

DRAFT

November 13, 2018

TO: MSP Task Force

FROM: Steve Lantz, SBCCOG Transportation Director

SUBJECT: MSP Performance Measurement and Metrics

Cambridge Systematics, Inc. prepared an LRTP Draft Technical Memo for Metro in September 2016 that described the methodology used to generate the performance metrics used to evaluate Metro's 2017 Long Range Transportation Plan (LRTP) update.

The Metro Board has identified five LRTP performance themes: Mobility, Economy, Accessibility, Safety, and Sustainability & Quality of Life. Major highway projects (e.g., carpool lanes, managed lanes, and mixed-flow lanes) and transit projects (e.g., bus rapid transit, light rail, and heavy rail) were evaluated separately for the project-level performance analysis utilizing the Metro Travel Demand Model (TDM) and Geographic Information System (GIS) analysis tools. Projects and programs not included in the major highway and transit performance assessment were analyzed by performance theme using the qualitative "Harvey Ball" scoring system established through the Mobility Matrix processes in 2015.

The Measure M Expenditure Plan includes numerous "non-modeled" projects and programs that cannot be analyzed using the Travel Demand Model. These non-modeled transportation projects and programs include investments in active transportation, goods movement, highway and arterial efficiency, ITS/operational improvements, interchange improvements, complete streets, first-last mile programs, transit system efficiency, bus rapid transit (BRT), state of good repair, modal connectivity programs, and mobility improvement programs. Since many of these projects and programs can result in improvements to mobility, economy, accessibility, safety, and sustainability/quality of life, a methodology was developed by Cambridge Systematics to capture the performance impacts of these non-modeled projects.

Based on the available literature, project benefits were based on performance improvements per investment dollar. The performance metrics included in the non-modeled projects/programs systemwide analysis included: person hours of delay (PHD), safety, vehicle miles traveled (VMT), and greenhouse gas (GHG) emissions benefits by project type and the total benefit for most of the non-modeled projects and programs.

Some of the non-modeled projects and programs were excluded from the analysis due to lack of information on project/program contents and/or no available research literature for the performance metric. Table 5 of the 2016 Cambridge Systematics report presented the factors utilized to estimate the additional systemwide performance impacts for the Measure M Expenditure Plan. For each project or program not modeled, the estimated cost was multiplied by the performance factor value for the associated performance category.






**Table 5 Non-Modeled Projects/Programs Performance Factor Values per \$Million Spent**

SYSTEMWIDE Project/Program Performance Category	Mobility	Safety	Sustainability & Quality of Life	
	Annual Hours Reduced per \$Million Spent	Annual Fatalities Reduced per \$Million Spent	Annual VMT Reduced per \$Million Spent	Annual Tons GHG Reduced per \$Million Spent
Interchange Improvements	9,000	0.0003	-22,000	20
HOV Direct Connectors	5,600	0.0004	-3,600	10
Highway Efficiency Improvements	21,000	0.001	-28,000	-30
Highway ITS/Operational Improvements	55,000	0.01	22,000	300
Highway Realignment	10,000	0.0025	-	10
Goods Movement Program	11,000	0.02	-27,000	100
Highway Demand Based Programs	9,000	0.0005	67,000	130
Arterial Program	41,000	0.003	-16,000	180
Subregional BRT Projects	10,000	0.0006	65,000	70
Subregional Bus Projects	4,700	0.0005	49,000	30
Streetcar	4,400	0.0003	46,000	20
Active Transportation	900	0.0003	23,000	600
First-Last Mile	NA	NA	365,000	150
Safe Routes to School (SRTS)	NA	NA	690,000	300
Multimodal Connectivity	6,300	0	63,000	120
Complete Streets	7,000	0.008	57,000	30
Transportation System and Mobility Improvements	NA	NA	1,500,000	250

### Qualitative Project Performance Evaluation Methodology

Some of the projects within the Measure M Multi-Year Sub-Regional Programs were not specifically identified as major highway or transit projects by Metro and could not be modeled using the Metro TDM. These projects need to be evaluated qualitatively through the Mobility Matrix Harvey Ball assessment process to estimate how projects and programs address the five themes in the performance analysis.

The project application needs to include a Harvey Ball projection of the anticipated performance of each project for each of the five themes (mobility, economy, accessibility, safety, and sustainability /quality of life). The resulting performance also needs to be reported at the conclusion of the project. Within each of the five themes, the appropriate Harvey Ball result should be projected/ reported using the following criteria:

To achieve the following score in a single theme:	Project must meet the corresponding criterion:
 <b>HIGH BENEFIT</b> 100 % Score	Significantly benefits one or more theme goals or metrics on a <u>subregional</u> scale
 <b>MEDIUM BENEFIT</b> 50% score	Significantly benefits one or more theme goals or metrics on a <u>corridor or activity center</u> scale
 <b>LOW BENEFIT</b> 25% score	Addresses one or more theme goals or metrics on a <u>limited/localized</u> scale (e.g., at a single intersection)
 <b>NEUTRAL BENEFIT</b> 0% score	Has no cumulative positive or negative impact on theme goals or metrics
 <b>NEGATIVE IMPACT</b>	Results in cumulative negative impact on one or more theme goals or metrics

## Funding available in MSP Programs

South Bay Multi-Year Sub-Regional Funding Availability								
MSP Program	Unallocated Balance	FY 2017-18	FY 2018-2019	FY 2019-2020	FY 2020-2021	FY 2021-2022	FY 2022-2023	Total 6-Year Funding Allocation
HEOI	\$ 11,000,000	\$ 11,286,000	\$ 11,579,438	\$ 11,868,932	\$ 12,153,776	\$ 12,495,297	\$ 70,383,443	
MSP I	\$ 3,500,000	\$ 3,591,000	\$ 3,684,366	\$ 3,776,474	\$ 3,867,111	\$ 3,975,776	\$ 22,394,727	
MSP II	\$ 19,566,667	\$ 20,075,400	\$ 20,597,361	\$ 21,112,295	\$ 21,618,990	\$ 22,336,483	\$ 125,307,196	
<b>Total</b>	<b>\$ 34,066,667</b>	<b>\$34,952,400</b>	<b>\$35,861,165</b>	<b>\$36,757,701</b>	<b>\$37,639,877</b>	<b>\$ 38,807,556</b>	<b>\$ 218,085,366</b>	
<b>Project Development Funding (0.5% of Measure M in MSP) = \$872,922, of which \$134,410 for FY 2022-2023 is unexecuted.</b>								

Notes:

- (a) Project development funding (0.5%) amount based on Measure M funding only.
- (b) Includes all funding sources programmed in the Expenditure Plan (page 3 of Attachment A) to subregional program.
- (c) Difference between 2018 Project Development Funding and Executed Agreements.
- (d) Forecasts assume inflation.