

BayArea Plan SCENARIO ANALYSIS

WHAT ARE THE TARGETS AND HOW ARE THEY MEASURED?

1. Reduce per-capita CO2 emissions from cars and light-duty trucks by 15%

SB 375 requires the California Air Resources Board (CARB) to set targets for reducing emissions from cars and light-duty trucks. CARB adopted this target for use in Plan Bay Area; the target results are based on a measurement of pounds of carbon dioxide emissions from passenger vehicles for a typical weekday, on a per-person basis.

2. House 100% of the region's projected 25-year growth by income level (very-low, low, moderate, above-moderate) without displacing current low-income residents

SB 375 requires regions to plan for housing all projected population growth, by income level, to prevent growth in in-commuting. This target's results reflect the percentage of year 2035 total housing demand that can be accommodated in the nine-county Bay Area. Only the first two scenarios are able to meet this target, as they assumed higher in-region population levels. In the other three scenarios, some households must live outside the Bay Area (particularly in the San Joaquin County) and commute into the region for employment.

3a. Reduce premature deaths from exposure to fine particulates (PM2.5) by 10%

The Bay Area currently does not meet the federal standard for fine particulate matter, which is extremely hazardous to health. The targeted reduction for PM2.5 reflects the expected benefit from meeting the federal standard. This target's performance was assessed by Bay Area Air Quality Management District (BAAQMD) staff; their analysis considers the impacts of fine particulate (PM2.5) emissions, as well as NOx emissions that produce secondary PM2.5. Note that all direct PM2.5 emissions from vehicles were considered, but road dust and brake/tire wear were not included.

3b. Reduce coarse particulate emissions (PM10) by 30%

The Bay Area currently does not attain the state standard for coarse particulate matter. The targeted reduction for PM10 is consistent with the reduction needed to meet the state standard and achieve key health benefits. The target results reflect tailpipe emissions and road dust from all vehicles, but do not include coarse particulates from brake and tire wear.

3c. Achieve greater particulate emission reductions in highly impacted areas

A "Yes" rating for this target means that highly impacted areas achieve greater reductions in particulate emissions than the rest of the region. The target assessment identified CARE communities as "highly impacted areas"; CARE communities are defined by BAAQMD as lower-income communities in the Bay Area with high levels of particulate emissions from roads and ports.

4. Reduce by 50% the number of injuries and fatalities from all collisions (including bike and pedestrian)

This target is adapted from the State's 2006 Strategic Highway Safety Plan and reflects core goals of improving safety and reducing driving. The target measures the total number of individuals injured or killed in traffic collisions, regardless of transport mode.

5. Increase the average daily time walking or biking per person for transportation by 70% (for an average of 15 minutes per person per day)

This target relates directly to U.S. Surgeon General's guidelines on physical activity, for the purposes of lowering risk of chronic disease and increasing life expectancy. The target results are based on the average time spent walking or biking on a typical weekday, only for transportation purposes (i.e. does not include recreational walking or biking).

6. Direct all non-agricultural development (100%) within the urban footprint (existing urban development and urban growth boundaries)

SB 375 requires consideration of open space and natural resource protection, which supports accommodating new housing and commercial development within existing areas of urban growth. The intent of this target is to support infill development while protecting the Bay Area's agriculture and open space lands. By focusing on areas with existing urban development, as well as areas specifically selected for future growth by local governments, the target seeks

to avoid both excess sprawl and elimination of key resource lands. The target results are based on the percentage of total housing units located within the year 2010 urban footprint (defined as existing areas of development, as well as areas within existing urban growth boundaries).

7. Decrease by 10% the share of low-income and lower-middle income residents' household income consumed by transportation and housing

This target aims to bring Bay Area housing and transportation costs in line with the national average, as the region's costs are currently significantly higher than the rest of the country. The target focuses on cost impacts for low-income and lower-middle income residents (with household income less than \$60,000 in year 2000 dollars).

8. Increase gross regional product (GRP) by 90% — an average annual growth rate of approximately 2% (in current dollars)

This target is a key indication of the region's commitment to advance Plan Bay Area in a manner that supports economic growth and competitiveness. Growth patterns and transportation investments in the scenarios affect travel time, cost and reliability. The Plan Bay Area Economic Impact Assessment, developed by consultant Cambridge Systematics, reflects on the cost of on-the-clock travel and access to labor, suppliers, and markets. Any resulting increases in productivity make the region more competitive for attracting new businesses and jobs; this increases employment and wages, which are also reflected in the GRP target.

9a. Increase non-auto mode share by 10%

Mode share can be interpreted as the percent of trips made by a particular travel mode (walk, bike, drive, etc.); this target reflects the Plan Bay Area goal of reducing trips made using automobiles. The target benefits from service and infrastructure improvements for the transit, bicycle, and pedestrian networks. The numeric target shown in the table reflects the resulting 10% mode share increase from the forecasted 2005 non-auto mode share of 16%. This updated target language has been proposed to replace the previously adopted non-auto travel time reduction target.

9b. Decrease automobile vehicle miles traveled per capita by 10%

Vehicle miles traveled (VMT) per capita reflect both the total number of auto trips and the average distance of auto trips; this target would be supported by increased transit service, more opportunities for active transportation, and reduced travel distances between origins and destinations. Given significant traffic congestion in the region, it is critical to reduce VMT per person. The target results are based on model output for total auto vehicle miles traveled and are adjusted based on the total population for the relevant scenario.

10a. Increase local road pavement condition index (PCI) to 75 or better

The Pavement Condition Index (PCI) reflects the quality of the roadway surface — the more cracks and potholes form, the lower the Pavement Condition Index. The target reflects a goal of reaching a state of good repair on local roadways, which form the backbone of the transportation network in Priority Development Areas (i.e. key areas for focused growth in the Plan).

10b. Decrease distressed lane-miles of state highways to less than 10% of total lane-miles

This target's performance is based on anticipated state funding for highway maintenance. The region must maintain the existing highway infrastructure in order to support the goals of Plan Bay Area.

10c. Reduce share of transit assets exceeding their useful life to 0%

This target reflects a goal of replacing all transit assets on-time (i.e. at the end of their useful life); failure to do so would result in unreliable transit service. As frequent, reliable transit service is critical to support focused growth, this target reflects the need to maintain existing transit service in a state of good repair. This updated target language has been proposed to replace the previously adopted average transit asset age target.

HOW WERE THE SCENARIOS DEFINED AND HOW DO THEY DIFFER?

In June 2011, MTC and ABAG approved five alternative Plan Bay Area land use and transportation scenarios for evaluation and testing to demonstrate how the region might achieve a set of performance targets for the environment, the economy and social equity (see inside for details).

These scenarios place varying degrees of growth in Priority Development Areas (PDAs), which are defined as land near public transit that local officials have determined to be most suitable for development. Likewise, the scenarios recognize Priority Conservation Areas, places local officials have deemed worth keeping undeveloped for farm land, parks or open space. The first two scenarios assume stronger economic growth and financial resources, along with a higher level of housing growth to meet forecasted demand. The remaining three scenarios fall somewhat short of meeting future housing demand but reflect input received from local jurisdictions on the level of growth they think can reasonably be accommodated.

SCENARIOS	LAND USE PATTERN	TRANSPORTATION NETWORK
1 Initial Vision	Housing and job growth is concentrated in the PDAs, based on local land use priorities, available transit service, and access to jobs. The scenario is based on input from local jurisdictions on the level of growth they can reasonably accommodate given resources, local plans, and community support. 70 percent of the housing would be accommodated in PDAs. More than half of job growth is expected to occur in the region's 10 largest cities.	Transportation 2035 Plan Network – Investment strategy in MTC's adopted long-range transportation plan.
2 Core Concentration	Housing and job growth is concentrated in locations that are served by frequent transit services and within a 45-minute transit commute of Oakland, San Francisco, and San Jose. Also identifies several "game changers," or places with capacity for a high level of growth if coupled with supportive policies and resources. These areas include the Tasman Corridor in Santa Clara County, lands east of Oakland Airport to the Coliseum, the Concord Naval Weapons Station, and the San Francisco Eastern Waterfront, among others. Overall, 72 percent of the housing and 61 percent of the job growth is expected within the PDAs.	Core Capacity Transit Network – Increases transit service frequency along the core transit network
3 Focused Growth	Distributes growth most evenly throughout the region's transit corridors and job centers, focusing most household and job growth within the PDAs. 70 percent of the housing production and around 55 percent of the employment growth would be accommodated within PDAs. Provides more housing near transit stations and more local services in existing downtown areas and neighborhood centers.	Core Capacity Transit Network – See description above.
4 Constrained Core Concentration	Places more household and job growth in those PDAs situated along several transit corridors ringing the Bay in San Francisco, San Mateo and Santa Clara counties, and in portions of Alameda and Contra Costa counties. Some 79 percent of the housing production and 58 percent of the employment growth would be accommodated within PDAs. By concentrating more growth in the major downtowns and along key transit corridors, this scenario goes even further than the Focused Growth scenario in trying to maximize the use of the core transit network and provide access to jobs and services to most of the population.	Core Capacity Transit Network – See description above.
5 Outward Growth	Closer to recent development trends, places more growth in the cities and PDAs in the inland areas away from the Bay than those considered in the Focused Growth or the Constrained Core Concentration scenarios. Most housing and employment growth would still be accommodated in areas closest to the Bay, but with clusters of jobs and housing in key transit-served locations in the inland areas away from the Bay. Some 67 percent of housing production and 53 percent of employment growth would be in PDAs. While increased use of public transit would be limited in inland areas, some shorter commutes could be expected as jobs are created closer to residential communities.	Transportation 2035 Plan Network – See description above.

Scenarios were assessed to determine their impacts on the Bay Area. This table shows how each scenario performs with regard to the adopted Plan Bay Area performance targets.

TARGETS ▼																
	CLIMATE PROTECTION 1 Reduce CO ₂ emissions per person from cars and light-duty trucks	ADEQUATE HOUSING 2 House projected regional growth	HEALTHY & SAFE COMMUNITIES 3a Reduce premature deaths from exposure to fine particulate emissions 3b Reduce coarse particulate emissions 3c Achieve greater particulate emissions reduction in highly-impacted areas					4 Reduce injuries and fatalities from all collisions	5 Increase the average daily time walking or biking per person	OPEN SPACE & AGRICULTURAL PRESERVATION 6 Direct new non-agricultural development within urban footprint	EQUITABLE ACCESS 7 Reduce housing and transportation costs as share of low-income households' budgets	ECONOMIC VITALITY 8 Increase Gross Regional Product (GRP)	TRANSPORTATION SYSTEM EFFECTIVENESS 9a** Increase non-auto mode share 9b Reduce vehicle miles traveled (VMT) per person 10a Improve local road pavement condition index (PCI) 10b Reduce share of distressed state highway lane-miles 10c** Reduce share of transit assets exceeding their useful life			
NUMERIC GOALS* ▶	-15%	100%	-10%	-30%	Yes	-50%	+70%	100%	-10%	+90%	26%	-10%	+19%	-63%	-100%	
SCENARIOS ▼	-15% ↔ 0	0 ↔ 100%	-40% ↔ 0	-30% ↔ 0		-50% ↔ +50%	0 ↔ 70%	0 ↔ 100%	-10% ↔ +10%	0 ↔ +140%	0 ↔ 26%	-10% ↔ 0	0 ↔ +19%	-63% ↔ +63%	-150% ↔ +150%	
1 Initial Vision	-8%	100%	-23%	-6%		+26%	+15%	98%	-4%	131%	19%	-6%	+5%	+30%	+138%	
2 Core Concentration	-8%	100%	-27%	-9%		+23%	+20%	92%	+8%	134%	20%	-6%	+5%	+30%	+138%	
3 Focused Growth	-9%	98%	-32%	-13%		+19%	+14%	92%	+9%	113%	19%	-6%	+5%	+30%	+138%	
4 Constrained Core Concentration	-9%	98%	-32%	-13%		+18%	+15%	92%	+9%	113%	19%	-7%	+5%	+30%	+138%	
5 Outward Growth	-8%	98%	-31%	-11%		+20%	+10%	90%	+9%	113%	18%	-5%	+5%	+30%	+138%	

* Percent changes reflect differences between 2005 and 2035 conditions.

** Alternate target used.

Target results shown with white stripes signify that result is going in the wrong direction with respect to the adopted target.