



**METROPOLITAN
TRANSPORTATION
COMMISSION**

Joseph P. Bort MetroCenter
101 Eighth Street
Oakland, CA 94607-4700
TEL 510.817.5700
TDD/TTY 510.817.5769
FAX 510.817.5848
E-MAIL info@mtc.ca.gov
WEB www.mtc.ca.gov

Memorandum

TO: Partnership Technical Advisory Committee

DATE: September 17, 2007

FR: Ashley Nguyen

W. I.

RE: Transportation 2035 Progress Report

Attached for your information is the staff report to be presented to MTC's Planning Committee on September 14. In short, staff will request the Committee's approval to modify the targets under the Environment and Equity and to approve the proposed pricing and land uses analyses.

Regarding our progress on the scenario performance assessment, staff has recently completed network coding for all three scenario packages, and we are in the process of preparing the travel forecasts. We intend to conduct the land use and pricing sensitivities in late September. At your October meeting, staff expects to share some of our preliminary evaluation results. The draft evaluation results will be unveiled at the MTC/ABAG "On the Move" event on October 26.



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Memorandum

TO: Planning Committee

DATE: September 7, 2007

FR: Executive Director

W. I.

RE: Transportation 2035 Vision: Performance Targets and Sensitivity Tests

In July 2007, the MTC Planning Committee authorized staff to proceed with a performance-based approach to developing the Transportation 2035 Vision. The approach, represented schematically in [Attachment A](#), calls for assessing three investment scenarios relative to a set of specific performance targets of congestion, vehicle miles traveled, emissions, and equity (to be derived through stakeholder input). Staff will then apply land use and pricing sensitivity tests to each of the investment scenarios to see how such policy measures could help the region achieve the targets.

With this memo, staff seeks the Committee's approval of two modifications to the performance targets previously approved by this committee, as well as the proposed pricing and sensitivity analyses.

Recommended Changes to Performance Targets

Based on further discussion with Air District staff (see Air District letter in Attachment B) and regional stakeholders, staff recommends modifications to the performance targets for Environment and Equity as described below. The complete set of targets, including the recommended modifications, is shown in [Attachment C](#).

Environment

Recommendation: Replace the previously approved target for particulate matter emissions (10 percent reduction compared to today) with the following targets:

- Reduce emissions of finer particulate matter (PM2.5) by 10 percent under today's levels by year 2035. Tailpipe emissions are an example of PM2.5 particles.
- Reduce emissions of coarser particulate matter (PM10) by 45 percent under today's levels by 2035. Road dust is an example of PM10 particles.

Discussion: Air District staff has confirmed these to be the appropriate levels of reduction to meet all applicable state and federal air quality standards. This is consistent with the previously approved carbon dioxide emissions target, which is based on state law (California Global Warming Solutions Act of 2006) and the governor's associated executive order (October 18, 2006).

Income Equity

Recommendation: Include a target to decrease by 10 percent (from today) the share of household income consumed by housing and transportation costs for low-income households. The foundation for this target is a national study showing that working families in the Bay Area spend a larger share of their income (by 10%) on housing and transportation combined compared to the national average.

Discussion: Equity is the one “three E” principle for which we cannot readily take the state’s lead to define a performance target. In approving the basic Vision approach in July, the Committee directed staff to continue research and discussions with stakeholders on this topic. Our discussions with MTC Advisors, partners and public interest groups revealed three primary areas of interest: (1) affordability of both housing and transportation principally for low-income residents; (2) access to essential activities or reduction in travel time for low-income, minority, youth and elderly populations; and (3) health impacts of particulate matter emissions on low-income and minority communities.

Findings from the 2006 study by the Center for Housing Policy that inspired the target are shown in Attachment C. Bay Area households currently spend a greater than average share of their income on housing and a less than the average share on transportation; however this balance could change based on the kinds of policy choices, particularly land use and pricing strategies, to be explored as part of developing the Vision.

Recommended Sensitivity Analysis

Staff will subject each investment scenario in Attachment A to two sensitivity analyses as described below, plus a combined land use and pricing analysis. The sensitivity tests are purposely aggressive to see what level of impact bold policy changes could have on performance of the infrastructure investments.

- **Land Use Sensitivity Analysis:** ABAG staff is deriving an alternative land use forecast that goes beyond the policy-based Projections 2007 series in both balancing jobs and housing and targeting growth in existing communities and near transit. The alternative land use is first and foremost a policy forecast, as opposed to a purely market-driven outcome.

Compared to Projections 2007, the alternative forecast reflects considerable shifts in regional growth to existing employment and housing centers, areas projected to have either household or employment growth, and areas with existing and/or planned transit. The alternative scenario also assumes fewer in-commuters from neighboring regions by accommodating approximately 37,000 more households within the Bay Area. [Attachment E](#) shows the factors ABAG used to allocate growth on these criteria. A full report on the ABAG methodology is available by request to ABAG.

- **Pricing Sensitivity Analysis:** MTC staff is defining a set of user-based pricing strategies that would induce changes in travel behavior by increasing the cost of driving. The analysis will look at several strategies in combination (see [Attachment E](#) for proposed charges):
 - (a) Carbon tax or tax on vehicle miles driven that would essentially double auto operating costs
 - (b) Congestion fee for using congested freeways during peak periods
 - (c) Increased parking charges for downtown and commercial areas

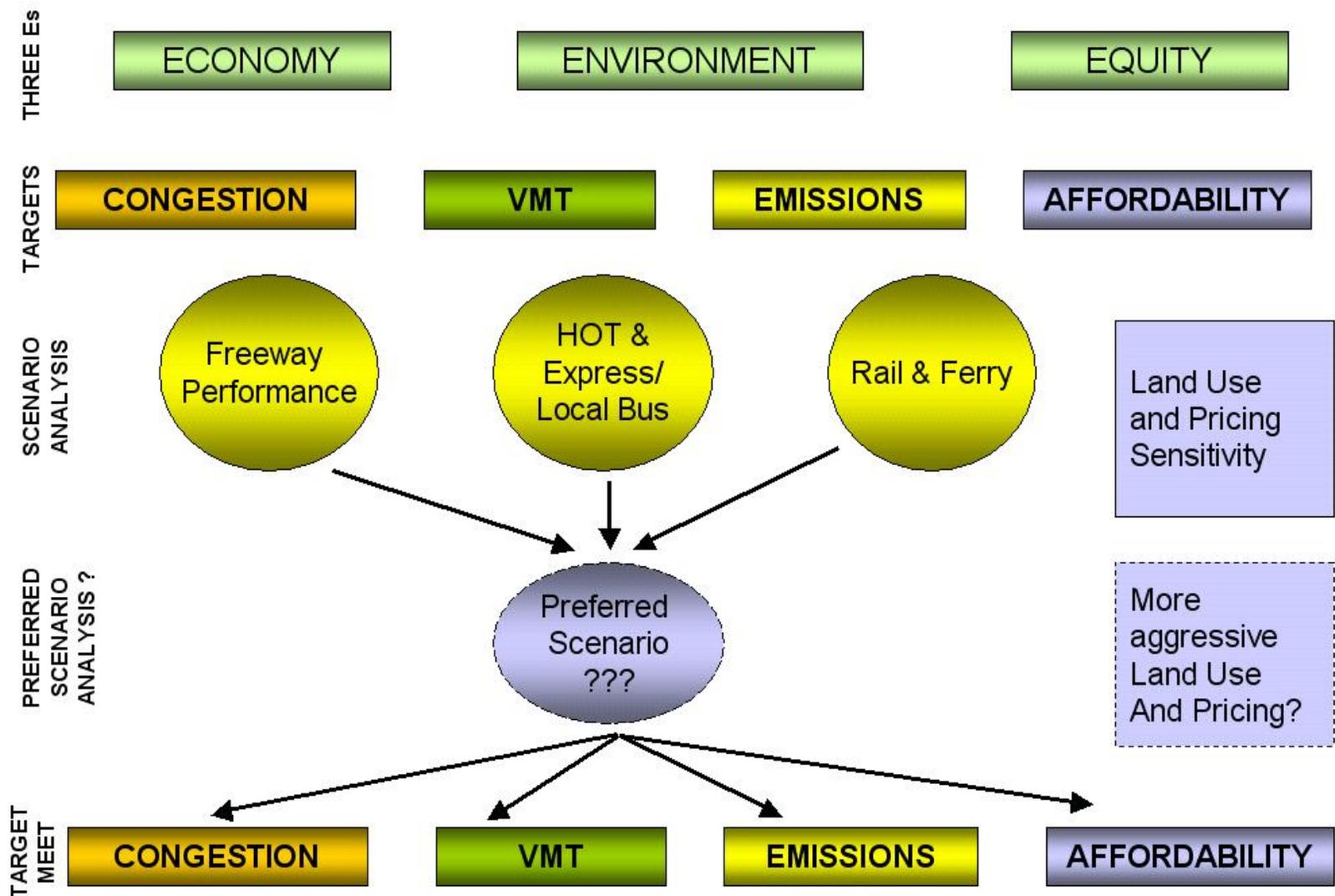
To address affordability for low-income travelers, staff will assess discount or rebate program options for eligible low-income households, much as utility companies have “lifeline” programs.

Recommendation and Next Steps

Staff recommends the Committee approve the modifications to the Environment and Equity targets and the proposed sensitivity analyses. We intend to have some preliminary results of the scenario assessments and sensitivity analyses to share with the Planning Committee at your meeting next month in advance of the October 26 ABAG/MTC fall forum, Bay Area On the Move.

Steve Heminger

Attachment A Scenario Performance Assessment





August 30, 2007

Steve Heminger, Executive Director
Metropolitan Transportation Commission
MetroCenter
101 Eighth St.
Oakland, CA 94607

Re: Emission Performance Targets for T2035 RTP

Dear Mr. Heminger:

The Air District appreciates the opportunity to provide recommendations regarding the performance targets that will be used in the scenario performance assessment process that MTC plans to conduct for the Regional Transportation Plan update (T2035). We are pleased that MTC has proposed to include targets for reducing emissions of particulate matter (PM) and carbon dioxide (CO₂). While it is important that the plan contribute to reducing all ozone precursor, criteria and toxic air pollutants, we agree that PM and CO₂ are the appropriate pollutants on which to focus the T2035 performance targets, due to the health impacts related to PM exposure and to the wide range of potential environmental and social impacts related to climate change. We firmly agree that it is essential that the T2035 Plan address carbon dioxide emissions and climate change. We offer the following comments to help you define these targets.

Carbon dioxide: We agree with the carbon dioxide reduction target that MTC has proposed, namely, to reduce CO₂ by 40% below 1990 levels by 2035. This target is consistent with the goals established in the Governor's Executive Order S-3-05 to reduce emissions of greenhouse gases to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. We recommend that MTC also consider establishing interim carbon dioxide emission reduction targets as follows:

- Reduce CO₂ emissions to 1990 level by 2020
- Reduce CO₂ emissions to 15% below 1990 level by 2025
- Reduce CO₂ emissions to 30% below 1990 level by 2030

Particulate matter: Based upon the rationale provided in Attachment A, we recommend that MTC establish targets to reduce PM emissions from on-road sources and road dust as follows:

- Reduce PM_{2.5} emissions by 10% below base year 2005 levels by 2035
- Reduce PM₁₀ emissions by 45% below base year 2005 levels by 2035

We recommend that MTC establish PM_{2.5} reduction targets for interim years as follows:

ALAMEDA COUNTY
Tom Bates
Scott Haggerty
Janet Lockhart
Nate Miley

CONTRA COSTA COUNTY
John Gioia
Mark Ross
(Chair)
Michael Shimansky
Gayle B. Ullikema

MARIN COUNTY
Harold C. Brown, Jr.

NAPA COUNTY
Brad Wagenknecht

SAN FRANCISCO COUNTY
Chris Daly
Jake McGoldrick
Gavin Newsom

SAN MATEO COUNTY
Jerry Hill
(Vice-Chair)
Carol Klatt

SANTA CLARA COUNTY
Erin Garner
Yoriko Kishimoto
Liz Kniss
Patrick Kwok

SOLANO COUNTY
John F. Silva

SONOMA COUNTY
Tim Smith
Pamela Torliatt
(Secretary)

Jack P. Broadbent
EXECUTIVE OFFICER/APCO

- Reduce PM2.5 emissions 2% below 2005 levels by 2015
- Reduce PM2.5 emissions 4% below 2005 levels by 2020
- Reduce PM2.5 emissions 6% below 2005 levels by 2025
- Reduce PM2.5 emissions 8% below 2005 levels by 2030

We recommend that MTC establish PM10 reduction targets for interim years as follows:

- Reduce PM10 emissions 10% below 2005 levels by 2015
- Reduce PM10 emissions 20% below 2005 levels by 2020
- Reduce PM10 emissions 30% below 2005 levels by 2025
- Reduce PM10 emissions 40% below 2005 levels by 2030

PM targets re: Equity: MTC staff has requested Air District input on potential PM reduction targets for purposes of developing "equity" performance targets for the T2035 scenario assessment. District staff has considered whether we can provide PM population exposure data for the 44 "communities of concern" defined in MTC's T2030 Equity Analysis report. Our regional PM monitoring network cannot provide the local-scale PM concentrations that would be needed to determine population exposures in all of these "communities of concern." Please note, however, that the District is working to enhance our computer modeling capabilities to estimate local PM concentrations and population exposure levels as part of our Community Air Risk Evaluation (CARE) program. We would be happy to share with you information we have compiled to date. In the future, we do expect to be able to provide modeling tools and data that can be applied to assess PM exposure in local communities.

In considering the question of an appropriate PM reduction target for equity purposes, District staff reviewed the Equity Analysis that MTC performed for the T2030 Plan. This analysis concluded that the "communities of concern" are subject, on a per capita basis, to greater VMT and greater emissions (ROG, NOx, and PM) than the remainder of the Bay Area. However, the T2030 Equity Analysis found that the "Project" (as well as the other alternatives that were analyzed) would reduce the difference in terms of per capita VMT and emissions. Whereas the 2000 "base case" showed that "communities of concern" were subject to 28% greater VMT and emissions, this difference would be narrowed to 21 % under the "Project" scenario.

We recommend that for equity purposes the PM reduction goal should be to eliminate the difference between "communities of concern" and the remainder of the region. This would entail reducing the average per capita emissions of PM2.5 and PM10 in the "communities of concern" to the average per capita levels that prevail in the remainder of the region.

We recognize that it will be difficult to achieve the PM reduction targets described above. However, we believe that our recommended PM reduction

targets are consistent with the challenging targets MTC has proposed for reducing VMT and carbon dioxide. To a great extent, progress in reducing VMT will determine progress in reducing both carbon dioxide and PM emissions.

We appreciate the opportunity to provide recommendations on the emission reduction performance targets for the T2035 Plan. Air District staff looks forward to continuing to work with MTC to ensure that the T2035 Plan will help the region attain air quality standards and reduce emissions of greenhouse gases. If you would like to discuss this further, please contact me or Henry Hilken, Director of Planning and Research at (415) 749-4642.

Sincerely,

A handwritten signature in black ink, appearing to read "Jack P. Broadbent". The signature is fluid and cursive, with a large initial "J" and "B".

Jack P. Broadbent
Executive Officer/APCO

cc: Doug Kimsey

Attachment C

Vision Performance Targets Reflecting Recommended Modifications

Economy: Congestion *(previously approved)*

Reduce person hours of delay by 20 percent below today's levels by 2035

Source: Governor's Strategic Growth Initiative

Environment: Carbon Dioxide (CO₂) and Particulate Matter (PM) Emissions

Reduce CO₂ emissions by 40 percent below 1990 levels by 2035 *(previously approved)*

Reduce PM_{2.5} emissions by 10 percent below today's levels by 2035. *(modified)*

Reduce emissions of coarser particulate matter (PM₁₀) by 45 percent under today's levels by 2035 *(modified)*.

Sources:

CO₂ – California Global Warming Solutions Act of 2006 and Governor's Executive Order S-20-06

PM – State and national standards

Environment: Vehicle Miles Traveled (VMT) *(previously approved)*

Reduce VMT per capita by 10 percent compared to today by 2035

Source: SB 375 (Steinberg), prior to amendment

Equity: Affordability of Housing and Transportation *(new)*

Decrease by 10 percent from today the share of household income consumed by housing and transportation costs for low-income households

Source: Adapted from the Center for Housing Policy report A Heavy Load: The Combined Housing and Transportation Burdens of Working Families (October 2006)

Attachment D

What Working Families Spend on Housing and Transportation [1]

	Percent of Income Spent on			Relative Rank (highest cost = 1)		
	Housing	Transportation	Total	Housing	Transportation	Total
Anchorage, AK*	31	30	60	3	4	3
Atlanta, GA*	29	32	61	4	2	2
Baltimore, MD**	27	29	56	6	5	7
Boston, MA	29	30	59	4	4	4
Chicago, IL	28	27	55	5	7	8
Cincinnati, OH	24	32	56	9	2	7
Cleveland, OH	24	30	55	9	4	8
Dallas, TX	26	31	57	7	3	6
Denver, CO	29	29	59	4	5	4
Detroit, MI	24	31	56	9	3	7
Honolulu, HI*	31	25	56	3	8	7
Houston, TX	24	31	56	9	3	7
Kansas City, MO-KS**	23	33	56	10	1	7
Los Angeles, CA	32	27	59	2	7	4
Miami, FL	31	28	59	3	6	4
Milwaukee, WI	25	30	55	8	4	8
Minneapolis, MN*	27	30	57	6	4	6
New York, NY	32	24	56	2	9	7
Philadelphia, PA	27	29	56	6	5	7
Phoenix, AZ	27	30	57	6	4	6
Pittsburgh, PA	22	33	54	11	1	9
Portland, OR	28	31	60	5	3	3
San Diego, CA*	31	28	59	3	6	4
San Francisco, CA	35	27	63	1	7	1
Seattle, WA	31	30	61	3	4	2
St Louis, MO*	23	32	55	10	2	8
Tampa, FL*	25	33	58	8	1	5
Washington, DC	32	28	60	2	6	3
Average of Metropolitan Areas	28	30	57			

Source: Center for Neighborhood Technology as presented in *A Heavy Load: The Combined Housing and Transportation Burdens of Working Families* (October 2006)

[1] Working Families are households with incomes between \$20,000 and \$50,000

Note: All areas are Consolidated Metropolitan Statistical Areas except as follows. Those marked "*" are Metropolitan Statistical Areas and those marked "**" are Primary Metropolitan Statistical Areas
Combined totals may reflect differences due to rounding.

**Attachment E
Detailed Assumptions for Sensitivity Analyses**

Alternative Land Use Sensitivity Analysis: Factors for allocating growth

Factor	Weight Used
Household Growth Allocation Factors	
Existing Employment	50.0%
Existing Employment near Transit	25.0 %
Employment Growth near Transit	25.0%
Job Growth Allocation Factors	
Existing Households	50.0%
Existing Households near Transit	25.0%
Household Growth near Transit	25.0%

Pricing Sensitivity Analysis Assumptions (2007\$)

Pricing Approach	Pricing Test (Year 2035 Costs)
Carbon tax or tax on vehicle miles driven	<p>Double auto operating costs from year 2035 baseline (\$0.23 per mile to \$0.46 per mile).</p> <p>This level of pricing represents an increase in gas prices from approximately \$3.80 per gallon to \$7.60 per gallon. Non-gas auto operating costs would also double.</p>
Congestion fee for using congested freeways during peak periods	Charge \$0.25 per mile for travel on congested freeways
Increased parking charges	<p>Surcharge of \$1 per hour for all trips.</p> <p>This equates to \$8 per day for work trips and \$1 per trip for non-work trips and would be applied on top of parking charges assumed in the baseline for downtown San Francisco, San Jose, Oakland and Berkeley, which range from \$100 to \$500 per month.</p>