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Memorandum

TO: Partnership Technical Advisory Committee DATE: January 31, 2011

FR: Dave Vautin and Lisa Klein W.I.

RE: RTP Transportation Project Performance Assessment – Preliminary Proposal

In order to help identify which transportation projects and programs should be considered for inclusion in the Draft Financially Constrained SCS/RTP, MTC will conduct a project performance assessment of transportation projects and programs submitted through the call for projects. The assessment will be similar to that performed as part of *Transportation 2035*.

What is Project Performance Assessment?

Project performance assessment is designed to identify projects and programs that advance the SCS/RTP goals, support the SCS land use strategy, and are cost-effective. To the extent practical and possible, the results of the assessment will allow us to quantitatively and qualitatively compare the merits of various transportation projects throughout the Bay Area. The analysis will aim to identify outliers that perform either very well or very poorly relative to other potential transportation investments. The results of the analysis will help inform the Commission's discussions of the trade-offs of various transportation investment strategies when selecting a set of projects for inclusion in the financially-constrained Draft SCS/RTP. This information will be supplemented by the Detailed Scenario Assessment results, which will capture the interactions among projects and between transportation projects and land use, as well as the Commission's policy discretion.

Approach to Project Performance Assessment

We propose to conduct the assessment based on quantitative and qualitative methodologies developed with advice from partner agencies, local government and other stakeholders and approved by the MTC Planning Committee. Table 1 outlines MTC staff's initial thoughts about the approach to assess transportation projects and programs.

Goals Assessment *(largely qualitative)* – We propose to conduct a goals assessment for all projects. As with Transportation 2035, this analysis will be based for the most part on project types (defined in the Call for Projects) and will assess the degree to which project types meet the SCS/RTP goals and targets based on a defined set of criteria. We propose to engage a panel of stakeholders to assist with the goals assessment process.

Benefit-Cost Assessment *(quantitative)* – For larger projects with regional impacts (see below), we propose to conduct a quantitative assessment. As with Transportation 2035, MTC will use the regional travel demand model to estimate the future impacts of projects and will provide

sponsors an opportunity to review results for reasonableness. We propose to use quantitative, off- model analysis for regional programs (such as TLC and 511) based on research.

The quantitative assessment will be based primarily on a benefit-cost ratio that captures benefits corresponding with the adopted SCS/RTP targets - to the extent they can be assessed quantitatively – but may include other measures that staff believes are important for capturing a full range of impacts to consider in a benefit-cost assessment. (See list in Table 1.) The goals analysis will capture qualitatively those goals that cannot be assessed based on model results. If time allows, staff would like to capture benefits and costs for the full RTP-period as opposed to annualized results for the horizon year only, as was done for Transportation 2035. This will capture the benefits of projects that can be implemented immediately, which is a key consideration for greenhouse gas reduction.

We are aware of concerns that changes in travel time and delay dominated the benefit-cost calculation in Transportation 2035 thereby masking other impacts such as emissions reduction. Over the next couple of months, staff will explore potential approaches to address this concern:

- Sensitivity testing to understand the impact of travel time on the relative ranking of projects**.**
- Reviewing emerging practices for valuing travel time savings. There is considerable research and debate on the best way to value travel time savings. One school of thought is to discount small increments of time savings (1 to 2 minutes) since individuals can't leverage these minimal travel time benefits in any meaningful way. Another approach is to adjust the value of time based on the trip purpose since research shows the value of time can vary significantly on this basis. A third approach posits improved reliability is more important than reduced travel time.
- Reviewing the results of the B/C ratio to ensure reasonable and meaningful output. We could rate our confidence in the B/C score for each project based on what we know about the project and strengths and weaknesses of the methodology. For example, some types of projects and their primary impacts are more-readily represented in the travel model.

Projects Subject to Analysis

Similar to *Transportation 2035*, all non-committed projects would be subject to qualitative analysis. Due to technical and resource considerations, quantitative analysis would be limited to larger projects as follows:

- All non-committed expansion/operations projects with cost greater than $50 million (in 2011 dollars) and/or with area-wide impacts (e.g. new/enhanced transit service, transit priority measures,, express lanes, freeway/state highway widenings, major arterial connectors/reliever routes, freeway to freeway interchanges)
- Regional programs (e.g. TLC, Bike Network, Lifeline, Local Roads Maintenance and Transit Capital shortfalls, Climate Program, uncommitted portions of 511, Clipper, FPI) beyond current contract period.

In general, project performance assessment will look at the impacts of individual projects, but in certain situations, we may wish to consider the synergistic benefits of a set of projects that would be implemented together and/or that would be too small to evaluate individually. An example of the latter is a multi-phase freeway-to-freeway interchange project.

Process for Defining the Project Performance Methodology

MTC staff will seek input on the general approach at regular meetings of the Partnership Technical Advisory Committee (PTAC), the Regional Advisory Working Group (RAWG) and MTC Policy Advisory Council. For more in-depth advice, we would like to identify a small group of technically-savvy representatives to provide feedback in a **fast-paced, technical discussion**. The group should expect to meet approximately 4 to 5 times in the next 2 months to:

- Review proposals for representing the targets and goals in quantitative terms
- Review results of sensitivity tests of the proposed quantitative methodology
- Review and suggest strategies to address limitations of analysis tools and techniques
- Review potential qualitative criteria for transportation projects and programs

We propose that this group include 15 total members, as listed below. Meetings will be open to the public.

- 5 representatives of transportation agencies from PTAC (at least 2 transit and 2 CMAs)
- 4 representatives of local government
- 3 members of MTC's Policy Advisory Council
- 3 representatives of non-governmental advocacy groups represented on ABAG's Regional Policy Committee

Interested volunteers are asked to email Dave Vautin by February 7 at dvautin@mtc.ca.gov. Please indicate the entity you represent as well as your knowledge of project evaluation, including quantitative analysis using travel models and data. We'll work to ensure broad geographic representation and expertise within the technical group.

Schedule for Transportation Project Performance Assessment

- February to March 2011 – Define methodology
- April 2011 – MTC Planning Committee adopts methodology
- February 2011 – Issue Call for Transportation Projects
- April 30, 2011 – Submittal deadline for transportation projects
- May to July 2011 – Conduct performance assessment and release results
- July 2011 – Define Detailed Scenarios
- October – December – Detailed Scenario Results and discussion of trade-offs to define draft SCS/RTP investments and land use

Attachment 1 – Transportation Project Performance Assessment

	Transportation 2035	**SCS/RTP Approach – Initial Thoughts**

Goals Assessment (largely qualitative)	• All projects (700+) assessed, grouped into 13 project type
	• How well projects address each goal/number of goals addressed
	• Conducted by panel of MTC staff and stakeholders
		• Same as for Transportation 2035 – but reflecting new goals/targets and with added emphasis on:
		  ◦ support for focused growth
		  ◦ statutory goals to reduce carbon dioxide and accommodate future housing demand
		• For larger projects, use quantitative information where available, such as projected CO2 and particulate emissions reduction

Benefit-Cost Assessment (quantitative)	• 60 large-scale uncommitted projects as well as uncommitted regional programs
	• MTC model analysis
	
	1. B/C ratio in 2035 including
	  o Delay
	  o CO2
	  o PM10 and PM2.5
	  o Injuries & fatalities
	  o Direct user costs (vehicle operating/ownership)
	  o Cost savings for on-time maintenance
	2. Cost per reduction on CO2
	3. Cost per reduction in VMT
	4. Cost per low-income household served by new transit
	
	Goals not reflected in B/C are captured through the qualitative assessment
		• Same types of projects but potentially more (perhaps 100) - subject to final policy on committed projects
		• MTC model analysis
		
		1. B/C ratio - over 25 yrs instead of horizon year (if time allows)
		  o Travel time (see notes below)
		  o CO2
		  o PM10 and PM2.5
		  o Health costs associated with changes in active transportation levels
		  o Injuries & fatalities
		  o Direct user costs (vehicle operating/ownership)
		  o Cost savings for on-time maintenance
		
		Goals not reflected in B/C are captured through the goals assessment in a qualitative fashion

Synthesis & Use of Information	• Bubble chart mapping B/C and number of goals addressed • Sponsors “justify” projects with low-B/C before inclusion in the draft plan	• Bubble chart mapping B/C and number of goals addressed • Sponsors must “justify” projects with (a) low B/C or meeting few goals (b) increase in CO2 emissions (c) that do not support draft land use

Considerations	• Four quantitative measures was information overload for the decision makers; prefer to have a single quantitative result	• Consider approaches to address to concern that current B/C model is dominated by travel time
		  o Sensitivity tests of impact of travel time on relative ratings of projects
		  o Review emerging practices for travel time valuation (e.g., discounting small time savings, different values of time based on trip purpose, value of reliability)
		  o Assess significance of B/C results for each project