

EXECUTIVE SUMMARY

Background

The Transportation 2030 Equity Analysis is one component adding to a host of MTC programs that focus on or address environmental justice. The intent of environmental justice is to 1) avoid, minimize, or mitigate disproportionately high and adverse effects on minority and low-income populations, and 2) ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

The purpose of the equity analysis is to measure both the benefits and burdens associated with the transportation investment packages proposed in the Transportation 2030 Plan, and to make sure that minority and low-income communities share equitably in the benefits without bearing a disproportionate share of the burdens.

This equity analysis builds on the analysis conducted for the 2001 Regional Transportation Plan, and responds to requests to include additional measures. In 2001, the analysis measured access and travel time to jobs. In addition to measuring access and travel time to jobs, this analysis assesses the following new measures:

- Access and travel time to essential destinations by auto and transit. Essential destinations include schools (elementary, middle schools, high schools, community colleges and universities), food stores, health services and social services (including banks and post offices). Results are compared across Transportation 2030 investment alternatives
- Travel-time and out-of-pocket savings associated with Transportation 2030 investment alternatives (user benefits)
- Vehicle miles traveled through minority and low-income neighborhoods. This measurement provides information on hours of travel, hours of delay and emissions associated with this traffic, and is assessed across Transportation 2030 investment alternatives

A comparison of the results of each of these measures is made between low-income and minority communities (“communities of concern”) and the remainder of the Bay Area.

MTC’s Minority Citizen’s Advisory Committee (MCAC) contributed to the development of the equity analysis methodology, and provided input on the definition of communities of concern, essential destinations, vehicle miles traveled and emissions.

After an initial assessment of the results, deeper analysis related to access and travel time to jobs and essential destinations was pursued. To observe the effects of the transportation investment alternatives on different density ranges in the Bay Area, urban and suburban/rural communities of concern were separated and compared to the remainder of urban and suburban communities in the Bay Area.

While several new measures are included in the analysis as noted, the analysis does not assess whether transit is serving residents *when they need to travel* and *exactly where they*

need to go, nor does it assess any cost barriers to using any mode of transportation. MTC and the Public Policy Institute of California (PPIC) collaborated on a study that examined travel patterns and transportation costs for low-income persons. Key findings of the final report for that study are highlighted in Chapter 2. MTC-sponsored community-based transportation plans also address these issues at the community level and are discussed later in this report.

Results of the Analysis

Access and Travel Time to Jobs and Essential Destinations

When looking at the aggregate level across the Transportation 2030 alternatives¹, communities of concern appear to share in the benefits of the transportation investments without bearing a disproportionate share of the burdens compared to the remainder of the Bay Area.

However, because 56% of communities of concern are located in urban areas where transportation networks are highly developed and a significant number of destinations are located, communities with urban and suburban densities were evaluated separately in order to determine whether benefits are distributed differently between urban and suburban communities of concern across the Transportation 2030 alternatives.

Key Findings

Access to jobs

- Across the Transportation 2030 alternatives, urban communities of concern have access to a greater number of jobs by transit than the remainder of urban communities. Both the Project and TRANSDEF alternatives offer access to a greater number of jobs overall than the No Project or Financially Constrained alternatives, which is likely due to the significant transit expansion included in these two alternatives.
- Access to jobs by auto is similar across the alternatives for both urban communities of concern and the remainder of urban communities. Access to the number of jobs by auto does not vary extensively across the alternatives compared to the base year for either urban communities of concern or the remainder of urban communities. One explanation may be that growth in population and employment projected for 2030 (land use changes) may be more pronounced relative to the investment in the road network over the same period.
- Results are similar for suburban communities of concern. Suburban communities of concern have access to a greater number of jobs by transit than the remainder of suburban communities. The Project alternative provides access to the greatest

¹ The Transportation 2030 alternatives assessed in the Equity Analysis include the No Project Alternative, the Financially Constrained Alternative, the Project Alternative and the Transportation Solutions Defense and Education Fund (TRANSDEF) Smart Growth Alternative. All alternatives are described in Section 4.2.

number of jobs by transit for suburban communities of concern, and is likely due to the investment in transit associated with this alternative as noted above.

- Access to jobs by auto is similar across the alternatives for both suburban communities of concern and the remainder of suburban communities.
- In general, the location of jobs held by low-income individuals is aligned with the location of communities of concern. Accessibility to low-income jobs within 30 minutes by transit is best from the downtown Oakland/Berkeley and downtown San Francisco communities of concern. A mismatch occurs along the I-680 and I-580 corridors in Contra Costa and Alameda counties where a significant number of low-income jobs are located but communities of concern are not. Similarly, low-income jobs are located along the Highway 101 corridor in Marin and Sonoma counties, which does not coincide with the location of communities of concern in this area.

Access to essential destinations

- Results for access and travel time to essential destinations for both urban and suburban communities of concern vary depending on which destination is examined. Generally, urban and suburban communities of concern have better access to destinations by transit across the Transportation 2030 alternatives than the remainder of the Bay Area as transit services are typically more concentrated in developed urban and suburban areas – where communities of concern are located – than in outlying areas².
- Urban and suburban communities of concern have access to a greater number of food stores, elementary schools and middle schools by auto and transit than the remainder of the Bay Area, as these destinations are more numerous in the higher density areas where communities of concern are also located. However, in most cases, urban and suburban communities of concern have access to fewer health services than does the remainder of the Bay Area communities.

Average Travel Time and Mode Split

- The remainder of Bay Area communities drives approximately 10% more for both work and non-work trips compared to communities of concern across Transportation 2030 alternatives. Conversely, residents of communities of concern take transit approximately 5%-7% more often for both work and non-work trips across all alternatives. One reason that may partially account for the higher use of transit in communities of concern could be the significant investment in the maintenance and expansion of public transit service in all the “build” alternatives of the Transportation 2030 Plan.

² Note that the models are unable to project future-year locations of essential destinations. Results reflect access and travel time to current-year destinations across the various transportation alternatives.

- Travel time for work trips for residents of communities are a few minutes shorter by auto and approximately ten minutes shorter by transit compared to the remainder of the Bay Area – a trend common across all alternatives. Walking trips to work are approximately 12 minutes shorter for residents of communities of concern than the remainder of the Bay Area. Average travel times for non-work trips for residents of communities of concern and the remainder of the Bay Area are very similar, varying by only a few minutes across all modes.

User Benefits

Key Findings

- Residents of communities of concern and the remainder of the Bay Area both benefit from building any of the Transportation 2030 alternatives than a “No Project” approach to transportation investment because, compared to the No Project approach, each yields an annual per capita dollar benefit per user. Residents of communities of concern benefit most from the TRANSDEF alternative, while the remainder of the Bay Area benefits most from both the Project and TRANSDEF alternative. This may be due to the assumptions associated with each alternative, such as the pricing concepts that reward transit use and discourage road use included in the more aggressive TRANSDEF alternative, which tend to benefit densely populated areas.

Vehicle Miles Traveled and Emissions

Key Findings

- On an aggregate level, more vehicle miles are traveled in the remainder of the Bay Area than in communities of concern across all alternatives because the remainder of the Bay Area represents a larger geographic area and therefore a larger portion of the highway and street network. Controlling for population, examining vehicle miles traveled on a *per capita* basis yields higher totals in communities of concern than in the remainder of the Bay Area by approximately 20% (12% higher in the TRANSDEF alternative). This is not unexpected given that communities of concern are generally in close proximity to denser concentrations of jobs and essential destinations (and their associated transportation infrastructure) compared to outlying areas.
- Emissions measured on a per capita basis are higher for all indicators across all alternatives for communities of concern compared to the remainder of the Bay Area because close proximity to jobs and essential destinations (developed areas vs. outlying suburban areas) brings higher traffic volumes and emissions as a result. The measurements are higher by approximately 11%-23% across the alternatives.
- However, except for particulate matter, emissions are significantly reduced for residents of communities of concern and the remainder of the Bay Area across all Transportation 2030 alternatives compared to the 2000 base year. This is due to projected advances in technology related to emission control that will affect all vehicles over the next 25 years.

Conclusions

Collectively these results indicate that, overall, communities of concern will share equitably in the benefits of the Transportation 2030 investment alternatives without bearing a disproportionate share of the burdens. Results related to access and travel time to jobs and essential destinations vary depending on whether communities of concern with urban or suburban densities are examined. Generally, residents of communities of concern benefit from accessibility to jobs and essential destinations because communities of concern are often located in the developed sections of urban and suburban areas where transit service levels are highest and many destinations are most concentrated. While emission levels may be higher in communities of concern compared to the remainder of the Bay Area, building any of the transportation alternatives yields lower emissions in communities of concern than if the No Project alternative is pursued. It should also be noted that the Bay Area has been classified as attaining the federal health-based standards for carbon monoxide, ozone and coarse particulate matter (PM₁₀) by the United States Environmental Protection Agency. The Bay Area is unclassified for fine particulate matter (PM_{2.5}) due to insufficient data, but preliminary data indicate that the Bay Area may be in attainment for this pollutant as well.

The results suggest that, across the Transportation 2030 alternatives, transit will serve communities of concern better than the remainder of the Bay Area. As mentioned above, the analysis does not measure or capture whether transit is serving residents *when they need to travel* or *where they specifically need to go*, nor does it assess any cost barriers to using any particular mode of transportation. This is why obtaining input from residents of communities of concern, particularly those without access to vehicles, is critical during planning stages at the local level, such as through MTC's community-based transportation plans or short-range transit planning through Bay Area transit operators.

When examining transportation investments from a regional perspective, which was the focus of this analysis, it is difficult to key in on the needs of individual communities of concern. However, the tables in the Appendices of this report contain detailed results for each of the communities of concern for all of the indicators examined in the analysis. These results may yield additional insight about the communities of concern, such as the number of essential destinations located in each community, and may be useful for community transportation, land use or development planning efforts taking place in these communities.

Next Steps

MTC will continue to focus attention on improving transportation options in communities of concern. The following directions will be pursued:

- Focus efforts on allocating the Lifeline Program's \$216 million on projects that improve transportation in communities of concern.
- Proceed with and complete remaining community-based transportation plans.

- Continue to develop land use and development policies that incorporate the transportation, housing and service needs of communities of concern through the Transportation for Livable Communities Program and through new initiatives such as the development of MTC's adopted transportation/land use platform.
- Continue to refine and improve upon the equity analysis methodology, and improve data collection on a region-wide basis, such as collecting demographic data on those who drive and those who take transit.
- Pursue strategies related to Lifeline Transportation and Access to Mobility as outlined in the Transportation 2030 Plan.
- Continue to work towards improving the Bay Area's air quality by working cooperatively with the Bay Area Air Quality Management District and the California Air Resources Board.

Chapter 1 : Introduction

1.1 Background on Environmental Justice

Environmental Justice is a broad and complex topic that applies to many fields, and evolved out of concerns related to civil rights and equal protection under the law. Federal legislation guides environmental justice policies and practices, including Title VI of the 1964 Civil Rights Act, the 1994 Executive Order on Environmental Justice, and in the case of transportation, the 1997 Department of Transportation Order on Environmental Justice.

The Federal Highway Administration and the Federal Transit Administration offer three principles that provide the foundation for environmental justice³:

- * To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- * To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- * To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

As the federally-designated metropolitan planning organization for the nine-county San Francisco Bay Area region, the Metropolitan Transportation Commission (MTC) has a responsibility to conduct an analysis that measures the distributional effects of transportation investments in the region related to its long-range transportation plan. The analysis must assess the *regional* benefits and burdens of the transportation system investments for different socio-economic groups. This “equity analysis” is just one component of MTC’s policies and programs that address the environmental justice principles noted above.

In addition to conducting the equity analysis, MTC addresses the transportation needs of minority and low-income populations in other ways. As part of the current update to the long-range Regional Transportation Plan (RTP) – Transportation 2030 – MTC dedicated \$216 million over the next 25 years to a regional Lifeline Transportation Program to improve services in low-income communities. Efforts to advance transportation improvements in low-income communities are intended to address transportation gaps identified in the 2001 RTP, which concluded with the Commission’s adoption of the Lifeline Transportation Network Report. The Lifeline Report identified both spatial and temporal transportation gaps in low-income communities that prevent the full access to jobs and services that people need, and recommended that solutions to these gaps be developed with input at the local level. As a result, MTC’s Community-based Transportation Planning Program was launched to work directly with communities to set priorities and evaluate options for filling local transportation gaps.

³ Source: <http://www.fhwa.dot.gov/environment/ej2000.htm> - Accessed November 2004.

The CBTP program and other MTC efforts that either include or focus on environmental justice communities are described in further detail in Chapter 2.

1.2 Purpose of Equity Analysis

As mentioned above, MTC is the federally-designated metropolitan planning organization for the nine-county San Francisco Bay Area region, and has a responsibility to conduct an analysis that measures the distributional effects of transportation investments in the region related to its long-range plan. Therefore, the purpose of the Transportation 2030 equity analysis is to measure both the benefits and burdens associated with the transportation investment packages proposed in the Transportation 2030 Plan, and to make sure that minority and low-income communities share equitably in the benefits of the transportation network without bearing a disproportionate share of the burdens.

There is no standard national policy or guidance on how an environmental justice assessment or equity analysis should be performed, especially for a long-range plan⁴. However, the U.S. Department of Transportation recognized the methodology used in MTC's 2001 equity analysis in their publication *Transportation and Environmental Justice, Effective Practices*. This equity analysis builds on the analysis conducted in 2001, and responds to requests to include additional measures and examine potential negative effects associated with the transportation investment alternatives proposed for the regional network. In 2001, the analysis measured access and travel time to jobs. In addition to measuring access and travel time to jobs, this analysis assesses the following **new** measures:

- Access and travel time to essential destinations by auto and transit. Essential destinations include schools (elementary, middle and high schools, community colleges and universities), food stores, health services and social services (including banks and post offices). Results are compared across Transportation 2030 investment alternatives.
- Travel-time and out-of-pocket savings associated with Transportation 2030 investment alternatives (user benefits)
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A comparison of the results of each of these measurements is made between low-income and minority communities and the remainder of the Bay Area.

MTC's Minority Citizens Advisory Committee (MCAC) contributed to the development of the equity analysis methodology, and provided input on the definition of environmental justice communities, essential destinations, vehicle miles traveled and

⁴ Transportation Research Board, National Cooperative Highway Research Program Report 532. *Effective Methods for Environmental Justice*, September 2004.

emissions. The methodology used in the analysis is discussed in Chapters 3 and 4.