San Mateo County
Energy Efficiency Climate Action Plan
Draft Environmental Impact Report
SCH# 2012052039

Prepared for:

San Mateo County
555 County Center, First Floor
Redwood City, CA 94063-1665

Prepared by:

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Rancho Cordova, CA 95670

February 2013

SAN MATEO COUNTY
ENERGY EFFICIENCY CLIMATE ACTION PLAN
DRAFT ENVIRONMENTAL IMPACT REPORT

Prepared for:

SAN MATEO COUNTY
555 COUNTY CENTER, FIRST FLOOR
REDWOOD CITY, CA 94063-1665

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FEBRUARY 2013

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NOTICE OF AVAILABILITY

Energy Efficiency Climate Action Plan
Draft Environmental Impact Report
February 21, 2013

Lead Agency: County of San Mateo
455 County Center, 2nd Floor
Redwood City, CA 94063

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Project Title: Energy Efficiency Climate Action Plan (EECAP)

Project Applicant: County of San Mateo

Project Location: The proposed project establishes goals, priorities, and methods for achieving countywide greenhouse gas (GHG) emissions reductions that would apply to unincorporated areas within San Mateo County.

Project Background and Project Description:
The County of San Mateo is proposing to amend its General Plan policies related to energy and climate change, and to adopt an Energy Efficiency Climate Action Plan (EECAP) in order to implement these policies. The objective of the project is to develop goals, priorities, and actions that will reduce greenhouse gas (GHG) emissions from unincorporated areas within the county in compliance with state goals and mandates (e.g., AB 32, Executive Order S-3-05, CEQA Guidelines, Bay Area Air Quality Management District CEQA Guidelines) and to identify the ways in which County land use and development policies should change in order to adapt to the impacts of climate change. To these ends, proposed policies and actions will address issues that affect GHG emissions, including water and energy consumption, transportation and land use patterns, agriculture, and waste. Implementation measures to be included in the EECAP will establish mandatory, incentive, and/or voluntary emissions reduction programs for county agencies, residents, and businesses, and include a monitoring and tracking program. Other implementation components include the identification of potential future updates to County Subdivision, Building, and Zoning Regulations.

Potential Environmental Effects: The EIR evaluates following issue areas to determine whether the proposed project would potentially result in one or more significant environmental effects:

- Aesthetics, Light, and Glare
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Seismicity
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise
- Population and Housing
- Public Services
- Public Utilities
- Recreation
- Transportation

The EIR determined implementation of the proposed EECAP could have substantial impacts on some sensitive and special-status species and their associated habitat and migratory corridors.

PUBLIC REVIEW PERIOD: The 45-day public review period for the Draft EIR will commence on February 21, 2013 and end on April 8, 2013 for interested individuals and public agencies to submit written comments on the document. Any written comments on the Draft EIR must be received at the above address within the public review period. Copies of the Draft EIR are available for review at the County of San Mateo, Planning and Building Department, 455 County Center, 2nd Floor, Redwood City, CA 94063. The Draft EIR also may be reviewed at the County's web site at http://www.co.sanmateo.ca.us/planning/rechargesmc/index.html. Referenced technical reports used in the preparation of the Draft EIR that are not included as appendices may be reviewed at the Planning and Building Department upon request.

Please send your comments to the County of San Mateo, Attention: Matt Seubert, Planning and Building Department, 455 County Center, 2nd Floor, Redwood City, CA 94063. Please provide a contact name for your agency with your comments.

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ES – Executive Summary

This section provides an overview of the proposed San Mateo Energy Efficiency Climate Action Plan (EECAP) project and the environmental analysis.

The San Mateo County is the lead agency for the proposed project. In accordance with Section 15082 of the California Environmental Quality Act (CEQA) Guidelines, the County prepared and distributed a Notice of Preparation (NOP) of an EIR on May 10, 2012 (SCH# 2012052039). This notice was circulated to the public, local, state, and federal agencies, and other interested parties to solicit comments on the proposed project. The NOP is presented in Draft EIR **Appendix A**. The County filed a Notice of Completion with the State Clearinghouse for the Draft EIR on February 21, 2013, concurrently initiating a 45-day public review period for the Draft EIR document and associated technical appendices. The public review period on the Draft EIR ends on April 8, 2013, after which the County will respond in writing to all comments received and incorporated into a Final Environmental Impact Report (FEIR) for consideration by the San Mateo County Board of Supervisors.

ES1 PURPOSE AND SCOPE OF THE ENVIRONMENTAL IMPACT REPORT

This Draft EIR provides an analysis of the potential environmental effects associated with the approval of the proposed project, pursuant to CEQA (California Public Resources Code Section 21000, et seq.) and the State CEQA Guidelines (14 California Code of Regulations, Section 15000, et seq.). The Draft EIR analysis focuses on potential impacts that could result from implementation of the EECAP.

ES2 PROJECT CHARACTERISTICS

The project consists of the adoption of the EECAP and proposed adoption of recommendations of amendments to the General Plan, Subdivision, Building, and Zoning Regulations. The County of San Mateo has a long-standing commitment to implementing environmental programs and proactively working to reduce GHG emissions. The EECAP builds on this early leadership and demonstrates the County's continued commitment to reducing GHG emissions. The EECAP is intended to streamline future environmental review of projects within the unincorporated county by following CEQA Guidelines and meeting the BAAQMD's expectations for a Qualified GHG Reduction Strategy.

The EECAP will act as an implementation tool to identify programs, policies, and actions to reduce GHG emissions. The reduction measures described in the EECAP are consistent with the goals, policies, and programs contained in the General Plan.

There are a number of regulatory documents intended to address the environmental effects of climate change through reductions in GHG emissions that have guided the creation of the EECAP. The EECAP was prepared to be consistent with all of the GHG regulatory provisions. For a complete description of the project, see Section 2.0, Project Description, of this Draft EIR.

ES3 PROJECT ALTERNATIVES SUMMARY

The CEQA Guidelines Section 15126.6 requires that an environmental impact report describe a range of reasonable alternatives to the project that could feasibly attain the basic objectives of the project and reduce the degree of environmental impact. Section 4.0, Alternatives to the Project, provides a qualitative analysis of alternatives as compared to the proposed project. Alternatives identified for the proposed project include the following:

Alternative 1 – No Project Alternative.

Under this alternative, the proposed EECAP would not be adopted and the General Plan would remain as it is currently adopted. This alternative is consistent with CEQA Guidelines Section 15126.6(e)(3)(A).

Alternative 2 – Wind Energy-Generating Facility Restriction Alternative. Alternative 2 would implement the reduction measures that are proposed in the EECAP, but in order to address the biological resources impacts associated with the proposed project, Alternative 2 would eliminate measures from the EECAP that would encourage the development of wind energy facilities. The analysis considers the potential effects if additional, low-GHG-generating energy facilities are developed to address the reduction in wind facilities. However, because the types of sites used for wind facilities may not be well suited for other types of facilities, such as solar, this alternative assumes that the amount of low-GHG-generating energy facilities would be reduced compared with the proposed project.

ES4 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

The County received no comments on the NOP and no comments identifying issues of controversy have been submitted to the County.

ES5 SUMMARY OF ENVIRONMENTAL IMPACTS

Table ES-1 displays a summary of project impacts and proposed mitigation measures that would avoid or minimize potential impacts. In the table, the level of significance is indicated both before and after the implementation of each mitigation measure. For detailed discussions of project impacts and mitigation measures, the reader is referred to the technical environmental analysis in Section 3 in this Draft EIR. CEQA Guidelines Section 15126.2(b) requires an EIR to discuss unavoidable significant environmental effects, including those that can be mitigated but not reduced to a level of insignificance.

The impact analysis provided in Sections 3.1 though 3.5 has identified that the proposed EECAP would result in the following significant and unavoidable impacts:

Impact 3.3.1 Natural Habitat Areas/Sensitive Species/Wildlife Corridors

TABLE 2.0-1
PROJECT IMPACTS AND PROPOSED MITIGATION MEASURES

Impact		Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
3.1 Aesthetics and Visual Resources				
Impact 3.1.1	Implementation of the proposed EECAP would not have a substantial effect on scenic views or a scenic vista, or substantially degrade the existing visual character of the county.	LS	None required.	LS
Impact 3.1.2	Implementation of the proposed EECAP could result in an increase of daytime glare and/or nighttime lighting. This increase in daytime glare sources and nighttime lighting levels could have an adverse affect on adjacent areas and land uses.	PS	None required.	LS
3.2 Air Quality				
Impact 3.2.1	Implementation of the proposed EECAP and General Plan Amendment could have a negative effect on air quality as a result of construction-generated air pollutants.	PS	The following standard mitigation shall be applied to all EECAP-related projects, as applicable: **MM 3.2.1** The County shall require that projects implementing EECAP reduction measures are analyzed as part of project review in accordance with BAAQMD-recommended methodologies and significance thresholds and shall require that all recommended mitigation measures are incorporated to reduce short-term construction emissions attributable to individual EECAP GHG reduction measures. Such mitigation measures may include, but are not limited to, the following:	LS

LS – Less than Significant LS + M – Less than Significant with Mitigation PS – Potentially Significant S – Significant SU – Significant and Unavoidable
LCC – Less than Cumulatively Considerable LCC + M – Less than Cumulatively Considerable with Mitigation CC – Cumulatively Considerable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		• Water all active construction areas at least twice daily as required. • Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard. • Sweep daily, as required, all paved access roads, parking areas, and staging areas at construction sites. • Sweep streets daily as required if visible soil material is carried onto adjacent public streets. • Reduce unnecessary idling of truck equipment within proximity to sensitive receptors (i.e., idle time to five minutes or less). • Where possible, use newer, cleaner-burning diesel-powered construction equipment • Properly maintain construction equipment per manufacturer specifications. • Designate a disturbance coordinator responsible for ensuring that mitigation measures to reduce air quality impacts from construction are properly implemented. *Timing/Implementation:* *During construction* *Enforcement/Monitoring:* *County of San Mateo Planning and Building Department*	

LS – Less than Significant LS + M – Less than Significant with Mitigation PS – Potentially Significant S – Significant SU – Significant and Unavoidable
LCC – Less than Cumulatively Considerable LCC + M – Less than Cumulatively Considerable with Mitigation CC – Cumulatively Considerable

Impact		Level of Significance Without Mitigation	Mitigation Measure		Resulting Level of Significance
Impact 3.2.2	Implementation of the proposed EECAP and General Plan Amendment would not have a negative effect on air quality as a result of air pollutants emissions generated during project operations.	N	None required.		N
Impact 3.2.3	Implementation of the proposed EECAP and General Plan Amendment would result in a decrease of vehicle miles traveled and, therefore, would not exceed assumptions used to create the BAAQMD Ozone Attainment Plan and Clean Air Plan.	N	None required.		N
Impact 3.2.4	Subsequent land use activities associated with implementation of the proposed EECAP and General Plan Amendment could result in projects that would include sources of toxic air contaminants which could affect surrounding land use.	PS	Implementation of Mitigation Measure MM 3.2.1 would ensure that each project implementing EECAP measures that goes through County plan review process would be subject to applicable BAAQMD regulations and requirements, and would make the project's impacts related to toxic air contaminants **less than significant**.		LS
3.3 Biological Resources					
Impact 3.3.1	Implementation of the proposed EECAP could have substantial impacts on some sensitive and special-status species and their associated habitat and migratory corridors.	S	**MM 3.3.1**	The following design measures shall be incorporated into all energy facilities constructed as part of EECAP implementation: • Transmission lines and all electrical components shall be designed, installed, and maintained to reduce the likelihood of large bird electrocutions and collisions. • The design of wind energy facilities shall discourage the use of the site by avian species (provision of landscaping and ground conditions that are unattractive to avian species).	SU

Impact		Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
			• Design and siting of wind turbines to avoid placement of turbines on or immediately adjacent to the upwind side of ridge crests, and other design features to minimize impacts to bat and avian species. • Provision of an avian and bat management plan that includes mortality monitoring and additional measures to address unanticipated significant adverse impacts on the population of avian or bat species or with any migratory corridor. *Timing/Implementation:* *As a condition of project approval, and implemented during construction activities.* *Enforcement/Monitoring:* *San Mateo County Planning and Building Department*	
Impact 3.3.2	Implementation of the proposed EECAP could result in substantial impacts on wetland and riparian habitat in some areas of the county.	LS	None required.	LS
Impact 3.3.3	Implementation of the proposed EECAP would not have substantial impacts related to potential inconsistencies with local or regional policies, ordinances, or habitat conservation plans.	LS	None required.	LS

LS – Less than Significant LS + M – Less than Significant with Mitigation PS – Potentially Significant S – Significant SU – Significant and Unavoidable
LCC – Less than Cumulatively Considerable LCC + M – Less than Cumulatively Considerable with Mitigation CC – Cumulatively Considerable

Impact		Level of Significance Without Mitigation	Mitigation Measure		Resulting Level of Significance
3.4 Historical, Archaeological, and Paleontological Resources					
Impact 3.4.1	Implementation of the proposed EECAP could result in the potential disturbance of historical resources.	LS	None required.		LS
Impact 3.4.2	Implementation of the proposed EECAP could result in the potential disturbance of known or undiscovered archeological resources (i.e., prehistoric sites and isolated artifacts and features) and human remains.	LS	None required.		LS
Impact 3.4.3	Adoption of the proposed EECAP could result in the potential disturbance of paleontological resources (i.e., fossils and fossil formations) within the county.	PS	**MM 3.4.3**	If paleontological resources are encountered during future grading or excavation activities associated with EECAP related activities, work shall avoid altering the resource and its stratigraphic context until a qualified paleontologist has evaluated, recorded, and determined appropriate treatment of the resource, in consultation with the County. Project personnel shall not collect cultural resources. Appropriate treatment may include collection and processing of "standard" samples by a qualified paleontologist to recover micro vertebrate fossils; preparation of significant fossils to a reasonable point of identification; and depositing significant fossils in a museum repository for permanent curation and storage, together with an itemized inventory of the specimens. *Timing/Implementation:* *As a condition of project approval, and implemented*	LS

Impact		Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
			during construction activities. *Enforcement/Monitoring:* *San Mateo County Planning and Building Department*	
3.5 Greenhouse Gases and Climate Change Adaptation				
Impact 3.5.1	The proposed EECAP and General Plan Amendment would not conflict with the goals of AB 32 or the AB 32 Scoping Plan.	LCC	None required.	LCC
Impact 3.5.2	The effects of climate change could result in the exposure of unincorporated San Mateo County to associated environmental effects. While the exact extent of the environmental effects of climate change on unincorporated San Mateo County is not known at this time, state provisions, in addition to proposed EECAP measures, address these effects. Thus the proposed project would not result in a new significant impact relating to the effect of climate change on unincorporated San Mateo County.	N		

LS – Less than Significant LS + M – Less than Significant with Mitigation PS – Potentially Significant S – Significant SU – Significant and Unavoidable
LCC – Less than Cumulatively Considerable LCC + M – Less than Cumulatively Considerable with Mitigation CC – Cumulatively Considerable

1.0 Introduction

This Draft Environmental Impact Report (Draft EIR) has been prepared for the proposed San Mateo County Energy Efficiency Climate Action Plan (EECAP/proposed project). The information below provides a brief description of the guiding regulations and documents that relate to this Draft EIR. The proposed project will amend the adopted General Plan by adding text and policies that describe the County's goal of reducing those greenhouse gas (GHG) emissions reasonably attributable to the County's discretionary land use decisions.

1.1 DOCUMENT AND PURPOSE

The California Environmental Quality Act (CEQA) requires that a local agency prepare an EIR on any discretionary action it proposes to approve that may have a significant physical effect on the environment. The purpose of an EIR is not to recommend approval or denial of a project, but to provide decision-makers, public agencies, and the general public with an objective and informational document that fully discloses the potential environmental effects of a proposed project. The EIR process is specifically designed to objectively evaluate and disclose potentially significant direct, indirect, and cumulative impacts of a proposed project; to identify alternatives that reduce or eliminate a project's significant effects; and to identify feasible measures that mitigate significant effects of a project.

The purpose of this Draft EIR is to satisfy CEQA requirements by addressing the environmental effects specific to the implementation of the proposed EECAP. This Draft EIR evaluates the effects of the proposed project on the physical environment, assessing whether the proposed project would result in any significant environmental impacts. This EIR serves as a Program EIR under CEQA Guidelines Section 15168. As a Program EIR, this document provides a more general analysis of those elements that are proposed as part of the EECAP, as described in the Project Description. As a Program EIR, this document focuses on the overall effects of implementing the EECAP the proposed project.

1.2 PUBLIC REVIEW OF THE NOTICE OF PREPARATION

The Notice of Preparation (NOP) was submitted to the State Clearinghouse for public review on Friday, May 12, 2012. At the close of the public review period (June 19, 2012), no comment letters had been received by the County of San Mateo, the lead agency for the proposed project. A scoping session was conducted by the County of San Mateo on Tuesday, June 12, 2012, at 5:30 p.m. at 455 County Center, Room 101, Redwood City, CA 94063. No agency representatives or members of the public attended the meeting.

The NOP is provided in **Appendix A** of this Draft EIR.

1.3 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

No areas of controversy or issues to be resolved were identified during the NOP phase of environmental review of the proposed project.

1.4 ORGANIZATION AND SCOPE OF EIR

This Draft EIR was prepared in conformance with the CEQA Guidelines (Sections 15120 through 15132) and includes the following chapters:

- **Executive Summary** describes the purpose of the Draft EIR and includes a summary of project characteristics, project alternatives summary, relationship to the General Plan EIR, and summary of impacts and mitigation measures.

- **Chapter 1: Introduction** describes the purpose of the Draft EIR and provides an overview of the environmental review process.

- **Chapter 2: Project Description** describes the project location, existing conditions, project objectives and characteristics, and regulatory requirements, including necessary permits and approvals.

- **Chapter 3**: **Environmental Setting and Analysis** evaluates the adverse and beneficial impacts associated with implementation of the proposed project, in addition to those effects found to be less than significant. The analysis provides an overview of the environmental setting for issue areas being evaluated, a discussion of significance thresholds used to determine the level of potential impacts, an assessment of the potential short- and long-term impacts of the proposed project, and a description of the mitigation measures that would reduce or eliminate those impacts.

- **Chapter 4**: **Alternatives** evaluates project alternatives (EIR Alternative No. 1 – No Project Alternative and EIR Alternative No. 2 – Renewable Energy Generating Facility Restriction Alternative), which would reduce some of the potentially significant environmental impacts associated with the implementation of the EECAP.

- **Chapter 5: Other CEQA Analysis** addresses cumulative impacts and describes those impacts that are considered significant and unavoidable. The chapter also includes a discussion of growth-inducing impacts associated with the proposed project.

- **Chapter 6: References** lists the documents consulted in the preparation of this document.

- **Chapter 7: Report Preparers** lists those involved with the preparation of the Draft EIR and those agencies and persons consulted in the preparation of the document.

2.0 Project Description

This section provides the description of the San Mateo Energy Efficiency Climate Action Plan (EECAP) and recommendations to update the General Plan, Subdivision, Building, and Zoning Regulations (proposed project). The purpose of the project description is to describe the project in a way that is meaningful to the public, reviewing agencies, and decision-makers. As described in Section 15124 of the California Environmental Quality Act (CEQA) Guidelines, a complete project description must contain the following information but is not required to supply extensive detail beyond that needed for evaluation and review of the potential environmental impacts: (1) the location and boundaries of the project on a regional and detail map; (2) a statement of objectives sought by the proposed project; (3) a general description of the project's economic and environmental characteristics; and (4) a statement briefly describing the intended uses of the Draft Environmental Impact Report (Draft EIR).

2.1 PROJECT LOCATION

The project location includes the unincorporated portions of San Mateo County, California. The total land area that comprises the unincorporated county is approximately 400 square miles (see **Figure 2.0-1**). San Mateo is located in the greater Bay Area, south of San Francisco and bordered by the City of San Mateo and Redwood City to the northeast and east.

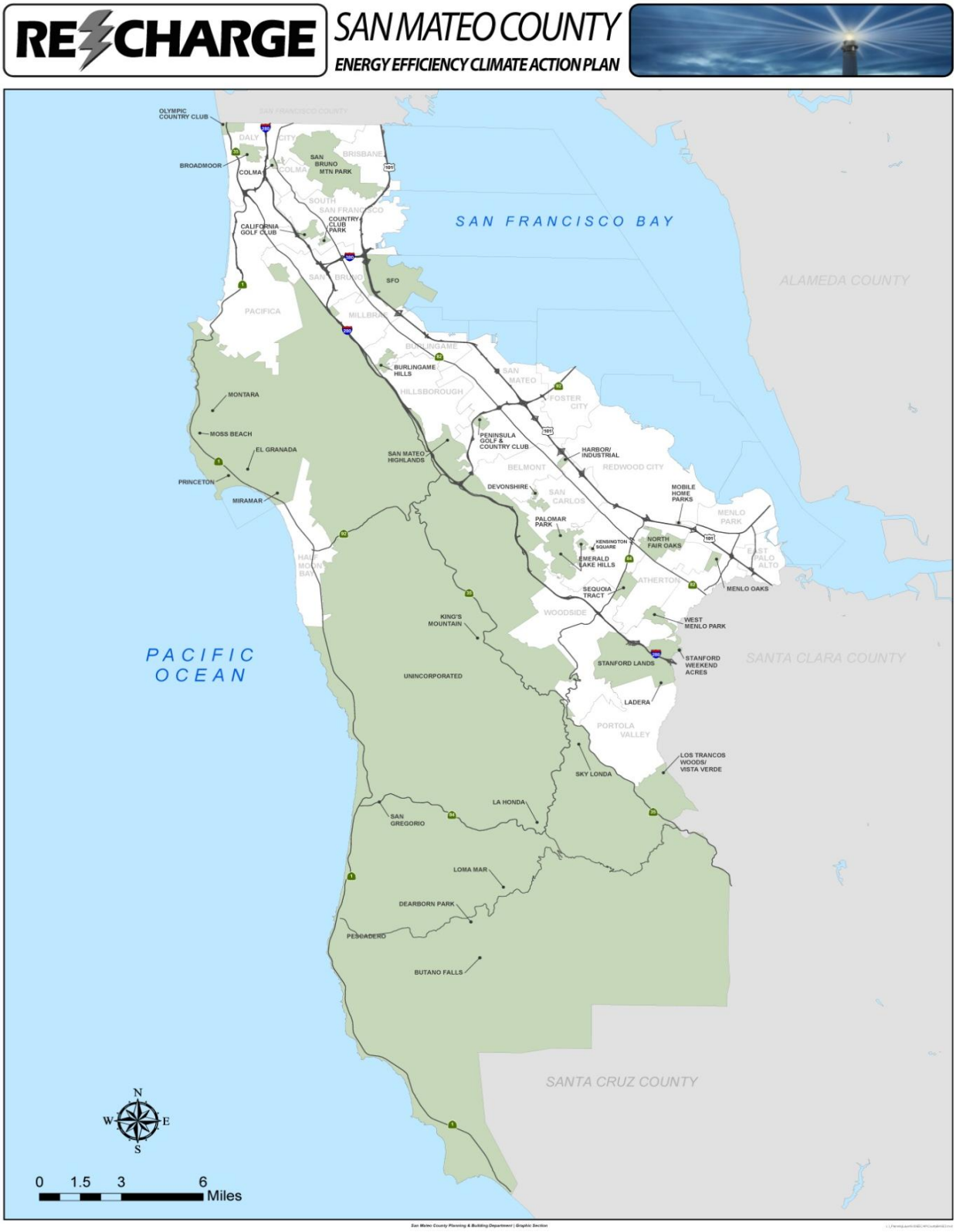
San Mateo County covers some of California's most diverse open spaces as well as part of the Silicon Valley. Almost 75 percent of unincorporated land is protected open space, wetlands, watersheds, or parks, including protected redwood forests. Nestled strategically between Stanford University, University of California, San Francisco, University of California, Berkeley, and additional private universities, the county has a highly skilled labor force that attracts innovative technology and bioscience industries. The county is bordered by the Pacific Ocean to the west, the City of South San Francisco to the north, and the incorporated cities that border the San Francisco Bay to the northeast and east, including the City of San Mateo and Redwood City. With a generally mild Mediterranean climate, the unincorporated county includes several microclimate zones, with cooler, coastal microclimates along the Pacific Ocean and more moderate climate areas inland.

The unincorporated county consists predominantly of rural land and dispersed communities. While the unincorporated county includes over 30 unincorporated communities, five primary communities are governed by County area plans: San Bruno Mountain, Emerald Lake Hills, North Fair Oaks, Skyline, and the Coastal Zone. The Coastal Zone consists of 88,800 acres of primarily rural land, with 55 miles of shoreline that includes the communities of Montara, Moss Beach, El Granada, Miramar, Princeton-by-the-Sea, Pescadero, and San Gregorio.

With a strategic location between top Bay Area employment centers, county residents tend to commute for work. According to the 2010 US Census (US Census Bureau 2012), the average travel time of residents in San Mateo County was 25 minutes, just slightly lower than the statewide average of approximately 27 minutes. In general, many residents work outside of the county, while many local workers live outside of the county. This leads to longer local commute patterns and daily trips that are highly auto-dependent.

In 2010, the per capita personal income in the greater San Mateo County (including incorporated cities) was $85,648. This income was 141 percent of the statewide median income, which was $60,883 (US Census Bureau 2012). The economic base of the county is dominated by bioscience and technology industries, hospitality, health care, and transportation companies (San Mateo County 2010).

FIGURE 2.0-1 PROJECT LOCATION



2.2 PROJECT OBJECTIVES

The County's project objective is to outline a clear path to successfully implementing policies, programs, and activities that will achieve the County's greenhouse gas (GHG) reduction targets, including the following specific objectives:

- Adopt an EECAP to reduce GHG emissions consistent with the target reductions of Assembly Bill (AB) 32 and the AB 32 Scoping Plan, as well as the locally adopted GHG emissions reduction targets.
- Provide a list of actions that will reduce GHG emissions.
- Create a framework to address vulnerabilities and prepare for adaptation to the impacts of climate change.
- Establish an EECAP that will streamline future environmental review of projects in the unincorporated county by following CEQA Guidelines Section 15183.5 and meeting the Bay Area Air Quality Management District's (BAAQMD) expectation for a Qualified GHG Reduction Strategy.
- Identify updates to complete to the County General Plan, Subdivision, Building, and Zoning Regulations.

2.3 PROJECT CHARACTERISTICS

The project consists of the adoption of the EECAP and proposed adoption of recommendations of amendments to the General Plan, Subdivision, Building, and Zoning Regulations. Project components are briefly described below.

2.3.1 RECOMMENDATIONS TO UPDATE THE GENERAL PLAN

The General Plan Amendment provides recommended policy updates to the existing County General Plan, including goals and policies upon which EECAP reduction measures and actions are based. The General Plan Amendment includes a new Energy and Climate Change Element and edits and additions to existing policies in the General Plan. Together, these amendments identify a path to integrate EECAP objectives into the County's long-term planning framework. The proposed Energy and Climate Change Element and other amendments to the General Plan text are provided in Appendix A of this Draft EIR.

2.3.2 ENERGY EFFICIENCY CLIMATE ACTION PLAN

The County of San Mateo has a long-standing commitment to implementing environmental programs and proactively working to reduce GHG emissions. The EECAP builds on this early leadership and demonstrates the County's continued commitment to reducing GHG emissions. The EECAP is intended to streamline future environmental review of projects within the unincorporated county by following CEQA Guidelines and meeting the BAAQMD's expectations for a Qualified GHG Reduction Strategy. The EECAP is available for review at County Center, 455 County Center, 2nd Floor, Redwood City CA, 94063, or online at http://www.co.sanmateo.ca.us/planning/rechargesmc/index.html.

The EECAP will act as an implementation tool to identify programs, policies, and actions to reduce GHG emissions. The reduction measures described in the EECAP are consistent with the goals, policies, and programs contained in the General Plan.

There are a number of regulatory documents intended to address the environmental effects of climate change through reductions in GHG emissions that have guided the creation of the EECAP. The EECAP was prepared to be consistent with all of the GHG regulatory provisions. The regulatory provisions include the following:

1) Executive Order S-3-05 (2005)

2) Assembly Bill 32, the California Climate Solutions Act of 2006

3) Assembly Bill 1493, automobile CO_2 reduction requirements (introduced 2002)

4) Senate Bill 97, modification to the Public Resources Code (2007)

5) Senate Bill 375, California's regional transportation and land use planning efforts (2008)

6) Senate Bill 1368, emissions performance standards (2008)

7) CEQA Guidelines Amendments concerning GHG emissions (2010)

8) BAAQMD development of GHG significance thresholds[1]

The framework of the EECAP consists of (1) an inventory of GHG emissions that identifies and quantifies existing emissions and projected future emissions; (2) reduction targets to reduce GHG emissions incrementally by 2020 and 2035; and (3) the goals, measures, and actions that have been devised to reduce existing emissions to meet the federal, state, and regional GHG emissions reduction targets. The County's EECAP and its reduction targets are consistent with AB 32 and the California Air Resources Board (CARB) recommendations to ensure that California emissions are reduced.

For the purpose of defining "existing" emissions levels, the County chose the emissions in the year 2005 as a benchmark for existing emissions conditions.

The EECAP identifies a state-recommended reduction target of 15 percent below 2005 emissions levels by 2020, consistent with AB 32. This state-recommended reduction target meets the GHG reduction recommendations identified under the AB 32 Scoping Plan. A reduction of 15 percent below 2005 emissions levels by 2020 would represent a total annual reduction of GHG emissions of approximately 49,600 metric tons of carbon dioxide equivalents ($MTCO_2e$). The State has not adopted GHG reduction targets beyond 2020; however, in 2005, then-Governor Schwarzenegger signed Executive Order S-3-05, which created a goal to reduce GHG emissions to 1990 levels by 2020 and to 80 percent below 1990 levels by 2050. An 80 percent reduction

[1] Although these Guidelines are effectively set aside pursuant to a legal challenge (California Building Industry Association v Bay Area Air Quality Management District, Alameda County Superior County, Docket No. RG10548693, January 16, 2012) these Guidelines are used as GHG emissions thresholds for stationary and non-stationary sources provided in Table 5-1 of the BAAQMD CEQA Guidelines. See Section 3.3.2 for further information.

below 1990 levels is equivalent to a 95 percent reduction below 2005 levels by 2050. To work towards this 2050 reduction trajectory, the EECAP estimates that the County would need to achieve a 55 percent reduction by 2035, which would represent a total annual reduction of GHG emissions of approximately 357,100 $MTCO_2e$.

GHG Emissions Inventory

As part of the preparation of the EECAP, the County prepared a GHG inventory that identified the existing, or "baseline," emissions that occur under existing (2005) conditions. Under baseline conditions, the unincorporated county generates approximately 782,080 $MTCO_2e$ per year.

Without implementation of the proposed EECAP, the unincorporated county's predicted emissions would decline by 9 percent, or 146,400 $MTCO_2e$, below 2005 baseline emissions by 2020 through reduction efforts mandated by the State. By 2035, the unincorporated county's emissions would also decrease by approximately 9 percent, or 225,200 $MTCO_2e$ below 2005 baseline emissions. **Table 2.0-1** summarizes the predicted future emissions without implementation of the proposed EECAP. **Figure 2.0-2** illustrates the predicted future emissions without implementation of the proposed EECAP.

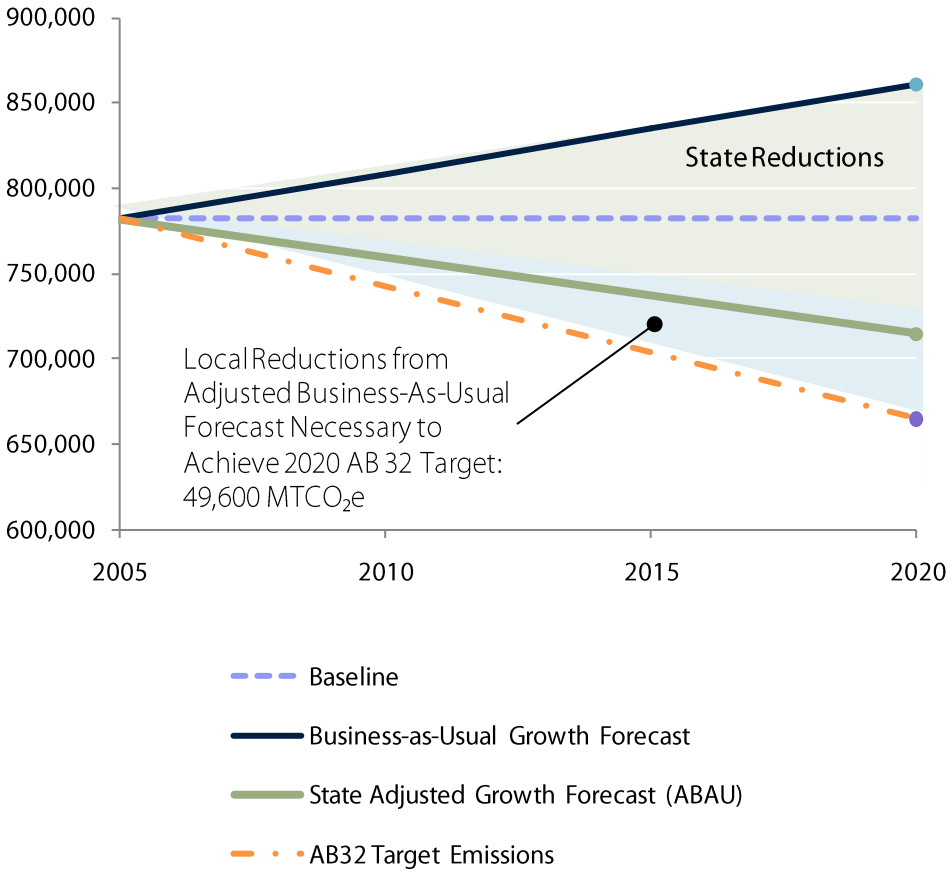
TABLE 2.0-1
SUMMARY OF GHG FORECAST ADJUSTED FOR STATE ACTIONS

	2020	2035
Business-as-Usual Emissions	860,800	934,300
California Green Building Standards Code (CalGreen)	-4,500	-13,300
AB 1493 (Pavley) Vehicle Standards	-130,700	-194,700
California Solar Initiative (CSI)	-300	-200
California's Renewables Portfolio Standard (RPS)	-10,900	-17,000
Subtotal of State Reduction Efforts*	-146,400	-225,200
Net Emissions*	714,400	709,000
Percent Change from 2005	-9%	-9%

** Due to rounding, the total may not equal the sum of component parts.*

Source: San Mateo County 2012

FIGURE 2.0-2
UNINCORPORATED SAN MATEO GHG FORECAST AND REDUCTION TARGETS ($MTCO_2E$)



Source: San Mateo County 2012

Anticipated Emissions Reductions

The GHG reduction measures included in the EECAP are a diverse mix of regulatory and incentive-based programs for existing and new development. The reduction measures aim to reduce GHG emissions from each source to avoid reliance on any one strategy or sector to achieve the target. In total, existing actions, state-recommended programs, and GHG reduction measures in the EECAP would reduce GHG emissions in the unincorporated county by approximately 213,400 $MTCO_2e$ in 2020. **Table 2.0-2** below summarizes the GHG reductions that would be achieved by goal for 2020 and 2035, respectively.

TABLE 2.0-2
GHG REDUCTION SUMMARY BY TOPIC

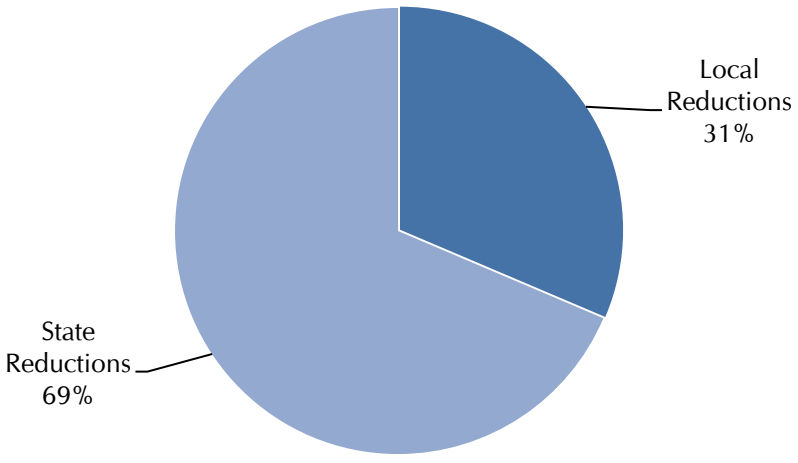
Goal Topic	2020	2035
Residential Energy Efficiency	-5,630	-10,590
Commercial Energy Efficiency	-15,580	-43,490
Green Building Ordinance	-6,780	-69,270
Renewable Energy	-6,480	-35,420
Transportation	-7,100	-6,400
Alternative Fuels	-1,780	-2,200
Waste Diversion	-15,010	-22,140
Water Efficiency	-170	-200
Sustainable Agricultural Practices[1]	-	-
Off-Road Technologies	-8,470	-16,740
Sequestration[1]	-	-
Totals	-67,000	-206,450

1. Supportive policies that were not quantified.

Source: San Mateo County 2012

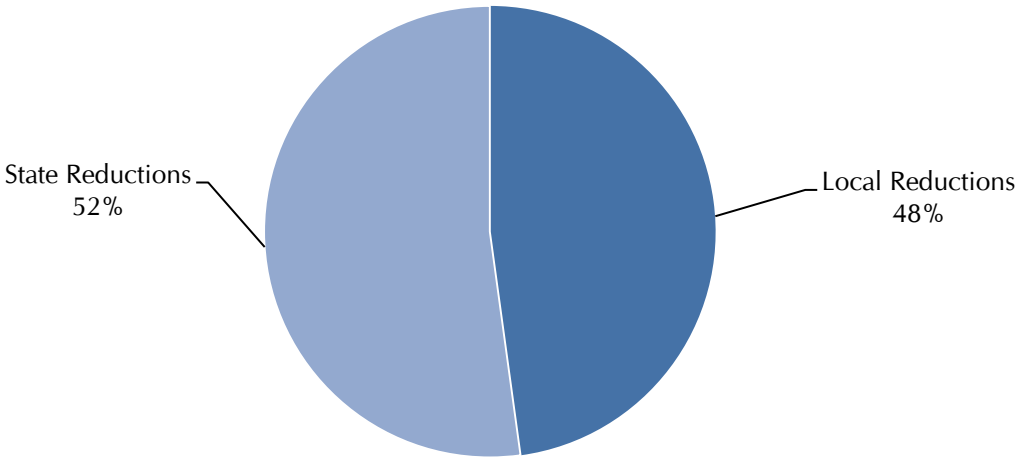
Figure 2.0-3 illustrates the predicted GHG reductions that would be achieved in 2020, as attributable to state programs and the proposed EECAP strategies. **Figure 2.0-4** shows GHG reductions that would be achieved by 2035.

FIGURE 2.0-3
2020 LOCAL AND STATE GHG REDUCTIONS ($MTCO_2E$)



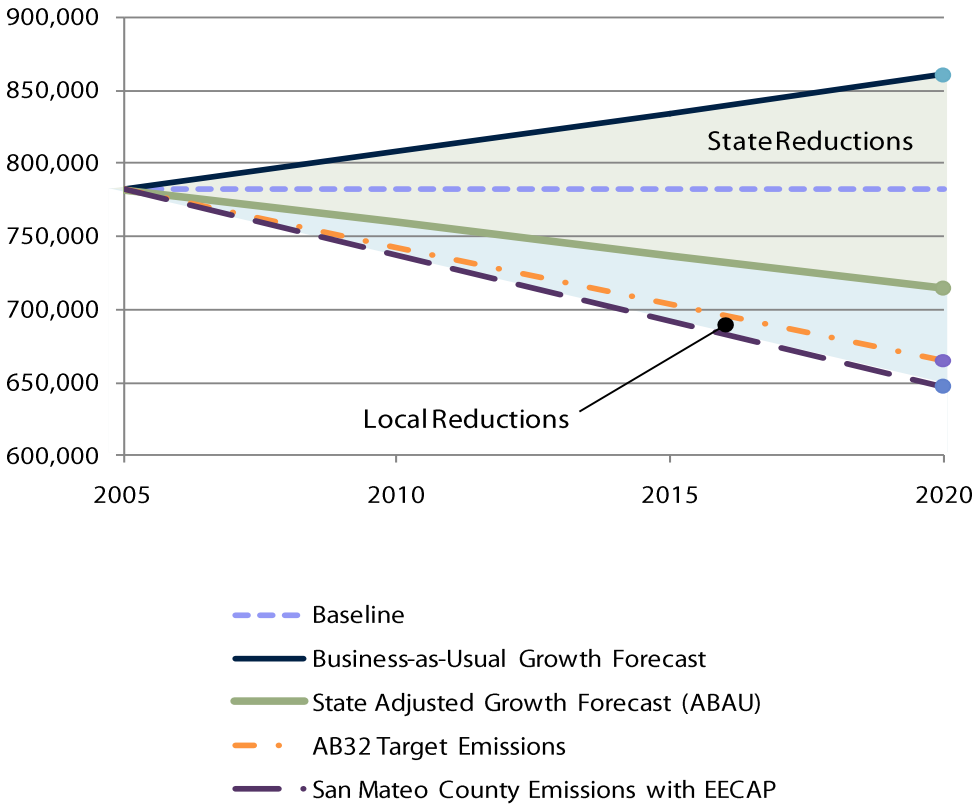
Source: San Mateo County 2012

FIGURE 2.0-4
2035 LOCAL AND STATE GHG REDUCTIONS ($MTCO_2E$)



Complete implementation of the EECAP would allow the County to achieve the adopted reduction target of reducing GHG emissions 15 percent below baseline 2005 levels by 2020, resulting in a 17 percent decrease below baseline levels. The EECAP would also set the County on a trajectory to achieve the State GHG reduction goal set by Executive Order S-3-05 of reducing GHG emissions 80 percent below 1990 levels by 2050. **Figure 2.0-5** shows the County's anticipated progress toward achieving the GHG reduction target through the implementation of the EECAP.

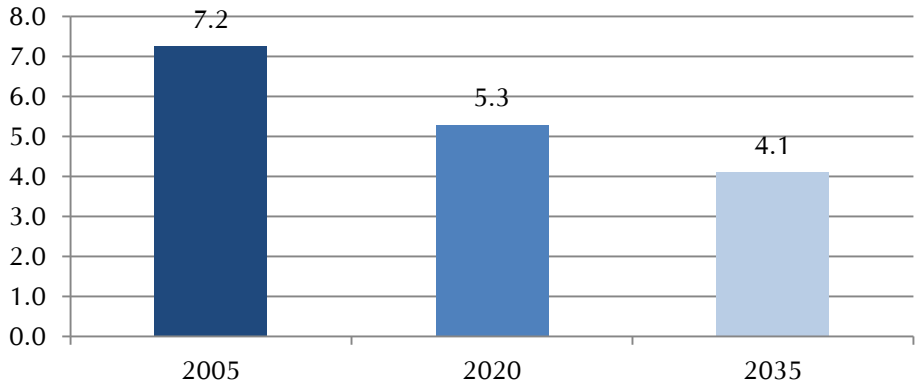
FIGURE 2.0-5
GHG REDUCTION TARGET ACHIEVEMENT ($MTCO_2E$)



Source: San Mateo County 2012.

As shown in **Figure 2.0-6**, through the implementation of the EECAP, the County's per capita GHG emissions would decrease from 7.2 $MTCO_2e$ per person per year in 2005 to 4.1 $MTCO_2e$ per person per year in 2035.

FIGURE 2.0-6
GHG EMISSIONS PER SERVICE POPULATION ($MTCO_2E$)



Source: San Mateo County 2012

Summary Description of GHG Emissions Reduction Measures

The following is a summary description of the various emissions reduction measures included in the EECAP. For more detailed discussion of these measures, please refer to the EECAP Chapter 4.

Goal 1: Residential Energy Efficiency—Maximize the energy efficiency of existing residential buildings.

Measure 1.1: Energy Upgrade California—Increase residential energy efficiency through green design and implementation of retrofits.

Measure 1.2: Residential Energy Efficiency Financing—Research and promote innovative financing opportunities for residential energy efficiency upgrades to achieve a 30 percent average household energy savings.

Measure 1.3: Low-Income Weatherization—Perform outreach to eligible low-income residents to encourage participation in federally funded weatherization programs.

Measure 1.4: Tree Planting—Incentivize or encourage appropriate tree planting near buildings to reduce heat gain and loss and to sequester greenhouse gases.

Measure 1.5: Propane Switch—Incentivize or encourage residents to switch from propane heaters to more energy-efficient options, such as Energy Star furnaces or electric air-source heat pumps.

Goal 2: Commercial and Industrial Energy Efficiency—Achieve optimum commercial and industrial energy efficiency.

Measure 2.1: Commercial and Industrial Efficiency—Promote and potentially further incentivize third-party programs for commercial and industrial energy efficiency, such as the Commercial Industrial Boiler Efficiency Program.

Measure 2.2: Commercial Financing—Research and promote innovative financing opportunities for commercial energy efficiency upgrades.

Measure 2.3: Institutional Energy Efficiency—Facilitate energy efficiency in large institutional energy users, including golf courses and airports.

Measure 2.4: Green Business Program—Participate in the County Green Business Program to encourage sustainability and energy efficiency in businesses throughout the unincorporated county.

Measure 2.5: Implement AB 1103—Support energy benchmarking of the nonresidential sector to help business owners identify opportunities for energy improvements.

Goal 3: Energy Efficiency in New Construction—Exceed State energy efficiency standards in new development.

Measure 3.1: Green Building Ordinance—Strengthen the energy efficiency requirements of the existing Green Building Ordinance.

Measure 3.2: Green Building Incentives—Provide additional incentives to promote voluntary green building practices.

Measure 3.3: Urban Heat Island—Require tree planting, shading design, solar orientation, and "cool" hardscapes.

Measure 3.4: Expedited Permitting—Expedite the review, permitting, and inspection process for projects targeting higher levels of energy reduction than mandated target goals or incorporating renewable energy systems.

Measure 3.5: Efficiency Training and Outreach—Promote green building practices and develop community-wide capacity for energy efficiency in new construction.

Measure 3.6: Regional Energy Efficiency Efforts—Develop programs and incentives to promote large-scale community-wide partnerships for energy efficiency.

Goal 4: Renewable Energy—Establish San Mateo County as a leader in the use of innovative renewable energy.

Measure 4.1: Solar Photovoltaic (PV) Incentives—Provide incentives for small-scale solar PV systems less than 10 kilowatts (kW) in size to encourage solar PV energy installations on existing development.

Measure 4.2: Solar Water Heater Incentives—Provide incentives for solar water heaters and reduce/remove permit fees for solar hot water energy installations.

Measure 4.3: Pre-Wired Solar Homes—Require all new roofs to be pre-wired for solar PV and all new buildings to be plumbed for solar water heaters.

Measure 4.4: Pilot Solar Program—Encourage developers to offer solar PV and solar water heaters as a standard feature on a percentage of new homes in a development and as an upgrade for redevelopment projects in residential and commercial projects.

Measure 4.5: Renewable Financing—Encourage the adoption of new, innovative financing options for renewable installations.

Measure 4.6: Commercial Wind Power—Encourage the development of commercial wind farms.

Measure 4.7: Incentivize Wind Energy—Incentivize safe and effective small distributed generation wind power systems on existing development in locations that complement existing land uses.

Measure 4.8: Investigate Community Choice Aggregation—Investigate Community Choice Aggregation to allow residents and businesses in the unincorporated county to aggregate their buying power to purchase renewable energy.

Measure 4.9: Emissions Offset Programs—Allow new development projects to participate in energy offset programs to purchase electricity generated from renewable sources off-site.

Measure 4.10: Waste to Energy—Incentivize or encourage the use of green waste and food waste for alternative energy generation.

Goal 5: Design for Mobility & Connectivity—Integrate mobility and connectivity by design into new development to reduce per capita vehicle miles traveled.

Measure 5.1: General Plan and Zoning Updates—Update the General Plan and Zoning Ordinance to encourage transit-oriented, mixed-use developments at appropriate locations.

Measure 5.2: Impact Fees—Create an impact fee program for new projects to encourage development in locations with high accessibility to destinations such as jobs, retail, and other attractions. The impact fee program will also be used to fund public transit improvements or school bus programs (as discussed in Measures 6.3 and 6.4).

Measure 5.3: Pedestrian Design—As appropriate, require new projects in North Fair Oaks, urban communities, and business districts to include improved design elements to enhance walkability and connectivity while balancing impacts on vehicle congestion.

Goal 6: Non-Motorized and Alternative Travel—Provide opportunities for non-motorized travel at the neighborhood scale.

Measure 6.1: Neighborhood Retail—When updating the General Plan, look for opportunities to add neighborhood-serving retail at key locations throughout the unincorporated county.

Measure 6.2: Traffic Calming in New Construction and Complete Streets—Require larger new projects (including existing projects with major renovations) to evaluate and implement traffic-calming measures at the site, as determined through the plan review process.

Measure 6.3: Traffic Impact Fund—Use the impact fee program discussed in Measure 5.2 to fund transit improvements, optimization, and expansion in the county.

Measure 6.4: Expand Transit—Work with SamTrans to optimize the local transit network by adding or modifying existing transit service to enhance service near future project sites and areas of future demand in the unincorporated county.

Goal 7: Efficient Parking—Develop efficient parking practices.

Measure 7.1: Parking Ordinance—Amend the Zoning Ordinance to allow a reduction in parking requirements if deemed appropriate and establish parking maximums, standards that will limit the number of parking spots in new projects and allow for flexible parking reductions to discourage an over-reliance on auto travel.

Measure 7.2: Efficient Parking Design—Evaluate the existing parking standards and look for ways to increase efficiency.

Measure 7.3: Unbundled Parking—Unbundle parking costs from property costs at strategic locations in the county, including North Fair Oaks, the Middlefield Road area, the small business district in West Menlo Park, and areas in Emerald Lake Hills. Unbundling separates parking from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost to the property cost. This removes the burden from those who do not wish to utilize a parking space.

Goal 8: Commute Trips—Discourage single-occupant vehicle travel to and from work.

Measure 8.1: Employee Commute—Require all large employers to implement a Commute Trip Reduction program to discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as walking, biking, transit riding, carpooling, vanpooling, and ridesharing.

Measure 8.2: Workplace Parking—Implement workplace parking pricing at employment centers.

Measure 8.3: Employer Transit Subsidies—Require employers to provide a subsidized/discounted daily or monthly public transit pass to employees.

Measure 8.4: Work Shuttles—Promote expansions of worker shuttle programs.

Goal 9: School-Related Travel—Work with schools in the unincorporated county to reduce vehicle miles traveled.

Measure 9.1: Alternative School Transit—Promote school shuttle programs to reduce vehicle miles traveled.

Goal 10: Alternative Fuels—Establish San Mateo County as a regional center for alternative fuel use and infrastructure.

Measure 10.1: Low Carbon Fuel Infrastructure—Increase alternative fuel infrastructure in the community.

Measure 10.2: Alternative Fuel Outreach—Educate the public on the feasibility, availability, and incentives for alternatively fueled vehicles.

Goal 11:Low Emissions Agriculture—Promote low-emissions agricultural practices.

Measure 11.1: Energy-Efficient Agriculture—Conduct a public outreach campaign to educate farmers and growers of easy and low- to no-cost energy efficiency practices.

Measure 11.2: Agricultural Best Practices—Create resources to promote best practices for agricultural management and establish a list of best practices for agricultural management.

Goal 12: Sustainable Agriculture—Encourage sustainable agricultural practices.

Measure 12.1: Sustainable Agriculture—Streamline regulations for the farming community to support sustainable practices and GHG reductions.

Goal 13: Zero Waste—Achieve zero waste.

Measure 13.1: Use of Recycled Materials—Require new development to incorporate a minimum of 15 percent of recycled materials into construction to encourage the market for recycled goods.

Measure 13.2: Zero Waste—Work toward zero waste through comprehensive recycling and composting programs, in addition to aggressive outreach efforts.

Measure 13.3: Waste-to-Energy Facility—Investigate the creation of an agricultural and food waste-to-energy biomass facility in San Mateo County.

Measure 13.4: Landfill Gas Capture—Continue to monitor and promote emerging technologies to increase landfill gas capture and combustion efficiency and to reduce fugitive emissions in each process.

Goal 14: Water Conservation—Reduce water use 20 percent by 2020.

Measure 14.1: Smart Water Meters—Work with water companies that serve the community to install smart water meters for 50 percent of residential and commercial water accounts by 2015 and 95 percent by 2020.

Measure 14.2: Water Reuse—Increase the use of grey, rain, and recycled water for landscaping and agricultural purposes throughout the community to reduce the use of potable water.

Goal 15: Off-Road Equipment—Support expansion and use of clean technology off-road equipment.

Measure 15.1: Construction Idling—Adopt ordinances and policies that aim to reduce emissions from heavy-duty construction equipment by limiting idling and utilizing cleaner fuels, equipment, and vehicles to exceed the Bay Area Air Quality Management District's requirements.

Measure 15.2: Electrification in New Homes—Facilitate the conversion of outdoor household equipment to more efficient models.

Goal 16: Forest Health & Sequestration—Protect long-term forest health and sequestration capacity for climate change resilience.

Measure 16.1: Promote Sequestration Efforts—Identify opportunities for forestry sequestration on county lands, including but not limited to publicly owned forests.

2.4 REGULATORY REQUIREMENTS, PERMITS, AND APPROVALS

Concurrent with the adoption of the recommended amendments to the General Plan, Subdivision, Building, and Zoning Regulations and the EECAP, the County will amend its General Plan to incorporate the text identified in Subsection 2.3.1 above to reflect the County's intent to reduce GHG emissions that are reasonably attributable to the County's discretionary land use decisions. Adoption of the recommended amendments to the General Plan and the EECAP does not require action by any other agencies.

2.5 APPLICATION OF THE ENERGY EFFICIENCY CLIMATE ACTION PLAN TO FUTURE CEQA REVIEWS AND SPECIFIC PROJECTS

One of the objectives of the proposed project is to adopt an EECAP that satisfies the requirements of Section 15183.5 of the CEQA Guidelines, which sets forth standards for using a GHG reduction plan to address the GHG emissions of specific projects. Under this guideline, compliance with the EECAP can be used in appropriate situations to determine the significance of a project's effects relating to GHG emissions, thus providing streamlined CEQA analysis of future projects that are consistent with the approved EECAP.

CEQA Guidelines Section 15183.5(b) reads as follows:

> (b) Plans for the Reduction of Greenhouse Gas Emissions. Public agencies may choose to analyze and mitigate significant greenhouse gas emissions in a plan for the reduction of greenhouse gas emissions or similar document. A plan to reduce greenhouse gas emissions may be used in a cumulative impacts analysis as set forth below. Pursuant to sections 15064(h)(3) and 15130(d), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances.
>
> (1) Plan Elements. A plan for the reduction of greenhouse gas emissions should:
>
> (A) Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;
>
> (B) Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;
>
> (C) Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area;

(D) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

(E) Establish a mechanism to monitor the plan's progress towards achieving the level and to require amendment if the plan is not achieving specified levels;

(F) Be adopted in a public process following environmental review.

(2) Use the Later Activities. A plan for the reduction of greenhouse gas emissions, once adopted following certification of an EIR or adoption of an environmental document, may be used in the cumulative impacts analysis of later projects. An environmental document that relies on a greenhouse gas reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project. If there is substantial evidence that the effects of a particular project may be cumulatively considerable, notwithstanding the project's compliance with the specified requirements in the plan for the reduction of greenhouse gas emissions, an EIR must be prepared for the project.

The provisions of the EECAP and the appendices that support the EECAP comply with these requirements by providing a quantified inventory of GHG emissions, and by identifying a level based on substantial evidence below which activities subject to the EECAP will not make a cumulatively considerable contribution to greenhouse gas impacts. That level is based on the State's AB 32 goals. The EECAP and associated documents also identify and analyze the emissions associated with specific actions, and set forth performance standards to achieve the specified emissions goals. The analysis in the EECAP and the supporting documents demonstrates that this level will be achieved by these measures. Finally, the EECAP, including monitoring, will be adopted in a public process following environmental review.

The County intends to use the EECAP to streamline the review of future development projects by using the EECAP Development Checklist, included as Appendix F in the EECAP. The EECAP Development Checklist clearly specifies the measures within the EECAP applicable to new construction projects and remodels, helping projects to demonstrate compliance with the County's GHG emissions reduction strategy and determine that the project's GHG emissions are less than significant. Projects that are found to comply with the County's GHG emissions reduction strategy would be determined to have a less than significant individual and cumulative impact from GHG emissions, consistent with CEQA Guidelines Sections 15064(h)(3) and 15064.4. Projects not in compliance with the EECAP would not receive any streamlined review under CEQA.

WORKS CITED

San Mateo County. 2012. *Energy Efficiency Climate Action Plan.* http://www.co.sanmateo.ca.us/planning/rechargesmc/resources.html.

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US Census Bureau. *American FactFinder.* 2012. Access April 18, 2012. http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS

The following is the environmental analysis for the proposed County of San Mateo (County) Energy Efficiency Climate Action Plan (EECAP/proposed project). As noted in Sections 1.0 and 2.0, the focus of the Draft Environmental Impact Report (Draft EIR) is on the changes associated with the proposed actions and whether those changes will result in significant environmental effects. As discussed below, the impact analysis in this Draft EIR focuses on the indirect effects of implementation of EECAP policies and actions.

3.1 ANALYSIS APPROACH USED TO EVALUATE IMPACTS OF THE PROPOSED PROJECT

As discussed in Chapter 2, Project Description, the County of San Mateo is proposing to amend its General Plan policies related to energy and climate change, and to adopt an EECAP in order to implement these policies. The objective of the project is to develop goals, priorities, and actions that will reduce greenhouse gas (GHG) emissions from unincorporated areas within the county in compliance with state goals and mandates (e.g., Assembly Bill 32, Executive Order S-3-05, CEQA Guidelines, Bay Area Air Quality Management District CEQA Guidelines) and to identify the ways in which County land use and development policies should change in order to adapt to the impacts of climate change. To these ends, proposed policies and actions address issues that affect GHG emissions, including water and energy consumption, transportation and land use patterns, agriculture, and waste. Implementation measures included in the EECAP establish mandatory, incentive, and/or voluntary emissions reduction programs for county agencies, residents, and businesses, and include a monitoring and tracking program. Other implementation components will include the identification of potential future updates to County Subdivision, Building, and Zoning Regulations.

The EECAP is not a land use plan and does not alter any land use designations in the County of San Mateo General Plan. The EECAP also does not include entitlements for the construction of any structures or facilities. Thus, the EECAP does not provide for development of areas not previously considered for development by the County and would not directly result in physical environmental effects due to the construction and operation of facilities. However, in implementing the proposed policies and actions, the EECAP encourages actions that could lead to the construction of facilities that could result in physical environmental effects. This Draft EIR focuses on the overall effects of the proposed EECAP within the County; it does not examine the effects of the potential site-specific projects that may occur in the future under the EECAP. The nature of the EECAP is such that many proposed policies are intended to be general, with details to be determined during implementation. Therefore, this Draft EIR assumes that specific development projects or infrastructure improvement proposals submitted to the County will require an independent environmental assessment consistent with the requirements of CEQA.

In terms of the potential to generate environmental effects, the EECAP includes three types of policies or actions. The first type involves avoided emissions, referring to emissions that are prevented from being released by changed behaviors. This category includes actions that would have positive effects with regard to reductions in resource and energy use without resulting in negative physical environmental effects. These include actions such as promoting energy conservation, recycling, and waste reduction, performing outreach to reduce energy consumption, and encouraging the continuation of existing energy reduction programs and use of alternative transportation. These actions require no additional infrastructure to be constructed and are generally accomplished by changes in behavior by individuals in the community. Also included in this category are measures aimed at encouraging the use of energy-efficient and resource-sensitive designs in new development. While these actions would be related to new development, which would likely result in physical environmental effects, the new development would occur with or without the EECAP. Therefore, application of EECAP policies and actions

would result in no additional physical environmental impacts in new development and would, in fact, reduce the projects' physical effects relative to development without EECAP policies.

The second category of actions includes efforts to achieve greater efficiency that could result in minor construction on existing structures. The EECAP identifies strategies for greater efficiencies when a behavior or activity cannot be avoided, but can be accomplished in a more efficient or less GHG-dependent manner. These actions include incentives for energy-efficiency upgrades in existing homes and businesses, such as weatherization and water heaters, installation of smart water meters, and development of electric vehicle charging stations in public areas and urban neighborhoods. Regarding energy-efficiency upgrades in existing homes and businesses, property owners would complete improvements on existing structures. In some instances retrofits would be for fixtures, such as water heaters, that are at or near the end of their useful life and would be recycled or discarded in the landfill even without incentives for replacement with high-performing, energy-efficient alternatives. Other minor improvements, such as installation of a charging station in an existing parking lot, would be encouraged primarily in areas that have already been developed. These types of improvements are not assumed to result in substantial ground disturbance or use of major construction equipment.

The third type of action encourages or provides incentives for development of improvements or facilities that are more intensive than minor retrofits described above. The EECAP could result in construction of energy-generating facilities, such as wind turbines and photovoltaic/solar arrays, most of which would primarily be installed on rooftops of existing or new buildings, but it is possible that some energy-generating facilities could be public utility installations that are constructed in other areas. The analysis in this Draft EIR focuses on these types of facilities because construction and/or operation of these stand-alone facilities have the potential to result in physical environmental impacts.

This level of analysis evaluates possible physical environmental effects of implementation of the EECAP. Certain GHG reduction measures included in the project have been developed by state and regional agencies; environmental evaluation of the state measures has been previously considered in functional equivalent documents, which are comparable to EIRs. Evaluation is accomplished via review of environmental documents prepared by the California Air Resources Board (CARB) for implementation of GHG emissions reduction programs (see Section 3.3.5, GHG and Climate Change).

The following contains a description of setting conditions (including applicable regulatory setting), an evaluation of the direct and indirect environmental effects resulting from the implementation of the proposed project, and identification of existing regulations and programs that mitigate environmental effects. Where applicable, this Draft EIR contains additional feasible mitigation measures and identifies whether significant environmental effects of the project would remain after application of policies, programs, and feasible mitigation measures.

3.1.1 EFFECTS FOUND TO BE NOT SIGNIFICANT

As discussed in Chapter 2, Project Description, the intent of the EECAP is to reduce GHG emissions from unincorporated areas within the county. The proposed EECAP was prepared with environmental factors in mind, and is intended to be self-mitigating to the extent possible. To achieve this, the EECAP includes reduction measures that are designed to mitigate environmental impacts. Thus, the reduction measures in the EECAP not only reduce GHG emissions associated with existing and future uses in the county, but would also provide mitigating effects in other issue areas, such as reductions in single-occupancy vehicle use and associated emissions, reduction in solid waste, water conservation, and a corresponding

reduction in wastewater treatment. In addition, continued application of the County's Zoning Regulations on future development would further reduce the potential for environmental effects.

Based on the review of the proposed EECAP, the County of San Mateo determined that there was no substantial evidence that the proposed project would cause or otherwise result in significant environmental effects in the resource areas discussed below.

Agriculture and Forestry Resources

Convert important farmland or conflict with zoning or Williamson Act

The proposed EECAP would not directly result in construction or changes in land use designations, so it would not result in the conversion of farmland or conflict with agricultural zoning or Williamson Act contracts. Future development under the EECAP would be required to comply with existing San Mateo County Zoning Regulations, including, but not limited to, Chapter 10, A-1 Agricultural District, Chapter 11, A-2 Exclusive Agricultural District, Chapter 12, A-3 Floricultural District, Chapter 21A, Planned Agricultural District, Chapter 20A, Resource Management (RM), and Chapter 36, Resource Management/Coastal Zone (RM/CZ), which are intended to preserve agricultural lands, including Important Farmland, in the county. Continued application of San Mateo County Board of Supervisors Resolution 65067 would reduce impacts related to Williamson Act contracts. Because projects encouraged by the EECAP would be subject to existing regulations protecting these resources, **no impact** related to conversion of Important Farmland or conflicts with agricultural zoning is expected and this issue will not be addressed further.

Conflict with forest zoning or result in the loss of forest land

Implementation of the proposed EECAP would not conflict with forest zoning. Projects would be required to comply with San Mateo County Zoning Regulations Chapter 34, Timberland Preserve Zone District, and Chapter 37, Timberland Preserve Zone/Coastal Zone, which allow only compatible uses that do "not significantly detract from the use of the property for, or inhibit growing and harvesting timber." Compliance with existing regulations regarding preservation of timber resources would ensure **no impact** related to conflict with forest zoning and this issue will not be addressed further.

Result in the conversion of agricultural or forest land

As discussed above, continued application of existing regulations, including the County's Zoning Regulations, would reduce the potential for the conversion of agricultural or forest land. Therefore, implementation of the proposed EECAP would not result in the conversion of agricultural or forest land. **No impact** related to conversion of agricultural or forest land is expected and this issue will not be addressed further.

Air Quality

Objectionable odors

Implementation of the proposed EECAP would not involve construction of odor-producing uses and would not create objectionable odors affecting a substantial number of people. Therefore, **no impact** related to odors is expected and this issue will not be addressed further.

Geology and Soils

Seismic hazard

The EECAP does not directly involve the construction of structures. Any structures that could be constructed consistent with the EECAP would be subject to existing California Building Code standards, which includes seismic standards, that would ensure buildings are adequately designed and constructed based upon site-specific conditions. Therefore, implementation of the proposed EECAP would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving earthquake, ground shaking, or seismic-related ground failure. **No impact** in these issue areas is expected and they will not be addressed further.

Soil erosion

Implementation of the proposed EECAP would not result in activities that would result in the loss of topsoil soils. The State Regional Water Quality Control Board (SWRCB) permits all regulated construction activities under National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity. Coverage under a General Construction Permit requires the preparation of a stormwater pollution prevention plan (SWPPP) and Notice of Intent (NOI) to request coverage under the General Permit. The NOI includes site-specific information and the certification of compliance with the terms of the General Construction Permit. The SWPPP includes pollution prevention measures (erosion and sediment control measures and measures to control non-stormwater discharges and hazardous spills), demonstration of compliance with all applicable local and regional erosion and sediment control standards, identification of responsible parties, a detailed construction timeline, and best management practices (BMPs) monitoring and maintenance schedule to determine quantities of pollutants leaving the site. SWPPP BMPs are recognized as effective methods to prevent or minimize the potential releases of pollutants into drainages, surface waters, or groundwater. Strict SWPPP compliance coupled with using the appropriate BMPs would reduce potential erosion and water quality impacts during construction activities. Therefore, **no impact** in this issue area is expected and it will not be addressed further.

Unstable or expansive soils

Implementation of the proposed EECAP would not locate people or structures on unstable geologic units or soil, or cause instability of geologic units or soils. Any structures that could be constructed consistent with the EECAP would be subject to existing California Building Code standards, which includes standards for unstable soils, that would ensure buildings are adequately designed and constructed based upon site-specific conditions. Therefore, **no impact** in this issue area is expected and it will not be addressed further.

Septic tanks

Implementation of the proposed EECAP does not involve septic tanks or alternate wastewater disposal systems. Therefore, **no impact** in this issue area is expected and it will not be addressed further.

Hazards and Hazardous Materials

Transport, use, or disposal of hazardous materials

Implementation of the proposed EECAP policies would not involve the routine transport, use, or disposal of hazardous materials. Therefore, **no impact** in this issue area is expected and it will not be addressed further.

Accident conditions involving the release of hazardous materials into the environment

Because implementation of the proposed EECAP does not involve the transport, use, or disposal of hazardous materials, the project would not create reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment. Therefore, **no impact** in this issue area is expected and it will not be addressed further.

Hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school

Implementation of the policies of the proposed EECAP would not result in hazardous emissions. **No impact** in this issue area is expected and it will not be addressed further.

Hazardous material sites

The proposed EECAP does not involve projects on hazardous material sites included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, nor would it create a significant hazard to the public or the environment. **No impact** in this issue area is expected and it will not be addressed further.

Hazard within two miles of an airport

Implementation of the policies of the proposed EECAP would not result in an airport safety hazard for people residing or working in the county. **No impact** in this issue area is expected and it will not be addressed further.

Emergency response plan or emergency evacuation plan

Implementation of the policies of the proposed EECAP would not impair or interfere with an adopted emergency response plan or emergency evacuation plan. **No impact** in this issue area is expected and it will not be addressed further.

Wildland fire

Implementation of the policies of the proposed EECAP would not involve projects that would expose persons to risk from wildland fire. **No impact** in this issue area is expected and it will not be addressed further.

Hydrology and Water Quality

Water quality standards

Implementation of the policies of the proposed EECAP would not violate water quality standards or waste discharge requirements. As noted above, using the appropriate BMPs would reduce potential water quality impacts during construction activities. Therefore, **no impact** in this issue area is expected and it will not be addressed further.

Groundwater supplies

Implementation of the policies of the proposed EECAP would not reduce groundwater supplies or reduce groundwater recharge. In fact, EECAP measures encourage water conservation, which would result in positive effects on groundwater. **No impact** in this issue area is expected and it will not be addressed further.

Drainage

Implementation of the policies of the proposed EECAP would not alter existing drainage patterns or result in substantial erosion, siltation, or flooding. **No impact** in this issue area is expected and it will not be addressed further.

Runoff

Implementation of the policies of the proposed EECAP would not contribute to polluted runoff or runoff water that would exceed the capacity of stormwater drainage systems or degrade water quality. Any subsequent projects would be verified by the Public Works Department prior to approval, which would ensure that project-related drainage facilities would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems. Therefore, **no impact** in this issue area is expected and it will not be addressed further. SEE ABOVE

Flooding

Implementation of the policies of the proposed EECAP would not place housing or structures within a 100-year flood hazard area that would impede or redirect flows or expose people or structures to hazard involving flooding. Therefore, **no impact** in this issue area is expected and it will not be addressed further.

Land Use and Planning

Division of an established community

Implementation of the proposed EECAP would not physically divide an established community. Therefore, **no impact** is expected and this issue will not be addressed further.

Conflict with land use plans

Implementation of the proposed EECAP would not result in physical impacts related to conflicts with land use plans or habitat conservation plans. Future projects would be required to comply with the existing regulations including, but not limited to, County Zoning Regulations, Chapter 20B, Coastal Development District, which would require a Coastal Development Permit for any

activities in the coastal zone that could involve a risk of adverse environmental impact. Therefore, **no impact** is expected and this issue will not be addressed further.

Mineral Resources

Availability of a known mineral resource

Implementation of the policies of the proposed EECAP would not affect known mineral resources**. No impact** would result and it will not be addressed further.

Loss of availability of a locally important mineral resource recovery site

Implementation of the policies of the proposed EECAP would not affect a locally important mineral resource recovery site. **No impact** would result and it will not be addressed further.

Noise

Exposure of persons to excess noise

Implementation of the policies of the proposed EECAP would not result in exposure of persons to noise in excess of established standards. The San Mateo County Ordinance Code (Section 4.88.360) restricts construction activities between the hours of 6:00 P.M. and 7:00 A.M. weekdays, 5:00 P.M. and 9:00 A.M. on Saturdays or at any time on Sundays, Thanksgiving and Christmas. Compliance with this code would ensure sensitive receptors are not exposed to excessive nose levels. So there would be **no impact** in this issue area and it will not be addressed further.

Exposure to excessive groundborne vibration

Implementation of the policies of the proposed EECAP would not result in exposure of persons to excessive vibration. **No impact** in this issue area is expected and it will not be addressed further.

Substantial permanent increase in ambient noise levels

Implementation of the policies of the proposed EECAP would not result in a substantial permanent increase in ambient noise levels in the county. **No impact** in this issue area is expected and it will not be addressed further.

Substantial temporary or periodic increase in ambient noise levels

Implementation of the policies of the proposed EECAP would not result in a substantial temporary or periodic increase in ambient noise levels in the county. As noted above, construction activities are restricted to daytime hours to avoid nighttime noise exposure. **No impact** in this issue area is expected and it will not be addressed further.

Exposure to airport noise

Implementation of the policies of the proposed EECAP would not result in exposure of persons to excessive airport noise levels. **No impact** in this issue area is expected and it will not be addressed further.

Population and Housing

Induce substantial population growth

The EECAP would not directly or indirectly result in increases in population and does not accommodate growth beyond that anticipated by the County's adopted General Plan or induce additional population growth. Therefore, **no impact** related to population growth is expected and this issue will not be addressed further.

Displace existing housing

While the effects of climate change itself, through rising sea level, could result in the need for people to relocate from coastal areas, this change would occur without the EECAP. Implementation of the policies of the proposed EECAP does not promote or would not otherwise displace existing housing. **No impact** related to existing housing is expected and this issue will not be addressed further.

Displace people

Implementation of the policies of the proposed EECAP would not displace people. **No impact** related to displacing people is expected and this issue will not be addressed further.

Public Services

Public services causing the need for new governmental facilities

Implementation of the proposed EECAP would not accommodate additional growth beyond that anticipated by the General Plan and, therefore, would not increase demand for public services or facilities. Implementation of the policies within the proposed EECAP would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts. Therefore, **no impact** on public services causing the need for new governmental facilities is expected and this issue will not be addressed further.

Recreation

Park Facilities

Implementation of the proposed EECAP would not increase population or demand for park facilities. Therefore, the EECAP would not result in physical deterioration of park facilities or require new park facilities, the construction of which could cause physical environmental impacts. Therefore, **no impact** related to parks is expected and this issue will not be addressed further.

Traffic and Circulation

Conflicts with plans or policies regarding effectiveness of circulation system

Implementation of the proposed EECAP would not result in a change in the circulation system in the county, but would promote the use of alternate transportation which could improve levels of

service on county roads. Therefore, **no impact** related to the circulation system is expected and this issue will not be addressed further.

Conflicts with congestion management plans

Implementation of the proposed EECAP would not conflict with congestion management plans. By promoting the use of alternate transportation, the EECAP could reduce congestion on county roads. Therefore, **no impact** related to congestion management plans is expected and this issue will not be addressed further.

Change in air traffic patterns

Implementation of the proposed EECAP would not result in a change in air traffic patterns. Therefore, **no impact** related to air traffic or safety is expected and this issue will not be addressed further.

Design hazard

Implementation of the proposed EECAP would not result in a substantial increase in hazard related to a design feature or incompatible uses. Therefore, **no impact** is expected and this issue will not be addressed further.

Emergency access

Implementation of the proposed EECAP would not result in inadequate emergency access. Therefore, **no impact** is expected and this issue will not be addressed further.

Conflicts with transit, bicycle, or pedestrian facilities

Implementation of the proposed EECAP would encourage alternatives to single-occupancy vehicles, and would not result in negative effects on the safety or performance of transit, bicycle, or pedestrian facilities. However, the EECAP does not propose specific improvements or plans, but instead proposes an overall strategy to reduce single-occupancy vehicle usage and encourage alternative forms of transportation. Therefore, **no impact** is expected on transit, bicycle, or pedestrian facilities and this issue will not be addressed further.

Public Utilities and Service Systems

Wastewater treatment facilities

Implementation of the proposed EECAP would not accommodate additional growth beyond that anticipated by the General Plan or increase demand for wastewater treatment. Therefore, the EECAP would not exceed service capacity, exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or require the construction of new water or wastewater treatment facilities. Therefore, **no impact** on wastewater treatment is expected and this issue will not be addressed further.

Storm drainage facilities

Implementation of the proposed EECAP would not accommodate additional growth beyond that anticipated by the General Plan or result in the need for new or expanded storm drainage

facilities. Therefore, **no impact** on storm drainage infrastructure is expected and this issue will not be addressed further.

Solid waste

The EECAP includes policies to increase the amount of recyclable diversion, increase the use of recycled materials, and reduce the amount of materials sent to landfill. Therefore, implementation of the proposed EECAP would reduce impacts on landfills and would comply with regulations related to solid waste. Therefore, **no impact** related to solid waste is expected and this issue will not be addressed further.

3.2 ENVIRONMENTAL IMPACT ANALYSIS

The Draft EIR addresses the environmental effects of implementing the proposed project. The Impacts and Mitigation subsection identifies direct and indirect environmental effects associated with implementation of the proposed project. Standards of significance are identified and used to determine whether the environmental effects are considered significant and require the application of mitigation measures. Each environmental impact analysis is identified numerically and is supported by substantial evidence.

Mitigation measures for the proposed project consist of performance standards that identify clear requirements that would avoid or minimize significant environmental effects (the use of performance standard mitigation is allowed under CEQA Guidelines Section 15126.4(a) and is supported by case law *Rio Vista Farm Bureau Center v. County of Solano* ([1st Dist. 1992] 5 Cal. App. 4th at pp. 371, 375–376 [7 Cal. Rptr. 2d 307]).

This document focuses on the overall effects of the proposed EECAP within the county; the Draft EIR does not examine the effects of the potential site-specific projects that may occur in the future under the EECAP. The nature of the EECAP is such that proposed policies and actions are intended to be general, with details to be determined during implementation. Therefore, this Draft EIR assumes that specific development projects and infrastructure improvement proposals submitted to the County will necessitate an environmental assessment consistent with the requirements of CEQA. Thus, many of the impacts and mitigation measures can only be described in this Draft EIR in general terms. Depending on the issue area, the significance criteria are identifiable quantitative, qualitative, or performance thresholds beyond which the proposed project would be considered to result in a significant effect.

The EECAP is not a land use plan or a specific development project and it does not alter the General Plan Land Use Diagram. This Draft EIR is based on the assumption that all development will be consistent with the General Plan Land Use Diagram and will be required to comply with existing regulations and implement the policies and actions of the proposed EECAP.

Development-specific construction and operational impacts are not known. Therefore, this Draft EIR provides a program-level impact analysis. However, impacts that could occur as a result of energy-generating structures allowed under the EECAP must be considered because they would be indirect impacts of implementation of the EECAP.

3.3 ENVIRONMENTAL SETTING AND ANALYSIS

This subsection includes a description of the physical setting associated with the technical area of discussion, consistent with CEQA Guidelines Section 15125. The General Plan EIR provides the background for the existing setting with updated information as needed.

3.1 Aesthetics and Visual Resources

3.1 AESTHETICS AND VISUAL RESOURCES

This section describes the existing aesthetic resources in San Mateo County and discusses the impacts associated with implementation of the proposed project. The analysis focuses on the anticipated alteration of the existing visual characteristics resulting from the proposed San Mateo Energy Efficiency Climate Action Plan (EECAP) and includes discussions of existing County regulations that reduce or avoid these impacts.

ENVIRONMENTAL SETTING

Visual resources are visible elements of the landscape; namely, landforms (hills and mountains), vegetative forms (trees and plant types), bodies of water (lakes, ocean, streams), and neighborhoods and communities (developed areas). Many of the visual resources observed are distinct and unique, such as San Bruno Mountain, while others impart a particular image and character, like the communities of Montara, Moss Beach, and El Granada. Many of the natural visual resources once found in urban areas have been significantly altered or removed in order to accommodate intense development. Bayside foothills have been reshaped, native ground cover and extensive wooded areas have been eliminated, and portions of the San Francisco Bay have been built over. These alterations have created a decidedly different landscape character from that found in the rural areas.

While the urban portions of the county, generally located in a region between the Santa Cruz Mountains and the San Francisco Bay, reflect extensive development, they still contain a number of visual resources, such as prominent views of the Pacific Ocean, San Francisco Bay, and San Bruno Mountain.

REGULATORY FRAMEWORK

This subsection identifies applicable federal, state, regional, and local plans, policies, laws, and regulations that apply to the technical areas of discussions included below.

State

State Scenic Highway Program

In 1963, the California legislature created the Scenic Highway Program to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to state highways. The state regulations and guidance governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq. A highway may be designated scenic depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. A scenic corridor is the land generally adjacent to and visible from the highway and is identified using a motorist's line of vision. A reasonable boundary is selected when the view extends to the distant horizon.

The following highways are State-designated scenic routes:

- State Route 1 (Cabrillo Highway), from Santa Cruz County line to southern limits of the City of Half Moon Bay
- Interstate 280 (Junipero Serra Freeway), from Santa Clara County line to city limit of City of San Bruno

- State Route 35 (Skyline Boulevard) from State Route 92 (Half Moon Bay Road) south to Santa Clara and Santa Cruz county lines

Nighttime Sky-Title 24 Outdoor Lighting Standards

The California legislature passed a bill in 2001 requiring the California Energy Commission (CEC) to adopt energy efficiency standards for outdoor lighting for both the public and private sector. In November 2003, CEC adopted changes to Title 24, parts 1 and 6, Building Energy Efficiency Standards. These standards became effective on October 1, 2005, and included changes to the requirements for outdoor lighting for residential and nonresidential development. The new standards will likely improve the quality of outdoor lighting and help to reduce the impacts of light pollution, light trespass, and glare. The standards regulate lighting characteristics, such as maximum power and brightness, shielding, and sensor controls to turn lighting on and off. Different lighting standards are set by classifying areas by lighting zone. The classification is based on population figures of the 2000 US Census. Areas can be designated as LZ1 (dark), LZ2 (rural), or LZ3 (urban).

Local

San Mateo County General Plan

The following policies from the San Mateo General Plan are applicable to the proposed project:

4.20 Utility Structures

Minimize the adverse visual quality of utility structures, including roads, roadway and building signs, overhead wires, utility poles, T.V. antennae, windmills and satellite dishes.

4.21 Scenic Corridors

Protect and enhance the visual quality of scenic corridors by managing the location and appearance of structural development.

4.22 Forest Lands

Protect the basic scenic character of forest lands by promoting the regulation of thinning and commercial harvesting.

4.24 Location of Structures

1) Locate, site and design all structures and paved areas to carefully conform with the natural vegetation, landforms and topography of the site so that their presence is compatible with the pre-existing character of the site.

2) Locate and design future structures to minimize the impacts of noise, light, glare and odors on adjacent properties and roads.

3) Locate structures adjacent to or in forested areas rather than in open grasslands, wherever possible and make compatible with timber harvesting activities and use of solar energy.

4.27 Ridgelines and Skyline

1) Discourage structures on open ridgelines and skylines, when seen as part of a public view in order to preserve visual integrity.

2) Allow structures on open ridgelines and skylines as part of a public view when no alternative building site exists.

3) Require structures on ridgelines in forested areas, which are part of a public view to: (1) blend with the existing silhouette; (2) not break or cause gaps within the ridgeline silhouette by removing tree masses; and (3) relate to the ridgeline form.

4) Define public view as a range of vision from a public road or other public facility.

4.58 Views

To the extent practicable, locate development in scenic corridors so it does not obstruct views from scenic roads or disrupt the visual harmony of the natural landscape.

4.59 Outdoor Lighting

Minimize exterior lighting in scenic corridors and, where used, employ warm colors rather than cool tones and shield the scenic corridor from glare.

San Mateo County Zoning Regulations

The San Mateo County Zoning Ordinance was adopted to promote and protect the public health, safety, peace, morals, comfort, convenience and general welfare, and for the more specific purposes:

1) To guide, control, and regulate the future growth and development of San Mateo County.

2) To protect the character and the social and economic stability of agricultural, residential, commercial, industrial, and other private and public areas within the County, and to assure the orderly and beneficial development of such areas.

3) To obviate the menace to the public safety resulting from the locating of buildings, and the use thereof, and the use of land, adjacent to streets and highways which are a part of the Streets and Highway Plan Unit of the Master Plan of the County, or which are important thoroughfares, in such manner as to cause interference with existing or prospective traffic movements on said streets and highways.

4) To provide adequate light, air, privacy, and convenience of access to property; and to secure safety from fire, inundation, and other dangers.

5) To prevent overcrowding the land and prevent undue congestion of population.

The Site Design Criteria in Zoning Section 6324.2 are related to visual resources and light and glare apply to development in the unincorporated county.

Section 6324.2. Site Design Criteria.

1) Development shall be located, sited and designed to carefully fit its environment so that its presence is subordinate to the pre-existing character of the site and its surrounding is maintained to the maximum extent practicable.

2) All roads, buildings and other structural improvements or land coverage shall be located, sited and designed to fit the natural topography and shall minimize grading and modification of existing land forms and natural characteristics. Primary Designated Landscape Features defined in the Open Space and Conservation Elements of the San Mateo County General Plan shall not be damaged.

3) Small, separate parking areas are preferred to single large parking lots.

4) No use, development or alteration shall: 1) create uniform, geometrically terraced building sites which are contrary to the natural land forms; 2) substantially detract from the scenic and visual quality of the County; or 3) substantially detract from the natural characteristics of existing major water courses, established and mature trees and other woody vegetation, dominant vegetative communities or primary wildlife habitats.

5) All development shall be sited and designed to minimize the impacts of noise, light, glare and odors on adjacent properties and the community-at-large.

Uniform Solar Energy Code

The code of rules and regulations known and designated as the Uniform Solar Energy Code provides for the erection, installation, alteration, repair, relocation, replacement, maintenance, or use of all solar energy systems except as otherwise provided for in the code, and is filed in the offices of the Building Inspection Section, Planning and Building Department, County of San Mateo. Any amendments and supplements to this code are enforceable to the same extent as if contained in the body of the Uniform Solar Energy Code.

Design Review Overlay District

The San Mateo County Design Review District Zoning Ordinance is an overlay zone that establishes design standards for all new exterior construction or remodeling of residential, commercial, or industrial structures. This zone is currently in effect in a number of unincorporated areas, including Montara, Moss Beach, El Granada, Pescadero, San Gregorio, Emerald Lake Hills, Devonshire, Palomar Park, Colma, and one area of North Fair Oaks. All applications for building or grading permits in these areas must be approved by the design review administrator. Approval of these permits is subject to guidelines and standards designed to minimize the visual impact of development upon the natural features present at the building site along with reducing the impact upon the established character of existing development.

Resource Management and Resource Management/Coastal Zone Districts

The San Mateo County Resource Management Zoning Districts within and outside the Coastal Zone contain provisions that address structural design in rural areas. These development review

criteria primarily seek to reduce the disruptive impact of development upon the natural features of the landscape present at the building site. In addition to requiring that development be subordinate to the pre-existing natural character of the site, the RM and RM/CZ district development criteria also address the visual impact of three architectural features; namely, building heights, construction materials, and exterior colors. These zoning districts also contain supplemental criteria applicable to development within scenic corridors and other areas determined to possess those natural features that can be considered scenic. For such areas, these additional provisions address public views, vegetation removal, access routes, screening, and finally, the location of development either in grass or brushland areas or upon landscape features that have unusual scientific, historic, or scenic value.

Timberland Preserve Zone and Timberland Preserve/Coastal Zone Districts

The San Mateo County Timberland Preserve Zoning Districts within and outside the Coastal Zone contain general and specific criteria applicable to the visual impact of development in timberland areas. Site and building design criteria seek to make development subordinate to the surroundings; limit adverse environmental consequences created by alterations; limit the size and visual impact of parking lots; minimize the impact of new development upon adjacent views; reduce the adverse visual impact of utilities; and finally, limit building heights and identify suitable exterior construction materials and colors. In addition, these zoning districts provide supplemental design criteria applicable to scenic corridors and scenic resource areas. In scenic corridors, public views, screening of access roads and parking areas, and the appropriate type of screening materials are addressed. In scenic resource areas, the additional provisions prohibit the use of those features deemed to possess unusual, scientific, historic, or scenic value.

IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

An aesthetic or visual resource impact is considered significant if implementation of the project would result in any of the following:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- Substantially degrade the existing visual character of quality of the site and its surroundings including the scenic quality of the foothills.
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

The following analysis takes into account the attribute of aesthetics or visual character, which pertains to aspects of the visual character of the County, including the natural and man-made environment. The inherent subjectivity of issues and values of visual character creates a challenge in arriving at a conclusive determination of what constitutes a "significant impact" for the purposes of CEQA. Impacts regarding visual character typically include changes to the original visual character of an area or the elimination of a significant natural feature.

Impacts and Mitigation Measures

Scenic Vista, Scenic Resources, and Routes or Existing Scenic Character

Impact 3.1.1 Implementation of the proposed EECAP would not have a substantial effect on scenic views or a scenic vista, or substantially degrade the existing visual character of the county. This is a **less than significant impact**.

The San Mateo County Energy Efficiency Climate Action Plan is a policy-level document that does not include any site-specific designs or proposals, or grant any entitlements for development that would have the potential to degrade the aesthetic quality of the environment or adversely affect visual resources. The EECAP does not propose to change existing land use designations or zoning and anticipates that land uses will be consistent with the designations established by the General Plan Land Use Element. As a policy document, the EECAP would have no direct impact on visual resources, but future implementation activities could change community aesthetics.

The project also includes text changes in the County General Plan. One such change, in Section 4.52, Architectural Design Standards for Rural Scenic Corridors, would allow distributed energy resources to exceed the height of the forest canopy where required for safety or efficient operation, where this section currently only applies to solar panels. Distributed energy resources are defined as small, modular energy generation and storage technologies that provide electric capacity or energy located on site or close to where it is needed. These systems would generally produce less than 10 megawatts (MW) of power and include wind turbines, photovoltaics (PV), fuel cells, microturbines, and energy storage systems. Because these systems would generally be small and any future project would be required to comply with General Plan Policy 4.27, which discourages structures on open ridgelines and skylines, and requires structures on ridgelines in forested areas to blend with the ridgeline, this policy amendment would not represent a substantial change with respect to future aesthetic changes.

EECAP measures 4.1, 4.2, 4.3, 4.4, 4.6, and 4.7 would support installation of small-scale renewable energy systems, including solar photovoltaic, solar hot water, pre-wired solar homes, a pilot solar program, and wind energy within the county. These facilities, especially wind turbines, if constructed within view of a designated scenic route, would have the potential to impact scenic vistas and resources due to their size and visibility. General Plan Policy 4.20 requires development to minimize adverse visual quality of utility structures, which would include windmills. Furthermore, General Plan Policy 4.21 calls for protection and enhancement of the visual quality of scenic corridors by managing the location and appearance of structural development. Finally, General Plan Policies 4.58 and 4.59 are intended to ensure that development in scenic corridors does not obstruct views from scenic roads, and that exterior lighting in these corridors is minimized; when exterior lighting is used, the General Plan calls for lighting that is warm in color and shields the corridor from glare. Compliance with these policies on the consideration of any renewable energy systems would ensure that any proposed small-scale renewable energy systems would not have a substantial effect on any scenic vistas or corridors.

General Plan Policy 4.15 encourages the preparation of supplemental site and architectural design guidelines for communities. General Plan Policy 4.22 states that the basic scenic character of forest lands shall be protected by promoting the regulation of thinning and commercial harvesting. Finally, General Plan Policy 4.24 requires that all structures be located, sited, and designed to conform with natural conditions, to minimize light and glare on adjacent properties, and in the case of solar energy structures, to be located in forest areas rather than

open grasslands. Compliance with these measures would ensure that renewable energy facilities would not substantially change existing scenic character within the county.

As previously noted, all future development projects that would implement EECAP measures and actions would be subject to applicable County regulations and requirements, as well as be subject to further CEQA analysis of project-specific impacts. Continued implementation of County General Plan policy provisions and the San Mateo County Zoning Regulations would manage the location and appearance of structural development in scenic corridors to ensure impacts to scenic vistas and the existing visual character of the unincorporated county would be **less than significant**.

Mitigation Measures

None required.

New Source of Substantial Light or Glare

Impact 3.1.2 Implementation of the proposed EECAP could result in an increase of daytime glare and/or nighttime lighting. This increase in daytime glare sources and nighttime lighting levels could have an adverse affect on adjacent areas and land uses. This is considered a **potentially significant** impact.

Implementation of the proposed EECAP may introduce new sources of daytime glare and may change nighttime lighting and illumination levels. Lighting nuisances typically are categorized by the following:

1) Glare—Intense light that shines directly or is reflected from a surface into a person's eyes.

2) "Skyglow"/Nighttime Illumination—Artificial lighting from urbanized sources that alters the rural landscape in sufficient quantity to cause lighting of the nighttime sky and reduction of visibility of stars and other astronomical features.

3) "Spillover" Lighting—Artificial lighting that spills over onto adjacent properties, which could interrupt sleeping patterns or cause other nuisances to neighboring residents.

As discussed under Impact 3.1.1 above, the proposed EECAP is a policy-level document that does not include site-specific designs or proposals or grant any entitlements for development that would increase daytime glare or nighttime illumination in the county. As a policy document, the EECAP would have no direct impacts resulting from light and/or glare, but future implementation activities could result in changes in the county that could alter lighting conditions in the county.

Measures 4.1, 4.2, 4.3, 4.4, 4.6, and 4.7 in the EECAP would support installation of small-scale renewable energy systems, including solar photovoltaic, solar hot water, pre-wired solar homes, a pilot solar program, and wind energy within the county, which would have the potential to be new sources of light and glare in the county. Some facilities may require lighting that could affect offsite receptors. The potential for glare from a photovoltaic panel surface exists when the angle of the sun to the surface is such that light is reflected toward a viewer. Some photovoltaic panels are equipped to change orientation during the course of a day, tracking the sun across a 90-degree arc. For instance, at midday, all reflections from a surface of the panels would be toward or near the sun's position in the sky. Further, solar modules are constructed to be non-

reflective to absorb as much sunlight as possible in order to yield the greatest amount of electricity. Photovoltaic technology generally consists of flat panels (i.e., modules) covered with specially treated low-iron glass that is designed to maximize absorption of light and minimize reflections, as reflected light results in the loss of energy output. When comparing various types of surfaces, photovoltaic solar panels (or modules) reflect approximately 4 percent of sunlight (similar to water), whereas standard glass reflects approximately 22 percent of sunlight, bare soil reflects approximately 30 percent of sunlight, and vegetation reflects approximately 50 percent of sunlight (FAA 2010).

Although the tracker frames could be constructed of galvanized steel, which tend to have the potential to create on- and off-site glare, the solar modules would shield the galvanized steel portions of the frame from sunlight, minimizing the potential to create glare. As discussed above, the modules themselves would not produce significant glare and may actually reduce the amount of sunlight currently reflected by existing vegetation.

General Plan Policy 4.24 requires that all structures minimize light and glare on adjacent properties. Furthermore, General Plan Policy 4.59 is intended to ensure that development in scenic corridors does not obstruct views from scenic roads, and that exterior lighting in these corridors is minimized; when exterior lighting is used, the General Plan calls for lighting that is warm in color and shields the corridor from spillover lighting. Because solar panels are currently constructed to minimize glare for optimal efficiency, there would not be a substantial amount of glare generated. Further mitigation would not be required to ensure that potential solar energy generators would not result in significant light and glare impacts. Therefore, this impact is **less than significant.**

Mitigation Measures

None required.

Cumulative Impacts

The cumulative context for the evaluation of cumulative impacts on aesthetics addresses the effects of the proposed project in combination with other development in San Mateo County. The cumulative context for light and glare would be development that could affect the same sites that would be affected by light or glare generated by the project.

The proposed EECAP does not propose any development and any development that would occur in the county would be required to comply with the same General Plan policies discussed above, with regard to protection of scenic vistas. Implementation of these policies on a county-wide basis would ensure a less than significant cumulative impact on scenic vistas.

Sources of night lighting emanate from the existing development in the county, and probable future development in the county would also include nighttime lighting, increasing light and glare and limiting views of the nighttime sky. This would be considered a significant cumulative impact. The EECAP may promote the development of a limited number of facilities that would include exterior lighting. Project lighting, in addition to lighting from other cumulative development, could create a new source of light that would affect nighttime views in the area. However, the number of facilities that would be developed under the EECAP would be limited and would generally be of the type that lighting would only be required for security, which would be less intense than lighting required for occupied uses. Therefore, with implementation of General Plan policies and mitigation measures identified for the proposed project, the project's contribution to cumulative light and glare would not be considerable.

REFERENCES

FAA (Federal Aviation Administration). 2010. *Technical Guidance for Evaluating Selected Solar Technologies on Airports. Chapter 3*. November 2010. Washington D.C.

3.2 Air Quality

3.2 AIR QUALITY

This section examines the air quality in San Mateo County, includes a summary of applicable air quality regulations, and analyzes potential air quality impacts associated with the proposed San Mateo Energy Efficiency Climate Action Plan (EECAP).

ENVIRONMENTAL SETTING

Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. San Mateo County is located in the Peninsula region, a subregion of the San Francisco Bay Area Air Basin (SFBAAB).

The Peninsula region extends from northwest of San Jose to the Golden Gate Bridge. The Santa Cruz Mountains run up the center of the Peninsula, with elevations exceeding 2,000 feet at the southern end, decreasing to 500 feet in South San Francisco. Coastal towns experience a high incidence of cool, foggy weather in the summer. Cities in the southeastern Peninsula region experience warmer temperatures and fewer foggy days, because the marine layer is blocked by the ridgeline to the west. The blocking effect of the Santa Cruz Mountains results in variations in summertime maximum temperatures in different parts of the Peninsula region. For example, in coastal areas of San Mateo County, the mean maximum summer temperatures are in the mid-60s (Fahrenheit), while in Redwood City the mean maximum summer temperatures are in the low 80s. Mean minimum temperatures during the winter months are in the high 30s to low 40s on the eastern side of the Peninsula and in the low 40s on the coast.

Two important gaps in the Santa Cruz Mountains occur on the Peninsula. The larger of the two is the San Bruno Gap, extending from Fort Funston on the ocean to the San Francisco Airport. The other gap is the Crystal Springs Gap, between Half Moon Bay and San Carlos. As the sea breeze strengthens on summer afternoons, the Crystal Springs Gap permits maritime air to pass across the mountains, and its cooling effect is commonly seen from the City of San Mateo to Redwood City.

Annual average wind speeds range from 5 to 10 miles per hour throughout the Peninsula, with higher wind speeds usually found along the coast. Winds on the eastern side of the Peninsula region are often high in certain areas, such as near the San Bruno Gap and the Crystal Springs Gap. The prevailing winds along the Peninsula's coast are from the west, although individual sites can show significant differences. For example, Fort Funston in western San Francisco shows a southwest wind pattern, while Pillar Point in San Mateo County shows a northwest wind pattern. On the east side of the mountains winds are generally from the west, although wind patterns in this area are often influenced greatly by local topographic features.

Air pollution potential is highest along the southeastern portion of the Peninsula region (BAAQMD 2012). This is the area most protected from the high winds and fog of the marine layer. Pollutant transport from upwind sites is common. In the southeastern portion of the Peninsula region, air pollutant emissions are relatively high due to motor vehicle traffic and stationary sources (BAAQMD 2012).

REGIONAL AIR QUALITY

Motor vehicle transportation, including automobiles, trucks, transit buses, and other modes of transportation, is the major contributor to regional air pollution. Stationary sources were once important contributors to both regional and local pollution, and remain significant contributors in

other parts of the state and country. Their role has been substantially reduced in recent years by pollution control programs, discussed below. Any further progress in air quality improvement now focuses heavily on transportation sources.

Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health. The National and California Ambient Air Quality Standards have been set at levels to protect human health with a determined margin of safety. For some pollutants, there are also secondary standards to protect the environment. Ozone (O_3) and particulate matter (PM) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb) are considered to be local pollutants because they tend to accumulate in the air locally. In addition to being considered a regional pollutant, PM is also considered a local pollutant. In San Mateo County, ozone and PM are of particular concern. Health effects commonly associated with criteria pollutants are summarized in **Table 3.2-1.**

TABLE 3.2-1
CRITERIA AIR POLLUTANTS SUMMARY OF COMMON SOURCES AND EFFECTS

Pollutant	Major Man-Made Sources	Human Health & Welfare Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O_3)	Formed by a chemical reaction between volatile organic compounds (VOC) and nitrous oxides (NOx) in the presence of sunlight. VOCs are also commonly referred to as reactive organic gases (ROGs). Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes.
Particulate Matter (PM_{10} & $PM_{2.5}$)	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).

Pollutant	Major Man-Made Sources	Human Health & Welfare Effects
Sulfur Dioxide (SO_2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned; when gasoline is extracted from oil; or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Lead (Pb)	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CAPCOA 2011

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome-plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

To date, the California Air Resources Board (CARB) has designated nearly 200 compounds as TACs and has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to a relatively few compounds, one of the most important in California being particulate matter from diesel-fueled engines. In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities.

Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation.

Regulatory Framework

Air quality in San Mateo County is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies primarily responsible for improving the air quality in the county are discussed below along with their individual responsibilities.

Ambient Air Quality Standards

Both the US Environmental Protection Agency (EPA) and CARB have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants representing safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The federal and California state ambient air quality standards are summarized in **Table 3.2-2**. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas.

Regulations implementing the federal Clean Air Act and its subsequent amendments established national ambient air quality standards (national standards) for the six criteria pollutants. California has adopted more stringent state ambient air quality standards for most of the criteria air pollutants. In addition, California has established state ambient air quality standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Because of the meteorological conditions in the state, there is considerable difference between state and federal standards in California.

The ambient air quality standards are intended to protect the public health and welfare, and they incorporate an adequate margin of safety. They are designed to protect those segments of the public most susceptible to respiratory distress, known as sensitive receptors, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels somewhat above the ambient air quality standards before adverse health effects are observed.

TABLE 3.2-2
AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards1	National Standards
Ozone	8 Hour	0.070 ppm ($137\mu g/m^3$)	0.075 ppm
	1 Hour	0.09 ppm ($180\ \mu g/m^3$)	--
Carbon Monoxide	8 Hour	9.0 ppm ($10\ mg/m^3$)	9 ppm ($10\ mg/m^3$)
	1 Hour	20 ppm ($23\ mg/m^3$)	35 ppm ($40\ mg/m^3$)
Nitrogen Dioxide	1 Hour	0.18 ppm ($339\ \mu g/m^3$)	100 ppb
	Annual Arithmetic Mean	0.030 ppm ($57\ \mu g/m^3$)	53 ppb
Sulfur Dioxide	24 Hour	0.04 ppm ($105\ \mu g/m^3$)	N/A
	3 Hour	--	N/A
	1 Hour	0.25 ppm ($665\ \mu g/m^3$)	75 ppb
Particulate Matter (PM_{10})	Annual Arithmetic Mean	$20\ \mu g/m^3$	N/A
	24 Hour	$50\ \mu g/m^3$	$150\ \mu g/m^3$
Particulate Matter – Fine ($PM_{2.5}$)	Annual Arithmetic Mean	$12\ \mu g/m^3$	$15\ \mu g/m^3$
	24 Hour	N/A	$35\ \mu g/m^3$
Sulfates	24 Hour	$25\ \mu g/m^3$	N/A
Lead	Calendar Quarter	N/A	$1.5\ \mu g/m^3$
	30 Day Average	$1.5\ \mu g/m^3$	N/A
Hydrogen Sulfide	1 Hour	0.03 ppm ($42\ \mu g/m^3$)	N/A
Vinyl Chloride (chloroethene)	24 Hour	0.01 ppm ($26\ \mu g/m^3$)	N/A
Visibility-Reducing particles	8 Hour (10:00 to 18:00 PST)	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.	N/A

Sources: CARB 2012a

Notes: N/A = Not Applicable; mg/m^3 = milligrams per cubic meter; ppm = parts per million; ppb = parts per billion; $\mu g/m^3$ = micrograms per cubic meter

1. This table provides a summary of current air quality standards and attainment designations at the time of this analysis. For more information on standards visit the CARB website at http//www.arb.ca.gov.research/aaqs/aaqs2.pdf.

Air Quality Attainment Plans

The Bay Area Air Quality Management District (BAAQMD) attains and maintains air quality conditions in the San Francisco Bay Area Air Basin, which includes San Mateo County, through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. As previously stated, areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. The BAAQMD clean air strategy includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution.

The BAAQMD prepares ozone attainment plans for the national ozone standard and clean air plans for the California standard in coordination with the Metropolitan Transportation Commission and the Association of Bay Area Governments (ABAG).

The BAAQMD prepared the *Bay Area 2010 Clean Air Plan* to address the air basin's nonattainment status with the national 1-hour ozone standard and the California Ambient Air Quality Standards (CAAQS). The purpose of the *Bay Area 2010 Clean Air Plan* is to:

1) Update the Bay Area 2005 Ozone Strategy (Ozone Attainment Plan) in accordance with the requirements of the California Clean Air Act to implement all feasible measures to reduce ozone.

2) Consider the impacts of ozone control measures on particulate matter (PM), air toxics, and greenhouse gases in a single, integrated plan.

3) Review progress in improving air quality in recent years.

4) Establish emissions control measures to be adopted or implemented in the 2009–2012 time frame.

The emissions inventories contained in the Ozone Attainment Plan and *Clean Air Plan* are based on projected population growth and vehicle miles traveled (VMT) for the region. These inventories are largely based on the predicted growth identified in regional and community plans and contribute to the cumulative air quality impact of all development projects. Projects that result in an increase in population or employment growth beyond that identified in regional or community plans could result in increases in VMT and subsequently increase mobile source emissions, which could conflict with the BAAQMD's air quality planning efforts.

Ambient Air Quality Attainment Status

Table 3.2-3 shows the federal and state attainment status for the SFBAAB and thus San Mateo County. The region is nonattainment for federal ozone and $PM_{2.5}$ standards, and nonattainment for state ozone and PM_{10} and $PM_{2.5}$ standards (CARB 2011).

Areas with air quality that exceed adopted air quality standards are designated as nonattainment areas for the relevant air pollutants. Areas that comply with air quality standards are designated as attainment areas for the relevant air pollutants. State Implementation Plans must be prepared by states for areas designated as federal nonattainment areas to demonstrate how the area will come into attainment of the exceeded federal ambient air quality standard.

TABLE 3.2-3
FEDERAL AND STATE AMBIENT AIR QUALITY ATTAINMENT STATUS FOR SFBAAB

Pollutant	Federal	State
1-hour Ozone (O_3)	–	Nonattainment
8-hour Ozone (O_3)	Nonattainment	Nonattainment
Coarse Particulate Matter (PM_{10})	Unclassified	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Unclassified
Sulfur Dioxide (SO_2)	Attainment	Attainment

Source: CARB 2011

The BAAQMD and CARB operate a regional monitoring network that measures the ambient concentrations of the six criteria air pollutants within the Bay Area. Existing and probable future levels of air quality in San Mateo County can generally be inferred from ambient air quality measurements conducted by the BAAQMD at its monitoring stations. San Mateo County currently has one monitoring station, located in Redwood City, which measures criteria pollutants, including ozone, carbon monoxide, nitrogen dioxide, lead, sulfates, and particulates 10 microns or smaller (PM_{10}). **Table 3.2-4** shows a three-year summary of monitoring data for ozone, PM_{10}, and $PM_{2.5}$ from the Redwood City monitoring station. The table also compares these measured concentrations with state and federal ambient air quality standards. Because of the number of exceedances, ozone is the pollutant of greatest concern in the Bay Area. Bay Area counties experience most ozone exceedances during the period from April through October.

TABLE 3.2-4
SUMMARY OF AMBIENT AIR QUALITY DATA

Pollutant Standards	2009	2010	2011
Ozone			
Max 1-hour concentration (ppm)	0.087	0.113	0.076
Max 8-hour concentration (ppm) (state/federal)	0.063 / 0.063	0.077 / 0.077	0.062 / 0.061
Number of days above state 1-hr standard	0	2	0
Number of days above state/federal 8-hour standard	0 / 0	1 / 1	0 / 1
Respirable Particulate Matter (PM_{10})			
Max 24-hour concentration (μg/m3) (state/federal)	–/–	–/–	–/–
Number of days above state/federal standard	–/–	–/–	–/–
Fine Particulate Matter ($PM_{2.5}$)			
Max 24-hour concentration (μg/m3) (state/federal)	34.2 / 31.7	32.7 / 36.5	24.0 / 39.7
Number of days above state/federal standard	–/ 0	–/ 1.0	–/ 1.0

Source: CARB 2012b
$\mu g/m^3$ = micrograms per cubic meter; ppm – parts per million
– Insufficient or no data currently available to determine the value

Air quality with respect to criteria air pollutants and toxic air contaminants in the SFBAAB is regulated by such agencies as the BAAQMD, CARB, and the EPA. Each of these agencies develops rules, regulations, policies, and/or goals to attain the goals or directives imposed through legislation.

FEDERAL

US Environmental Protection Agency

At the federal level, the EPA has been charged with implementing national air quality programs. The EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1963. The CAA was amended in 1970, 1977, and 1990.

The CAA required the EPA to establish primary and secondary national ambient air quality standards, which are available at http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. The CAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The CAA Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The EPA has responsibility to review all SIPs to determine conformation to the mandates of the CAAA and determine if implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated time frame may result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin (BAAQMD 2012).

STATE

California Air Resources Board

CARB, a department of the California Environmental Protection Agency, oversees air quality planning and control throughout California. It is primarily responsible for ensuring implementation of the 1989 amendments to the California Clean Air Act (CCAA), responding to the federal CAA requirements, and regulating emissions from motor vehicles and consumer products within the state. CARB has established emissions standards for vehicles sold in California and for various types of equipment available commercially. It also sets fuel specifications to further reduce vehicular emissions.

The amendments to the CCAA establish ambient air quality standards for the state (state standards) and a legal mandate to achieve these standards by the earliest practical date. These standards apply to the same six criteria pollutants as the federal CAA and also include sulfate, visibility, hydrogen sulfide, and vinyl chloride. They are more stringent than the federal standards and, in the case of PM_{10} and NO_2, far more stringent.

Senate Bill 656

In 2003, the California legislature enacted Senate Bill 656 to reduce public exposure to PM_{10} and $PM_{2.5}$. CARB approved a list of the most readily available, feasible, and cost-effective control measures that can be employed by air districts to reduce PM_{10} and $PM_{2.5}$ (collectively referred to as PM) in 2004. The list is based on rules, regulations, and programs existing in California as of January 1, 2004, for stationary, area-wide, and mobile sources. In 2005, air districts adopted

implementation schedules for selected measures from the list. The implementation schedules identify the appropriate subset of measures and the dates for final adoption, implementation, and the sequencing of selected control measures. In developing the implementation schedules, each air district prioritized measures based on the nature and severity of the PM problem in their area and cost-effectiveness. Consideration was also given to ongoing programs, such as measures being adopted to meet national air quality standards or the state ozone planning process.

LOCAL

Bay Area Air Quality Management District

The BAAQMD attains and maintains air quality conditions in the SFBAAB through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The BAAQMD clean air strategy includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. The BAAQMD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the Clean Air Act, Clean Air Act Amendments, and California Clean Air Act. The BAAQMD also limits emissions and public exposure to emissions, including TACs, through a number of programs. The BAAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. In addition, BAAQMD has adopted Regulation 11 Rules 2 and 14, which address asbestos demolition renovation, manufacturing, and standards for asbestos-containing serpentine (BAAQMD 2012).

BAAQMD CEQA Guidelines

Regarding BAAQMD GHG significance thresholds, as stated in CEQA Appendix G, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. On June 2, 2010, the BAAQMD's Board of Directors unanimously adopted thresholds of significance to assist local jurisdictions during the review of projects that are subject to CEQA. These thresholds of significance were designed to establish the level at which the BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The BAAQMD's justification for the adopted thresholds of significance was incorporated into Appendix D of the BAAQMD's updated California Environmental Quality Act Air Quality Guidelines (2010).

On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds. The court did not determine whether the thresholds were valid on the merits, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD had complied with CEQA. The BAAQMD has appealed the Alameda County Superior Court's decision. The appeal is currently pending in the Court of Appeal of the State of California, First Appellate District.

In view of the court's order, the BAAQMD is no longer recommending that the 2010 significance thresholds be used as a generally applicable measure of a project's significant air quality impacts. Lead agencies will therefore need to determine appropriate air quality thresholds of significance based on substantial evidence in the record. The 2010 significance thresholds are based on substantial evidence, as identified in Appendix D of the BAAQMD's California

Environmental Quality Act Air Quality Guidelines (2010). Given that the court's judgment does not pertain to the scientific soundness of the 2010 significance thresholds and given that these thresholds are supported by substantial evidence, as provided by the BAAQMD in Appendix D of the Air Quality Guidelines, these thresholds are used in this DEIR for the evaluation of air quality impacts, as noted below.

BAAQMD Rules and Regulations

The BAAQMD is the regional agency responsible for rulemaking, permitting, and enforcement activities affecting stationary sources in the Bay Area. Specific rules and regulations adopted by the BAAQMD limit the emissions that can be generated by various activities, and identify specific pollution reduction measures that must be implemented in association with various activities. These rules regulate not only emissions of the six criteria air pollutants, but also toxic emissions and acutely hazardous, non-radioactive materials emissions.

Emissions sources subject to these rules are regulated through the BAAQMD's permitting process and standards of operation. Through this permitting process, including an annual permit review, the BAAQMD monitors generation of stationary emissions and uses this information in developing its air quality plans. Any sources of stationary emissions constructed as part of a proposed project would be subject to the BAAQMD rules and regulations. Both federal and state ozone plans rely upon stationary source control measures set forth in BAAQMD's rules and regulations.

With respect to the construction activities associated with development instigated by policy provisions included in the proposed EECAP, applicable BAAQMD regulations would relate to portable equipment (e.g., concrete batch plants, and gasoline- or diesel-powered engines used for power generation, pumps, compressors, pile drivers, and cranes), architectural coatings, and paving materials. Equipment used during project construction would be subject to the requirements of BAAQMD Regulation 2 (Permits), Rule 1 (General Requirements) with respect to portable equipment unless exempt under Rule 2-1-105 (Exemption, Registered Statewide Portable Equipment); BAAQMD Regulation 8 (Organic Compounds), Rule 3 (Architectural Coatings); and BAAQMD Regulation 8 (Organic Compounds), Rule 15 (Emulsified and Liquid Asphalts). With respect to the operational phase of the project, BAAQMD Regulation 2 (Permits) would apply to any new or modified stationary sources within the planning area.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The impact analysis provided below is based on the following State CEQA Guidelines Appendix G thresholds of significance. The project would result in a significant air quality impact if it would:

- Conflict with or obstruct implementation of any applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.

- Create objectionable odors affecting a substantial number of people.

In addition, air quality impacts are considered to be significant if the following could result from the implementation of the proposed project:

- Result in significant construction-related air quality impacts.

The purpose of the EECAP is to reduce GHG emissions within the unincorporated county. As determined in subsection 3.1.1, Effects Found Not to be Significant, implementation of the EECAP would not result in substantial odors for downwind receptors and that impact is not discussed further here.

METHODOLOGY

The impact analysis below utilizes San Mateo County General Plan policies and development standard provisions of the San Mateo County Code to determine whether implementation of the proposed project (i.e., EECAP reduction measures under the County's jurisdiction to implement) would result in a significant environmental impact.

Specific subsequent activities or projects, their associated locations, and physical effects on the environment from the implementation of the EECAP measures to reduce GHG emissions are not known at this time. Therefore, this analysis uses a programmatic approach in evaluating possible air quality impacts of implementation of the EECAP.

IMPACTS AND MITIGATION MEASURES

Short-Term Construction Emissions

Impact 3.2.1 Implementation of the proposed EECAP and General Plan Amendment could have a negative effect on air quality as a result of construction-generated air pollutants. This is considered a **potentially significant** impact.

Short-term construction emissions would result in increased emissions of ozone-precursor pollutants (i.e., ROG and NO_X) and emissions of PM. Emissions of ozone precursors would result from the operation of on-road and off-road motorized vehicles and equipment. Emissions of airborne PM are largely associated with ground-disturbing activities, such as those occurring during site preparation. Localized concentrations of construction-generated emissions, including emissions of PM, can adversely impact nearby sensitive land uses.

The quantity of daily emissions, particularly ROG and NO_x emissions, generated by construction equipment used to implement EECAP measures and amended General Plan policies would depend on the number of vehicles used and the hours of operation. The significance of fugitive dust (PM) emissions would vary widely and would depend on the following factors: the aerial extent of disturbed soils and the length of disturbance time; whether existing structures are demolished; whether excavation is involved; and whether transport of excavated materials off-site is necessary. The level of hydrocarbon emissions generated by oil-based substances, such as asphalt, is dependent on the type and amount of asphalt utilized. Quantifying the air quality impacts from short-term, temporary construction activities of the proposed project is not possible due to project-level variability and uncertainties related to future individual projects.

The majority of proposed EECAP measures are not expected to generate significant short-term impacts because they would result in only minor upgrades to existing uses and/or County

programs. Examples of these types of EECAP measures include the incentive of tree planting near buildings to reduce heat gain and loss and carbon sequestration efforts (EECAP Measures 1.4 and 16.1), the encouragement of residents to switch from propane heaters to more energy-efficient options (EECAP Measure 1.5), and the limiting of heavy-duty construction equipment idling (EECAP Measure 15.1). However, other GHG reduction measures could involve grading and paving or the construction of permanent facilities, such as the facilitation of energy efficiency upgrades and retrofits in existing commercial and residential buildings and institutional facilities (EECAP Measures 1.1, 1.2, 1.3, 2.1, and 2.3), the support of small-scale solar photovoltaic energy systems installation on existing development (EECAP Measure 4.1), the encouragement of commercial wind farm development (EECAP Measures 4.6 and 4.7), and the provision of traffic-calming measures to encourage people to walk or bike instead of drive (EECAP Measure 6.2).

Although individual improvements may not generate significant short-term emissions, it is possible that several improvements would be under construction simultaneously in the county and would generate cumulative construction emissions that could affect air quality. **Table 3.2-5** shows the approximate level of construction-generated emissions that would result in a potentially significant impact for each pollutant of concern in the San Francisco Bay Area Air Basin.

TABLE 3.2-5
THRESHOLDS OF SIGNIFICANCE FOR CONSTRUCTION OPERATIONS IN THE SAN FRANCISCO BAY AREA AIR BASIN

Mass Daily Thresholds	
Pollutant	**Construction**
NO_x	54 pounds/day
ROG	54 pounds/day
PM_{10}	82 pounds/day
$PM_{2.5}$	54 pounds/day
SO_2	None
CO	None
Lead	None

Source: BAAQMD 2011[1]

Implementation of the EECAP could result in short-term emissions of diesel PM, which was identified as a TAC by CARB in 1998. Implementation of EECAP measures to reduce GHG emissions would result in the generation of diesel PM emissions from the use of off-road diesel equipment required for site grading and excavation, paving, and other construction activities. The amount to which receptors are exposed (a function of concentration and duration of

[1] The thresholds BAAQMD adopted were called into question by a minute order issued January 9, 2012, in *California Building Industry Associated v. BAAQMD*, Alameda Superior Court Case No RG10548693. On March 5, 2012, the Alameda County Superior Court issued a judgment finding that BAAQMD had failed to comply with CEQA when it adopted the thresholds. The court did not determine whether the thresholds were valid on the merits, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering BAAQMD to set aside the thresholds and cease dissemination of them until BAAQMD had complied with CEQA. The claim made in the case concerned the CEQA impacts of adopting the thresholds; that is, how the thresholds would affect land use development patterns. Those issues are not relevant to the scientific soundness of the BAAQMD's analysis of what levels of pollutants should be deemed significant, or the threshold to use in assessing any air quality-related impact the project would have on the existing environment. These thresholds are based on substantial evidence identified in Appendix D of the Guidelines and are therefore used within this analysis.

exposure) is the primary factor used to determine health risk (i.e., potential exposure to TAC emissions levels that exceed applicable standards). Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. Cancer risk associated with exposure to TACs is typically based on calculations over a 70-year period of exposure. The use of diesel-powered construction equipment, however, would be temporary and episodic and would occur over a relatively large area. For these reasons, diesel PM generated by construction activities, in and of itself, would not be expected to create conditions where the probability of contracting cancer is greater than 10 in 1 million for nearby receptors. To assist local jurisdictions in the analysis of potential health risks associated with short-term construction projects, the BAAQMD has developed screening criteria that can be applied at the project level[1] (BAAQMD 2011). The BAAQMD Construction Risk Calculator model provides distances from a construction site, based on user-provided project data, where the risk impacts are estimated to be less than significant; sensitive receptors located within these distances would be considered to have potentially significant risk impacts from construction. The BAAQMD considers this screening procedure an environmentally conservative guidance.

It is also important to note that any future demolition of structures will be subject to BAAQMD Regulation 11, Rule 2 (Asbestos Demolition, Renovation and Manufacturing). Compliance with Regulation 11 would reduce short-term emissions during demolition activities.

As previously mentioned, the quantification of air quality impacts from short-term, temporary construction activities of EECAP measures identified in the proposed project is not possible due to project-level variability and uncertainties related to future individual projects. However, all construction projects can produce ozone precursors, diesel PM, and nuisance dust emissions. BAAQMD has identified basic construction mitigation measures to reduce construction-generated air pollutants. Without these measures, the impact would be considered significant.

The San Mateo County General Plan does not include policy provisions implementing BAAQMD-recommended best management practices (BMPs) for the control of construction-generated air pollutant emissions. Without implementation of BMPs for the control of construction-generated emissions, short-term increases of criteria air pollutants could potentially conflict with or obstruct implementation of the applicable air quality plan and may contribute substantially to an existing or projected air quality violation. Therefore, uncontrolled construction-generated emissions are potentially significant.

Mitigation Measures

The following standard mitigation shall be applied to all EECAP-related projects, as applicable:

MM 3.2.1 The County shall require that projects implementing EECAP reduction measures are analyzed as part of project review in accordance with BAAQMD-recommended methodologies and significance thresholds and shall require that all recommended mitigation measures are incorporated to reduce short-term construction emissions attributable to individual EECAP GHG reduction measures. Such mitigation measures may include, but are not limited to, the following:

- Water all active construction areas at least twice daily as required.
- Cover all trucks hauling soil, sand, and other loose materials or require all truck to maintain at least 2 feet of freeboard.

- Sweep daily, as required, all paved access roads, parking areas, and staging areas at construction sites.
- Sweep streets daily as required if visible soil material is carried onto adjacent public streets.
- Reduce unnecessary idling of truck equipment within proximity to sensitive receptors (i.e., idle time to five minutes or less).
- Where possible, use newer, cleaner-burning diesel-powered construction equipment
- Properly maintain construction equipment per manufacturer specifications.
- Designate a disturbance coordinator responsible for ensuring that mitigation measures to reduce air quality impacts from construction are properly implemented.

Timing/Implementation: *During construction*

Enforcement/Monitoring: *County of San Mateo Planning and Building Department*

Environmental impacts of subsequent EECAP measures would be considered pursuant to CEQA on a case-by-case basis. At the time of specific project-level environmental review, the County will ensure compliance with BAAQMD-recommended mitigation measures such as those listed in mitigation measure **MM 3.2.1**, as well as through the placement of conditions of approval on applicable projects, to reduce impacts. Implementation of the above measures would substantially reduce construction-related emissions. It is also important to note that any future demolition of structures will be subject to BAAQMD Regulation 11, Rule 2 (Asbestos Demolition, Renovation and Manufacturing). Compliance with Regulation 11 would reduce short-term emissions during demolition activities. With mitigation, this impact is **less than significant**.

Violate Air Quality Standard or Contribute Substantially to an Air Quality Violation: Long-Term, Operational Emissions

Impact 3.2.2 Implementation of the proposed EECAP and General Plan Amendment would not have a negative effect on air quality as a result of air pollutants emissions generated during project operations. **No impact** would occur.

The proposed EECAP and General Plan amendments contain measures that support energy-conserving programs and renewable energy generators, and encourage development in close proximity to transit (e.g., EECAP Measure 2.1, Commercial and Industrial Efficiency, EECAP Measure 4.6, Commercial Wind Power, and EECAP Measure 5.1, General Plan and Zoning Updates). These measures would help to reduce adverse air quality effects through the reduction of fossil fuel consumption and use of private motor vehicles. Furthermore, there are no measures proposed under the EECAP or proposed General Plan amendments that would intensify the use of fossil-fuel-propelled automobiles. EECAP Measure 10.0 proposes to increase alternative fuel infrastructure in the community.

In addition, proposed EECAP measures related to transportation would reduce VMT, and thus automobile-generating air pollutants, throughout the county (Fehr & Peers 2012). Implementation of the proposed EECAP would reduce VMT in the county by 35 million miles in 2020 as compared to anticipated annual VMT without implementation of the EECAP (Fehr & Peers 2012). Such a reduction of annual VMT would result in a benefit to air quality, because with fewer vehicle miles traveled, fewer criteria air pollutants are generated. Therefore, the proposed EECAP would result in **no impact** associated with contributing substantially to an existing or projected air quality violation, or increasing criteria pollutants during operational activities.

Mitigation Measures

None required.

Conflict with the BAAQMD 2010 Clean Air Plan and/or Ozone Attainment Plan

Impact 3.2.3 Implementation of the proposed EECAP and General Plan Amendment would result in a decrease of vehicle miles traveled and, therefore, would not exceed assumptions used to create the BAAQMD Ozone Attainment Plan and Clean Air Plan. **No impact** would occur.

As noted above, projects that result in an increase in population or employment growth beyond that identified in regional plans could result in increases in VMT and subsequently increase mobile source emissions, which could conflict with the BAAQMD's air quality planning efforts. Specifically, as indicated in the BAAQMD's CEQA Air Quality Guidelines, if a plan's projected VMT increase is greater than its projected population increase, a plan would conflict with the applicable air quality plan (the 2010 Clean Air Plan).

The San Mateo EECAP is intended to reduce GHG emissions generated within the unincorporated county to contribute to global efforts to reduce the effects of climate change by, among other things, using fuel-efficient and alternatively fueled vehicles (see EECAP Measure 10.1), reducing VMT (see EECAP Measures 6.1, 6.2, 6.3 and 6.4), developing pedestrian facilities (see EECAP Measure 5.3), using renewable energy (see EECAP Measures 4.1 through 4.10), improving energy efficiency in buildings (see EECAP Measures 1.1 through 1.5, 2.1 through 2.5, and 3.1 through 3.6), increasing water conservation (see EECAP Measures 14.1 and 14.2), and reducing waste generation (see EECAP Measures 13.1, 13.2, 13.3, and 13.4). In addition to reducing GHGs, each of these measures would help to reduce criteria air pollutants. With implementation of the EECAP measures to reduce VMT, it is anticipated that annual VMT within the county would be reduced by 35 million miles by 2020 compared to anticipated annual VMT without implementation of the EECAP.

The annual reduction of over 35 million VMT through implementation of EECAP measures would represent a substantial benefit to air quality through reduction of criteria pollutants, as compared to without implementation of EECAP measures. Therefore, the proposed CAP would result in a benefit in terms of air pollutant emissions and **no impact** would occur concerning conformance with the Clean Air Plan and Ozone Attainment Plan.

Mitigation Measures

None required.

Exposure of Sensitive Receptors to Substantial Concentrations of Toxic Air Contaminants

Impact 3.2.4 Subsequent land use activities associated with implementation of the proposed EECAP and General Plan Amendment could result in projects that would include sources of toxic air contaminants which could affect surrounding land use. This is considered a **potentially significant** impact.

As stated under Impact 3.2.1, construction associated with implementation of EECAP measures to reduce GHG emissions would result in the generation of diesel PM emissions from the use of off-road diesel equipment required for site grading and excavation, paving, and other construction activities. Mitigation Measure MM 3.2.1 requires the review of all new construction projects and requires actions as contained in the BAAQMD CEQA *Air Quality Handbook*. To assist local jurisdictions in the analysis of potential health risks associated with short-term construction projects, the BAAQMD has developed screening criteria that can be applied at the project level. The BAAQMD Construction Risk Calculator model provides distances from a construction site, based on user-provided project data, where the risk impacts are estimated to be less than significant; sensitive receptors located within these distances would be considered to have potentially significant risk impacts from construction. BAAQMD considers this screening procedure an environmentally conservative guidance.

It should be noted that while there are no physical improvements proposed as part of the EECAP, any future actions that would be implemented per the EECAP would be subject to applicable BAAQMD regulations and requirements per Mitigation Measure MM 3.2.1, as well as be subject to further CEQA analysis of project-specific impacts. Furthermore, none of the subsequent actions proposed as part of EECAP measures would result in a major source of toxic air contaminants, which include industrial processes (e.g., petroleum refining and chrome-plating operations), commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust (with implementation of the EECAP measures to reduce VMT, it is anticipated that annual VMT within the county would be reduced by 35 million miles by 2020 compared to anticipated annual VMT without implementation of the EECAP). Therefore, without implementation of MM 3.2.1, the proposed EECAP and General Plan Amendments would result in a potentially significant impact from toxic air contaminants**.**

MITIGATION MEASURES

Implement Mitigation Measure MM 3.2.1

Implementation of Mitigation Measure MM 3.2.1 would ensure that each project implementing EECAP measures that goes through County plan review process would be subject to applicable BAAQMD regulations and requirements, and would make the project's impacts related to toxic air contaminants **less than significant**.

Cumulative Impacts and Mitigation Measures

The EECAP and General Plan Amendments are intended to reduce GHG emissions generated within the unincorporated county to contribute to global efforts to reduce the effects of climate change by, among other things, using fuel-efficient and alternatively fueled vehicles (see EECAP Measure 10.1), reducing VMT (see EECAP Measures 6.1, 6.2, 6.3 and 6.4), developing pedestrian facilities (see EECAP Measure 5.3), using renewable energy (see EECAP Measures 4.1 through 4.10), improving energy efficiency in buildings (see EECAP Measures 1.1 through 1.5, 2.1 through 2.5, and 3.1 through 3.6), increasing water conservation (see EECAP Measures 14.1 and 14.2), and reducing waste generation (see EECAP Measures 13.1, 13.2, 13.3, and 13.4). In addition to

reducing GHGs, each of these measures would help to reduce criteria air pollutants through the substantial reduction of VMT, as discussed under Impact 3.2.3. Therefore, the proposed EECAP would not contribute to cumulative increases in criteria pollutants. This is considered a less than cumulatively considerable impact.

REFERENCES

BAAQMD (Bay Area Air Quality Management District). 2012. *CEQA Air Quality Guidelines*.

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CARB (California Air Resources Board). 2012a. *Ambient Air Quality Standards*. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

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Fehr & Peers. 2012. *Memorandum: County of San Mateo Climate Action Plan Transportation Reduction Estimates*.

3.3 Biological Resources

3.3 BIOLOGICAL RESOURCES

This section describes the biological resources present in San Mateo County, and includes a discussion of the special-status species and sensitive habitats potentially occurring in the area. This section analyzes impacts that could occur to biological resources due to implementation of the proposed San Mateo Energy Efficiency Climate Action Plan (EECAP) and includes appropriate mitigation measures to reduce or avoid these impacts.

ENVIRONMENTAL SETTING

The County of San Mateo is bounded to the west by the Pacific Ocean and to the east by the San Francisco Bay. There are 34 separate watersheds in the county, 22 of which drain into the Pacific Ocean and 12 which drain into San Francisco Bay (County of San Mateo General Plan 1986).

The county is home to an abundance of vegetative types, with a diverse number of plant species. The vegetative types found in the county can be categorized as coastal shoreline, coastal marine, salt marsh, freshwater marsh, coastal scrub, chaparral, grassland, woodland savanna, mixed evergreen forest, coniferous forest, and streambank vegetation.

Special Status Species

Fish and wildlife resources of the county are numerous and diverse due to the wide variety of habitats contained in San Mateo County, including drainages, the Pacific Ocean, and San Francisco Bay. Several special-status plant and animal species are known to occur within the marine and nearshore environment throughout San Mateo County and have the potential to occur if suitable habitat is present. These include western pond turtle (*Actinemys marmorata*), western snowy plover (*Charadrius alexandrinus*), salt marsh harvest mouse (*Reithrodontomys raviventris*), steelhead trout (*Oncorhynchus mykiss irideus*), alkali milkvetch (*Astragalus tener*), and California seablite (*Suaeda californica*). Northern coastal salt marsh, a sensitive natural community, has been documented along the shore of San Francisco Bay.

While the coastal and marine habitats of the Pacific Ocean and San Francisco Bay have been altered due to human disturbance, a number of additional sensitive species have the potential to occur in these environments. Sensitive species that are known to occur in the county are identified in **Table 3.3-1.**

TABLE 3.3-1
SENSITIVE SPECIES KNOWN TO OCCUR IN SAN MATEO COUNTY

Common Name	Scientific Name	Federal Status	State Status	CNPS
Insects				
Bay checkerspot butterfly	*Euphydryas editha bayensis*	FT	None	
callippe silverspot butterfly	*Speyeria callippe callippe*	FE	None	
Mission blue butterfly	*Plebejus icarioides missionensis*	FE	None	
Myrtle's silverspot	*Speyeria zerene myrtleae*	FE	None	
San Bruno elfin butterfly	*Callophrys mossii bayensis*	FE	None	

Common Name	Scientific Name	Federal Status	State Status	CNPS
Reptiles				
San Francisco garter snake	*Thamnophis sirtalis tetrataenia*	FE	SE	
western pond turtle	*Emys marmorata*	None	SSC	
Mammals				
American badger	*Taxidea taxus*	None	SSC	
big free-tailed bat	*Nyctinomops macrotis*	None	SSC	
hoary bat	*Lasiurus cinereus*	None	SSC	
salt-marsh harvest mouse	*Reithrodontomys raviventris*	FE	SE	
salt-marsh wandering shrew	*Sorex vagrans halicoetes*	None	SSC	
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectens*	None	SSC	
Fish				
hardhead	*Mylopharodon conocephalus*	None	SSC	
steelhead - central California coast DPS	*Oncorhynchus mykiss irideus*	FT	SSC	
tidewater goby	*Eucyclogobius newberryi*	FE	SSC	
Birds				
Alameda song sparrow	*Melospiza melodia pusillula*	None	SSC	
American peregrine falcon	*Falco peregrinus anatum*	Delisted	Delisted	
bank swallow	*Riparia riparia*	None	ST	
black swift (Nesting)	*Cypseloides niger*	None	SSC	
burrowing owl	*Athene cunicularia*	None	SSC	
California black rail	*Laterallus jamaicensis coturniculus*	None	ST/CFP	
California clapper rail	*Rallus longirostris obsoletus*	FE	SE	
California least tern	*Sternula antillarum browni*	FE	SE	
long-eared owl(Nesting)	*Asio otus*	None	SSC	
northern harrier (Nesting)	*Circus cyaneus*	None	SSC	
saltmarsh common yellowthroat	*Geothlypis trichas sinuosa*	None	SSC	
short-eared owl (Nesting)	*Asio flammeus*	None	SSC	
western snowy plover	*Charadrius alexandrinus nivosus*	FT	SSC	
white-tailed kite	*Elanus leucurus*	None	CFP	
Amphibians				
California red-legged frog	*Rana draytonii*	FT	SSC	

Common Name	Scientific Name	Federal Status	State Status	CNPS
California tiger salamander	*Ambystoma californiense*	FT	ST	
foothill yellow-legged frog	*Rana boylii*	None	SSC	
Plants				
Anderson's manzanita	*Arctostaphylos andersonii*	None	None	1B
arcuate bush mallow	*Malacothamnus arcuatus*	None	None	1B
beach layia	*Layia carnosa*	FE	SE	1B
Ben Lomond buckwheat	*Eriogonum nudum var. decurrens*	None	None	1B
bent-flowered fiddleneck	*Amsinckia lunaris*	None	None	1B
Blasdale's bent grass	*Agrostis blasdalei*	None	None	1B
bristly sedge	*Carex comosa*	None	None	2.1
Choris' popcorn-flower	*Plagiobothrys chorisianus var. chorisianus*	None	None	1B
coast yellow leptosiphon	*Leptosiphon croceus*	None	None	1B
coastal marsh milkvetch	*Astragalus pycnostachyus var. pycnostachyus*	None	None	1B
Congdon's tarplant	*Centromadia parryi ssp. congdonii*	None	None	1B
Crystal Springs lessingia	*Lessingia arachnoidea*	None	None	1B
Davidson's bush mallow	*Malacothamnus davidsonii*	None	None	1B
Diablo helianthella	*Helianthella castanea*	None	None	1B
Dudley's lousewort	*Pedicularis dudleyi*	None	Rare	1B
fountain thistle	*Cirsium fontinale var. fontinale*	FE	SE	1B
fragrant fritillary	*Fritillaria liliacea*	None	None	1B
Franciscan onion	*Allium peninsulare var. franciscanum*	None	None	1B
Franciscan thistle	*Cirsium andrewsii*	None	None	1B
Hall's bush mallow	*Malacothamnus hallii*	None	None	1B
Hickman's cinquefoil	*Potentilla hickmanii*	FE	SE	1B
Hillsborough chocolate lily	*Fritillaria biflora var. ineziana*	None	None	1B
Hoover's button-celery	*Eryngium aristulatum var. hooveri*	None	None	1B
Indian Valley bush mallow	*Malacothamnus aboriginum*	None	None	1B
Kellogg's horkelia	*Horkelia cuneata ssp. sericea*	None	None	1B
Kings Mountain manzanita	*Arctostaphylos regismontana*	None	None	1B

Common Name	Scientific Name	Federal Status	State Status	CNPS
legenere	*Legenere limosa*	None	None	1B
lost thistle	*Cirsium praeteriens*	None	None	1A
Marin western flax	*Hesperolinon congestum*	FT	ST	1B
marsh microseris	*Microseris paludosa*	None	None	1B
Montara manzanita	*Arctostaphylos montaraensis*	None	None	1B
Monterey pine	*Pinus radiata*	None	None	1B
Oregon polemonium	*Polemonium carneum*	None	None	2.2
Pacific manzanita	*Arctostaphylos pacifica*	None	SE	1B
pappose tarplant	*Centromadia parryi ssp. parryi*	None	None	1B
perennial goldfields	*Lasthenia californica ssp. macrantha*	None	None	1B
Point Reyes bird's-beak	*Chloropyron maritimum ssp. palustre*	None	None	1B
Point Reyes horkelia	*Horkelia marinensis*	None	None	1B
Point Reyes meadowfoam	*Limnanthes douglasii ssp. sulphurea*	None	SE	1B
robust spineflower	*Chorizanthe robusta var. robusta*	FE	None	1B
rose leptosiphon	*Leptosiphon rosaceus*	None	None	1B
round-leaved filaree	*California macrophylla*	None	None	1B
saline clover	*Trifolium hydrophilum*	None	None	1B
San Bruno Mountain manzanita	*Arctostaphylos imbricata*	None	SE	1B
San Francisco Bay spineflower	*Chorizanthe cuspidata var. cuspidata*	None	None	1B
San Francisco campion	*Silene verecunda ssp. verecunda*	None	None	1B
San Francisco collinsia	*Collinsia multicolor*	None	None	1B
San Francisco lessingia	*Lessingia germanorum*	FE	SE	1B
San Francisco owl's-clover	*Triphysaria floribunda*	None	None	1B
San Francisco popcorn-flower	*Plagiobothrys diffusus*	None	SE	1B
San Mateo thorn-mint	*Acanthomintha duttonii*	FE	SE	1B
San Mateo woolly sunflower	*Eriophyllum latilobum*	FE	SE	1B
sand-loving wallflower	*Erysimum ammophilum*	None	None	1B
Santa Cruz microseris	*Stebbinsoseris decipiens*	None	None	1B
short-leaved evax	*Hesperevax sparsiflora var. brevifolia*	None	None	1B

Common Name	Scientific Name	Federal Status	State Status	CNPS
showy rancheria clover	*Trifolium amoenum*	FE	None	1B
slender-leaved pondweed	*Stuckenia filiformis*	None	None	2.2
western leatherwood	*Dirca occidentalis*	None	None	1B
white seaside tarplant	*Hemizonia congesta ssp. congesta*	None	None	1B
white-flowered rein orchid	*Piperia candida*	None	None	1B
white-rayed pentachaeta	*Pentachaeta bellidiflora*	FE	SE	1B
woodland woollythreads	*Monolopia gracilens*	None	None	1B
Natural Communities				
Monterey Pine Forest				
N. Central Coast Calif. Roach/Stickleback/Steelhead Stream				
North Central Coast Steelhead/Sculpin Stream				
Northern Coastal Salt Marsh				
Northern Interior Cypress Forest				
Northern Maritime Chaparral				
Sacramento-San Joaquin Coastal Lagoon				
Serpentine Bunchgrass				
Valley Needlegrass Grassland				
Valley Oak Woodland				

CODE DESIGNATIONS

Federal	State	CNPS Rank
FE = Federally endangered **FT** = Federally threatened	**SE =** California Endangered **ST =** California Threatened **SSC =** California Species of Special Concern	**Rank 1B** – Plant species that are rare, threatened, or endangered in California and elsewhere **Rank 2** – Plants rare, threatened, or endangered in California, but more common elsewhere

Source: CNDDB August 2012

REGULATORY FRAMEWORK

Federal

Endangered Species Act

Provisions of the federal Endangered Species Act (ESA), as amended (16 USC 1531), protect federally listed threatened and endangered species and their habitats from unlawful take. "Take" under the ESA includes activities such as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." US Fish and Wildlife Service (USFWS) regulations define harm to include some types of "significant habitat modification or degradation." In the case of *Babbitt, Secretary of Interior, et al., Petitioners v. Sweet Home Chapter of Communities for a Great Oregon, et al.* (No. 94-859), the United States Supreme Court ruled on June 29, 1995, that "harm" may include habitat modification "where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering."

For projects with a federal nexus, Section 7 of the ESA requires that, in consultation with USFWS, a federal agency use its authority to further the purpose of the ESA and to ensure that its actions are not likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat. Section 10(a)(1)(B) allows nonfederal entities to obtain permits for incidental taking of threatened or endangered species through consultation with USFWS. Key provisions of the ESA are summarized below under the section that implements them.

Section 10

Section 10 of the ESA provides a means for nonfederal entities (states, local agencies, and private parties) that are not permitted or funded by a federal agency to receive authorization to disturb, displace, or kill (i.e., take) threatened and endangered species. It allows USFWS to issue an incidental take permit authorizing take resulting from otherwise legal activities, as long as the take would not jeopardize the continued existence of the species. Section 10 requires the applicant to prepare a habitat conservation plan (HCP) addressing project impacts and proposing mitigation measures to compensate for those impacts. The HCP is subject to USFWS review and must be approved by the reviewing agency or agencies before the proposed project can be initiated. Because the issuance of the incidental take permit is a federal action, USFWS must also comply with the requirements of the ESA Section 7 and the National Environmental Policy Act (NEPA).

Section 7

Section 7 of the ESA applies to the management of federal lands, as well as other federal actions, such as federal approval of private activities through the issuance of federal permits, licenses, funding, or other actions that may affect listed species. Section 7 directs all federal agencies to use their existing authorities to conserve threatened and endangered species and, in consultation with USFWS, to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. Critical habitat is defined as specific areas that are essential to the conservation of federally listed species.

Clean Water Act, Section 404

The objective of the Clean Water Act (CWA 1977, as amended) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Discharge of fill material into

waters of the US, including wetlands, is regulated by the US Army Corps of Engineers (USACE) under Section 404 of the federal Clean Water Act (33 USC 1251–1376). USACE regulations implementing Section 404 define waters of the US to include intrastate waters, including lakes, rivers, streams, wetlands, and natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce. Wetlands are defined for regulatory purposes as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3; 40 CFR 230.3). The jurisdictional boundaries for other waters of the US are identified based on the presence of an ordinary high water mark (OHWM) as defined in 33 CFR 328.3(e). The placement of structures in "navigable waters of the U.S." is also regulated by USACE under Section 10 of the federal Rivers and Harbors Act (33 USC 401 et seq.). Projects are permitted under either individual or general (e.g., nationwide) permits. Specific applicability of permit type is determined by USACE on a case-by-case basis.

In 1987, USACE published a manual that standardized the manner in which wetlands were to be delineated nationwide. To determine whether areas that appear to be wetlands are subject to USACE jurisdiction (jurisdictional wetlands), a wetland delineation must be performed. Under normal circumstances, positive indicators from three parameters—(1) wetland hydrology, (2) hydrophytic vegetation, and (3) hydric soils—must be present to classify a feature as a jurisdictional wetland. More recently, USACE developed the Arid West Regional Supplement (USACE 2008) for identifying wetlands and distinguishing them from aquatic habitats and other nonwetlands. The supplement presents wetland indicators, delineation guidance, and other information that is specific to the Arid West Region. For any wetland delineations submitted after June 5, 2007, USACE is requiring that the site be surveyed according to both the 1987 manual and the supplement guidelines. In addition to verifying wetlands for potential jurisdiction, USACE is responsible for the issuance of permits for projects that propose filling of wetlands. Any permanent loss of a jurisdictional wetland as a result of project construction activities is considered a significant impact.

A "no net loss" wetlands policy is an overall policy goal for wetland protection first adopted by the George H. W. Bush Administration (1989–1993) and endorsed and updated by the Clinton Administration (1993–2001).

Clean Water Act, Section 401

Section 401 of the CWA requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the US to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. The appropriate Regional Water Quality Control Board regulates Section 401 requirements.

Migratory Bird Treaty Act

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703–711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21).

Bald and Golden Eagle Protection Act

The bald eagle and golden eagle are federally protected under the Bald and Golden Eagle Protection Act (16 USC 668–668c). It is illegal to take, possess, sell, purchase, barter, offer to sell or purchase or barter, transport, export, or import at any time or in any manner a bald or golden eagle, alive or dead, or any part, nest, or egg of these eagles unless authorized by the Secretary of the Interior. Violations are subject to fines and/or imprisonment for up to one year. Active nest sites are also protected from disturbance during the breeding season.

State

California Endangered Species Act

Under the California Endangered Species Act (CESA), California Department of Fish and Game (CDFG) has the responsibility for maintaining a list of endangered and threatened species (California Fish and Game Code 2070). CDFG maintains a list of "candidate species," which are species that CDFG formally notices as being under review for addition to the list of endangered or threatened species. CDFG also maintains lists of "species of special concern," which serve as species "watch lists." Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project site and determine whether the proposed project will have a potentially significant impact on such species. In addition, CDFG encourages informal consultation on any proposed project that may impact a candidate species.

Project-related impacts to species on the CESA endangered or threatened list would be considered significant. State-listed species are fully protected under the mandates of the CESA. Take of protected species incidental to otherwise lawful management activities may be authorized under California Fish and Game Code Section 206.591. Authorization from CDFG would be in the form of an Incidental Take Permit.

California Wetlands Conservation Policy

In August 1993, then-Governor Wilson announced the California Wetlands Conservation Policy. The goals of the policy are to establish a framework and strategy that will:

- Ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property.

- Reduce procedural complexity in the administration of state and federal wetlands conservation programs.

- Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetlands conservation and restoration.

The Governor also signed Executive Order W-59-93, which incorporated the goals and objectives contained in the new policy and directed the Resources Agency to establish an Interagency Task Force to direct and coordinate administration and implementation of the policy.

California Regional Water Quality Control Board

Clean Water Act, Section 401 Water Quality Certification

Section 401 of the CWA (33 USC 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the US to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. The appropriate Regional Water Quality Control Board (in California) regulates Section 401 requirements. The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) covers San Mateo County, and is responsible for controlling discharges to surface waters of the state by issuing waste discharge requirements or commonly by issuing conditional waivers to waste discharge requirements.

Delegated Permit Authority

California has been delegated permit authority for the National Pollutant Discharge Elimination System (NPDES) permit program including stormwater permits for all areas except Indian lands. Issuing CWA Section 404 dredge and fill permits remains the responsibility of USACE, but the State actively uses its CWA Section 401 certification authority to ensure 404 permits protect state water quality standards.

State Definition of Covered Waters

Under California state law, "waters of the state" means "any surface water or groundwater, including saline waters, within the boundaries of the state." Therefore, water quality laws apply to both surface and groundwater. After the US Supreme Court decision in *Solid Waste Agency of Northern Cook County* v. *Army COE of Engineers* (*SWANCC v. USCOE*), the Office of Chief Counsel of the State Water Regional Control Board (SWRCB) released a legal memorandum confirming the State's jurisdiction over isolated wetlands. The memorandum stated that under the California Porter-Cologne Water Quality Control Act, discharges to wetlands and other waters of the state are subject to state regulation, and this includes isolated wetlands. In general, RWQCBs regulate discharges to isolated waters in much the same way as they do for federal-jurisdictional waters, using Porter-Cologne rather than CWA authority.

California Fish and Game Code

Fully Protected Species

Certain species are considered fully protected, meaning that the code explicitly prohibits all take of individuals of these species except for take permitted for scientific research. Section 5050 lists fully protected amphibians and reptiles, Section 5515 lists fully protected fish, Section 3511 lists fully protected birds, and Section 4700 lists fully protected mammals.

It is possible for a species to be protected under the California Fish and Game Code, but not fully protected. For instance, mountain lion (*Puma concolor*) is protected under Section 4800 et seq., but is not a fully protected species.

Protection of Birds and Their Nests

Eggs and nests of all birds are protected under Section 3503 of the California Fish and Game Code, nesting birds (including raptors and passerines) under Sections 3503.5 and 3513, and birds

of prey under Section 3503.5. Migratory non-game birds are protected under Section 3800 and other specified birds under Section 3505.

Stream and Lake Protection

CDFG has jurisdictional authority over streams and lakes and the wetland resources associated with these aquatic systems under California Fish and Game Code Sections 1600 et seq. through administration of lake or streambed alteration agreements. Such agreements are not a permit, but rather a mutual accord between CDFG and the project proponent. California Fish and Game Code Section 1600 et seq. was repealed and replaced in October of 2003 with the new Section 1600–1616 that took effect on January 1, 2004 (Senate Bill 418, Sher). Under the new code, CDFG has the authority to regulate work that will "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river lake or stream." CDFG enters into a streambed alteration agreement with the project proponent and can impose conditions in the agreement to minimize and mitigate impacts to fish and wildlife resources. Because CDFG includes under its jurisdiction streamside habitats that may not qualify as wetlands under the federal CWA definition, CDFG jurisdiction may be broader than USACE jurisdiction.

A project proponent must submit a notification of streambed alteration to CDFG before construction. The notification requires an application fee for streambed alteration agreements, with a specific fee schedule to be determined by CDFG. CDFG can enter into programmatic agreements that cover recurring operation and maintenance activities and regional plans. These agreements are sometimes referred to as Master Streambed Alteration Agreements.

San Mateo Countywide Water Pollution Prevention Program

The San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) prevents the pollution of local water bodies such as creeks, San Francisco Bay, and the Pacific Ocean. SMCWPPP is a partnership of the City/County Association of Governments, each incorporated city and town in the county, and the County of San Mateo, which share a common NPDES permit that is administered by the San Francisco Bay Regional Water Quality Board. The SMCWPPP serves as the overarching program for all participating jurisdictions to achieve compliance with the regional NPDES permit. Departments within the County of San Mateo have adopted Best Management Practices (BMPs) to reduce the presence of pollutants in stormwater discharges to the maximum extent practicable. The SMCWPPP focuses on reduction of pollution entering the storm drain system, the control of pollutants from industrial and commercial facilities through the education of businesses about stormwater pollution prevention, and the control of pollutants from residential communities through public education about the causes and effects of stormwater pollution.

Local

San Bruno Mountain Habitat Conservation Plan

San Bruno Mountain Habitat Conservation Plan (HCP) was authorized by the USFWS in 1983 and includes operating programs for the 36 separate parcels that are included in the HCP area. One of the important functions of the HCP is to allow both public and private projects on San Bruno Mountain to be planned to minimize the effect on endangered species and the other biological resources of the mountain. As part of the preparation of the HCP, the private

developers have redesigned their projects to reflect habitat consideration. The HCP provides for ongoing planning assistance, including design review, phasing, reclamation of land disturbed during development, and the creation of buffer zones.

San Mateo County General Plan

San Mateo County General Plan serves as the overall guiding policy document for unincorporated San Mateo County. The following is a list of applicable General Plan goals and policies most pertinent to the EECAP with regard to biological resources.

Vegetative, Water, Fish and Wildlife Resources Element

1.1 Conserve, Enhance, Protect, Maintain and Manage Vegetative, Water, Fish and Wildlife Resources. Promote the conservation, enhancement, protection, maintenance and managed use of the County's Vegetative, Water, Fish and Wildlife Resources.

1.2 Protect Sensitive Habitats. Protect sensitive habitats from reduction in size or degradation of the conditions necessary for their maintenance.

1.22 Regulate Development to Protect Vegetative, Water, Fish and Wildlife Resources.

a. Regulate land uses and development activities to prevent, and if infeasible mitigate to the extent possible, significant adverse impacts on vegetative, water, fish and wildlife resources.

b. Place a priority on the managed use and protection of vegetative, water, fish and wildlife resources in rural areas of the County.

1.23 Regulate Location, Densitv and Design of Development to Protect Vegetative, Water, Fish and Wildlife Resources. Regulate the location, density and design of development to minimize significant adverse impacts and encourage enhancement of vegetative, water, fish and wildlife resources.

1.24 Protect Vegetative Resources. Ensure that development will: (1) minimize the removal of vegetative resources and/or; (2) protect vegetation which enhances microclimate, stabilizes slopes or reduces surface water runoff, erosion or sedimentation; and/or (3) protect historic and scenic trees.

1.25 Protect Water Resources. Ensure that development will: (1) minimize the alteration of natural water bodies, (2) maintain adequate stream flows and water quality for vegetative, fish and wildlife habitats; (3) maintain and improve, if possible, the quality of groundwater basins and recharge areas; and (4) prevent to the greatest extent possible the depletion of groundwater resources.

1.26 Protect Fish and Wildlife Resources. Ensure that development will minimize the disruption of fish and wildlife and their habitats.

1.27 Regulate Development to Protect Sensitive Habitats. Regulate land uses and development activities within and adjacent to sensitive habitats in order to protect critical vegetative, water, fish and wildlife resources; protect rare, endangered, and unique plants and animals from reduction in their range or degradation of their

environment; and protect and maintain the biological productivity of important plant and animal habitats.

1.32 Performance Criteria and Development Standards. Establish performance criteria and development standards for development permitted within sensitive habitats and buffer zones, to prevent and if infeasible mitigate to the extent possible significant negative impacts, and to enhance positive impacts.

1.38 Control Incompatible Vegetation, Fish and Wildlife. Encourage and support the control of vegetation, fish and wildlife resources which are harmful to the surrounding environment or pose a threat to public health, safety and welfare.

1.39 Minimize Adverse Impacts of Programs Controlling Incompatible Vegetation, and Fish and Wildlife. Minimize the negative impacts and risks of programs controlling incompatible vegetation, fish and wildlife.

Visual Quality Element

4.28 Trees and Vegetation.

a. Preserve trees and natural vegetation except where removal is required for approved development or safety.

b. Replace vegetation and trees removed during construction wherever possible. Use native plant materials or vegetation compatible with the surrounding vegetation, climate, soil, ecological characteristics of the region and acceptable to the California Department of Forestry.

c. Provide special protection to large and native trees.

4.57 Tree and Vegetation Removal.

a. Allow the removal of trees and natural vegetation when done in accordance with existing regulations.

b. Prohibit the removal of more than 50% of the tree coverage except as allowed by permit.

Heritage Tree Ordinance (San Mateo County Ordinance Code, Division VIII, 11,000-11,050)

The Heritage Tree Ordinance prohibits the removal of any heritage tree without first obtaining a permit from the San Mateo County Planning Department. A heritage tree is a tree listed as endangered by either the California Native Plant Society or the Federal Register or any tree species designated protected by the Board of Supervisors. Depending upon their size and location, all of the following native trees may be heritage trees: bigleaf maple (*Acer macrophyllum*), madrone (*Arbutus menziesii*), golden chinquapin (*Chrysolepis chrysophylla*), Santa Cruz cypress (*Cupressus abramsiana*), Oregon ash (*Fraxinus latifolia*), tan oak (*Lithocarpus densiflorus*), Douglas fir (*Pseudotsuga menziesii*), coast live oak (*Quercus agrifolia*), canyon live oak (*Quercus chrysolepis*), black oak (*Quercus kellogii*), interior live oak (*Quercus wislizenii*), valley oak (*Quercus lobata*), blue oak (*Quercus douglasii*), California bay laurel (*Umbellularia californica*), California nutmeg (*Torreya californica*), and coast redwood (*Sequoia sempervirens*). The Board of Supervisors may designate other trees and groves as heritage trees.

Significant Tree Ordinance (San Mateo County Ordinance Code, Division VIII, 12,000-12,032.5)

Under the Significant Tree Ordinance, a permit is required for the removal of any indigenous or exotic tree with a circumference of at least 38 inches when measured at 4.5 feet vertically above the ground or immediately below the lowest branch, whichever is lower. A permit is also required for the removal of a portion of a community of trees, which refers to a group of trees of any size that are ecologically or aesthetically related to each other, such that the loss of several of them would cause a significant ecological, aesthetic, or environmental impact in the immediate area.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

For the purposes of this EIR, impacts on biological resources are considered significant if the proposed project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service.

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or US Fish and Wildlife Service.

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

The analysis of biological resources presented in this section is based on a review of the project description, and available literature from federal, state, and local agencies and the potential for activities that could occur during implementation of the project to result in physical effects on the resources present.

Impacts and Mitigation Measures

Natural Habitat Areas/Sensitive Species/Wildlife Corridors

Impact 3.3.1 Implementation of the proposed EECAP could have substantial impacts on some sensitive and special-status species and their associated habitat and migratory corridors. This is a **significant impact**.

The San Mateo County EECAP is a policy-level document that does not include site-specific designs or proposals for development projects, nor does it grant any entitlements for development that would have the potential to adversely affect biological resources. The EECAP does not propose to change existing land use designations or zoning and anticipates that land uses will be consistent with the designations established by the General Plan Land Use Element. As a policy document, the EECAP would have no direct impact on biological resources, but future implementation activities could adversely affect biological resources.

Many of the proposed EECAP policies would not result in infrastructure being constructed and are generally accomplished by minor changes in behavior by individuals in the community or through actions such as promoting energy conservation, recycling, and waste reduction, or may involve minor construction on existing structures. Other measures, however, encourage or provide incentives for development of improvements or facilities that are more intensive than minor retrofits. EECAP measures 4.1, 4.2, 4.3, 4.4, 4.6, and 4.7 would support installation of small-scale renewable energy systems, including solar photovoltaic, solar hot water, pre-wired solar homes, a pilot solar program, and wind energy within the county. Construction and operation of these facilities would have the potential to impact biological resources. Specifically, implementation of EECAP measures could involve installation of wind generators and other renewable energy facilities that have the potential to impact sensitive and special-status species in unique ways compared with other development not anticipated or evaluated in the General Plan EIR. Wildlife may be potentially affected by certain GHG reduction measures through:

- Loss of habitat and blockage of movement corridors.
- Electrocution from transmission lines.
- Noise.
- Presence of, or collision with, turbines or transmission lines.
- Maintenance activities.
- Special-status avian and bat strikes from wind energy facilities.

In some instances, turbines, transmission lines, and other facility structures may interfere with behavioral activities, including migratory movements, and may provide additional perch sites for raptors, thereby increasing predatory levels on other wildlife. Additionally, with the development of wind power-generating facilities, there is a potential for direct mortality to special-status birds, raptors, and bats due to collisions with wind turbines; and indirect death to bats through barotraumas[1] (Baerwald et al. 2008).

General Plan Policy 1.2 calls for protection of sensitive habitats, and Policies 1.22 and 1.23 regulate development (including location, density, and design) to protect vegetative, water, fish and wildlife resources. Policies 1.25 and 1.26 seek to protect water, fish and wildlife resources through development restrictions, and Policies 1.27 through 1.32 seek to protect sensitive habitat through land use regulations, buffer zones, siting and performance criteria. In addition, proposed

[1] Barotrauma refers to trauma caused by rapid or extreme changes in air pressure, affecting enclosed cavities within the body, such as the middle ear, sinuses, and lungs.

Implementing Strategy 3.2B (see Appendix B) requires commercial wind farms or large-scale wind projects to use technologies deemed bird-safe and that would minimize impacts to wildlife. Implementation of the General Plan policies address biological resource impacts; however, impacts from the further promotion of renewable energy-generating facilities would increase the potential for impacts on birds and bats. This is a *potentially significant impact*.

Because the County has some jurisdiction on transmission lines from energy facilities to their tie-in to the grid (the County does not have jurisdiction on transmission lines on state and federal land), the following mitigation measures would assist in mitigating the additional impacts associated with renewable energy-generating facilities.

Mitigation Measures

MM 3.3.1 The following design measures shall be incorporated into all energy facilities constructed as part of EECAP implementation:

- Transmission lines and all electrical components shall be designed, installed, and maintained to reduce the likelihood of large bird electrocutions and collisions.
- The design of wind energy facilities shall discourage the use of the site by avian species (provision of landscaping and ground conditions that are unattractive to avian species).
- Design and siting of wind turbines to avoid placement of turbines on or immediately adjacent to the upwind side of ridge crests, and other design features to minimize impacts to bat and avian species.
- Provision of an avian and bat management plan that includes mortality monitoring and additional measures to address unanticipated significant adverse impacts on the population of avian or bat species or with any migratory corridor.

Timing/Implementation: *As a condition of project approval, and implemented during construction activities.*

Enforcement/Monitoring: *San Mateo County Planning and Building Department*

Mitigation measure MM 3.3.1 would establish development standards to address potential impacts to bats and to raptors and other bird species. Compliance with the above mitigation measure (in combination with General Plan policy and Development Code provisions) would reduce potential impacts to special-status species and impacts to avian and bat species on a project-by-project basis. However, impacts from the further promotion of renewable energy-generating facilities would not be eliminated. Therefore, the proposed project would result in a ***significant and unavoidable impact***.

Wetland/Riparian Habitats

Impact 3.3.2 Implementation of the proposed EECAP could result in substantial impacts on wetland and riparian habitat in some areas of the county. The proposed project would result in a **less than significant impact**.

The San Mateo County Energy Efficiency Climate Action Plan is a policy-level document that does not include site-specific designs or proposals for development projects, nor does it grant any entitlements for development that would have the potential to adversely affect biological resources. The EECAP does not propose to change existing land use designations or zoning and anticipates that land uses will be consistent with the designations established by the General Plan Land Use Element. As a policy document, the EECAP would have no direct impact on biological resources, but future implementation activities could adversely affect biological resources.

As noted above, construction of facilities developed to comply with EECAP policies could have both direct impacts due to disturbance of riparian and/or wetland flora and fauna and indirect impacts due to increased erosion and sedimentation, which would adversely affect downstream water quality. Such disturbance would also have the potential to adversely affect species that inhabit these types of areas, including various amphibians, songbirds, fish, and raptors. However, any projects that would be constructed under the EECAP would be required to comply with the BMPs adopted for the SMCWPPP, which would reduce the potential for impacts to wetlands and riparian areas related to increased erosion and sedimentation.

Additionally, a number of regulatory mechanisms address various types of construction-related impacts to wetlands. Disturbance within any water of the US would require a Section 404 permit from the USACE, which would place certain requirements for avoidance or replacement of lost wetland habitat to ensure no net loss of wetland resources. When a project would alter the natural flow or bed, channel, or bank of any river, stream, or lake, a Section 1601 streambed alteration agreement would need to be obtained from the California Department of Fish and Game. Like the 404 permit, this agreement would be expected to include measures that alleviate impacts to riparian habitats. Preparation and implementation of the stormwater pollution prevention plans required under Section 401 of the Clean Water Act would alleviate potential indirect impacts relating to increased erosion, sedimentation, and runoff.

Furthermore, subsequent GHG reduction measures implemented as a result of the proposed project would still be required to be considered pursuant to CEQA on a case-by-case basis following submittal of a specific development proposal. As specific reduction measure projects are proposed, the significance of potential impacts would need to be addressed on a case-by-case basis through site-specific studies as the individual projects are developed.

Direct and growth-inducing impacts determined to cause a significant adverse effect on riparian and/or wetland habitats would be mitigated by avoidance, habitat restoration, or compensated by off-site mitigation. However, compliance with San Mateo County General Plan policies and existing regulations, such as Sections 401 and 404 of the Clean Water Act (which requires no net loss of wetlands), Section 1601 of the Fish and Game Code, and, would protect wetland resources from direct and indirect impacts and assure no net loss of wetlands. Therefore, there would be no adverse impact on wetlands and this would be a **less than significant impact.**

Policies/Ordinances/Habitat Conservation Plans

Impact 3.3.3 Implementation of the proposed EECAP would not have substantial impacts related to potential inconsistencies with local or regional policies, ordinances, or habitat conservation plans. The proposed project would result in a **less than significant impact**.

The San Mateo County Energy Efficiency Climate Action Plan is a policy-level document that does not include site-specific designs or proposals for development projects, nor does it grant any entitlements for development that would have the potential to adversely affect biological resources. The EECAP does not propose to change existing land use designations or zoning and anticipates that land uses will be consistent with the designations established by the General Plan Land Use Element. The EECAP does not propose any development within the San Bruno Mountain HCP; therefore, implementation of the EECAP would not be inconsistent with the San Bruno Mountain HCP. If any subsequent project under the EECAP were proposed in the San Bruno Mountain HCP, it would comply with the HCP measures to protect species covered under the plan. The EECAP would not be inconsistent with any other policies or regulations intended to reduce physical environmental effects. This would be a **less than significant impact**.

CUMULATIVE IMPACTS

The cumulative context for the biological resources analysis for the proposed project is the County of San Mateo. As development in the county continues, habitat for plant and wildlife species native to the region is lost through conversion to urban development. Although more mobile species may be able to survive these changes in their environment by moving to new areas, less mobile species would simply be extirpated. With continued conversion of natural habitat to human use, the availability and accessibility of remaining foraging and natural habitats in this ecosystem would dwindle and those remaining natural areas would not be able to support additional plant or animal populations above their current carrying capacities through increased competition for resources, displacement, and development-induced introduction of non-native species. The conversion of plant and wildlife habitat and loss of protected species on a regional level would, therefore, result in a cumulatively significant impact on biological resources.

As discussed above, improvements associated with implementation of the EECAP would generally not be extensive and would not contribute substantially to the loss of species or habitat. However, construction of wind energy facilities could result in impacts on raptors and bats. Consequently, the project's contribution to the cumulative loss of species, specifically raptors and bats, would be cumulatively considerable.

The proposed EECAP does not propose any development in the area protected by the San Bruno Mountain HCP. Any development that is proposed within that area would comply with the HCP measures to protect species covered under the plan. Therefore, this impact would be less than cumulatively considerable.

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3.4 Historical, Archaeological, and Paleontological Resources

3.4 HISTORICAL, ARCHAEOLOGICAL, AND PALEONTOLOGICAL RESOURCES

This analysis considers and evaluates the potential impacts of the proposed project on historical, cultural, and paleontological resources in San Mateo County. This section is based on a review of the known historic, archeological, and paleontological resources contained in the San Mateo County General Plan.

ENVIRONMENTAL SETTING

The San Mateo County General Plan includes two existing inventories of County historical resources, including a preliminary inventory of significant historic structures and sites located throughout the county and a comprehensive inventory of historical resources found in the Coastal zone, which can be found in Appendix B (Preliminary Inventory of Historic Resources) and Appendix C (Comprehensive Inventory of Coastal Resources) of the Historical and Archeological Resources Background Report for the San Mateo General Plan.

It is thought that the first known inhabitants of the Bay Area were members of an American Indian tribe identified by the Spanish name Coastanoan. By 1770, this tribe had grown to about 50 different groups and spoke a language consisting of approximately eight dialects. The presence of fresh water, firewood, protection from the wind, and easy access to food sources encouraged the Coastanoans to settle primarily on the bayside. Some Indians, however, did live on the coastside despite the climate, and remains have been discovered in excavated middens and village sites.

Evidence of the Coastanoan culture has been discovered from excavated middens or shell mounds along the San Mateo Coast and from scattered sites inland. These middens are deposits of refuse often made up of shells, soil, ash, charcoal lenses, rock clusters, bones, skeletons, and artifacts. Shell mounds range in size at the base from about 30 to 600 feet in diameter and in height from a few inches to about 30 feet. In age, many Bay Area middens range from 3,000 to 4,000 years.

A number of archaeological sites have been discovered throughout San Mateo County. In 1970, through the support of the Treganza Anthropology Museum at San Francisco State University, several archaeologically significant areas were located and mapped. These maps are kept on file with the Planning Division of the County Department of Environmental Management. The exact locations, however, of these sites have been kept confidential in an effort to protect the areas from both vandalism and artifact hunters.

Paleontological resources or prehistoric fossils have also been discovered in the county. Examples of these limited resources have been discovered in exposed bluffs above the ocean bench along the coast. These sites contained molluscan fossils from the Pleistocene period.

REGULATORY FRAMEWORK

This subsection identifies applicable federal, state, regional, and local plans, policies, laws, and regulations that apply to the technical areas of discussions included below.

Federal

National Historic Preservation Act of 1966

The National Historic Preservation Act of 1966 requires that the federal government list significant historic resources on the National Register of Historic Places (NRHP). Federal agencies must consult the NRHP when planning to undertake or grant approval through permits for a project. Prior to the issuance of any license or implementation of any project, the federal agency must consider the effects of a project or license on any historical buildings, sites, structures, or objects that are included on, or eligible for inclusion on, the NRHP (16 USC Section 470(f)). This typically includes consultation with the federal agency responsible for the undertaking, the state historic preservation officer, local Native American groups and individuals, local and state historical societies and organizations, and relevant archival sources, including the appropriate facility of the California Historical Resources Information System.

State

California Native American Historical, Cultural and Sacred Sites Act

The California Native American Historical, Cultural and Sacred Sites Act applies to both state and private lands. The act requires that upon discovery of human remains, construction or excavation activity cease and that the county coroner be notified. If the remains are of a Native American, the coroner must notify the Native American Heritage Commission. The Native American Heritage Commission then notifies those persons mostly likely to be descended from the Native American remains. The act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

California Register of Historical Resources

The State Historical Resources Commission designed the California Register of Historic Resources (CRHR) for use by state and local agencies, private groups, and citizens to identify, evaluate, register, and protect California's historical resources. The CRHR is the authoritative guide to the state's significant historical and archaeological resources. This program encourages public recognition and protection of resources of architectural, historical, archaeological, and cultural significance, identifies historical resources for state and local planning purposes, determines eligibility for state historic preservation grant funding, and affords certain protections under the California Environmental Quality Act (CEQA).

California Environmental Quality Act

Under CEQA, public agencies must consider the effects of their actions on both "historical resources" and "unique archaeological resources." Pursuant to Public Resources Code (PRC) Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether proposed projects would have effects on unique archaeological resources.

Historical resource is a term with a defined statutory meaning (PRC Section 21084.1; determining significant impacts to historical and archaeological resources is described in CEQA Guidelines Section 15064.5 [a],[b]). Under CEQA Guidelines Section 15064.5(a), historical resources include the following:

1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR (PRC Section 5024.1).

2) A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1), including the following:

    a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

    b) Is associated with the lives of persons important in our past;

    c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

    d) Has yielded, or may be likely to yield, information important in prehistory or history.

4) The fact that a resource is not listed in, determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC Section 5020.1(k)), or identified in a historical resources survey (meeting the criteria in PRC Section 5024.1(g)) does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC Section 5020.1(j) or 5024.1.

Historic resources are usually 45 years old or older and must meet at least one of the criteria for listing in the CRHR, described above (such as association with historical events, important people, or architectural significance), in addition to maintaining a sufficient level of physical integrity.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be historical resources for purposes of CEQA unless a preponderance of evidence indicates otherwise (PRC Section 5024.1 and California Code of Regulations, Title 14, Section 4850). Unless a resource listed in a survey has been demolished, lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the CRHR.

For historic structures, CEQA Guidelines Section 15064.5, subdivision (b)(3), indicates that a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic

Buildings, or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), shall be considered as mitigating impacts to a less than significant level.

As noted above, CEQA also requires lead agencies to consider whether projects will impact "unique archaeological resources." PRC Section 21083.2, subdivision (g), states that " 'unique archaeological resource' means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."

Treatment options under Section 21083.2 include activities that preserve such resources in place in an undisturbed state. Other acceptable methods of mitigation under Section 21083.2 include excavation and curation or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a unique archaeological resource).

Section 7050.5(b) of the California Health and Safety Code specifies the following protocol when human remains are discovered:

> *In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.*

CEQA Guidelines Section 15064.5, subdivision (e), requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the Native American Heritage Commission must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as timely identified by the Native American Heritage Commission. Section 15064.5 directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the appropriate Native Americans for the treatment and disposition of the remains.

In addition to the mitigation provisions pertaining to accidental discovery of human remains, the CEQA Guidelines also require that a lead agency make provisions for the accidental discovery

of historical or archaeological resources, generally. Pursuant to Section 15064.5, subdivision (f), these provisions should include "an immediate evaluation of the find by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue on other parts of the building site while historical or unique archaeological resource mitigation takes place."

Paleontological resources are classified as nonrenewable scientific resources. PRC Section 5097.5 et seq. makes it a misdemeanor for anyone to knowingly disturb any archaeological, paleontological, or historical features situated on public lands. No state or local agencies have specific jurisdiction over paleontological resources. No state or local agency requires a paleontological collecting permit to allow for the recovery of fossil remains discovered as a result of construction-related earth-moving on state or private land in a project site.

Local

San Mateo County General Plan

San Mateo County General Plan serves as the overall guiding policy document for San Mateo County. The following is a list of applicable General Plan goals and policies most pertinent to the EECAP in regard to cultural resources.

Historical and Archaeological Resources Element

5.1 Historic Resource Protection. Protect historic resources for their historic, cultural, social and educational values and the enjoyment of future generations.

5.2 Rehabilitation of Historic Structures. Encourage the rehabilitation, preservation and use of historically significant structures.

5.3 Protection of Archaeological/Paleontological Sites. Protect archaeological/ paleontological sites from destruction in order to preserve and interpret them for future scientific research, and public educational programs.

5.5 Planning and Historic Preservation. Integrate historical preservation into the planning process of the County.

5.11 Recognition of Historic Resources.

a. Identify high priority resources in the comprehensive inventory and apply for their designation as State Point of Historic Interest, State Historical Landmark, or inclusion in the National Register of Historic Places.

b. Establish historic districts for areas which include concentrations of historic resources found in the comprehensive inventory.

5.12 Rehabilitation of Historic Structures. Encourage the rehabilitation and recycling of historic structures.

5.13 Use of Innovative Techniques

Encourage the use of innovative techniques such as density transfer, facade easements, etc., to protect historic structures.

5.14 Registration of Significant Archaeological/Paleontological Sites

Recommend State and/or national register status for significant archaeological/ paleontological sites.

5.15 Character of New Development.

a. Encourage the preservation and protection of historic resources, districts and landmarks on sites which are proposed for new development.

b. Ensure that new development in historic districts is compatible in bulk, height, material and design with that of the historic character and qualities of the district.

c. Encourage the use of the Secretary of the Interior's guidelines and standards for rehabilitation of historic structures by: (1) those undertaking the rehabilitation of historic structures, and (2) those responsible for the architectural review and permit approval.

5.16 Demolition of Resources

Discourage the demolition of any designated historic district or landmark.

5.17 Designation of Historic Resources

Establish criteria and procedures for the designation of County landmarks and districts. Include a provision requiring approval to alter, demolish or relocate designated landmarks or districts.

5. 18 Development of County Historic Sites

Develop County-owned historic sites in park and recreation areas in accordance with the performance criteria and development standards [contained in Appendix D of the Historical and Archaeological Resources Element].

5.19 Economic Use

a. Encourage compatible and adaptive residential, commercial or public uses of historic structures as a means for their protection.

b. Permit commercial uses such as crafts, stores, bookshops and art shops if they preserve and enhance the resource.

5.20 Site Survey

Determine if sites proposed for new development contain archaeological/ paleontological resources. Prior to approval of development for these sites, require that a mitigation plan, adequate to protect the resource and prepared by a qualified professional, be reviewed and implemented as a part of the project.

5.21 Site Treatment

a. Encourage the protection and preservation of archaeological sites.

b. Temporarily suspend construction work when archaeological/paleontological sites are discovered. Establish procedures which allow for the timely investigation and/or excavation of such sites by qualified professionals as may be appropriate.

c. Cooperate with institutions of higher learning and interested organizations to record, preserve, and excavate sites.

5.23 Acquisition of Structures

Encourage and coordinate efforts with groups to acquire structures of historic merit in order to prevent their loss and/or promote their adaptation for other uses.

5.25 Archaeological/Paleontological Resource Data Base

Maintain and update a comprehensive archaeological/paleontological data base.

5.26 Discovering Unrecorded Archaeological/Paleontological Sites

Support comprehensive studies to discover unrecorded archaeological and paleontological sites, particularly in areas under pressure for development.

Resource Management District

Section 6324.5 of the Resource Management District implements the policies of the 1973 Conservation and Open Space Element. This section requires a survey by a qualified professional to be performed whenever there is substantial indication that an archaeological or paleontological site may exist within a project area. Further, when such a site is discovered during construction work which could damage the site, work is to be suspended pending an investigation by qualified professionals in accordance with certain procedures. This section also prohibits the destruction of primary sites and requires the professional excavation of other sites prior to development.

Historic Preservation Ordinance

A Historic Preservation Ordinance has been prepared to provide the County with the authority to protect eligible resources listed in the various inventories included in the appendices of this report. This ordinance: (1) provides criteria and procedures for the designation of County historic landmarks and historic districts; (2) requires permits to be obtained to demolish, alter, or relocate designated landmarks or districts, and to construct, place, alter or relocate signs, exterior lighting, fences or other features within historic districts or on landmarks or landmark sites; and (3) when approved by the Secretary of the Interior, allows owners of structures or buildings within designated historic districts to qualify for favorable tax treatments for approved rehabilitation work.

Historical Resources Advisory Board

A County Historical Resources Advisory Board advises the Planning Commission, Parks and Recreation Commission, and the Board of Supervisors on matters relating to the protection and preservation of man-made resources of historical, cultural, and architectural significance.

IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

The following thresholds of significance are based on the 2012 CEQA Guidelines Appendix G. For purposes of this EIR, implementation of the EECAP may have a significant adverse impact on the resources discussed below based on the following:

1) Cause a substantial adverse change in the significance of a historical resource as defined in PRC Section 21084.1 and CEQA Guidelines Section 15064.5, respectively.

2) Cause a substantial adverse change in the significance of an archaeological resource as defined in PRC Sections 21083.2 and 21084.1, and CEQA Guidelines Section 15064.5, respectively.

3) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

4) Disturb any human remains, including those interred outside of formal cemeteries.

This analysis is based on a review of the known historic and cultural resources contained in the San Mateo County General Plan. Because there is the potential for unknown historic resources to occur within the County, the analysis conservatively assumes that any ground disturbing activities could affect these resources.

Impacts and Mitigation Measures

Historical Resources

Impact 3.4.1 Implementation of the proposed EECAP could result in the potential disturbance of historical resources. This would be a **less than significant** impact.

The San Mateo County Energy Efficiency Climate Action Plan is a policy-level document that does not include any site-specific designs or proposals for development projects, nor does it grant any entitlements for development that would have the potential to adversely affect cultural resources. The EECAP does not propose to change existing land use designations or zoning and anticipates that land uses will be consistent with the designations established by the General Plan Land Use Element. As a policy document, the EECAP would have no direct impact on cultural resources, but future implementation activities could adversely affect these resources.

EECAP measures 4.1, 4.2, 4.3, 4.4, 4.6, and 4.7 would support installation of small-scale renewable energy systems, including solar photovoltaic, solar hot water, pre-wired solar homes, a pilot solar program, and wind energy within the county. Construction of these facilities would have the potential to impact cultural resources. However, General Plan Policies 5.1 and 5.3 call for protection of historic resources and archaeological/paleontological sites. Policies 5.15 and 5.16 encourage the preservation and protection of historic resources and discourage the demolition of historic districts and landmarks. Policies 5.20 and 5.21 require site surveys for archeological/paleontological resources and encourage the protection and preservation of archeological sites. Finally, Policies 5.22, 5.25 and 5.26 calls for development with inventories for historical and archaeological/paleontological resources as well as supporting comprehensive

studies to discover unrecorded archaeological and paleontological sites. Compliance with these policies would ensure that renewable energy facilities would not have a substantial effect on cultural resources.

As previously noted, all future development projects that would implement EECAP measures and actions would be subject to applicable County regulations and requirements, as well as be subject to further CEQA analysis of project-specific impacts. Continued implementation of County General Plan policy provisions and the San Mateo County Ordinance Code would ensure impacts to cultural resources would be **less than significant**.

Mitigation Measure

None required.

Known and Undiscovered Archaeological Resources and Human Remains

Impact 3.4.2 Implementation of the proposed EECAP could result in the potential disturbance of known or undiscovered archeological resources (i.e., prehistoric sites and isolated artifacts and features) and human remains. This would be a **less than significant** impact.

Development of some of the proposed project's measures could result in damage, destruction, or removal of known and/or unrecorded archaeological resources, resulting in impacts. Many of the EECAP measures are not expected to generate significant impacts because they are minor improvements to existing infrastructure and/or County programs. However, there are other EECAP measures that would involve ground-disturbing activities that could potentially disturb or damage undiscovered archaeological resources and/or human remains.

Archaeological resources have been identified by previous investigations in the county, and it is anticipated that archaeological resources may be discovered in other areas throughout the county during construction of facilities envisioned under the EECAP and these activities have the potential to destroy and/or degrade known and unknown prehistoric archaeological resources, historical archaeological resources, or human remains. As noted above, CEQA Guidelines Section 15064.5, subdivision (e), requires that whenever human remains are uncovered, excavation activities must be stopped and the county coroner be called in to assess the remains. If the county coroner determines that the remains are of Native American origin, the Native American Heritage Commission must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as timely identified by the Native American Heritage Commission. Section 15064.5 directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the appropriate Native Americans for the treatment and disposition of the remains. In addition, as noted above, Section 6324.5 of the Resource Management District requires a survey by a qualified professional to be performed whenever there is substantial indication that an archaeological or paleontological site may exist within a project area. Further, when such a site is discovered during construction work which could damage the site, work is to be suspended pending an investigation by qualified professionals in accordance with certain procedures. This section also prohibits the destruction of primary sites and requires the professional excavation of other sites prior to development. Consequently, if any previously undiscovered resources are uncovered during construction activities, work would be suspended to prevent damage to the resources. Consequently, compliance with existing regulations would ensure that impacts on known or undiscovered archeological resources would be ***less than significant***.

Mitigation Measure

None required.

Paleontological Resources

Impact 3.4.3 Adoption of the proposed EECAP could result in the potential disturbance of paleontological resources (i.e., fossils and fossil formations) within the county. This would be a **potentially significant** impact.

Paleontological resources include fossil remains, as well as fossil localities and rock or soil formations that have produced fossil material. Fossils are the remains or traces of prehistoric animals and plants. Fossils are important scientific and educational resources because of their use in: (1) documenting the presence and evolutionary history of particular groups of now extinct organisms, (2) reconstructing the environments in which these organisms lived, and (3) determining the relative ages of the strata in which they occur and of the geologic events that resulted in the deposition of the sediments that formed these strata and in their subsequent deformation. The age and abundance of fossils depend on the location, topographic setting, and particular geologic formation in which they are found. The potential exists for projects developed to implement EECAP measures to disturb undiscovered paleontological resources. This impact is considered *potentially significant*.

Mitigation Measures

MM 3.4.3 If paleontological resources are encountered during future grading or excavation activities associated with EECAP related activities, work shall avoid altering the resource and its stratigraphic context until a qualified paleontologist has evaluated, recorded, and determined appropriate treatment of the resource, in consultation with the County. Project personnel shall not collect cultural resources. Appropriate treatment may include collection and processing of "standard" samples by a qualified paleontologist to recover micro vertebrate fossils; preparation of significant fossils to a reasonable point of identification; and depositing significant fossils in a museum repository for permanent curation and storage, together with an itemized inventory of the specimens.

Timing/Implementation: *As a condition of project approval, and implemented during construction activities.*

Enforcement/Monitoring: *San Mateo County Planning and Building Department*

Implementation of **MM 3.4.3** would reduce potentially significant impacts resulting from inadvertent damage or destruction to unknown paleontological resources during construction to a **less than significant** level.

Cumulative Impacts and Mitigation Measures

The cumulative context for the impacts on cultural resources would be development in San Mateo County. Urban development that has occurred over the past several decades in San Mateo County has resulted in the adverse impacts on significant historical and archaeological resources, and it is reasonable to assume that present and future development activities will

continue to result in impacts on significant cultural resources, including historical resources, archaeological resources, and human remains. Federal, state, and local laws protect cultural resources in most instances but are not always feasible to protect cultural resources, particularly when in-place preservation would frustrate implementation of projects. For this reason, the cumulative effects of development in San Mateo County on cultural resources are considered significant. Implementation of General Plan policies and mitigation measures identified for the proposed project would protect any significant archaeological resources, human remains, or paleontological resources, if present, to ensure that the project's incremental contribution to these cumulative effects would not be cumulatively considerable.

3.5 Greenhouse Gases and Climate Change Adaptation

3.5 GREENHOUSE GASES AND CLIMATE CHANGE ADAPTATION

This section provides a discussion of the effect of the proposed San Mateo Energy Efficiency Climate Action Plan (EECAP) on greenhouse gas emissions and the associated effects of climate change. CEQA requires that lead agencies consider the reasonably foreseeable adverse environmental effects of projects they are considering for approval.

ENVIRONMENTAL SETTING

Since the early 1990s, scientific consensus holds that the world's population is releasing greenhouse gases (GHG) faster than the earth's natural systems can absorb them. These gases are released as byproducts of fossil fuel combustion, waste disposal, energy use, land-use changes, and other human activities. This release of gases, such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), and chlorofluorocarbons, creates a blanket around the earth that allows light to pass through but traps heat at the surface preventing its escape into space. While this is a naturally occurring process known as the greenhouse effect, human activities have accelerated the generation of GHGs beyond natural levels. The overabundance of GHGs in the atmosphere has led to an unexpected warming of the earth and has the potential to severely impact the earth's climate system.

While often used interchangeably, there is a difference between the terms "climate change" and "global warming." According to the National Academy of Sciences, climate change refers to any significant, measurable change of climate lasting for an extended period of time that can be caused by both natural factors and human activities. Global warming, on the other hand, is an average increase in the temperature of the atmosphere caused by increased GHG emissions. The use of the term climate change is becoming more prevalent because it encompasses all changes to the climate, not just temperature.

To fully understand global climate change, it is important to recognize the naturally occurring greenhouse effect and to define the GHGs that contribute to this phenomenon. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect.

For most nonindustrial development projects, motor vehicles make up the bulk of GHG emissions produced on an operational basis. The primary GHGs emitted by motor vehicles include carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons (CARB 2004). **Table 3.5-1** provides descriptions of the primary GHGs attributed to global climate change, including a description of their physical properties, primary sources, and contribution to the greenhouse effect.

TABLE 3.5-1
GREENHOUSE GASES

Greenhouse Gas	Description
Carbon Dioxide (CO_2)	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.[1]
Methane (CH_4)	Methane is a colorless, odorless gas that is not flammable under most circumstances. CH_4 is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane to the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. Methane's atmospheric lifetime is about 12 years.[2]
Nitrous Dioxide (N_2O)	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. N_2O is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.[3]
Hydrofluorocarbons (HFCs)	Hydrofluorocarbons are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 260 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years).[4]
Perfluorocarbons (PFCs)	Perfluorocarbons are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF_4), perfluoroethane (C_2F_6), perfluoropropane (C_3F_8), perfluorobutane (C_4F_{10}), perfluorocyclobutane (C_4F_8), perfluoropentane (C_5F_{12}), and perfluorohexane (C_6F1_4). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases CF_4 and C_2F_6 as byproducts. The estimated atmospheric lifetimes for CF_4 and C_2F_6 are 50,000 and 10,000 years, respectively.[4,5]
Sulfur Hexafluoride (SF_6)	Sulfur hexafluoride is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF_6 is primarily used as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80 percent of all SF_6 produced worldwide. Significant leaks occur from aging equipment and during equipment maintenance and servicing. SF_6 has an atmospheric life of 3,200 years.[4]

Sources: [1]EPA 2011a, [2]EPA 2011b, [3]EPA 2010a, [4]EPA 2010b, [5]EFCTC 2003

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Gases with high global warming potential, such as HFCs, PFCs, and SF_6, are the most heat-absorbent. Methane traps over 21 times more heat per molecule than CO_2, and N_2O absorbs 310 times more heat per molecule than CO_2. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential (GWP). Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. **Table 3.5-2** shows the GWPs for different GHGs for a 100-year time horizon.

TABLE 3.5-2
GLOBAL WARMING POTENTIAL FOR GREENHOUSE GASES

Greenhouse Gas	Global Warming Potential
Carbon Dioxide (CO_2)	1
Methane (CH_4)	21
Nitrous Dioxide (N_2O)	310
Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs)	6,500
Sulfur Hexafluoride (SF_6)	23,900

Source: California Climate Action Registry 2009

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California is a significant emitter of CO_2 in the world and produced 477 million gross metric tons of carbon dioxide equivalent in 2008 (CARB 2010). Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2008, accounting for 36.4 percent of total GHG emissions in the state (CARB 2010). This category was followed by the electric power sector (including both in-state and out-of-state sources) (24.3 percent) and the industrial sector (19.3 percent) (CARB 2010).

EFFECTS OF GLOBAL CLIMATE CHANGE

California can draw on substantial scientific research conducted by experts at various state universities and research institutions. With more than a decade of concerted research, scientists have established that the early signs of climate change are already evident in the state—as shown, for example, in increased average temperatures, changes in temperature extremes, reduced snowpack in the Sierra Nevada, sea level rise, and ecological shifts.

Many of these changes are accelerating—locally, across the country, and around the globe. As a result of emissions already released into the atmosphere, California is anticipated to face intensifying climate changes in coming decades (CNRA 2009). Generally, research indicates that California should expect overall hotter and drier conditions with a continued reduction in winter snow (with concurrent increases in winter rains), as well as increased average temperatures, and accelerating sea level rise. In addition to changes in average temperatures, sea level, and precipitation patterns, the intensity of extreme weather events is also changing (CNRA 2009).

Climate change temperature projections identified in the 2009 California Climate Adaptation Strategy suggest the following (CNRA 2009):

- Average temperature increase is expected to be more pronounced in the summer than in the winter season.
- Inland areas are likely to experience more pronounced warming than coastal regions.
- Heat waves are expected to increase in frequency, with individual heat waves also showing a tendency toward becoming longer, and extending over a larger area, thus more likely to encompass multiple population centers in California at the same time.
- As GHGs remain in the atmosphere for decades, temperature changes over the next 30 to 40 years are already largely determined by past emissions. By 2050, temperatures are projected to increase by an additional 1.8 to 5.4°F (an increase one to three times as large as that which occurred over the entire 20th century).
- By 2100, the models project temperature increases between 3.6 to 9°F.

Precipitation levels are expected to change over the 21st century, though models differ in determining where and how much rain and snowfall patterns may change (CNRA 2009). Eleven out of twelve precipitation models run by the Scripps Institution of Oceanography suggest a small to significant (12–35 percent) overall decrease in precipitation levels by mid-century (CNRA 2009). In addition, higher temperatures increase evaporation and make for a generally drier climate, as higher temperatures hasten snowmelt. Moreover, the 2009 California Climate Adaptation Strategy concludes that more precipitation may fall as rain rather than as snow, with important implications for water management in the state. California communities have largely depended on runoff from yearly established snowpack to provide the water supplies during the warmer, drier months of late spring, summer, and early autumn. With rainfall and meltwater running off earlier in the year, the state may face increasing challenges of storing the water for the dry season while protecting Californians downstream from floodwaters during the wet season.

According to the 2009 California Climate Adaptation Strategy, the impacts of climate change in California have the potential to include, but are not limited to, the areas discussed in **Table 3.5-3**.

TABLE 3.5-3
POTENTIAL STATEWIDE IMPACTS FROM CLIMATE CHANGE

Potential Statewide Impact	Description
Public Health	Climate change is expected to lead to an increase in ambient (i.e., outdoor) average air temperature, with greater increases expected in summer than in winter months. Larger temperature increases are anticipated in inland communities as compared to the California coast. The potential health impacts from sustained and significantly higher than average temperatures include heat stroke, heat exhaustion, and the exacerbation of existing medical conditions such as cardiovascular and respiratory diseases, diabetes, nervous system disorders, emphysema, and epilepsy. Numerous studies have indicated that there are generally more deaths during periods of sustained higher temperatures, and these are due to cardiovascular causes and other chronic diseases. The elderly, infants, and socially isolated people with pre-existing illnesses who lack access to air conditioning or cooling spaces are among the most at risk during heat waves.

Potential Statewide Impact	Description
Floods and Droughts	The impacts of flooding can be significant. Results may include population displacement, severe psychosocial stress with resulting mental health impacts, exacerbation of pre-existing chronic conditions, and infectious disease. Additionally, impacts can range from a loss of personal belongings, and the emotional ramifications from such loss, to direct injury and/or mortality. Drinking water contamination outbreaks in the United States are associated with extreme precipitation events. Runoff from rainfall is also associated with coastal contamination that can lead to contamination of shellfish and contribute to food-borne illness. Floodwaters may contain household, industrial, and agricultural chemicals as well as sewage and animal waste. Flooding and heavy rainfall events can wash pathogens and chemicals from contaminated soils, farms, and streets into drinking water supplies. Flooding may also overload storm and wastewater systems, or flood septic systems, also leading to possible contamination of drinking water systems. Drought impacts develop more slowly over time. Risks to public health that Californians may face from drought include impacts on water supply and quality, food production (both agricultural and commercial fisheries), and risks of waterborne illness. As surface water supplies are reduced as a result of drought conditions, the amount of groundwater pumping is expected to increase to make up for the water shortfall. The increase in groundwater pumping has the potential to lower the water tables and cause land subsidence. Communities that utilize well water will be adversely affected by drops in water tables or through changes in water quality. Groundwater supplies have higher levels of total dissolved solids compared to surface waters. This introduces a set of effects for consumers, such as repair and maintenance costs associated with mineral deposits in water heaters and other plumbing fixtures, and on public water system infrastructure designed for lower salinity surface water supplies. Drought may also lead to increased concentration of contaminants in drinking water supplies.
Water Resources	The state's water supply system already faces challenges to provide water for California's growing population. Climate change is expected to exacerbate these challenges through increased temperatures and possible changes in precipitation patterns. The trends of the last century—especially increases in hydrologic variability—will likely intensify in this century. The state can expect to experience more frequent and larger floods and deeper droughts. Rising sea level will threaten the Delta water conveyance system and increase salinity in near-coastal groundwater supplies. Planning for and adapting to these simultaneous changes, particularly their impacts on public safety and long-term water supply reliability, will be among the most significant challenges facing water and flood managers this century.
Habitats and species	Global climate change has the potential to intensify the current threat to forests and landscapes by increasing the risk of wildfire and altering the distribution and character of natural vegetation. If temperatures rise into the medium warming range, wildfire occurrence statewide could increase from 57 percent to 169 percent by 2085. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state.
Sea Level Rise	The San Francisco Bay Conservation and Development Commission (BCDC) issued a report on sea level rise that states that sea level along the West Coast rises approximately 7.9 inches per century, or approximately 0.08 inches per year (BCDC 2011). However, the rate of sea level rise is increasing. During the period of 1993–2003, the rate was approximately 0.12 inches per year, which could demonstrate the result of human-induced warming on sea level. The BCDC uses the same sea level rise estimates that are used by California Climate Action Team-funded assessments. These estimates anticipate the sea level in the Bay Area will rise 16 inches by mid-century and 55 inches by the end of the century.

Source: CNRA 2009

REGULATORY FRAMEWORK

Federal

Federal Regulation and the Clean Air Act

In the past, the US Environmental Protection Agency (EPA) has not regulated GHGs under the Clean Air Act because it asserted that the act did not authorize the EPA to issue mandatory regulations to address global climate change and that such regulation would be unwise without an unequivocally established causal link between GHGs and the increase in global surface air temperatures. However, the US Supreme Court held that the EPA must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency et al.*, twelve states and cities, including California, together with several environmental organizations, sued to require the EPA to regulate GHGs as pollutants under the Clean Air Act (127 S. Ct. 1438 [2007]). The court ruled that GHGs fit within the Clean Air Act's definition of a pollutant and that the EPA did not have a valid rationale for not regulating GHGs. In response to this ruling, the EPA has recently made an endangerment finding that GHGs pose a threat to the public health and welfare. This is the first step necessary for the establishment of federal GHG regulations under the Clean Air Act.

In April 2010, the EPA issued the final rule on new standards for GHG emissions and fuel economy for light-duty vehicles in model years 2017–2025. In November 2010, the EPA published the "Prevention of Significant Deterioration (PSD) and Title V Permitting Guidance for Greenhouse Gases," which provides the basic information that permit writers and applicants need to address GHG emissions regulated under the Clean Air Act. In that document, the EPA described the "Tailoring Rule" in the regulation of GHG emissions. With the Tailoring Rule, the EPA established a phased schedule in the regulation of stationary sources. The first phase of the Tailoring Rule began January 2, 2011, and focuses the GHG permitting programs on the largest sources with the most Clean Air Act permitting experience. In step two, which began June 1, 2011, the rule expands to cover large sources of GHGs that may not have been previously covered by the Clean Air Act for other pollutants. The rule also describes the EPA's commitment to future rulemaking that will describe subsequent steps of the Tailoring Rule for GHG permitting (EPA 2010c).

Federal Heavy-Duty National Program

In August 2011, the EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced the first-ever program to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses. The EPA and the NHTSA have each adopted complementary standards under their respective authorities covering model years 2014–2018, which together form a comprehensive Heavy-Duty National Program. The goal of the joint rulemakings is to present coordinated federal standards that help manufacturers to build a single fleet of vehicles and engines that are able to comply with both. The EPA and the NHTSA have adopted standards for CO_2 emissions and fuel consumption, respectively, tailored to each of three main regulatory categories: (1) combination tractors; (2) heavy-duty pickup trucks and vans; and (3) vocational vehicles. The EPA has additionally adopted standards to control HFC leakage from air conditioning systems in pickups and vans and combination tractors. Also exclusive to the EPA program are the EPA's N_2O and CH_4 standards that will apply to all heavy-duty engines, pickups, and vans. For purposes of this program, the heavy-duty fleet incorporates all on-road vehicles rated at a gross vehicle weight at or above 8,500 pounds, and the engines that power them, except those covered by the current GHG emissions and Corporate Average Fuel Economy standards for model year 2012–2016 passenger vehicles.

The Heavy-Duty National Program is projected to reduce fuel use and GHG emissions from medium- and heavy-duty vehicles, from semi-trucks to the largest pickup trucks and vans, as well as all types and sizes of work trucks and buses in between. Vehicles covered by this program make up the transportation segment's second largest contributor to oil consumption and GHG emissions. This comprehensive program is designed to address the urgent and closely intertwined challenges of dependence on oil, energy security, and global climate change. The EPA and the NHTSA estimate that the combined standards will reduce CO_2 emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of vehicles built for the 2014 to 2018 model years, providing $49 billion in net program benefits. A second phase of regulations is planned for model years beyond 2018. The goals would include spurring innovation as well as updating the assessment of actual emissions and fuel use from this sector. Such future regulation would also be designed to align with similar programs developed outside the United States.

State

Assembly Bill 1493

Assembly Bill (AB) 1493 (Pavley) of 2002 (Health and Safety Code Sections 42823 and 43018.5) requires the California Air Resources Board (CARB) to develop and adopt the nation's first GHG emissions standards, also known as Pavley 1, for automobiles. The California legislature declared in AB 1493 that global warming is a matter of increasing concern for public health and the environment. It cites several risks that California faces from climate change, including a reduction in the state's water supply, an increase in air pollution caused by higher temperatures, harm to agriculture, an increase in wildfires, damage to the coastline, and economic losses caused by higher food, water, energy, and insurance prices. The bill also states that technological solutions to reduce GHG emissions would stimulate California's economy and provide jobs. In 2004, the state of California submitted a request for a waiver from federal clean air regulations, as the state is authorized to do under the Clean Air Act, to allow the state to require reduced tailpipe emissions of CO_2. In late 2007, the EPA denied California's waiver request and declined to promulgate adequate federal regulations limiting GHG emissions. In early 2008, the state brought suit against the EPA related to this denial.

In January 2009, President Obama instructed the EPA to reconsider the Bush Administration's denial of California's and 13 other states' requests to implement global warming pollution standards for cars and trucks. In June 2009, the EPA granted California's waiver request, enabling the state to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

Also in 2009, President Obama announced a national policy aimed at both increasing fuel economy and reducing GHG pollution for all new cars and trucks sold in the US. The new standards would cover model years 2012–2016 and would raise passenger vehicle fuel economy to a fleet average of 35.5 miles per gallon by 2016. When the national program takes effect, California has committed to allowing automakers showing compliance with the national program to also be deemed in compliance with state requirements. California is committed to further strengthening these standards requiring a 45 percent GHG reduction from the 2020 model year vehicles.

Executive Order S-3-05

Executive Order S-3-05 (State of California) proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the snowpack in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise

in sea levels. To combat those concerns, the Executive Order established total GHG emissions targets. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multiagency effort to reduce GHG emissions to the target levels. The secretary will also submit biannual reports to the governor and state legislature describing (1) progress made toward reaching the emissions targets, (2) impacts of global warming on California's resources, and (3) mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the secretary of CalEPA created a Climate Action Team made up of members from various state agencies and commissions. The Climate Action Team released its first report in March 2006 and continues to release periodic reports on progress. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government, and community actions, as well as through state incentive and regulatory programs.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

Assembly Bill (AB) 32 (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599) requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride. The reduction to 1990 levels will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that CARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap, institute a schedule to meet the emissions cap, and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. CARB is implementing this program. The CARB Board adopted a draft resolution for formal cap-and-trade rulemaking on December 16, 2010, and is developing offset protocols and compliance requirements. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Climate Change Scoping Plan

In October 2008, CARB published its Climate Change Proposed Scoping Plan, which is the State's plan to achieve GHG reductions in California required by AB 32. The Scoping Plan contains the main strategies California will implement to achieve reduction of 169 million metric tons (MMT) of CO_2e, or approximately 30 percent from the state's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario (this is a reduction of 42 MMT CO_2e, or almost 10 percent, from 2002–2004 average emissions). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations are from improving emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e), implementation of the Low Carbon Fuel Standard (15.0 MMT CO_2e) program, energy efficiency measures in buildings and

appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e), and a renewable portfolio standard for electricity production (21.3 MMT CO_2e). The Scoping Plan identifies the local equivalent of AB 32 targets as a 15 percent reduction below baseline GHG emissions level, with baseline interpreted as GHG emissions levels between 2003 and 2008. The Scoping Plan states that land use planning and urban growth decisions will play important roles in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. (Meanwhile, CARB is also developing an additional protocol for community emissions.) CARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects approximately 5.0 MMT CO_2e will be achieved associated with implementation of Senate Bill 375, which is discussed further below. The Climate Change Proposed Scoping Plan was approved by CARB on December 11, 2008.

The status of the Scoping Plan had been uncertain as a result of a court decision in the case of *Association of Irritated Residents v. California Air Resources Board* (San Francisco Superior Court Case No. CPF-09-509562). The court found that CARB, in its CEQA review, had not adequately explained why it selected a scoping plan that included a cap-and-trade program rather than an alternative plan. While CARB disagrees with the trial court finding and has appealed the decision, in order to remove any doubt about the matter and in keeping with CARB's interest in public participation and informed decision-making, CARB revisited the alternatives. The revised analysis includes the five alternatives included in the original environmental analysis: a "no project" alternative (that is, taking no action at all); a plan relying on a cap-and-trade program for the sectors included in a cap; a plan relying more on source-specific regulatory requirements with no cap-and-trade component; a plan relying on a carbon fee or tax; and a plan relying on a variety of proposed strategies and measures. The revised analysis relies on emissions projections updated in light of current economic forecasts, accounting for the economic downturn since 2008 and reduction measures already approved and put in place.

The public hearing to consider approval of the AB 32 Scoping Plan Functional Equivalent Document (including the Supplement) and the AB 32 Scoping Plan was held on August 24, 2011. On this date, the Scoping Plan was re-approved by the Board.

Senate Bill 1368

Senate Bill (SB) 1368 (codified at Public Utilities Code Chapter 3) is the companion bill of AB 32. SB 1368 required the California Public Utilities Commission (CPUC) to establish a GHG emissions performance standard for baseload generation from investor-owned utilities by February 1, 2007. The bill also required the California Energy Commission (CEC) to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the GHG emissions rate from a baseload combined-cycle natural-gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and CEC.

Senate Bill 1078, Governor's Order S-14-08, and Senate Bill 2X (California Renewables Portfolio Standards)

SB 1078 (Public Utilities Code Sections 387, 390.1, 399.25 and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and

community choice aggregators, provide a minimum 20 percent of their supply from renewable sources by 2017. This senate bill will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed Executive Order S-14-08, which set the Renewables Portfolio Standard target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target.

Prior to the Executive Order, the CPUC and the CEC were responsible for implementing and overseeing the Renewables Portfolio Standards. The Executive Order shifted that responsibility to CARB, requiring it to adopt regulations by July 31, 2010. CARB is required by current law, AB 32 of 2006, to regulate sources of GHGs to meet a state goal of reducing GHG emissions to 1990 levels by 2020 and to reach an 80 percent reduction of 1990 levels by 2050.

In March 2011, SB 2X established S-14-08 as law passed the California legislature. While SB 2X contains the same targets as Governor's Order S-14-08 (33 percent of their supply from renewable sources by 2020), as an executive order it did not have the force of law (governor's orders can be reversed by future governors).

Senate Bill 375

SB 375 (codified at Government Code and Public Resources Code[1]), signed in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a sustainable communities strategy or alternative planning strategy, which will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years, but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's sustainable communities strategy or alternative planning strategy for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects would not be eligible for funding programmed after January 1, 2012.

California Building Energy Efficiency Standards

Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards, was established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. On January 1, 2010, the California Building Standards Commission adopted CALGreen and became the first state in the US to adopt a statewide green building standards code. CALGreen requires new buildings to reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low-pollutant-emitting materials. On May 31, 2012, the California Building Standards Commission adopted standards that exceed the energy efficiency requirements of the 2010 version, which will go into effect on January 1, 2014

[1] Senate Bill 375 is codified at Government Code Sections 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588, 14522.1, 14522.2, and 65080.01 as well as Public Resources Code Sections 21061.3, 21159.28, and Chapter 4.2.

Local

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines were developed to assist lead agencies in evaluating air quality impacts for projects and plans in the San Francisco Bay Area Air Basin. The guidelines were updated in 2010 to include guidance on assessing GHG and climate change impacts as required under CEQA Section 15183.5(b) and to establish thresholds of significance for impacts related to GHG emissions. These thresholds can be used to assess plan-level and project-level impacts and allow a lead agency to determine that a project's impact on GHG emissions is less than significant if it is in compliance with a Qualified Greenhouse Gas Reduction Strategy.[2]

The County's Energy Efficiency Climate Action Plan (EECAP) is required to follow BAAQMD's guidelines by incorporating the standard elements of a Qualified GHG Reduction Strategy into the EECAP. The standard elements of a GHG reduction strategy include the following steps:

1) Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic range.

2) Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable.

3) Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area.

4) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level.

5) Monitor the plan's progress.

6) Adopt the greenhouse gas reduction strategy in a public process following environmental review.

The San Mateo EECAP has been developed to satisfy the requirements of the BAAQMD guidelines on the standard elements of a Qualified GHG Reduction Strategy and would allow future development projects to determine that a project has a less than significant impact on GHG emissions so long as it is in compliance with the EECAP.

[2] The thresholds BAAQMD adopted were called into question by a minute order issued January 9, 2012, in *California Building Industry Associated v. BAAQMD*, Alameda Superior Court Case No RG10548693. On March 5, 2012, the Alameda County Superior Court issued a judgment finding that BAAQMD had failed to comply with CEQA when it adopted the thresholds. The court did not determine whether the thresholds were valid on the merits, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering BAAQMD to set aside the thresholds and cease dissemination of them until BAAQMD had complied with CEQA. The claim made in the case concerned the CEQA impacts of adopting the thresholds; that is, how the thresholds would affect land use development patterns. Those issues are not relevant to the scientific soundness of the BAAQMD's analysis of what levels of pollutants should be deemed significant, or the threshold to use in assessing any air quality-related impact the project would have on the existing environment. These thresholds are based on substantial evidence identified in Appendix D of the Guidelines and are therefore used within this analysis.

San Mateo County Energy Strategy 2012

Created by the County of San Mateo Utilities and Sustainability Task Force, with support from the County of San Mateo, City/County Association of Governments (C/CAG), and BAAQMD, the San Mateo County Energy Strategy 2012 is a guidance document that identifies general energy reduction strategies appropriate for San Mateo County, regional organizations, and municipalities. While most goals, strategies, and actions focus on reducing municipal energy use, several actions aim to reduce community energy use, including:

- Reduce or eliminate permitting fees for the investment of clean energy systems.
- Adopt green building standards and ordinances.
- Provide financial incentives and rebates for water-conserving products.
- Update general plans and municipal codes to include water conservation policies.
- Consider incentives for businesses to achieve Green Business Certification.

After releasing the document, C/CAG provided additional educational materials to cities and the County and provided incentives to promote the completion of government operation inventories for cities in the county.

San Mateo County Energy Watch

San Mateo County Energy Watch is a partnership between C/CAG and Pacific Gas and Electric (PG&E). The program's goal is to reduce energy usage through energy efficiency in San Mateo County cities and unincorporated areas. San Mateo County Energy Watch provides energy efficiency services to public agencies, nonprofits, small businesses, and residential customers. These program elements include:

- A direct-install program for lighting and refrigeration measures for public agencies, nonprofits, and small businesses.
- Comprehensive audits for public agencies and nonprofits.
- Technical assistance for more complex energy efficiency projects for public agencies and nonprofits through the Customized Retrofit Incentives program.
- A direct-install program for lighting and weatherization measures for moderately low-income residents.
- Climate action program assistance for cities and the County.
- Energy efficiency training and education workshops and classes.

As part of the Energy Watch program, PG&E and BAAQMD have provided support to C/CAG to develop the Regionally Integrated Climate Action Planning Suite. The County provides standardized tool kits for cities and towns in San Mateo County to create climate action plans. Tool kits include inventory tools, suggestions for quantified reduction measures, and climate action plan language. C/CAG and the County have been actively engaged in the development of these tools.

Indicators for a Sustainable San Mateo County

Indicators for a Sustainable San Mateo is an annual report published by Sustainable San Mateo County (SSMC). SSMC has been producing reports for 15 years with the goal of raising awareness of sustainability in San Mateo County. The report tracks 30 countywide economic, social, and environmental issues. Additionally, the report provides regional benchmarks that illustrate San Mateo County data relative to other Bay Area counties. The 2011 report provides regional benchmarks for indicators such as unemployment rates, vehicle miles traveled per capita, and GHG emissions per capita.

IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Per Appendix G of the CEQA Guidelines, impacts related to climate change are normally considered significant if implementation of the proposed project would result in any of the following:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The project proposes to amend the General Plan to include text and policies addressing the County's intent to reduce GHG emissions. The proposed project includes the proposed adoption of an EECAP to implement the proposed General Plan policies set forth. The EECAP recognizes the imperative to act and demonstrates the County's commitment to reducing GHG emissions. The EECAP is intended to streamline future environmental review of projects within the unincorporated portions of San Mateo County by following the CEQA Guidelines and meeting the BAAQMD's expectations for a Qualified GHG Reduction Strategy. As identified above, the BAAQMD provides clear guidance of the expected standard elements of a GHG reduction strategy, and the proposed EECAP has been developed to satisfy the requirements of the BAAQMD's guidelines.

For the purposes of this analysis, the General Plan Amendments and EECAP are compared for consistency with AB 32 reduction targets to determine significance. The AB 32 reduction target has been determined as the reduction of statewide GHG emissions to 1990 levels by 2020, or as outlined in the AB 32 Scoping Plan, the functional equivalent of 15 percent below "existing" (2005–2008) levels by 2020. For the purpose of defining existing emissions levels, the County chose the emissions in the year 2005 as a benchmark for existing emissions conditions.

The General Plan Amendments and EECAP would have to decrease County emissions to a level at least 15 percent below existing emissions by the year 2020 in order to be considered less than significant under CEQA. The General Plan Amendments include text and policies addressing the County's intent to reduce GHG emissions. The associated EECAP would act as an implementation tool in the unincorporated portions of the county by focusing on attaining the various goals and policies of the General Plan relative to GHG emissions reductions.

Even with significant efforts to mitigate GHG emissions today, future climate projections and scenarios anticipate that climate change may have significant effects on California and on San Mateo County's precipitation, temperature, and weather patterns. The potential consequences

of climate change for the state of California and San Mateo County include those described under the Effects of Global Climate Change subsection above. This section also analyzes the proposed project's impacts to the County's ability to adapt to the effects of climate change.

METHODOLOGY

The County has determined that the project's potential for creating an impact on global climate change should be based on a comparative analysis of the EECAP against AB 32 targets in the year 2020 and progress toward Executive Order S-3-05 targets in the year 2050. In order for California to meet the goals of AB 32, emissions will need to be reduced by 15 percent below existing levels by 2020. San Mateo County would also need to achieve the same GHG targets in order to be consistent with AB 32. CARB states, "… ARB recommended a greenhouse gas reduction goal for local governments of 15 percent below today's levels by 2020 to ensure that their municipal and community-wide emissions match the State's reduction target." The County chose the emissions in the year 2005 as a benchmark for existing emissions conditions.

A community-wide emissions inventory was prepared for the County's EECAP. The community-wide baseline inventory details the sources of emissions from community activities. The unit of measure used is the metric ton of carbon dioxide (CO_2) equivalent ($MTCO_2e$). $MTCO_2e$ is the international unit that combines the differing impacts of all GHGs into a single unit by multiplying each emitted gas by its global warming potential (see **Table 3.5-2**).

The inventory includes major sources of GHGs caused by activities in the unincorporated county consistent with the methodology recommended by CARB, ICLEI-Local Governments for Sustainability, and the BAAQMD. The inventory analyzes the following emissions sources:

- **Energy** – Electricity, natural gas, and residential propane consumed in the unincorporated county in 2005.
- **Transportation** – Vehicle miles traveled to and/or from the unincorporated county in 2005.
- **Waste** – Methane emissions from waste sent to landfills from the county in 2005.
- **Water and Wastewater** – The energy required to extract, filter, move, and treat the water consumed and/or treated in the unincorporated county in 2005.
- **Stationary Sources** – Direct emissions from industrial processes in the unincorporated county that are permitted by the BAAQMD.
- **Landfills –** Direct emissions from open and closed landfills in the unincorporated county.
- **Off-Road** – Emissions from construction as well as lawn and garden equipment/vehicles.
- **Agriculture** – Emissions from fertilizer and agricultural off-road equipment/vehicles.

The inventory was developed with the best-available tools, data, and methodology; however, as with any GHG inventory, there are limitations to representing all sources of emissions in a jurisdiction. The main factors that limit GHG inventories include (1) data availability, (2) privacy laws, and (3) deficient methodology. It is estimated that sources not included in the inventory for reasons of data availability and privacy laws comprise less than 5 percent of total emissions in the county and are, therefore, anticipated to have a minimal impact. The emissions excluded

for reasons of deficient methodology may be considerable, but it is not possible to estimate their impact on the inventory of unincorporated San Mateo County under current methodological constraints. [3]

The measures to reduce GHG emissions identified in the EECAP are a diverse mix of regulatory and incentive-based programs for both new and existing development. The reduction measures also aim to reduce GHG emissions from each source of emissions to avoid reliance on any one strategy or sector to achieve the target. The development of GHG reduction measures was an interactive process with multiple levels of review and refinement. This process included an assessment of existing activities and ongoing involvement of County planning staff, advisory committees, and the public. The final piece to developing each GHG reduction measure involved the identification of how each policy will be successfully implemented by determining the GHG reduction benefit, the time frame for implementation, the estimated costs and savings to the community and the County, potential sources of funding, the department responsible for implementation, and the additional benefits, or co-benefits, that may occur from implementation of each measure. Whenever possible, emissions reduction estimates are based on tools and reports provided by government agencies such as the EPA, CalEPA, CEC, CARB, California Air Pollution Control Officers Association, and local air districts.

IMPACTS AND MITIGATION MEASURES

Consistency with AB 32 and the AB 32 Scoping Plan

Impact 3.5.1 The proposed EECAP and General Plan Amendment would not conflict with the goals of AB 32 or the AB 32 Scoping Plan. This impact is **less than cumulatively considerable**.

According to the EECAP, the forecast of unmitigated emissions at 2020 from County operations and growth would be 860,800 $MTCO_2e$.

GHG Emissions

The unincorporated county's 2005 emissions and 2020 unmitigated emissions are presented in **Table 3.5-4** by major sector. The largest source of GHG emissions in 2005 is transportation emissions, followed by nonresidential energy use. Unmitigated year 2020 emissions are based on current emissions, scaled by sector-specific growth rates.

[3] Emissions excluded from the inventory due to lack of relevance or deficient methodology include emissions from Caltrain, airport landings and take offs, and direct emissions from wastewater treatment and processing. An appropriate methodology for estimating life cycle emissions is still under development and is not recommended for inclusion in a community-wide inventory. Life cycle emissions are emissions associated with the production and disposal of items consumed by a community (i.e., "cradle-to-grave"). For instance, a life cycle assessment of vehicle emissions would include those from designing, extracting raw materials, producing, delivering, and disposing of each car in the unincorporated county. In contrast, this analysis only captures how much that car is driven in the unincorporated county consistent with standard protocol. Review of similar inventories, including the California Greenhouse Gas Inventory prepared by the CARB, indicates that those sources not included in the inventory for the reasons stated above comprise less than 5% of total emissions in the unincorporated county. The emissions identified in this report are primarily GHGs that the community has directly caused and has the ability to reduce through implementation of conservation actions, a GHG reduction strategy, or corresponding efforts.

TABLE 3.5-4
GHG EMISSIONS SUMMARY FOR 2005 (BASELINE) AND UNMITIGATED YEAR 2020 ($MTCO_2E$)

Existing and Unmitigated Emissions Projections ($MTCO_2e$)				
Sector	Existing		2020	
	Emissions (per year)	Percentage	Emissions (per year)	Percentage
Residential Energy	93,100	11.9%	100,500	11.7%
Nonresidential Energy	160,900	20.5%	194,600	22.6%
Solid Waste	8,380	1.1%	9,500	1.1%
Transportation	479,400	61.3%	506,800	58.9%
Water and Wastewater	1,500	0.2%	1,700	0.2%
Off-Road	35,800	4.6%	44,600	5.2%
Agriculture	3,000	0.4%	3,100	0.3%
Total	**782,080**	**100**	**860,800**	**100**

Source: San Mateo County 2012, Chapter 3

Note: $MTCO_2e$ = metric tons of carbon dioxide equivalent emissions

GHG Emissions Reduction Measures

As previously mentioned, in order for the County to achieve consistency with AB 32, forecast emissions will need to be reduced 15 percent by 2020 (to 664,800 $MTCO_2e$ per year).

The proposed EECAP describes the reduction measures that would be employed by the County, through implementation of the EECAP, and through a variety of state legislation and regulations. The combination of proposed new strategies indentified in the EECAP would be assembled into an integrated plan to reduce the countywide GHG emissions level.

The GHG reduction measures of the EECAP, as well as proposed General Plan Amendments, would substantially reduce projected unmitigated year 2020 emissions. The EECAP and General Plan Amendments include measures to address the resultant emissions of buildings (associated with energy use), transportation and land use emissions, solid waste emissions, agriculture emissions, and emissions generated for the energy used to pump water.

For instance, EECAP Measure 1.1, Energy Upgrade California, Measure 1.2, Residential Energy Efficiency Financing, and Measure 2.1, Commercial and Industrial Efficiency, are programs for energy efficiency upgrades and retrofits in existing commercial, residential, and industrial buildings by connecting residents and businesses with technical and financial assistance to achieve emissions reduction of 0.8 percent from 2020 unmitigated levels. In addition, EECAP Measure 1.3 seeks to take advantage of existing programs to encourage homeowners to perform energy efficiency retrofits. Specifically, the County will perform outreach to eligible low-income residents to encourage participation in weatherization programs that will allow them to upgrade their homes and achieve energy and cost savings.

As another example, EECAP Measure 5.3, Pedestrian Design (emissions reduction of 0.03 percent from 2020 unmitigated levels), would provide pedestrian access to uses within the site of new projects and will also link to destinations near new development. Barriers to pedestrian access

and interconnectivity would be mitigated. EECAP Measure 6.4, Expand Transit, would encourage SamTrans to reduce transit-passenger travel time through more reduced headways and increased speed and reliability. This measure would also seek to support improved access to transit facilities through sidewalk/crosswalk safety and bus shelter enhancements (EECAP Measure 6.4 in its entirety would equal emissions reduction of 0.04 percent from 2020 unmitigated levels).

GHG reduction measures would also result in GHG reductions for the solid waste sector. As outlined in EECAP Measure 13.1, the County proposes to increase the amount of waste that is recycled by requiring new development projects to incorporate a minimum of 15 percent of recycled materials into construction to encourage the market for recycled goods.

The reader is referred to Chapter 3 of the EECAP for a further description of GHG reduction measures.

GHG Reduction Quantification

Implementation of the proposed EECAP would result in GHG emissions reductions in the unincorporated county of approximately 67,000 $MTCO_2e$ by 2020. In addition, state-led reduction efforts are projected to result in the reduction of another 146,400 $MTCO_2e$. The San Mateo County EECAP, in conjunction with state-led efforts such as the Renewables Portfolio Standard, Clean Car Fuel Standard (Pavley), and Building Energy Efficiency Standards, would equal reductions of approximately 213,400 $MTCO_2e$ by 2020. This amount of GHG emissions reduction is equivalent to a 17.3 percent reduction from 2005 baseline emissions levels as shown in Table 3.5-5. Such reductions meet the goals established in AB 32 and the AB 32 Scoping Plan.

TABLE 3.5-5
ANNUAL GHG EMISSIONS REDUCTIONS FROM CAP MEASURES ($MTCO_2E$)

Emissions Inventory	
2005 Baseline Emissions Inventory	782,080
2020 Unmitigated Emissions Inventory	860,800
Reductions from 2020 Unmitigated Emissions Inventory	
San Mateo County Energy Efficiency Climate Action Plan	
Residential Energy Efficiency	-5,630
Commercial Energy Efficiency	-15,580
Green Building Ordinance	-6,780
Renewable Energy	-6,480
Transportation	-7,100
Alternative Fuels	-1,780
Waste Diversion	-15,010
Water Efficiency	-170
Sustainable Agricultural Practices	--
Off-Road Technologies	-8,470

Emissions Inventory	
Sequestration	--
Total CAP Emissions Reductions	**-67,000**
California State-Led Reduction Efforts	
Renewables Portfolio Standard	-10,900
Clean Car Fuel Standard (AB 1493 Pavley Vehicle Standards)	-130,700
CALGreen Building Standards (Building Energy Efficiency Standards)	-4,500
California Solar Initiative (CSI)	-300
Total State-Led Emissions Reductions	**-146,400**
Combined CAP and State Reductions	- 213,400
AB 32 Emissions Target (15% below 2005 Baseline Inventory)	**664,780**
San Mateo EECAP and State-Adjusted Inventory	647,400
AB 32 Target Achieved?	Yes

**Due to rounding, totals may not equal the sum of component parts.*

The proposed project would be consistent with AB 32 and the AB 32 Scoping Plan, as the GHG inventory for unincorporated San Mateo County would experience a 17.3 percent reduction below 2005 baseline levels (647,400 $MTCO_2e$), which exceeds the 15 percent (to 664,768 $MTCO_2e$) required under the provisions of AB 32. The implementation of the proposed project would be consistent with state goals to reduce GHG emissions. Thus, this impact is **less than cumulatively considerable.**

Mitigation Measures

None required.

Climate Change Environmental Effects on Unincorporated San Mateo County

Impact 3.5.2 The effects of climate change could result in the exposure of unincorporated San Mateo County to associated environmental effects. While the exact extent of the environmental effects of climate change on unincorporated San Mateo County is not known at this time, state provisions, in addition to proposed EECAP measures, address these effects. Thus the proposed project would not result in a new significant impact relating to the effect of climate change on unincorporated San Mateo County. There is **no impact**.

Subsequent implementation of the measures under the proposed General Plan Amendments and associated EECAP would serve as both climate change adaptation and GHG reduction measures. Adaptation and reduction measures are closely tied, but differ in that adaptation measures address the *effects* of climate change, whereas reduction measures address the *cause*.

There are two types of adaptation measures: operational changes and increases to adaptive capacity. Operational measures assess climate change vulnerabilities and sensitive populations on a regular basis. They also address climate change adaptation in planning and public safety documents. Adaptive capacity measures are strategies that help prepare for and adjust to the

impacts of climate change. Examples include the establishment of cooling centers during heat waves, promotion of energy efficiency and renewable energy to reduce peak load demand, and implementation of low-impact development standards to reduce stormwater runoff and increase groundwater recharge.

It should be noted that the adaptation measures of the proposed EECAP are meant to serve as a starting point for the County by including measures that would direct operational changes to identify potential climate change impacts and vulnerabilities but does not include adaptive capacity measures to address specific climate change impacts. The EECAP's adaptation strategies are intended to ensure climate change adaptation is adequately incorporated into future planning efforts by guiding County staff involvement in coordinating, preparing for, and educating the public on the potential impacts that climate change may have on the community.

A vulnerability assessment for San Mateo County was conducted as a collaborative effort between ICLEI-Local Governments for Sustainability, PMC, and San Mateo County's Planning and Building Department, as well as the San Mateo County Vulnerability Assessment Working Group. The working group included staff representatives from County departments such as Parks and Recreation, Planning, Public Health, and Public Works and external experts and stakeholders, including the BCDC, the California Coastal Commission, the California Department of Forestry and Fire Protection (CAL FIRE), and PG&E. The working group provided local data and information needed to create the analysis.

The assessment considered four components of vulnerability—exposure, sensitivity, adaptive capacity, and timing. The exposure assessment was used to identify key impacts that San Mateo County will probably face. In cases where an impact was identified, sensitivity and adaptive capacity levels were used to create a vulnerability level. Finally, the potential timing of impacts was used to create an additional screen to determine the unincorporated county's greatest current threats. As noted in the vulnerability assessment, potential consequences of climate change include the following:

- Decreased supply of fresh water.
- Increased severity of flood events.
- Shoreline damage.
- Increased rate of fires.
- Loss of natural resources.
- Increased forestry and agricultural vulnerability.
- Deterioration of public health.

Impacts on Water Supply

The state's water supply is already under stress and is anticipated to shrink under even the most conservative climate change scenario. Warmer average global temperatures cause more rainfall than snowfall, making the winter snowfall season shorter and accelerating the rate at which the snowpack melts in the spring. The Sierra snowpack is estimated to experience a 25–40 percent reduction from its average by 2050 (CNRA 2009). With rain and snow events becoming

less predictable and more variable, the rate of flooding could increase and California's ability to store and transport fresh water for consumption could decrease. Further, warmer weather will lead to longer growing seasons and increased agricultural demand for water (CNRA 2009).

The County General Plan contains several policies that address environmental effects on these resources. For instance, General Plan Policy 1.25 seeks to ensure that development maintains and improves, if possible, the quality of groundwater basins and recharge areas, and prevents to the greatest extent possible, the depletion of groundwater resources. Policy 1.22 regulates land uses and development activities to prevent and mitigate significant adverse impacts on water resources to the extent possible.

Furthermore, the proposed EECAP contains measures to improve water conservation efforts. For example, EECAP Measure 14.1 proposes to work with water companies that serve the community to install smart water meters on 50 percent of residential and commercial customers by 2015 and 95 percent by 2020. EECAP Measure 14.2 would increase the use of grey, rain, and recycled water for landscaping and agricultural purposes throughout the community to reduce the use of potable water.

In addition to County efforts, the California Department of Water Resources (DWR), in collaboration with the State Water Resources Control Board, other state agencies, and numerous stakeholders, has initiated a number of projects to begin climate change adaptation planning for the water sector including the development of an adaptation strategy entitled *Managing an Uncertain Future: Climate Change Adaptation Strategies for California's Water* (DWR 2008). This report details how climate change is already affecting the state's water supplies and sets forth ten adaptation strategies to help avoid or reduce climate change impacts to water resources, such as water conservation strategies, the enhancing of wetland ecosystems, and the expansion of water storage and conjunctive management of surface and groundwater resources. Other strategies include fixing the Sacramento- San Joaquin Delta water supply system, water quality, and ecosystem conditions, the practice of integrated flood management, and the provision for sustainable funding for statewide and integrated regional water management (DWR 2008).

According to the adaptation strategies of the report (DWR 2008), all urban water management plans must include provisions to fund and implement all economic, feasible, and legal urban best management practices established by the California Urban Water Conservation Council. Best management practices include residential ultra-low-flush toilet replacement programs, conservation pricing, large landscape conservation, and high-efficiency clothes washer rebates (DWR 2008, p. 13). In addition, the Water Conservation in Landscaping Act of 2006 (AB 1881) required DWR to update the existing Model Water-Efficient Landscape Ordinance (model ordinance) (DWR 2008, p. 13). Under this ordinance, local agencies in the state are required to adopt either the updated model ordinance or their own local landscape ordinance that is at least as effective. The updated model ordinance reflects new technology and advances in landscape water management and seeks to increase outdoor water conservation through improved landscape design, management, and maintenance. In addition, the model ordinance provides guidance to local agencies in developing and adopting landscape ordinances leading to water savings, which will reduce water demand, waste, and water-related energy use (DWR 2008, p. 13). The ultimate goal of the water conservation measures highlighted in the report is to achieve a statewide 20 percent reduction in per capita water use in 2020 (DWR 2008, p. 12).

Increased Severity of Flooding Events, Including from Sea Level Rise

Regarding the increased threat from flooding, General Plan Policy 9.42c states that where possible, development is required to be located in areas that are free from hazardous conditions, including but not limited to areas of special flood hazard. Furthermore, one of the mid-term adaptation measures of the proposed EECAP would revise local and regional flood zone maps, and coordinate with state and federal agencies to identify areas that will be subject to inundation as a result of changes in sea level or storm events. One of the long-term measures of the EECAP proposes to develop resource management plans to address anticipated changes in sea level and extreme events on public beaches, wetlands, tidal pools, and similar shoreline resources.

In addition, the state is in the process of establishing a System Reoperation Task Force comprising state personnel, federal agency representatives, and appropriate stakeholders that will support the update of flood frequency analyses on major rivers and streams and evaluate the need to amend flow objectives (DWR 2008, p. 17-18). Furthermore, in order to coordinate California's water supply and flood management operations, state and federal agencies collaboratively established the Joint Operations Center (DWR 2008, p. 18). Year-round, the Joint Operations Center is the focal point for the gathering, analysis, and dissemination of flood and water-related information to stakeholders.

Shoreline damage

Sea level rise is attributed to the increase of ocean temperatures and the resulting thermal expansion and melting of ice sheets, which contribute to the volume of water held in the oceans. The speed and amount of sea level rise will be determined by the increase in average temperatures and rate of melting of glacial ice. While there is a degree of uncertainty in the magnitude of projections, to date, the actual impacts of climate change have been more severe than the projections. While the unincorporated area of San Mateo County has very little bay shoreline, it has more than 50 miles of coastal shoreline. Changes in sea level might not directly impact county lands, but facilities that are essential to the county function might be at risk and sea level rise will probably have negative effects on the coastal shoreline.

The EECAP has several adaptation measures related to protection of the County's shorelines. Adaptation Measure 2.6 calls for creation of a shoreline and coastal protection strategy that can prevent erosion and damage from flooding and Measures 2.7 and 2.8 call for nonstructural shoreline and coastal protection methods to provide protection from flooding and control erosion.

Increased Wildland Fire Hazards

All development in the unincorporated county that is at risk for wildland fire hazards is required to comply with the California Fire Code (Title 24, Part 9 of the California Code of Regulations), which requires construction methods that mitigate wildfire exposure be applied in geographical areas where wildfire burning in vegetative fuels may readily transmit fire to buildings and threaten to destroy life, overwhelm fire suppression capabilities, or result in large property losses. The California Fire Code establishes minimum standards for materials and material assemblies to provide a reasonable level of exterior wildfire exposure protection for buildings in wildland-urban interface areas and requires the use of ignition-resistant materials and design to resist the intrusion of flame or burning embers projected by a vegetation fire.

General Plan Policy 15.28 includes criteria for locating development in fire hazard areas related to building materials, access, vegetative clearance from structures, fire flows, and water supplies adequate for fire protection purposes. In addition, Policy 15.30 provides standards for water supply and fire flow for new development.

CAL FIRE has several programs that support vegetation management and fuel hazard reduction activities (mechanical treatments and prescribed burning). These can be used to increase forest health and resilience to climate impacts (CNRA 2009, p. 114). In recent years, both state and federal fuel reduction priorities have focused on the wildland-urban interface, the area where at-risk forests and rangelands meet structure and human development. In 2001, federal agencies and the Western Governors' Association approved "A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment," a 10-year strategy to improve fire suppression, prevention, fuels reduction, and recovery and to restore fire-adapted ecosystems through collaboration among states, federal agencies, and stakeholders. The plan includes the use of prescribed fire, mechanical treatments, and wildland fire use, and seeks to reduce barriers to treatments through policies and incentives (CNRA 2009, p. 115).

As a result, CAL FIRE has increased fire suppression readiness to meet changing climate conditions (CNRA 2009, p 115). Recommendations from the Governor's Blue Ribbon Commission are being implemented to replace aging fire engines and to provide a higher level of firefighter safety (CNRA 2009, p. 115). Emerging remote sensing technologies are being tested on major fires to provide real-time planning tools to incident commanders and fire managers, and new air tanker platforms, including the DC-10, are being evaluated for large and remote fires (CNRA 2009, p. 115). Recent Governor's Executive Orders have also provided increased staffing, additional aircraft availability, and other support for periods of critical fuel and weather conditions (CNRA 2009, p. 115).

Loss of Natural Resources

The General Plan seeks to reduce potential impacts to special-status species and habitats such as forestlands and wetlands. For instance, Policy 1.22 seeks to regulate land uses and development activities to prevent, and if infeasible mitigate to the extent possible, significant adverse impacts on vegetative, water, fish, and wildlife resources and requires priority be placed on the managed use and protection of vegetative, water, fish, and wildlife resources in rural areas of the county. General Plan Policy 1.24 ensures that development minimizes the removal of vegetative resources, protects vegetation that enhances microclimate, and protects historic and scenic trees. Policy 1.27 regulates land uses and development activities within and adjacent to sensitive habitats in order to protect critical vegetative, water, fish, and wildlife resources; protect rare, endangered, and unique plants and animals from reduction in their range or degradation of their environment; and seeks to protect and maintain the biological productivity of important plant and animal habitats.

Beginning in 2009, the California Department of Fish and Game and California State Parks have made climate change a priority in addressing the complex and large-scale challenges needed for conserving biodiversity and habitat (CNRA 2009, p. 56). Both of these departments are an important part of the climate change solution and are working collaboratively with stakeholders to create strategies for addressing climate change impacts while responding to public needs. Some of these strategies include the development of a system of sustainable habitat reserves. The intent of this strategy is to identify and improve a statewide landscape reserve system to protect the maximum number of representative plant and animal species in California. Another identified strategy proposes the appointment of a permanent team of researchers and land

managers to ensure that the best available science is used in management, restoration, and species protection (CNRA 2009, p. 62).

Urban forestry has a significant role in adaptation to rising temperature and precipitation runoff events. Increased street tree cover provides shade relief to pedestrians and other residents, absorbs pollutants including ozone and CO_2 which may increase with climate change, and reduces stormwater pollution and flooding. A 10 percent increase in vegetation cover can reduce ambient temperatures by 1 to 2 degrees (CNRA 2009, p. 115). Urban forests also provide significant co-benefits, reducing habitat fragmentation and mitigating GHG emissions through sequestration and by reducing energy use for buildings (CNRA 2009, p. 115). CAL FIRE urban forestry activities, funded through state bonds authorized under Propositions 40 and 84, help plant trees and support local agencies and nonprofits in planning, implementing, and monitoring urban forestry programs (CNRA 2009, p. 115). CAL FIRE helped develop urban forestry carbon protocols to provide incentives for increased urban forest development and will continue to work with local and federal agencies and the private and nonprofit sector to expand and enhance urban forests. Additionally, proposed EECAP Measure 3.3 requires tree planting and shading design for new development and Measure 16.1 identifies opportunities for forestry sequestration on County and other publicly owned lands.

Adverse Impacts on Agricultural Resources

The County General Plan includes policies that address potential impacts to agricultural lands. For instance, Policy 2.18 encourages the continuance and expansion of soil protective uses in rural areas, specifically agriculture and forestry. Policy 6.12 seeks to preserve the best agricultural land for agricultural uses. Additionally, proposed EECAP Measure 12.1 would streamline regulations for the farming community to support sustainable practices. For instance, Measure 12.1 would simplify the permitting process for water permits and off-stream ponds for agricultural uses that can be used for summer irrigation and reduce the use of stream and potable water. This measure also proposes to identify special overlay zones to allow for appropriate farming practices in sensitive areas that would contribute to the County's land use goals, as appropriate, based on activities to control erosion and other land impacts, to work with the Mid-Peninsula Regional Open Space District and stakeholders to identify appropriate agricultural uses, and to encourage urban agriculture through zoning and land use designations, and support an expansion of certified farmers markets.

Furthermore, the California Department of Food and Agriculture and California Department of Conservation are developing strategies to address impacts to state agricultural resources resulting from climate change. Some of these strategies include the support of research and development for more drought-tolerant cultivars, crop rotations, and crop mixtures, increased vigilance and development of a long-term funding strategy at the state's port-of-entry inspection stations to prevent entry of new diseases, pests, and weeds, and the encouragement of crop diversification among farming operations (CNRA 2009, p. 101–105).

Adverse Impact to Public Health

As mentioned above, public health could be adversely affected by a shifting climate. The Public Health Climate Change Adaptation Work Group, in concert with the Department of Public Health, has identified several priorities for public health adaptation for climate change (CNRA 2009, p. 40). One of these identified priorities involves the increase of ground cover and shading by expanding urban forests, community gardens, parks, and native vegetation-cover, as well as open spaces, in order to reduce urban heat islands, which are prone to develop when high ratios of paving material exist compared with natural ground cover. Another priority involves the

improvement of disease reporting, management, and surveillance by replacing the current paper-based system with a secure electronic system. The Centers for Disease Control and Prevention is exploring ways to develop rapid surveillance by coordinating with larger entities such as the Regional Health Information Organizations and Health Information Exchanges (CNRA 2009, p. 42).

Based on consideration of the cited General Plan policy provisions and proposed EECAP measures, as well as the extensive statewide strategies and efforts cited above that address and seek to address the environmental effects of climate change, it is reasonably expected that the environmental effects of global climate change on the unincorporated portions of San Mateo County would not result in a substantial increase in severity as a result of the proposed project. To ensure climate change adaptation is adequately incorporated into future planning efforts, the EECAP includes measures to guide County staff involvement in coordinating, preparing for, and educating the public on the potential impacts that climate change may have on the community. Thus, there is no impact.

Mitigation Measures

None required.

REFERENCES

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4.0 ALTERNATIVES

4.1 INTRODUCTION TO THE ALTERNATIVES ANALYSIS

California Environmental Quality Act (CEQA) Guidelines Section 15126.6(a) states that an environmental impact report (EIR) shall describe and analyze a range of reasonable alternatives to a project. These alternatives should feasibly attain most of the basic objectives of the project, while avoiding or substantially lessening one or more of the significant environmental impacts of the project. An EIR need not consider every conceivable alternative to a project, nor is it required to consider alternatives that are infeasible. The discussion of alternatives shall focus on those which are capable of avoiding or substantially lessening any significant effects of the project, even if they impede the attainment of the project objectives to some degree or would be more costly [CEQA Guidelines Section 15126.6(b)].

When addressing feasibility, CEQA Guidelines Section 15126.6 states that "among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, jurisdictional boundaries, and whether the applicant can reasonably acquire, control or otherwise have access to alternative sites." The CEQA Guidelines also specify that the alternatives discussion should not be remote or speculative; however, they need not be presented in the same level of detail as the assessment of the proposed project.

CEQA Guidelines indicate that several factors need to be considered in determining the range of alternatives to be analyzed in an EIR and the level of analytical detail that should be provided for each alternative. These factors include (1) the nature of the significant impacts of the proposed project; (2) the ability of alternatives to avoid or lessen the significant impacts associated with the project; (3) the ability of the alternatives to meet the objectives of the project; and (4) the feasibility of the alternatives. These factors would be unique for each project.

INTRODUCTION

As discussed in Section 2.0, Project Description, to fulfill the purposes of the proposed project, the County has identified the following objectives:

- Adopt an Energy Efficiency Climate Action Plan to reduce greenhouse gas (GHG) emissions consistent with the target reductions of Assembly Bill (AB) 32 and the AB 32 scoping plan, as well as the locally adopted GHG emission reduction targets.
- Provide a list of actions that will reduce GHG emissions.
- Create a framework to address vulnerabilities and prepare for adaptation to the impacts of climate change.
- Establish an Energy Efficiency Climate Action Plan that will streamline future environmental review of projects in the unincorporated county by following Section 15183.5 of the CEQA Guidelines and meeting the Bay Area Air Quality Management District's expectation for a Qualified GHG Reduction Strategy.
- Identify updates to complete the County General Plan, Subdivision, Building, and Zoning Regulations.

The impact analysis provided in Sections 3.1 though 3.5 has identified that the proposed Energy Efficiency Climate Action Plan (EECAP) would result in the following significant and unavoidable impacts:

- Impact 3.3.1 – Natural Habitat Areas/Sensitive Species/Wildlife Corridors

As identified in Section 3.3, Biological Resources, implementation of EECAP Measures 4.1, 4.2, 4.3, 4.4, 4.6, and 4.7 would support installation of small-scale renewable energy systems, including solar photovoltaic, solar hot water, pre-wired solar homes, a pilot solar program, and wind energy within the county. Construction and operation of these facilities would have the potential to impact biological resources. Specifically, implementation of EECAP measures could involve installation of wind generators and other renewable energy facilities that have the potential to impact sensitive and special-status species.

4.2 ALTERNATIVES CONSIDERED BUT REJECTED

CEQA Guidelines Section 15126.6(c) states that an EIR should identify any alternatives considered by the lead agency but rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (1) failure to meet most of the basic project objectives, (2) infeasibility, or (3) inability to avoid significant environmental impacts.

The alternatives that were considered but rejected consist of the following:

Reduced Wind Energy Facilities Alternative—The possibility of reducing the amount of (rather than entirely eliminating) wind energy facilities allowed under the EECAP was not feasible. This alternative could, in theory, reduce potential impacts to special-status birds, raptors, and bats due to collisions with wind turbines associated with the proposed project while retaining the lack of significant impacts for air quality and greenhouse gas. However, the EECAP policies associated with wind energy (Measures 4.6 and 4.7) only encourage and incentivize wind energy within the county. Although the EECAP identifies an estimated level of voluntary installation of facilities in Measure 4.7, the EECAP does not identify the number of facilities that would be allowed or would be built. Because the project does not describe a definite number of wind energy facilities to be constructed for the EECAP, but rather only estimated a likely range of voluntary participation, a reduced wind energy alternative cannot be defined and, therefore, also cannot be quantified.

Renewable Energy-Generating Facility Restriction Alternative—The County considered an alternative that eliminates policies and measures that encourage or provide incentives for development of facilities that may result in physical effects, while maintaining EECAP policies and measures that include actions such as promoting energy conservation, recycling, and waste reduction, performing outreach to reduce energy consumption, and encouraging the continuation of existing energy reduction programs and use of alternative transportation. The possibility of eliminating EECAP Measures 4.1, 4.2, 4.3, 4.4, 4.6, and 4.7 that support installation of small-scale renewable energy systems, including solar photovoltaic, solar hot water, pre-wired solar homes, a pilot solar program, and wind energy within the county, was considered but rejected. While this alternative would result in a reduction of physical effects (e.g., biological resources), it would not result in a reduction of impacts related to air quality and greenhouse gases

and climate change. Elimination of component of the EECAP would result in a project that is generally inconsistent with the project objective of meeting the target reductions of AB 32 and the AB 32 scoping plan, as well as the locally adopted GHG emission reduction targets. Therefore, this alternative was rejected.

4.3 ALTERNATIVES ANALYZED IN THE EIR

As discussed above, the significant unavoidable impacts identified for the proposed project are related to bird and bat mortality due to collisions with wind energy facilities. Therefore, the alternatives below include the CEQA-required No Project Alternative and an alternative that eliminates wind energy facilities entirely.

- Alternative 1—No Project Alternative
- Alternative 2—Wind Energy Generating Facility Restriction Alternative

ALTERNATIVE 1—NO PROJECT ALTERNATIVE

Under this alternative, the proposed EECAP would not be adopted and the General Plan would remain as it is currently adopted. This alternative is consistent with CEQA Guidelines Section 15126.6(e)(3)(A).

Environmental Analysis

Aesthetics and Visual Resources

As identified in Section 3.1, Aesthetics and Visual Resources, the proposed project's impacts related to increase in daytime glare and/or nighttime lighting were potentially significant and reduced to less than significant after mitigation. Alternative 1 would retain the existing General Plan and, as such, would not implement policies that encourage construction of alternative energy sources within the county that would create new sources of light or glare. As such, Alternative 1 would not require mitigation related to light and glare, and therefore would result in a less severe light and glare impact than the proposed project.

Air Quality

As identified in Section 3.2, Air Quality, the proposed project's impacts related to short-term construction-generated air pollutants and toxic air contaminants were potentially significant and reduced to less than significant with mitigation. Alternative 1 would retain the existing General Plan and, as such, would not implement policies that encourage construction of alternative energy sources within the county that would reduce emissions from electrical generation plants, nor would it implement additional measures to reduce vehicle miles traveled, which would reduce criteria pollutant emissions from vehicular travel. Thus, although this alternative would not result in the construction of facilities that could themselves result in construction or operational air quality impacts, Alternative 1 would result in a more severe impact on air quality due to an overall increase in emissions from conventional electrical generation plants and vehicle miles traveled compared to the proposed project.

Biological Resources

As identified in Section 3.3, Biological Resources, the proposed project's impacts related to sensitive and special-status species and their associated habitat and migratory corridors were

significant and unavoidable. Alternative 1 would retain the existing General Plan and would, therefore, not result in an increase in severity of impacts related to sensitive and special-status species and their associated habitat and migratory corridors. Therefore, Alternative 1 would result in less of an impact than the proposed project.

Historical, Archaeological, and Paleontological Resources

As identified in Section 3.4, Historical, Archaeological, and Paleontological Resources, the proposed project's impacts related to potential disturbance of paleontological resources (i.e., fossils and fossil formations) within the county were potentially significant and reduced to less than significant with mitigation. Alternative 1 would retain the existing General Plan and would not encourage the construction of alternative energy facilities. Therefore, this alternative would not result in an increase in severity of impacts related to paleontological resources and Alternative 1 would result in a less severe impact than the proposed project.

Greenhouse Gases and Climate Change Adaptation

As identified in Section 3.5, Greenhouse Gases and Climate Change Adaptation, implementation of the proposed project would implement a number of activities that are consistent with the reduction target of AB 32 and reduction strategies which are consistent with the early emissions reduction strategies contained in the AB 32 Scoping Plan Report. No significant greenhouse gas or climate change impacts were identified for the proposed project. Alternative 1 would not include the EECAP and the associated greenhouse gas reduction measures and would hinder the County's ability to attain consistency with AB 32 for all activities under the County's jurisdiction. Thus, Alternative 1 would result in a more severe impact to climate change and greenhouse gas emission reductions as compared to the proposed project.

ALTERNATIVE 2 – WIND ENERGY-GENERATING FACILITY RESTRICTION ALTERNATIVE

Alternative 2 is similar to the proposed project and would implement the reduction measures that are proposed in the EECAP. In order to address the biological resources impacts associated with the proposed project, Alternative 2 would eliminate measures from the EECAP that would promote of encourage the development of wind energy facilities. The analyses below consider the potential effects if additional, low-GHG-generating energy facilities are developed to address the reduction in wind facilities. However, because the types of sites used for wind facilities may not be well suited for other types of facilities, such as solar, this alternative assumes that the amount of low-GHG-generating energy facilities would be reduced compared with the proposed project.

Environmental Analysis

Aesthetics and Visual Resources

As identified in Section 3.1, Aesthetics and Visual Resources, the proposed project's impacts related to increase in daytime glare and/or nighttime lighting were potentially significant and reduced to less than significant after mitigation. While other types of alternative energy-generation facilities, such as solar, could be developed under this alternative, Alternative 2 would reduce light and glare impacts by eliminating measures that encourage the construction of wind energy installations within the county. Therefore, any light and glare that would be generated by wind energy facilities would be reduced under this alternative. It is unknown at this time if additional non-wind-related energy facilities would be developed to accommodate

for the elimination of the potential wind facilities under this alternative. Assuming non-wind-related facilities are intensified in order to meet AB 32 requirements, these facilities would also result in some increases in light and glare, so the overall amount of light and glare may be similar to the proposed project. Based on this assumption, Alternative 2 would have similar aesthetic and visual resource impacts to the proposed project. However, assuming there would be fewer overall facilities developed under this alternative than the proposed project due to the elimination of wind facilities, the visual impacts of this alternative would be less than that of the proposed project.

Air Quality

As identified in Section 3.2, Air Quality, the proposed project's impacts related to short-term construction-generated air pollutants and toxic air contaminants were potentially significant, but reduced to less than significant with mitigation. Alternative 2 would eliminate policies that encourage wind energy facilities within the county that would reduce emissions from electrical generation plants. If additional non-wind-related energy facilities would be developed to accommodate the elimination of the potential wind facilities under this alternative, the air quality impacts of this alternative would be similar to those of the proposed project. However, if additional alternative energy facilities to offset the lack of wind energy facilities are not constructed, Alternative 2 would result in a more severe impact on air quality as compared to the proposed project, because this alternative would be required to rely upon traditional, more pollutant-intensive energy-generating facilities.

Biological Resources

As identified in Section 3.3, Biological Resources, the proposed project's impacts related to sensitive and special-status species and their associated habitat and migratory corridors were significant and unavoidable. Alternative 2 would not encourage wind facilities within the county, and therefore would eliminate the potential impacts to special-status birds, raptors, and bats due to collisions with wind turbines associated with the proposed project. Other types of facilities would not pose the same risks to loss of birds, raptors, and bats. Therefore, Alternative 2 would result in a substantially less impact than the proposed project.

Historical, Archaeological, and Paleontological Resources

As identified in Section 3.4, Historical, Archaeological, and Paleontological Resources, the proposed project's impacts related to potential disturbance of paleontological resources (i.e., fossils and fossil formations) within the county were potentially significant and reduced to less than significant after mitigation. Development under Alternative 2 would be subject to the same regulations and paleontological resources mitigation measures as the proposed project, and would therefore have similar historical, archaeological, and paleontological resources impacts as the proposed project. However, if this alternative results in less construction due to an overall reduction in facilities (specifically related to wind facilities), this alternative would result in a less severe impact than the proposed project.

Greenhouse Gases and Climate Change Adaptation

As identified in Section 3.5, Greenhouse Gases and Climate Change Adaptation, implementation of the proposed project would implement a number of activities that are consistent with the reduction target of AB 32 and reduction strategies, which are consistent with the early emissions reduction strategies contained in the AB 32 Scoping Plan Report. No significant greenhouse gas or climate change impacts were identified for the proposed project.

Alternative 2 would eliminate the encouragement of construction of wind-powered energy facilities within the county. Elimination of the measures would reduce the county's ability to meet the requirements of AB 32, as well as to achieve the goals of the EECAP. If additional non-wind-related energy facilities would be developed to accommodate the elimination of the potential wind facilities under this alternative, there would be similar climate change and greenhouse gas reductions as the proposed project. If additional facilities are not developed to offset the elimination of wind facilities, Alternative 2 would result in a more severe impact to climate change and greenhouse gas emission reductions as compared to the proposed project. In addition, this alternative may not be able to attain the requirements of AB 32 with an overall reduction in alternative energy facilities.

4.4 ALTERNATIVE COMPARISON

Table 4.0-1 provides a summary of the potential impacts of the EIR alternatives evaluated in this section, as compared with the potential impacts of the proposed EECAP. The impact significance is identified for the No Project Alternative and the Wind Energy Generating Facility Restriction Alternative as is the ranking of the impact as compared to the proposed project. An "L" ranking means the alternative would result in "less" of an impact; a "W" ranking means the alternative would result in a "worse" impact; and the "S" ranking identifies where the impact of the alternative is "similar" to the proposed project.

TABLE 4.0-1
SUMMARY COMPARISON OF ALTERNATIVES

Environmental Impacts	Proposed Project	Alternative 1 No Project	Alternative 2 Wind Energy Restriction
Aesthetics and Visual Resources			
New sources of light or glare	Less than significant with mitigation incorporated	Less than significant	Less than significant with mitigation incorporated
Ranking		L	L
Air Quality			
Short-term construction-generated air pollutants and toxic air contaminants	Less than significant with mitigation incorporated	Potentially significant	Less than significant with mitigation incorporated
Ranking		W	W
Biological Resources			
Sensitive and special-status species and their associated habitat and migratory corridors	Significant and unavoidable	Less than significant	Less than significant
Ranking		L	L
Historical, Archaeological, and Paleontological Resources			
Disturbance of paleontological resources	Less than significant with mitigation incorporated	Less than significant	Less than significant with mitigation incorporated
Ranking		L	L

Environmental Impacts	Proposed Project	Alternative 1 No Project	Alternative 2 Wind Energy Restriction
Greenhouse Gases and Climate Change Adaptation			
Consistency with AB 32 and the AB 32 Scoping Plan	No impact	Potentially significant	Potentially significant
Ranking		W	W

Notes:

L Alternative would result in less adverse impacts than the proposed project.
S: Alternative would result in similar conditions as the proposed project.
W: Alternative would result in worse impacts than the proposed project.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Alternative 1 would result in fewer physical environmental impacts, particularly with regard to the significant and unavoidable impact related to biological resources, but Alternative 1 would not meet any of the project objectives. In addition, Alternative 1 would not be consistent with the target reductions of AB 32 and the AB 32 scoping plan or reduce GHG emissions. Similarly, Alternative 2 could provide benefits associated with reduction of biological resources impacts relative to the proposed project, but it too may not be consistent with the target reductions of AB 32 and the AB 32 scoping plan or reduce GHG emissions.

As discussed in Section 3.5, the effects of climate change could include negative impacts related to public health, flooding and drought, water resources, habitats and species, and sea level rise. Therefore, although the proposed EECAP would result in significant impacts on biological resources, the proposed project would be considered the environmentally superior due to its ability to reduce overall GHG emissions in the county and curbing air pollutants.

5.0 Other CEQA Analysis

This chapter summarizes potential cumulative impacts, significant unavoidable impacts, growth-inducing effects, and impacts found not to be significant associated with the proposed San Mateo County Energy Efficiency Climate Action Plan (EECAP), referred to hereafter as the proposed project. The purpose of this Draft Environmental Impact Report (Draft EIR) is to satisfy California Environmental Quality Act (CEQA) requirements by addressing the environmental effects specific to the implementation of the proposed project.

5.1 CUMULATIVE IMPACTS

INTRODUCTION

CEQA requires that an environmental impact report (EIR) contain an assessment of the cumulative impacts that could be associated with the proposed project. According to CEQA Guidelines Section 15130(a), "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." *Cumulatively considerable* means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (as defined by Section 15130). As defined in CEQA Guidelines Section 15355, a cumulative impact is an impact created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. A cumulative impact occurs from:

> . . . the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

In addition, Section 15130(b) identifies the following elements as necessary for an adequate cumulative impact analysis:

1) Either:

   a. A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or,

   b. A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

2) A definition of the geographic scope of the area affected by the cumulative effect and a reasonable explanation for the geographic limitation used;

3) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and

4) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

Where a lead agency is examining a project with an incremental effect that is not cumulatively considerable, a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

Approach to the Cumulative Impact Analysis

CEQA Guidelines Section 15130 requires that an EIR include an analysis of the cumulative impacts of a project when the project's effect is considered cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (CEQA Guidelines, Section 15065(a)(3)). The determination of whether the project's impact on cumulative conditions is considerable is based on a number of factors, including consideration of applicable public agency standards, consultation with public agencies, and expert opinion.

The cumulative setting conditions considered in this Draft EIR are based on the San Mateo General Plan and any additional impacts that may occur as a result of implementation of the proposed project. The Draft EIR cumulative analysis focuses on whether there is a significant cumulative impact and whether the project's contribution to that impact is cumulatively considerable. Each technical section of this Draft EIR contains the cumulative discussion for the resources being evaluated.

5.2 EFFECTS FOUND NOT TO BE CUMULATIVELY CONSIDERABLE

Since no impacts related to agricultural and forestry resources, odors, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population/housing, public services, recreation, transportation and traffic, and utilities and service systems were identified for the proposed project, the project would not contribute to potential cumulative effects in these areas. These issues are, therefore, not discussed in this cumulative analysis. With the exception of potential impacts on some sensitive and special-status species, specifically bats and raptors and other bird species, the proposed EECAP would not result in considerable contributions to cumulative impacts.

5.3 SIGNIFICANT UNAVOIDABLE IMPACTS

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, including those that cannot be reduced to less than significant with the implementation of feasible mitigation measures. The environmental effects of the proposed project on various aspects of the environment are discussed in detail in Chapter 3 of this Draft EIR. Project-specific impacts that cannot be avoided if the project is approved as proposed are listed below.

Implementation of the proposed EECAP could have substantial impacts on some sensitive and special-status species, specifically bats and raptors and other bird species.

5.4 GROWTH-INDUCING IMPACTS

Implementation of the proposed project would not alter the growth potential of the San Mateo General Plan. The proposed project does not propose any changes to land use or zoning designations that would alter the planned population or job growth anticipated under the General Plan. Additionally, there are no components of the proposed project that would remove an obstacle to additional growth or development, such as removing a constraint on a required public service.

5.5 EFFECTS FOUND NOT TO BE SIGNIFICANT

CEQA Guidelines Section 15128 requires an EIR briefly describe any possible significant effects that were determined not to be significant and were therefore not discussed in detail in the EIR. For purposes of this Draft EIR, the following topics were found not to be significant and were eliminated from further evaluation (see Chapter 3, Section 3.1.1, in this Draft EIR): agricultural and forestry resources, odors, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population/housing, public services, recreation, traffic and circulation, and public utilities and service systems. Impacts to aesthetics, air quality, cultural resources, and greenhouse gases and climate change are analyzed in this Draft EIR. These impacts are disclosed in Section 3.3 of this Draft EIR.

5.6 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

INTRODUCTION

Public Resources Code Section 21100(b)(2), a part of CEQA, requires that EIRs prepared for the adoption of a plan, policy, or ordinance of a public agency must include a discussion of significant irreversible environmental changes of project implementation. In addition, CEQA Guidelines Section 15126.2(c) describes irreversible environmental changes as follows:

> *Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.*

As noted above, the proposed project does not propose any changes to land use or zoning designations that would alter the planned population or job growth anticipated under the General Plan such that there would be additional growth. The proposed project does not propose new development; the EECAP encourages transit-oriented and mixed-use development in appropriate locations. The EECAP also encourages construction of energy-generating facilities and energy retrofits on existing structures, which would entail a small commitment of energy and building materials. This commitment of energy and building materials would be commensurate with that of other projects of similar magnitude. Operation of new energy-generating facilities may entail a further commitment of energy resources in the form of natural gas, electricity, and water resources. However, this commitment would be minimal, consisting of routine maintenance of solar panels and wind turbines. The EECAP does not propose any development that would otherwise entail commitment of energy resources. The EECAP would reduce long-term energy demand and the corresponding impacts.

6.0 REPORT PREPARATION

SAN MATEO COUNTY

Planning Manager	Matthew Seubert

PMC – EIR CONSULTANT

EIR Project Manager	Patrick Hindmarsh
Technical Analysts	Joyce Hunting, Josh Kinkade, Seth Myers
Document Production	Jolene Miller
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APPENDICES

APPENDIX A – NOTICE OF PREPARATION

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650/363-4161 Fax: 650/363-4849
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plngbldg@co.sanmateo.ca.us
www.co.sanmateo.ca.us/planning

NOTICE OF EIR PREPARATION
NOTICE OF EIR SCOPING MEETING

To: Responsible Agencies, Trustee Agencies, and Other Interested Parties

Subject: Notice of Preparation of a Draft Environmental Impact Report

From: County of San Mateo
Street Address: 455 County Center, 2nd Floor
City/State/Zip: Redwood City, CA 94063
Contact: Matthew Seubert; (650) 363-1829

The County of San Mateo will be the lead agency and will prepare an Environmental Impact Report (EIR) for the proposed Energy Efficiency Climate Action Plan (EECAP) identified below. We are interested in comments from your agency as to the appropriate scope and content of the EIR's environmental information pertaining to your agency's statutory responsibilities in connection with the proposed project.

Due to the time limits mandated by state law, your response to this notice must be sent at the earliest possible date but ***not later than 30 days*** after receipt of this notice; that is, no later than 5 p.m. on June 19, 2012.

Please send your response to the County of San Mateo, Attention: Matt Seubert, Planning and Building Department, 455 County Center, 2nd Floor, Redwood City, CA 94063. Please provide a contact name for your agency with your comments.

Project Title: Energy Efficiency Climate Action Plan (EECAP)

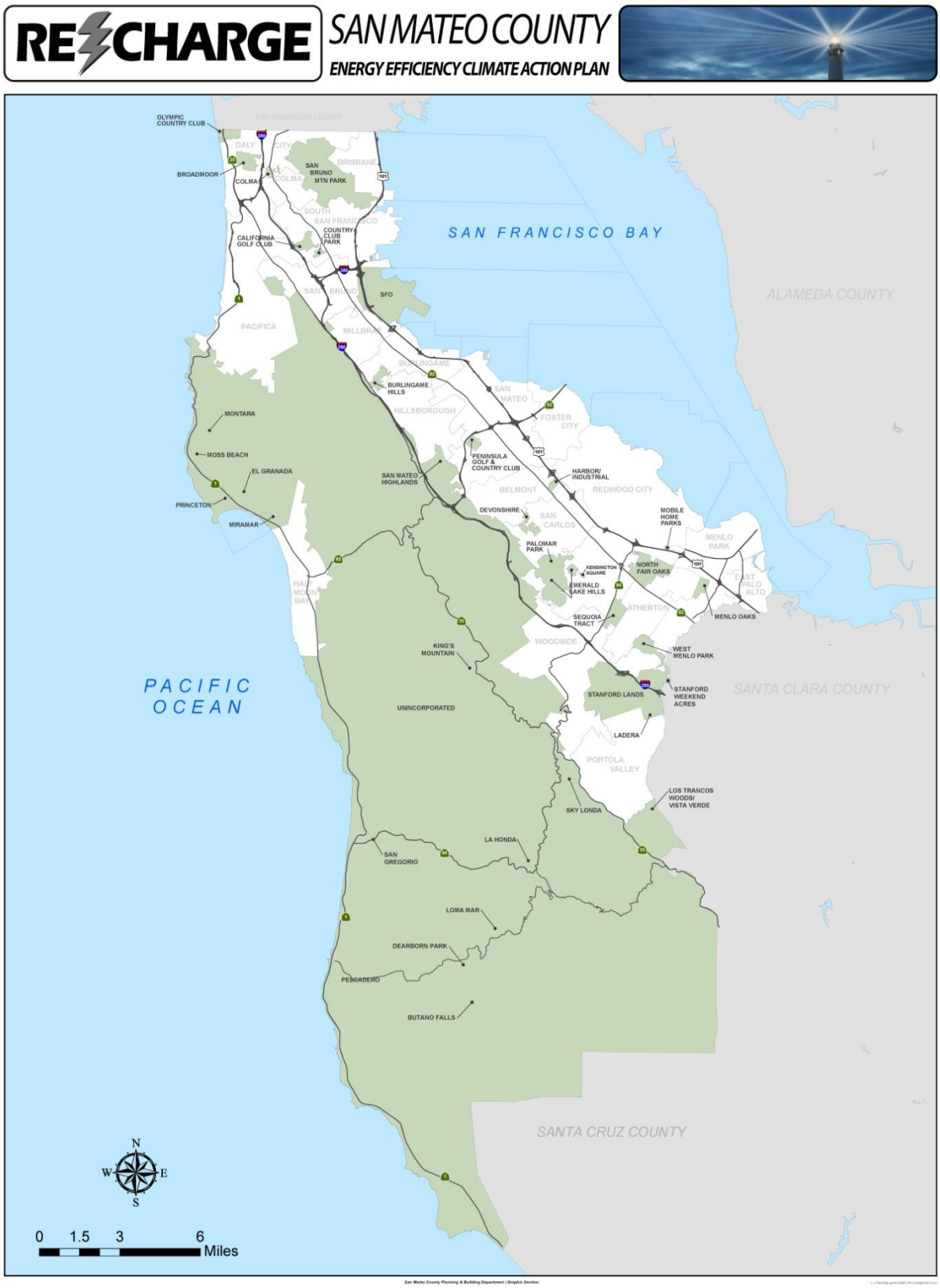
Project Applicant: County of San Mateo

Project Location: The proposed project establishes goals, priorities, and methods for achieving countywide greenhouse gas (GHG) emissions reductions that would apply to unincorporated areas within San Mateo County (see Figure 1).

Project Background and Project Description:
The County of San Mateo is proposing to amend its General Plan policies related to energy and climate change, and to adopt an Energy Efficiency Climate Action Plan (EECAP) in order to implement these policies. The objective of the project is to develop goals, priorities, and actions that will reduce greenhouse gas (GHG) emissions from unincorporated areas within the county in compliance with state goals and mandates (e.g., AB 32, Executive Order S-3-05, CEQA Guidelines, Bay Area Air Quality Management District CEQA Guidelines) and to identify the ways in which County land use and development policies should change in order to adapt to the impacts of climate change. To these ends, proposed policies and actions will address issues that affect GHG emissions, including water and energy consumption, transportation and land use patterns, agriculture, and waste. Implementation measures to be included in the EECAP will establish mandatory, incentive, and/or voluntary emissions reduction programs for county agencies, residents, and businesses, and include a monitoring and tracking program. Other implementation components will include the identification of potential future updates to County Subdivision, Building, and Zoning Regulations.

Additional information about the project can be found at:
http://www.co.sanmateo.ca.us/planning/rechargesmc/index.html

Figure 1: Map of Unincorporated San Mateo County



Potential Environmental Effects: The EIR will evaluate whether the proposed project would potentially result in one or more significant environmental effects. The following issues will be addressed in the EIR:

- Aesthetics, Light, and Glare
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Seismicity
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise
- Population and Housing
- Public Services
- Public Utilities
- Recreation
- Transportation

It is anticipated that some of the environmental issues would result in less than significant impacts and will be discussed in the EIR as Effects Found Not to be Significant.

Notice of Scoping Meeting: Pursuant to CEQA Guidelines Section 15082 (Notice of Preparation and Determination of Scope of EIR), the County of San Mateo will conduct a scoping meeting for the purpose of soliciting views of adjacent cities, responsible agencies, agencies with jurisdiction by law, trustee agencies, and interested parties requesting notice, as to the appropriate scope and content of the EIR.

The scoping session will be conducted by the County of San Mateo on Tuesday, June 12, 2012, at 5:30 p.m. at 455 County Center, Room 101, Redwood City, CA 94063. Please contact Matt Seubert for further information.

Matt Seubert
Telephone: (650) 363-1829
FAX: (650) 363-4849
E-mail: mseubert@smcgov.org

Appendix B – San Mateo County General Plan Energy and Climate Change Element and General Plan Text Revisions

SAN MATEO COUNTY

GENERAL PLAN

CHAPTER 17

ENERGY AND CLIMATE CHANGE ELEMENT

DRAFT

FEBRUARY 2013

PREPARED BY PMC
PREPARED FOR PLANNING AND BUILDING DEPARTMENT

TABLE OF CONTENTS

SAN MATEO COUNTY
CLIMATE CHANGE ELEMENT

PURPOSE

This Energy and Climate Change Element demonstrates San Mateo County's commitment to achieve energy efficiency and mitigate its impact on climate change by reducing greenhouse gas (GHG) emissions consistent with state legislation. This element is an optional element of the General Plan and is not mandated by the State of California. Authorized by Section 65303 of the Government Code, the inclusion of this element in the General Plan demonstrates the County's commitment to the long-term sustainability and resilience of the unincorporated county. San Mateo County is working to sustain the long-term health of the natural and built environments, achieve effective and meaningful reductions in GHGs, and increase resiliency to the impacts of climate change in the unincorporated county.

REGULATORY CONTEXT

OVERVIEW OF THE ELEMENT AND RELATIONSHIP TO THE ENERGY EFFICIENCY CLIMATE ACTION PLAN

Greenhouse gas emissions are unique in their cross-sector link across General Plan topics and issues. Similarly, the Energy and Climate Change Element takes an interdisciplinary approach to address the key opportunities related to GHG emissions. This element identifies the County's key opportunities to achieve consistency with statewide guidance related to GHG emissions. Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, provides a statewide directive to achieve 1990 GHG emissions levels by 2020, equivalent to a 15% reduction below baseline 2005–2008 emissions levels.

The Energy Efficiency Climate Action Plan (EECAP) provides a path for achieving local energy efficiency and reductions in GHGs by 2020. The EECAP will function as an implementation tool of the General Plan, working as a shorter-term plan that will be updated on a more regular basis. The EECAP also provides technical analysis to demonstrate the impact of the County's policies and programs on GHG emissions. Maintaining the EECAP separately from the General Plan provides flexibility to the County to assess and revisit the effectiveness of EECAP measures and actions toward this element's overall goals and policies. As a stand-alone plan, the EECAP also has the flexibility to integrate near-term opportunities, new technologies, and research.

Together, the General Plan and EECAP function as part of the County's toolkit to achieve resilience to climate change and long-term GHG reductions.

GUIDANCE FROM THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT AND THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

The Energy and Climate Change Element and the EECAP are part of the framework for developing a GHG emissions reduction strategy in compliance with regional and statewide requirements. This includes Section 15183.5(b) of the California Environmental Quality Act (CEQA) Guidelines and the Bay Area Air Quality Management District's (BAAQMD) criteria for a Qualified GHG Reduction Strategy as defined in the BAAQMD's CEQA Air Quality Guidelines. The purpose of the BAAQMD CEQA Air Quality Guidelines is to assist lead agencies in evaluating the significance of impacts related to air quality and CEQA in the San Francisco Bay Area Air Basin. The guidelines were updated in 2010 to establish thresholds of significance for impacts related to GHG emissions to be consistent with the requirements of CEQA in response to the State of California's amendment to the State CEQA Guidelines Section 15183.5(b) through Senate Bill (SB) 97, which requires all projects subject to CEQA to analyze and mitigate the GHG emissions that will occur.

The County's EECAP follows both the State CEQA Guidelines (Section 15183.5(b)) and the BAAQMD's guidelines by incorporating the standard elements of a Qualified GHG Reduction Strategy into the EECAP. The standard elements of a Qualified GHG Reduction Strategy include the following steps:

1) Prepare a greenhouse gas inventory that includes projected emissions

2) Develop an emissions reduction target

3) Include emissions associated with specific actions in the county

4) Identify emissions reduction measures and quantify their benefits

5) Establish a procedure to monitor and update the climate action plan

6) Go through a public process and appropriate level of environmental review

The approach taken by the County to develop the EECAP and this element satisfies all of the criteria outlined in the existing Section 15183.5(b) of the CEQA Guidelines. This element further equips the County to achieve EECAP targets and respond to climate change with meaningful and measurable actions.

POTENTIAL IMPACTS OF CLIMATE CHANGE

GHG reduction efforts and climate change adaptation are the two complementary tasks for mitigating and responding to climate change. In addition to reducing the County's contribution to global climate change, the

County is also acting as a leader to proactively prepare for local impacts that will result from global climate change. By taking steps to adapt or manage potential changes to the local environment and socioeconomic systems, the County will equip county residents and businesses to reduce risks and increase resilience. Climate change adaptation is the term that summarizes this process of preparing for climate change, referring to the process of adjusting both natural and human systems to anticipated climate change impacts, moderating risks and maximizing potential benefits.

CLIMATE CHANGE FORECASTS FOR SAN MATEO COUNTY

The County conducted a vulnerability assessment to assess the impacts of climate change on the unincorporated county's built environment and natural resource systems. The adaptation assessment was conducted in partnership with ICLEI-Local Governments for Sustainability, PMC, San Mateo County's Planning and Building Department, and a Vulnerability Assessment Working Group.

Three primary climate conditions are projected to change in the San Mateo County region:

- **Temperature.** Temperatures in San Mateo County are expected to increase between 1 and 2 degrees (estimated to increase 1.6 degrees) Fahrenheit by 2030 and between 2 and 3 degrees (estimated to increase 2.8 degrees) Fahrenheit by 2050.

- **Precipitation.** Climate model projections for San Mateo County anticipate moderate changes in annual precipitation. A statewide assessment found that California will probably retain its current basic precipitation pattern and will continue to have a high likelihood of extreme dry weather events. The statewide assessment indicates that precipitation patterns in San Mateo County will also experience increasing variability, resulting in more extreme events that could be complemented by prolonged dry weather periods.

- **Sea Level Rise.** Over the last century, California has observed a nearly 8-inch rise in sea levels along the coast. Climate models have projected an additional 3.3- to 4.6-inch rise in sea level by 2100. Areas in unincorporated San Mateo County most at risk for sea level rise include inland bay shoreline areas, but are primarily coastal shoreline areas. This is because all of the bay shoreline areas are within incorporated cities, rather than the unincorporated county, with the exception of the San Francisco International Airport, which is conducting a separate climate action planning process. Specific areas of vulnerability include areas that will be subject to increased inundation (for example, Surfers Beach at Highway 1) and erosion (for example, Seal Cove). Sea level rise will also result in more

extreme events that will inflict more damage, which are anticipated to coincide with winter storm events and El Niño occurrences.

VULNERABILITIES IN SAN MATEO COUNTY

In addition to specific changes in climatic conditions, San Mateo County also expects to experience increasing vulnerability in natural and man-made systems. Changes in weather and climatic conditions affect wider biological systems, ecosystems, and infrastructure. Anticipated vulnerabilities include an increased rate of fires, loss of natural resources, increased forestry and agricultural vulnerability, and deteriorating public health. Climatic changes are also expected to affect water supply and systems. Variable temperatures and weather patterns are expected to result in decreased groundwater and reservoir supplies, while also triggering greater severity in flooding events. Areas in San Mateo County have been determined by the Federal Emergency Management Agency (FEMA) to fall within 500- and 100-year floodplains, which will be more vulnerable to the heightened flooding threats that are anticipated to result from climate change. Localized flooding of low-lying areas will continue to be a concern as rainfall events become more severe. A summary of climate change vulnerabilities in the unincorporated county is presented in **Table 1** below.

Table 1. Climate Change Vulnerabilities in San Mateo County

Potential Changes	Vulnerability Assessment for San Mateo County		
Rising Sea Levels Sea levels are projected to rise approximately 3 to 5 inches by 2100.	**Built Environment** As much as $24 billion in property throughout the county is at risk from an extreme flood by the end of century. Coastal infrastructure will be increasingly vulnerable. Other key vulnerability areas include Seal Cove and homes and businesses in North Fair Oaks, Pescadero, Princeton, and Moss Beach.		**Natural Resources** Erosion and inundation that result from sea level rise may permanently damage wetlands, beaches, tide pools, and other natural resources. Surfers Beach at Highway 1 is vulnerable to inundation and even complete loss, while Pescadero Marsh and Pillar Point Marsh are also resources of concern.
Temperature Variability Increased average temperature and extreme weather will lead to longer heat waves, reduced air quality, changes in vegetation patterns, and reduced snowpack in the Sierras.	**Public Health** County residents may experience more heat-related and respiratory illnesses. Elderly, very young, low-income residents, and outdoor workers are especially vulnerable.		**Fire** It is estimated that the county will face a 1% increase in wildfire risk as a result of shifting vegetation patterns and increased evapotranspiration rates. Increasingly severe drought events also contribute to increased vulnerability.
Precipitation Variability Climate change will likely lead to more intense precipitation events followed by extended drought events, which will be exacerbated by loss of snowpack in the Sierras.	**Agriculture and Forestry** Agricultural productivity is vulnerable to changes in water availability, especially for water-intensive crops. Forest health is also vulnerable to lower rainfall levels and higher temperatures.		**Water** Water supply may decrease, resulting from the impacts of drought, due to reductions in surface water and groundwater, and the impact of flooding on water infrastructure.

GHG EMISSIONS INVENTORY AND FORECAST FOR THE UNINCORPORATED COUNTY

BASELINE GHG INVENTORY

The County conducted a comprehensive greenhouse gas emissions inventory and forecast for the baseline year of 2005. The inventory presents carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4) emissions generated from activities by San Mateo County community members in unincorporated areas of the county.

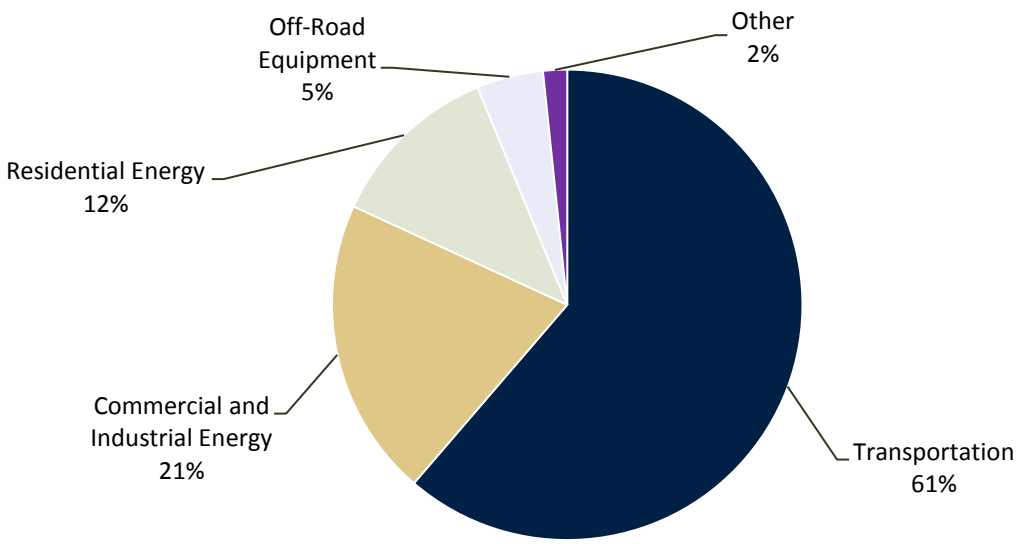
The emissions sources calculated in the baseline GHG inventory include commercial, residential, and industrial electricity and natural gas use, transportation, solid waste disposal, energy use related to water and wastewater, agricultural off-road equipment and emissions associated with fertilizer application, and off-road equipment used for construction and lawn and garden activities. GHG emissions from these activities were calculated from activity data such as kilowatt-hours (kWh) of electricity, therms of natural gas, tons of waste disposed, and vehicle miles traveled from trips with an origin or destination in unincorporated San Mateo County. In 2005, the County of San Mateo emitted approximately 782,080 metric tons of carbon dioxide equivalents ($MTCO_2e$) (see **Table 2** and **Figure 1**).

Table 2. 2005 Community-Wide Baseline Emissions by Sector

Sector	Metric Tons CO_2e/year	Percentage of Total
Transportation	479,400	61%
Commercial and Industrial Energy	160,900	21%
Residential Energy	93,100	12%
Off-Road Equipment	35,800	5%
Solid Waste	8,380	1%
Agriculture	3,000	<1%
Water and Wastewater	1,500	<1%
TOTAL	782,080	100%

Due to rounding, the total may not equal the sum of component parts.

Figure 1. 2005 Community-Wide Baseline Emissions by Sector

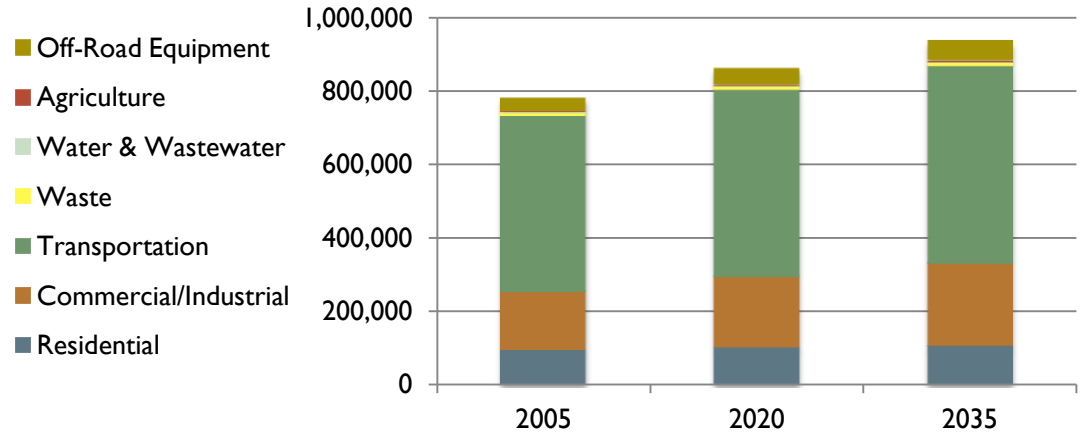


Due to rounding, the total may not equal the sum of component parts.

GHG INVENTORY FORECAST

The basis for all growth scenarios is a business-as-usual (BAU) projection. The BAU projection forecasts emissions to reflect the County's growth projections without regulatory or technical intervention to reduce GHG emissions, consistent with regional forecasts. These indicators are then applied to the 2005 GHG emissions inventory to determine a BAU growth scenario. Under the BAU scenario, community-wide emissions will grow by approximately 10% by the year 2020 to 860,800 $MTCO_2e$ and by 19% by 2035 to 934,300 $MTCO_2e$, as shown in **Figure 2** and **Table 3**.

Figure 2. San Mateo Community GHG Emissions Forecast, 2005–2035



The emissions contribution of agriculture and water & wastewater are too nominal to be adequately represented on the scale of this chart.

Table 3. San Mateo Community GHG Emissions BAU Forecast, 2005–2035

Sector	2005 Baseline	2020	2035
Transportation	479,400	506,800	534,200
Commercial and Industrial Energy	160,900	194,600	226,300
Residential Energy	93,100	100,500	104,200
Off-Road Equipment	35,800	44,600	53,900
Solid Waste	8,380	9,500	10,400
Agriculture	3,000	3,100	3,400
Water and Wastewater	1,500	1,700	1,900
TOTAL	782,080	860,800	934,300
Percentage Change from 2005		10%	19%

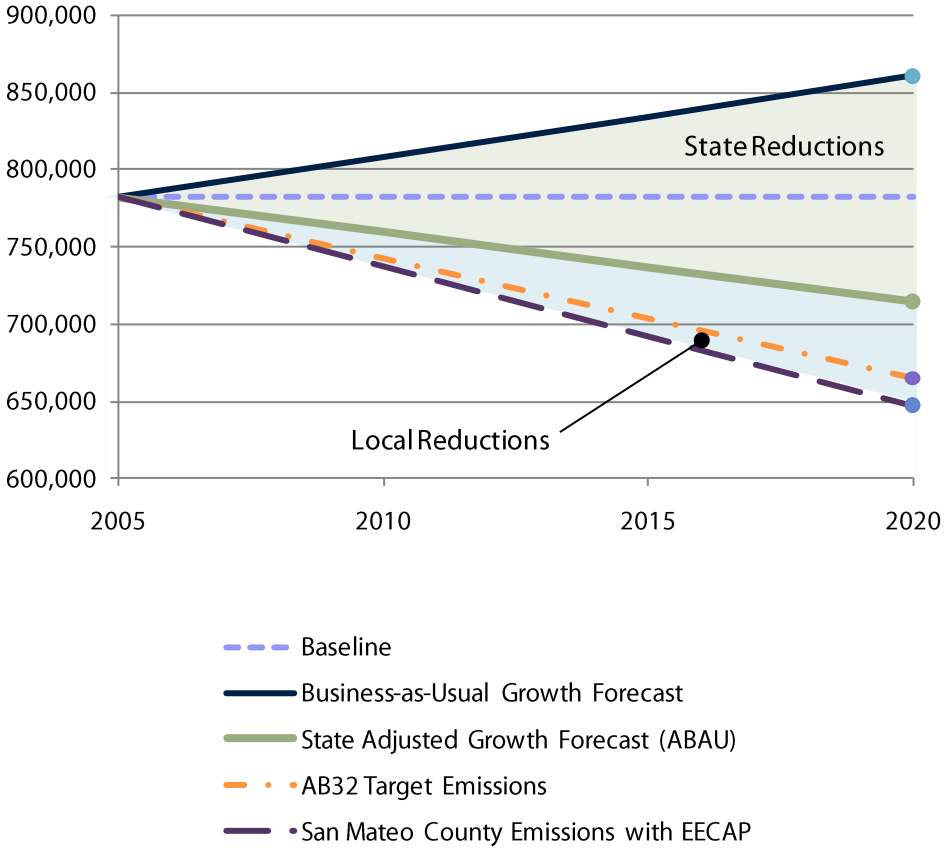
In addition to AB 32, California has adopted and initiated several state-level programs that will impact local GHG emissions. In order to effectively determine the emissions reductions that will need to be implemented at the local level to meet the County's emissions reduction target, the impact of state-level programs has been incorporated into an adjusted BAU forecast. The state-level programs included in this adjusted forecast include the Renewables Portfolio Standard (RPS), updates to Title 24 Energy Efficiency Standards, California Solar Initiative rebates, and the implementation of the Clean Car Fuel Standard, commonly referred to as the Pavley standards. The impact of these state programs (shown in **Table 4**) will play a critical role in helping San Mateo County achieve the emissions reduction target.

Table 4. State Reductions Summary

	2005	2020	2035
Business-as-Usual Emissions	782,080	860,800	934,300
Renewables Portfolio Standard (RPS)	–	-4,500	-13,300
AB 1493 (Pavley) Vehicle Standards	–	-130,700	-194,700
California Solar Initiative (CSI)	–	-300	-200
CALGreen Building Standards	–	-10,900	-17,000
Subtotal State Reduction Efforts	–	-146,400	-225,200
Net Emissions	–	714,400	709,100
Percentage Change from 2005 Levels	–	-9%	-9%

Through the EECAP, the County of San Mateo is following state guidelines by seeking to achieve a GHG emissions reduction target of 15% below 2005 baseline levels by 2020. To achieve this goal, the County identified actions in the EECAP that will reduce remaining emissions through local activities and programs. The strategies in the EECAP demonstrate a path for the County to achieve a 15% reduction below baseline 2005 emissions by 2020 (see **Figure 3**), which provides the basis for the goals and policies in this element.

Figure 3. GHG Reductions in San Mateo County ($MTCO_2e$)



ENERGY USE IN SAN MATEO COUNTY

INTRODUCTION TO ENERGY USE

Energy used in the homes and businesses of San Mateo County is currently provided primarily by Pacific Gas and Electric (PG&E). PG&E generates energy from a mix of nonrenewable, fossil fuel-based sources, such as coal and natural gas, and renewable sources, such as biomass, geothermal, hydroelectric, and wind.

The amount of energy used to power homes and businesses determines how much power PG&E needs to generate and the quantity of GHGs emitted. If the energy needed for daily activities is decreased, reductions can be achieved in the amount of electricity or natural gas PG&E needs to generate, obtain, and/or transmit. In addition, the GHGs associated with electricity generation and natural gas combustion would decrease. The most common uses of electricity are for lighting and heating/cooling buildings, for powering appliances such as refrigerators, computers, and washing machines, and for conveying water around the county and into homes or to treatment plants. Natural gas is most

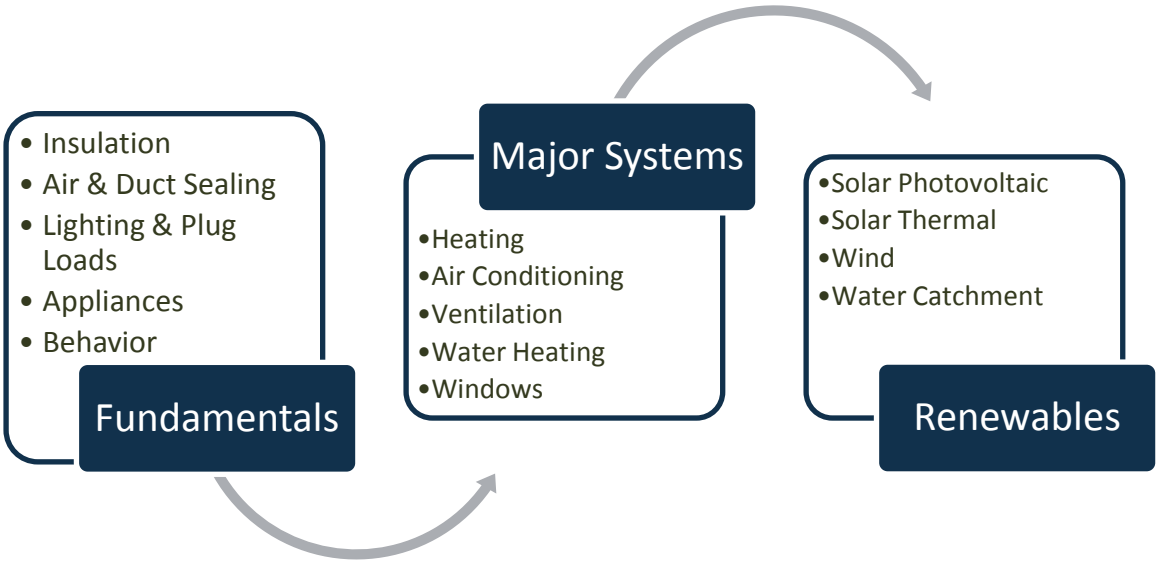
typically used for heating buildings and water, in addition to powering industrial and manufacturing processes.

THE ENERGY REDUCTION LOADING ORDER

GHGs from energy use can be reduced, primarily through increasing conservation (i.e., avoiding using electricity) and improving efficiency (i.e., using less electricity for the same activity) when conservation cannot be realized. Common conservation practices include unplugging appliances and electronics when not in use, turning off lights during the day or when the room is empty, and changing heating and cooling settings on thermostats. Increasing energy efficiency means replacing incandescent light bulbs with compact fluorescent lights and inefficient or older models of appliances and electronics with new, preferably Energy Star (or other efficiency label) models in order to use less energy when it is necessary. Using small renewable solar panels can also reduce demand from PG&E for daily electricity use. Reductions in electricity used for water pumping in the community can be achieved by using less water for irrigation and other household uses. The use of solar water heaters can also reduce demand from PG&E for natural gas use. These are just some examples of energy efficiency and conservation.

When completing energy efficiency retrofits to buildings, there is a loading order that should be followed to maximize energy savings while minimizing added costs. **Figure 4** depicts the recommended loading order for undertaking energy efficiency projects and retrofits.

Figure 4: Retrofitting Loading Order



COMMUNITY ENERGY DEMAND

Unincorporated San Mateo County has over 20,000 homes in diverse residential communities. Over 60% of homes in the unincorporated county were constructed before 1970, the date of adoption of the state's first mandatory energy efficiency standards for new construction. Older homes generally have a greater opportunity to improve levels of comfort and reduce energy use through energy efficiency improvements. In general, the county's inland communities have older housing stock than the newer coastal communities, providing more significant retrofit opportunities. For example, the five inland communities of Broadmoor, North Fair Oaks, Emerald Lake Hills, West Menlo Park, and the Sequoia Tract have homes with a median age of construction ranging from 1940 to 1967, with a sizable number of homes constructed before 1940.[1] On average, households in the unincorporated county that are served by PG&E used approximately 6,000 kWh of electricity and nearly 500 therms of natural gas in the baseline year of 2005. Assuming average energy rates, in 2005 these households paid on average of $1,100 per year for electricity and almost $600 per year for natural gas.

Nonresidential uses also contribute to the unincorporated county's energy use. In 2005, just three sectors used approximately 80% of total nonresidential energy in the unincorporated county: manufacturing and transportation, retail, and hospitality. On average, each nonresidential PG&E customer used approximately 37,000 kWh and 24,000 therms per year, paying a total of about

[11] US Census Bureau 2012.

$29,000 in energy bills. This higher level of energy use reflects the presence of advanced biotech and manufacturing firms, which contribute significantly to the county's overall economy. These types of firms also stand to benefit from energy efficiency and conservation. Retrofits and improvements can help businesses reduce operating costs and maintenance, in addition to enhancing profitability.

GREENHOUSE GAS REDUCTION GOALS, POLICIES, AND PROGRAMS

This section provides the County's policy framework to minimize its contribution to climate change by reducing GHG emissions. The County will accomplish this reduction by decreasing GHG emissions through the built environment, transportation, and water and waste practices. While reducing GHG emissions, the goals, policies, and programs presented here also improve the quality of life in San Mateo County for residents, strengthen business, reduce costs, and conserve natural resources.

DEFINITIONS

The following definitions are provided for terms contained in this plan:

- **Climate change** is a term to imply a significant change from one climatic condition to another, including natural changes in climate.

- **Complete Streets** is an approach to transportation that describes an integrated, multimodal transportation system which equally supports all types of transportation, including pedestrian, bicycle, and vehicular traffic.

- **Distributed energy resources** are small, modular energy generation and storage technologies that provide electric capacity or energy located on-site or close to where it is needed, whether connected to the local electric power grid or isolated in stand-alone applications. These systems generally produce less than 10 megawatts of power and include wind turbines, photovoltaics, fuel cells, microturbines, and energy storage systems.

- **Greenhouse gas emissions** are gases that cause heat to be trapped in the atmosphere, warming the earth. Greenhouse gases include all of the following: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The majority of greenhouse gases come from natural sources, although human activity is also a major contributor.

- **Renewable energy** is energy from sources that regenerate and are less damaging to the environment than nonrenewable energy sources, such as solar, wind, biomass, and small-scale hydroelectric power.

- **Traffic-calming features** are features designed to increase non-vehicular traffic and reduce the conflict of vehicles with pedestrians and cyclists. Traffic-calming features may include, but are not limited to, marked crosswalks, countdown signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, and chicanes/chokers.

GREENHOUSE GAS REDUCTION GOALS

The County will achieve the following goals for greenhouse gas emissions:

Goal 1: Promote and implement policies and programs to reduce community-wide greenhouse gas emissions.

Goal 2: Maximize energy efficiency in new and existing development.

Goal 3: Promote the expansion of the use of renewable energy supplies.

Goal 4: Promote and implement policies and programs to reduce vehicle miles traveled by all vehicles traveling in the unincorporated county.

Goal 5: Encourage the use of clean, low-emissions vehicles and equipment.

Goal 6: Promote and implement policies and programs with the goal of achieving zero waste.

Goal 7: Support sustainable agricultural practices.

Goal 8: Promote and implement policies and programs to reduce water use.

GENERAL GREENHOUSE GAS REDUCTION POLICIES AND PROGRAMS

Goal 1: Promote and implement policies and programs to reduce county-wide greenhouse gas emissions..

Policy 1.1: Create a strategic planning framework to identify and reduce greenhouse gas emissions countywide.

Implementing Strategy 1.1A: Regularly inventory greenhouse gas emissions from community-wide activities on a regular basis.

Implementing Strategy 1.1B: Identify a community-wide greenhouse gas emissions reduction target that will be consistent with current state objectives, statewide guidance, and regulations.

Implementing Strategy 1.1C: Adopt and implement the County of San Mateo's Energy Efficiency Climate Action Plan that will identify goals, measures, and actions to achieve the County's greenhouse gas reduction target.

Implementing Strategy 1.1D: Regularly monitor and track progress toward the County's greenhouse gas reduction goals.

Implementing Strategy 1.1E: Regularly report to the Board of Supervisors or its designee on the implementation status of the Energy Efficiency Climate Action Plan.

Implementing Strategy 1.1F: Update the Energy Efficiency Climate Action Plan should the County find that specific strategies are not achieving the intended GHG reductions or to incorporate new technology, programs, and opportunities to reduce greenhouse gas emissions.

Policy 1.2: Evaluate the greenhouse gas emissions impacts of development projects as part of plan review.

Implementing Strategy 1.2A: Update development forms and permits to help County staff collect and assess project-related information on greenhouse gas emissions impacts.

Implementing Strategy 1.2B: Create a checklist or other tool that allows project applicants to identify all project measures that reduce greenhouse gas emissions.

Goal 2: Maximize energy efficiency in new and existing development.

Policy 2.1: Support energy conservation and efficiency in the existing building stock.

Implementing Strategy 2.1A: Identify and foster innovative financing opportunities for energy efficiency retrofits, including utility rebates or programs such as on-bill financing, statewide energy efficiency rebates or loans, "green" mortgages, and bulk procurement programs.

Implementing Strategy 2.1B: Educate homeowners, renters, building owners, and tenants about the benefits of energy efficiency.

Implementing Strategy 2.1C: Continue to participate in regional programs that provide education or funding resources for building owners to undertake energy efficiency improvements, such as property-assessed clean energy financing.

Implementing Strategy 2.1D: Implement policy HE 47 in the Housing Element to expand energy efficiency in existing housing through

educational outreach, promotion of audits, and encouragement of weatherization and audits in low-income housing.

Implementing Strategy 2.1E: Consider options to implement a green business program for businesses in the unincorporated county, which would encourage business "greening" and energy efficiency practices.

Policy 2.2: Provide incentives for voluntary energy efficiency improvements in the existing building stock.

Implementing Strategy 2.2A: Streamline the review process for energy efficiency improvements, considering options such as reduced permit fees, expedited or administrative review, or other mechanisms.

Implementing Strategy 2.2B: Incentivize the transition to more energy-efficient home heating and cooling strategies through the plan review process.

Implementing Strategy 2.2C: Collaborate with utility providers, such as PG&E, and regional partners to encourage development of large-scale cooperative efforts that reduce costs and simplify the purchase of energy efficiency equipment or the completion of voluntary retrofits.

Policy 2.3: Develop a program for unincorporated communities to reduce heat gain in buildings and sequester greenhouse gases through tree planting and other "cooling" strategies.

Implementing Strategy 2.3A: Revise design guidelines and other regulations to incorporate requirements for tree planting, shading design, and the use of high albedo, pervious, or open-grid materials to reduce heat absorption in development.

Implementing Strategy 2.3B: Collaborate with nonprofits or local environmental or community groups to increase tree planting and the forest canopy countywide.

Policy 2.4: Collaborate with stakeholders to encourage energy efficiency by the county's largest energy users in the commercial sector in concert with economic growth and development objectives.

Implementing Strategy 2.4A: Through the regular greenhouse gas monitoring process, use reports from utility providers such as PG&E to identify the largest users of energy and understand the highest opportunities for energy efficiency.

Implementing Strategy 2.4B: In partnership with utility providers such as PG&E, encourage energy benchmarking practices that help businesses monitor and reduce energy use, consistent with state regulations.

Implementing Strategy 2.4C: Collaborate with business stakeholders to provide education on programs, financing, and other resources for nonresidential energy efficiency.

Policy 2.5: Continue implementation of green building standards that exceed state energy efficiency standards.

Implementing Strategy 2.5A: Continue to require the participation of new development and significant remodels in green certification programs or standards that reduce energy use, such as the Leadership in Energy and Environmental Design (LEED) program, GreenPoint Rated, or CALGreen Tier 1 and Tier 2.

Implementing Strategy 2.5B: Consider options to expand the requirements or applicability of the Green Building Ordinance to achieve higher levels of energy efficiency.

Goal 3: Promote the expansion of the use of renewable energy supplies.

Policy 3.1: Identify opportunities for new and existing development to incorporate on-site distributed energy resources into project design and construction.

Implementing Strategy 3.1A: Incorporate standards for new development to provide pre-wiring for renewable energy systems, such as solar photovoltaic systems or solar water heaters.

Implementing Strategy 3.1B: Streamline the process for installing on-site distributed energy resources through strategies such as simplified review procedures, permit fee reductions, or expedited permitting, consistent with state law.

Implementing Strategy 3.1C: Promote financing opportunities and rebates for installation of on-site renewable energy systems.

Implementing Strategy 3.1D: Encourage developers of new large projects to provide solar photovoltaic or other on-site renewable energy systems.

Implementing Strategy 3.1E: Consider creating incentives to encourage development of distributed energy systems in existing developed areas, with minimum biological and aesthetic impact.

Implementing Strategy 3.1F: Support a pilot solar photovoltaic program that provides additional incentives to participating developers for on-site solar photovoltaic facilities, with minimal biological and aesthetic impact.

Policy 3.2: Promote the production of appropriate off-site renewable energy for use in the unincorporated county.

Implementing Strategy 3.2A: Consider identifying areas with the highest feasibility for large-scale, commercial production of energy from renewable resources, including locations near existing power facilities and transmission lines to minimize biological and aesthetic impacts, and other environmental impacts.

Implementing Strategy 3.2B: Require commercial wind farms or large-scale wind projects to use technologies deemed bird-safe and that would minimize impacts to wildlife.

Implementing Strategy 3.2C: Investigate feasible opportunities to promote the use of off-site renewable energy in new and existing development, including power purchase agreements and renewable energy credits.

Implementing Strategy 3.2D: Assess the feasibility and benefits of creation of a Community Choice Aggregation Program.

Goal 4: Promote and implement policies and programs to reduce vehicle miles traveled by all vehicles traveling in the unincorporated county.

Policy 4.1: Expand transit-oriented and mixed-use development that reduces reliance on vehicular travel.

Implementing Strategy 4.1A: As new development occurs, encourage new development to locate in proximity to transit corridors.

Implementing Strategy 4.1B: Assess existing standards to expand the provision of mixed uses by right in appropriate areas.

Implementing Strategy 4.1C: Evaluate options to reduce minimum parking requirements and promote a variety of transportation choices in new development.

Implementing Strategy 4.1D: Encourage neighborhood-serving retail and co-location of daily service uses at key locations throughout the unincorporated county.

Implementing Strategy 4.1E: Work with local community advisory councils, environmental groups, and community groups to assess appropriate strategies and locations to test innovative parking, land use, or other design solutions to reduce single-occupant vehicle use.

Policy 4.2: Promote non-motorized and alternative travel.

Implementing Strategy 4.2A: Require project applicants to evaluate and identify appropriate measures to achieve Complete Streets and promote alternative travel, such as pedestrian paths/sidewalks or traffic calming improvements.

Implementing Strategy 4.2B: Develop standards for and require new projects to provide appropriate levels of short- and long-term bicycling facilities such as bicycle parking, lockers, and shower facilities.

Implementing Strategy 4.2C: Identify options for collection of alternative revenue to support transit and Complete Streets projects, such as an impact fee.

Implementing Strategy 4.2D: Establish design criteria for the assessment of Complete Streets and pedestrian-oriented design in new development, recognizing the unique considerations of urban, suburban and rural communities.

Implementing Strategy 4.2E: Create a local commute trip reduction program, which would establish mandatory standards for employers to promote commuter programs and support a reduction in single-occupant vehicle trips.

Implementing Strategy 4.2F: Continue to partner with the Peninsula Traffic Congestion Relief Alliance, Shuttle Business Task Force, SamTrans, school districts, and private partners to fund and support transit and commuter programs.

Goal 5: Encourage the use of clean, low-emissions vehicles and equipment.

Policy 5.1: Facilitate the expansion of infrastructure for alternative fuel vehicles.

Implementing Strategy 5.1A: Encourage the installation of electric vehicle charging stations in new development.

Implementing Strategy 5.1B: Consider strategic opportunities to plan for electric vehicle networks or alternative fueling stations, such as

development of a neighborhood electric vehicle plan for urban areas or integration with regional planning efforts.

Implementing Strategy 5.1C: Explore pursuing funding with partners for the conversion of government and private fleets in the unincorporated county to alternative and low-emissions fuels.

Policy 5.2: Promote the voluntary transition to clean and low-emissions outdoor equipment through programs and plan review.

Implementing Strategy 5.2A: Require new development to provide accessible exterior electrical outlets to support the use of electric-powered lawn and garden equipment.

Implementing Strategy 5.2B: Support both the use of low-emissions construction equipment and reduced equipment idling in construction activities through the plan review process, such as through permit requirements or conditions of approval.

Implementing Strategy 5.2C: Work with agricultural stakeholders to encourage the use of low-emitting, energy-efficient agricultural equipment.

Goal 6: Promote and implement policies and programs with the goal of achieving zero waste.

Policy 6.1: Continue to expand recycling and reduce landfilled waste.

Implementing Strategy 6.1A: Collaborate with solid waste providers to increase diversion of landfilled waste using new technologies or other methods.

Implementing Strategy 6.1B: Ensure the provision of food waste services, such as composting, for commercial restaurants.

Implementing Strategy 6.1C: Provide curbside composting and green waste for residential customers. In rural locations that are infeasible for curbside services, provide centralized drop-off locations for residential customers.

Implementing Strategy 6.1.D: Require new development to provide appropriate trash and recycling enclosures.

Implementing Strategy 6.1.E: Create standards for new development that will support the use of recycled goods and reduce the consumption of raw materials.

Implementing Strategy 6.1.F: Promote statewide recycling and waste reduction programs to the private sector.

Implementing Strategy 6.1G: Consider opportunities to increase mandatory diversion of construction and demolition waste.

Goal 7: Support sustainable agricultural practices.

Policy 7.1: Collaborate with partners to encourage voluntary sustainable agricultural practices that reduce greenhouse gas emissions.

Implementing Strategy 7.1A: Support compliance with statewide restricted materials requirements for pesticides and fumigants, and encourage the voluntary use of low global warming potential (GWP) pesticides and fumigants.

Implementing Strategy 7.1B: Consider allowing sustainable farming practices that protect resources in appropriate non-farmed areas where agriculture may not otherwise be allowed.

Implementing Strategy 7.1C: Work with agricultural stakeholders to encourage the preparation and dissemination of tools for sustainable agricultural practices, including new technologies.

Implementing Strategy 7.1D: Consider updating zoning standards and land use designations for small-scale farming and temporary ancillary agricultural uses, such as farmers markets, to create clear and uniform definitions that encourage appropriate farming practices..

Goal 8: Promote and implement policies and programs to reduce water use.

Policy 8.1: Expand infrastructure for monitoring and reusing water.

Implementing Strategy 8.1A: Work with water providers to promote the installation of water meters or other technologies that allow for the accurate monitoring and billing of water use.

Implementing Strategy 8.1B: Investigate opportunities to expand the provision of recycled water to the more built-out communities.

Implementing Strategy 8.1C: Consider requiring new development to provide dual plumbing in anticipation of recycled water provisions.

Implementing Strategy 8.1D: Streamline and incentivize the provision of greywater systems for unincorporated areas that follow the County's Environmental Health best management practices.

ADAPTATION GOALS, POLICIES, AND PROGRAMS

This section provides the County's policy framework to adapt to the impact of climate change and sustain ongoing resilience in the natural and built environments. The County will attain these objectives through proactive anticipation of climate change impacts, working closely with stakeholders and partners to protect resources. The County will also use the opportunities afforded by climate change to sustain resilience and sustainability of San Mateo County's resources.

DEFINITIONS

The following definitions are provided for terms contained in this element:

- **Buffer zones** are areas adjacent to sensitive habitats which are necessary to allow for periodic, seasonal, or ecological changes, including the impacts of climate change.

- **Critical infrastructure or facilities** provide necessary services to the community, including but not limited to roadways, hospitals, airports, utility lines, and water and sewage infrastructure.

- **Climate change** is significant change from one climatic condition to another, including natural changes in climate.

- **Climate change adaptation** seeks to address the impacts of climate change on natural or human systems to minimize harm or take advantage of beneficial opportunities.

- **Climate change mitigation** is a technical or behavioral intervention to reduce the sources of greenhouse gas emissions in order to reduce the potential effects of climate change.

- **Climate change risks** are vulnerabilities caused or exacerbated by changes in climatic conditions, such as flood zone areas, wildfire, drought, and extreme weather events such as heat waves.

Adaptation Goals

The County will achieve the following goals for climate change adaptation:

Goal 9: Identify and prepare for climate change impacts.

Goal 10: Enhance the adaptive capacity of natural and man-made systems.

GENERAL ADAPTATION POLICIES AND PROGRAMS

Goal 9: Identify and prepare for climate change impacts.

Policy 9.1: Develop an approach to track and fund the assessment of climate change impacts and risks.

Implementing Strategy 9.1A: Identify funding programs and grant opportunities for assessing climate risks.

Implementing Strategy 9.1B: Work with governmental and non-governmental partners, including educational institutions, landowners, and regional or state agencies, to leverage resources and assess climate change vulnerabilities.

Implementing Strategy 9.1C: Partner with neighboring jurisdictions and regional entities to create an ongoing monitoring program that tracks local and regional climate change impacts.

Implementing Strategy 9.1D: Regularly evaluate existing plans and programs (federal, state, and regional) to identify updates in response to emerging information on climate change impacts or best practices.

Policy 9.2: Integrate ongoing assessment of climate change vulnerabilities into the planning process.

Implementing Strategy 9.2A: Establish the State of California Sea-Level Rise Interim Guidance Document, or its successor, as the standard for designing, evaluating, and implementing plans, projects, and programs.

Implementing Strategy 9.2B: Develop guidelines that require the consideration of potential climate change impacts when preparing environmental documents in accordance with the California Environmental Quality Act.

Implementing Strategy 9.2C: Create mechanisms to assess risk and liability for projects and activities that may occur in areas that are vulnerable to climate change.

Implementing Strategy 9.2D: Incorporate potential climate change impacts into the decision-making process when siting new facilities and prioritizing repairs and improvements to critical infrastructure.

Implementing Strategy 9.2E: Encourage the San Mateo County Local Agency Formation Commission to integrate analysis of climate change risks into municipal service reviews, public service or infrastructure improvements, and management plans.

Goal 10: Enhance the adaptive capacity of natural and man-made systems.

Policy 10.1: Encourage the location and design of new development, remodels, or expansions to anticipate and mitigate climate change risks.

Implementing Strategy 10.1A: Consider expanding minimum standards for setbacks or buffer zones in areas with high vulnerability to climate change impacts.

Implementing Strategy 10.1B: Promote the site selection and design of critical facilities that consider site-specific vulnerabilities to climate change.

Implementing Strategy 10.1.C: Promote the location of new critical infrastructure facilities in areas not subject to severe climate change impacts, such as storm surge, flooding, or inundation.

Implementing Strategy 10.1D: Evaluate on-site disposal system regulations to ensure they are adequate to address surface water and groundwater issues anticipated with changes in the water table and precipitation.

Implementing Strategy 10.1E: Consistent with statewide standards and guidance from the California Coastal Commission, require all new projects in the coastal zone to account for sea level rise and the potential for increasing rates of erosion.

Implementing Strategy 10.1F: Encourage the use of biological and natural solutions for shoreline protection, rather than "armoring" infrastructure such as sea walls or breakwaters.

Policy 10.2: Improve public health and social equity through climate change adaptation strategies.

Implementing Strategy 10.2A: Prepare a regular inventory of essential infrastructure that supports public health and meets emergency response needs, such as emergency facilities, response routes, water supplies, and wastewater disposal.

Implementing Strategy 10.2B: Regularly assess health, socioeconomic, and equity vulnerabilities and adaptive strategies related to climate change using performance metrics and data.

Implementing Strategy 10.2C: Work with public health organizations, nonprofits, and other groups to conduct public outreach and education efforts that inform vulnerable groups about climate change risks.

Implementing Strategy 10.2D: Prioritize adaptation planning efforts for vulnerable populations and communities, including low-income groups, such as potentially affected trailer parks and farmworker housing.

Implementing Strategy 10.2E: Ensure that emergency response and educational information regarding climate change is provided in the key languages commonly spoken throughout the unincorporated county.

Policy 10.3: Protect the built environment from climate change risks through programs and strategic planning.

Implementing Strategy 10.3A: Establish a strategy for addressing existing development and critical infrastructure that is vulnerable to increased impacts of climate change, identifying decision-making criteria for upgrades and managed retreats from risks.

Implementing Strategy 10.3B: Consider the transfer of development rights for reconstruction of development that has been damaged or destroyed due to fire or flooding, as feasible.

Implementing Strategy 10.3C: Coordinate with agency partners to prepare for the increased need for emergency response services that is expected due to climate change impacts.

Implementing Strategy 10.3D: Collaborate with utility providers to ensure that infrastructure management plans account for anticipated climate change impacts.

Implementing Strategy 10.3E: Promote improved emergency vehicle access and roadside vegetative management.

Implementing Strategy 10.3F: Continue collaboration with the Federal Emergency Management Agency to review and identify flood zones and risks.

Implementing Strategy 10.3G: Coordinate with neighboring jurisdictions and regional entities to plan and mitigate wildfire impacts in wildland-urban interface areas.

Implementing Strategy 10.3H: Maintain public access to recreation facilities, open space, and other natural resources wherever possible despite climate change impacts.

Policy 10.4: Monitor and support the adaptive capacity of natural and agricultural resources to climate change.

Implementing Strategy 10.4A: Consider diversifying the allowable activities on agricultural land to support the diversification of sources for potential income, such as agricultural tourism, roadside stands, and farmers markets.

Implementing Strategy 10.4B: Create a monitoring and assessment program to track forest health and support ecological, social, and economic sustainability of public forestlands.

Implementing Strategy 10.4C: Partner with local organizations to investigate the use of conservation easements for protection of habitats vulnerable to climate change that could also serve as buffers for the built environment.

Implementing Strategy 10.4D: Collaborate with partners to prepare adaptive management plans for sea level rise in coastal areas.

Implementing Strategy 10.4E: Evaluate the role of wetlands in carbon sequestration and as buffer to the impacts of sea level rise and increased flooding.

Implementing Strategy 10.4F: Coordinate with stakeholders, agencies, and other groups to monitor new opportunities to strengthen the resilience of natural and agricultural resources to climate change.

APPENDIX B-2 -
GENERAL PLAN TEXT REVISIONS

San Mateo County

General Plan Amendment

February 2013

Proposed Edits and Additions to Existing Text

Vegetative, Water, Fish and Wildlife Resources Policies, Section 1.14, Definition of Buffer Zones:

> Define Buffer Zones as those areas adjacent to sensitive habitats which are necessary to allow for periodic, seasonal, or ecological changes, including the impacts of climate change.

Suggested addition following Section 1.14:

> Define climate change as a term to imply a significant change from one climatic condition to another, including natural changes in climate.

Vegetative, Water, Fish and Wildlife Resources Policies, Section 1.28, Establish Buffer Zones:

> Establish necessary buffer zones adjacent to sensitive habitats which include areas that directly affect the natural conditions in the habitats~~,~~ and areas expected to experience changing vulnerabilities due to impacts of climate change.

Vegetative, Water, Fish and Wildlife Resources Policies, Section 1.49, Support Resources Management:

> 1.49 Support Resource Management Efforts of Other Agencies
> Recognize, encourage, and cooperate with the efforts of public agencies and private groups which are consistent with the goals, objectives, and policies of this chapter.

> 1.50 Develop P~~p~~rograms to A~~a~~dapt to the I~~i~~mpacts of Climate Change~~.~~
> a. Integrate advances in research of the impact of climate change into the assessment of vulnerabilities of sensitive species,~~;~~ sensitive habitats, and vegetative, fish, and wildlife resources.
> b. ~~Support adaptation of~~ Protect sensitive habitats and resources ~~to~~ from the impacts of climate change.
> c. Coordinate with other local, state, and national agencies to understand and respond to new, exacerbated, or changing vulnerabilities that result from the impacts of climate change.

Visual Quality, Section 4.1, suggested addition:

> Define distributed energy resources as small, modular~~,~~ energy generation and storage technologies that provide electric capacity or energy located on-~~-~~site or close to where it is needed, whether connected to the local electric power grid or isolated in stand-alone applications. These systems generally produce less than 10 megawatts (MW) of power and include wind turbines, photovoltaics (PV), fuel cells, microturbines, and energy storage systems.

San Mateo County

General Plan Amendment

February 2013

Visual Quality, Section 4.20, Utility Structures:

Minimize the adverse visual quality of utility structures, including roads, roadway and building signs, overhead wires, utility poles, T.V., antennae, distributed energy resources, solar water heaters, windmills, and satellite dishes.

Visual Quality, Section 4.52, Architectural Design Standards for Rural Scenic Corridors:

a. Limit the height of structures or appurtenances in forested areas so as not to exceed the height of the forest canopy.
b. Limit the height of structures in grassland areas in order to maintain a low horizontal profile.
c. Allow ~~solar~~ distributed energy resources~~, panels~~ and chimneys to extend beyond these height limits where required for safety or efficient operation.

Visual Quality, Section 4.61, Parking and Paved Areas:

Integrate paved areas with their site~~, consider~~encourgage the use of alternative paving technologies that minimize hardscape, ~~-~~and landscape and/or screen them to reduce visual impact from the scenic corridor.

Park and Recreation Resources, ~~Section 6.34, County Park and Recreation Facilities~~Maintenance and Operation suggested addition:

6.34 Use of Volunteer Programs
a. Support, encourage and recognize volunteer and docent programs to help maintain and operate the County park and recreation system and to educate the public in the understanding and appreciation of its facilities.
b. Provide interpretation programs which will encourage the support of volunteer assistance. Also provide coordinative senior citizen and handicapped recreation programs.

6.35 Encouragement of Forest Resilience Studies
Support the use of County-owned forests or public land for studies of long-term forest resilience, carbon sequestration, or adaptation to changing climate, which would be compatible with park and recreation activities.

Urban Land Use, Section 8.3, Land Use Objectives for Urban Neighborhoods:

a. Plan Urban Neighborhoods to be primarily, though not exclusively, single~~-~~family residential areas which appear and function as residential neighborhoods of contiguous cities.

b. Provide a mix of residential and commercial land uses to balance generated tax revenues with the costs of providing desired levels of public services and facilities.
c. Encourage the integration of land uses to provide neighborhood-serving uses and facilitate clean transportation options, such as pedestrian and bicycle activity.
d~~c~~. Establish land use patterns which make u~~U~~rban n~~N~~eighborhoods compatible, functional, and identifiable with adjoining cities.

Urban Land Use, s~~S~~uggested a~~A~~ddition:

[Insert a new s~~S~~ection, titled Definition of Transit-Oriented Land Uses, to start as section 8.7 (preceding the Urban Land Use map reference on page 8.3a~~P~~)]

Define t~~T~~ransit-o~~O~~riented l~~L~~and u~~U~~ses as land uses that are integrated with multimodal transportation systems, facilitating creation of Complete Streets by equally supporting all types of transportation, including pedestrian, bicycle, and vehicular traffic.

Urban Land Use, Section 8.14 ~~– 8.16~~, Residential Land Use Compatibility:

a. Protect and enhance the character of existing single-family areas.
b. Protect existing single-family areas from adjacent incompatible land use designations which would degrade the environmental quality and economic stability of the area.
c. Encourage transit-oriented development- in appropriate locations and ~~the~~a mixture of appropriate land uses that would enhance neighborhood quality and support pedestrian and bicycle activity.

Urban Land Use, Section 8.15, Commercial Land Use Compatibility:

Ensure that commercial development is compatible with adjacent land uses and supports a mixture of commercial activity with appropriate service-oriented and transit-oriented land uses.

Urban Land Use, Section 8.16, Commercial Buffers:

Buffer commercial land uses when needed to protect contiguous residential uses, while maintaining connectivity and walkability. ~~.~~

Urban Land Use, Section 8.39, Parking Requirements:

Regulate minimum on-site parking requirements and parking development standards in order to: (1) accommodate the parking needs of the development, (2) provide convenient and safe access, (3) prevent congestion of public streets, ~~and~~ (4) establish orderly development patterns, and (5) discourage an over-reliance on ~~unnecessary~~ auto travel to the exclusion of other travel modes.

Urban Land Use, Section 8.42, Buildings:

Encourage the construction of energy-~~-~~efficient buildings which use renewable resources and resource-efficient design to the maximum extent possible.

Water Supply, Section 10.9, Potential Water Sources:

a. Support the creation of water supplies which are commensurate with the level of development permitted in adopted land use plans.
b. Identify and encourage the protection and development of sites in rural areas suitable for reservoirs to store water supplies.
c. Encourage and support different techniques to convert salt water to potable water.
d. ~~Consider~~ Encourage the use of treated wastewater as a potential source of water.
e. Encourage the development of off-stream reservoirs for the retention of water generated from winter runoff.

Water Supply, Section 10.26, ~~Water Reclamation~~Wastewater Reuse:

10.26 Wastewater Reuse
a. Encourage the reuse and recycling of water whenever feasible.
b. Encourage the use of treated wastewater that meets applicable County and State health agency criteria.
~~e~~c. Support small-scale and on-site water recycling technologies, which meet public health and safety standards, for landscaping and agricultural purposes~~, which meet public health and safety standards~~.

Transportation, Section 12.1, Goals and Objectives:

12.1 Plan for a transportation system that provides for the safe, efficient, and convenient movement of people and goods in and through San Mateo County.
12.2 Create and maintain Complete Streets that serve all categories of transportation users and goods, providing safe, efficient, comfortable, and convenient travel along all streets through an integrated, balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan.
12.3~~2~~ To the extent possible, plan for accommodating future transportation demand in the County by using existing transportation facilities more efficiently, or improving and expanding them before building new facilities.
12.4~~3~~ Provide for a balanced and integrated transportation system in the County which allows for travel by various modes and easy transfer between modes.

12.54 Plan for increasing the proportion of trips using public transit or ridesharing.
12.65 Balance and attempt to minimize adverse environmental impacts resulting from transportation system improvements in the County.
12.76 Promote the development of energy-conserving transportation systems in the County.
12.78 Coordinate transportation planning with adjacent jurisdictions.

Transportation, Section 12, suggested additions:

Add definition of Complete Streets as an approach to transportation that describes an integrated, multimodal transportation system thatwhich equally supports all types of transportation, including pedestrian, bicycle, and vehicular traffic.

Add definition of Complete Streets Pprojects: Including but not limited to sidewalks, shared--use paths, b-icycle lanes, bicycle routes, paved shoulders, street trees and landscaping, planting strips, accessible curb ramps, crosswalks, refuge islands, pedestrian signals, and signs, street furniture, bicycle parking facilities, public transprotationtransportation stops and facilities, transit priority signalization, and other features assisting in the provision of safe travel for all users, such as traffic--calming devicescircles, transit bulb-outs, curb extensions, chicanes, and road diets.

Add definition of streets to include streets, roads, bridges, interchanges used to get to and across highways, bridges, and other portions of the transportation system.

Add definition of transportation users as motorists, movers of commercial goods, users of public transportation, bicyclists, pedestrians of all ages and abilities,, children, persons with disabilities, and seniors, bicyclists, persons with disabilities, motorists, movers of commercial goods, users and operations, operators of public transportation, seniors, children, youth, and families. (STET)

Add definition of streets projects: pPlanning, design, and implementation process for street construction, reconstruction, retrofit, maintenance, operations, alteration-, or repair of streets, as feasible.; and p-Projects, programs, and practices, including but not limited to pavement resurfacing, restriping, accessing aboveground and underground utilitiesutility projects, signalization operations or modifications, and maintenance of landscaping/related features.

Transportation, Section 12.9, Rural Road Improvements:

In rural areas, where improvements are needed due to safety or congestion, support improved traffic control measures that balance the needs of all users and provide safe travel, implementing measures such as signing, lane markings, and speed controls, and the construction of operational and safety improvements, such as adequate passing lanes, elimination of sharp curves, lane widening, or paved shoulders.

Transportation, Section 12.10, Urban Road Improvements:

> In urban areas, where improvements are needed due to safety concerns or congestion, support the construction of interchange and intersection improvements, additional traffic lanes, turning lanes, redesign of parking, channelization, traffic control signals, or other improvements while enhancing the functionality of travel routes for all transportation users.

Transportation, Section 12.13, Circulation East of Highway 101:

> Encourage the cities and Caltrans to develop an adequate circulation system, including bikeways~~,~~ and other context-sensitive design features to serve all transportation users and new development east of Highway 101 and which, to the maximum extent feasible, does not adversely affect baylands or wetlands.

Transportation, Section 12.15, Local Circulation Policies:

> In unincorporated communities, plan for providing:
> a. Maximum freedom of movement for all transportation users and adequate access to various land uses~~;~~.
> b. Improved streets, sidewalks, ~~and bikeways~~bicycle routes, landscaping, shared-use paths, ~~-~~and other site-appropriate design features that enhance the safety and usability of transportation networks in developed areas~~;~~.
> c. Minimal through~~-~~traffic in residential areas~~;~~.
> d. Routes for truck traffic which avoid residential areas and are structurally designed to accommodate trucks~~;~~.
> e. Access for emergency vehicles~~;~~.
> f. Safe and efficient ~~B~~bicycle and pedestrian travel~~-~~;.
> g. Access by ~~physically handicapped persons~~all transportation users, including persons with disabilities, seniors, children, and youth, to public buildings, shopping areas, hospitals, offices, and schools~~, including persons with disabilities, seniors, children, and youth~~;.
> h. Prioritization of accessibility to transit services and to ~~Routes~~ routes and turnouts for public transit~~;~~.
> i. Parking areas for ridesharing~~;~~.
> j. Coordination of transportation improvement with adjacent jurisdictions.

Transportation, Section 12.19, Parking Standards:

> Review and update the County's off-street and on-street parking standards in order to reflect current conditions and requirements. Consider the needs of each individual land use, the potential for joint use of parking areas, fees in lieu of parking, spaces for smaller cars, and parking management strategies that support project needs while reducing an over-abundance

of surface parking to the detriment of other categories of transportation users or other land uses.

Transportation, Section 12.23, ~~Suggested~~ suggested addition:

[Insert a new s~~S~~ection, titled Complete Streets, to start as S~~s~~ection 12.23 (preceding the Public Transit and Ridesharing Category)]

Complete Streets

12.23 Context-Sensitive Street Design
Coordinate with stakeholders during street planning and design to maintain sensitivity to local conditions and ensure a strong sense of place that meets the needs of transit users, including consideration of a diversity of C~~c~~omplete S~~s~~treets projects.

12.24 Integration with Regional Complete Streets Planning
Coordinate transportation and street~~s~~ projects with local and regional plans for bicycle, pedestrian, transit, and related multimodal plans designed to support Complete Streets.

12.25 Existing Street and Network Connectivity
Incorporate Complete Streets infrastructure into existing streets to improve the safety and convenience of users, ~~create employment,~~ accommodate all transportation users, and increase connectivity across jurisdictional boundaries and for existing and anticipated areas of development.

Transportation, Section 12.45, Role of County:

a. Provide a leadership role in coordinating countywide transportation issues with the cities of San Mateo County.
b. Continue County participation in the regional transportation planning activities of MTC, SamTrans, RPC, and the City County Engineers Association.
c. Strengthen County participation in the regional transportation planning structure by using the policy framework of this chapter and the area plans to provide input for decision-~~-~~making.
d. Provide staff support in transportation planning to assist County decision-~~-~~makers; coordinate with MTC, SamTrans, and CalTrans; maintain a transportation planning data~~-~~base; review and comment on transportation plans and programs affecting the County; and periodically review and update the Transportation Chapter of the General Plan.
e. Support consultation with local and regional bicycle, pedestrian, transit, and other multimodal relevant plans to achieve Complete Streets and support connectivity across jurisdictional boundaries.

fe. Departments and agencies of San Mateo County addressing transportation issues shall work towards making Complete Streets practices a routine aspect of everyday operations and integrate Complete Streets planning into all long-term streets projects, as feasible.
g. County staff will use a standardized process to document the integration of Complete Streets into street projects, which shall also allow for documentation of reasons the project could not accommodate all modes of transportation.

Natural Hazards, Section 15.4, Definition of Natural Hazards:

15.4 Definition of Natural Hazards
Define natural hazards as conditions of potential danger or risk to life and/or property resulting from acts of nature, man-made alterations to the natural environment that create hazardous conditions, and/or hazardous conditions intrinsic to the natural environment. Natural hazards may include risks or vulnerabilities likely to be caused or exacerbated by climate change.

Natural Hazards, Section 15.12, Locating New Development in Areas Which Contain Natural Hazards:

a. As precisely as possible, determine the areas of the County where development should be avoided or where additional precautions should be undertaken during review of development proposals due to the presence of natural hazards.
b. Give preference to land uses that minimize the number of people exposed to hazards in these areas.
c. Determine appropriate densities and development.
d. Require detailed analysis of hazard risk and design of appropriate mitigation when development is proposed in these areas, including assessment of hazardous conditions expected to be exacerbated by climate change, such as increased risks of fire, flooding, and sea level rise.

Natural Hazards, Section 15.15, Critical Facilities:

a. Where practical, avoid the location of new critical facilities in areas which contain significant natural hazards or are likely to contain significant natural hazards due to the impacts of climate change.
b. Continue to work with public utilities, school districts, and other agencies supplying critical public services to ensure that they have incorporated structural safety and other measures to be adequately protected from natural hazards for both existing and proposed facilities and are prepared for potential disasters affecting these facilities.