

In order to inform policy decisions related to project and program selection for Plan Bay Area 2040, MTC will conduct a performance assessment of major, uncommitted projects submitted through the Call for Projects. The assessment will build upon the existing framework, which was informed by a similar working group process in 2011 for Plan Bay Area. This memorandum provides an overview of the project performance assessment process and highlights some key changes proposed as part of this Plan update.

What is Project Performance Assessment?

The objective of the project performance assessment is to identify projects and programs that advance the long-range plan goals, support the region's 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 different transportation investment strategies when selecting a set of projects for inclusion in the financially constrained Draft Plan Bay Area 2040. This information will be supplemented by detailed scenario targets 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

Staff proposes to conduct the assessment using quantitative and qualitative methodologies similar to the assessment in Plan Bay Area. Based on feedback received over the next few months, staff will update the methodology with feedback from partner agencies, local government, policymakers and other key stakeholders. The two main components of the assessment are:

1. Targets Assessment (qualitative) – Staff will evaluate the extent to which each major, uncommitted project supports the region's ability to meet the targets in Plan Bay Area 2040, which the MTC Commission will officially adopt in September 2015. In the last Plan, staff qualitatively evaluated the project's support for each of the targets on a 5-point scale, ranging from 1 to -1, in increments of 0.5. A project received a "1" for a particular target if it strongly supported the target and a "-1" if it had a strong adverse impact on the region's ability to meet the target. The final target score was a sum across targets with the maximum possible score of a 10 and the lowest possible score of a -10. The Performance Working Group will inform the development of the target assessment for Plan Bay Area 2040, including scoring criteria for each target, at a later meeting.
2. Benefit-Cost Assessment (quantitative) – For the same set of projects, staff will evaluate the cost-effectiveness of each project using a benefit-cost assessment. As with Plan Bay Area, MTC will use the regional travel demand model to estimate the future impacts of projects; project benefits will be estimated for year 2040 for this Plan cycle. The benefits will include the full suite of potential measures, not just those identified by the targets. Benefits include travel time, travel time reliability, travel cost, air pollution, collisions, noise, and health. Costs include both capital and operating costs. **Attachment D** provides details of the benefit-cost methodology.

The objective of the performance assessment is to influence the development of the Plan by maximizing the number of cost-effective projects in the Plan and limiting the number of cost-ineffective project or projects with adverse impacts on the performance targets. As with Plan Bay Area, the benefit-cost ratio and the targets score taken together will define the performance for each project. Relative to other projects seeking regional discretionary funding, high-performing projects will have a high benefit-cost ratio **and** a high targets score. Low-performing projects have **either** a low benefit-cost ratio **or** a low targets score. The Performance Working Group will inform the decision of "high" and "low" performance thresholds that will go before the MTC Planning Committee for adoption in Winter 2015.

Staff proposes to retain the low-performer process developed for Plan Bay Area. Project sponsors would have three choices on how to proceed if their project is as a low-performer:

- A. Project sponsors could drop their low-performing project and instead fund other projects identifying as high- or medium-performing.

- B. Project sponsors could re-scope their project to exclude the construction phase or could agree to fund the project using 100% local dollars (exempting their project from the compelling case process).
- C. Project sponsors could submit a compelling case for consideration by the MTC Planning Committee under a set of eligible compelling case criteria. In addition, low-performing projects seeking approval for inclusion in the Plan needed to have a full funding plan (i.e. project needed to be financially feasible).

For the compelling case process, a project could be eligible for inclusion in the Plan if the sponsor documents that the travel model does not adequately capture project benefits; that the project meets federal requirements for reducing air pollution of GHG emissions; or that the project serves one or more Communities of Concern.

Supplemental Assessments

During Plan Bay Area, stakeholders suggested an evaluation of the limitations in the performance methodology. Given that all evaluation methods have limitations, it was important to document known shortcomings of the approach, acknowledgement of which better informed policymakers of the strengths and weaknesses of the performance outcomes. Staff proposes to retain the supplemental assessment developed during Plan Bay Area. These include the benefit-cost confidence assessment and benefit-cost sensitivity testing.

Confidence assessment – this analysis identifies the primary shortcomings of the quantitative assessment approach, including limitations in travel model specificity or calibration, completeness of benefit estimation, and the horizon-year approach.

Sensitivity testing – this analysis documents the impact of benefit valuations on the estimate of cost-effectiveness by varying the valuations of key benefits and evaluating the effects on project ranking.

Project-Level Equity Considerations

Staff proposes to preserve the existing approach for considering equity issues related to individual transportation projects. Similar to Plan Bay Area, all projects subject to performance assessment will be mapped against the Communities of Concern (COC) and Community Air Risk Evaluation (CARE) community boundaries. Staff will use a qualitative approach to identify the project's level of support for these communities and will confirm that the project provides access to residents of the affected community. Staff will meet with the Regional Equity Working Group to seek additional feedback on the equity methodology and to share the preliminary results.

Evaluation of State-of-Good Repair

The major difference between Plan Bay Area and Plan Bay Area 2040 will be the inclusion of a state-of-good repair performance assessment. Plan Bay Area evaluated the performance of state-of-good repair using a sketch-level methodology that monetized different benefits than what was included in the benefit-cost evaluation for the other projects. Given that state-of-good repair projects comprise the majority of funds in Plan Bay Area, MTC has established a Plan priority to better understand the cost-effectiveness of these investments, especially compared to the performance of expansion projects.

Since adoption of the last Plan, staff have developed methodologies for evaluating the benefits of local streets and roads and transit state-of-good repair using the same metrics as for expansion projects. For the first time, staff will evaluate state-of-good repair and expansion projects with the same metrics, utilizing a truly apples-to-apples comparison. A brief description of the new methodology is as follows:

Local Streets and Roads – The methodology involves the connection between pavement condition and vehicle operating costs. Staff forecasts pavement conditions for cities and counties based on funding levels and facility prioritizations using MTC's asset-management software, StreetSaver. A separate model translates pavement condition into vehicle operating costs by type of vehicle, based on the findings in NCHRP Report 720.¹ The vehicle operating cost is the primary input to the travel demand model, which effectively makes trips more expensive if drivers are traveling on roadways in poor condition. This affects auto mode choice and travel costs.

¹ National Cooperative Highway Research Program (NCHRP) Report 720: Estimating the Effects of Pavement Condition on Vehicle Operating Costs

Transit – The methodology involves the connection between asset age and the travel time delay associated with failing infrastructure. Staff forecasts transit asset conditions for transit operators using FTA’s TERM-Lite software. A separate model estimates transit delay as a function of failure frequencies based on TCRP Report 157.² Delay varies by transit operator and mode. For example, the impact of a BART failure leaves a rider with fewer options than if the break down occurred on a Muni bus with available parallel routes. Delay is the primary input to the travel demand model, which effectively increases the travel time on transit modes in poor condition. This affects transit mode choice and travel times.

With both methodologies, staff could evaluate several different levers: variations in funding levels, funding priorities, and geographic priorities. Staff are continuing to refine the packages of state-of-good repair concepts to evaluate during the project performance assessment. For more details on the methodologies, see the following TRB papers:

Local Streets and Roads

<https://mtcdrive.box.com/s/3m44dk1lbuopuhwktq5ruk4pqg83b>

Transit

<https://mtcdrive.box.com/s/x7thxg1reha9oretlvc3fwn39k48r7pv>

Projects Subject to Performance Assessment

As Plan Bay Area 2040 is a limited and focused update to Plan Bay Area, staff proposes to preserve the strong performance framework while at the same time focusing on the most significant transportation investments with a strong policy nexus. As such, staff proposes the following:

1. Raise the project cost threshold to a value higher than \$50 million (in 2017 dollars).
2. Remove the “regionally significant” criterion that required quantitative evaluation of projects less than \$50 million.
3. Only analyze projects that increase transit or roadway capacity, as these investments represent the vast majority of project submittals in terms of dollars.

Focusing the performance assessment will allow staff to perform a comprehensive evaluation of on-going regional planning efforts:

- State-of-Good Repair
 - Local Streets and Roads – different investment levels and prioritizations
 - Transit State of Good Repair – different investment levels and prioritizations
- Managed Lanes Implementation Plan (MLIP)
 - Policies to improve operations of Bay Area freeways
- Core Capacity Transit Study
 - Projects and policies to increase transit service in the Bay Bridge corridor
- Goods Movement
 - Projects and policies to improve conditions along freight corridors for truck and rail

Schedule for Project Performance Assessment

- Refine methodology with Performance Working Group – July/August 2015
- Prepare models and code projects – ongoing through September 30, 2015
- Call for Projects submittal deadline – September 30, 2015
- Run travel model to evaluate projects – October/November 2015
- Release draft results – December 2015
- Release final results – January 2015
- Compelling case process – February 2015
- Scenario and investment trade-off discussion – March 2015

² Transit Cooperative Research Program (TCRP) Report 157: State of Good Repair – Prioritizing the Rehabilitation and Replacement of Existing Capital Assets and Evaluating the Implications for Transit