2022 SYSTEM PERFORMANCE MEASURES REPORTING & SCORECARDS

Reliability, Congestion and CMAQ Air Quality Measures (PM3)

Full Performance Period Progress Report for the First Federal Performance Period (2018-2021) and
Baseline Performance Period Report for the Second Federal Performance Period (2022-2025)

SEPTEMBER 2022

About the System Performance Scorecards

H-GAC is federally required to set performance targets and is reporting if the 2022 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 2022 actual conditions are based on the best data available, as of June 2022, therefore, the conditions reported may contain traffic data from 2021 or previous years, as prescribed by federal regulations. As of this writing, the first federal performance period (2018-2021) has ended, and the second performance period (2022-2025) is beginning. From April to September 2022, H-GAC staff worked with the Texas A&M University Transportation Institute, numerous H-GAC Subcommittees, the Transportation Advisory Committee (TAC) and the Transportation Policy Council (TPC) to analyze, discuss and finalize the draft targets and reports. A public comment period was held from July 15 to August 14, 2022.

Understanding the Reliability, Congestion, and Air Quality Measures

Percent of person-miles traveled that are Reliable (Interstates and Non-Interstate National Highway System (NHS) roadways)

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 should normally take 30 minutes can take up to 45 minutes and still be considered "Reliable". A trip is considered "Unreliable" if the trip takes more than 45 minutes. An increase in the reliability percentage indicates better conditions.

Truck Travel Time Reliability Index (Interstates only)

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 is 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. A decrease in the truck index indicates better conditions.

Annual Hours of Peak Hour Excessive Delay (NHS roadways in the Houston and Conroe-The Woodlands 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 Occupancy Travel (Commuter trips in the Houston and Conroe-The Woodlands 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, 21.1% of commuters are sharing a ride, such as carpooling, using regional vanpool, riding public transportation, telecommuting, walking, bicycling, and by other means, and 78.9% of commuters drive alone. In the Conroe-The Woodland Urban Area, 19.7% of commuters are sharing a ride, and 80.3% of commuters drive alone and. An increased percentage of Non-SOV travel indicates improvement.

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 resulting in better 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 period of two and four years. The target setting methodology uses planned TIP projects for the second 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 first performance period to account for difficulties in moving programmed TIP project towards receiving the final federal obligation. An increase in the emission reductions indicates improvement.

Assessment of 2022 Targets and Target Setting for 2024 & 2026

The 2022 targets were achieved, due in part to the COVID-19 pandemic and its effects on travel conditions. Data from 2021 and traffic conditions are used to report 2022 target achievement per federal requirements for reporting performance. The 4-year targets for the Congestion Mitigation Air Quality measures were not achieved. The reasons for not meeting the targets were project delays, some due to COVID, and funding changes from CMAQ to another funding category.

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 by more employees working from home and the trend is likely to continue. Traffic conditions of 2021 were considered an outlier and future targets were made based on a look back 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. For future Congestion Mitigation Air Quality (CMAQ) targets, the target setting methodology is based on a project success rate. The project delivery success rate is calculated by comparing the previous projects programmed in the TIP to those projects that came to fruition. The success rate is applied to future TIP projects to create the future 2-year and 4-year targets. The targets and actual performance conditions of the Reliability and Congestion measures are illustrated in the following table.

RELIABILITY & CONGESTION							
	2018 Baseline*	2020 Targets / Actuals	2022 Targets / Actuals	2022 Target achieved?	Desired Trend	2024 Targets	2026 Targets
Interstate Reliability of Person Miles Traveled	65%	63% / 71%	69% / 79%	✓	↑	70%	71%
Non-Interstate Reliability of Person Miles Traveled	75%	73% / 82%	80% / 89%	✓	↑	75%	77%
	(An increased value indicates improvement.)						
Interstate Truck Travel Time Reliability Index	2.0	2.1 / 2.1	2.2 / 1.9	✓	↓	2.2	2.2
Peak Hour Excessive Delay – Houston Urban Area	16.8	14.0 / 14.0	14.0 / 13.5	✓	↓	16.0	16.0
Peak Hour Excessive Delay – Conroe-The Woodlands Urban Area	5.1	NA / 6.4	NA /8.1	Not applicable	↓	8.0	8.0
	(A decreased value indicates improvement.)						

	2018 Baseline*	2020 Targets / Actuals	2022 Targets / Actuals	2022 Target achieved?	Desired Trend	2024 Targets	2026 Targets
Non-Single Occupant Vehicle Trips – Houston Urban Area	20.1%	21.1% / 21.1%	20.0% / 21.1%	✓	↑	21.1%	22.0%
Non-Single Occupant Vehicle Trips – Conroe-The Woodlands Urban Area	18.9%	NA / 19.0%	NA /19.7%	Not applicable	↑	20.0%	20.0%
	(An increased value indicates improvement.)						

**2018 Baselines were updated in 2022 based on updated HPMS and NPMRDS data sets and used for consistency purposes for historical trends when formulating the 2024 & 2026 targets.*

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						
	2018 Baseline	2020 Targets / Actuals	2022 Targets / Actuals	2022 Target achieved?	2024 Targets	2026 Targets
Emission Reductions of NOx (kg/day)	453.741	1,419.426 / 158.319	1,429.077/ 1,383.040	✗	221.251	601.465
Emission Reductions of VOC (kg/day)	66.850	169.301 / 52.010	234.604 / 98.863	✗	69.939	172.864

Nitrogen Oxides (NOx)
Volatile Organic Compounds (VOC)

Timeline

July 15 to August 14, 2022
Public Comment Period

August 2022
Subcommittees, Transportation Advisory Committee (TAC), and Transportation Policy Council (TPC) Discussion

September 2022
Subcommittees, Transportation Advisory Committee (TAC), and Transportation Policy Council (TPC) Approval