

This section identifies the cumulative impacts associated with the proposed project. Cumulative impacts are the result of combining the potential effects of the project with other planned developments, as well as foreseeable development projects. The following discussion considers the cumulative impacts of the relevant environmental issue areas.

5.1 INTRODUCTION

The California Environmental Quality Act (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 consists of an impact that is 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 that the following three elements are necessary for an adequate cumulative 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 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
- 3) 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.

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This EIR utilizes both the “list” and the “general plan” approaches described above in the cumulative analysis.

5.2 CUMULATIVE SETTING

Table 4.0-1 details the number of residential units and commercial square footage anticipated for approved and proposed residential and commercial projects in the City of Elk Grove and also projects in adjacent areas of Sacramento County and the City of Sacramento. Development of these projects would contribute to growth anticipated in the cumulative setting.

In the City of Elk Grove, the Elk Grove General Plan provides for the long-range direction and development of land within the City. The General Plan and the General Plan Land Use Map identify and plan for future development densities and intensities throughout the City. The proposed Laguna Ridge Town Center project is consistent with the land uses anticipated on the project site in the General Plan and evaluated in the General Plan EIR (State Clearinghouse #2002062082).

A full discussion of cumulative impacts, as well as a general description of the cumulative setting, is provided under each environmental issue area in Section 4.0, Introduction to the Environmental Analysis and Assumptions Used.

5.3 CUMULATIVE IMPACT ANALYSIS

Identified below is a compilation of the cumulative impacts that would result from the implementation of the project and future development in the vicinity. As described above, cumulative impacts are two or more effects that, when combined, are considerable or compound other environmental effects. Each cumulative impact is determined to have one of the following levels of significance: less than significant, significant, or significant and unavoidable. The reader is referred to Sections 4.1 through 4.4 for a complete discussion of the project's impacts.

This EIR has been prepared as a Subsequent EIR pursuant to CEQA Guidelines Section 15162. The analysis associated with a Subsequent EIR focuses on substantial changes proposed in a project which will require major revisions of a previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. The revisions to the Laguna Ridge Specific Plan as proposed by the project could result in new significant impacts or increase the severity of previously identified significant impacts.

This Laguna Ridge Town Center project Subsequent EIR provides an analysis of environmental effects specifically associated with the proposed project, as well as an evaluation of project impacts in light of the environmental analysis provided in the Laguna Ridge Specific Plan program EIR. The reader is referred to the Laguna Ridge Specific Plan EIR for disclosure of cumulative impacts that were addressed under the Laguna Ridge Specific Plan. Cumulative environmental effects of the proposed project are generally based on information provided in the General Plan, General Plan EIR, Laguna Ridge Specific Plan, and Laguna Ridge Specific Plan EIR.

SECTION 4.1 LAND USE

Cumulative Land Use Impacts

Impact 4.1.3 Development of the proposed project in addition to other reasonably foreseeable projects in the region would change the land use patterns. The proposed project would contribute to a cumulative increase in commercial and high density residential uses. These proposed changes would not result in commercial land use development in excess of that considered under the General Plan as well as the Laguna Ridge Specific Plan. The proposed project would have a **less than cumulatively considerable** contribution to cumulative land use impacts.

SECTION 4.2 AIR QUALITY

Regional Air Plan Impacts

Impact 4.2.4 Implementation of the proposed project in combination with growth throughout the air basin would exacerbate existing regional problems with ozone and particulate matter. This is considered a significant impact. While implementation of mitigation measures **MM 4.2.1a** through **MM 4.2.1d** and **MM 4.2.3** would reduce the project's air pollution emissions, implementation of the proposed project would have a significant adverse incremental effect on the region's ability to attain state and federal air quality standards. The project would have a **cumulatively considerable** contribution to this **significant and unavoidable** impact.

SECTION 4.3 NOISE

Permanent Cumulative Noise Increase: Traffic

Impact 4.3.3 Implementation of the proposed project, along with approved and planned urban development in the region, would increase traffic volumes within and adjacent to the project area which would increase transportation related noise levels in excess of the City of Elk Grove noise standards. Development of the project site would result in increased cumulative traffic noise levels. However, the proposed project would result in an increase in ambient noise levels of approximately 0.4 dBA or less along area roadways. As a result, the project would have a **less than cumulatively considerable** contribution to cumulative traffic noise impacts.

SECTION 4.4 TRAFFIC

Unacceptable Operations Exacerbated on Elk Grove Boulevard between Laguna Springs Drive and SR 99 between Wymark Drive and Big Horn Boulevard

Impact 4.4.6 The addition of project traffic to cumulative volumes would increase the volume to capacity ratio on Elk Grove Boulevard between Laguna Springs Drive and SR 99 and between Wymark Drive and Big Horn Boulevard by at least 0.05. Since these roadway segments currently operate unacceptably

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(LOS F and LOS E respectively) under cumulative no project conditions, this is considered a **cumulatively significant** impact.

Operations on Bruceville Road between Elk Grove Boulevard and Whitelock Parkway, Big Horn Boulevard between Laguna Boulevard and Elk Grove Boulevard, and Elk Grove Boulevard between Big Horn Boulevard and Laguna Springs Drive

Impact 4.4.7 The addition of project traffic to cumulative volumes would increase the volume to capacity ratio on Elk Grove Boulevard between Big Horn Boulevard and Laguna Springs Drive by 0.04. The addition of project traffic to cumulative volumes would increase the volume to capacity ratio on Big Horn Boulevard between Laguna Boulevard and Elk Grove Boulevard as well as Bruceville Road between Elk Grove Boulevard and Whitelock Parkway by 0.05. Since these roadway segments would continue to operate acceptably (LOS D or better) under cumulative plus project conditions, this is considered a **less than cumulatively significant** impact.

Operations at Elk Grove Boulevard/Bruceville Road Intersection

Impact 4.4.8 The addition of project traffic to cumulative no project volumes would increase the average delay at the Elk Grove Boulevard/Bruceville Road intersection by more than five seconds. Since this intersection operates unacceptably (LOS F) under cumulative no project conditions, this is considered a **significant** impact.

Cumulative Operations at Intersections in the Project Vicinity

Impact 4.4.9 The addition of project traffic to cumulative no project volumes would increase the average delay at multiple project vicinity intersections by more than five seconds. Since these intersections operates unacceptably (LOS F or LOS E) under cumulative no project conditions, this is considered a **cumulatively significant** impact.

5.4 CLIMATE CHANGE

CUMULATIVE CLIMATE CHANGE SETTING

Greenhouse Gases and Climate Change

To fully understand global climate change it is important to recognize the naturally occurring "greenhouse effect" and to define the greenhouse gases that contribute to this phenomenon. The temperature on Earth is regulated by this greenhouse effect, which is so named because the earth's atmosphere acts like a greenhouse, warming the planet in much the same way that an ordinary greenhouse warms the air inside its glass walls. Like glass, the gases in the atmosphere let in light yet prevent heat from escaping.

Greenhouse gases (GHG) are naturally occurring gases such as water vapor, carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) that absorb heat radiated from the earth's surface. Greenhouse gases – carbon dioxide, methane, nitrous oxide, and others – are transparent to certain wavelengths of the sun's radiant energy, allowing them to penetrate deep into the atmosphere or all the way to earth's surface (NASA, 2007). Clouds, ice caps, and

particles in the air reflect about 30 percent of this radiation, but oceans and land masses absorb the rest (70 percent of the radiation received from the sun) before releasing it back toward space as infrared radiation. The greenhouse gases and clouds effectively prevent some of the infrared radiation from escaping; they trap the heat near the earth's surface where it warms the lower atmosphere. If this natural barrier of atmospheric gases were not present, the heat would escape into space, and earth's average global temperatures could be as much as 61 degrees Fahrenheit cooler (NASA, 2007).

In addition to natural sources, human activities are exerting a major and growing influence on climate by changing the composition of the atmosphere and by modifying the land surface. Particularly, the increased consumption of fossil fuels (natural gas, coal, gasoline, etc.) has substantially increased atmospheric levels of greenhouse gases. Measured atmospheric levels of certain greenhouse gases such as carbon dioxide, methane, and nitrous oxide have risen substantially in recent decades (Miller, 2000). This increase in atmospheric levels of greenhouse gases unnaturally enhances the greenhouse effect by trapping more infrared radiation as it rebounds from the earth's surface and thus trapping more heat near the earth's surface.

According to the U.S. Environmental Protection Agency (EPA), the earth's average surface temperature has increased by about 1.2 to 1.4°F since 1900. The warmest global average temperatures on record have all occurred within the past 15 years, with the warmest two years being 1998 and 2005. Eleven of the last 12 years rank among the hottest years on record (since 1850, when reliable worldwide temperature measurements began) (IPCC, 2007). Most of the warming in recent decades is likely the result of human activities. Other aspects of the climate are also changing such as rainfall patterns, snow and ice cover, and sea level.

Many complex mechanisms interact within the earth's energy budget to establish the global average temperature. For example, a change in ocean temperature would be expected to lead to changes in the circulation of ocean currents, which, in turn would further alter ocean temperatures. There is uncertainty about how some factors could affect global climate change because they have the potential to both enhance and neutralize future climate warming. For instance aerosols, including particulate matter, reflect sunlight back to space. As particulate matter attainment designations are met and fewer emissions of particulate matter occur, the cooling effect of anthropogenic aerosols would be reduced, and the greenhouse effect would be further enhanced. Similarly, aerosols act as cloud condensation nuclei, aiding in cloud formation and increasing cloud lifetime. Clouds can efficiently reflect solar radiation back to space (see discussion of the cloud effect below). As particulate matter emissions are reduced, the indirect positive effect of aerosols on clouds would be reduced, potentially further amplifying the greenhouse effect.

Another mechanism affecting climate is cloud cover. As global temperature rises, the ability of the air to hold moisture increases, facilitating cloud formation. If an increase in cloud cover occurs at low or middle altitudes, resulting in clouds with greater liquid water content such as stratus or cumulus clouds, more radiation would be reflected back to space, resulting in a negative feedback mechanism, wherein the side effect of more cloud cover resulting from global warming acts to balance further warming. If clouds form at higher altitudes in the form of cirrus clouds, however, these clouds actually allow more solar radiation to pass through than they reflect, and ultimately they act as a GHG themselves. This results in a positive feedback mechanism in which the side effect of global warming acts to enhance the warming process. This feedback mechanism, known as the "cloud effect" contributes to uncertainties associated with projecting future global climate conditions.

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Other mechanisms include permafrost and polar and sea ice. As global temperature continues to rise, CH₄ gas currently trapped in permafrost would be released into the atmosphere when areas of permafrost thaw. Thawing of permafrost attributable to global warming would be expected to accelerate and enhance global warming trends. Additionally, as the surface area of polar and sea ice continues to diminish, the earth's albedo, or reflectivity, is also anticipated to decrease. More incoming solar radiation will likely be absorbed by the earth rather than being reflected back to space, further enhancing the greenhouse effect. The scientific community is still studying these and other positive and negative feedback mechanisms to better understand their potential effects on global climate change.

IMPACTS OF GLOBAL CLIMATE CHANGE

Global Implications

Recognizing the problem of global climate change, the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) established the Intergovernmental Panel on Climate Change (IPCC) in 1988. It is open to all members of the United Nations and WMO. The role of the IPCC is to assess on a comprehensive, objective, open and transparent basis the scientific, technical, and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation. According to climate models, the IPCC projects that the earth's average surface temperature should rise 1.8–6.3 °F before the year 2100. If the atmospheric concentration of CO₂ doubles from its late 1700s level of 280 parts per million to 560 parts per million, the most likely rise in temperature would be about 3.6 °F. This may not seem like a significant increase, yet even at the lowest projected increase of 1.8 °F, the earth would be warmer than it has been for 10,000 years (Miller, 2000).

As previously stated, 11 of the last 12 years rank among the hottest years on record. The IPCC Fourth Assessment Report's Working Group I Summary for Policymakers (Report) synthesizes current scientific understanding of global climate change and projects future climate change using the most comprehensive set of well-established global climate models. The report incorporates findings of the current effects of global climate change. These findings include:

- The intensity of tropical cyclones (hurricanes) in the North Atlantic has increased over the past 30 years, which correlates with increases in tropical sea surface temperatures.
- Droughts have become longer and more intense and have affected larger areas since the 1970s, especially in the tropics and subtropics.
- Since 1900 the Northern Hemisphere has lost seven percent of the maximum area covered by seasonally frozen ground.
- Mountain glaciers and snow cover have declined worldwide.
- Satellite data since 1978 show that the extent of Arctic sea ice during the summer has shrunk by more than 20 percent.
- Since 1961, the world's oceans have been absorbing more than 80 percent of the heat added to the climate, causing ocean water to expand and contributing to rising sea levels. Between 1993 and 2003 ocean expansion was the largest contributor to sea level rise.

- Melting glaciers and losses from the Greenland and Antarctic ice sheets have also contributed to recent sea level rise.

An enhanced greenhouse effect will generate new patterns of microclimate and will have significant impacts on the economy, environment, and transportation infrastructure and operations due to increased temperatures, intensity of storms, sea level rise, and changes in precipitation. Impacts may include flooding of tunnels, coastal highways, runways, and railways, buckling of highways and railroad tracks, submersion of dock facilities, and shift in agriculture to areas that are now cooler. Such prospects will have strategic security as well as transportation implications.

Climate change affects public health and the environment. Increased smog and emissions, respiratory disease, reduction in the state's water supply, extensive coastal damage, and changes in vegetation and crop patterns have been identified as effects of climate change. The impacts of climate change are broad-ranging and interact with other market failures and economic dynamics, giving rise to many complex policy problems. If global greenhouse gas emissions continue rising on their current trajectory, the costs of climate change could eventually total 5–20 percent of the annual global gross domestic product (GDP) (Caltrans, page 4). The findings are the latest in a string of reports warning that the rate of carbon dioxide accumulating in the atmosphere is increasing at an alarming pace.

California Implications

Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Worldwide, California is the 12th to 16th largest emitter of CO₂ and is responsible for approximately two percent of the world's CO₂ emissions (CEC, 2006a, 2006b). In 2004, California produced 492 million gross metric tons of carbon dioxide-equivalent (CEC, 2006a).

Increased global average temperature increases ocean temperatures and the Pacific Ocean strongly influences the climate within California. If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. According to a California Energy Commission (CEC) report, the snowpack portion of the supply could potentially decline by 70 to 90 percent by the end of the 21st century (CEC, 2006c). This phenomenon could lead to significant challenges in securing an adequate water supply for a growing state population.

Further, the increased ocean temperature could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system. Sea level has risen approximately seven inches during the last century and, according to the CEC report, it is predicted to rise an additional 22–35 inches by 2100, depending on the future GHG emissions levels (CEC, 2006c). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands (CEC, 2006c). As the existing climate throughout California changes over time, mass migration of species, or worse, failure of species to migrate in time to adapt to the perturbations in climate, could also result.

According to the California Environmental Protection Agency, the climate changes for global warming could affect agriculture, the fishing industry, California's coastline, forests, and ecosystems, increase air pollution, and energy production (CalEPA, 2007).

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Agriculture

Potential impacts, such as reduced water supply, more severe droughts, more winter floods, and drier growing seasons will affect California's agriculture. Many farms, especially in the fruit and nut business, require long-term investments making fast adaptation difficult and could thus experience serious losses if decisions continue to be made with no regard to expected climate changes.

Fishing

Studies found that as a result of changes in ocean conditions, the distribution and abundance of major fish stocks will change substantially. Impacts to fisheries related to El Nino/Southern Oscillation illustrate how climate directly impacts marine fisheries on short-term scales. Higher sea surface temperatures in 1997-1998 during the El Nino had a great impact on market squid, California's largest fishery by volume. The California Regional Assessment reports that landings fell to less than 1,000 metric tons in that season, down from 110,000 tons in the 1996-1997 season. Other unusual events also occurred such as poor salmon returns, a series of plankton blooms, and seabird die-offs.

Coastline

With climate changes, recreational facilities and developed coastlines will also be more vulnerable to hurricanes, storm surges, and flooding increases. Increasing population growth in coastal areas is a reason for further concern, since these areas could be more vulnerable to climate change impacts. Impacts of expected sea level rise and increased storm surges are numerous. Beachfront homes and harbors as well as wetlands may flood. Sewage systems may be overwhelmed by storm runoff and high tides. Coastal airports are vulnerable to flooding (San Francisco, Oakland, and Santa Barbara). Jetties and seawalls may have to be raised and strengthened to protect harbors which are used for shipping, recreation, and tourism.

Forests

The California Regional Assessment notes that an increase in the number and extent of areas burned by wildfires in recent years and modeling results under changing climate conditions suggest that fires may be hotter, move faster, and be more difficult to contain under future climate conditions. The factors which contribute to the risk of catastrophic fires (fuel loads, high temperatures, dry conditions, and wind) are typically present already in summer and fall seasons in California, but can exist at other times of the year, especially in drought conditions. Public safety is an issue as more home and tourism developments on coastal hills and mountains and the foothills and higher elevations in the Sierra Nevada are highly susceptible to catastrophic wild fires.

Ecosystems

The current distribution, abundance, and vitality of species and habitats are strongly dependent on climatic (and microclimatic) conditions. Climate change is expected to result in warmer temperatures year-round, accompanied by substantially wetter winters. Rising sea level will significantly affect coastal wetlands because they are mostly within a few feet of sea level. As the sea rises, these wetlands will move inland. The overall acreage of wetlands will be reduced due to constraints by existing urban development and steeper slopes immediately inland of existing wetlands. Tidal rivers, estuaries, and relatively flat shoreline habitats will be more subject to damage by flooding and erosion. More severe storm surges from the ocean, due to higher

sea levels, combined with higher river runoff could significantly increase flood levels by more than the rise in sea level alone. Erosion of beaches would decrease habitat for beach-dependent species, such as seals, shorebirds, and endangered species (for example, snowy plover and least tern). Aquatic habitats are also likely to be significantly affected by climatic changes. Most fish have limits to how hot or cold the water can be before they must either find more hospitable temperatures or die. As temperatures warm, many fish will have to retreat to cooler waters.

Changes in temperature and precipitation patterns would also shift California's current climate zones, and thus habitats associated with these zones, northward by approximately 100 to 400 miles, as well as upwards in elevation by 500-1500 feet. Global climate change would alter the composition, structure, and arrangement of the vegetation cover of the state (forest and wildland). Species distribution would move geographically as the climate changes, with forest stands, woodlands, and grassland species predicted to move northward and higher in elevation. The entire vegetative community may be affected if non-native invasive species occupy sites and replace native plants. Outbreaks of insects and diseases could compromise forest health and the capability of the forest stands to reproduce and to store carbon on a landscape basis. Forest fires are likely to become more frequent and severe if soils become drier. Changes in pest populations could further increase the stress on forests.

Air Quality

Projected climate changes will impact the quality of California's air, public health, and environment. Higher temperatures increase the formation of ground-level ozone and particulate matter, making it more difficult to meet the health-based air quality standards for these pollutants. Ground-level ozone has been shown to aggravate existing respiratory illnesses such as asthma, reduce lung function, and induce respiratory inflammation. Ambient ozone also reduces agricultural crop yields and impairs ecosystem health.

The particulate matter of most concern – PM₁₀ – has a diameter smaller than 10 micrometers and can easily pass into the lungs, contributing to the development of lung tissue damage. PM₁₀ has been implicated in exacerbation of cardiovascular disease, asthma, and other respiratory diseases, and associated with increased mortality. Air pollution is also made worse by increases in natural hydrocarbon emissions and evaporative emissions of fuels and solvents which lead to higher levels of ozone and PM₁₀ during hot weather. Warmer temperatures that cause increased use of air conditioners can cause increased air pollutants from power plants and from vehicle operation. In addition, warming, drying, and increased winds could mean hotter, harder-to-control wildfires. These wildfires could result in increased levels of fine particulate matter that could also exceed state and federal standards and harm public health.

Electricity Generation

California's electricity generation is currently relatively efficient when it comes to emissions of greenhouse gases. The national average for the electricity generation share of total greenhouse gas emissions is approximately 40 percent, while California electricity accounts for only 16 percent of statewide emissions. This is in part due to California's significant amount of imported electricity, mild climate, and lack of energy-intensive industry. Over the past two decades, California has developed one of the largest and most diverse renewable electricity generation industries in the world. However, changes in climate of the magnitude predicted by the Intergovernmental Panel of Climate Change would substantially affect electricity generation throughout California and the entire Western States grid, particularly for hydroelectric facilities.

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Less snowpack would result in lower levels of hydro generation in the summer and fall seasons due to reduced runoff in those seasons. Additional hydropower may be available during the winter and the spring. However, on balance hydropower is more useful and valuable within the grid mix of generation sources when it is available throughout the peak summer and fall seasons. The natural gas distribution system may also be damaged because of landslides and fires. Flooding could also impact pipelines, wells, and related petroleum extraction equipment. Warmer weather would result in an increased demand for electricity for cooling appliances in homes and businesses.

REGULATORY FRAMEWORK

STATE

Assembly Bill 1493

In 2002, then-Governor Gray Davis signed Assembly Bill (AB) 1493. AB 1493 requires California Air Resources Board (ARB) to develop and adopt the nation's first greenhouse gas emission standards for automobiles. The legislature declared in AB 1493 that global warming was a matter of increasing concern for public health and environment in the state. It cited several risks that California faces from climate change, including reduction in the state's water supply, increased air pollution creation 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. Further, the legislature stated that technological solutions to reduce greenhouse gas emissions would stimulate the California economy and provide jobs.

Executive Order S-3-05

Executive Order S-3-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total greenhouse gas emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, 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 multi-agency effort to reduce greenhouse gas 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 emission 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 the CalEPA created a Climate Act Team (CAT) made up of members from various state agencies and commission. CAT released its first report in March 2006. 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 Climate Solutions Act of 2006

In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Climate Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. This reduction 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 ARB 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 ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that ARB 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. 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.

Senate Bill 1368

SB 1368 is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 requires the California Public Utilities Commission (PUC) to establish a greenhouse gas emission performance standard for baseload generation from investor-owned utilities by February 1, 2007. The California Energy Commission (CEC) must establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the greenhouse gas emission 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 PUC and CEC.

LOCAL

Elk Grove General Plan

The City of Elk Grove General Plan currently is used as the "blueprint" to guide future development within the City limits and in unincorporated portions of the existing Planning Area. The existing General Plan has no policies specifically applicable to global warming and climate change issues. However, the General Plan does contain air quality policies and actions associated with air quality and energy efficiency which would reduce the production of GHGs. The policies and actions are in the Conservation and Air Quality Element of the General Plan.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

While AB 32 requires ARB to develop thresholds of significance for GHGs by 2008, no air district in California, including the Sacramento Metropolitan Air Quality Management District, has identified either a significance threshold for GHG emissions or a methodology for analyzing air quality impacts related to greenhouse gas emissions at this time. The state has identified 1990 emission levels as a goal through adoption of AB 32. To meet this goal, California would need to generate lower levels of GHG emissions than current levels. However, no standards have yet been adopted quantifying 1990 emission targets. It is recognized that for most projects there is no simple metric available to determine if a single project would help or hinder meeting the AB 32 emission goals. In addition, at this time AB 32 only applies to stationary source emissions. Consumption of fossil fuels in the transportation sector accounted for over 40 percent of the total GHG emissions in California in 2004. Current standards for reducing vehicle emissions considered under AB 1493 call for "the maximum feasible reduction of greenhouse gases

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emitted by passenger vehicles and light-duty trucks and other vehicles" and do not provide a quantified target for GHG emissions reductions for vehicles.

Emitting CO₂ into the atmosphere is not itself an adverse environmental effect. It is the cumulative increased concentration of CO₂ in the atmosphere resulting in global climate change and the associated consequences of climate change that result in adverse environmental affects (e.g., sea level rise, loss of snowpack, severe weather events). Although it is possible to generally estimate a project's incremental contribution of CO₂ into the atmosphere, it is typically not possible to determine whether or how an individual project's relatively small incremental contribution might translate into physical effects on the environment. Given the complex interactions between various global and regional-scale physical, chemical, atmospheric, terrestrial, and aquatic systems that result in the physical expressions of global climate change, it is impossible to discern whether the presence or absence of CO₂ emitted by the project would result in any altered conditions.

Given the challenges associated with determining a project-specific significance criteria for GHG emissions when the issue must be viewed on a global scale, a quantitative significance criteria is not proposed for the Laguna Ridge Town Center project. For this analysis, the project's incremental contribution to global climate change would be considered significant if due to the size or nature of the project it would generate a substantial increase in GHG emissions relative to existing conditions.

METHODOLOGY

GHG emissions associated with the Laguna Ridge Town Center project were estimated using CO₂ emissions as a proxy for all GHG emissions. This is consistent with the current reporting protocol of the California Climate Action Registry (CCAR). Calculations of GHG emissions typically focus on CO₂ because it is the most commonly produced GHG in terms of both number of sources and volume generated, and because it is among the easiest GHGs to measure. However, it is important to note that other GHGs have a higher global warming potential than CO₂. For example, 1 pound of methane has an equivalent global warming potential of 21 pounds of CO₂ (California Climate Action Registry, 2006). Nonetheless, emissions of other GHGs from the Laguna Ridge Town Center project (and from almost all GHG emissions sources) would be extremely low relative to emissions of CO₂ and would not contribute significantly to the overall generation of GHGs from the project.

While there are various methods for determining the potential GHG emissions of a specific project, at this time there is not an approved ARB method. For the Laguna Ridge Town Center project, emission sources (buildings or vehicles) were analyzed to ascertain the potential CO₂ emissions at project buildout. Discussed below are the estimated CO₂ emissions for residential buildings, non-residential buildings, residential vehicles, and non-residential vehicles. The methodology used to determine the CO₂ emissions of each of these categories is discussed within that category analysis.

CUMULATIVE IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED PROJECT

Potential Increase in Long-Term Atmospheric Greenhouse Gas Emissions

Impact 5.0.1 The project, in addition to existing, approved, proposed, and reasonably foreseeable development in the Sacramento Valley Air Basin, may contribute to an increase in greenhouse gas (GHG) emissions in the earth's atmosphere. Higher concentrations of GHGs have been linked to the phenomenon of

climate change. The project would have a **less than cumulatively considerable** impact on the state's GHG reduction efforts.

The amount of GHGs emissions produced from residential and commercial buildings are related to the amount of energy that is used to operate the buildings such as electricity, natural gas, and fuel oil.

Residential Buildings

Under project conditions the implementation of the proposed Laguna Ridge Town Center will result in an estimated total CO₂ emission for residential buildings of 9,192,768 lbs/year. This is a decrease of 8,397,241 lbs/year over existing Laguna Ridge land use designations for the project site. However, as the site is currently vacant land, no CO₂ emissions from residential buildings are produced. Therefore, any development of residential buildings will result in an increase of CO₂ emissions over current conditions.

The method used to determine CO₂ emissions from buildings is based on the EPA Personal GHG Calculator which is available at http://www.epa.gov/climatechange/emissions/ind_calculator.html. The following attributes were input into the GHG calculator to determine the amount of CO₂ emissions of a single home in Elk Grove:

- All residential building types were treated the same.
- The CO₂ emissions for residential buildings were produced solely by the EPA Personal Greenhouse Gas (GHG) Calculator Annual Household Estimator and include CO₂-equivalent amounts as well as other sources of emissions other than electricity use.
- Assumptions used in EPA Personal GHG Calculator include:
 - 0 miles vehicle per week traveled (vehicle travel will be analyzed separately)
 - No recycling.

This emission was then multiplied by the potential housing units under the current Laguna Ridge land use designations (597) and the potential number of units under the proposed project's buildout conditions (312) as identified in Section 4.1. **Table 4.1-4** of this EIR. **Table 5.0-1** illustrates the CO₂ emissions under existing Laguna Ridge land use designations and project conditions.

**TABLE 5.0-1
RESIDENTIAL BUILDINGS CO₂ EMISSIONS**

GHG Calculator Question	Data	Pounds of CO ₂ per Year per Dwelling Unit (lbs/yr/du)
Average number of persons per home	2.99*	-
Home heat source	Electric	-
Average monthly gas bill	\$105	10,988 lbs/yr/du
Average monthly electric bill	\$100	16,440 lbs/yr/du
Average monthly fuel oil bill	\$0	0 lbs/yr/du

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GHG Calculator Question	Data	Pounds of CO ₂ per Year per Dwelling Unit (lbs/yr/du)
GHG emissions from waste (for 2.99 persons per home)	-	2,036 lbs/yr/du
Total CO₂ Emissions		29,464 lbs/yr/du
Condition	Housing Units	Total CO ₂ Emissions
Current land use designation potential	597	17,590,008 lbs/yr
Project land use designation potential	312	9,192,768 lbs/yr
Difference		-8,397,241 lbs/yr

Source: EPA Personal GHG Calculator; DOF; PMC, 2007

Notes: *Average number of persons per home is based on a 2007 city population of 136,318 and 46,495 housing units as identified by the DOF Table E-5 Population and Housing Estimates.

Non-Residential Buildings

A total of 56.5 acres of the project site is currently designated Commercial by the Elk Grove General Plan and Laguna Ridge Specific Plan. Although no specific commercial uses had been proposed for the site, it has been assumed that 28.4 acres of this total would suit the Laguna Ridge Specific Plan *General Commercial* category (0.40 Floor Area Ratio) and 28.1 acres would suit the Specific Plan *Neighborhood Commercial Mixed Use* category (0.30 Floor Area Ratio). The combined floor area of all commercial uses in a single parcel would not exceed a floor area ratio (FAR) of 0.40 or 0.30. Therefore, of the 56.5 acres of the project site currently designated as Commercial, only 19.79 acres (862,052.4 square feet) could be actual building space under existing conditions. The proposed land use reconfiguration would result in a possible 28 acre medical office building and a possible 565,480 square feet of commercial building space. Individual acreages are numerated in **Table 4.1-4** of this EIR.

The following parameters were used to calculate the amount of CO₂ emitted by the non-residential buildings in the project area:

- All non-residential building types were treated the same (i.e., same energy intensity, percentage from coal/natural gas, and emission factors).
- The CO₂ emissions for non-residential buildings are not CO₂-equivalent emissions but only CO₂ emissions.
- CO₂ emissions estimates for non-residential buildings are based solely on electricity use and no other energy source. These estimates are weighted according to coal and natural gas based electricity generation in California.
- Non-residential building annual energy intensity is based on the year 2002 for the SMUD service area as a whole and are estimated to be 16.5 kWh/ft²/yr¹ as identified in the SMUD summary table for the California Commercial End-Use Survey report, available at <http://capabilities.itron.com/CeusWeb/Chart.aspx>

¹ kWh/ft²/yr = kilo watt hour per square foot per year.

- CO₂ emissions factors for non-residential uses are based the EPA Power Profiler for commercial uses available at <http://www.epa.gov/cleanenergy/powerprofiler.htm>.

Table 5.0-2 illustrates the estimated CO₂ emissions for non-residential uses in Elk Grove under existing and project buildout conditions. This calculation does not include vehicle trips for non-residential uses. It is estimated that buildout of the proposed project will result in the production of 6,501,505 lbs/year of CO₂ for non-residential uses. This is an increase of 3,409,783 lbs/year over Laguna Ridge Specific Plan land use designations for the project site. However, as the site is currently vacant land, currently no CO₂ emissions from non-residential buildings are produced. Therefore, any development of non-residential buildings will result in an increase of CO₂ emissions over current conditions.

**TABLE 5.0-2
NON-RESIDENTIAL BUILDINGS CO₂ EMISSIONS**

Condition	Area	CO ₂ Emission ¹
Current Land Use Designation Potential ²	19.79 acres	9,911,288 lbs/yr
Project Land Use Designation Potential ²	28.40 acres	6,501,505 lbs/yr
Difference	8.61 acres	3,409,783 lbs/yr

Source: EPA Power Profiler.

Notes: 1) CO₂ emissions are based on the EPA Power Profiler program. The program’s output, which is based on a monthly 1 kWh average use, was adjusted to reflect a monthly 1.883 kWh as identified by Itron1 for commercial SMUD accounts in Forecasting Climate Zone 6 (which includes the City of Elk Grove).

2) The existing/project non-residential square footage is only an estimate and is based on the total acreage of the commercial project area which assumes 100% lot coverage. The CO₂ emissions for non-residential buildings are not based on the potential square footage of actual buildings as this square footage is unknown at this time.

Traffic

The traffic analysis conducted for the project (**Appendix D**) provides data that can be used to estimate CO₂ emissions from project-generated residential and non-residential vehicle trips. The proposed land use reconfiguration could potentially result in 51,580 residential and non-residential daily vehicle trips per day (see **Table 5.0-4**). Assuming a trip rate of five miles per trip, the proposed project at full buildout would generate an average of 257,900 vehicle miles traveled (VMT) per day, or approximately 94 million VMT annually. Assuming an emissions factor for future CO₂ emissions from vehicles of approximately 366 grams (0.807 pounds) of CO₂ per mile (California Air Resources Board 2002), approximately 37,982 tons (75,965,734 lbs) of CO₂ per year could potentially be generated by all vehicle trips under the proposed land use reconfiguration. **Table 5.0-4** illustrates the residential and non-residential vehicle emissions that could potentially result from development allowed under the proposed land use reconfiguration.

The project site is currently vacant and as such results in no residential or non-residential vehicle CO₂ emissions. **Table 5.0-3** shows potential residential and non-residential vehicle CO₂ emissions that would result with development under the existing land use designation and zoning. **Table 5.0-4** shows potential residential and non-residential vehicle emissions that would result with development under the proposed land use reconfiguration.

The maximum residential units allowed under existing designations and zoning is 597 – 731. According to the Caltrans *Trip Generation Manual* (7th Edition), the type of residential units allowed under existing conditions (multi-family residential) would result in an average 6.59 daily

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vehicle trips per unit assuming a worst case scenario equaling 4,817 total trips daily (731 units x 6.59 average daily trips = 4,817 total trips daily from residential uses). As stated in Section 3.0, Project Description, the proposed project will result in an overall reduction of residential units (312 to 390) with the elimination of the areas zoned RD-10 and RD-15. The residential designation RD-20 will increase slightly over the existing area designation and will increase the units by 22 to 27. This will result in a reduction of 285 to 341 residential units in this area (390 units x 6.59 average daily trips = 2,570 total residential daily trips).

A total of 56.5 acres of the project site is currently designated Commercial by the Elk Grove General Plan and Laguna Ridge Specific Plan. Although no specific commercial uses had been proposed for the site, it has been assumed that 28.4 acres of this total would suit the Laguna Ridge Specific Plan *General Commercial* category (0.40 Floor Area Ratio) and 28.1 acres would suit the Specific Plan *Neighborhood Commercial Mixed Use* category (0.30 Floor Area Ratio). The combined floor area of all commercial uses in a single parcel would not exceed a floor area ratio (FAR) of 0.40 or 0.30. Therefore, of the 56.5 acres of the project site currently designated as Commercial, only 19.79 acres (862,052.4 square feet) could be actual building space under existing conditions. According to the Caltrans *Trip Generation Manual* (7th Edition), commercial development results in an average 42.92 daily vehicle trips per every 1,000 square feet of commercial building space. Existing designations and zoning would result in 36,996 total daily trips from commercial uses (862,052.4 square feet/1000) = 861.9 x 42.92 average daily trips per 1,000 square feet = 36,996 total commercial related daily trips). The proposed land use reconfiguration would result in 49,010 total commercial related daily trips. This number was generated through the assumption of a possible 28-acre medical office building and a possible 565,480 square feet of commercial building space.

**TABLE 5.0-3
RESIDENTIAL AND NON-RESIDENTIAL VEHICLE CO₂ EMISSIONS UNDER EXISTING CONDITIONS**

Source	Daily Vehicle Trips	Daily Vehicle Miles Traveled	CO ₂ Emission (lbs)	
			Daily	Annually
Residential (597 – 731 Low Rise Apartment units)	4,817	24,085	19,436.60	7,094,359
Non-Residential (494,841 sq. feet of LRSP General Commercial)	21,236	106,180	85,687.26	31,275,849
Non-Residential (367,210 sq. feet of LRSP Neighborhood Commercial)	15,760	78,800	63,591.60	23,210,934
Total	41,813	209,065	168,715.46	61,581,142

**TABLE 5.0-4
RESIDENTIAL AND NON-RESIDENTIAL VEHICLE CO₂ EMISSIONS UNDER PROPOSED PROJECT**

Source	Daily Vehicle Trips	Daily Vehicle Miles Traveled	CO ₂ Emission (lbs)	
			Daily	Annually
Residential (312 – 390 Low Rise Apartment units)	2,570	12,850	10,369.95	3,785,031
Non-Residential (639,460 sq. feet of LRSP General Commercial)	27,447	137,235	110,748.64	39,328,252

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Source	Daily Vehicle Trips	Daily Vehicle Miles Traveled	CO ₂ Emission (lbs)	
			Daily	Annually
Non-Residential (196,020 sq. feet of LRSP Neighborhood Commercial)	8,412	42,060	33,942.42	12,388,983
Non-Residential (possible Medical Office Building, 364,000 sq. feet)	13,151	65,755	53,064.29	20,463,465
Total	51,580	257,900	208,125.30	75,965,734

Note that although this future CO₂ emissions factor does assume certain reductions in vehicle emissions due to future vehicle models operating more efficiently, it does not take into account additional vehicle emission reductions that might take place in response to AB 1493, if mobile source emission reductions are ultimately implemented through this legislation.

Total General Plan Buildout CO₂ Emissions

Table 5.0-5 illustrates the total buildout amount of CO₂ emissions as a result of implementation Laguna Ridge Town Center. According to the methodologies listed previously for the identification of CO₂ emissions, buildout of the project will result in an increase in CO₂ emissions of .076 million metric tons (MMT) annually. In comparison, the amount of CO₂ emitted in California in 2004 was 334.9 MMT (369.2 million tons).

**TABLE 5.0-5
PROJECT CO₂ EMISSIONS**

Source	CO ₂ Emission (lbs/yr)	Million Metric Tons (MMT)
Residential Buildings	9,192,768 lbs/yr	0.004 MMT
Non-Residential Buildings	54,882,594 lbs/yr	0.025 MMT
Vehicles	75,965,734 lbs/yr	0.047 MMT
Total	140,051,096 lbs/yr	0.076 MMT
California 2004 total CO₂ Emissions		334.9 MMT

Source: PMC; CEC 2006a Table 6

The analysis methodology used for the emissions estimate assumes that all emissions sources are new sources and that emissions from these sources are 100 percent additive to existing conditions. This is a standard approach taken for air quality analyses. In many cases, such an assumption is appropriate because it is impossible to determine whether emissions sources associated with a project move from outside the air basin and are in effect new emissions sources, or whether they are sources that were already in the air basin and just shifted to a new location. However, because the effects of GHGs are global, a project that merely shifts the location of a GHG-emitting activity (e.g., where people live, where vehicles drive, or where companies conduct business) would result in no net change in global GHG emissions levels.

For example, if a substantial portion of California's population migrated from the South Coast Air Basin to the North Coast Air Basin, this would likely result in decreased emissions in the South Coast Air Basin and increased emissions in the North Coast Air Basin, but little change in overall global GHG emissions. However, if a person moves from one location where the land use

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pattern requires substantial vehicle use for day-to-day activities (commuting, shopping, etc.) to a new development that promotes shorter and fewer vehicle trips, more walking, and overall less energy usage, then it could be argued that the new development would result in a potential net reduction in global GHG emissions.

It is impossible to know at this time whether residents in the City of Elk Grove will have longer or shorter commutes relative to their existing homes, whether they will walk, bike, and use public transportation more or less than under existing circumstances, and whether their overall driving habits will result in higher or lower VMT. Much of the vehicle-generated CO₂ emissions attributed to the project could simply be from vehicles currently emitting CO₂ at an existing location moving to the project site and not from new vehicle emissions sources relative to global climate change. It is of interest to note that current General Plan and Specific Plan designations for the project site allow for 56.5 acres of Commercial/Shopping Center uses and the proposed amendments would allow for 79.7 acres. This is an increase of 23.2 acres of commercial lands. While the Laguna Ridge Town Center does not request entitlements for a specific development project, a medical user has expressed interest in the purchase of approximately 30 acres of SC-designated land in the Specific Plan area with the intent of developing up to 364,000 square feet of medical offices. Medical offices are an allowed use under the SC designation. The increase of such uses within the City of Elk Grove may reduce the need of area residents to drive distances outside of the City elsewhere in the Sacramento County area and farther.

The Laguna Ridge Specific Plan includes components to addressing the need to reduce GHG emissions. One objective of the Laguna Ridge Specific Plan is to provide an urban design with an efficient use of energy and resources. The Specific Plan is further guided to plan for the creation of a mix of land uses in close proximity and with a balance of residential and employment opportunities as well as commercial and neighborhood-oriented services.

Future changes in building energy efficiency standards as well as higher production of non CO₂ emitting energy sources (i.e., wind and solar power) would decrease the amount of CO₂ emissions from buildings than those calculated today. As a result, although it is possible to calculate the estimated contribution of building and vehicle generated CO₂ emissions from buildout of the project, the actual CO₂ contribution during the life of the project would likely be much less than the 0.076 million metric tons of CO₂ per year calculated above. This net CO₂ contribution would likely be much less than the 334.9 million metric tons (US) of CO₂ emissions produced in California in 2004 (CEC 2006a). The actual percentage of the statewide GHG emissions totals generated by the proposed project are likely much lower than the percentage listed above, as the vast majority of the vehicle trips "generated" by the proposed project are already occurring elsewhere.

The proposed project is not considered to be a major emitter of GHGs. As described above, the primary source of GHG emissions from the project are from vehicle emissions. California vehicle emissions standards are regulated by the state and federal governments. Given the lack of a quantifiable significance threshold, coupled with the fact that the project's GHG emissions account for 0.00023% of the statewide annual GHG emissions totals, the project's contribution to this cumulative impact is considered **less than cumulatively considerable**.

Additional Mitigation Measures

None feasible.

Cumulative Effects of Global Climate Change on the City of Elk Grove

Impact 5.0.2 The impacts of global climate change would cumulatively result in the potential decrease in water supply, increase in air pollutants, and increase in health hazards. The proposed project is considered to have a **less than cumulatively considerable** contribution to this impact.

According to a report on the effects of climate change in California by the California Climate Change Center (CCCC), based on state-of-the-art climate models, if global heat-trapping emissions proceed at a medium to high rate, temperatures in California are expected to rise 4.7 to 10.5°F by the end of the century. In contrast, a lower emissions rate would keep the projected warming to 3 to 5.6°F. These temperature increases would have widespread cumulative consequences including substantial loss of snowpack, increased risk of large wildfires, reductions in the quality and quantity of certain agricultural products and health effects. Refer to the Existing Setting section for a description of effects of climate change.

These consequences would potentially affect the residents of the City. For instance, a substantial loss in snowpack may reduce river volumes in the Sacramento River and potentially the amount of groundwater available for use as a water supply. Also, the potential for flooding and drought conditions are increased. Decreasing snowmelt and spring stream flows coupled with increasing demand for water resulting from both a growing population and hotter climate could lead to increasing water shortages. By the end of the century, if temperatures rise to the medium warming range and precipitation decreases, late spring stream flow could decline by up to 30 percent. Agricultural areas could be hard hit, with California farmers losing as much as 25 percent of the water supply they need (CCCC, page 7).

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, if temperatures rise to the medium warming range, there will be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if temperature rises are kept in the lower warming range.

Global warming scenarios provided by CCCC in their report *Our Changing Climate Assessing the Risk to California*, indicate that by 2100, if temperatures rise to the higher warming range, there could be up to 100 more days per year with temperatures above 95°F in Sacramento which means that temperatures in Elk Grove will certainly rise as well. This is a striking increase over historical patterns. As temperatures rise, residents of Elk Grove will face greater risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

Proposed General Plan Policies and Implementing Actions that Mitigate Potential Impacts

All policies and implementing actions applicable to the project are listed in the Air Quality Section 4.2 of this DEIR. The proposed project is found to be consistent with all the applicable General Plan policies; these policies would assist in the reduction of GHGs. Mitigation measures **MM 4.2.1a** through **MM 4.2.1d** and **MM 4.2.3** would also reduce the project's air pollution emissions. The project would generate a reduced level of emissions than under its existing zoning designation. Additionally, mitigation measures **MM 4.4.8** and **MM 4.4.9** would reduce impacts associated with project traffic impacts.

While the General Plan policies and implementing actions would reduce the potential GHG emissions in the City, climate change is a result of global GHG emissions. A complete elimination

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of GHG emissions in the City would not significantly change GHG emissions on a global scale nor decrease the effects of global climate change on the City's residents. The proposed project will not subject the residents of Elk Grove to the effects of climate change that would not be felt elsewhere within the region.

The project's contribution to this cumulative impact is considered **less than cumulatively considerable**.

Additional Mitigation Measures

None feasible.

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