MID-PERFORMANCE PERIOD PROGRESS REPORT
FOR THE 2022-2025 FEDERAL PERFORMANCE PERIOD
Reliability, Congestion and Congestion Mitigation Air Quality Measures

2024 Performance Measures Report and Scorecards

September 13, 2024

About the System Performance Scorecards

H-GAC is federally required to set performance targets and report if the 2024 performance targets have been achieved. For each of the performance areas, the progress achieved towards meeting the targets are detailed in the tables that follow. For all measures, the 2024 actual conditions are based on the best data available, as of June 2024, therefore, the conditions reported may contain traffic data from 2023 or previous years, as prescribed by federal regulations. 2024 is the midpoint of the federal performance period of 2022 – 2025.

The 2026 targets and reporting contained in this report are draft recommendations. Over the past four months, staff will has analyzed the data, reviewed trends considered recommendations for adjusting the 2026 targets. During this time, H-GAC staff has worked with local governments, the Texas Department of Transportation, numerous H-GAC subcommittees, the Transportation Advisory Committee, and the Transportation Policy Council to finalize the draft targets and reports. A timeline of activities related to these performance measures can be found on page 5.

Understanding the Reliability, Congestion, and Air Quality Measures

Percent of Person-Miles Traveled that are Reliable (Interstates and Non-Interstate roadways of the National Highway System)

Travel reliability is calculated by comparing a bad day of traffic to a normal day using a ratio of the 80th to the 50th percentile. For example, a trip that normally takes 30 minutes takes up to 45 minutes is considered "Reliable". A trip is considered "Unreliable" if the 30-minute trip takes 45 minutes or longer.

Truck Travel Time Reliability Index (Interstates only)

Recognizing the importance of on-time deliveries, this measure assesses the reliability of freight movement on the region's four interstates with a high standard of making on-time deliveries, 95% of the time. Truck reliability is calculated by comparing a very bad day of traffic to a normal day using a ratio of the 95th to the 50th percentile. There is no official standard for reliable and unreliable in this measure. Unlike the previous reliability measure, the truck reliability measure is an index. The truck index represents the amount of time a truck driver needs to add to a median trip length to arrive on-time, 95% of the time. For example, when the truck index is 2.0, for a normal truck trip of 30 minutes, a driver would need to plan for twice the drive time of 60 minutes to arrive on-time, 95% of the time.

Annual Hours of Peak Hour Excessive Delay (NHS roadways in the Houston and The Woodlands-Conroe Urban Areas)

This is the number of extra travel time hours spent in peak traffic, annually. The federal threshold for excessive delay on a roadway is 20 mph or 60% of the speed limit, whichever is greater. On a segment with a speed limit of 60 mph, the excessive delay (60% of 60 mph) would be 36 mph. A decrease of excessive delay hours indicates improvement.

Percent of Trips that are Non-Single Vehicle Occupant Travel (Commuter trips in the Houston and The Woodlands-Conroe Urban Areas)

The goal of this measure is focused on increasing the number of work trips where commuters are sharing a ride with others, thus reducing congestion. In the Houston Urban Area, 25% of commuters are sharing a ride, such as carpooling, riding public transportation, walking, bicycling, and commuter trips avoided by working from home and 75% of commuter trips are made in single occupant vehicles. In The Woodlands-Conroe Urban Area, 23% of commuter trips are made when sharing a ride or working from home, and 77% of commuters drive alone.

Congestion Mitigation Air Quality (CMAQ) On-Road Mobile Source Emission Reductions (in the 8-county region)

FHWA established air quality performance measures to assess on-road vehicle emissions with a goal of reducing emissions to improve air quality. These measures look at the Nitrogen Oxides (NOx) and Volatile Organic Compounds (VOC) emission reductions from CMAQ-funded projects and programs that went to construction or obligated in a two-year period (FY 2022 to 2023) and a four-year period (FY 2022 to 2025). The target setting methodology uses planned TIP projects for the current federal four-year performance period to calculate future targets. Next, it applies a project delivery success rate determined by using project delivery data from the previous performance period to account for difficulties in moving programmed TIP project towards construction or receiving the final federal obligation. The success rate is applied to future TIP projects to create the 2-year and 4-year targets.

Reporting of 2024 Target Achievements and Adjusting 2026 Targets

Reliability and Congestion

For the Reliability and Congestion set of measures, six of the seven 2024 targets were achieved. Data from 2023 traffic conditions and previous years are used to report 2024 target achievement per federal requirements for reporting performance.

For the performance measures of Person Miles Reliability, Truck Reliability Index, Peak Hour Excessive Delay and Non-Single Occupant Vehicles, considerations for setting 2024 and 2026 targets included a review and analysis of historical traffic conditions and several assumptions, as follows. The COVID-19 Pandemic shifted commuter travel with more employees working from home and the trend is likely to continue. Actual traffic conditions during the pandemic were outliers and future targets were made based on a look back to pre-COVID conditions with the expectation that post-COVID, there would be an eventual return to pre-COVID conditions. Additionally, the region's population continues to grow significantly which will increase vehicle miles traveled and, in turn, may increase congestion. Roadway construction zones, that are widely evident across the region, contribute to excessive delay and congestion.

Regional programs, projects, and strategies that improve reliability, reduce congestion and travel delay, and assist with meeting these performance targets are:

- The incident management programs of Houston TranStar and the Tow and Go Program
- Projects in the Transportation Improvement Program and the 2045 Regional Transportation Plan
- Commute Solutions Program and the Connect Smart app
- H-GAC conducts a Project Selection Process that has the Investment Category of Operational Improvements & Congestion Management for future projects.

The 2026 target adjustments contained in this report are draft recommendations. The targets and actual performance conditions of the Reliability and Congestion measures are illustrated in the following table.

RELIABILITY & CONGESTION							
Performance Measure	Desired Trend	2022 Targets / Actuals	2022 Target Achieved?	2024 Targets/ Actuals	2024 Target Achieved?	2026 Targets	2026 Target Adjustment
Interstate Reliability of Person Miles Traveled	⬆	69% / 79%	✓	70%/70%	✓	71%	No adjustment
Non-Interstate Reliability of Person Miles Traveled	⬆	80% / 89%	✓	75%/81%	✓	77%	No adjustment
	(An increased value indicates improvement.)						
Performance Measure	Desired Trend	2022 Targets / Actuals	2022 Target Achieved?	2024 Targets/ Actuals	2024 Target Achieved?	2026 Targets	2026 Target Adjustment
Interstate Truck Travel Time Reliability Index	⬇	2.2 / 1.9	✓	2.2/2.0	✓	2.2	No adjustment
Peak Hour Excessive Delay – Houston Urban Area	⬇	14.0 / 13.5	✓	16.0/15.5	✓	16.0	17.0
Peak Hour Excessive Delay – The Woodlands-Conroe Urban Area	⬇	NA /8.0	Not applicable	8.0/9.0	✗	8.0	No adjustment
	(A decreased value indicates improvement.)						
Performance Measure	Desired Trend	2022 Targets / Actuals	2022 Target Achieved?	2024 Targets/ Actuals	2024 Target Achieved?	2026 Targets	2026 Target Adjustments
Non-Single Occupant Vehicle Trips – Houston Urban Area	⬆	20.0% / 21.4%	✓	21.1%/25.3%	✓	22.0%	27.0%
Non-Single Occupant Vehicle Trips – Conroe-The Woodlands Urban Area	⬆	NA /19.7%	Not applicable	20.0%/22.9%	✓	20.0%	24.0%
	(An increased value indicates improvement.)						

Congestion Mitigation Air Quality (CMAQ)

For Congestion Mitigation Air Quality measures, the target setting methodology incorporates a project success rate for programmed projects that came to fruition within the programmed fiscal year. The project delivery success rate is calculated by comparing the previous CMAQ-funded projects programmed in the Transportation Improvement Program to those projects that came to fruition, then applying the success rate to Transportation Improvement Program projects scheduled for fiscal year 2022 through 2025. The 2024 actual performance is calculated by a summation of the NOx and VOC emissions associated with the TIP projects that came to fruition in fiscal years 2022 and 2023.

NOx and VOC emission reductions associated with CMAQ funded projects that came to fruition in FY 2022 and FY 2023 are used to report 2024 target achievement per federal requirements for reporting performance. The 2024 CMAQ targets were not met due to project delays, projects with STIP exceptions that are awaiting FHWA clearance, and a few transit project cancellations. Relative to the 2026 targets, the initial recommendation is not to adjust them pending further data analysis.

Regional programs, projects, and strategies that reduce tailpipe emissions, improve air quality, and assist with meeting these performance targets are:

- The emissions reduction incentive grant programs of Clean Vehicles and the Heavy Duty Diesel Replacement
- Commute Solutions Program and the Connect Smart app
- METRO Star Regional Vanpool Program
- Commuter and Transit Pilot Projects
- Replacement of diesel transit buses with electric buses
- Intelligent Transportation System (ITS) infrastructure
- Traffic signal communication systems
- Access management improvement projects

The targets and actual performance conditions of the Congestion Mitigation Air Quality (CMAQ) measures are illustrated in the following table.

CONGESTION MITIGATION AIR QUALITY							
On-Road Mobile Source Emission Reductions							
	Desired Trend	2022 Targets / Actuals	2022 Target achieved?	2024 Targets / Actuals	2024 Target achieved?	2026 Targets	2026 Target Adjustments
Emission Reductions of NOx (kg/day)	⬆	1,429.077/ 1,383.040	✖	221.251/19.964	✖	601.465	No adjustment
Emission Reductions of VOC (kg/day)	⬆	234.604 / 98.863	✖	69.939/4.343	✖	172.864	No adjustment

Nitrogen Oxides (NOx) *(An increased value indicates improvement.)*
Volatile Organic Compounds (VOC)

Timeline for the Reporting of Reliability, Congestion and Air Quality Targets

- July 19 to August 18, 2024 - Public Comment Period
- July 2024 - Subcommittees Discussion
- August 2024 - Subcommittees Endorsement, Transportation Advisory Committee and Transportation Policy Council discussion
- September 2024 - Transportation Advisory Committee, and Transportation Policy Council approval
- October 1, 2024 – Federal deadline for performance reporting

Charts of Historical Data

The historical data of past actual conditions and targets, past, present, and future, are represented in charts in the following pages.

Reliability, Congestion and Air Quality Performance Measures

September 2024

Regional Collaboration • Transportation Planning • Multimodal Mobility

METROPOLITAN PLANNING ORGANIZATION

Performance Measures

Reliability

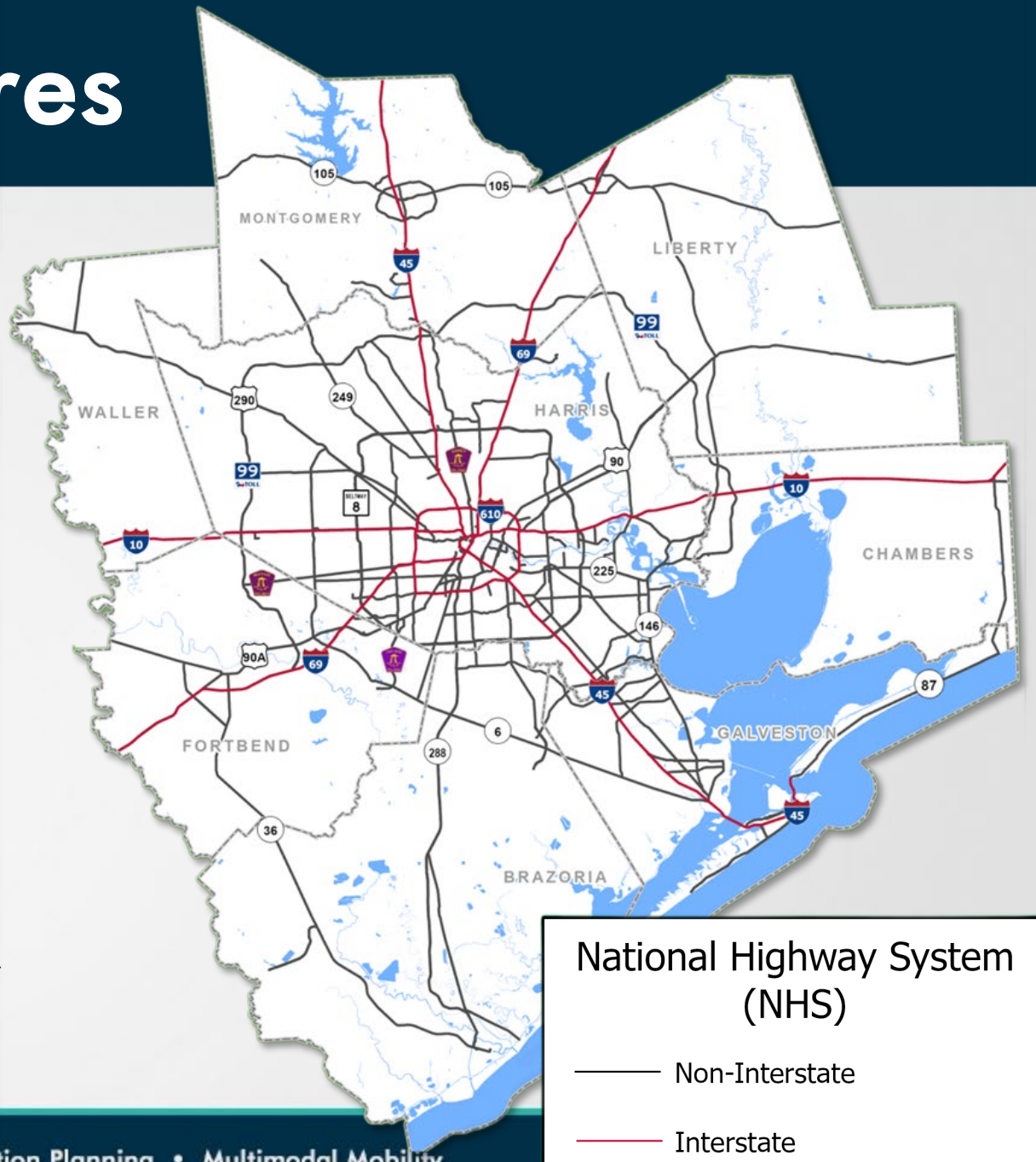
- Personal & Truck Travel

Congestion

- Peak Hour Excessive Delay
- Non-Single Occupant Vehicles

Air Quality

- Tailpipe emission reductions from Congestion Mitigation Air Quality (CMAQ) projects



Federal Performance Measures

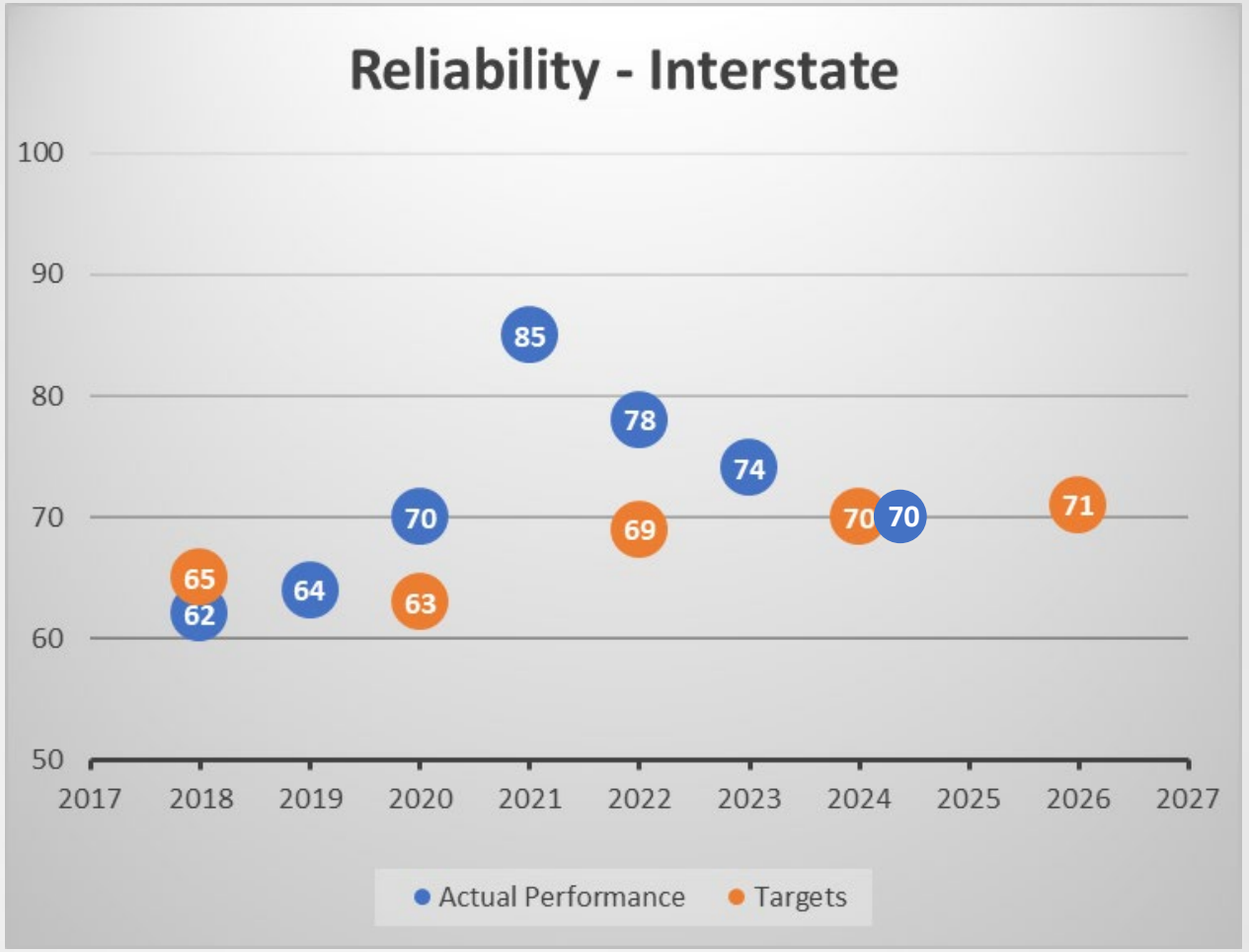
- 2024 Actual Performance based on 2023 traffic conditions
- 2026 Target Adjustments
- No penalties if targets aren't met

Percentage of Reliable Person-Miles (Annual)

Level of Travel Time Reliability (LOTTR) = Ratio of the 80th percentile (bad traffic) / 50th percentile (normal traffic)

Example: For a 30-minute trip:

- **Reliable = 30 to 45 mins.**
- **Unreliable = More than 45 mins.**



2024 Target met

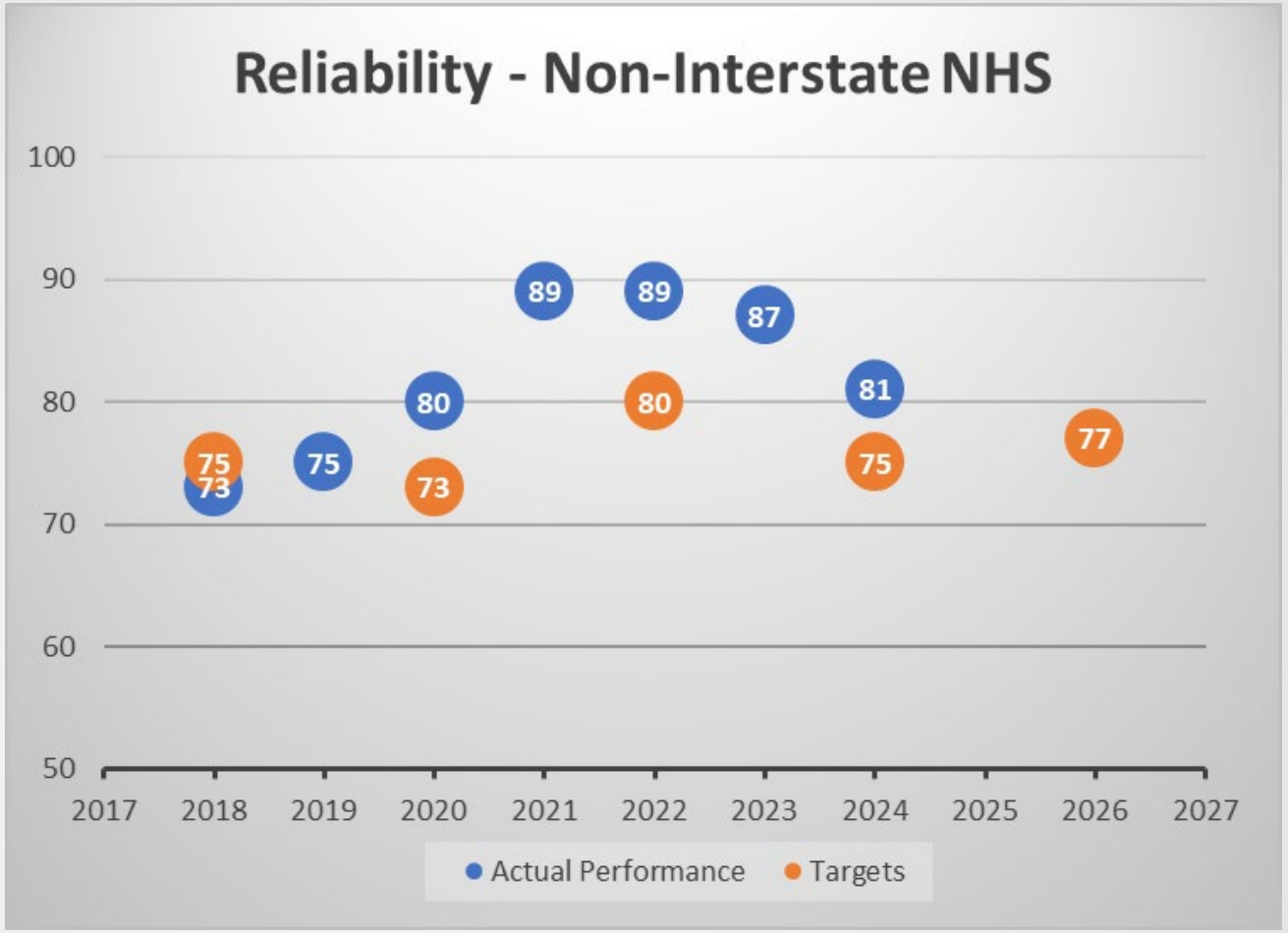
An increased value indicates improvement

Percentage of Reliable Person-Miles (Annual)

Level of Travel Time Reliability (LOTTR) = Ratio of the 80th percentile (bad traffic) / 50th percentile (normal traffic)

Example: For a 30-minute trip:

- **Reliable = 30 to 45 mins.**
- **Unreliable = 45 mins. or longer**



2024 Target met

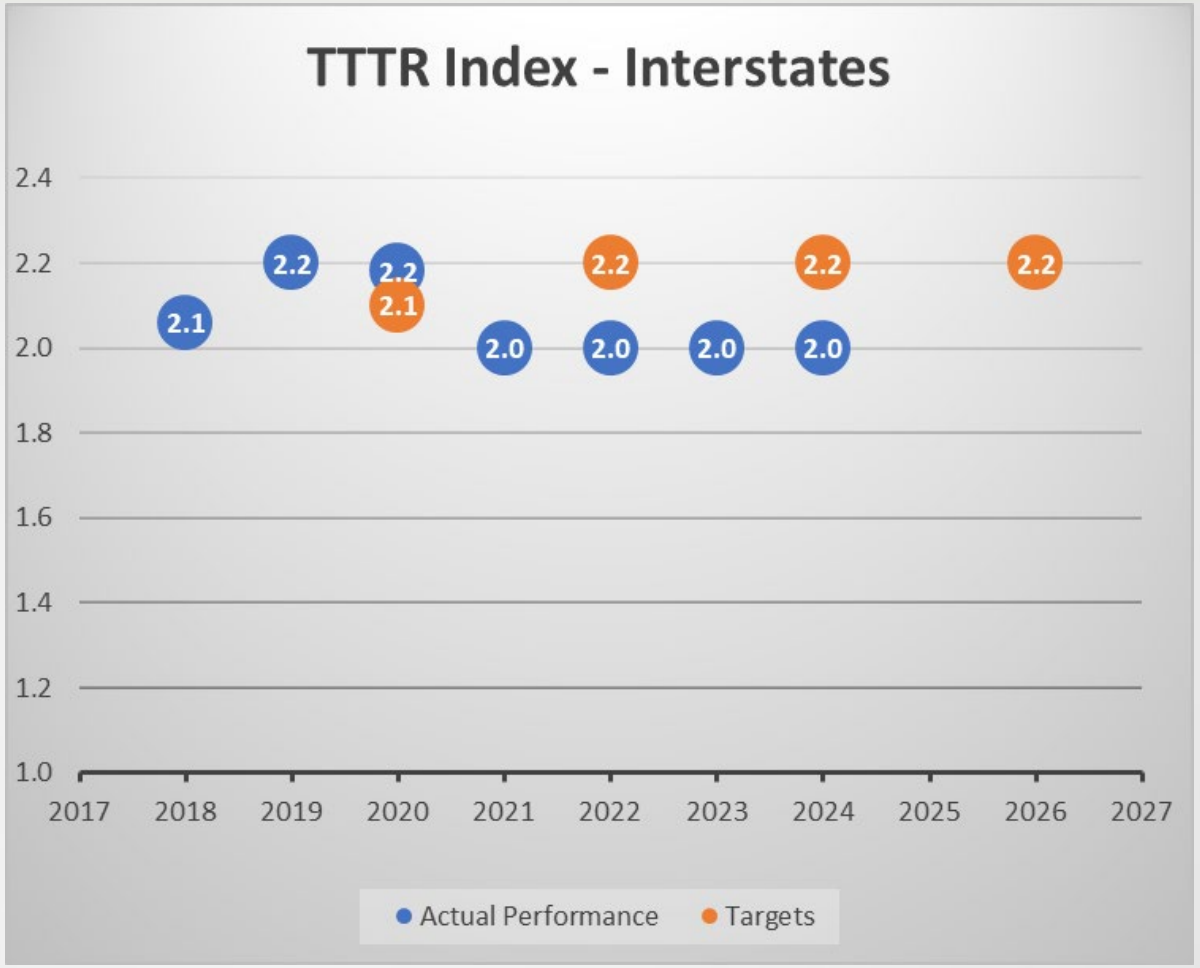
An increased value indicates improvement

Truck Travel Time Reliability Index

Truck Travel Time Reliability (TTTR) Index is the time a truck driver adds to a median trip length to arrive on-time, 95% of the time.

Example:
What is normally a trip of 30 minutes X 2.1 (truck index) = 63 minutes.

Ratio of 95th percentile (very bad traffic) / 50th percentile (normal traffic)



2024 Target met

A decreased value indicates improvement

Project Types & Strategies

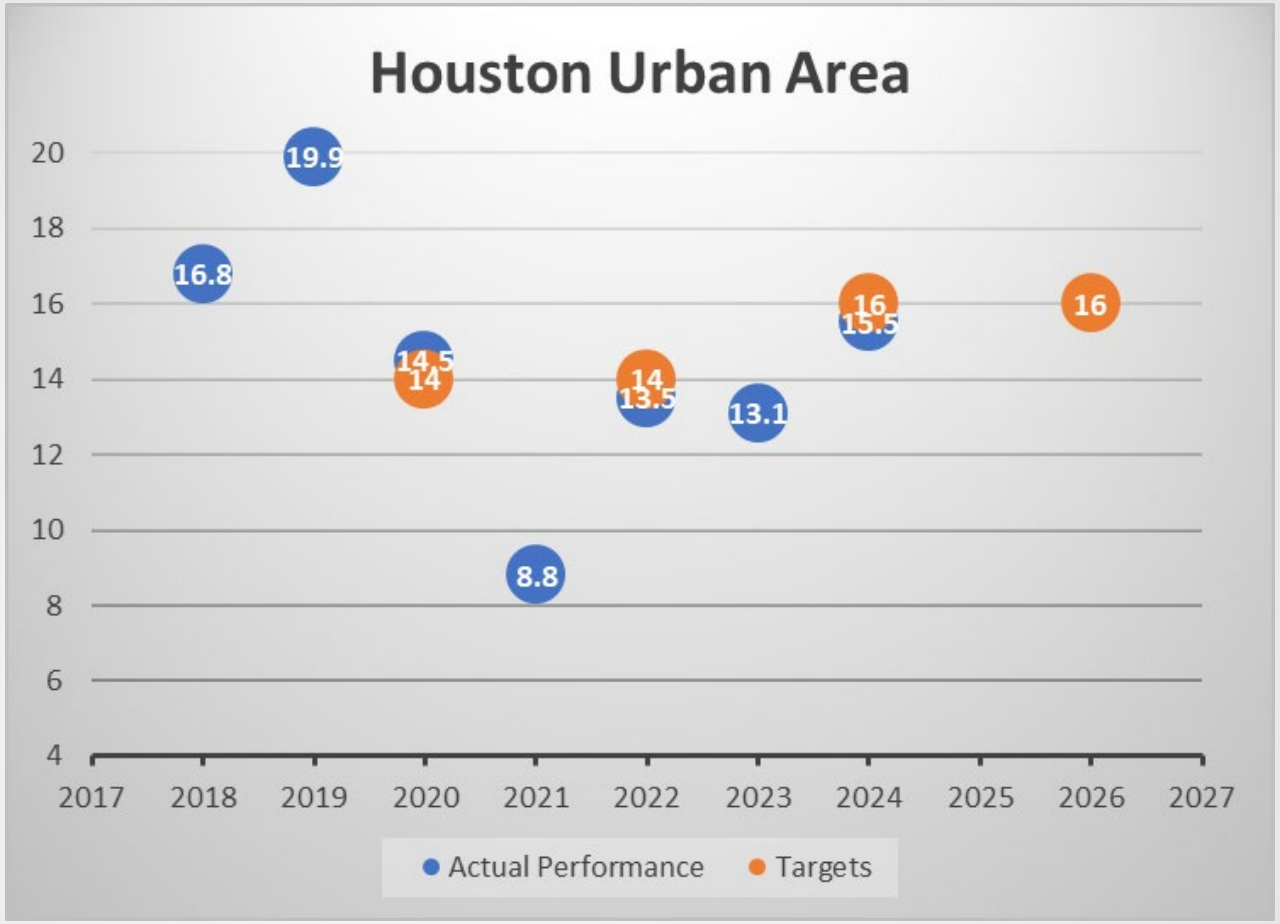
- Transportation Improvement Program (TIP)
- Regional Transportation Plan (RTP)
- Project Selection Process
  - Operational Improvements & Congestion Management
- Tow and Go Program
- TranStar
- Commute Solutions
- Connect Smart app

Peak Hour Excessive Delay

The annual average hours of extra travel time on the National Highway System in excessive conditions per capita.

Peak Periods (Mon-Fri)
AM Peak (6-10 am)
PM Peak (3-7 pm)

For a speed limit of 60 mph (60% of 60 mph), the excessive delay occurs below 36 mph.



2024 Target met

Adjust 2026 Target from 16 to 17 hours

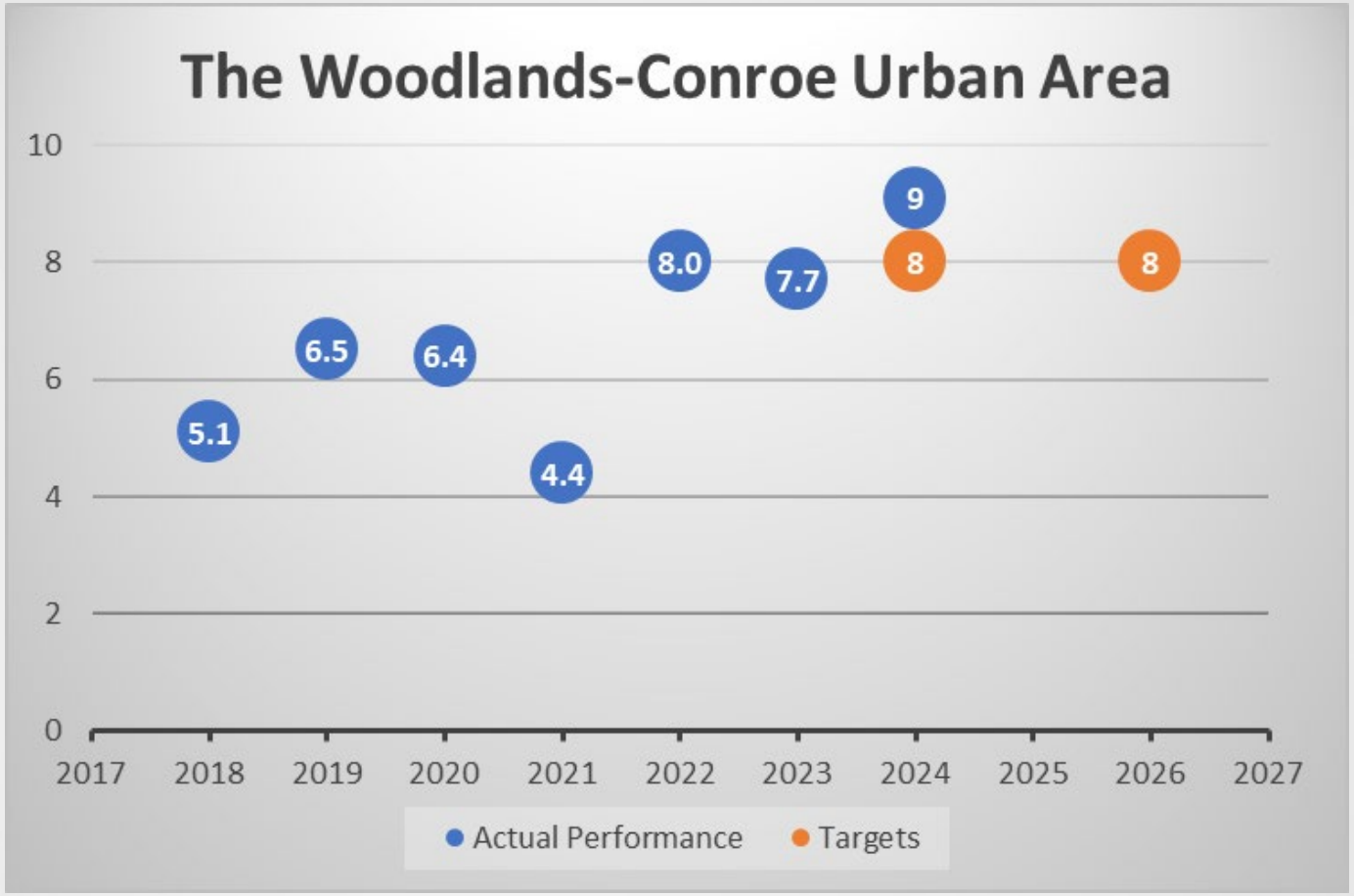
A decreased value indicates improvement

Peak Hour Excessive Delay

The annual average hours of extra travel time on the National Highway System in excessive conditions per capita.

Peak Periods (Mon-Fri)
- AM Peak (6-10 am)
- PM Peak (3-7 pm)

For a speed limit of 60 mph (60% of 60 mph), the excessive delay occurs below 36 mph.



2024 Target not met

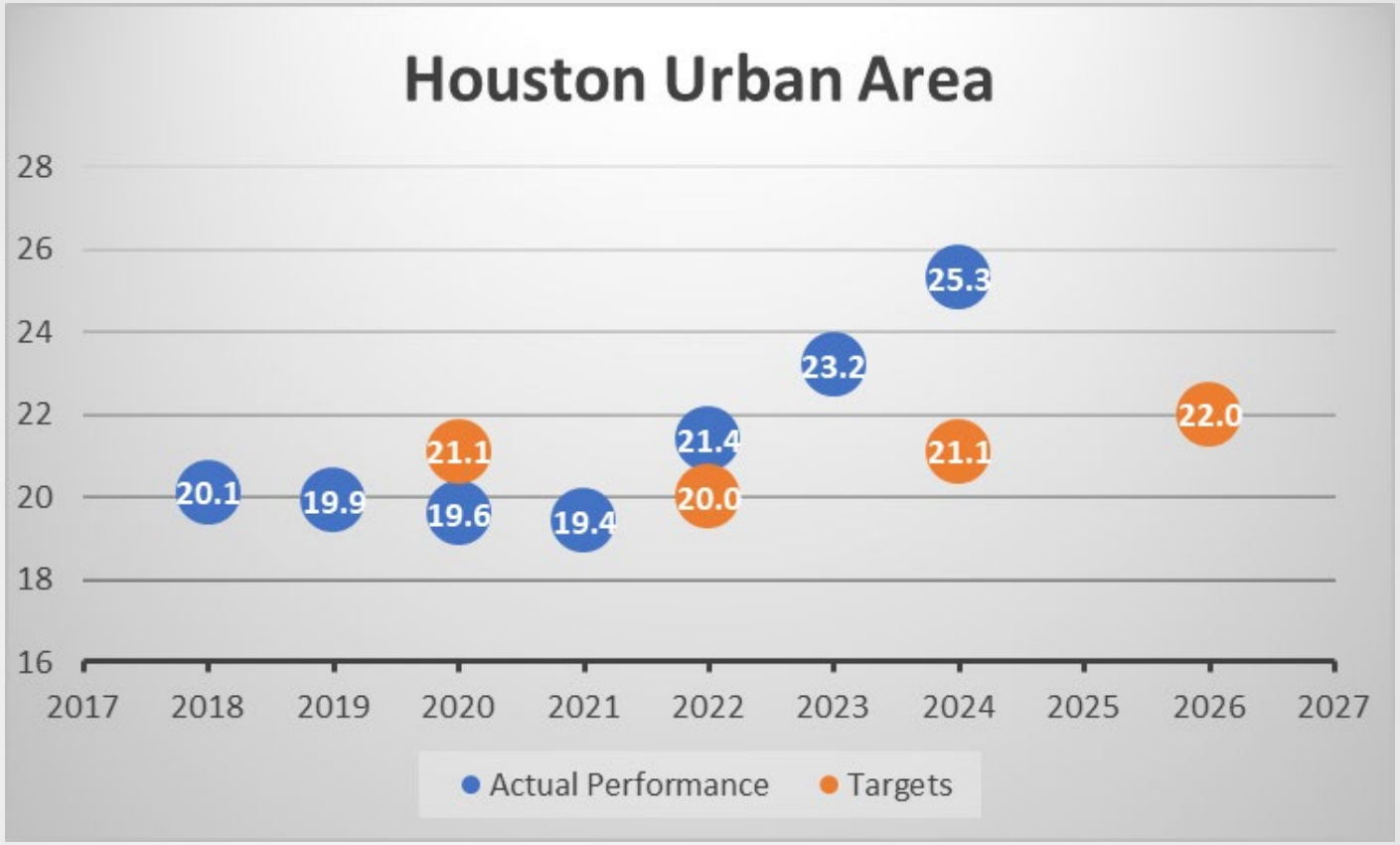
A decreased value indicates improvement

Percent of Non-Single Occupant Vehicles

Percent of Work Trips made in Non-Single Occupant Vehicles

- Carpooling
- Riding public transportation
- Walking
- Bicycling
- Taxicab or other means
- Travel avoided by working from home

American Community Survey (ACS) 5-year averages



2024 Target met

Adjust 2026 Target from 22 to 27%

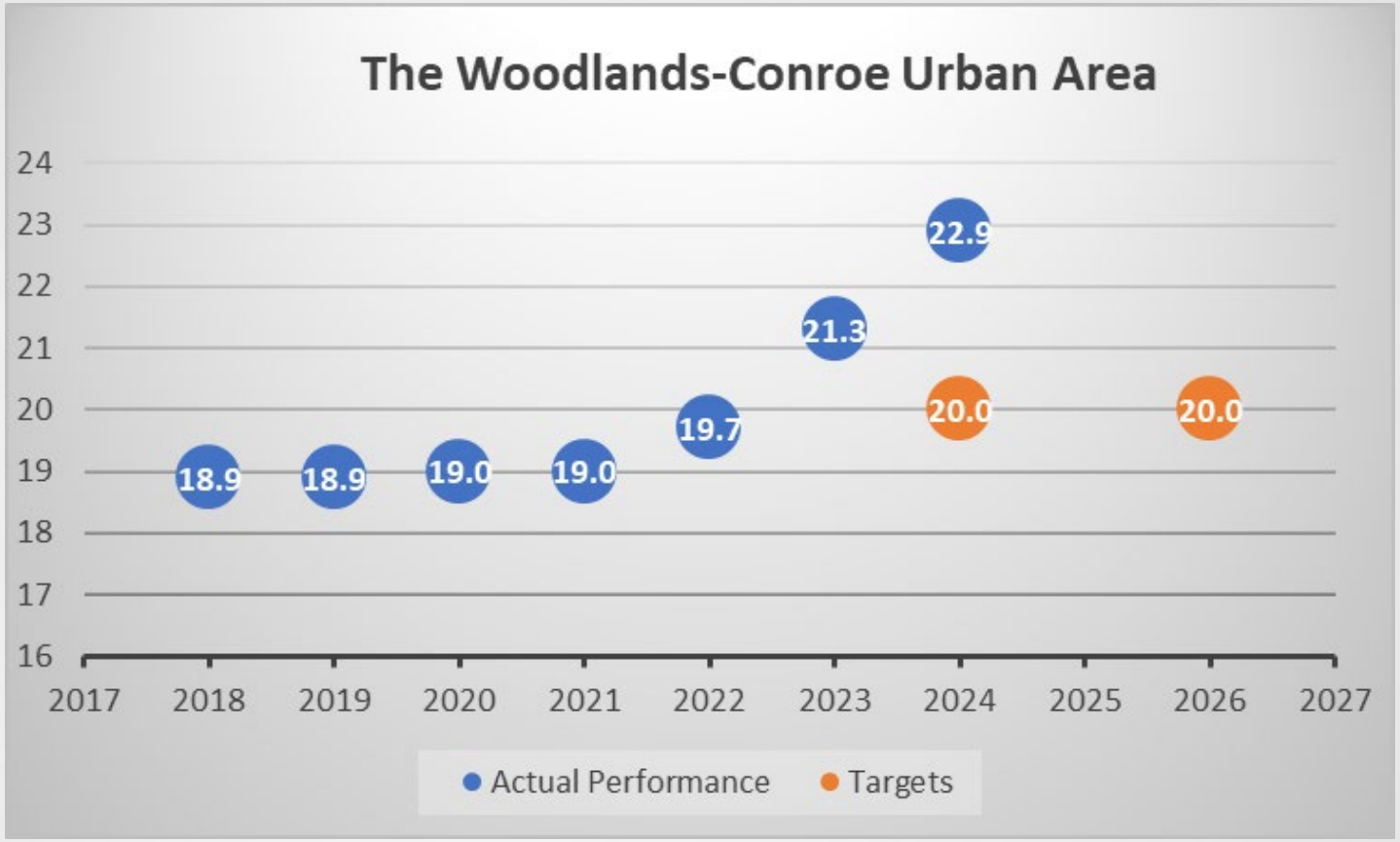
An increased value indicates improvement

Percent of Non-Single Occupant Vehicles

Percent of Work Trips made in Non-Single Occupant Vehicles

- Carpooling
- Riding public transportation
- Walking
- Bicycling
- Taxicab or other means
- Travel avoided by working from home

Source: American Community Survey (ACS) 5-year averages



2024 Target met

Adjust 2026 Target From 20 to 24%

An increased value indicates improvement

On-Road Mobile Source Emissions Reduction (kg/day)

Congestion Mitigation Air Quality (CMAQ) Measures

Target Years	NOx	VOC
2-Year Target (FY 22 & 23)	221.251	69.939
2-Year Actuals	19.964	4.343
2-Year Shortage	(201.287)	(65.596)
4-Year Target (FY 22, 23, 24 & 25)	601.465	172.864

2-Year Targets were not met due to:

- 13 project delays to FY 24 & 25
- 7 project delays by sponsors to FY 26 & later

Nitrogen Oxides (NOx)
Volatile Organic Compounds (VOC)

Project Types & Strategies

- Projects & Programs
  - Clean Vehicles
  - Commute Solutions
  - Regional Vanpool
  - Commuter and Transit Pilot Projects
  - Replacement of diesel transit buses with electric buses
- Construction Projects
  - Intelligent Transportation Systems (ITS) Equipment & Infrastructure
  - Traffic Signal Communication Systems
  - Access Management Improvements
- Seek opportunities for CMAQ-eligible Projects
  - Carryover Spend Down projects

Performance Measures

Transporatation Performance Measures
https://www.h-gac.com/transportation-performance-measures