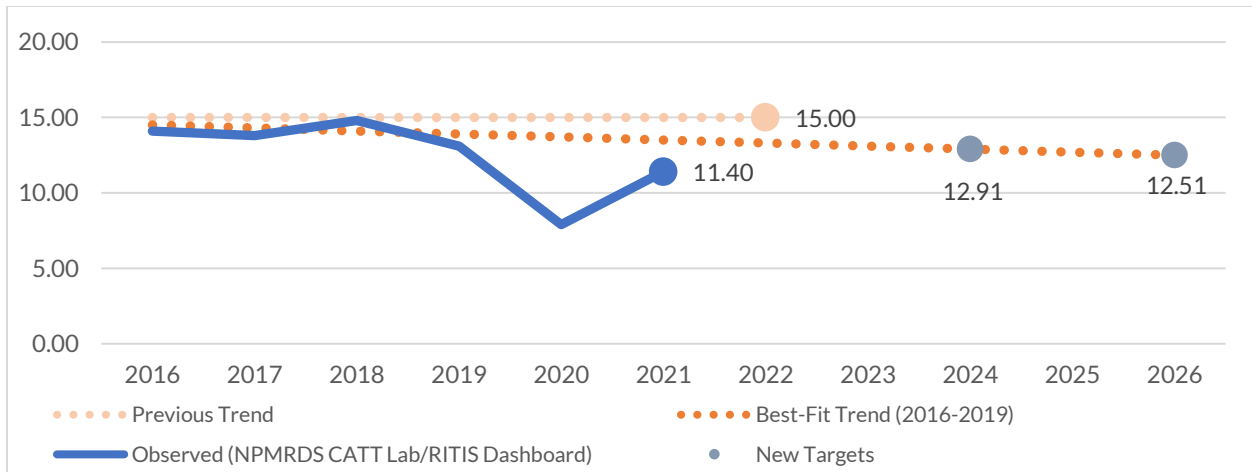
The improvements seen for this measure during the COVID-19 pandemic can be retained and improved upon by implementing programs and projects that shift mode share to alternative modes. NCTCOG is actively using this performance measure to select programs and projects for the TIP. See “Addressing System Performance, Freight, and CMAQ (PM3) Measures in the TIP” below for more information.

### Peak Hour Excessive Delay (PHED)

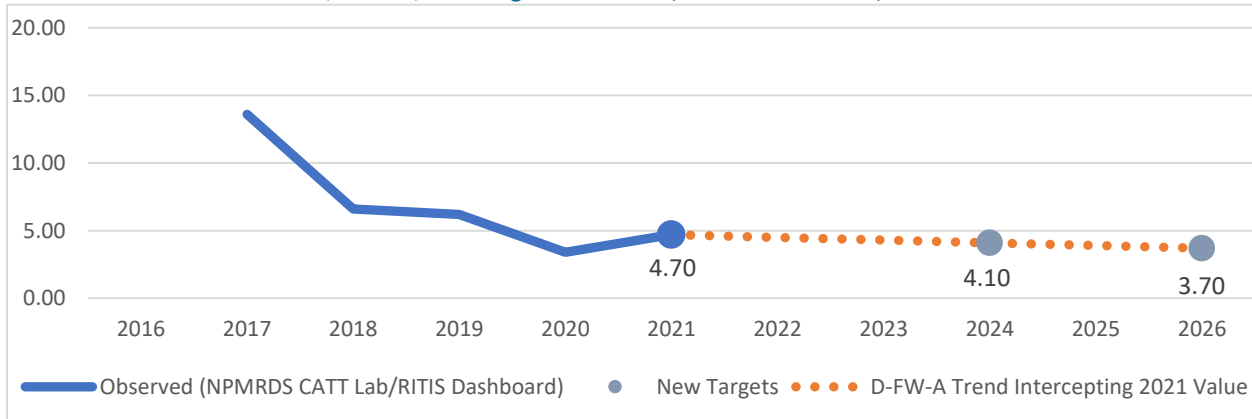
Excessive congestion delay impacts both roadway users and regional air quality. Delays are determined to be excessive if the average annual delay exceeds an established threshold experienced by the average resident of the region during peak travel times. The scope of this measure is NHS facilities in the Dallas-Fort Worth-Arlington, Denton-Lewisville, and McKinney-Frisco Urbanized Areas. This calculation provides an absolute measure of congestion quantifying overall congestion rather than its variability. Variability in congestion, or “non-recurring congestion” is addressed by the reliability measures discussed above.

This measure improved slightly during 2016-2019 and improved dramatically in 2020 and 2021 due to significant changes in traveler behavior due to the COVID-19 pandemic. The latest observed values and adopted targets are shown in Exhibits V-21 through V-24.

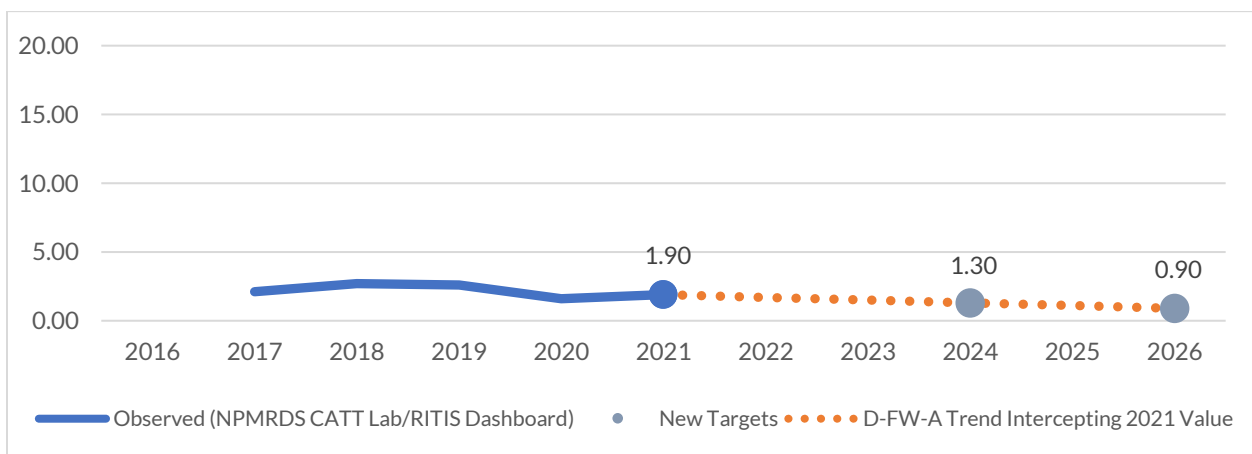
**Exhibit V-21. Observed Data, Trends, and Targets for PHED (Dallas-Fort Worth-Arlington)**



**Exhibit V-22. Observed Data, Trends, and Targets for PHED (Denton-Lewisville)**



**Exhibit V-23. Observed Data, Trends, and Targets for PHED (McKinney-Frisco)**



**Exhibit V-24. Latest Observations and Targets for PHED (All Urbanized Areas)**

| Urbanized Area              | Latest Observed Value (2021) | 2024 Target | 2026 Target |
|-----------------------------|------------------------------|-------------|-------------|
| Dallas-Fort Worth-Arlington | 11.40 hours                  | 12.91 hours | 12.51 hours |
| Denton-Lewisville           | 4.70 hours                   | 4.10 hours  | 3.70 hours  |
| McKinney-Frisco             | 1.90 hours                   | 1.30 hours  | 0.90 hours  |

While Peak Hour Excessive Delay was already improving in the region prior to the COVID-19 pandemic, congestion can be further improved by implementing programs and projects that reduce recurring congestion and retain the improvements seen during the pandemic. NCTCOG is actively using this performance measure to select programs and projects for the TIP. See “Addressing System Performance, Freight, and CMAQ (PM3) Measures in the TIP” below for more information.

**Total Emissions Reductions**

The on-road mobile source emissions performance measure is the total emissions reduction for each applicable pollutant and precursor (two- and four-year cumulative estimated emissions reductions) for all CMAQ (or air quality) funded projects. For the Dallas-Fort Worth nonattainment area, the pollutants measured are Nitrogen Oxides (NOx) and Volatile Organic Compounds (VOCs).

NCTCOG staff developed a new baseline and targets for the second performance measure reporting period by comparing existing local TIP projects from 2021 to 2024 with projects included in the Federal Highway Administration’s Public Access System for that same time period. Based on the results, staff applied the percentage of the emissions benefits reported in the TIP for NOx and VOC to determine the new baseline and future targets.

NCTCOG coordinates with local stakeholders and TxDOT in the selection of CMAQ projects for deployment in the Dallas-Fort Worth ozone nonattainment area. These projects were selected to meet the program goals of reducing congestion and/or reducing emissions of ozone precursor pollutants. Emissions estimates for these projects are calculated by NCTCOG using methodologies developed as part of the Texas Guide to Accepted Mobile Source Emission Reduction Strategies (MOSERS). In cases where no practical MOSERS methodology exists, verified past emission reduction performance is used to create an emissions reduction estimate.

To establish targets for these measures, staff analyzed the behavior of emission factors over time and applied percentage reductions to the baseline to better correlate with potential future reductions. These cumulative targets are reported in Exhibit V-25.

**Exhibit V-25. Emissions Reductions Measures and Targets**

| Pollutant                | Baseline | 2024 Target | 2026 Target |
|--------------------------|----------|-------------|-------------|
| NO <sub>x</sub> (kg/day) | 1,942.20 | 2,330.64    | 4,195.15    |
| VOC (kg/day)             | 466.90   | 599.90      | 1,035.83    |

## ADDRESSING SYSTEM PERFORMANCE, FREIGHT, AND CMAQ (PM<sub>3</sub>) MEASURES IN THE TIP

The TIP directly addresses many of the measures in the PM<sub>3</sub> rulemaking and has included projects using similar criteria for many years. In recent years, the RTC has approved several major funding initiatives and calls for projects that sought to continue investments in projects that will address these measures. Funds have been devoted to projects that will increase efficiency at intersections across the region, including the addition of turn lanes, installation of traffic signals, and the re-timing of existing traffic signals. These projects and programs reduce congestion, improve travel times, increase the reliability of the transportation system, and reduce air quality emissions.

Investments in bicycle/pedestrian projects are addressing multiple PM<sub>3</sub> measures, specifically Non-SOV Travel and Total Emissions Reduction, by facilitating walking and biking. These projects take single-occupant vehicles off the road and provide an associated air quality benefit. NCTCOG's Transportation Alternatives Set Aside Call for Projects includes specific criteria that give higher scores to projects that provide these benefits.

The RTC has also continued investments in various initiatives led by NCTCOG staff to address these measures, including programs and projects that identify and implement ways to reduce emissions from vehicles, deploy new vehicle technologies, and assist the public and private sectors with adopting various low-emission technologies.

Travel time reliability is being addressed in several ways by the RTC. The Regional 10-Year Plan includes the level of travel time reliability as one of the metrics in the evaluation process. An additional benefit of the previously discussed Traffic Incident Management Call for Projects is that quicker clearance of incidents will lead to less non-recurring congestion, and as a result, provide an air quality benefit.

Examples of specific programs and projects included in the TIP that are anticipated to address the PM3 measures are listed in Exhibit V-26.

**Exhibit V-26. PM3 Performance Impacts of Selected Programs and Projects**

| TIP Code | Program/Project Name   | PM3 Measures Addressed  | Potential Impact   |
|----------|--|---|--|
| 11613.3  | Regional Goods Movement/Corridor Studies                             | Interstate Reliability, TTR, PHED   | Data collection and analysis of regional truck and rail movement to facilitate improvements to freight transportation, including safety.   |
| 11647.2  | Land Use/Transportation and Bike/Pedestrian Initiatives and Planning | Non-SOV Travel, Total Emission Reductions   | Development and implementation of regionwide initiatives and funding programs to improve pedestrian safety, including safe routes to schools.  |
| 11616.1  | Signal Retiming Program  | Interstate Reliability, Non-Interstate Reliability, PHED, Total Emission Reductions | Retiming signals on the region's arterials leads to more efficient utilization of the system and higher Interstate and Non-Interstate Reliability with resulting air quality benefits as well. |
| 13058    | SH 360 from IH 30 to SH 183 Asset Optimization Project               | Interstate Reliability, TTR, PHED   | Strategically adding capacity and operational improvements to this corridor are anticipated to improve Interstate Reliability and Truck Travel Time Reliability.                               |
| 14080    | Regional Veloweb Trail in Grand Prairie                              | Non-SOV Travel, Total Emission Reductions   | Completing these portions of the Regional Veloweb enables more of the region's population to switch to non-motorized commutes.   |

## TRANSIT ASSET MANAGEMENT (TAM)

Public transportation provides thousands of people in North Central Texas with daily access to essential life opportunities. It is critical to have well-maintained, reliable transit assets to help ensure safe, dependable, and accessible transit services. The North Central Texas region has a variety of transit assets. The three major transit authorities, Dallas Area Rapid Transit (DART), Trinity Metro, the Denton County Transportation Authority (DCTA), and smaller transit providers have transit assets including nearly 2,000 buses and vans, and over 250 commuter, light rail, and trolley vehicles covering almost 300 miles of track. Transit agency assets also include support vehicles like service trucks and police cars, infrastructure such as rail stations, park-and-ride locations, and maintenance facilities. NCTCOG coordinated with public transportation providers in the region to ensure all agencies have either developed their own Transit Assessment Management (TAM) Plan or participated in a group-sponsored plan offered by NCTCOG or

TxDOT. All providers in the region have joined the TxDOT group-sponsored plan. As a result, NCTCOG did not develop an FY2023-2026 TAM Group Plan but will develop one if necessary. Transit asset management is a business model that prioritizes funding based on the condition of transit assets to achieve or maintain transit networks in a state of good repair. TAM supports a series of practices to achieve a transit state of good repair including, but not limited to:

- Regular maintenance
- Inspections
- Tracking asset condition over time
- Planning for maintenance and replacement costs
- Replacing each asset at the appropriate time

The TAM final rule establishes four performance measures related to the condition of transit assets. MPOs are required to coordinate with transit providers to report on these measures, establish regional targets, and integrate individual transit providers' performance targets and TAM plans into planning documents. NCTCOG coordinated with all transit providers in the region, requesting transit asset data and agency-level metrics and targets. Based on the data received, the RTC established initial regional targets for the four transit asset categories in December 2017. These targets have been reaffirmed regularly since that time, and updated targets were developed and adopted by RTC in September 2022. These targets will cover the Fiscal Years 2023-2026.

In addition to adopting new targets, NCTCOG has shifted its approach to the regional targets by setting distinct targets for the three large transit authorities (DART, Trinity Metro, and DCTA) and the rest of the region's transit providers. This new approach was adopted to ensure that differences in operating environments, asset procurement options, and other impacts from the COVID-19 pandemic are considered in the target-setting and performance measurement process, while still providing an aspirational goal to guide regional coordination and assistance in keeping critical transit assets and infrastructure in a state of good repair. Exhibit V-27 and V-28 list the measures and targets adopted for the large agencies and small providers, respectively.

**Exhibit V-27. Large Agency Transit Asset Management Targets for FY 2023-2026**

| Asset Category                                   | Target | Metric  |
|--|--------|---|
| Rolling Stock (transit vehicles)                 | 0%     | Vehicles that meet or exceed the industry standard, defined as the Federal Transit Administration's Default Useful Life Benchmark * |
| Infrastructure (rail track)                      | 0%     | Rail track segments with performance restrictions   |
| Equipment (transit support vehicles)             | 25%    | Vehicles that meet or exceed the industry standard, defined as the Federal Transit Administration's Default Useful Life Benchmark * |
| Facilities (buildings, stations, park and rides) | 0%     | Transit facilities rated below "Adequate" (3.0) on the industry standard Transit Economic Requirements Model (TERM) scale           |

\*These vehicles are as old as or older than the industry standard.

**Exhibit V-28. Small Provider Transit Asset Management Targets for FY 2023-2026**

| Asset Category                                   | Target | Metric  |
|--|--------|---|
| Rolling Stock (transit vehicles)                 | 5%     | Vehicles that meet or exceed the industry standard, defined as the Federal Transit Administration's Default Useful Life Benchmark * |
| Infrastructure (rail track)                      | 0%     | Rail track segments with performance restrictions   |
| Equipment (transit support vehicles)             | 25%    | Vehicles that meet or exceed the industry standard, defined as the Federal Transit Administration's Default Useful Life Benchmark * |
| Facilities (buildings, stations, park and rides) | 0%     | Transit facilities rated below "Adequate" (3.0) on the industry standard Transit Economic Requirements Model (TERM) scale           |

\*These vehicles are as old as or older than the industry standard.

**Percentage of Revenue Vehicles Met or Exceeded Useful Life Benchmark (Rolling Stock)**

This measure assesses the percentage of rolling stock revenue vehicles, such as buses and paratransit vehicles, operated by a transit provider that has met or exceeded the Useful Life Benchmark (ULB). The ULB is the expected life cycle of a capital asset for a particular transit provider's operating environment, based on recommended mileage or the acceptable period of use in service. NCTCOG has set the regional target for this measure with the goal that the percentage of revenue vehicles that have met or exceeded their ULB does not exceed the target percentage. Exhibit V-29, below, summarizes the targets and comparative performance in FY2020-2022 for rolling stock revenue vehicles in the region.



**Exhibit V-29. Rolling Stock Performance Compared to Targets**

(Percent of revenue vehicles that have met or exceeded their useful life benchmark)

| Asset Type <sup>1</sup>                    | FY2020 Performance | FY2021 Performance | FY2022 Performance | Large Agency Target | Small Provider Target |
|--|--------------------|--------------------|--------------------|---------------------|-----------------------|
| Bus  | 6%                 | 2%                 | 4%                 | 0%                  | 5%                    |
| Small Bus                                  | 11%                | 24%                | 24%                | 0%                  | 5%                    |
| Light Rail Vehicle                         | 0%                 | 0%                 | 0%                 | 0%                  | 5%                    |
| Commuter Rail Locomotive                   | 0%                 | 0%                 | 44%                | 0%                  | 5%                    |
| Commuter Rail Passenger Car                | 0%                 | 0%                 | 0%                 | 0%                  | 5%                    |
| Articulated Bus                            | 0%                 | 0%                 | 0%                 | 0%                  | 5%                    |
| Commuter Rail Passenger Coach <sup>2</sup> | 40%                | 0%                 | 48%                | 0%                  | 5%                    |

<sup>1</sup>Rolling stock assets include a small number of vehicles reported to the National Transit Database as “inactive”<sup>2</sup>Includes assets rebuilt near the end of their useful life with the assumption of a minimum useful life extension of 10 years, which may be too conservative (i.e., vehicles may be in better condition than expected based on completed rebuild activities).

NCTCOG is actively using this performance measure to select programs and projects for the TIP. See “Addressing TAM in the TIP” below for more information.

**Percentage of Track Segments with Performance Restrictions (Infrastructure)**

This measure assesses the performance of rail infrastructure operated by transit providers in the region by measuring the percentage of track segments with performance restrictions. A performance restriction exists on a segment of rail fixed guideway when the maximum permissible speed of transit vehicles is set to a value that is below the guideway’s full-service speed. These restrictions are often referred to as “slow zones.” NCTCOG has set the regional target for this measure with the goal that the percentage of track segments with performance restrictions does not exceed the target percentage. Exhibit V-30 summarizes the targets and comparative performance in FY2020-2022 for rail infrastructure.

**Exhibit V-30. Infrastructure Performance Compared to Targets**

| Rail Mode      | Fiscal Year 2020 Performance | Fiscal Year 2021 Performance | Fiscal Year 2022 Performance | Large Agency/Small Provider Target |
|----------------|------------------------------|------------------------------|------------------------------|------------------------------------|
| Light Rail     | 0.20%                        | 0.20%                        | 0%                           | 0%                                 |
| Commuter Rail  | 12.55%                       | 12.55%                       | 0%                           | 0%                                 |
| Streetcar Rail | 0%                           | 0%                           | 0%                           | 0%                                 |
| Hybrid Rail    | 0%                           | 0%                           | 0%                           | 0%                                 |

**Percentage of Non-Revenue Vehicles Met or Exceeded Useful Life Benchmark (Equipment)**

This measure assesses the percentage of non-revenue vehicles, including transit service and maintenance vehicles, that have met or exceeded their ULB. NCTCOG has set the regional target for this measure with the goal that the percentage of revenue vehicles that have met or exceeded their ULB does not exceed the target percentage. Exhibit V-31 below summarizes the target and comparative performance in FY2020-2022 for non-revenue equipment.

**Exhibit V-31. Equipment Performance Compared to Targets**

| Asset Type                          | Fiscal Year 2020 Performance | Fiscal Year 2021 Performance | Fiscal Year 2022 Performance | Large Agency/Small Provider Target |
|-------------------------------------|------------------------------|------------------------------|------------------------------|------------------------------------|
| Automobiles                         | 50%                          | 57%                          | 57%                          | 25%                                |
| Steel Wheel Vehicles                | 25%                          | 33%                          | 33%                          | 25%                                |
| Trucks & Other Rubber Tire Vehicles | 66%                          | 69%                          | 69%                          | 25%                                |

**Percentage of Facilities Assets with Condition Rating Below 3.0 on FTA Transit Economic Requirements Model Scale (Facilities)**

This measure tracks the percentage of facility assets, such as maintenance, administrative, passenger, and parking facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) scale. NCTCOG set the regional target for this measure with the goal that the percentage of facilities with a condition rating below 3.0 on the TERM scale does not exceed the target percentage. Exhibit V-32 below summarizes the target and comparative performance in FY2020-2022 for this measure.

**Exhibit V-32. Facilities Performance Compared to Targets**

| Asset Type                 | Fiscal Year 2020 Performance | Fiscal Year 2021 Performance | Fiscal Year 2022 Performance | Large Agency/Small Provider Target |
|----------------------------|------------------------------|------------------------------|------------------------------|------------------------------------|
| Administrative/Maintenance | 5%                           | 13%                          | 13%                          | 0%                                 |
| Passenger/Parking          | 0%                           | 2%                           | 0%                           | 0%                                 |

**ADDRESSING TAM IN THE TIP**

The TIP directly addresses many of the measures in the TAM rulemaking, and projects are selected with transit asset management principles in mind. To meet the TAM goal of maintaining a state of good repair for transit vehicles, infrastructure, and facilities, the TIP includes planning, procurement, and implementation of projects that would further the maintenance or replacement of transit assets. As of FY2024, TAM has been addressed in the TIP through regular maintenance of transit assets and the purchasing of new vehicles in cooperation with the region’s transit agencies and NCTCOG’s sub-recipients using FTA 5307 (Urbanized Area Formula) and 5339 (Bus and Bus Facilities) funds. In addition, the RTC approved additional funding for transit bus stop facilities for DART, DCTA, and Trinity Metro in April 2023.

Moving forward, NCTCOG is conducting a Cooperative Vehicle Procurement (CVP) on behalf of small transit providers throughout the region. The CVP will ease the administrative burden on several small transit providers by leveraging nearly \$10 million in funding for both the replacement and expansion of ADA-accessible transit fleets across the region. Through this CVP, NCTCOG will ensure compliance with federal procurement requirements, deliver savings and efficiencies to regional partners, and continue efforts to implement regional transit vehicle standards. The CVP will help meet the regional targets for the rolling stock performance measure.

A summary of specific programs and projects included in the TIP that will help address the TAM measures are listed in Exhibit V-33. The current transit listings will be updated each TIP modification cycle as the FTA releases additional funds for each fiscal year.

**Exhibit V-33. Summary of TIP Projects that Address TAM Performance Measures**

| Project Description                        | Performance Measures     |
|--|--------------------------|
| Purchase Replacement Vehicles              | Rolling Stock, Equipment |
| Bus Preventive Maintenance                 | Rolling Stock            |
| Preventive Maintenance                     | All                      |
| System Preventive Maintenance              | All                      |
| Rail Preventive Maintenance                | Infrastructure           |
| Purchase Replacement Vehicles- TRE Service | Equipment                |
| Acquisition of Security Equipment          | Equipment                |

## PUBLIC TRANSPORTATION AGENCY SAFETY PLANS

Public Transit Agency Safety Plans (PTASPs) are a means for transit providers and MPOs to monitor and improve the agency of transit systems under their jurisdiction. A core component of the process is monitoring and establishing targets for four required performance measures:

- Fatalities (total number of reportable fatalities and rate per total vehicle revenue miles by mode)
- Injuries (total number of reportable injuries and rate per total vehicle revenue miles by mode)
- Safety Events (total number of reportable events and rate per total vehicle revenue miles by mode)
- System Reliability (mean distance between major mechanical failures by mode)

Transit providers in the region were required to establish initial safety targets by December 31, 2020, after which NCTCOG had 180 days to establish regional targets in a cooperative process with transit providers. Transit provider targets are established annually. Regional targets will be updated every four years. Regional transit providers have all established and published their safety targets for each of the required performance measures in their agency safety plans. NCTCOG assessed each of these plans and coordinated with the transit providers, TxDOT, and the FTA PTASP Technical Assistance Center to determine the method and overall goal for the regional safety targets. Exhibit V-34 summarizes NCTCOG's regional safety targets for each of the seven performance measures. While individual providers created targets for each mode they operate, the regional safety performance data is aggregated for the regional baseline average performance and safety targets to ensure consistency and applicability across the region. FY 2022 safety performance data is also compared with the baseline average and the regional safety targets to assess current performance. The overall goal of the targets is to achieve a five percent improvement over the regional baseline average performance by FY2025. However, fatality targets are set to zero, in line with the regional safety position that, "Even one death in the transportation system is unacceptable." Regional targets must be updated every 4 years, with the next update coinciding with Mobility 2050, the long-range transportation plan. On an annual basis, direct recipients must certify that it and all applicable subrecipients are in compliance. NCTCOG has confirmed that subrecipient agency plans have been updated.

**Exhibit V-34. PTASP Baseline Average Performance and Regional Safety Targets**

| Performance Measure  | Baseline Average | Fiscal Year 2022 Performance | Regional Safety Target |
|--|------------------|------------------------------|------------------------|
| Fatalities – Total Number  | 6.00             | 17                           | 0.00                   |
| Fatalities – Rate per 100k Miles                                     | 0.01             | 0.026                        | 0.00                   |
| Injuries – Total Number  | 150.50           | 338                          | 142.98                 |
| Injuries – Rate per 100k Miles                                       | 0.23             | 0.514                        | 0.22                   |
| Safety Events – Total Number   | 516.00           | 172                          | 490.20                 |
| Safety Events – Rate per 100k Miles                                  | 0.81             | 0.26                         | 0.77                   |
| System Reliability – Average Miles Between Major Mechanical Failures | 18,896           | 20,951                       | 19,841                 |

## ADDRESSING PTASP IN THE TIP

Strategies for addressing transit safety will become clearer in the coming years as transit safety principles are more strongly integrated into planning processes. However, the safety of the transit system is an important regional value and many programs and projects that are currently programmed in the 2025-2028 TIP directly or indirectly address the safety of the transit system. An example project in Appendix C of the TIP is 14013.6 and 14013.9, which will construct safety walls along the Silver Line/Cotton Belt rail corridor near schools in Dallas and Plano. Double tracking projects, like TIP 25072, TIP 25072.1, and TIP 25072.3 (TRE Double tracking) also found in Appendix C, represent added capacity to the rail system, but they also provide important safety functions. The rail will be reconstructed, allowing for higher speeds, on a previously speed-restricted corridor. In addition, by allowing the trains to pass one another on separate tracks, potential conflicts are reduced, thereby increasing safety across the system.

## OVERALL PERFORMANCE-BASED APPROACH

When working to select and program projects, MPO staff factor in a variety of performance measures. Given that projects and programs in an MPO's TIP must be included in and consistent with its MTP, the MTP and the performance measures that support it are critical to the development of the TIP. The projects that are recommended in the MTP and eventually programmed in the TIP go through a review process to determine if they are warranted.

The RTC selects projects through one of two primary methods: calls for projects and funding initiatives. Funding initiatives can take one of two forms, funding programs that have one or two primary objectives

and larger funding initiatives that do not focus on a single objective. Performance measures and targets are being addressed through both options.

As previously noted, two project selection programs (Sustainable Development Round 4: Turnback Program, Context Sensitive, & Transit-Oriented Development and the Transit Program) funded projects in the 2025-2028 TIP that will invest in transit projects and projects that emphasize non-vehicular modes of transportation and context-sensitive design. Both programs address parts of PM3 and the Transit Asset Management performance measures.

Performance targets related to transit projects approved by the RTC are also addressed through the annual transit funding process. While many transit projects relate to maintaining existing operations of public transportation services, other transit projects relate directly to the maintenance, repair, and replacement of capital assets. These projects are evaluated against the TAM regional performance targets and individual transit providers' TAM plans to ensure consistency.

Each TAM plan addresses capital assets used in the provision of public transportation and requires prioritization of investments for repair, maintenance, and replacement. This requirement allows transit providers to strategically plan for funding capital assets and allows the MPO to make effective funding decisions for projects included in the TIP. All TAM plans include investment prioritization tools to assist in determining funding priorities to maintain an overall state of good repair. NCTCOG developed decision support tools for each asset category that includes various weighted categories based on common factors that affect the overall life of the asset. The transit projects in the TIP will help the region meet the adopted transit state of good repair performance targets by providing funding to replace vehicles that meet or exceed the industry standard, defined as the Federal Transit Administration's default Useful Life Benchmark.

Performance targets are also being addressed via larger funding initiatives that do not necessarily specify achieving progress toward a certain target as the reason for the initiative. One of the RTC's recent project selection initiatives, the Regional 10-Year Plan, includes many projects that address congestion reduction, connectivity, and safety issues, in addition to other criteria like pavement and bridge condition.

A notable example is the proposed reconstruction of the IH 30 Canyon project in Downtown Dallas. The implementation of the IH 30 project helps address congestion reduction, connectivity and accessibility, and safety issues for all users, in addition to other benefits like air quality and economic development. This project eliminates hazardous weaving sections throughout the downtown corridor, which creates a safer driving environment. The project also reconstructs cross streets and overpasses with sidewalks and shared-use paths and/or buffer-separated bicycle lanes connecting neighborhoods and businesses on both sides of the project corridor. Connectivity and accessibility are enhanced by providing ADA-compliant ramps and crosswalks along the frontage roads and intersections.

The IH 30 project will also bring improved traffic operations with signals and turn lanes, collector-distributor roads, and reconstructed ramps to allow more efficient ingress and egress. Congestion will be reduced by adding roadway capacity. Ultimately, the project is a regional priority because it will address multiple performance measures.

This emphasis on projects that have multi-faceted benefits also applies to the other performance measures and targets that will be utilized in the coming years. Many projects that have been selected by the RTC fall into this category where the improvements do not strictly address one issue. An interchange project may be selected primarily for its expected congestion relief, but it can address a structurally deficient bridge at the same time. A project that increases capacity will often also address a pavement deficiency through the reconstruction of all existing lanes in addition to constructing new ones.

In addition to the measures and targets described above, there are other focus areas that are being considered when determining whether a project is selected and programmed. These include environmental justice, geographic dispersion, and many more. When vetting projects, NCTCOG and the RTC consider a variety of measures pertaining to each of these areas as applicable.

## SUMMARY

NCTCOG has a robust performance-based planning process in place, which has been bolstered in the 2025-2028 TIP and Mobility 2045: 2022 Update by new federal performance requirements. These requirements have been incorporated into planning and programming processes. Current processes include performance measures based on both observed and forecasted data sources, both of which will continue to be strengthened in future TIPs and MTPs. The region faces a continuing challenge to implement transportation improvements that will have a lasting positive benefit for the region. These improvements must address continued population growth, yet they are constrained by financial resources that are insufficient to meet the needs created by that growth. By continuing to evaluate and monitor the region's transportation system using a performance-based planning process, policymakers can ensure that the most beneficial and effective projects and programs are implemented.

