

OneBayArea

Equity Working Group
August 10, 2011, 11:15 a.m. – 1:00 p.m.
MetroCenter, Claremont Conference Room
101 8th Street, Oakland, 2nd Floor

AGENDA

Estimated Time
for Agenda Item

1. Welcome and Self-introductions **11:15 a.m.**
2. Equity Working Group Work Plan and Schedule* (*Jennifer Yeamans, MTC*)
3. Reports from Other Regional Advisory Groups:
 - Housing Methodology Committee
The Housing Methodology Committee did not meet in July or August. The next meeting is scheduled for September 22, 2011
 - Regional Advisory Working Group
The Regional Advisory Working Group did not meet in August. The next meeting is scheduled for September 6, 2011
4. Status of Alternative Scenario Development (*David Ory, MTC/Miriam Chion, ABAG*)

DISCUSSION ITEMS

11:30 a.m.

5. Alternative Scenarios Equity Analysis Target Populations* (*Jennifer Yeamans, MTC*).
Staff will present an alternative set of target population thresholds to those presented at your June 8 meeting. Staff requests input on which target population definition should be used in the equity analysis.
6. Alternative Scenarios Equity Analysis Performance Measures* (*Jennifer Yeamans, MTC/Marisa Raya, ABAG*)
Staff will present additional details on proposed equity analysis performance measures for any final input from group members prior to proceeding with the analysis.

INFORMATION ITEMS / OTHER BUSINESS

12:55 p.m.

7. Future Agenda Items (*All*)
8. Public Comment
9. Adjournment

Next meeting:

Wednesday, September 14, 2011 11:15 a.m. – 1:00 p.m.
MetroCenter
2nd Floor Claremont Conference Room
101-8th Street, Oakland 94607

* Agenda items attached

** Attachments to be distributed at the meeting.

The Equity Working Group assists staff in the development of the Equity Analysis for the Sustainable Communities Strategy/Regional Transportation Plan.

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Plan Bay Area Equity Working Group Work Plan and Schedule

8/3/2011

Tasks	2011												2012												2013					
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A		
1. Vision Scenario Analysis																														
1.1 Review populations and measures to be analyzed		*																												
1.2 Review results			*																											
2. Alternative Scenarios Analysis																														
2.1 Review populations and measures to be analyzed								*																						
2.2 Review results										*																				
3. Draft Plan (Preferred Scenario) Analysis																														
2.1 Review populations and measures to be analyzed																*														
2.2 Review results																						*								
4. Complementary Tasks																														
4.1 Update Snapshot Analysis/SCS Indicators																														
4.2 Identify other essential equity tasks that can be effectively analyzed							*																							
4.3 Review/comment on Scenarios relative to equity analysis results														*																
4.4 Support engagement in low-income and minority communities																														
4.5 Recommend possible policies for consideration in the SCS/RTP															*															
Key Committee/Board Meetings			1										2	3								4						5		
RTP/SCS + EIR		Vision		Alternative Scenarios									Plan Preparation						D											F
RHNA				Methodology								D												F						

* Milestone D = Draft F = Final

Meetings:

- (1) Review Vision Scenario Results
- (2) Adopt RHNA methodology
- (3) MTC/ABAG Approve Draft SCS (Preferred Scenario)
- (4) Release Draft Plan
- (5) Final RTP/SCS

All dates/workplan elements subject to change



To: Equity Working Group
 From: Jennifer Yeamans, MTC
 Date: August 3, 2011
 Subject: Alternative Scenarios Equity Analysis: Target Population Definitions

Over the past several meetings staff has emphasized two key requirements for carrying out equity analysis of the Alternative Scenarios: (1) identifying a set of equity performance measures that can be readily summarized for each scenario, and (2) identifying relevant target population(s) for each performance measure. This memorandum summarizes staff's recommended approach for identifying target populations based on discussions at your June meeting when staff's initial draft target population definition was presented and discussed (see [Table A](#), attached). A memorandum summarizing the proposed performance measures is provided under Agenda Item #6.

Summary

Staff has prepared an alternative, empirically derived target population threshold definition based on feedback from working group members in June ([Table B](#), attached). Staff is recommending the equity analysis proceed with the original set of target population thresholds proposed in [Table A](#) for reasons outlined in this memorandum, but welcomes further discussion and input at your August 10 meeting.

Original Staff Proposal

Staff's original proposal for target population thresholds for the equity analysis ([Table A](#)) began with feedback from working group members in May that the population thresholds for minority/low-income communities of concern should remain at 70% and 30%, respectively, which is the threshold definition that has been used to date in MTC's regional planning work related to minority/low-income communities of concern. Recall that staff presented two maps in May with updated data from the Census Bureau for 2005-09, comparing past community-of-concern locations (based on 2000 Census data) with updated population thresholds at 70% minority/30% low-income, and 75% minority/35% low income.

Keeping these population thresholds the same while the minority and low-income populations rose in both absolute and relative terms since 2000 meant that the geographic extent of minority/low-income communities increased from one-third of the region's overall population and geography based on 2000 data to 40% of the region's population and geography based on the 2005-09 data (see attached map). Staff then developed thresholds for other target populations at levels intended to: (1) be round numbers that are easy to understand and interpret; and (2) capture roughly 40% of the region's total population and tracts for purposes of comparing the target and non-target communities in the equity analysis.

Alternative Target Population Threshold Definition

Based on input from working group members in June, staff has developed an alternative set of target population thresholds ([Table B](#), attached) that are empirically derived, where the threshold



for each target population is established based on the top quartile of each target population’s most-concentrated tracts (explanation follows). Based on differences in how spatially-concentrated different target populations are throughout the region, these alternative thresholds capture more varied shares of regional population and tracts compared to staff’s original proposal, from one-third to one-half.

Explanation of the Thresholds

Using the top-quartile definition, the alternative thresholds consider the range and distribution of how the concentration of target populations varies by census tract throughout the region. For example, consider the distribution of zero-car households in the region. The range of concentration of zero-car households varies across the region’s 1,405 census tracts from a low of 0% of a tract’s population (some tracts contain no households in the target population at all) to a high of 90% of households having no car in the region’s most-concentrated tract. In the tract which is at the 75th-percentile (where 75% of the region’s tracts have a lower population concentration and 25% have a higher population concentration, shown in Column E), the target-population concentration level within that tract is 11%, which is then identified as the target population threshold (Column D). This concentration threshold captures 65% of the target population throughout the region in the selected tracts (Column G), and when the other “low-mobility” populations are added which define “low-mobility communities” as a whole, that number increases to 79% of the region’s zero-vehicle households being included in the “low-mobility communities” definition (Column H).

Thresholds for the other target populations listed in Table B were identified in the same manner using the 75th-percentile tract’s target-population concentration level.

For comparison, purposes, staff also prepared an analysis using the 60th percentile (see Table C, attached). Staff does not recommend using these thresholds, but the comparison is helpful in terms of illustrating for each community type how much of the region’s population and geography is captured using the lower thresholds.

Discussion

There is no definitive best way to identify target populations or establish concentration thresholds for spatial analysis, and any approach chosen is going to have advantages and limitations. I have summarized some of these for your consideration of both staff’s original proposal in Table A and the alternative in Table B:

	Original Staff Proposal	Alternative Proposal
<i>Threshold Identification</i>	Intended to capture ~40% of region using round-number threshold levels	Uses the target population concentration identified at the 75th percentile of all tracts
<i>Share of regional target populations captured in community definitions</i>	Varies from 44% to 85%	Varies from 49% to 79%
<i>Share of regional total population captured in community definitions</i>	Varies from 35% to 46%	Varies from 33% to 46%
<i>Share of region’s geographical extent captured (# of tracts) captured in community definitions</i>	Varies from 39% to 44%	Varies from 32% to 50%

Recommendation

Staff recommends proceeding with the population thresholds outlined in Table A, for the following reasons:

- The defined threshold levels are simple-to-understand round numbers.
- A more consistent, less varied share of regional tracts and population is captured in all three target-community definitions, between 39% and 44% of tracts and between 35% and 46% of population.
- The thresholds capture at least or close to half of the specific target populations within the union of the defined geographies (Column H). The senior and disabled target populations attain slightly lower than 50% inclusion in the low-mobility communities, however these populations are the least-concentrated spatially.
- The three unions of the defined geographies do not exceed 50% of region's total population or tracts (to more clearly emphasize the unique needs of the target communities relative to the rest of the region).

Next Steps

After finalizing the population thresholds, staff will create community of concern definitions out of the region's Travel Analysis Zones (TAZs) for analysis with MTC's travel model. TAZs approximately correspond with census tracts presented in the staff analysis described in this memo, but some variations can be expected between this analysis and the final population tabulations using TAZs.

Table A: Summary of Proposed Geographic-Based Definitions of Target Populations for Equity Analysis of Alternative Scenarios
Draft for Discussion - 8/3/11 (Original Staff Proposal)

	(A) Target Population: Regional Total	(B) Target Population Share of Total Regional Population	(C) Regional Median Target- Population Share by Tract*	(D) Proposed Target Population Threshold	(E) Share of Regional Tracts Included by Threshold	(F) Share of Total Regional Population Located in Tracts Above Threshold	(G) Share of Regional Target Population Located in Tracts Above Threshold	(H) Share of Regional Target Population Located in Union of Communities
Communities of Concern								
Low income population (1)	1,544,352	23%	19%	30%	27%	23%	48%	60%
Minority population (1)	3,785,369	54%	52%	70%	30%	31%	47%	56%
<i>Communities of Concern Union**</i>					40%	40%		
Limited English Proficiency/Low Educational Attainment Communities								
Pop. speaking English less than "very well" (1)	1,159,188	18%	15%	20%	35%	36%	64%	72%
Pop. 25+ with less than HS diploma (1)	642,723	13%	10%	15%	36%	35%	67%	74%
<i>Limited English Proficiency/Low Educational Attainment Communities Union</i>					44%	46%		
Low Mobility Communities								
Population 5+ with a disability (2)	1,106,833	18%	17%	25%	13%	11%	19%	44%
Population 75+ (1)	409,225	6%	5%	10%	12%	10%	25%	46%
Zero Vehicle Households*** (1)	234,074	9%	5%	10%	28%	28%	69%	85%
<i>Low Mobility Communities Union</i>					39%	35%		

(1) Analysis based on 2005-09 American Community Survey data

(2) Analysis based on 2000 Census data

* This data is included to highlight the varying spatial distributions of different target populations within the region. A number in Column C much lower than Column B reflects greater spatial concentrations of the target population within the regional context; if the number in Column C is closer to that in Column B, the target population is more dispersed throughout the region.

** By comparison, Communities of Concern defined by 2000 Census used in the last two RTP Equity Analyses comprised 34% of all regional TAZs and 33% of regional population.

*** Regional total is expressed in households rather than population.

Table B: Summary of Proposed Geographic-Based Definitions of Target Populations Defined by Top Quartile of Spatial Concentration
 Draft for Discussion - 8/3/11

	(A) Target Population: Regional Total	(B) Target Population Share of Total Regional Population	(C) Regional Median Target- Population Share by Tract*	(D) Proposed Population Threshold at 75th Percentile	(E) Share of Regional Tracts Included by Threshold	(F) Share of Total Regional Population Located in Tracts Above Threshold	(G) Share of Regional Target Population Located in Tracts Above Threshold	(H) Share of Regional Target Population Located in Union of Communities
Low-Income/Minority Communities								
Low income population (1)	1,544,352	23%	19%	31%	25%	21%	46%	55%
Minority population (1)	3,785,369	54%	52%	74%	25%	25%	39%	49%
<i>Low Income/Minority Communities Union**</i>					35%	34%		
Limited English Proficiency/Low Educational Attainment Communities								
Pop. speaking English less than "very well" (1)	1,159,188	18%	15%	25%	25%	27%	52%	58%
Pop. 25+ with less than HS diploma (1)	642,723	13%	10%	20%	25%	25%	52%	60%
<i>Limited English Proficiency/Low Educational Attainment Communities Union</i>					32%	33%		
Low Mobility Communities								
Population 5+ with a disability (2)	1,106,833	18%	17%	22%	25%	22%	33%	55%
Population 75+ (1)	409,225	6%	5%	8%	25%	21%	41%	59%
Zero Vehicle Households*** (1)	234,074	9%	5%	11%	25%	22%	65%	79%
<i>Low Mobility Communities Union</i>					50%	46%		

(1) Analysis based on 2005-09 American Community Survey data

(2) Analysis based on 2000 Census data

* This data is included to highlight the varying spatial distributions of different target populations within the region. A number in Column C much lower than Column B reflects greater spatial concentrations of the target population within the regional context; if the number in Column C is closer to that in Column B, the target population is more dispersed throughout the region.

** By comparison, Communities of Concern defined by 2000 Census used in the last two RTP Equity Analyses comprised 34% of all regional TAZs and 33% of regional population.

*** Regional total is expressed in households rather than population.

Table C: Summary of Proposed Geographic-Based Definitions of Target Populations Defined by Top Two Quintiles of Spatial Concentration
 Data Provided for Comparison Purposes (Not Recommended by Staff)
 Draft for Discussion - 8/3/11

	(A) Target Population: Regional Total	(B) Target Population Share of Total Regional Population	(C) Regional Median Target- Population Share by Tract*	(D) Proposed Population Threshold at 60th Percentile	(E) Share of Regional Tracts Included by Threshold	(F) Share of Total Regional Population Located in Tracts Above Threshold	(G) Share of Regional Target Population Located in Tracts Above Threshold	(H) Share of Regional Target Population Located in Union of Communities
Low Income/Minority Communities								
Low income population (1)	1,544,352	23%	19%	23%	40%	35%	65%	76%
Minority population (1)	3,785,369	54%	52%	61%	40%	42%	60%	72%
<i>Low-Income/Minority Communities Union**</i>					55%	56%		
Limited English Proficiency/Low Educational Attainment Communities								
Pop. speaking English less than "very well" (1)	1,159,188	18%	15%	18%	40%	42%	70%	77%
Pop. 25+ with less than HS diploma (1)	642,723	13%	10%	13%	40%	42%	73%	79%
<i>Limited English Proficiency/Low Educational Attainment Communities Union</i>					50%	52%		
Low Mobility Communities								
Population 5+ with a disability (2)	1,106,833	18%	17%	19%	40%	37%	51%	77%
Population 75+ (1)	409,225	6%	5%	6%	40%	39%	62%	81%
Zero Vehicle Households*** (1)	234,074	9%	5%	7%	40%	36%	79%	91%
<i>Low Mobility Communities Union</i>					73%	69%		

(1) Analysis based on 2005-09 American Community Survey data

(2) Analysis based on 2000 Census data

* This data is included to highlight the varying spatial distributions of different target populations within the region. A number in Column C much lower than Column B reflects greater spatial concentrations of the target population within the regional context; if the number in Column C is closer to that in Column B, the target population is more dispersed throughout the region.

** By comparison, Communities of Concern defined by 2000 Census used in the last two RTP Equity Analyses comprised 34% of all regional TAZs and 33% of regional population.

*** Regional total is expressed in households rather than population.

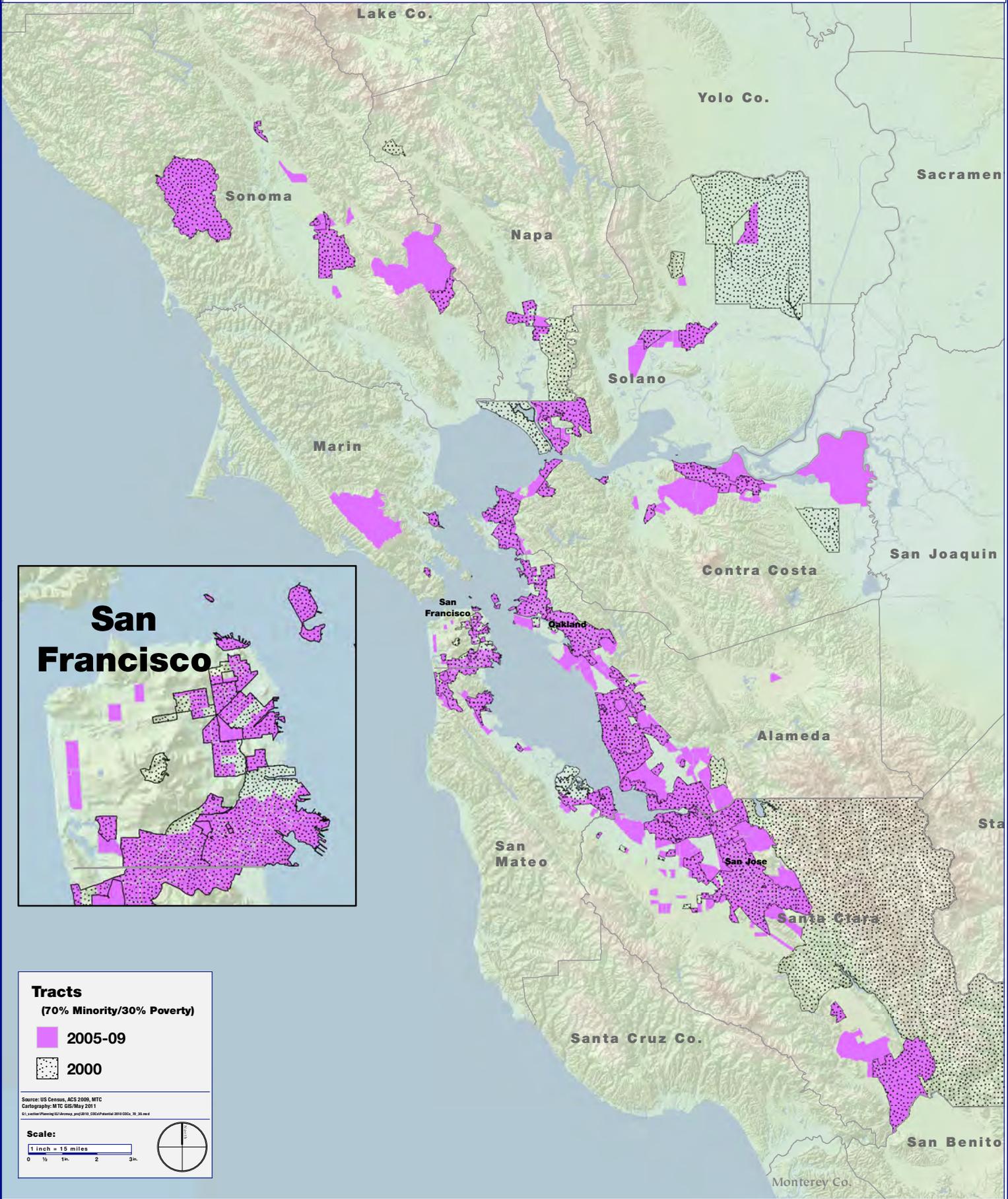
70% Minority and/or 30% Low Income

Planning, Financing and Coordinating
Transportation for the nine-county
San Francisco Bay Area

Research and Demographic Unit

DRAFT

Geographic Information Systems Unit



Tracts
(70% Minority/30% Poverty)

- 2005-09
- 2000

Source: US Census, ACS 2000, MTC
Cartography: MTC GIS/May 2011
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Scale:
1 inch = 15 miles

0 1/4 1/2 1 2 3 miles



OneBayArea

To: Equity Working Group
 From: Jennifer Yeamans, MTC and Marisa Raya, ABAG
 Date: August 3, 2011
 Subject: Alternative Scenarios Equity Analysis: Performance Measures and Analysis Framework

This memorandum summarizes the proposed methodology for staff's recommended performance measures for the Alternative Scenarios equity analysis and details how the performance measures will be analyzed with respect to the recommended target populations (summarized in [Attachment A](#)).

Background

Over the past several meetings staff has emphasized two key requirements for carrying out equity analysis of the Alternative Scenarios: (1) identifying a set of equity performance measures that can be readily summarized for each scenario, and (2) identifying relevant target population(s) for each performance measure. A memorandum summarizing staff's recommended approach to defining target populations is provided under Agenda Item #5.

Staff's memorandum for your June 8 meeting detailed the considerations that went into identifying each of the proposed performance measures based in part on priority equity issues raised in working group discussions and from past regional studies. In addition, documentation provided to you following the June 29 Technical Workshop contained additional details on some of the assumptions regarding land use and housing that will apply to the analysis, as well as how some of the variables involved in the equity analysis are forecast. This memorandum provides more thorough detail on the methodology behind each of the proposed measures for your consideration and further input at your August 10 meeting. Following the August 10 meeting, analytical work must proceed immediately in order to provide equity analysis results for public review in October with the rest of the Alternative Scenarios technical analysis.

Measure 1: Housing and Transportation Affordability

This measure is a combination of three different variables: housing costs, transportation costs, and household income. It is expressed as the share (percentage) of average household income spent on housing and transportation costs as follows:

$$(\text{Average Housing Costs} + \text{Average Transportation Costs}) / \text{Average Household Income}$$

This measure was previously used in the Transportation 2035 Equity Analysis as a test measure. Several improvements and refinements to the previous methodology are being proposed.

Housing Cost Forecasts

In the last regional transportation plan, Transportation 2035, the housing price analysis used to calculate Housing + Transportation Affordability was limited. ABAG staff expects to extend that



analysis to estimate housing prices for different products at different locations. Initially, ABAG staff expect to produce those prices using an econometric analysis: forecasting an average housing price over time and then estimating changes that result from different attributes and locations.

The ongoing development of ABAG's locational model for land-use change (called "Steelhead") should provide staff with housing prices for forecast years. The model currently provides housing prices for several categories of housing. Staff are evaluating the housing prices from some initial model runs and comparing them to the econometric model to check consistency.

For housing prices that come from either an econometric analysis or the regional models, some explicit assumptions would need to be made to identify the costs and available funding for affordable housing.

Transportation Cost Forecasts

A household's estimated transportation costs include fixed costs related to owning automobiles (such as car payments and insurance), and variable costs (such as fuel, parking charges, and/or transit fares) related to how much and what kind of travel people choose to make day-to-day. Travel costs are forecast as out-of-pocket expenses incurred by travelers on a "typical day" for:

- Bridge tolls
- High Occupancy Toll (HOT) lane prices
- Transit fares
- Auto operating costs, which include assumptions about the price of fuel and fuel economy of vehicles
- Parking costs

Out-of-pocket travel costs for a typical day of travel are annualized by multiplying these costs by 300. These annualized costs are then added to a household's annual auto ownership costs and annual housing costs in the H+T calculation. Note that automobile ownership costs will vary by scenario as different land use and transportation inputs will result in differing levels of automobile ownership per household.

Household Income Forecasts

Mean household incomes by county in the Current Regional Plans and Initial Vision Scenario were based on per-capita income forecasts from Moody's analytics. These estimates, using Census and Bureau of Economic Analysis data, show a relatively small increase in real incomes over time. Statistical models are used to estimate the change in household incomes at a census tract level.

The distribution of incomes, at both the regional and local level, follows the trend of slow growth in real income. While there is a small widening of the distribution, there is growth in income at all levels. The income distribution going forward is a difficult issue. Recent research suggests that income distributions in the U.S. have become more skewed over the last several decades.¹

¹ Alroc, Sherman and Stone, Chad, "Income Gaps Between the Very Rich and Everyone Else More than Triple in the Last Three Decades, New Data Show" Center on Budget and Policy Priorities, June 25, 2010 www.cbpp.org

Some research also indicates that the trend toward more unequal incomes has been even worse in California.²

The regional planning agencies across California do not have consistent approaches to this question. Some expect strong income growth, others do not. Some expect more skewed income distributions, and others seem to expect increasing equality.

Staff will continue to look at the estimates of income distribution over the next several months. It may be appropriate to make changes to the local distributions as part of the scenario analysis.

Relationship to Other Analyses: This measure is distinct from the measure used in the Targets Analysis, in that it compares results for low-income households to non-low-income households, and for geographically defined communities with concentrations of equity analysis populations to the remainder of the region. The Targets Analysis is intended to focus on results only for low- and moderately-low-income households combined.

Results: Results of this measure will be compared between groups across all scenarios for:

- All households by income level (low-income vs. non-low-income)
- Low-income/minority communities vs. all other communities
- Limited English Proficiency/low-educational-attainment communities vs. all other communities
- Low-mobility communities vs. all other communities

Measure 2: Displacement Analysis

The best way to consider displacement would be to have panel data that follows a specific group of people over time. However, that data is difficult to obtain and is not currently used in regional modeling. The regional land use and transportation models use base year data and then estimate specific variables across a forecast period. While the variables are tied to specific geographies, staff is not estimating changes in particular households over time. The comparison therefore is between households that exist in two different time periods.

The displacement analysis will first look at projected changes to incomes for the population in low-income communities, and see whether the total number of low-income households changes. The future population will then be compared to the projected change in housing costs for the same area.

Relationship to Other Analyses: This measure is related to the additional displacement factor added to the Housing Target in the Target Analysis.

Results: Results of this measure will be compared between groups across all scenarios for low-income communities of concern.

² Daly, Mary C., Royer, Heather N., "Cyclical and Demographic Influence on the Distribution of Income in California," FRBSF Economic Review, San Francisco Federal Reserve, pp. 1-13,2000

Measure 3: Jobs-Housing Fit Analysis (Test Measure)

ABAG forecasting models provide estimates of both household income and employment. Household income is actually estimated separately from employment. Income is modeled based on the location of residence, while employment is primarily modeled by the location of the job. While they have a relationship to employment growth, household incomes are not directly tied to employment or occupations at a detailed geography.

As a result, ABAG is developing tools to identify jobs-housing fit. Staff are using Census data, particularly Census Transportation Planning Package data for the 2006-2008 American Community survey, to identify incomes by place of employment and industry of employment. This data is not available at a census tract level, but is available at larger geographies such as the county and “place” level; place refers to city-level information for selected cities with populations greater than 20,000. There are about fifty places across the region identified in the CTPP data. It may be appropriate to use these places to create more generalized results, or, if needed, larger geographies such as Public Use Microdata Areas (PUMAs) may be used as the basis for the analysis. There are 54 PUMAs in the region comprising approximately 100,000 residents each, and they vary in size with population density from large (all of Napa County) to fairly small (San Francisco’s Richmond District). Further examination of the data set will be required to determine what level of geography is most appropriate to use for this analysis.

The models’ employment estimates by industry category will be used to estimate the income generated in local areas across a variety of income categories. This would be an estimate of income by the location of employment, instead of income by location of residence that is already in the models. This will allow staff to identify the differences that would occur between scenarios.

Relationship to Other Analyses: This measure is unique to the Equity Analysis and is being proposed as a test measure. As a test measure, staff may need to make adjustments to the methodology as it is developed.

Results: Results of this measure will be reported by the sub-areas defined and results compared between target and non-target populations.

Measure 4: Vehicle Emissions

Calculating this measure relies on the California Air Resources Board’s (ARB) Emission FACTors (EMFAC) model to calculate emission rates from all motor vehicles, such as passenger cars to heavy-duty trucks, operating on highways, freeways and local roads in California.

The basic procedure for conducting an emissions analysis or emissions inventory for on-road mobile sources is to calculate emission factors using the current version of the EMFAC model (EMFAC2007, version 2.3, November 2006), then multiply by the vehicle-miles of travel (VMT) for each affected roadway link. EMFAC2007 is capable of predicting composite vehicle-type emission factors for hydrocarbons, carbon monoxide, nitrogen oxides, particulate matter, and other pollutants in units of grams per mile.

This analysis proposes to focus on coarse and fine particulate matter (also known as PM10 and PM2.5, respectively) due to the relationship of these pollutants to health risks from direct, localized exposure to on-road mobile sources (compared to more indirect exposure to smog-forming pollutants which create health hazards at a more regional rather than localized scale). EMFAC2007 emission factors are sensitive to changes in vehicle activity parameters so that the appropriate emission factors for a link are matched to the corresponding travel speeds and vehicle type shares present on a specific roadway.

An emission calculation can be summarized as the product of an emission rate (e.g. grams per pollutant emitted over a mile) and vehicle activity (e.g. miles driven per day).

The following basic statement determines how emissions are calculated:

Emission Factor X travel activity (i.e., VMT) = Emissions in a unit of mass per day (a unit of mass such as grams, kilograms, tons, pounds, etc.)

Relationship to Other Analyses: This measure is distinct from the measure used in the Targets Analysis in that it compares results for geographically defined communities with concentrations of equity analysis target populations to the remainder of the region. The Targets Analysis will focus on those communities identified by the Bay Area Air Quality Management District's Community Air Risk Evaluation (CARE) Program.

Results: Results of this measure in average amount of pollutant per day per roadway link will be compared between groups across all scenarios for:

- Low-income/minority communities vs. all other communities

Measure 5: Non-commute Travel Time

This measure provides average travel time per trip for non-commute trips by all modes for both the target populations and non-target populations. Non-commute trips for all modes is recommended because:

- Commute travel to work will be analyzed implicitly in the Jobs-Housing Fit measure (#3).
- Low-income travelers are more likely than higher-income travelers to be non-workers, students, or retirees.³
- Non-commute trips outnumber commute trips for low-income travelers⁴ (though commute trips are generally longer than non-commute trips in terms of time and distance). Non-commute trips are also more likely to occur at off-peak travel times.
- Non-commute trips capture a wider variety of both essential and discretionary travel needs including shopping, accessing health care and social services, and social and

³ Source: Bay Area Travel Survey 2000, as cited in MTC's Snapshot Analysis Development Report, June 2010. <http://www.mtc.ca.gov/planning/snapshot/Snapshot%20Development%20Report-0609.pdf>. Note "Low Income" is defined as travelers living in households with incomes below \$35,000 per year.

⁴ See April 6, 2011 staff memorandum to Equity Working Group "Additional Initial Vision Scenario Data Results," Figures 4 and 6. http://apps.mtc.ca.gov/meeting_packet_documents/agenda_1649/April_13_Equity_Working_Group_packet.pdf

- recreational trips, and as such provide a better indication of whether residents live in “complete communities” where a wide variety of daily needs are located nearby.
- All modes are considered because regionally low-income travelers use a wide variety of travel modes, including automobile (57% of all weekday trips), walking and biking (24%), and public transit (14%).⁵

Relationship to Other Analyses: This measure is distinct from the measure used in the Targets Analysis, in that it (a) focuses on non-commute travel and (b) compares results for geographically defined communities with concentrations of equity analysis target populations to the remainder of the region, and for low-income households and non-low-income households. The Targets Analysis will look at travel time for non-auto modes only and only for the regional population as a whole.

Results: Results of this measure will be compared between groups across all scenarios for:

- All households by income level (low-income vs. non-low-income)
- Low-income/minority communities vs. all other communities
- Limited English Proficiency/low-educational-attainment communities vs. all other communities
- Low-mobility communities vs. all other communities

Next Steps

Staff welcomes any further feedback on these proposed measures and their methodologies at your August 10 meeting, after which analytical work will commence on the Alternative Scenarios.

⁵ Source: Bay Area Travel Survey 2000, as cited in MTC’s Snapshot Analysis Development Report, June 2010.

Attachment A: Draft Equity Measures for Alternative Scenarios

Version 08.03.11

Measure/Description	Key Questions Addressed	Target Population Breakout	Discussion
Theme: Affordable Housing and Transportation Choices			
<p>1. Housing + Transportation Affordability</p> <p>Result is a percentage expressing the average share of household income spent on housing and transportation costs combined. Results are compared between groups across all scenarios.</p>	<ul style="list-style-type: none"> Which scenario(s) reduce the share of income spent on housing and transportation by the greatest amount for the target population? Which scenario(s) provide similar or better results for the target population compared to the rest of the population? 	<ul style="list-style-type: none"> Low-income households (all) vs. non-low-income households Low-income/minority communities of concern vs. remainder of region Limited English proficiency/limited educational attainment communities vs. remainder of region Low-mobility communities vs. remainder of region 	<p>Advantages:</p> <ul style="list-style-type: none"> Dovetails with targets analysis (which combines low and moderately low income households) <p>Issues:</p> <ul style="list-style-type: none"> Relies on future-year assumptions/forecasts about housing cost and income distribution, as well as forecasted transportation costs Travel mode choice and access end up deeply embedded within the measure
Theme: Growing Equitably			
<p>2. Displacement Analysis</p> <p>Compares forecasted number of low-income households to current-year. Results are compared across all scenarios.</p>	<ul style="list-style-type: none"> Which scenario(s) result in zero displacement of low-income households? Which scenario(s) accommodate the greatest number of low-income households? 	<ul style="list-style-type: none"> Low-income households (all) Other communities TBD 	<p>Advantages:</p> <ul style="list-style-type: none"> Dovetails with targets analysis <p>Issues:</p> <ul style="list-style-type: none"> May be challenging to characterize market forces in forecasts
Theme: Making the Jobs/Housing Connection			
<p>3. Jobs-Housing Fit Analysis (Test Measure)</p>	<ul style="list-style-type: none"> Which scenario(s) provide the best fit for low-income households and entry-level jobs? 	<ul style="list-style-type: none"> Low-income households (all) Other communities TBD 	<p>Advantages:</p> <ul style="list-style-type: none"> Addresses inter-jurisdictional issues affecting locations of jobs and housing <p>Issues:</p> <ul style="list-style-type: none"> Methodology still under development
Theme: Healthy Communities			
<p>4. Vehicle Emissions (PM_{2.5} and PM₁₀)</p> <p>Emissions of fine and coarse particulate matter from on-road vehicles are estimated in terms of average amount (e.g. kg) per day per roadway link. Based on location of roadway links, results are compared between groups across all scenarios.</p>	<ul style="list-style-type: none"> Which scenario(s) reduce emissions by the greatest amount for the target populations? Which scenario(s) provide similar or better results for the target populations compared to the rest of the population? 	<ul style="list-style-type: none"> Low-income/minority communities of concern vs. remainder of region Limited English proficiency/limited educational attainment communities vs. remainder of region Low-mobility communities vs. remainder of region 	<p>Advantages:</p> <ul style="list-style-type: none"> Dovetails with targets analysis (which analyzes BAAQMD CARE communities) <p>Issues:</p> <ul style="list-style-type: none"> Spatially disaggregated emissions estimates are a proxy for—but do not equate to—forecasting air quality concentrations or health outcomes
Theme: Equitable Mobility			
<p>5. Non-commute Travel Time</p> <p>Result is an average travel time in minutes for non-commute trips, reflecting travel to all other destinations than work or school, including shopping, childcare, health and medical, and social/recreational trips.</p>	<ul style="list-style-type: none"> Which scenario(s) reduce average trip time to non-work destinations by the greatest amount for the target populations? Which scenario(s) provide similar or better results for the target populations compared to the rest of the population? 	<ul style="list-style-type: none"> Low-income households (all) vs. non-low income households Low-income/minority communities of concern vs. remainder of region Limited English proficiency/limited educational attainment communities vs. remainder of region Low-mobility communities vs. remainder of region 	<p>Advantages:</p> <ul style="list-style-type: none"> Can capture a broad cross-section of populations who benefit from improved connections to non-work destinations. <p>Issues:</p> <ul style="list-style-type: none"> Doesn't individually break out more specific kinds of trips or modes of interest to specific target populations.