

5.1 Introduction

The California Environmental Quality Act (CEQA) (Public Resources Code [PRC], Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.) require that an environmental impact report (EIR) “describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives” (State CEQA Guidelines Section 15126.6(a)). If mitigation measures or a feasible project alternative that would meet most of the basic project objectives would substantially lessen the significant environmental effects of a proposed project, then the lead agency should not approve the proposed project unless it determines that specific technological, economic, social, or other considerations make the mitigation measures and the project alternative infeasible (PRC Section 21002, State CEQA Guidelines Section 15091(a)(3)). The EIR must also identify alternatives that were considered by the lead agency but rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency’s determination (State CEQA Guidelines Section 15126.6(c)). Therefore, pursuant to the State CEQA Guidelines, this chapter briefly explains the reasons why certain identified alternatives were rejected as infeasible.

One of the alternatives that must be analyzed is the No Project Alternative. The analysis must consider the existing conditions at the time the notice of preparation (NOP) was published as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved and development continued to occur in accordance with existing plans and consistent with available infrastructure and community services (State CEQA Guidelines Section 15126.6(e)(2)). The No Project Alternative is not required to be feasible, nor is it required to meet any of the project objectives or reduce the project’s expected impacts to any degree.

In addition to the No Project Alternative, this chapter describes additional alternatives (Zero Net Energy Buildings Alternative and Carbon Offset Alternative) to the proposed Climate Action 2020: Community Climate Action Plan (CAP) and analyzes the impacts of each. It compares the significant impacts of the alternatives to the significant environmental impacts of the project as proposed.

5.2 Alternatives Selection Process

As allowed by CEQA, an EIR needs to analyze only alternatives that are feasible, that meet most of the project objectives, and that reduce one or more of the significant impacts of the project. Thus, it is important to establish project objectives and profile the significant impacts of the project.

The NOP for the project was available for review and comment during a 30-day period between September 28 and October 27, 2015. One suggestion regarding the alternatives was received in response to the NOP. This alternative (Increased Employment Alternative) is discussed below in Section 5.5, *Alternatives Considered but Rejected*.

5.2.1 Project Objectives

As discussed in Chapter 2, *Project Description*, the proposed CAP would include both regional measures, to be implemented by the Regional Climate Protection Authority (RCPA) and other regional agencies (with local government support), and local measures, to be implemented by local governments (with RCPA and regional agency support and on their own). The RCPA, other regional agencies, and local governments in Sonoma County (County) have identified the following project objectives, which are relevant to the physical impacts considered in this Draft EIR:

- Identify specific and implementable actions that the RCPA, other regional agencies, each participating community, and individual residents and businesses can take to reduce greenhouse gas (GHG) emissions, consistent with, and even exceeding, the goals established in Assembly Bill (AB) 32. **Specifically, the CAP target is to reduce countywide GHG emissions to 25% below 1990 levels by 2020.**
- Promote consistency with the land use policy direction and growth anticipated in local general plans.
- Allow for continued economic growth to provide opportunities for businesses and residents.

As stated above, the alternatives to a proposed project are meant to feasibly attain most of the basic project objectives while avoiding or substantially lessening significant impacts. Significant project-specific and cumulative impacts related to implementation of the CAP are discussed below.

5.2.2 Project Features

The CAP seeks to reduce GHG emissions through the approaches listed below.

- **Building Energy** emissions-reduction strategies include:
 - a. Increasing the energy efficiency of buildings
 - b. Increasing renewable energy use
 - c. Switching equipment from fossil fuel to electricity
- **Transportation and Land Use** emissions-reduction strategies include:
 - a. Reducing travel demand through focused growth
 - b. Encouraging a shift toward low-carbon transportation options
 - c. Increasing vehicle and equipment fuel efficiency
 - d. Encouraging a shift toward low-carbon fuels in vehicles and equipment
 - e. Reducing idling
- **Solid Waste Generation** emissions-reduction strategies include:
 - a. Increasing solid waste diversion
 - b. Increasing the capture and use of methane from landfills
- **Water Conveyance and Wastewater Treatment** emissions-reduction strategies include:
 - a. Reducing water consumption
 - b. Increasing recycled water and greywater use
 - c. Increasing water and wastewater infrastructure efficiency
 - d. Increasing the use of renewable energy in water and wastewater systems

- **Livestock and Fertilizer** emissions-reduction strategies include:
 - a. Reducing emissions from livestock operations
 - b. Reducing emissions from fertilizer use
- **Advanced Climate Initiatives** aim to reduce emissions by:
 - a. Protecting and enhancing the value of open and working lands
 - b. Promoting sustainable agriculture
 - c. Increasing carbon sequestration
 - d. Educating residents about emissions from the consumption of goods and services

5.2.3 Significant Impacts of the Project (Before Mitigation)

The significant impacts, prior to mitigation, that would result from implementation of the CAP are provided below for each environmental resource area. This impact analysis is provided in Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*, and summarized in Table ES-1 of the *Executive Summary*. All significant impacts, except one, can be reduced to a less-than-significant level with mitigation measures, as described in Chapter 3. Implementation of the CAP would result in one significant and unavoidable impact (Impact CUL-1) on historic resources from the installation of solar rooftops.

- *Aesthetics*
 - The project could result in daytime glare impacts for motorists while traveling in the project vicinity as well as residents in the area if reflections from the rooftop photovoltaic solar panels are directed toward a roadway or residence, thereby affecting public safety (Impact AES-2). These impacts can be mitigated to a less-than-significant level with mitigation identified in Section 3.2, *Aesthetics*.
- *Air Quality*
 - The project could increase emissions of ozone-precursor pollutants (i.e., reactive organic gases [ROGs] and oxides of nitrogen [NO_x]) and fugitive dust (i.e., particulate matter [PM]) during new or remodeled construction of solid waste facilities, mixed-use and transit-oriented development in city centers, wastewater plant upgrades, recycled water line extensions, and transportation facilities (Impact AQ-2a). These impacts can be mitigated to a less-than-significant level with mitigation identified in Section 3.4, *Air Quality*.
- *Biological Resources*
 - The project could affect sensitive and special-status species, their habitat, migratory corridors, and wetlands or riparian habitat if solid waste facilities, recycled water line extensions, and transportation facilities (that are not part of existing roadways) are sited in areas with these resources (Impacts BIO-1 and BIO-2). These impacts can be mitigated to a less-than-significant level with mitigation identified in Section 3.5, *Biological Resources*.
 - The project could conflict with local tree ordinances if the construction of solid waste facilities, recycled water line extensions, or transportation facilities or the installation of rooftop photovoltaic solar panels (if overhanging trees substantially hinder access) would

result in the removal of protected trees (Impact BIO-3). These impacts can be mitigated to a less-than-significant level with mitigation identified in Section 3.5, *Biological Resources*.

- *Cultural Resources*

- The project could alter a historic resource's physical characteristics if energy-efficient retrofits; electric charging or alternative fueling facilities; transit, pedestrian, bicycle, or traffic-calming facilities; solid waste facilities; wastewater plant upgrades; recycled water line extensions; methane digesters; or mixed-use and transit-oriented developments in city centers are located at the site of a historic resource, thereby resulting in an adverse change in the significance of the resource itself. Although unlikely, for the reasons also discussed in Section 3.2, *Aesthetics*, future projects in furtherance of the plan could alter the character-defining feature of a historic building if rooftop photovoltaic solar panels are installed on the structure (Impact CUL-1). These impacts can be mitigated with mitigation identified in Section 3.6, *Cultural Resources*, but not necessarily to a less-than-significant level related to potential impacts of solar roofs on historic buildings.
- The project could disturb archaeological resources, paleontological resources, and human remains through ground-disturbing activities associated with the construction of solid waste facilities, recycled water line extensions, transportation facilities, and mixed-use and transit-oriented development in city centers (Impacts CUL-2 and CUL-3). These impacts can be mitigated to a less-than-significant level with mitigation identified in Section 3.6, *Cultural Resources*.

- *Hazards and Hazardous Materials*

- The project could result in the accidental release of hazardous materials during the installation of rooftop photovoltaic solar panels or the construction of energy-efficient retrofits; electric charging or alternative fueling facilities; transit, pedestrian, bicycle, or traffic-calming facilities; solid waste facilities; wastewater plant upgrades; recycled water line extensions; methane digesters; or mixed-use and transit-oriented development in city centers (Impacts HAZ-1a and HAZ-2). These impacts can be mitigated to a less-than-significant level with mitigation identified in Section 3.9, *Hazards and hazardous Materials*.

- *Transportation and Traffic*

- The project could temporarily disrupt traffic flows on area roadways, substantially increase hazards due to incompatible uses, or delay emergency access by increasing the number of heavy-duty construction vehicles on roadways with normal vehicle traffic during the installation of rooftop photovoltaic solar panels or the construction of energy-efficient retrofits; electric charging or alternative fueling facilities; transit, pedestrian, bicycle, or traffic calming facilities; solid waste facilities; wastewater plant upgrades; recycled water line extensions; methane digesters; or mixed-use and transit-oriented development in city centers (Impacts TRA-1a, TRA-4a, and TRA-5a). These temporary impacts can be mitigated to a less-than-significant level with mitigation identified in Section 3.5, *Transportation/Traffic*.

5.3 Description of Alternatives Considered

Given the goal of reducing significant environmental impacts, as listed above, alternatives were developed for evaluation in the Draft EIR:

- No Project Alternative
- Zero Net Energy Buildings Alternative
- Carbon Offset Alternative.

5.3.1 No Project Alternative

The No Project Alternative, which is required to be analyzed under CEQA, assumes that the County will not adopt and implement a countywide CAP. The No Project Alternative scenario would include already-adopted (as of September 28, 2015, when the NOP was published) plans and programs related to reducing GHG emissions.

The nine statewide measures for reducing GHG emissions related to building energy and transportation would remain in effect as part of the No Project Alternative. These statewide measures to reduce GHG emissions include the following and would result in 582,364 MTCO_{2e} of GHG emissions reductions in 2020:

- *Title 24 Energy Efficiency Standards for Commercial and Residential Buildings (Title 24)* requires that new and remodeled buildings be designed to conserve energy and water.
- *Lighting Efficiency and Toxics Reduction Act (AB 1109)* requires a reduction in electricity used for lighting in new buildings through regulation and lighting standards.
- *Industrial Boiler Efficiency* requires an annual tuning of all boilers or the installation of controls and systems to maximize efficiency.
- *Renewable Portfolio Standard (RPS)* requires electric utilities, including Pacific Gas and Electric (PG&E), Healdsburg, and Sonoma Clean Power (SCP), to procure an increasing amount of their electricity from eligible renewable sources of up to 33% by 2020.
- *Residential Solar Water Heater Program (AB 1470)* provides incentives to encourage the installation of solar water-heating systems.
- *Pavley Emissions Standards for Passenger Vehicles and the Low-Carbon Fuel Standard* requires increasing the efficiency of automobiles and light-duty trucks by 30% from 2002 levels by 2016. This also requires a reduction in the carbon intensity of transportation fuels sold in California for on-road vehicles.
- *Advanced Clean Cars* requires that vehicle manufacturers increase the average fuel efficiency of their new vehicles beyond the Pavley requirements.
- *Vehicle Efficiency Measures in AB 32* requires increasing the efficiency of vehicles through proper tire inflation, aerodynamic designs for heavy-duty vehicles, hybrid technology for heavy-duty vehicles, and other measures.
- *Low Carbon Fuel Standard (LCFS)* requires a minimum 10% reduction in the carbon intensity of transportation fuels sold in California for off-road vehicles.

Additional measures that would be implemented as part of the No Project Alternative include the following:

- Measure 1-C1, *Community Energy Efficiency Retrofits for Existing Buildings*, includes existing programs and would result in 3,954 MTCO_{2e} of reductions.
- Measure 2-C1, *Community Choice Aggregation* (Sonoma Clean Power), is an adopted program and would result in 48,004 MTCO_{2e} of reductions.
- Measure 5-C3, *SMART*, is an adopted project and is already included in the base forecast for 2020.
- Measure 11-L1, *SB X7-7 – Water Conservation Act of 2009* is a mandatory state requirement being implemented locally and would result in 16,653 MTCO_{2e} of reductions.
- Measure 14-C1, *Sonoma County Water Agency Carbon-Free Water by 2015* is an adopted project and would result in 2,145 MTCO_{2e} of reductions.

This alternative would avoid the generation of approximately 1.21 million MTCO_{2e} in 2020 solely as a result of implementation of the state, regional, and local measures noted above, which would remain in effect as part of the No Project Alternative. In addition, new development projects would be required to comply with CEQA concerning GHG emissions and thus would still be required to reduce their emissions compared with immitigable levels. However, GHG emissions reduction from new development has not been quantified because of insufficient information.

The GHG emissions avoided under the No Project Alternative would represent approximately a 20% reduction in GHG emissions, compared with 1990 levels, by 2020. This alternative is feasible and would lessen the severity of the project's environmental impacts but would not meet the basic objective of the project to reduce countywide GHG emissions to 25% below 1990 levels by 2020.

5.3.2 Zero Net Energy Buildings Alternative

In 2007, the California Energy Commission adopted in Title 24 the goal to achieve zero net energy (ZNE) by 2020 for homes and zero net energy by 2030 for commercial buildings. Under this alternative, in addition to adopting the CAP, the County would also adopt an updated green building ordinance, requiring ZNE for all new commercial and residential buildings in the County beginning in 2017. ZNE buildings produce enough renewable energy to meet their own annual energy consumption requirements, thereby reducing the use of non-renewable energy in the building sector. These buildings achieve ZNE first through high levels of energy efficiency to minimize energy use, then through the addition of on-site renewable power generation. Energy-efficiency measures include building design strategies and features that reduce energy demand such as high-performance building envelopes, air barrier systems, daylighting, sun control and shading design, select windows and glazing, passive solar heating, natural ventilation, and water conservation. Energy use could be managed with efficient equipment and systems, such as energy-efficient lighting; electric lighting controls; high-performing heating, ventilation, and air-conditioning (HVAC); geothermal heat pumps; and energy-conversion devices. Once efficiency measures have been incorporated, the remaining energy needs of the building can be met with renewable generation on-site. Common on-site electricity generation strategies include photovoltaics, solar water heating, and wind turbines.

This measure would avoid the generation of approximately 35,000 MTCO_{2e} by 2020. With the increased GHG emissions reductions from ZNE, the CAP measures that could result in significant

secondary environmental impacts would be modified. The CAP measures incentivizing rooftop photovoltaic solar panels on existing residential and non-residential buildings (e.g., PACE financing) would be modified to not include installations on historic buildings, although permitting for rooftop solar would remain ministerial under AB 2188 and SB 226 (Government Code 65850.5; PRC 21080.35). A major issue discussed at the California Energy Commission regarding phasing in ZNE requirements is economic feasibility. While it is technically feasible to construct ZNE buildings using current technology, the cost of constructing such buildings would be substantially higher than the cost of constructing current new buildings; therefore, it is uncertain whether it would be financially feasible for private and public project proponents to require all new construction to meet such a higher standard immediately starting in 2017. Operationally, ZNE buildings would be much more efficient than buildings that meet the current 2013 Title 24 requirements and therefore would have lower energy demands and associated costs. No assessment has been done of the financial tradeoffs of the higher upfront costs vs. the operational reduction in energy costs.

This alternative would lessen the severity of the project's environmental impacts, and would meet the basic objective of the project to reduce countywide GHG emissions to 25% below 1990 levels by 2020, although it would likely involve major costs. This alternative could potentially have negative impacts on the availability of new housing within the County.

5.3.3 Carbon Offset Alternative

Under the Carbon Offset Alternative, the County would reduce GHG emissions through the purchase of valid carbon offsets. Carbon offsets represent reductions in GHG that compensate (or offset) emissions from somewhere else. Offset projects could range from sequestration to investments in energy or water efficiency, wind or solar farms, methane capture at animal farms or landfills, preservation of forested lands subject to development, planting of forests, replacement of high-global warming potential gas use, carbon farming, or other measures.

The offsets could be purchased locally (i.e., within the County), outside the County in California, elsewhere in the United States, or in other countries. If offsets are purchased outside the County, the offsets would provide little to no economic or environmental co-benefits to the County, except the cost savings that might occur if the specific offsets purchased would be less costly than implementing direct GHG reduction measures locally.

With increased reliance on carbon offsets, CAP measures that could result in significant secondary environmental impacts would be modified or not adopted. The CAP measures incentivizing rooftop photovoltaic solar panels on existing residential and non-residential buildings would be modified to not include installations on historic buildings. It is unknown where and to what extent solar might be proposed on historic buildings, but for the sake of this analysis it is assumed that 10 percent of the proposed new solar installations would be on historic buildings. In order to meet the reduction target and replace the GHG emissions reductions that the above-mentioned CAP measures would achieve, the County would need to purchase approximately 3,600 MTCO_{2e} of offsets in 2020 (and for every year thereafter for the equivalent lifetime of solar panels, nominally assumed to be 20 years).

At present, the cost of offsets and carbon allowances in California can range from approximately \$4 per MTCO_{2e} on the voluntary market to \$13 per MTCO_{2e} on the regulated market (California Cap and Trade price as of March 2016). Using this range, the 2020 purchase of 3,600 MTCO_{2e} of offsets could range from approximately \$14,000 to \$47,000 per year. Although it is difficult to predict the cost of offsets in the future, one way of estimating future costs is by using the range of allowable

allowance credit prices (floor of \$10 per MTCO_{2e} to a ceiling of \$40 per MTCO_{2e}) in the California cap-and-trade system, which is the largest market in California. Using this range, the 2020 purchase of 3,600 MTCO_{2e} of offsets could range from about \$36,000 to \$144,000 per year.

In concept, offsets could be used to replace any of the new regional or local measures proposed in the CAP, but costs would increase if measures with larger GHG reduction values were to be offset instead of being implemented. Under this alternative, the RCPA and the implementing cities would need to decide how these offsets would be funded. Possibilities could include payment through city or county general funds, through fees imposed on existing and/or new development, or other requirements.

This alternative is feasible, would lessen the severity of the project's secondary environmental impacts, and would meet the basic objective of the project to reduce countywide GHG emissions to 25% below 1990 levels by 2020. Given the ongoing nature of emissions for projects, and the uncertain life of projects, this alternative would have a significant administrative overhead and it could also lead to a significant amount of money leaving the County.

5.4 Alternatives Considered but Rejected

State CEQA Guidelines Section 15126.6(f)(2) states that a Draft EIR must consider off-site alternatives if such alternatives are deemed to be feasible by the lead agency. As stated in State CEQA Guidelines Section 15126.6(f)(1), factors that may be considered when a lead agency is assessing the feasibility of an alternative include:

site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent).

The RCPA also considered other alternatives but dismissed the alternatives from further analysis in this Draft EIR because the alternatives were determined to be infeasible, would not meet the basic project objectives, or would not reduce one or more of the significant impacts of the project. The reasons for their dismissal are described briefly below.

5.4.1 Growth Moratorium Alternative

Under this alternative, the County would reduce GHG emissions by placing a moratorium on new wineries/vineyard expansions or new housing until the jobs-housing balance in the County is more equitable. A moratorium on new growth, although reducing emissions compared with a business-as-usual (BAU) scenario, would hinder the economic growth of the County and would not be consistent with the existing general plans adopted by the County or the incorporated cities. Thus, this alternative is not analyzed further in this EIR because it would not meet the objective of the project to allow for continued economic growth and provide opportunities for businesses and residents in the County.

5.4.2 Reduced Density Alternative

Under this alternative, the CAP measures that promote mixed-use and transit-oriented development in city centers would not be implemented. Although the infill impacts of existing land use policies that

promote such growth would be lessened, this alternative would result in greater impacts on natural resources (such as agricultural and forestry resources and biological resources) because of potential development in areas where these resources currently exist. This alternative would most likely result in fewer GHG emissions reductions compared with the project and thus would not meet the project objective of reducing countywide GHG emissions. Furthermore, this alternative would not be consistent with the existing land use policies and general plans that promote mixed-use and transit-oriented development within the participating jurisdictions. Thus, this alternative is not analyzed further in this EIR because it would most likely result in greater environmental impacts than the project and would not meet the project's objective of being consistent with land use policy direction, including reducing countywide GHG emissions to 25% below 1990 levels by 2020, and the growth anticipated in local general plans.

5.4.3 Greater Density Alternative

Under this alternative, the County would reduce GHG emissions through the promotion of new changes to existing zoning and land use policies to provide for substantially increased levels of high-density and mixed-use development within the participating jurisdictions' current city limits. This alternative would implement firm urban limit lines and contracted spheres of influences for the participating jurisdictions to prevent further annexations and edge development. With a strict urban limit line, this alternative would promote a more compact city form than is currently called for in local land use plans. As with the project, development would be concentrated in city centers and located near transit options. This alternative would place a greater emphasis on emissions reductions in the transportation sector through a greater reduction in VMT.

This alternative would result in greater secondary physical impacts (air quality, noise, transportation/traffic) in city centers than the project because of the intensification of infill under this alternative compared with the project. Furthermore, this alternative would require participating jurisdictions to change their current land use policies and thus would not meet the project objective of promoting consistency with the land use policy direction and growth anticipated in local general plans. Given the large-scale land use policy changes in this alternative, there may be substantial concern and controversy about pursuing such an alternative. This would require major updates to the adopted general plans and a new public debate about the future of land use in the County and participating jurisdictions. There could be major opposition to this alternative from landowners with land that is located outside of the implemented urban limit line. Whether that opposition and level of controversy would make this alternative politically infeasible is unknown. Thus, this alternative is not analyzed further in this EIR because it is most likely infeasible, would most likely result in greater environmental impacts than the project, and would not meet the project's objective of being consistent with the land use policy direction and growth anticipated in local general plans.

5.4.4 Increased Sonoma Clean Power Renewable Alternative

This alternative would require SCP, the official electricity provider of the County, to procure an increasing amount of its electricity from eligible renewable sources. Under this alternative, SCP would increase renewable sources in its CleanStart service to 50% by 2020. SCP's current renewable sources include solar, wind, and geothermal; approximately 36% of SCP's CleanStart service is currently procured from renewable sources. This alternative and the decision to increase SCP's eligible renewable sources are independent of the RCPA and participating jurisdictions, and for SCP

involve a variety of considerations, including the likelihood that ratepayers will continue to participate in SCP. This alternative is not analyzed further in this EIR because it cannot be implemented by the RCPA or participating jurisdictions.

5.4.5 Expanded Transit Service Alternative

Under this alternative, the County and local jurisdiction would substantially expand transit service levels by improving bus headway, routes, and operations. This alternative would also expand Sonoma Marin Area Rail Transit (SMART) operations in the County and to Marin County beyond those currently proposed. Local municipal bus services in Santa Rosa, Petaluma, Healdsburg, and Cloverdale and countywide bus transit services (such as Sonoma County Transit) would also be expanded. However, the feasibility of expanding the transit services of local municipal and countywide bus services is uncertain because of the financial constraints in expansion beyond what is currently planned for by the local transit agencies. In addition, SMART is an adopted project, with the first phase (connecting San Rafael and Santa Rosa) currently under construction, with service anticipated to begin in 2016. The feasibility of additional expansion phases of SMART, with extension to the north and south, is uncertain and unknown because of the lack of identified funding. Thus, this alternative is not analyzed further in this EIR because of the uncertainty of what could be achieved in terms of GHG emissions reductions from expanded transit service by 2020.

5.4.6 1990 Levels by 2020 (AB 32) Alternative

Under this alternative, the County would adopt a reduction target plan that would be less stringent than the project. This alternative, which would be consistent with AB 32, would set the GHG emissions reduction target to 1990 levels by 2020 and be the “minimum plan” alternative. Although this alternative is feasible, it would not meet the basic objective of the project (i.e., to reduce countywide GHG emissions to 25% below 1990 levels by 2020). Furthermore, this alternative would result in greater GHG impacts than the project because of fewer GHG emissions reductions under this alternative compared with the project. There would also be fewer economic or environmental co-benefits (i.e., less air pollution) in the County compared with the project. Thus, this alternative is not analyzed further in this EIR because it would result in greater environmental impacts than the project and would not meet the basic objective of the project to reduce countywide GHG emissions to 25% below 1990 levels by 2020.

5.4.7 80% Below 1990 Levels by 2020 Alternative

Under this alternative, the County would adopt a more aggressive reduction target than that of the project. The alternative would surpass the target in Executive Order S-03-05 of 80% below 1990 levels by 2050 by accelerating the target date (i.e., to 2020). As discussed in Section 3.8, *Greenhouse Gas Emissions*, this target is in excess of the minimum target necessary to be consistent with AB 32. This alternative would require substantially more aggressive reduction measures, which would most likely result in an increase in secondary physical effects compared with those of the project. Furthermore, although the County can influence some emissions, it does not have the jurisdiction that the federal government has with respect to some of the larger sources (e.g., vehicle technology and fuels), jurisdiction that is necessary to achieve such aggressive goals. At this time, this alternative is considered infeasible in the short run (by 2020) and the medium term (by 2030), although it is a long-term GHG emissions reduction goal for the County by 2050. Thus, this alternative is not analyzed further in this EIR because it is infeasible, would result in greater

environmental impacts than the project, and is not necessary to meet the basic objective of the project to reduce countywide GHG emissions to 25% below 1990 levels by 2020.

5.5 Impact Assessment of Alternatives

The following analysis emphasizes a comparison of the adverse effects of each alternative with those identified for the project in order to make a determination regarding whether an alternative would avoid or substantially lessen any of the significant effects of the project. Because each of the action alternatives (Zero Net Energy Buildings Alternative and Carbon Offset Alternative) would include similar policies and would focus, enhance, or accelerate certain policy areas, no new significant impact categories not already identified in the discussion of the project are anticipated.

5.5.1 No Project Alternative

As discussed above, the No Project Alternative is required to be analyzed under CEQA and assumes that the County would not adopt the CAP. The statewide measures that reduce GHG emissions related to building energy and transportation would remain in effect. Additionally, several regional and local GHG emissions reduction measures would also remain in effect (existing retrofit programs, Sonoma Clean Power, SMART, SB X 7-7 water conservation, and SCWA carbon free water).

Since statewide measures would be the same as those for the proposed project and would occur with or without CAP adoption, they are not addressed further.

The regional and local measures that would be implemented with the No Project Alternative would result in impacts limited to existing buildings (energy efficiency retrofits), water conservations, carbon free water, in relation to SCP, and due to the SMART facilities. All of these impacts would occur with the proposed project as well. The No Project Alternative would not result in any new facilities that the proposed project would not.

The environmental impacts of the No Project Alternative relative to the project are summarized below.

- *Aesthetics*: Under this alternative, impacts on scenic views or vistas, scenic resources, and existing visual character would be less than those of the project. The No Project Alternative would not include measures that would promote rooftop solar energy installations and thus would avoid potential daytime glare impacts related to public safety.
- *Agriculture and Forest Resources*: Under this alternative, impacts on agriculture and forestry resources may be less than those of the project. The No Project Alternative would not include measures that may promote construction of facilities that may be located in areas with agricultural or forest resources. However, the No Project Alternative does not include the land conservation measures or the agricultural supporting measures included in the CAP, and thus may have less of a benefit in terms of preserving open space and working lands. The project's benefits to agricultural and forest resources is expected to more than compensate for potential new facility effects; therefore, the No Project Alternative is expected to result in similar overall impacts on agriculture and forestry resources.
- *Air Quality*: The No Project Alternative does not promote as much construction of new facilities and therefore would result in fewer air quality impacts during construction and operation than the project. However, compared with the project, the No Project Alternative would result in

greater air pollution because it would implement only a few of the CAP measures that are already mandated. In particular, the No Project Alternative would have higher vehicle travel and associated criteria pollutant emissions. Under the No Project Alternative, the co-benefits of reducing GHG emissions and, consequently, air pollution would not be realized. Therefore, overall, under this alternative, impacts on air quality would be higher than those of the project.

- *Biological Resources:* Under this alternative, direct impacts on biological resources would be less than those of the project due to fewer facilities necessary to implement GHG measures. However, because the No Project Alternative would have higher VMT, it would result in greater amounts of air pollution and water pollution that would adversely affect habitats for terrestrial and aquatic biological resources.
- *Cultural Resources:* The No Project Alternative would require fewer ground-disturbing activities and therefore would have less potential to encounter archaeological and paleontological resources or human remains. Energy-efficient retrofits promoted by the No Project Alternative would be constructed within existing buildings. These improvements would be minor and unlikely to alter the character-defining features of a historic building. Therefore, impacts on cultural resources would be less than those of the project.
- *Geology and Soils:* The No Project Alternative would require less construction of new facilities and therefore would encounter less geological and soil hazards. Under this alternative, impacts from geologic and soil hazards would be less than those of the project.
- *Greenhouse Gas Emissions:* GHG emissions would be approximately five percent higher than for the project; therefore, co-benefit of reducing GHG emissions would not be as beneficial under the project. Thus, under this alternative, GHG emissions impacts would be more than those of the project.
- *Hazards and Hazardous Materials:* The No Project Alternative would promote less construction of new facilities and therefore would result in less public exposure to hazardous materials during construction and operation of facilities. However, this alternative would result in higher VMT and therefore greater use of petroleum and vehicle fluids than the proposed project and greater risk of spills of such materials. Although potential exposure resulting from new facilities would be less, due to the higher petroleum use and associated risks of spills, impacts related to hazards and hazardous materials would be higher than those of the project.
- *Hydrology and Water Quality:* The No Project Alternative would promote less construction of new facilities and thus would result in reduced hydrology and water quality impacts during construction of new facilities. However, this alternative would result in higher VMT and therefore greater use of petroleum and vehicle fluids than the proposed project and greater potential for indirect effects on water quality due to urban runoff containing petroleum. Although potential direct effects on water quality resulting from new facilities would be less, due to the higher petroleum use and associated water quality effects, impacts on water quality would be higher than those of the project.
- *Land Use and Recreation:* The No Project Alternative would promote less construction of new facilities and therefore may have less inconsistency with land use plans, policies, or regulations or land use compatibility issues than the project. However, as discussed in Chapter 3, the CAP measures are consistent with existing land use policies and represent the fulfillment of many of the purposes of such policies, whereas the No Project Alternative would result in a lesser level of accomplishment of many land use policies. In addition, the No Project Alternative would result

in fewer pedestrian and bicycle facilities than the project and would have fewer benefits for recreation. Therefore, while the No Project Alternative would result in fewer direct impacts on land use and recreation from new facilities, it would represent a lesser fulfillment of many land use and recreational priorities.

- *Noise*: The No Project Alternative would promote less construction of new facilities and therefore fewer noise impacts during construction. The No Project Alternative would result in higher VMT than the project overall and therefore would in general result in higher traffic noise levels, although the project may have higher transit noise levels in certain areas. Under this alternative, impacts on the existing noise environment overall would be higher than those for the project because of overall higher traffic levels; however, in certain areas with increased transit noise the project may have higher noise levels.
- *Public Services, Utilities, and Energy*: The No Project Alternative would promote less construction of new facilities and therefore would require fewer additional public services and utilities for new facilities. However, compared with the project, the No Project Alternative would not include GHG-reduction measures to increase solid waste diversion, reduce water consumption, and increase recycled water and greywater use. The co-benefits of the project in terms of reducing demand for public utilities would not be realized. The project also includes regional and local measures to reduce building energy use. Although the No Project Alternative would include some measures to reduce building energy use, the benefits to energy resources would not be as great as compared to those for the project. Overall, under this alternative, impacts on public services would be fewer than those of the project, but impacts on public utilities and energy would be more than those of the project.
- *Transportation and Traffic*: The No Project Alternative would promote less construction of new facilities and therefore would result in fewer direct traffic impacts during construction. However, the No Project Alternative would result in higher VMT and worse traffic than the project because it would not include many of the measures to promote transit and alternatives to individual personal vehicle travel. Under this alternative, impacts on traffic and transportation would therefore be higher than those of the project.

5.5.2 Zero Net Energy Buildings Alternative

As discussed above, under the Zero Net Energy Buildings Alternative, the County would adopt an updated green building ordinance, requiring ZNE for all new commercial and residential buildings in the County beginning in 2017. ZNE buildings employ high levels of energy efficiency to minimize energy use and typically include on-site renewable power generation. With the increased GHG emissions reductions from ZNE, the CAP measures in support of the rooftop photovoltaic solar panels on existing residential and non-residential building would be modified to preclude installation on historic buildings.

The environmental impacts of the Zero Net Energy Building Alternative relative to the project are summarized below.

- *Aesthetics*: Under this alternative, impacts on scenic resources and existing visual character would be similar to those for the project. Although this alternative would preclude rooftop photovoltaic solar panels from being installed on historic buildings, impacts from solar installations on non-historic existing buildings and new buildings could create daytime glare impacts related to public safety. With the ZNE requirement, there would likely be more

renewable energy installations for new development; however, since the ZNE requirement would only apply to new development it would not change the visual character of existing development.

- *Agriculture and Forestry Resources*: Similar to the project, this alternative would promote concentrated growth in city centers and most likely divert development from non-urbanized areas with agricultural and forestry resources. The alternative, similar to the project, would promote the construction of facilities that could be located in areas with agricultural and forestry resources. Therefore, under this alternative, impacts on farmlands, agricultural lands, and forestlands would be the same as under the project.
- *Air Quality*: Under this alternative, impacts on the air quality would be similar to those for the project. This alternative, similar to the project, promotes the construction of new facilities, which could result in temporary localized air quality impacts during construction. Operationally, this project would result in similar air quality benefits from reduced vehicle emissions and reduced energy demands for buildings. Therefore, under this alternative, impacts on air quality would be the same as under the project.
- *Biological Resources*: Similar to the project, this alternative would promote concentrated growth in city centers and most likely divert development from non-urbanized areas with biological resources. The alternative, similar to the project, would promote the construction of facilities that could be located in areas with biological resources. ZNE buildings may require additional renewable energy facilities than Title 24-compliant-only buildings, which could result in additional footprints of development that might increase slightly the impacts on biological resources. Therefore, under this alternative, impacts on biological resources would be similar to, but possibly slightly higher than, those for the project.
- *Cultural Resources*: Under this alternative, impacts on archaeological resources, paleontological resources, and human remains would be same as under the project. However, under this alternative, CAP measures supporting rooftop photovoltaic solar panels on existing buildings would be modified to preclude installation on historic buildings. Therefore, compared to the project, this alternative would avoid significant and unavoidable impacts on historic resources.
- *Geology and Soils*: Under this alternative, impacts from geologic and soil hazards would be the same as under the project. This alternative, similar to the project, promotes the construction of new facilities that could be located in geological hazard areas.
- *Greenhouse Gas Emissions*: This alternative would reduce the same amount of GHG emissions as the project. Because all the measures would be implemented locally (i.e., within the County), the co-benefits of reducing GHG emissions would be received locally as well.
- *Hazards and Hazardous Materials*: Under this alternative, impacts from hazards and hazardous materials would be the same as under the project. This alternative, similar to the project, promotes the construction of new facilities, which could result in public exposure to hazardous materials during construction and operation.
- *Hydrology and Water Quality*: Under this alternative, impacts on hydrology and water quality would be the same as under the project. This alternative, similar to the project, promotes the construction of new facilities, which could result in hydrology and water quality impacts during construction.

- *Land Use and Recreation*: Similar to the project, this alternative would promote concentrated growth in city centers, which is consistent with local land use plans of the incorporated jurisdictions. The alternative, similar to the project, would promote the construction of facilities that could be located on land uses not zoned for the particular use and result in land use compatibility issues with existing adjacent uses. Therefore, under this alternative, land use and recreation impacts would be the same as under the project.
- *Noise*: This alternative, similar to the project, promotes the construction of new facilities, which could result in temporary noise increases during construction. Therefore, under this alternative, noise impacts would be the same as under the project.
- *Public Services, Utilities, and Energy*: Similar to the project, this alternative would not create a new population; rather, it would divert growth to city centers where development already exists. Under this alternative, impacts on public services and utilities would be the same as under the project. However, under this alternative, all new commercial and residential development would be required to be ZNE in 2017 rather than in 2020 (residential) and 2030 (commercial). ZNE buildings employ high levels of energy efficiency to minimize energy use combined with on-site renewable energy. This alternative might result in slightly less energy demand overall than the project because more of the GHG reductions would likely be met through energy efficiency due to the ZNE requirement.
- *Transportation and Traffic*: This alternative, similar to the project, promotes the construction of new facilities, which could result in temporary localized traffic impacts during construction. Thus, under this alternative, traffic impacts would be the same as under the project.

5.5.3 Carbon Offset Alternative

As discussed above, under the Carbon Offset Alternative, the County would reduce GHG emissions through the purchase of valid carbon offsets. The offsets could be purchased locally (i.e., within the County), outside of the County in California, or outside California. With increased reliance on carbon offsets, CAP measures that could result in significant secondary impacts would be modified or not adopted.

While in concept any local or regional CAP measure could be replaced with offsets, for the purpose of impact analysis, the CAP measures supporting rooftop photovoltaic solar panels on existing residential and non-residential buildings would be modified to preclude installation on historic buildings. Using this assumption, the environmental impacts of the Carbon Offset Alternative relative to the project are summarized below.

- *Aesthetics*: Under this alternative, impacts on scenic resources and existing visual character would be the same as under the project. Although this alternative would preclude rooftop photovoltaic solar panels from being installed on historic buildings, impacts from solar installations on non-historic existing buildings and new buildings could create daytime glare impacts related to public safety. The impacts of offset projects on aesthetics could range widely depending on the specific offsets funded; while many offset projects have little to no aesthetic impacts, some, such as solar or wind farms, could have substantial aesthetic effects. However, it is speculative to conclude what those effects might be without identification of the specific offset projects.
- *Agriculture and Forestry Resources*: Similar to the project, this alternative would promote concentrated growth in city centers and most likely divert development from non-urbanized

areas with agricultural and forestry resources. The alternative, similar to the project, would promote the construction of facilities, which could be located in areas with agricultural and forestry resources. While many offset projects (such as energy efficiency or water efficiency projects) may have little to no impact on agriculture or forestry, or may be beneficial (such as carbon farming or afforestation), it is possible that some offset projects could adversely affect agriculture or forestry resources. It is speculative to conclude what those effects might be.

- *Air Quality*: This alternative, similar to the project, promotes the construction of new facilities that could result in temporary localized air quality impacts during construction and would have similar operational air quality benefits locally. Most offset projects would likely have air quality benefits as well. This alternative would replace the air quality benefits of lowering utility electricity generation with solar panels with some form of carbon offsets. Thus, under this alternative, impacts on air quality would be the same as under the project.
- *Biological Resources*: Similar to the project, this alternative would promote concentrated growth in city centers and most likely divert development from non-urbanized areas with biological resources. The alternative, similar to the project, would promote the construction of facilities, some of which may be located in areas with biological resources. While many offset projects (such as energy efficiency or water efficiency projects) may have little to no impact on biological resources, or may be beneficial (such as land conservation or afforestation), it is possible that some offset projects could adversely affect biological resources. It is speculative to conclude what those beneficial or adverse effects might be without identification of the specific offset projects.
- *Cultural Resources*: Under this alternative, impacts on archaeological resources, paleontological resources, and human remains would be similar to those under the project. However, under this alternative, CAP measures supporting rooftop photovoltaic solar panels on existing buildings would be modified to preclude installation on historic buildings. Therefore, compared with the project, this alternative would avoid direct significant and unavoidable impacts on historic resources. While many offset projects (such as energy efficiency or water efficiency projects) may have little to no impact on cultural resources, it is possible that some offset projects could adversely affect cultural resources. It is speculative to conclude what those adverse effects might be without identification of the specific offset projects.
- *Geology and Soils*: Under this alternative, impacts from geologic and soil hazards would be the same as under the project. This alternative, similar to the project, promotes the construction of new facilities that could be located in geological hazard areas. Offset projects are unlikely to result in significant geology or soils impacts.
- *Greenhouse Gas Emissions*: This alternative would reduce the same amount of GHG emissions as the project.
- *Hazards and Hazardous Materials*: Under this alternative, impacts from hazards and hazardous materials would be the same as under the project relative to measures implemented in Sonoma County. This alternative, similar to the project, promotes the construction of new facilities that could result in public exposure to hazardous materials during construction and operation and helps to reduce VMT and associated hazards with petroleum use and handling during operation. While many offset projects (such as energy efficiency or water efficiency projects) may have little to no impact on hazards or hazardous materials, it is possible that some offset projects could require the use of hazardous materials. It is speculative to conclude what those effects might be without identification of the specific offset projects.

- *Hydrology and Water Quality:* Under this alternative, impacts on hydrology and water quality would be the same as under the project. This alternative, similar to the project, promotes the construction of new facilities that could result in hydrology and water quality impacts during construction and helps to reduce VMT and associated water quality impacts. While many offset projects (such as energy efficiency or water efficiency projects) may have little to no impact on hydrology or water quality, it is possible that some offset projects may have effects, especially during construction. It is speculative to conclude what those effects might be without identification of the specific offset projects.
- *Land Use and Recreation:* Similar to the project, this alternative would promote concentrated growth in city centers, which is consistent with local land use plans of the incorporated jurisdictions. Therefore, under this alternative, direct land use and recreation impacts would be the same as under the project. While many offset projects (such as energy efficiency or water efficiency projects) would not have the potential to result in significant conflicts with land use or recreational use, it is possible that some offset projects may require rezoning or other changes in land use policies to facilitate their implementation. It is speculative to conclude what those effects might be without identification of the specific offset projects.
- *Noise:* This alternative, similar to the project, promotes the construction of new facilities, which could result in temporary noise increases during construction. Therefore, under this alternative, direct noise impacts would be the same as under the project. While many offset projects (such as energy efficiency or water efficiency projects) may have little to no noise or vibration impacts, it is possible that some offset projects, such as wind farms, could result in certain noise impacts. It is speculative to conclude what those effects might be without identification of the specific offset projects.
- *Public Services, Utilities, and Energy:* This alternative, similar to the project, would have the same beneficial impacts on energy as the project. Similar to the project, this alternative would not create a new population; rather, it would focus growth to city centers where development already exists. Under this alternative, impacts on public services and utilities in Sonoma County would likely be the same as under the project. Offset projects would likely result in reduced energy demands as well and are not likely to result in substantial new public service demands. However, offset projects consisting of renewable energy generation may require additional utility line connections and facilities.
- *Transportation and Traffic:* This alternative, similar to the project, promotes the construction of new facilities, which could result in temporary localized traffic impacts during construction. Operationally, this alternative would result in the same reductions in VMT as the project within Sonoma County. Therefore, under this alternative, direct traffic impacts would be the same as under the project locally. Offset projects are not likely to result in substantial new traffic where they are proposed.

5.6 Environmentally Superior Alternative

Section 21002 of the State CEQA Guidelines requires lead agencies to adopt feasible mitigation measures or feasible environmentally superior alternatives in order to substantially lessen or avoid otherwise significant adverse environmental effects, unless specific social or other conditions make such mitigation measures or alternatives infeasible. CEQA also requires that an environmentally superior alternative be identified among the alternatives analyzed. In general, the environmentally

superior alternative is the project that avoids or substantially lessens some or all of the significant and unavoidable impacts of the proposed project (State CEQA Guidelines Section 15126.6).

Table 5-1 compares the potential differences in the level of environmental impacts under the alternatives considered in this EIR. The key areas of differences between the alternatives are as follows:

- The No Project Alternative would not result in direct additional significant impacts on any resources from construction of new facilities and would not result in worse impacts related to air quality, GHGs, water quality, public utilities, and energy compared to the project and the other action alternatives.
- The Zero Net Energy Buildings Alternative would result in similar impacts as the project but would potentially avoid some significant and unavoidable impacts on historical resources. In addition, the Zero Net Energy Buildings Alternative would result in greater beneficial effects related to energy.
- The Carbon Offset Alternative would result in similar impacts as the project but would avoid significant and unavoidable impacts on historical resources. Although the Carbon Offset Alternative would result in the same amount of GHG emissions reductions as compared to the project, because the offsets could be purchased anywhere, the co-benefits of the emissions reductions may not be realized locally. Further, the secondary environmental effects of carbon offset projects cannot be identified at this time because such effects are project specific; therefore, funded offset projects may result in other adverse effects heretofore not identified.

There are notable tradeoffs between the different alternatives. When considering the full range of potential environmental impacts, the Zero Net Energy Buildings Alternative is considered the environmentally superior alternative because it would have lower impacts on historical resources compared with the project and greater benefits related to energy compared with all alternatives. Further, the co-benefits of GHG emissions reductions would be realized locally (compared to the Carbon Offset Alternative).

Table 5-1. Comparison of Alternative Impacts with the Project

	Alternative 1: No Project	Alternative 2: Zero Net Energy Buildings	Alternative 3: Carbon Offset (Due to CAP measures/Due to offset projects) (1)
Aesthetics	Lower	Same	Same/Unknown
Agriculture and Forest Resources	Similar	Same	Same/Unknown
Air Quality	Greater	Same	Same/Same
Biological Resources	Greater	Similar	Same/Unknown
Cultural Resources	Lower	Lower	Lower/Unknown
Geology and Soils	Lower	Same	Same/Same
Greenhouse Gas Emissions	Greater	Same	Same/Same
Hazards and Hazardous Materials	Greater	Same	Same/Unknown
Hydrology and Water Quality	Greater	Same	Same/Same
Land Use and Recreation	Lower	Same	Same/Unknown
Noise	Greater	Same	Same/Unknown
Public Services, Utilities, and Energy	Less for public services; Higher for public utilities and energy	Same for public services and utilities; Lower for energy	Same for Energy and Public services Same/Unknown for utilities
Transportation and Traffic	Greater	Same	Same/Same

(1) As discussed in text, the offset alternative would allow elimination of CAP measures with secondary environmental effects. The analysis uses the example of excluding solar installation on historic buildings. The impact comparisons above are presented separately for the CAP measures vs. offset projects. As offset measures are not known at this time, many of the impacts cannot be determined.

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