

6. PAVEMENT AND BRIDGE PERFORMANCE MEASURES

BACKGROUND

The federal laws Fixing America’s Surface Transportation Act and the Infrastructure Investment and Jobs Act require a performance-based process to monitor the conditions of pavements and bridges of the National Highway System, set performance targets, and report on progress. H-GAC is responsible for setting pavement and bridge targets for the 8-county region. Measuring and tracking the performance of the region’s transportation system is an approach to evaluate the effectiveness of transportation investments and to track progress toward achieving goals. Ensuring a State of Good Repair for pavements and bridges is critical to safety, the movement of goods and people, as well as economic development.

CURRENT SITUATION

The federal performance period, spanning from 2022 to 2025, is currently underway. Staff has conducted data analysis on pavement conditions, evaluating ride quality, and bridge conditions, considering the assessment scores provided by the National Bridge Inventory. To ensure a comprehensive evaluation, staff has been collaborating with the Texas Department of Transportation (TxDOT) and local governments for the data review and analysis.

As part of our progress monitoring efforts, staff is reporting on target achievement of the 2022 pavement and bridge targets. The six pavement targets for 2022 were achieved. The bridge targets for 2022 were narrowly missed by less than 1%. There are no penalties when targets are not achieved. Moreover, for the past several months, staff has been in discussions, receiving input and recommendations from committees for past performance and to establish future targets for the years of 2024 and 2026. Historical conditions over a five-year period have been steady. Target setting methodology consists of averaging historical ratings and holding them flat for future years. Resolution 2023-27 contains the pavement and bridge performance measures, reporting of past performance, and future targets for 2024 and 2026. Target setting and reporting is due to TxDOT and the Federal Highway Administration by August 9, 2023.

ACTION REQUESTED

Recommendation for Transportation Policy Council approval of Resolution 2023-27.



Resolution

NO. 2023-27

AUTHORIZING ADOPTION OF FEDERAL PERFORMANCE TARGETS FOR PAVEMENT AND BRIDGE PERFORMANCE MEASURES REQUIRED BY THE FAST ACT AND THE INFRASTRUCTURE INVESTMENT AND JOBS ACT

WHEREAS, the Houston-Galveston Area Council (H-GAC) is designated as the Metropolitan Planning Organization (MPO) for the Houston - Galveston Transportation Management Area by the Governor of Texas in accordance with federal law, and;

WHEREAS, the Transportation Policy Council (TPC) is the regional transportation policy body, and;

WHEREAS, the H-GAC is committed to maintaining and improving a State of Good Repair for the region's pavements and bridges;

WHEREAS, ensuring the preservation of pavements and bridges is critical to safety, the movement of goods and people, and economic development, and;

WHEREAS, federal law assigns the MPO the responsibility for carrying out the metropolitan planning process, in cooperation with the State and publicly-owned transit service providers, and;

WHEREAS, the federal law assigns the MPO the responsibility for developing and approving regional performance targets and to incorporate these measures and a performance-based planning process into the Transportation Improvement Program (TIP) and the Regional Transportation Plan (RTP) documents, and;

WHEREAS, the federal law requires the adoption of regional pavement and bridge performance targets for the Interstate and Non-Interstate National Highway System, for the percentage of the highways and bridge deck area in good and poor condition based on the federal criteria measuring the International Roughness Index, cracking, faulting and rutting of highways and evaluation of the bridge deck area, superstructure, substructure and culvert; as shown in the attached table, and;

NOW, THEREFORE, BE IT RESOLVED THAT THE TRANSPORTATION POLICY COUNCIL FOR THE HOUSTON-GALVESTON TRANSPORTATION MANAGEMENT AREA ADOPTS THE REGIONAL PAVEMENT AND BRIDGE TARGETS AS IDENTIFIED IN THE ATTACHED TABLE 1 AND AMENDS THE PERFORMANCE MEASURES INTO THE 2023-2026 TRANSPORTATION IMPROVEMENT PROGRAM AND THE 2045 REGIONAL TRANSPORTATION PLAN UPDATE.

PASSED AND APPROVED this 28th day of July 2023, at a regularly called meeting of the
Transportation Policy Council.

APPROVED:

ATTEST:

Hon. David Robinson, Chairman
Transportation Policy Council

Hon. Nancy Arnold, Secretary
Transportation Policy Council

Table 1. Pavement and Bridge Past Performance and Future Targets

PAVEMENT & BRIDGE							
Performance Measure	2022 Targets / Actuals	2022 Targets achieved			Desired Trend	2024 Targets	2026 Targets
Interstate pavement in good condition	42.1% / 44.6%	Yes			↑	45.7%	45.7%
Interstate pavement in fair condition	57.8% / 55.3%	Yes			↓	54.2%	54.2%
Interstate pavement in poor condition	0.1% / 0.1%	Yes			↓	0.1%	0.1%
Non-Interstate pavement in good condition	34.4% / 38.3%	Yes			↑	34.7%	34.7%
Non-Interstate pavement in fair condition	40.8% / 40.2%	Yes			↓	62.0%	62.0%
Non-Interstate pavement in poor condition	24.8% / 21.5%	Yes			↓	3.2%	3.2%
National Highway System bridge deck area in good condition	49.1% / 48.5%	No			↑	46.7%	46.7%
National Highway System bridge deck area in fair condition	49.7% / 50.2%	No			↓	47.8%	47.8%
National Highway System bridge deck area in poor condition	1.2% / 1.3%	No			↓	1.2%	1.2%

For Non-Interstate pavement measures, for 2022 the condition calculation was based on only one condition rating, the International Roughness Index (IRI). For 2024 and 2026, the condition calculation was changed to three ratings, the IRI, Cracking, and Rutting or Faulting based on the pavement type (asphalt concrete, jointed concrete, and continuously reinforced concrete pavement). This explains the noticeable difference of the targets for Non-Interstate pavements in fair condition in 2022 at 40.8% and in 2024 at 62.0%.

Table 2. Congestion Mitigation Air Quality Actual Performance and Targets

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 / 52.100	234.604 / 98.863	×	69.939	172.864

Nitrogen Oxides (NOx)
Volatile Organic Compounds (VOC)