



TO: Bay Area Partnership Board

Date: October 2, 2015

FR: Ken Kirkey, Director, Planning

RE: Plan Bay Area (PBA) 2040 Performance Targets, Project Performance Assessment and Scenario Development

### **Introduction to the Performance Component of the Plan**

Performance-based planning forms the foundation of the long-range planning process for MTC and ABAG. Plan Bay Area, the region's first integrated Regional Transportation Plan/Sustainable Communities Strategy, included a set of ten performance targets that were used to evaluate over a dozen different scenarios and hundreds of transportation projects. The Plan was the fourth in a series of Regional Transportation Plans adopted by MTC that incorporated both performance measures and associated numeric targets. Performance Targets for Plan Bay Area 2040 do not include every potential target; instead, the list of targets has been designed to reflect the highest-level priorities to be considered in the regional planning process.

On September 11, 2015, the MTC Planning Committee and ABAG Administrative Committee reviewed the revised staff recommendation for Plan Bay Area 2040 goals and performance targets. In addition to amending the staff recommendation to include two new placeholders for targets related to jobs/wages and goods movement, the committees recommended approval of the goals and nine of the thirteen targets in September, deferring action on the remaining four targets until November. On September 17 and September 23, the ABAG Executive Board and MTC Commission, respectively, approved that recommendation. The performance target framework is summarized and next steps are identified in Attachment 1.

### **Project Performance Assessment**

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. This memorandum provides an overview of the project performance assessment process and highlights some key changes proposed as part of this Plan update.

The objective of the project performance assessment is to inform key policy questions related to a simple but critical question: which projects should be included in the Regional Transportation Plan? By adopting the Plan Bay Area 2040 committed projects policy, the Commission took the first step towards establishing the projects and project types that the region will fund and

implement. The project performance assessment will inform the next step of the process by evaluating remaining uncommitted projects. Project performance assessment is one venue for examining the efficiency and effectiveness of projects for inclusion in the regional plan.

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. The project performance assessment is summarized and next steps are identified in Attachment 2.

### **Scenario Development**

ABAG and MTC are beginning the process of developing three land use and transportation scenarios to inform discussions about the strategic update of Plan Bay Area 2040. Scenarios show different options for how the Bay Area can grow and change over time in ways that help us meet our goals for a more prosperous, sustainable, and equitable region. A vital part of the Plan Bay Area 2040 strategic update, scenarios represent alternative Bay Area futures based on distinct land use development patterns and transportation investment strategies.

ABAG and MTC are requesting feedback about our draft scenario concepts to ensure they preserve the character of our diverse communities while adapting to the challenges of future population growth. On October 6 and October 7, ABAG and MTC held two scenario workshops at the Regional Advisory Working Group (RAWG) and ABAG's Regional Planning Committee (RPC), respectively. After a short overview of our Plan Bay Area 2040 scenario development approach, participants had the opportunity to engage in small-group discussions around the initial scenario concepts. Participants were asked for their feedback on the draft scenario concepts, and to prioritize the policy and investment strategies that best shape each alternative.

Once refined, these scenario concept narratives will provide a framework for our scenario alternatives, which will be developed, modeled, and evaluated to understand the effects of different combinations of land use and transportation strategies on our shared goals and targets. The scenario planning process is summarized and next steps are identified in Attachment 3.

### **Emerging Issues**

Although Plan Bay Area 2040 is a limited and focused update of Plan Bay Area, there are several key policy issues that PBA 2040 will advance including support for *Goods Movement*-related transportation infrastructure; relieving *Transit Crowding* in the near-, mid- and long-term; better understanding the impact of *Innovative Transportation*, the burgeoning number and array of innovative, “potentially disruptive” transportation technologies; and, *Climate Adaptation*, ensuring that our transportation infrastructure, shorelines and communities are prepared for emerging challenges related to Climate Change.

Bay Area Partnership Board

Memo – PBA 2040 Performance Targets, Project Performance Assessment and Scenario Development

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Today, we are seeking input and feedback from the Partnership Board. A follow-up meeting will be held in the Spring as we finalize the Plan Bay Area 2040 Investment Strategy.

  
Ken Kirkey

- Attachments:*
1. Project Performance Targets
  2. Project Performance Overview
  3. Scenario Planning Approach
  4. Presentation

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## STAKEHOLDER MEETING ON REMAINING TARGETS

Targets Memo  
October 6, 2015

### Overview

On September 11, 2015, the MTC Planning Committee and ABAG Administrative Committee reviewed the revised staff recommendation for Plan Bay Area 2040 goals and performance targets. In addition to amending the staff recommendation to include two new placeholders for targets related to jobs/wages and goods movement, the committees recommended approval of the goals and nine of the thirteen targets in September, deferring action on the remaining four targets until November. On September 17 and September 23, the ABAG Executive Board and MTC Commission, respectively, approved that recommendation.

Based on the direction received from policymakers, staff has developed a draft recommendation for the four remaining targets slated for review and approval in November (refer to **Table 1**). The purpose of this stakeholder meeting is to seek feedback and engage in collaborative discussion for these remaining targets.

### Current Status

- **Target #2 (Adequate Housing):** Staff was directed by policymakers to continue internal dialogue about the phrasing of the Adequate Housing target. As of this point, a resolution has not yet been reached. Given that there are no new MTC or ABAG proposals on the table beyond what was shown and discussed at meetings in early September, this stakeholder meeting will instead focus on the three remaining performance targets.
- **Target #7 (Risk of Displacement):** Policymakers and stakeholders had a number of questions about this issue and the approach for including it in the performance targets. Staff has incorporated revisions based on feedback and concerns into the three options highlighted on the following page. Staff is requesting your input to inform the selection of the staff recommendation in November.
- **Target #9 (Jobs/Wages):** Staff has reviewed potential targets for feasibility based on direction from policymakers and is seeking feedback on the two options highlighted on the following page.
- **Target #10 (Goods Movement):** Staff has reviewed potential targets for feasibility based on direction from policymakers and is seeking feedback on the proposed target.

**Table 1: Draft Staff Recommendation for Four Remaining Performance Targets** (goals/targets already adopted in gray)

Goal	#	Performance Target
Climate Protection	1	Reduce per-capita CO <sub>2</sub> emissions from cars and light-duty trucks by 15%
Adequate Housing	2	<i>[placeholder pending internal MTC/ABAG dialogue on target phrasing]</i>
Healthy and Safe Communities	3	Reduce adverse health impacts associated with air quality, road safety, and physical inactivity by 10%
Open Space and Agricultural Preservation	4	Direct <b>all</b> non-agricultural development within the urban footprint (existing urban development and UGBs)
	5	Decrease the share of lower-income residents' household income consumed by transportation and housing by 10%
Equitable Access	6	Increase the share of affordable housing in PDAs, TPAs, or high-opportunity areas by 15%
	7	<i>[refer to three options in Table 2 below]</i>
Economic Vitality	8	Increase by 20% the share of jobs accessible within 30 minutes by auto or within 45 minutes by transit in congested conditions
	9	<i>[refer to two options in Table 3 below]</i>
	10	Reduce per-capita delay on the Regional Freight Network by 20%
Transportation System Effectiveness	11	Increase non-auto mode share by 10%
	12	Reduce vehicle operating and maintenance costs due to pavement conditions by 100%
	13	Reduce per-rider transit delay due to aged infrastructure by 100%

### Equitable Access – Risk of Displacement Target (Target #7)

At the joint committees meeting in mid-September, staff presented three potential options for performance targets related to the issue of displacement risk, given that it is not possible to directly forecast displacement. Since that meeting, staff has refined each of the options (note that the underlined text has either been modified or added over the past few weeks), as shown in **Table 2**. Staff is seeking your input as we work to identify a recommended target.

**Table 2: Options for Displacement Risk Target**

Option	Performance Target	Pros	Cons
1	Reduce the share of <u>low- and moderate-income renter</u> households that are at <u>an increased</u> risk of displacement to 0%	Addresses displacement throughout the entire region. Assumes no net increase in displacement risk compared to conditions in 2005, the Plan baseline year.	Does not address PDAs, although what happens in PDAs affects this target as PDAs will accommodate 2/3 of the region's projected growth (PDAs are areas most influenced by the Plan through future growth allocations and investments). Aims to address risk factors that might not be influenced by the Plan.
2	Reduce the share of <u>low- and moderate-income renter</u> households that are at risk of displacement to 30% ( <i>half its current share</i> )	Addresses displacement throughout the entire region. Assumes a 50% reduction in displacement risk compared to conditions in 2013.	Same as in Option 1.
3	Reduce the share of <u>low- and moderate-income renter</u> households in PDAs that are at risk of displacement by 30% ( <i>to same share as outside PDAs</i> )	Emphasizes PDAs as a geography. PDAs are the framework for developing land use and transportation policies and investments for the Plan.	Does not address risk of displacement in the broader region. Displacement in PDAs is emphasized due to the focused nature of growth in PDAs. Factors other than PDA designation could positively or negatively impact displacement risk including local development pressures and local displacement mitigation measures.

### Economic Vitality – Jobs/Wages Target (Target #9)

During the September joint meeting of the MTC Planning Committee and ABAG Administrative Committee, a placeholder was added to the performance targets related to jobs and wages, particularly with regards to living-wage (i.e., middle-class) jobs. As discussed at meetings of the Performance Working Group earlier this year, the challenge with including such a target is that the Plan's scenario forecasting approach relies upon fixed population and employment control totals across all scenarios. These control totals have assigned income/wage distributions that are held constant through the planning process, given that transportation investments and land use patterns are not expected to strongly influence these types of economic conditions. At the same time, both MTC and ABAG recognize the importance of this critical issue, in particular the lack of living-wage job growth in recent years.

Given these modeling limitations, staff has developed two options to respond to interest in jobs/wages through the performance targets, as shown in **Table 3** below. Staff is seeking your input as we work to identify a recommended performance target. Note that Option 1 is focused primarily on total jobs by industry, while Option 2 is focused on residents' access to jobs by industry.

**Table 3: Options for Jobs/Wages Target**

Option	Performance Target	Pros	Cons
1	Increase by 35%* the number of jobs in predominantly middle-wage industries	Most responsive to stakeholder concerns about living-wage job growth; relatively simple and easy to understand	Would not vary between scenarios as jobs are held constant (via control totals); does not meet all eligibility criteria to be a performance target
2	Increase by 35%* the number of jobs in predominantly middle-wage industries accessible within 30 minutes by auto or 45 minutes by transit in congested conditions	Reflects how Plan Bay Area 2040 can actually benefit middle-wage workers (by providing better access to jobs); has a linkage to target #8 (overall access to jobs)	Does not explicitly assess the overall change in middle-wage jobs in the region

\* = indicates that the numeric target will be revised based on the final ABAG forecast for overall job growth

For either option, the proposed numeric target is based on preliminary figures from ABAG's Forecast of Populations, Households, and Jobs, which shows an approximately 35 percent increase in the number of total jobs in the Bay Area over the planning period. The target seeks to ensure that jobs in middle-wage industries (or access to such jobs, depending on which option is preferred) grow at the same rate as total regional jobs.

### **Economic Vitality – Goods Movement Target (Target #10)**

In response to feedback from stakeholders and policymakers at the committee meeting, staff has reviewed a number of different options for a goods movement target, recognizing the primary concern raised was the impact of congestion on freight. Based upon the criteria shown in **Table 4** and **Table 5** on the following page, staff identified the following target as preferred, as it meets all relevant criteria and is responsive to the concerns raised at the meeting: **Reduce per-capita delay on the Regional Freight Network by 20%**. Note that the proposed numeric target – a 20 percent reduction over the Plan lifespan – is based on the congestion reduction target identified in *Transportation 2035*.

Strengths of the proposed target include its emphasis on delay (demonstrating responsiveness to truck congestion concerns), its primary focus on the Regional Freight Network<sup>1</sup> (a defined network from the Goods Movement Plan of heavily-traveled truck routes), its inclusion of a per-capita component (thus ensuring that the target reflects drivers' conditions and is not biased by population growth), and its ease of communication. At the same time, the target does have a few known limitations, primarily due to limits in the travel model. As Travel Model One does not include a freight rail component and lacks a sufficiently robust truck trip model, the proposed target focuses on truck corridors and explore the overall delay from congestion specific to those facilities. Staff believes this target strikes the right balance between reflecting the concerns of goods movement stakeholders and ensuring the target can be forecasted well using available tools.

### **Process Going Forward**

We look forward to your feedback on the draft staff recommendation for the remaining performance targets. In order to review and, as appropriate, incorporate your feedback into the staff recommendation in November, **we are asking for all feedback to be submitted by Friday, October 16<sup>th</sup> to [dvautin@mtc.ca.gov](mailto:dvautin@mtc.ca.gov)**. In addition to this meeting and the subsequent comment period, we will be taking the final staff recommendation for the four remaining targets to the following committees in November and seeking their feedback as well:

- Regional Advisory Working Group – Tuesday, November 3 [*feedback*]
- Regional Equity Working Group – Wednesday, November 4 [*information*]
- MTC Policy Advisory Council – Wednesday, November 4 [*feedback*]
- MTC Planning Committee & ABAG Administrative Committee – Friday, November 13 [*move for approval*]
- MTC Commission – Wednesday, November 18 [*final adoption*]
- ABAG Executive Board – Thursday, November 19 [*final adoption*]

The November meeting packets will include final proposals for target language, as well as methodology documentation similar to what was produced for all other performance targets in September.

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<sup>1</sup> The Regional Freight Network includes segments along the following highway corridors: I-880, I-80, I-580, US-101, I-680, SR-12/SR-37, SR-152 and SR-4; it was finalized earlier this year as part of the Goods Movement Plan.

**Table 4: Primary Technical Criteria for Selecting Performance Targets****1 Targets should be able to be forecasted well.**

A target must be able to be forecasted reasonably well using MTC's and ABAG's models for transportation and land use, respectively. This means that the target must be something that can be predicted with reasonable accuracy into future conditions, as opposed to an indicator that can only be observed.

**2 Targets should be able to be influenced by regional agencies in cooperation with local agencies.**

A target must be able to be affected or influenced by policies or practices of ABAG, MTC, BAAQMD and BCDC, in conjunction with local agencies. For example, MTC and ABAG policies can have a significant effect on accessibility of residents to jobs by virtue of their adopted policies on transportation investment and housing requirements.

**3 Targets should be easy to understand.**

A target should be a concept to which the general public can readily relate and should be represented in terms that are easy for the general public to understand.

**4 Targets should address multiple areas of interest.**

Ideally, a target should address more than one of the three "E's" – economy, environment, and equity. By influencing more than one of these factors, the target will better recognize the interactions between these goals. Additionally, by selecting targets that address multiple areas of interest, we can keep the total number of targets smaller.

**5 Targets should have some existing basis for the long-term numeric goal.**

The numeric goal associated with the target should have some basis in research literature or technical analysis performed by MTC or another organization, rather than being an arbitrarily determined value.

**Table 5: Primary Technical Criteria for Identifying a Set of Targets****A The total number of targets selected should be relatively small.**

Targets should be selected carefully to make technical analysis feasible within the project timeline and to ensure that scenario comparison can be performed without overwhelming decision-makers with redundant quantitative data.

**B Each of the targets should measure distinct criteria.**

Once a set of targets is created, it is necessary to verify that each of the targets in the set is measuring something unique, as having multiple targets with the same goal unnecessarily complicates scenario assessment and comparison.

**C The set of targets should provide some quantifiable metric for each of the identified goals.**

For each of the seven goals identified, the set of performance measures should provide some level of quantification for each to ensure that that particular goal is being met. Multiple goals may be measured with a single target, resulting in a smaller set of targets while still providing a metric for each of the goals.

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. 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 inform key policy questions related to a simple but critical question: which projects should be included in the Regional Transportation Plan? By adopting the Plan Bay Area 2040 committed projects policy, the Commission took the first step towards establishing the projects and project types that the region will fund and implement. The project performance assessment will inform the next step of the process by evaluating remaining uncommitted projects. Project performance assessment is one venue for examining the efficiency and effectiveness of projects for inclusion in the regional plan.

### 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. As with the last Plan, staff will qualitatively evaluate 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 receives a "1" for a particular target if it strongly supports the target and a "-1" if it has a strong adverse impact on the region's ability to meet the target. The final target score is a sum across targets with the maximum possible score of a 10 and the lowest possible score of a -10.
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.

As with Plan Bay Area, the benefit-cost ratio and the targets score will together 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 will have **either** a low benefit-cost ratio **or** a low targets score.

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 is important to document known shortcomings of the approach, acknowledgement of which better informs 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 Assessment

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 overlaid on Communities of Concern (COC) 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 conduct this analysis in tandem with the benefit-cost and targets assessments, ensuring that equity considerations inform the final performance outcomes.

## 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.<sup>1</sup> 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.

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.<sup>2</sup> 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.

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

<sup>2</sup> 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

**Projects Subject to Performance Assessment**

Committed projects and programs, as defined by MTC Resolution No. 4182 in April 2015, are not subject to project performance assessment. Of the uncommitted projects submitted in the Call for Projects by the September 2015 deadline, MTC staff will evaluate projects that meet the following criteria:

1. The project impacts can be captured in the regional travel demand model (i.e., capacity-increasing, and model-able).
  - a. Highway and transit expansion projects
  - b. Highway operations/efficiency projects
  - c. Transit service increases
  - d. Highway tolling/pricing
  - e. State-of-good repair for transit, highways, and local roads
2. The total project costs are at least \$100 million (as measured in 2017 dollars).

**Schedule for Project Performance Assessment**

- Call for Projects submittal deadline – September 30, 2015
- Run travel model to evaluate projects – Fall 2015
- Release results – Winter 2016
- Compelling case process – Winter 2016
- Scenario and investment trade-off discussion – Spring 2016



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# Scenario Planning Approach

## Background

In July 2013, MTC and ABAG adopted Plan Bay Area 2013 as the Bay Area's first Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The plan responds to State Law (SB 375) requiring the preparation of an integrated land-use and transportation plan to meet greenhouse gas (GHG) emission reduction targets. A lot has changed in the Bay Area since the Plan's adoption, as the region's economy is growing rapidly and housing costs continue to increase, and many communities have recently completed land use plans that envision how to accommodate future growth.

MTC and ABAG are required to update the RTP/SCS every four years. In spring 2015, MTC and ABAG began a limited and focused update of Plan Bay Area 2013, called Plan Bay Area 2040 (PBA 2040). From late April through May, a series of open houses were conducted across the region to introduce the public to the PBA 2040 update process, seek comments on goals and targets, and receive feedback on local priorities across a wide range of issue areas. The comments and feedback were compiled and shared with the Regional Advisory Working Group (RAWG) as well as MTC and ABAG other committees and working groups, in July 2015. Meanwhile, over the past several months, MTC and ABAG have presented information regarding PBA 2040's proposed Goals and Performance Targets, Regional Forecasts, and Project Performance Assessment to the RAWG, the MTC Planning and ABAG Administrative Committees, and various other committees and working groups. With the Goals and Performance Targets up for adoption this fall and the Regional Forecasts underway, the next milestone is to develop and evaluate regional scenarios that integrate land use and transportation strategies.

## What is Scenario Planning?

Scenario planning is a common way for organizations such as MTC and ABAG to analyze and communicate the effects of different combinations of land use and transportation strategies on regional goals and targets. Scenarios can help articulate alternative future paths and provide information to help partner agencies, local jurisdictions, and the general public understand trade-offs. Scenarios can be constructed to modify the status quo, analyze and evaluate strategies that may be practically or politically challenging, and engage the region in a common dialogue about planning for our common future.

Constructing and communicating scenarios generally requires adherence to the following principles:

- **Develop a small number of scenarios.** A good regional planning process should advance a short list of coherent scenarios that can be clearly communicated. This can be challenging, because the strategies underpinning scenarios can be arranged in an infinite number of ways.
- **Construct a preferred scenario.** Since an infinite number of scenarios can theoretically be constructed, it is not appropriate to conduct a "winner takes all" approach to scenario planning. Rather, a "preferred scenario" can incorporate some of the best ideas from each scenario alternative. This can be challenging, because most people naturally gravitate toward voting for a favorite scenario out of the alternatives presented.
- **Balance sophistication with simplicity.** Scenarios should be meaningful for the most engaged and sophisticated observers, but also be easy to communicate to a broad spectrum of people around the region. This can be challenging, because scenarios may seem overly simplistic to some audiences or cryptic to other audiences.

## Scenario Planning in Plan Bay Area 2013

For Plan Bay Area 2013, MTC and ABAG conducted extensive outreach to develop multiple rounds of scenario development and evaluation. This led to the development and adoption of the preferred land use distribution and transportation investment strategy (preferred scenario). Once the preferred scenario was adopted, another set of scenarios was developed and evaluated as alternatives within Plan Bay Area 2013's Environmental Impact

Report (EIR). These multiple rounds of scenario development required a tremendous amount of time and effort on the part of MTC and ABAG, partner agencies, local jurisdictions, working groups and committees. In retrospect, this process may also have created confusion due to the large number of scenario alternatives (13 alternatives in total). As a result, in early project scoping meetings for PBA 2040, MTC and ABAG proposed a simplified approach to scenario planning as described in the following sections.

## Recommended approach to PBA 2040 Scenario Development

As described in a July 2014 memo to the MTC Planning Committee and ABAG Administrative Committees, MTC and ABAG's approach for this RTP/SCS will be to conduct a limited and focused update, building off the core framework established in Plan Bay Area 2013. One key difference between Plan Bay Area 2013 and its update – PBA 2040 – is that PBA 2040 does not include the Regional Housing Need Allocation (RHNA), which will be included again in the 2021 RTP/SCS. The RHNA process required a great deal of outreach and planning work that will not be necessary for PBA 2040. In addition, this will not be the region's first RTP/SCS, so we can build on lessons learned in the first integrated transportation and land use planning effort.

The MTC Public Participation Plan, adopted in February 2015, lays out PBA 2040's scenario development approach. This approach can be summarized as follows:

- One round of scenario analysis and evaluation will be conducted, and a maximum of three scenarios will be developed;
- The scenarios will be constructed in an effort to achieve PBA 2040's goals and performance targets;
- The scenarios will be designed to inform the selection of a preferred scenario; and,
- The same scenario alternatives will be carried over into the Environmental Impact Report (EIR) process.

Additionally, in order to analyze and evaluate the scenario alternatives, each scenario output will include, at a minimum:

- **Land use**
  - Total jobs by PDA and city;
  - Total housing units and households by PDA and city; and
  - Total population by PDA and city.
- **Transportation**
  - Investments by mode and purpose; and,
  - GHG and other travel model outputs for performance targets assessment.

## Specific Process and Timeline for Developing and Evaluating Scenarios

The scenario development and evaluation process will occur over the next nine months, with MTC and ABAG adopting a preferred scenario in June 2016. MTC and ABAG, using input from the public workshops held in Spring 2015, partner agencies, working groups, and committees will develop and evaluate three alternative scenarios composed of land use and transportation strategies.

The scenario planning process will have three phases:

- **Scenario Development.** In October, MTC and ABAG staff will host scenario development workshops with the RAWG and ABAG Regional Planning Committee (RPC) to kick off the scenario planning process; gather input on the draft scenario concepts; and identify potential jobs, housing and transportation strategies to support the scenario concepts. These workshops will help shape the development of the three scenario alternative concepts and their respective strategies.

Following the October workshops, MTC and ABAG staff will present the draft scenario concepts in November to the MTC Planning and ABAG Administrative Committees, ABAG Executive Board, and other committees and working groups as appropriate, for additional feedback.

In February and March 2016, MTC and ABAG staff will present to the RAWG, RPC, the MTC Planning and ABAG Administrative Committees, and the ABAG Executive Board defined scenario alternatives that show

different options for distributing forecasted housing, population, and employment growth, as well as the high performing projects of the project performance assessment and the costs to maintain and operate our existing transportation system.

- **Scenario Evaluation.** Following the November 2015 joint meeting of the MTC Planning and ABAG Administrative Committees, MTC and ABAG staff will begin an iterative process of scenario evaluation and refinement of each scenario’s land use and transportation strategies to meet regional goals and targets. MTC and ABAG staff will use regional models, described in more detail in the following section, to develop and analyze the scenarios.

In March 2016, MTC and ABAG staff will present to the RAWG, the MTC Planning and ABAG Administrative Committees, and other committees and working groups as appropriate, the results of the performance targets and equity assessments for each of the three scenario alternatives.

In April 2016, MTC and ABAG will host public workshops to discuss the scenario alternatives and the results of their evaluation.

- **Scenario Adoption.** Following the April 2016 public workshops, MTC and ABAG staff will create a draft preferred scenario based on feedback from the public, local jurisdictions, MTC and ABAG’s partner agencies, working groups, and committees. The draft preferred scenario will incorporate strategies that best achieve the adopted PBA 2040 goals and performance targets and equity metrics.

In May 2016, MTC and ABAG staff will present the draft preferred scenario to the RAWG, the MTC Planning and ABAG Administrative Committees, and ABAG Executive Board. Their input will be used to refine the preferred scenario before the MTC Commission and ABAG Executive Board are asked to adopt the final preferred scenario at a joint June 2016 meeting.



Figure 1

## Modeling Tools

MTC and ABAG staff will use modeling tools to assist in the development and analysis of scenarios. The integration of the regional land use and travel demand models allows for analysis of how land use policies will affect transportation outcomes and how transportation projects and policies will affect land use outcomes. The models allow us to perform our targets assessment for each scenario.

- **UrbanSim.** This regional land use forecasting model relies on regional control totals of jobs, housing, and population, developed and adopted by ABAG, to analyze the effects of land use and transportation strategies on the forecasted regional development pattern. The model simulates the interactions of households, businesses, developers, and governments within the urban market. The model will produce land use outputs, including the forecasted location of new jobs and housing for each scenario alternative. MTC and ABAG staff will evaluate the model outputs through an extensive planning process involving input by local jurisdictions.
- **Travel Model One.** The regional travel demand model relies on UrbanSim’s forecasted regional development pattern to analyze the significance of transportation impacts and estimate travel outcomes, including vehicle miles traveled, vehicle hours of delay, and accessibility for each scenario alternative.

## Common Assumptions for All Scenarios

There are a number of core assumptions that will stay the same across different scenarios:

- **Regional Forecast – Total Jobs, Housing, and Population (Control Totals).** ABAG’s adopted regional forecast will set control totals for the total jobs, housing, and population in the region. This total number will not vary across scenarios.
- **Regional Housing Need Allocation (RHNA).** In 2013, ABAG adopted the *Final Regional Housing Need Plan for the San Francisco Bay Area: 2014-2022*, including the final housing unit allocations, by income, to local jurisdictions in the region. The three scenario alternatives will reflect the adopted 2013 RHNA, and will not vary across scenarios. The next RHNA process will occur in coordination with the 2021 RTP/SCS.
- **Regional PDA and PCA Framework.** PDAs and PCAs are locally nominated and their geography will not vary across scenarios; however, the extent to which growth is emphasized in PDAs and land in PCAs is conserved may be considered as strategies.
- **Regional Transportation Revenue Sources.** MTC develops a revenue forecast that accounts for all reasonably assumed revenue sources to 2040. The total amount of revenues and sources will not vary across scenarios; however, certain revenue enhancements may be considered as strategies.
- **Regional Committed Transportation Network.** The committed transportation network represents the existing transportation infrastructure and proposed transportation improvements that are fully funded and under construction. The committed transportation network will not vary across scenarios.

## Strategies Varying Across Scenarios

The differences in scenario alternatives will be driven by alternative distributions of strategies, which generally comprise a short set of land use and housing policies, transportation policies, and transportation investments. While not an exhaustive list, the strategies generally encompass the following actions:

- **Land Use Strategies** that change a community’s capacity for new development or incentivize a particular type or location of growth, such as changes to zoning, fees and subsidies, incentives and growth boundaries.
- **Transportation Strategies**
  - Transportation Investments- includes strategies for different types of transportation investments by category (expansion, maintenance, state of good repair, etc.), and mode (highway, transit, bike/ped, etc.), and programs.
  - Transportation Policies- includes strategies to manage transportation demand, systems operations, parking policies, and taxes and fees.
  - Climate Strategies- includes technological advancements (e.g. clean vehicles) and incentive programs to encourage travel options that help meet GHG emissions reduction targets.

It is important to recognize that the distribution of different strategies within initial scenarios does not constitute a staff proposal or recommendation. This distribution is done simply to illustrate tradeoffs between alternative growth patterns and infrastructure investments and serve as a building block for developing a preferred scenario.

## Next Steps

Stakeholder engagement will help shape the strategies across each of the three scenario alternatives. The October ’15 scenario workshops are the first opportunity for input.



Figure 2