

KEY ISSUES

In this edition of the Indicators for a Sustainable San Mateo County, SSMC has chosen to focus particular attention on three key issues that threaten the sustainability of the county: CLIMATE CHANGE, HOUSING and WATER.

No one of the 32 indicators in the report can hope to fully capture these key issues. In fact, each issue touches upon two or more of the indicators presented. SSMC asked San Mateo County, the 20 cities in the county, and the San Mateo County Community College District to describe their actions and policies regarding these three key issues.

CLIMATE CHANGE

One fundamental principle of sustainability is that today's actions do not compromise future generations' quality of life or ability to meet their needs. The greatest challenge to this principle today is climate change. Scientists have found that the increase in greenhouse gases (GHG), primarily carbon, over the past century has resulted in profound changes in the global climate. The major source of carbon emissions has been the burning of fossil fuels: coal, petroleum, and natural gas.

The greatest challenge to sustainability today is climate change.

Because of the nature of the atmospheric carbon cycle, carbon already released into the atmosphere will continue to change the climate for decades. The rate and severity of these changes will increase as more GHG are released into the atmosphere. Potential impacts from climate change include an increase in surface and ocean temperatures, a rise in sea levels, an increase in extreme weather events, changes in amounts and form of precipitation, and species migration.

Depending upon the amount of carbon and other types of GHG released into the atmosphere over the next 40 years, the California Climate Change Center (the Center) predicts temperatures in California to increase from 3.6 to 10.8 degrees Fahrenheit (F). Temperature changes in this range will reduce the Sierra Nevada snow pack and negatively impact the state's water used for drinking, flood control, hydroelectric power, agriculture, and recreation. The Center predicts that potential heightened sea levels and high river inflows could endanger the levee system in the Sacramento/San Joaquin Delta of the San Francisco Bay estuary. The most dramatic potential impacts may be from extreme weather events such as heat waves, wildfires, and floods.

The following paragraphs present data on changes in the region's climate and environment. Natural systems are inherently complex and we do not assert that carbon and other GHG emissions are responsible. These changes, however, fit the general outcomes scientists have predicted.

The Department of Meteorology at San José State University is studying temperature data from over 300 California weather stations. Data from Half Moon Bay show average annual maximum temperatures have increased 0.21 degrees F per decade since 1940 and the average winter maximum has increased by 0.32 degrees F per decade. Winters in Half Moon Bay are almost two degrees F warmer than they were in 1940. Such temperature changes can affect agriculture; many fruit crops require extended winter dormant periods to flower properly, and the Center is concerned about the northward migration of pests now killed by cold winter temperatures.

Measurements at Fort Point in San Francisco show that the sea level rose seven inches during the 20th century. Because of thermal ex-

pansion from ocean warming and the melting of land ice this trend will likely continue. Changes in the populations of marine species also appear to be occurring. According to research done at Pacific Grove in 1931 and repeated in 1993, 46 of the 62 invertebrate species studied showed significant population changes. Species from Southern California's warmer waters had moved northward, while cold water species had moved away from Pacific Grove. The sea water at the study site had warmed 3.5 degrees F during the period. The Center expects this pattern to be repeated throughout California and for many marine and land species to become endangered or extinct as they migrate, or fail to migrate, in response to changing habitats. Impacts on San Mateo County's fisheries may occur as sea waters warm and species migrate.

In September 2006, Governor Schwarzenegger signed into law AB32, a program of regulatory and market mechanisms aimed at reducing GHG emissions to 1990 levels by the year 2020, a 25 percent reduction. In the Governor's press release announcing AB32, he stated "We simply must do everything in our power to slow down global warming before it's too late."

Policies and local developments

We can expect efforts to reduce carbon and other GHG emissions to dramatically impact "business as usual" in the county. These impacts, however, are presumed to be less traumatic than the impact of doing nothing. Many local governments are making efforts to reduce carbon emissions; the initiatives were not necessarily undertaken to reduce carbon emissions alone, often capital and maintenance costs were taken into consideration. Following is a sampling of what is happening in the county.

- High-mileage, low-emission vehicles such as hybrids have been purchased for government operations in Redwood City, Burlingame, San Carlos, Foster City, Menlo Park, the City of San Mateo, and South San Francisco.
- Renewable energy technologies have been installed in public facilities, such as solar panels in San Carlos, cogeneration systems at the Community College District and the Millbrae sewage plant, and solar heating in Brisbane and Menlo Park.
- Investments in energy efficiency have been made, such as the replacement of inefficient incandescent lighting with fluorescent lights in public facilities in many cities and the replacement of traditional traffic lights with long-lasting light-emitting diodes (LEDs) and low-power traffic lights in Foster City, San Carlos, and Millbrae.
- Alternative transportation schemes have been developed, such as bicycle lanes, shuttle services, housing and commercial developments near public transit, incentives for city employees to use public transit, and requirements that developers of commercial properties implement traffic reduction plans.

Often policies in other areas, such as housing and waste reduction, have carbon emission implications as well.

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Key Issues, continued

HOUSING

In sustainable communities, individuals and families can find safe, affordable housing near their places of work with access to services such as good schools, shopping, health care, and public transit. In San Mateo County, high housing costs have made this a challenge. Homeownership is out of reach for many and finding an affordable apartment is becoming increasingly difficult.

The shortage of affordable housing has significant negative consequences for the county. Some residents are forced into overcrowded living situations while others pay a significant portion of their income on housing, leaving less for other needs. When administering its housing programs, the federal government assumes that a household pays no more than 30 percent of its income on housing. The California Budget Project estimated that in 2004, nearly half of San Mateo County residents spent more than this amount on housing, and nearly 20 percent of residents spent 50 percent or more of their income on housing. With little room for savings, lower-income residents may be one financial emergency away from becoming homeless.

Another option for residents is to move where housing is more affordable even if that is far from work. This leads to longer commutes and more traffic congestion. Long commutes and traffic congestion are costly, requiring more gasoline purchases and leading to more wear on automobiles and roads. They lead to increased emissions of particulate matter that can compromise air quality and GHG that are linked to climate change. Long commutes also come with a personal sacrifice—time spent away from family. Besides disrupting family life, this can be expensive as child care costs in the region are rising as well.

If workers are unable to afford housing in the county, our economic future is threatened as it can become difficult for local employers to attract workers and for the county to attract new businesses.

A shortage of supply has made housing in San Mateo County increasingly unaffordable.

A shortage of housing supply is the primary cause of the county's high housing costs. During the 1990's and the first half of this decade, housing production did not keep up with population growth. Barriers to housing production include government regulation, fiscal policies that favor sales tax-generating commercial developments, inadequate funding for affordable housing, and community resistance to higher densities in existing neighborhoods. Local barriers to housing production can force development outside urban environments, leading to a loss of open space and fragment habitat for native species of wildlife.

The Association of Bay Area Governments (ABAG) cites another reason for high housing costs: a lack of housing choice. Many communities focus on the development of single-family homes rather than multi-family developments or townhouses which are often more affordable housing options.

Housing prices, housing production, and housing location—these factors are inextricably intertwined with our region's economic vitality.

Bay Area Council, Bay Area Housing Profile 2006

Policies and local developments

There are a number of policies that San Mateo County or its cities can adopt to encourage new, affordable, and sustainable housing development. These include:

- Inclusionary housing policies that require a certain percentage of newly constructed residential units be affordable to very low-, low-, and moderate-income households;
- Transit-oriented developments (TOD) where residential and commercial areas are designed to maximize access to public transit and encourage walking and biking;
- Zoning within downtown or commercial areas and along bus or transit corridors to encourage higher-density housing and mixed-use residential and commercial developments;
- Permitting or encouraging the construction of accessory units. Accessory units (also known as secondary units, guest apartments, or in-law apartments) create separate residences on a homeowner's property by converting all or part of a garage or by building a new structure; and
- Green building policies that maximize resource efficiency and reduce construction waste from new development.

San Mateo County and its cities have adopted some of these policies to address housing affordability and encourage new, sustainable housing developments. Following are results from our survey of the cities and the county regarding their housing policies and current developments.

- Inclusionary housing policies have been adopted in 16 jurisdictions, with affordability requirements ranging from 10 percent to the 20 percent required in Colma, East Palo Alto, Foster City, South San Francisco, and unincorporated San Mateo County.
- TOD projects near Caltrain and BART stations in Belmont, Burlingame, Menlo Park, Millbrae, San Bruno, San Carlos, the City of San Mateo, South San Francisco, Redwood City, and unincorporated San Mateo County are either being planned, in construction, or completed.
- Habitat for Humanity projects have been completed in Daly City, Redwood City, East Palo Alto, and Menlo Park. There is also a current project in Brisbane.
- East Palo Alto partnered in a 77-unit, 100 percent affordable housing complex that opened in April 2006. A rooftop solar photovoltaic system powers a portion of the complex.

In addition, a number of cities have policies encouraging higher-density housing and mixed-use development in their downtowns or along transit corridors. Awareness of green building is growing and many cities encourage different green building strategies, but no jurisdiction in the county has adopted comprehensive green building policies for residential or commercial developments.

Local governments are in the process of determining a new Regional Housing Needs Allocation, which will set housing production targets for all income levels for the next 5-10 years. Once those targets are established, the Housing Element of each jurisdiction's General Plan will be updated and approved by the state. This process provides an opportunity for local governments to enact policies that will encourage new, sustainable housing development.

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Key Issues, continued

WATER

To be sustainable a population needs safe, clean drinking water and adequate water supplies to accommodate residential, agricultural, industrial, and other uses. San Mateo County has high-quality drinking water and sufficient supplies for its current needs. The county is dependent, however, upon the ability to move water efficiently hundreds of miles across the state. Nearly all of San Mateo County's residents are serviced by water agencies who are members of the Bay Area Water Supply and Conservation Agency (BAWSCA). During fiscal year 2004-05, 96 percent of the water supplied by those agencies was purchased from the San Francisco Regional Water System (the System), which is operated by the San Francisco Public Utilities Commission (SFPUC). The water the System currently delivers is made up of a combination of runoff into local Bay Area reservoirs and diversion from the Tuolumne River through the Hetch Hetchy Water and Power Project in the Sierra Nevada.

Primarily because of expected population growth, BAWSCA estimates that demand from the SFPUC in the county will exceed its assured supply of water (a contractual right to a certain amount of water) by fiscal year 2010-11. Exceeding the assured supply could lead to higher rates or other measures. Today, the System is subject to cutbacks of up to 30 percent during an extended drought. Any drought conditions in the future would put a squeeze on supplies even further, increasing the possibility for future water rationing absent new conservation measures or supplies. One further risk is seismic vulnerability, as the tunnels and pipelines which bring us water from the System cross all of the major Bay Area fault lines.

Population growth, any future drought conditions, and climate change could all threaten the sustainability of San Mateo County's water supplies.

Another uncertainty comes from the future impact of climate change on the region's water resources. San Francisco's Hetch Hetchy system is fed by snowpack in the Sierra Nevada. The snowpack acts as a natural reservoir, slowly melting and feeding the Hetch Hetchy system during the spring and summer. Rising temperatures may reduce the average annual snowpack because of a rise in the snowline, a thinner snowpack at lower elevations, an increased amount of precipitation falling as rain rather than snow, and snowmelt occurring earlier in the year.

Climate change may affect the demand for water within the county as well. For example, reduced rainfall and higher temperatures in the county could lead to more intense residential and park irrigation than occurs today.

Bordered by the San Francisco Bay to the east and the Pacific Ocean to the west, the county also relies on water for recreational opportunities, to support local economies, and to draw tourists. Climate change could have a dramatic impact on these waters. Rising temperatures could drastically alter marine habitats and impact water quality. Further, rising sea levels could impact coastal and bayside communities and habitats, eroding beaches and cliffs, and making flooding more prevalent during storms. Salty ocean water could even flow into the Sacramento-San Joaquin River Delta, putting the drinking water supply of many Californians at risk.

Policies and local developments

For San Mateo County to assure a sustainable source of water for the future, it will need to more efficiently use its water resources and increase the use of domestic sources of water. The California Urban Water Conservation Council suggests several best practices in water conservation, covering topics including residential surveys and retrofits, system water audits and leak repairs, landscaping, clothes washers and toilet replacement programs, and public information and school-based education.

Local governments have adopted many of these and other programs. Following are some highlights.

- San Mateo County and cities such as Foster City and South San Francisco are attempting to reduce water use in parks through the use of computer-managed irrigation equipment.
- Foster City, San Carlos, South San Francisco, and the Community College District have installed synthetic turfs or alternative grasses such as tall fescue in selected parks or sports fields. These reduce water usage and require lower maintenance. Synthetic turfs also eliminate the need for pesticides and fertilizers.
- A number of cities provide rebates to install water-saving toilets and washers for qualified residents.
- Daly City is using surplus water from wet years to recharge its aquifer. Other North County cities and the SFPUC are exploring greater coordination in aquifer management.

As the county currently receives over 90 percent of its water from the San Francisco Regional Water System, becoming water independent is not a possibility. To achieve greater sustainability in local water use, the county, however, will likely need to use more local sources of water. This may entail more intensive use of groundwater in the North County and an increase in the use of recycled water throughout the county. Currently, Pacifica's Calera Creek Water Recycling Plant generates up to three million gallons of tertiary recycled wastewater each day. Other cities use recycled water for landscaped city properties or deliver it to customers with large watering needs, such as golf courses.

2000 SSMC Award Winner
Water from the Pacifica's Calera Creek Water Recycling Plant innovative waste water treatment plant is used for wetland restoration.