



MEMORANDUM

TO: TPB Technical Committee
FROM: Sergio Ritacco and Stacy Cook, Transportation Planners
SUBJECT: Evaluation of Performance Measures in Long-Range Transportation Plan Analyses
DATE: July 1, 2020

This memo provides an overview of the status of an effort to refresh the TPB performance measures. The purpose of this activity is to:

- review existing measures used to evaluate system performance against TPB policy framework;
- identify planning policy focus areas and the gaps in what we measure; and
- identify and develop methodologies for additional measures to be used to evaluate the system performance of the updated long-range transportation plan (LRTP).

Please direct questions and comments to Sergio Ritacco, (202) 962-3232, sritacco@mwkog.org, or Stacy Cook, Principal Transportation Planner, (202) 962-3335, scook@mwkog.org.

BACKGROUND

Staff, aided by consultant support (study team), have been examining the various analysis performed on long-range transportation plan, which evaluates some specific aspect(s) of system performance. This examination was the first step in assessing if these various analyses were collectively describing the multi-modal, multi-disciplinary performance of the transportation system the planned investments is anticipated to provide. The work seeks to recommend a collection of measures, and methods of developing them, which addresses TPB's multi-modal, multi-disciplinary planning policy focus areas. Such a comprehensive set of performance measures will better inform regional policymaking, provide information and insights that might help the TPB members target investments, better address system deficiencies, mitigate negative externalities, and improve overall transportation system performance. A high-level of focus is on being responsive to and guided by the TPB policy framework and touch-on transportation issues of importance to our region.

IDENTIFYING REGIONAL PLANNING POLICY FOCUS AREAS

The study team conducted a review of the TPB policy framework to identify common themes and topics that arose from the documents. The TPB policy framework includes the TPB Vision, COG Region Forward, TPB Regional Transportation Priorities Plan (RTPP), and Visualize 2045. Referred to as 'planning policy focus areas,' themes and topics from these documents are referred to in singular terms like 'resiliency, equity, and safety'; rather than as statements.

Based on the review, the study team has identified planning policy focus areas. Please review to the TPB Policy Framework Summary provided with this memorandum for policy statement detail. TPB Technical Committee comments on the draft list are welcome.

Listing of the identified planning policy focus areas

- Accessibility
- Affordability
- Air Quality
- Comprehensive Multimodal System
- Connectivity
- Economy
- Emerging Mobility and Tech
- Environmental / Resiliency Sustainability
- Equity
- Land Use
- Mobility/ Reliability
- Operational Efficiency
- Public Health
- Safety
- State of Good Repair

The above list of planning policy focus areas was developed on the basis on previous and on-going TPB work activities and discussions at the board and various committees/sub-committees. The above represent an area rather than a specific performance indicator or measure. For example, the area of Connectivity includes measures such as Change in Population and Employment in Regional Activity Centers, number of Regional Activity Centers in the proximity of High Capacity Transit stations. The study team documented and examined all the TPB performance measures used in various analyses in developing the above list of areas of performance.

REVIEW OF MEASURES AGAINST EXISTING PLANNING POLICY FOCUS AREAS:

The study team then conducted a review of existing, regional long-range planning analyses to compare how their performance measures compare against the above planning policy focus areas. The analyses and their measures reviewed are for the current long range transportation plan, Visualize 2045 and are: Performance Assessment of Visualize 2045; the Regional Air Quality Conformity Analysis, Environmental Justice Analysis, Performance-Based Planning and Programming target areas, Congestion Management Planning reporting requirements and measures in the Long-Range Plan Task Force Final Report. The crosswalks summarizing results from this review are presented in Tables 1- 6 of this memorandum.



Table 1 Long-Range Transportation Plan and Planning Policy Focus Area Crosswalk

**Long Range Transportation
 Plan Analysis**

Planning Policy Focus Areas

	Accessibility/ Connectivity	Affordability	Air Quality Conformity	Comprehensive Multimodal System	Economy	Emerging Mobility and Tech	Environmental / Resiliency / Sustainability	Equity	Land Use	Mobility/ Reliability	Operational Efficiency	Public Health	Safety	State of Good Repair
GHG - total emissions & per capita			✓											
Daily Mode Share - SOV,HOV,Transit,Walk/Bike - Reg				✓						✓				
Daily Mode Share - SOV,HOV,Transit,Walk/Bike - Sub-Reg				✓						✓				
VMT Per Capita										✓				
Travel on Reliable Modes (HOV & Transit)										✓				
Work Mode Share - SOV,HOV,Transit,Walk/Bike - Reg				✓						✓				
Work Mode Share - SOV,HOV,Transit,Walk/Bike - Sub-Reg				✓						✓				
% Lane Miles Congested										✓				
Vehicle Hours of Delay										✓	✓			
Change in Jobs Accessible by Transit	✓													
Change in Jobs Accessible by Auto	✓													
RAC Proximity to HCT	✓								✓					
POP Proximity of HCT - Reg & Sub-Reg	✓			✓					✓					
EMP Proximity to HCT - Reg & Sub-Reg	✓			✓					✓					
EMP Growth within RAC	✓								✓					
POP Growth within RAC	✓													

Table 2 Air Quality Conformity Analysis and Planning Policy Focus Area Crosswalk

Air Quality Conformity Analysis	Planning Policy Focus Areas													
	Accessibility/ Connectivity	Affordability	Air Quality Conformity	Comprehensive Multimodal System	Economy	Emerging Mobility and Tech	Environmental / Resiliency / Sustainability	Equity	Land Use	Mobility/ Reliability	Operational Efficiency	Public Health	Safety	State of Good Repair
VOC Emissions - tons/day			✓											
NOx emissions - tons/day			✓											

Table 3 Congestion Management Report and Planning Policy Focus Areas Crosswalk

Congestion Management Report	Planning Policy Focus Areas													
	Accessibility/ Connectivity	Affordability	Air Quality Conformity	Comprehensive Multimodal System	Economy	Emerging Mobility and Tech	Environmental / Resiliency / Sustainability	Equity	Land Use	Mobility/ Reliability	Operational Efficiency	Public Health	Safety	State of Good Repair
Travel Time Index (TTI) (annual, monthly, time of day and day of week, peak periods)										✓	✓			
Planning Time Index (annual)										✓	✓			
Percent of Congested Miles (annual)										✓	✓			
TTI * Miles										✓	✓			
TTI * Miles * AADT										✓	✓			
Travel Time on selected commute routes (peak hours and time of day, both in annually)										✓	✓			

Table 4 Environmental Justice Analysis of Visualize 2045 and Planning Policy Focus Areas Crosswalk

**Environmental Justice
Analysis of
Visualize 2045**

Planning Policy Focus Areas

	Accessibility/ Connectivity	Affordability	Air Quality Conformity	Comprehensive Multimodal System	Economy	Emerging Mobility and Tech	Environmental / Resiliency / Sustainability	Equity	Land Use	Mobility/ Reliability	Operational Efficiency	Public Health	Safety	State of Good Repair
<i>Avg. number of jobs accessible by auto</i>	✓							✓						
<i>Avg. number of jobs accessible by transit</i>	✓							✓						
<i>Avg. number of jobs accessible by HCT</i>	✓							✓						
<i>Avg. number of jobs accessible by bus</i>	✓							✓						
<i>POP with walkable access to HCT</i>	✓							✓	✓					
<i>POP with walkable access to bus service</i>	✓							✓	✓					
<i>Avg. commute time by auto</i>								✓		✓				
<i>Avg. commute time by transit</i>								✓		✓				
<i>Avg. travel time to closest hospital by auto</i>								✓		✓				
<i>Avg. travel time to closest hospital by transit</i>								✓		✓				

Table 5 Performance-Based Planning and Programming and Planning Policy Focus Areas Crosswalk

Performance-Based Planning and Programming

Planning Policy Focus Areas

	Accessibility/ Connectivity	Affordability	Air Quality Conformity	Comprehensive Multimodal System	Economy	Emerging Mobility and Tech	Environmental / Resiliency / Sustainability	Equity	Land Use	Mobility/ Reliability	Operational Efficiency	Public Health	Safety	State of Good Repair
<i>Number of fatalities</i>													✓	
<i>Fatality rate (per 100 million VMT)</i>													✓	
<i>Number of serious injuries</i>													✓	
<i>Serious injury rate (per 100 million VMT)</i>													✓	
<i>No. of non-motorized fatalities & serious injuries</i>													✓	
<i>No. of reportable fatalities and rate per total VRM by mode</i>													✓	
<i>No. of reportable injuries and rate per total VRM by mode</i>													✓	
<i>No. of reportable events and rate per total VRM by mode</i>													✓	
<i>Mean distance between major mechanical failures by mode</i>														✓
<i>% of IS pavements in Good & Poor conditions</i>														✓
<i>% of Non IS NHS pavements in Good & Poor conditions</i>														✓
<i>% of NHS bridges in Good & Poor conditions</i>														✓
<i>% of PMT on the IS System that are reliable</i>										✓				
<i>% of PMT on the non-IS NHS that are reliable</i>										✓				
<i>Truck Travel Time Reliability Index</i>										✓				
<i>Annual hours of peak-hour excessive delay per capita</i>											✓			
<i>Percent of non-single-occupant vehicle travel</i>				✓							✓			
<i>Total emissions reduction (Criteria pollutants)</i>			✓				✓					✓		

Table 6 Long-Range Plan Task Force and Planning Policy Focus Areas Crosswalk

Long-Range Plan Task Force	Planning Policy Focus Areas													
	Accessibility/ Connectivity	Affordability	Air Quality Conformity	Comprehensive Multimodal System	Economy	Emerging Mobility and Tech	Environmental / Resiliency / Sustainability	Equity	Land Use	Mobility/ Reliability	Operational Efficiency	Public Health	Safety	State of Good Repair
Travel Time (SOV)										✓	✓			
Travel Time (HOV)										✓	✓			
Travel Time (Transit)										✓	✓			
Daily Vehicle Hours of Delay	✓										✓			
Jobs Accessible by Transit	✓				✓			✓						
Jobs Accessible by Auto	✓				✓			✓						
Mode Share: SOV				✓					✓					
Mode Share: HOV				✓					✓					
Mode Share: Transit				✓					✓					
Mode Share: Non-Motorized				✓					✓					
Travel on Reliable Modes**									✓					
VMT daily	✓				✓									
VMT daily per capita	✓							✓						
Share of Households in Zones with High-Capacity Transit								✓						
Share of Jobs in Zones with High-Capacity Transit				✓	✓			✓						
VOC Emissions			✓				✓					✓		
NOx Emissions			✓				✓					✓		
CO2 Emissions			✓				✓					✓		



NEXT STEPS

Staff will continue to accept and consider additional TPB Technical Committee comments and feedback. Following the July presentation, staff will seek to complete the following activities:

- Continue to review, test, and analyze feasibility of proposed new and existing measures;
- Vet and discuss proposed measures;
- Using existing data sources, test the new measures and consider resources needs for new/improved data
- Provide update to TPB Technical Committee

Please reach out to Sergio Ritacco, Transportation Planner, at (202) 962-3232, sritacco@mwkog.org, or Stacy Cook, Principal Transportation Planner, (202) 962-3335, scook@mwkog.org, for any questions or comments.