

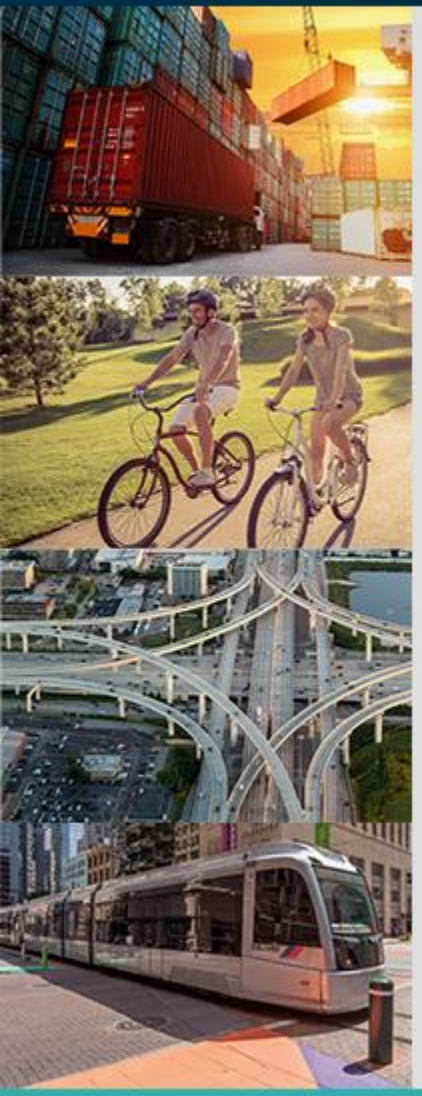

Reliability, Congestion and Air Quality Performance Measures


Karen Owen
TIP Subcommittee
August 3, 2022

Regional Collaboration • Transportation Planning • Multimodal Mobility

METROPOLITAN PLANNING ORGANIZATION

Reliability, Congestion & Air Quality



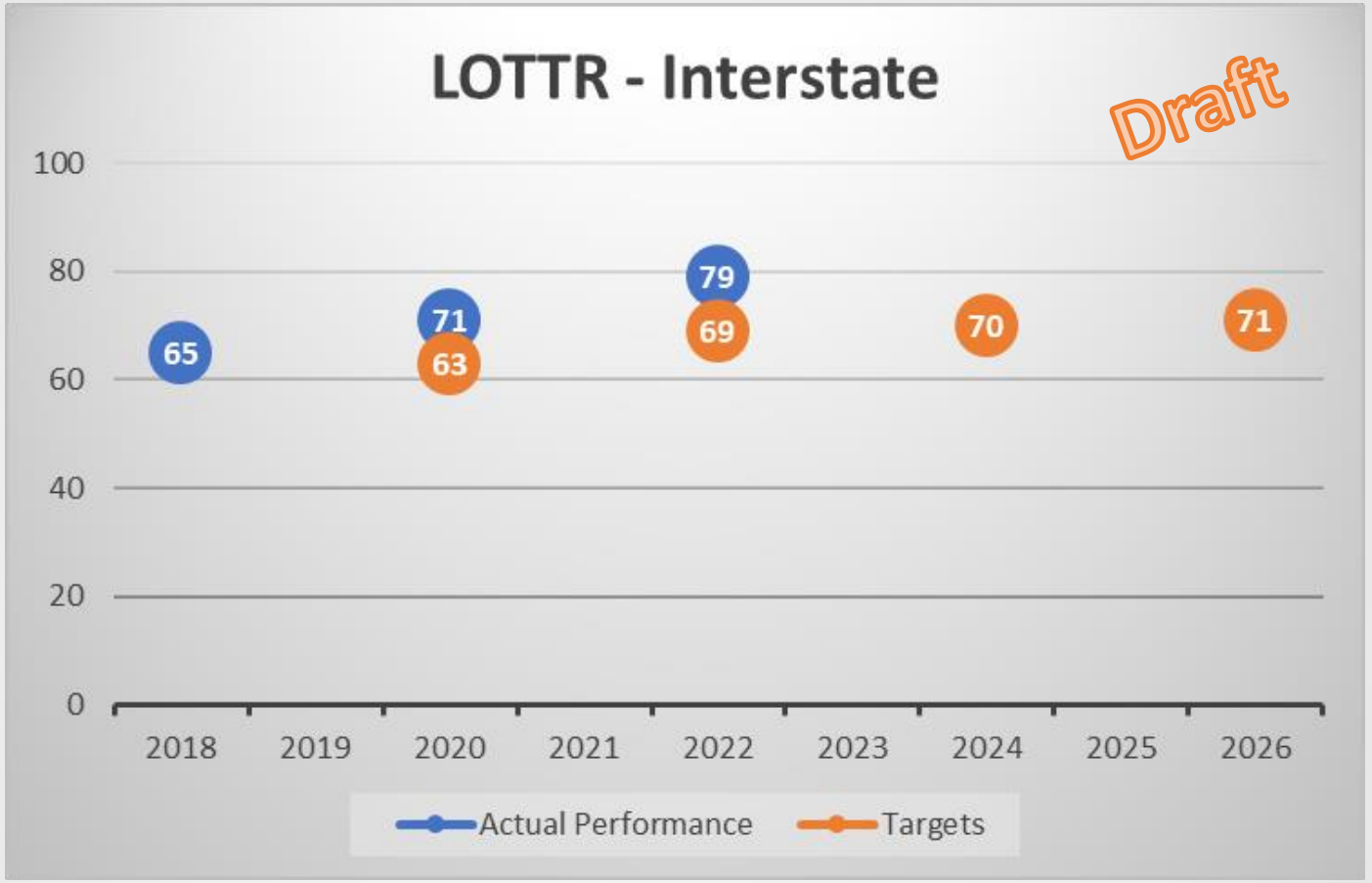
- 2022 Performance Reporting is based on 2021 data
- 2024 and 2026 Target Setting
  - Can adjust 2026 targets in two years
- No penalties if targets aren't met

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 = 45 mins. or longer**



Targets met in 2020 and 2022

Desired Trend

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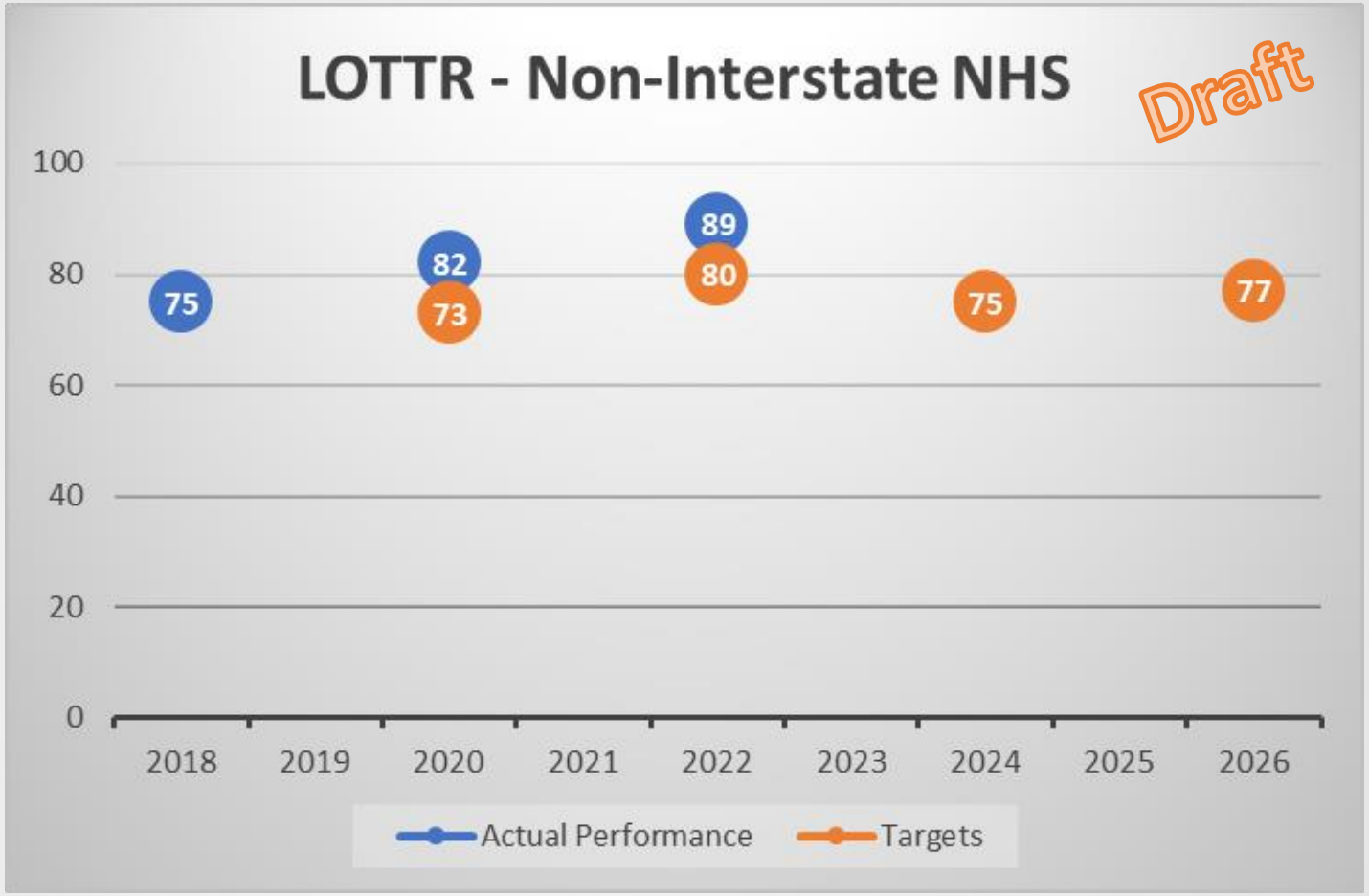


Targets met in 2020 and 2022

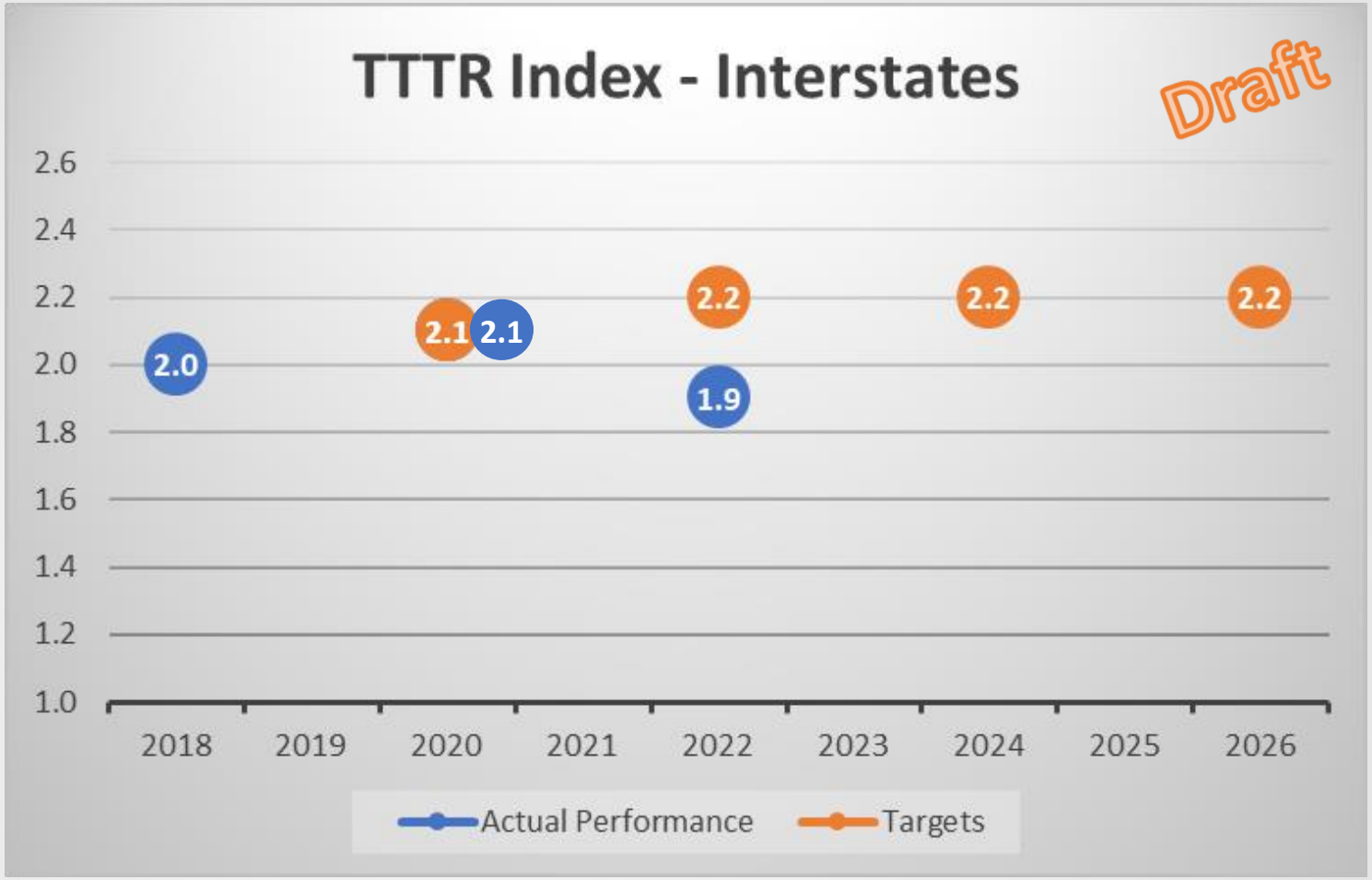
Desired Trend

Truck Travel Time Reliability Index

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

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

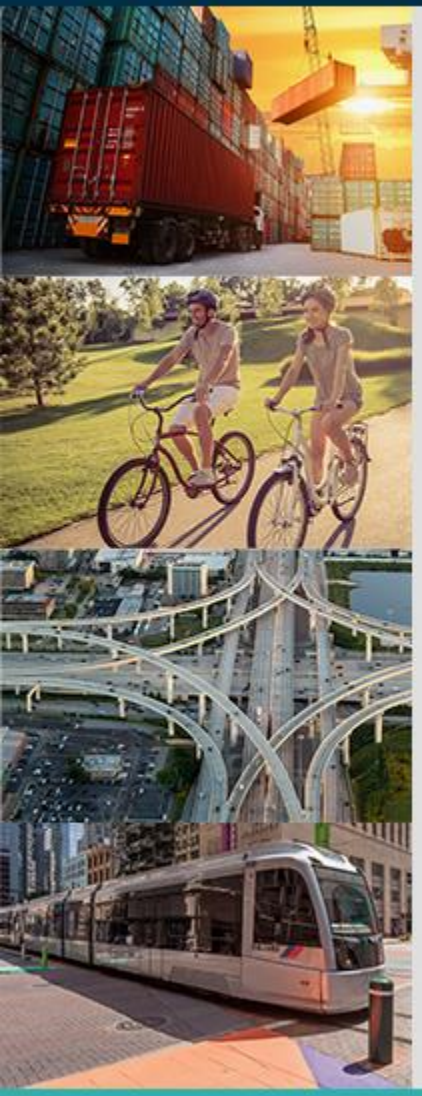
Example:
What is normally a trip of 30 minutes X 2.1 (truck index) = 63 mins.



Targets met in 2020 and 2022

Desired Trend

Project Types & Strategies



- Transportation Improvement Program (TIP)
- Regional Transportation Plan (RTP)
- Tow and Go Program
- TranStar
- Commute Solutions

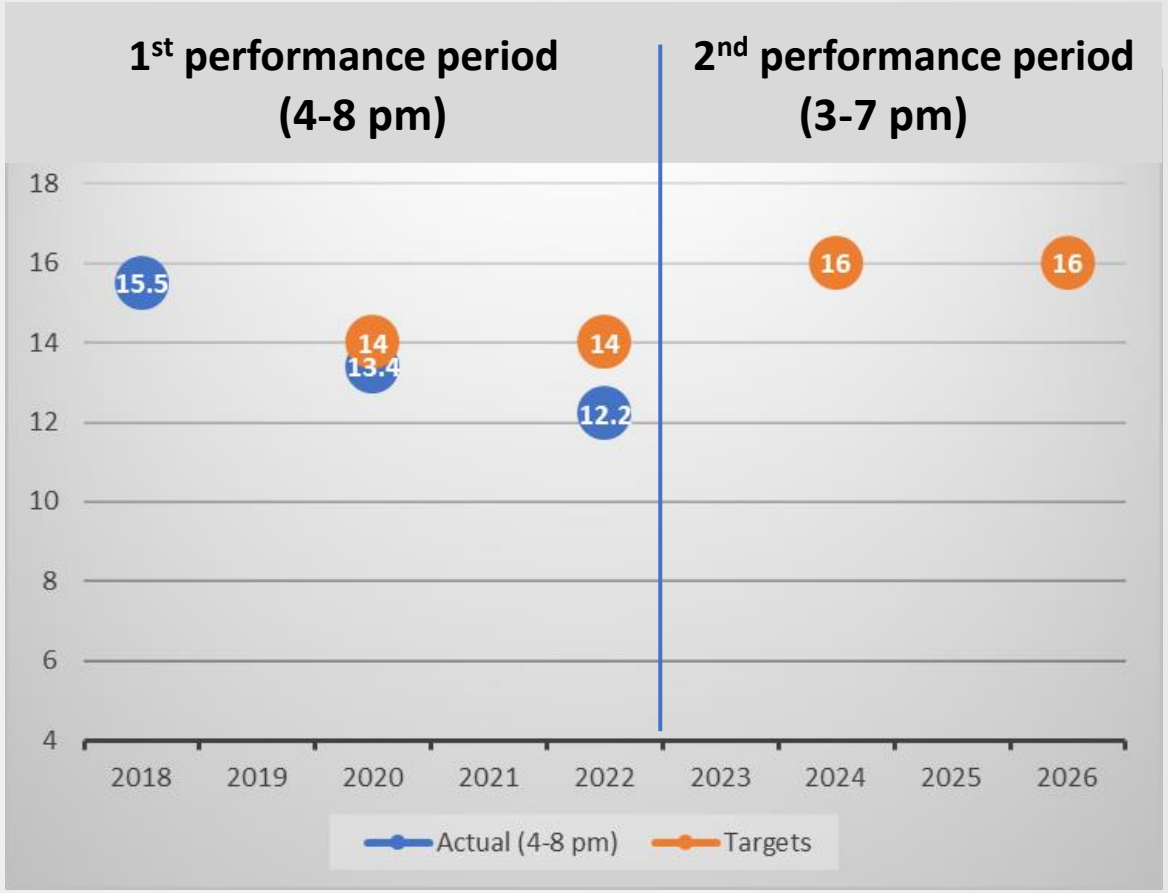
Peak Hour Excessive Delay

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

Peak Periods (Mon-Fri)
AM Peak (6-10 am)
PM Peak (4-8 pm) less delay or
(3-7 pm) more delay

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

Houston Urban Area



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Targets met in 2020 and 2022

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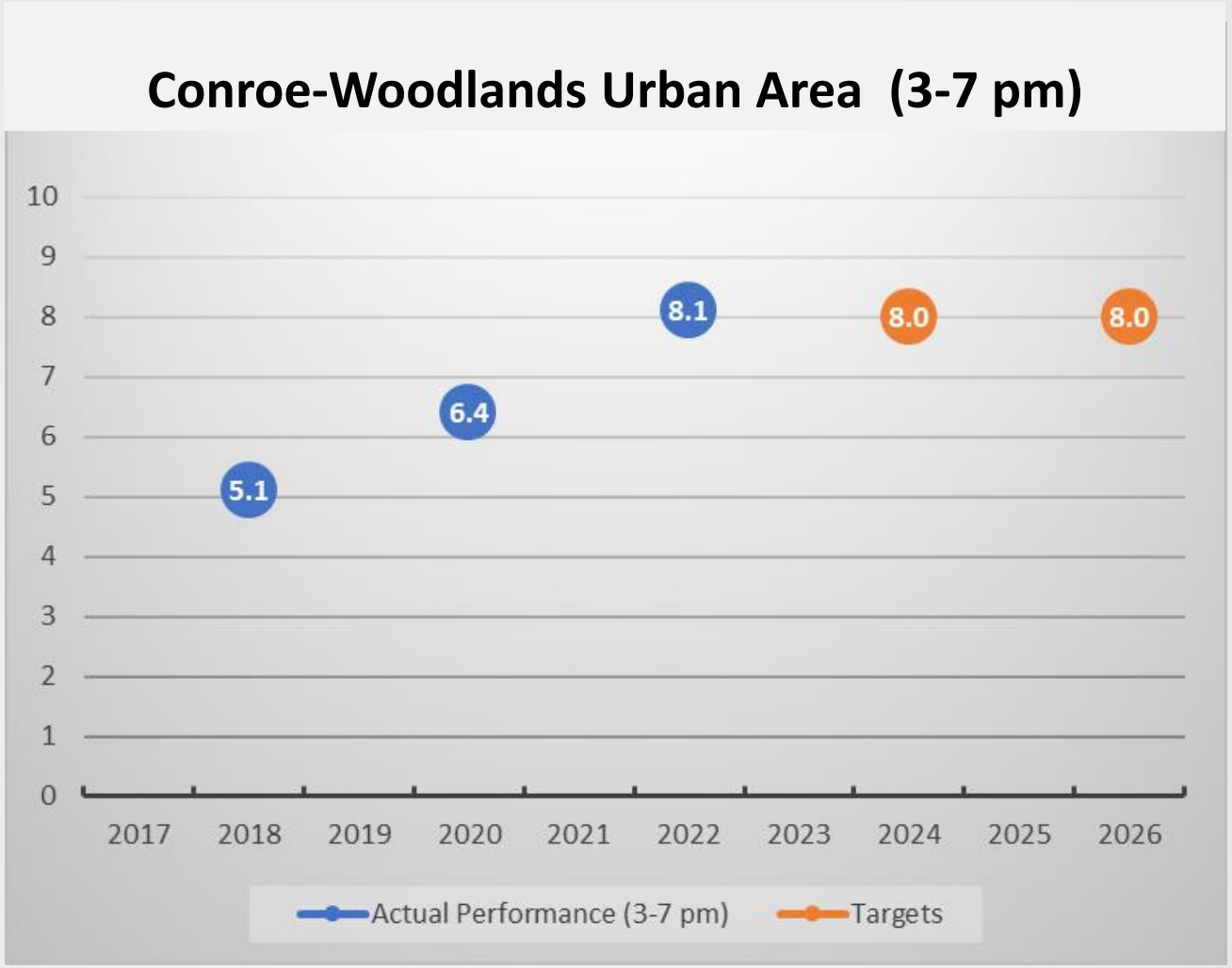

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New target setting requirement for 2024 & 2026

Desired Trend

Percent of Non-Single Occupant Vehicle Trips

Percent of Work Trips made in Non-Single Occupant Vehicles:

- Carpooling
- Riding public transportation
- Walking
- Bicycling
- Working from home
- Taxicab, motorcycle or other means

American Community Survey 5-year averages

Targets met in 2020 and 2022

Desired Trend

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American Community Survey
5-year averages

New target setting requirement for 2024 & 2026

Desired Trend

Congestion Mitigation Air Quality (CMAQ)

On-Road Mobile Source Emission Reductions (kg/day)

NOx and VOC emission reductions from CMAQ projects that went to construction in FY 2018 to 2021.

Nitrogen Oxides (NOx)
Volatile Organic Compounds (VOC)

1st Performance Period (FY 2018 – 2021)	NOx	VOC
4-Year Targets	1,429.077	234.604
4-Year Actuals	1,383.040	98.863
Difference	(46.037)	(135.741)

4-Year Targets were not met

Desired Trend

CMAQ Air Quality – Future Targets

On-Road Mobile Source Emission Reductions (kg/day)

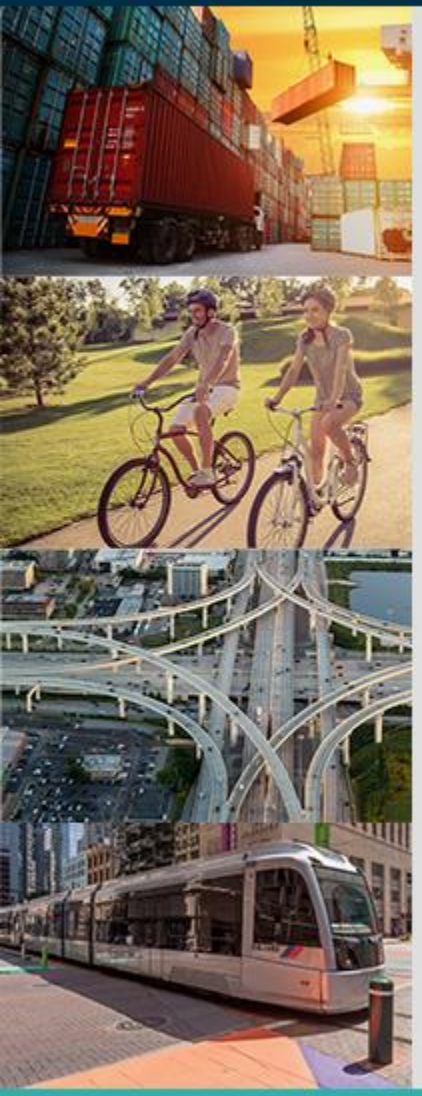
Draft

2nd Performance Period (FY 2022 – 2025)	NOx	VOC
2-Year Targets	221.251	69.939
4-Year Targets	601.465	172.864

Applied a project delivery success rate from TIP projects the 1st performance period to future TIP projects in the 2nd performance period.

Nitrogen Oxides (NOx)
Volatile Organic Compounds (VOC)

Project Types & Strategies



- Air Quality Projects
  - Clean Vehicles
  - Commute Solutions/Outreach
  - Regional Vanpool
  - Transit Pilot Projects
- Construction Projects
  - Bicycle/Pedestrian
  - Intelligent Transportation Systems (ITS)
- Seek opportunities for CMAQ-eligible Projects

Reliability, Congestion & Air Quality Performance Measures

April - May

Data gathering, review and analysis
- H-GAC staff
- TTI
- MPO Coordination

June

Committees' review Information Session – 6/29

July

Committees' performance and draft targets recommendations

Public Comment Period

August

Information
- TAC
- TPC

September

Action
- TAC
- TPC
- Performance Reporting & CMAQ Performance Plans

September 30 deadline

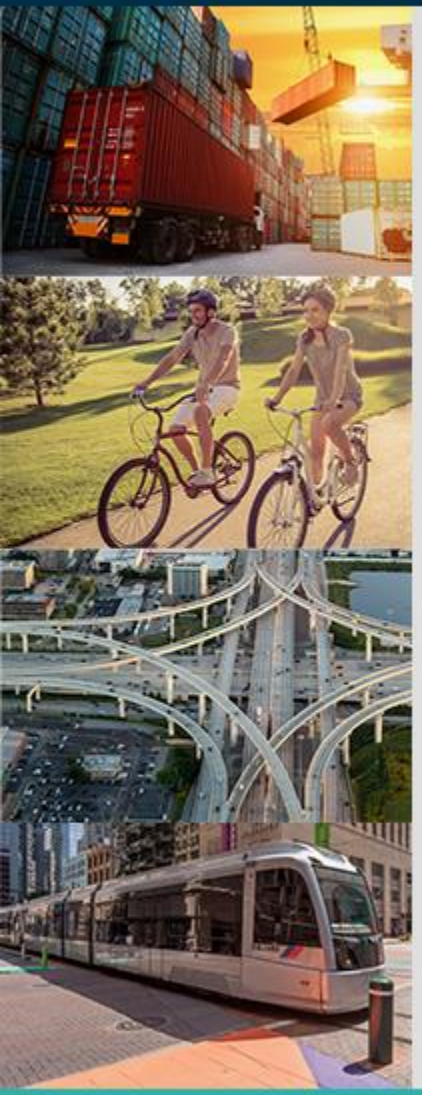
October

- Performance Reporting follow up
- Update TIP Appendix B in Nov. STIP Rev.

DRAFT

TIP, RTP, Transportation Air Quality, and Transportation Systems Management & Operations Subcommittees

Recommendation



Public Comment Period open through August 14

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

Performance Report
https://www.h-gac.com/getmedia/66c3af3f-83be-4738-b34f-5f4603afe305/Appendix-B-FAST-Act-Compliance-Performance-Measures-April-2022

Recommendation for the reporting and targets to be forwarded to the Transportation Advisory Committee (TAC) and the Transportation Policy Council (TPC)

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Quarterly TIP Status Report

TIP Subcommittee

August 3, 2022

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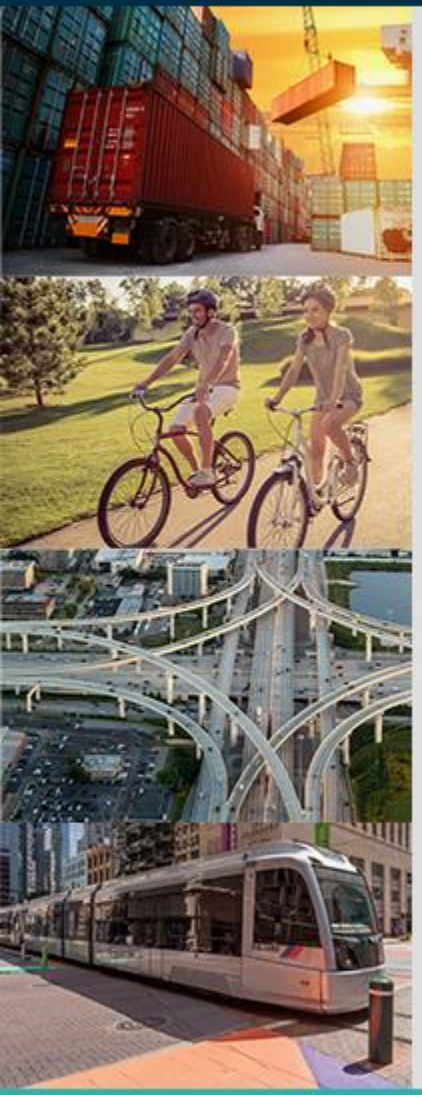
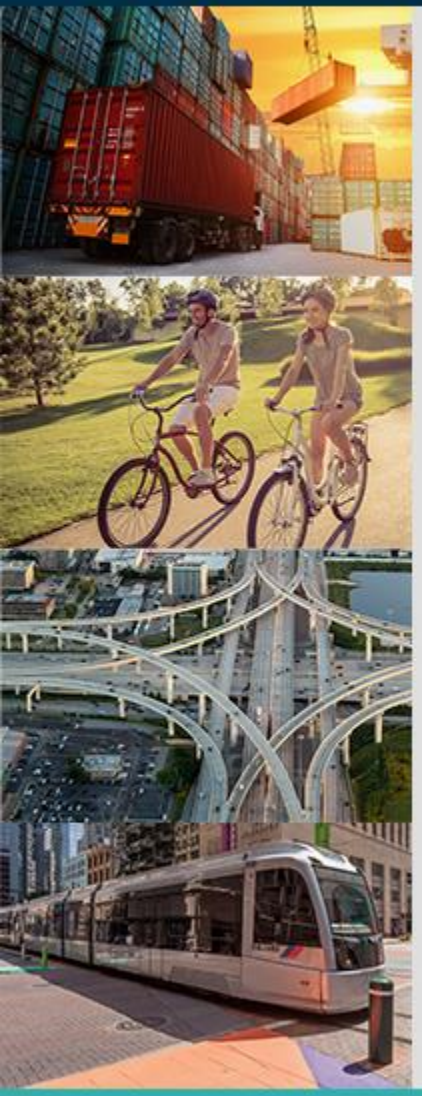
Houston-Galveston Area Council

Quarterly TIP Status - 2022



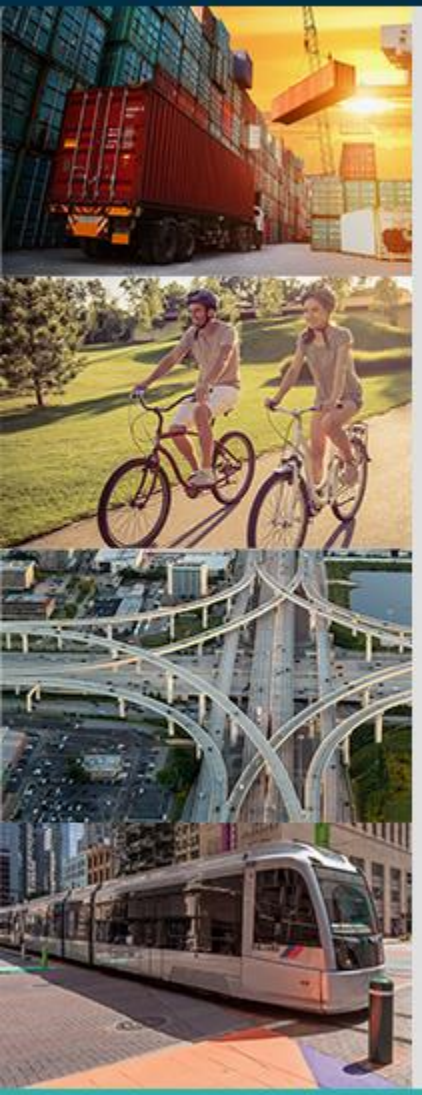
Category 5 – Congestion Mitigation Air Quality (CMAQ) Program	As of July 2022
Federal Funds Allocated in FY 2022	$96,064,920
Number of Projects Let in 2022	3
Total $ Amount for Projects Let in 2022	$51,923,000
Estimated Carryover Funds (FY 2022 to FY 2023)	$44,141,920
Estimated Cumulative Carryover Funds	$218,946,663

Quarterly TIP Status - 2022



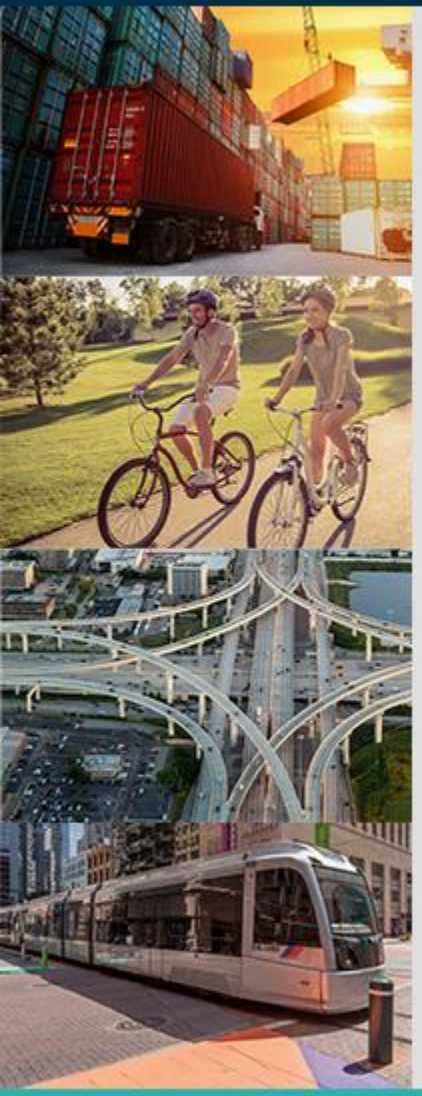
Category 7 – Surface Transportation Block Grant (STBG) Program	As of July 2022
Total Federal Funds Allocated in FY 2022	$203,237,558
Number of Projects Let in 2022	4
Total $ Amount for Projects Let in 2022	$52,621,523
Estimated Carryover Funds (FY 2022 to FY 2023)	$150,616,035
Estimated Cumulative Carryover Funds	$136,827,127

Quarterly TIP Status - 2022



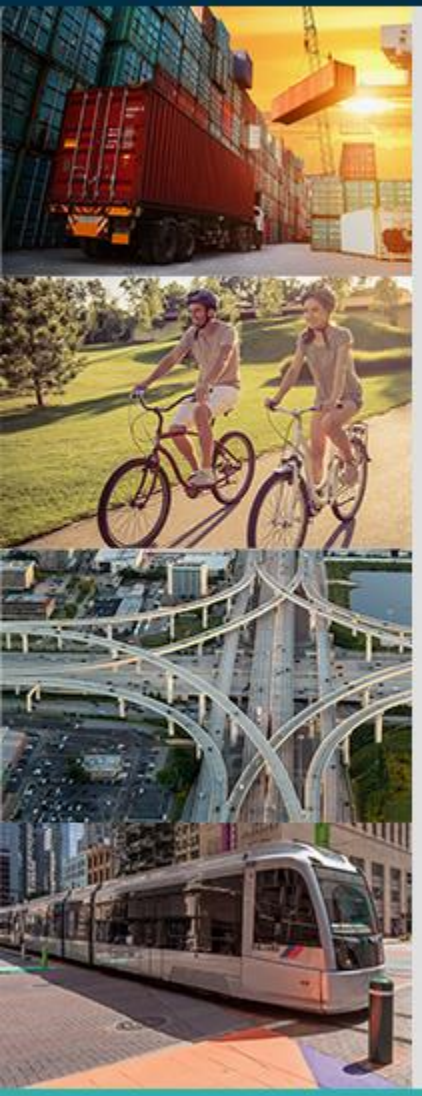
Category 9 – Transportation Alternative Set Aside (TASA) Program	As of July 2022
Total Federal Funds Allocated in FY 2022	$9,385,907
Number of Projects Let in 2022	2
Total $ Amount for Projects Let in 2022	$4,824,000
Estimated Carryover Funds (FY 2022 to FY 2023)	$4,561,907
Estimated Cumulative Carryover Funds	$14,493,037

FY 2021 Programming vs. 2022 Actual Lets



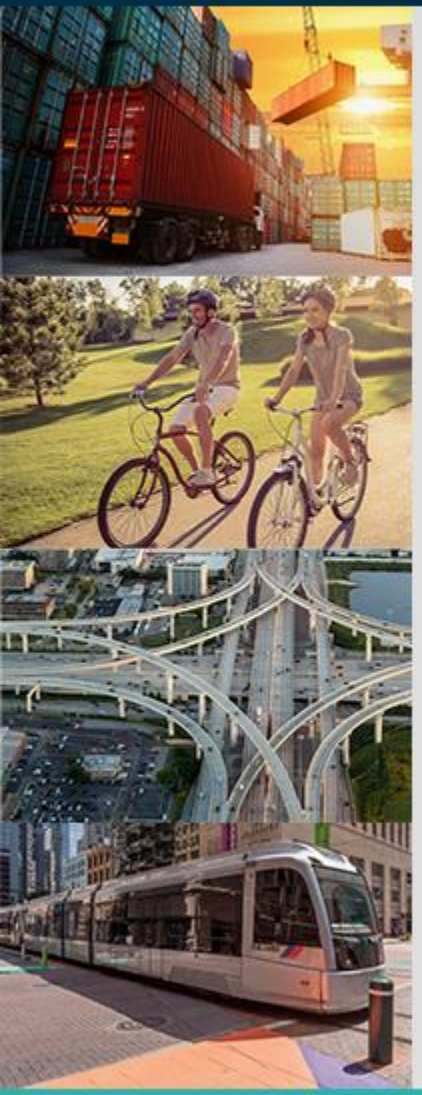
	2022 TIP Projects as of July 31, 2021		2022 Projects Let as of August 3, 2022		Programmed (July 31, 2021) vs. Actual Let (August 3, 2022)	
	Total Programmed	*Number of Projects*	*Total Spent*	*Number of Projects*	*Percentage of Projects*	*Percentage of Money Spent*
CMAQ	$83,457,368	14	$51,923,000	3	21%	62%
STBG	$205,583,387	12	$52,621,523	4	33%	26%
TASA	$7,297,537	3	$4,824,000	2	67%	66%

2023 "Punting"



	2023 TIP Projects (as of August 3, 2022)			
	Number of Projects	*Amount*	*Number From Previous Years*	*Percentage of Projects From Previous Years*
CMAQ	17	$335,335,738	8	47%
STBG	28	$375,254,329	12	43%
TASA	6	$17,454,791	5	83%

2022 Let vs. 2023 Programmed



- 31 Projects Let in 2022 across all Categories of Funding
- Over 200 Projects Programmed for FY 2023 across all Categories of Funding

"Work Together to Guess Better"

- Quarterly Project Status Meetings
- Quarterly Project Status Worksheets – "High Level" 25 Questions
  - Dropdown responses – Consistent Comparisons
  - Easy/quick response options: "Not Needed, Complete, More Than ½ Way Complete, Less Than ½ Way Complete and Not Started"
- Follow Up Questions (If Needed) – More Detailed Questionnaire for those tasks that do not seem on target based on the let date

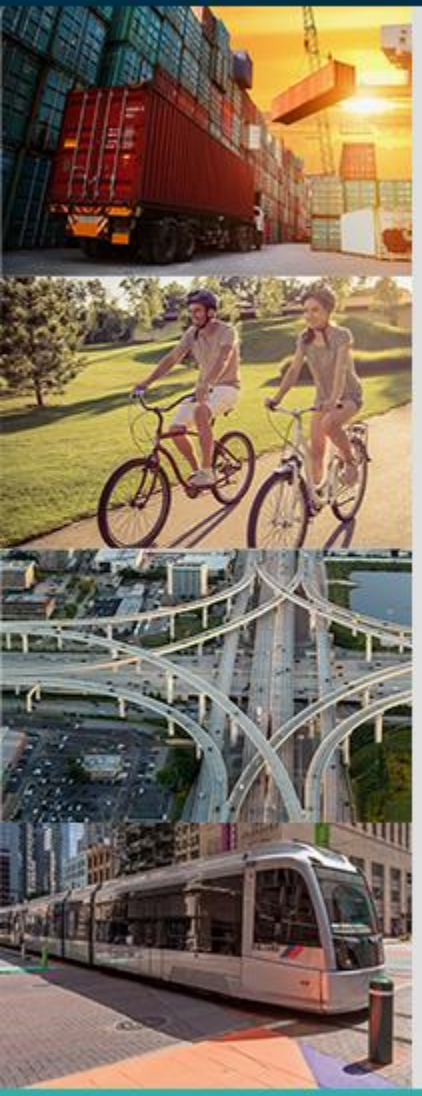
Sponsor Meetings

- Focus on 2023-2024 TIP Projects
- Of 30 Sponsors with 2023-2024 TIP Projects, we have met with or set meetings with 25 project sponsors
- Meeting Minutes Prepared and Project Status Worksheet Populated

Next Steps- Risk Assessment

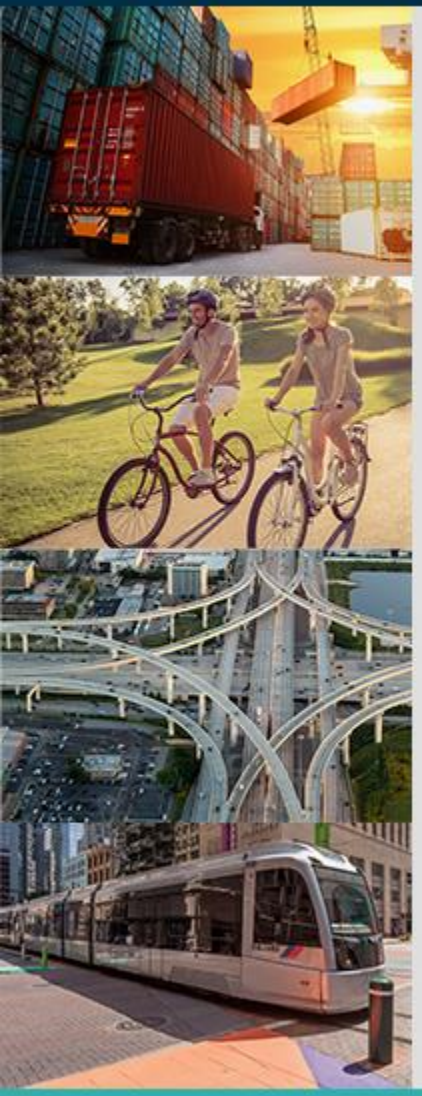
- Assign and present quantifiable measures of “readiness” based on project status worksheet responses and let dates
- More detailed Questionnaire (if needed)

Goals



- Identify correct FYs for projects
- Preemptively plan and identify schedule risks to help keep projects in the originally proposed FY
- Develop potential solutions to assist sponsors with "schedule risk items"
- Advance projects where possible

Contacts



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Program Manager

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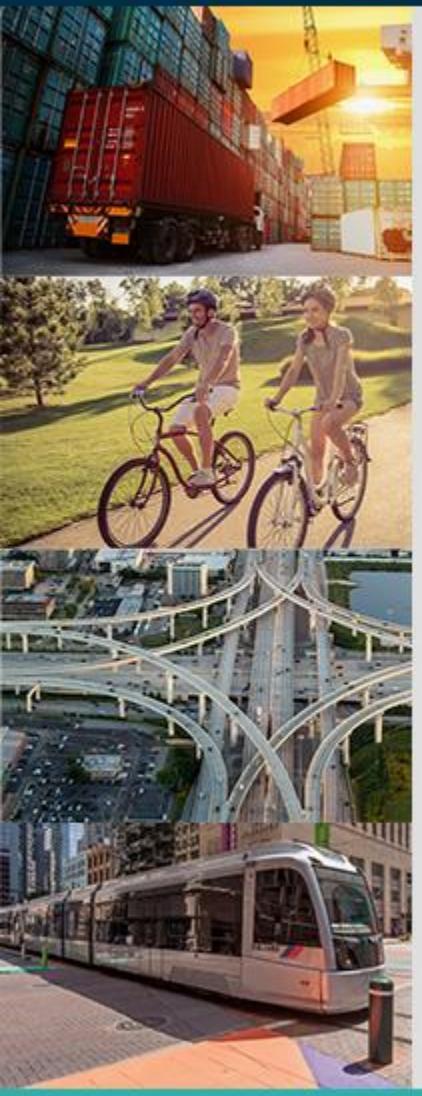
Project Selection Process Update

TIP Subcommittee
August 3, 2022

Regional Collaboration • Transportation Planning • Multimodal Mobility

METROPOLITAN PLANNING ORGANIZATION

Project Selection Goals



- Develop a workable, fair Project Selection Process
- Implement TPC Workgroup Priorities
- Spend down growing carryover balances
  - ~$190M CMAQ
  - ~$130M STBGP
- Establish funded project list
  - Select projects for Transportation Improvement Program, 10-Year Program, and 20+-year Regional Transportation Plan

Draft Statements of Interest

Timeframe	# of Projects	Total Cost
Short term (0-5 Years)	302	$9.7 B
Medium term (6-10 Years)	195	$22.2 B
Long term (> 10 Years)	78	$15.5 B
Total	575	$47.4 B

- Statements of interest submitted by sponsors (as of July 29th)
- Duplicate projects submitted
- Projects with no estimated costs
- Review federal eligibility

Submitted Projects - Projects by Type

Project Type	Short (302)	Medium (195)	Long (78)
Highway	215	150	52
Transit	27	16	23
Bicycle/Pedestrian	51	12	2
Freight	6	5	-
Other (Detention Pond, Pump Station Ferry, etc.)	3	12	1

Short Range Projects - Funding Analysis

Project Type	Projects Submitted	Previously Funded (Fed, 3LC, 3DB & Toll)	Funding Gap
Highway (215)	$7.4B	$2.4B	$5.0B
Transit (27)	$1.4B	$632M	$762M
Bicycle/Pedestrian (51)	$384M	0	$384M
Freight, Other (9)	$488M	0	$488M

Medium Range Projects - Funding Analysis

Project Type	Projects Submitted	Previously Funded (Fed, 3LC, 3DB & Toll)	Funding Gap
Highway (150)	$18B	$3.5B	$13.5B
Transit (15)	$3.1B	$2.5B	$589M
Bicycle/Pedestrian (12)	$229M	$119M	$110M
Freight, Other (18)	$1.2B	$287M	$900M

Submitted Projects – Desired Outcomes

Desired Outcomes	Short (302)	Medium (195)	Long (78)
Crash Reduction/Safety	188	113	54
Delay Reduction/Congestion relief	163	122	59
Accessibility/Connectivity	144	51	40
State of Good Repair	79	40	6
Strengthen Regional Economic Competitiveness	58	39	12
Resiliency/Flood Mitigation	38	37	6
Improved Freight Connectivity	27	25	7
Conserve and Protect Natural and Cultural Resources	15	6	1

Submitted Projects – Improvement Type

Improvement Type	Short (302)	Medium (195)	Long (78)
Safety Improvements	182	123	55
Pedestrian Improvements	144	75	28
Bicycle Improvements	99	48	21
Intersection Improvements	92	45	17
Added Capacity	90	96	28
Access Management	75	54	15
Transit	63	34	35
Freight Movement	41	35	12
Other	39	39	15
Policy	15	9	2

Next Steps

- Assess projects eligibility for federal funding [MPO Staff]
  - Not all projects are eligible for federal funding
  - Can be complete after mapping of the projects
- Focus on new short-range projects? [Committee Discussion]
  - Investment Categories
  - Based on statements of interests submitted desired outcomes
- Initial eligibility screening for various funding programs [MPO Staff]
  - CMAQ
  - STBGP
  - Other Grants from IIJA (Resiliency, Carbon reduction etc.)

Next Steps

- Follow-up discussions with project sponsors [HGAC Staff]
  - Detailed scope
  - Project readiness

- Develop strategy for funding "high-readiness" projects [Future Discussion]
- Identify opportunities to accelerate project prioritization and funding [Future Discussion]
- TIP Subcommittee discussion on progress and process
- Coordination with TPC workgroup and possible meeting
- Implement ongoing project interest statement submittal process
- Develop Final Scoring Criteria and Selection Process

Project Readiness – Short Range

- Stakeholder Coordination
- Environmental
  - Categorical Exclusion (CE)
  - Environmental Assessment (EA)
  - Environmental Impact Statement (EIS)
  - Re-evaluation
- Estimated Start and Completion dates
- Level of Design
  - PS & E - 30%, 60%, 90%
- Preliminary Drainage Design – Level of Completion

Project Readiness – Short Range

- Right of Way Acquisition – Level of Completion
  - Parcels needed
- Environmental, Permits, Issues, and Commitments (EPICS)
- Railroad Agreements
- Utility Agreements
- USACE, USCG Permits

Discussion Only