ADDENDUM #4
DATED DECEMBER 20, 2012

TO THE CABRILLO BUSINESS PARK ENVIRONMENTAL IMPACT REPORT (37-SB-EIR) AND TO ADDENDA DATED APRIL 23, 2007, OCTOBER 24, 2008, AND MAY 27, 2011

FOR THE CABRILLO BUSINESS PARK/FLIR PROJECT
DEVELOPMENT PLAN AMENDMENT
(Case No. 12-028-DPAM)

6767 HOLLISTER AVENUE

APNs 073-610-001, -002, -003, -004, -005, -006,
-008, -009, -010, -011, -012, -013, -015, -016, -017, -018, and -019

A. OVERVIEW

The City of Goleta prepared this Addendum to the Final Environmental Impact Report for the Cabrillo Business Park Project ("the CBP Project") that was certified in April 2007 (SCH# 2000041129). Other prior environmental documents for the CBP Project include three Addenda, dated April 23, 2007, October 24, 2008, and May 27, 2011. Background information on these documents is provided below and they are incorporated by reference into this document.

This Addendum, dated December 20, 2012, ("Addendum #4) was prepared pursuant to the California Environmental Quality Act (California Public Resources Code §§ 21000 *et seq*., "CEQA") the regulations promulgated thereunder (14 Cal. Code of Regulations §§ 15000, et seq., the "CEQA Guidelines"), and the City's Environmental Guidelines ("Goleta Guidelines"). It addresses minor changes to the approved CBP Project resulting from implementation of the Cabrillo Business Park/FLIR Addition Project ("FLIR Project")[1].

B. CEQA GUIDELINES

CEQA Guidelines §§ 15163(a) and 15164(a) allow a Lead Agency or a Responsible Agency to prepare an addendum to a previously certified EIR if some changes or additions are necessary and none of the conditions described in CEQA Guidelines § 15162 calling for the preparation of a subsequent or supplemental EIR have occurred. CEQA Guidelines § 15164(e) requires substantial evidence that a subsequent EIR is not necessary.

CEQA Guidelines §§15162 and 15163 state that, for a project covered by a certified EIR, preparation of a subsequent or supplemental EIR rather than an addendum is required only if one or more of the following conditions occur:

1. Substantial changes are proposed in the project that will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

2. Substantial changes occur with respect to the circumstances under which the project is undertaken that will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in severity of previously identified significant effects.

3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:

    a. The project will have one or more significant effects not discussed in the previous EIR or negative declaration;

[1] As defined in Section G, "FLIR Project Description", below.

b. Significant effects previously examined will be substantially more severe than shown in the previous EIR;

c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

d. Mitigation measures or alternatives that are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

As set forth in this Addendum, none of the conditions described above will occur because of, or in relation to, the minor changes resulting from implementation of the FLIR Project. Therefore, an Addendum is appropriate, and neither a subsequent EIR under CEQA Guidelines § 15162 nor a supplemental EIR pursuant to CEQA Guidelines § 15163 are required.

C. BACKGROUND

The CBP Project included a Rezone, Development Agreement, Vesting Tentative Map, Development Plan, and Road Naming. A Final Environmental Impact Report for the CBP Project ("2007 FEIR"; SCH #2000041129) was completed and certified in April 2007 (inclusive of an Errata Sheet dated April 23, 2007).

An Addendum to the 2007 FEIR (dated April 23, 2007), was prepared to address the changes in environmental effects associated with revisions to the CBP Project. The revisions included an increased buffer of 50 feet from the California Department of Fish and Game property to the south and the transfer of 5,000 square feet (SF) from this buffer area to a 15,000-square foot building on Lot 2 in the northeast corner of the property. The revisions to the CBP Project also included reconfiguration of Lot 13 into four separate lots, for a total of 22 lots. City Council approved the revisions and addendum to the CBP Project on May 7, 2007 and allowed for up to approximately 956,282 square feet (SF) of total development.

A second Addendum to the 2007 FEIR (dated October 24, 2008) was prepared for a Development Plan Amendment that was approved on November 3, 2008 (hereinafter referred to as Development Plan Amendment #1). The CBP Project was amended to allow minor changes to the CBP Project, including an increase in the number of buildings from 12 to 14 with a net reduction of 7,500 SF of building area. The total number of parking spaces increased to 2,480 (an increase of 28 spaces). The CBP Project, as amended by this second CEQA addendum and Development Plan Amendment #1, allowed for up to approximately 948,782 SF of total development.

A third Addendum to the 2007 FEIR (dated May 27, 2011) was prepared for the Cabrillo Business Park/Deckers Development Plan Amendment and approved by the City Council on June 28, 2011 (hereinafter referred to as "Development Plan Amendment #2). The CBP

Project was amended to decrease total development to approximately 934,782 SF (a reduction of 14,000 SF), reconfigure buildings and associated infrastructure, change the use of one building from self-storage to warehouse, change building height and architecture, and include an emergency back-up generator at the southeast corner of Building 12.

The 2007 FEIR and three subsequent Addenda shall hereinafter collectively be referred to and considered as the "Final EIR."

D. SCOPE OF THE ADDENDUM

Addendum #4 addresses minor changes to the CBP Project through the FLIR Project's Development Plan Amendment. The baseline for review is the CBP Project as currently approved and entitled, including the recorded Development Agreement, the approved Development Plan Amendment #1, and the approved Development Plan Amendment #2, which allows for approximately 934,782 SF of total development.

The scope of analysis contained within this Addendum addresses each of the environmental resource areas that were previously analyzed in the Final EIR. This Addendum addresses the following environmental issues:

- Aesthetics/Visual Resources
- Air Quality
- Archaeological Resources
- Biological Resources
- Energy
- Fire Protection/Hazards
- Geologic Resources
- Hazardous Materials/Risk Of Upset
- Land Use
- Noise
- Public Facilities
- Recreation
- Transportation/Circulation
- Water Resources/Flooding

In addition, Greenhouse Gas Emissions are analyzed in Addendum #4, but were not previously analyzed in the Final EIR.

E. ADOPTION AND AVAILABILITY OF ADDENDUM

Addendum #4 will be considered for certification by the City Council. In accordance with CEQA Guidelines § 15164(c), an Addendum need not be circulated for public review but can be included in or attached to the Final EIR. The decision-maker considers the Addendum with the Final EIR prior to making a decision on the Project.

Addendum #4 is available at the following location:

City of Goleta
Planning and Environmental Review Department
130 Cremona Drive, Suite B
Goleta, California 93117

F. PROJECT LOCATION

The subject property is a 92.25-acre parcel located at the southwest corner of the Los Carneros Road/Hollister Avenue intersection. The property address is 6767 Hollister Avenue (APNs 073-610-001, -002, -003, -004, -005, -006, -008, -009, -010, -011, -012, -013, -015, -016, -017, -018, and -019).

G. FLIR PROJECT DESCRIPTION

The FLIR Project is located on located on Lots 13 and 20 of the Cabrillo Business Park (APNs 073-610-001 and 073-610-002, respectively). It includes the demolition of the 4,348-square foot “Navigator Building” and proposes construction of a new two-story, 16,175-square foot building addition on Lot 20, with a height of 30.5 feet and an architectural projection (elevator tower) of 31.7 feet. A pedestrian plaza and canopy will connect the new addition to the existing office building.

Lot 13 will have a building coverage of 17%; a landscaping coverage of 36%, and 179 parking spaces. Lot 20 will have a building coverage of 40%, a landscaping coverage of 13%, and 287 parking spaces. Parking for the two lots will be reduced by 16 spaces (from 498 to 482). Access to the site will continue to be provided from a driveway off Hollister Avenue in the northwestern corner of Lot 13, as well as from the Hollister/Coromar intersection. Preliminary estimates for earthwork are 400 cubic yards of cut and 350 cubic yards of fill.

With the construction of the proposed addition and associated site improvements, the Cabrillo Business Park would have a total of approximately 948,348 square feet in 13 buildings, with 2,500 parking spaces and 4,388 square feet of enclosed non-habitable accessory structures.

H. POTENTIAL ENVIRONMENTAL IMPACTS

1. Aesthetics/Visual Resources

Section 4.1 of the Final EIR describes the aesthetics/visual resources setting relative to the CBP Project, impacts on aesthetics/visual resources that would result from the CBP Project, and mitigation measures that would reduce potentially significant impacts.

The new 16,175-square foot office building addition proposed by the FLIR Project will be setback approximately 240 feet from the Hollister Avenue right-of-way line, located behind the existing Administration building. Only approximately 70 feet of the front façade of the new building will be visible from the Hollister Avenue frontage. The mass of the new building is similar to that of the Administration Building, with a height of 31.7 feet and building width matching the Manufacturing Building. The architectural style of the new building will match that of the Administration Building, which is an example of the midcentury-modern “International Style”. Architectural elements shared by the Administration Building and the new building include usage of large glass walls framed with gray aluminum mullions, louvers, and awnings. Therefore, the FLIR Project will not result in any new significant aesthetics/visual resources impacts and no changes to mitigation measures are necessary.

Project-Specific Impacts: The following previously identified impacts in the Final EIR are still expected to occur:

Impacts AES-1, AES-2, AES-3, AES-4, AES-5, AES-6, AES-7, AES-8, AES-9, AES-10

Cumulative Impacts: Cumulative impacts on aesthetics/visual resources remain the same.

Mitigation Measures: The following mitigation measures are still required:

AES-1, AES-2.1, AES-4, AES-5, AES-8.2, AES-10, AES-11, AES-12, AES-13, AES-14, AES-15, AES-16, AES-17, AES-18, AES-19, AES-20

The following mitigation measures are still recommended:

AES-6, AES-7, AES-8.1, AES-9

Residual Impacts: Under the above mitigation measures, residual project-specific and cumulative impacts are less than significant for those impacts identified as potentially significant. Residual impacts associated with potentially adverse project-specific and cumulative impacts remain adverse but not significant.

2. Air Quality

Section 4.2 of the Final EIR describes the air quality setting relative to the CBP Project, impacts on air quality that would result from the CBP Project, and mitigation measures that would reduce potentially adverse but not significant impacts. The City of Goleta has adopted specific thresholds for reactive organic gases and nitrogen oxides, but not for carbon monoxide or particulate matter.

Grading and construction requirements associated with the FLIR Project remain similar to Development Plan Amendment #1 and Development Plan Amendment #2 in terms of quantities of cut and fill and type of structural development. Grading/construction related emissions (including particulate matter, nitrogen oxide, and reactive organic gases) would remain the same.

As noted in Table 2-1 below, operational emissions (particulate matter, nitrogen oxides, reactive organic gases, and pollutant emissions at existing congested intersections) would be increased slightly as a result of an increase of 94 average daily trips (ADTs) associated with the FLIR Project (a 1.9% increase above the 4,946 ADTs projected for the CBP Project).

Table 2-1
Daily Operational Emissions

	Daily emissions (pounds)			
	Reactive Organic Gases (ROG)	Nitrogen Oxides (NOx)	Carbon Monoxide (CO)	Particulate Matter (PM10)
CBP Project (2020 projection)[1]	9.6	5.3	1.5	89.9
FLIR Project[2]	0.99	1.04	5.32	0.55
Total	10.59	6.34	6.82	90.45
Threshold of Significance	25.0	25.0	N/A	N/A

Notes:

1. Data for original CBP Project (Table 4.2-3, 2007 FEIR). Development Plan Amendments 1 and 2, reduced the approved building floor area by 21,500 square feet; emissions reductions resulting from the floor area reductions are not included.
2. Data for FLIR Project from CalEEMod air quality model output.

The FLIR Project's air quality impacts associated with operational emissions would remain potentially adverse but less than significant. The marginal increase in operational emissions will not create any new impacts beyond those already analyzed in the Final EIR. The FLIR Project will still be subject to all mitigation measures for air quality and transportation identified in the Final EIR, such as dust control, energy conservation, transportation system improvements and transportation demand management, and permitting requirements of the Santa Barbara County Air Pollution Control District. Therefore, no new impacts will occur and no changes to mitigation measures are necessary.

Project-Specific Impacts: The following previously identified impacts in the Final EIR are still expected to occur:

Impacts AQ-1, AQ-2, AQ-3, AQ-4, AQ-5, AQ-6

Cumulative Impacts: The following previously identified impacts in the Final EIR are still expected to occur:

Impacts AQ-7, AQ-8, AQ-9

Mitigation Measures

The following mitigation measures are still recommended:

AQ-1.1, AQ-1.2, AQ-1.3, AQ-2, AQ-3, AQ-4, AQ-5, AQ-7, AQ-8, AQ-9

Residual Impacts

Under the above mitigation measure, residual project-specific and cumulative impacts remain adverse but not significant.

3. Archaeological Resources

Section 4.3 of the Final EIR describes the archaeological setting relative to the CBP Project, impacts on archaeological resources that would result from the CBP Project, and mitigation measures that would reduce potentially significant impacts. The FLIR Project does not include any elements that would affect archaeological resources in a new or different manner (David Stone, Dudek; *CBP FLIR Amended DP Archaeological Review/Recommendations,* February 20, 2012). Therefore, no new impacts are expected to occur and no changes to mitigation measures are necessary.

Project-Specific Impacts: The following previously identified impacts in the Final EIR are still expected to occur:

Impacts ARCH-1, ARCH -2, ARCH -3, ARCH -4, ARCH-5, ARCH-6, ARCH-7, ARCH-8, ARCH-9, ARCH -10

Cumulative Impacts: Cumulative impacts on archaeological resources remain the same.

Mitigation Measures: The following mitigation measures are still required:

ARCH-1.1, ARCH-1.2, ARCH-1.3, ARCH-3, ARCH-4, ARCH-5, ARCH-6, ARCH-7, ARCH-8, ARCH-10

Residual Impacts: Under the above mitigation measures, residual project-specific and cumulative impacts are less than significant for those impacts identified as potentially significant. Residual impacts associated with potentially adverse project-specific impacts remain adverse but not significant.

4. Biological Resources

Section 4.4 of the Final EIR describes the biological setting relative to the CBP Project, impacts on biological resources that would result from the CBP Project, and mitigation measures that would reduce potentially significant impacts. The FLIR Project does not include any elements that would affect biological resources in a new or different manner. Therefore, no new impacts will occur and no changes to mitigation measures are necessary.

Project-Specific Impacts: The following previously identified impacts in the Final EIR are still expected to occur:

Impacts BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8

Cumulative Impacts: Cumulative impacts on biological resources remain the same.

Mitigation Measures: The following mitigation measures are still required:

BIO-1.1, BIO-1.2, BIO-1.3, BIO-2, BIO-3.1, BIO-3.2, BIO-5.1, BIO-5.2, BIO-6

Residual Impacts: Under the above mitigation measures, residual project-specific and cumulative impacts are less than significant, for those impacts identified as potentially significant. Residual impacts associated with potentially adverse project-specific and cumulative impacts, remain adverse but not significant.

5. Energy

Section 4.5 of the Final EIR describes the energy setting relative to the CBP Project, impacts on energy demand that would result from the CBP Project, and mitigation measures that would reduce potentially adverse impacts. The FLIR Project does not include any elements that would affect energy resources in a new or different manner. Therefore, no new impacts are expected to occur and no changes to mitigation measures are necessary.

Project-Specific Impacts

The following previously identified impact in the Final EIR would still occur:

Impact ENERGY-1

Cumulative Impacts

Cumulative energy impacts remain the same.

Mitigation Measures

The following mitigation measure is still recommended: ENERGY-1.

Residual Impacts

Under the above mitigation measure, residual project-specific and cumulative impacts remain adverse but not significant.

6. Fire Protection/Hazards

Section 4.6 of the Final EIR describes the fire protection/hazards setting relative to the CBP Project, impacts that would result from the CBP Project, and mitigation measures that would reduce potentially significant impacts. The FLIR Project does not include any elements that would affect fire protection/hazards in a new or different manner. Therefore, no new impacts are expected to occur and no changes to mitigation measures are necessary.

Project-Specific Impacts: The following previously identified impacts in the Final EIR are expected to occur:

Impacts FIRE-1, FIRE-2, FIRE-3, FIRE-4

Cumulative Impacts: Cumulative fire protection impacts remain the same.

Mitigation Measures: The following mitigation measures are still required:

FIRE-1.1, FIRE-1.2, FIRE-1.3

The following mitigation measure is still recommended:

FIRE-3

Residual Impacts: Under the above mitigation measures, residual project-specific and cumulative impacts are less than significant, for those impacts identified as potentially significant. Residual impacts associated with potentially adverse project-specific, remain adverse but not significant.

7. Geologic Resources

Section 4.7 of the Final EIR describes the geologic setting relative to the CBP Project, impacts on geologic resources that would result from the CBP Project, and mitigation measures that would reduce potentially significant impacts. The FLIR Project does not include any elements that would affect geologic resources in a new or different manner. Therefore, no new impacts are expected to occur and no changes to mitigation measures are necessary.

Project-Specific Impacts: The following previously identified impacts in the Final EIR are still expected to occur:

Impacts GEO-1, GEO-2, GEO-3, GEO-4, GEO-5

Cumulative Impacts: Cumulative geologic resources impacts remain the same. (Class III)

Mitigation Measures: The following mitigation measures are still required:

GEO-1.1, GEO-1.2

Residual Impacts: Under the above mitigation measures, residual project-specific impacts are less than significant, for those impacts identified as potentially significant. Residual impacts associated with potentially adverse project-specific and cumulative impacts remain adverse but not significant.

8. Greenhouse Gas Emissions

Greenhouse Gas Emissions was an issue not analyzed in the Final EIR. This section evaluates the FLIR Project with respect to this issue.

8.1 Existing Conditions

Introduction/Background

Parts of the Earth's atmosphere act as an insulating "blanket" for the planet. This "blanket" of various gases traps solar energy, which keeps the global average temperature in a range suitable for life (if this "blanket" were to suddenly disappear, the planet would be approximately 60°F colder). The collection of atmospheric gases that comprise this blanket are called "greenhouse gases" based on the idea that these gases trap heat like the glass walls of a greenhouse. These gases, mainly water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), and chlorofluorocarbons (CFCs), all act as effective global insulators, reflecting visible light and infrared radiation back to earth. Most scientists agrees that human activities, such as producing electricity and driving internal combustion vehicles, have contributed to the elevated concentration of these gases in the atmosphere. As a result, the Earth's overall temperature is rising.

Scientists have observed a global warming trend beginning around the late 1800s. The global temperature record shows an average warming of about 1.3°F over the past century. The most rapid warming has occurred in recent decades. According to the National Oceanic and Atmospheric Administration (NOAA), seven of the eight warmest years on record have occurred since 2001. Within the past 30 years, the rate of warming across the globe has been approximately three times greater than the rate over the last 100 years. Past climate information suggests the warmth of the last half-century is unusual in at least the previous 1,300 years in the Northern Hemisphere. The preponderance of scientific evidence indicates that most of this recent warming is very likely the result of human activities.

In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC) to assess the scientific, technical, and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation. In February 2007, the IPCC issued a report on global climate change. The IPCC concluded that warming of the Earth's climate system is now "unequivocal" (i.e., "definite") and that changes in climate are now affecting physical and biological systems on every continent. The IPCC bases these conclusions on observations of increases in average air and ocean temperatures, melting of snow and ice, and rising average sea level across the globe.

The IPCC's best estimates are that the average global temperature rise between years 2000 and 2100 could range from 0.6 degrees Celsius (1.08 degrees Fahrenheit) with no increase in GHG emissions above 2000 levels, to 4.0 degrees Celsius (7.2 degrees Fahrenheit) with a substantial increase in GHG emissions (IPCC, 2007). Large increases in global temperatures could have massive deleterious impacts on the natural and human environments.

Climate change could impact the natural environment in California by triggering, among others things:

- Rising sea levels along the California coastline;
- Extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- Increase in heat-related human deaths, an increase in infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality;
- Reduced snow pack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies;
- Potential increase in the severity of winter storms, affecting peak stream flows and flooding;
- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield; and

- Changes in distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

These changes in California's climate and ecosystems could occur at a time when California's population is expected to increase from 34 million to 59 million by the year 2040 (California Energy Commission, 2005).

In 2004, total worldwide greenhouse gas emissions were estimated to be 20,135 Million Metric Tons (MMT)[2] of carbon dioxide equivalents (CO_2e), excluding emissions/removals from land use, land use change, and forestry (Association of Environmental Professionals AEP, 2007). In 2004, greenhouse emissions in the U.S. were 7,074.4 MMT CO_2e (Association of Environmental Professionals, 2007). California is a substantial contributor of greenhouse gas as it is the second largest contributor in the U.S. and the sixteenth largest in the world (California Energy Commission, 2006). In 2004, California produced approximately 500MMT CO_2e, which is approximately seven percent of U.S. emissions (California Energy Commission, 2006). The major source of greenhouse gas emissions in California is transportation, contributing 41 percent of the State's total greenhouse emissions. Electricity generation is the second largest source, contributing 22 percent of the State's greenhouse gas emissions. California experienced a statewide GHG reduction from 464 MMT of CO_2e (gross) in 2000 to 457 MMT of CO_2e (gross) in 2009, a decrease of 1.5 percent. The 2009 levels are the lowest in the ten-year period, with the highest level 489 MMT of CO_2e experienced in 2007. Since 1990 GHG emissions have increased approximately 5.5 percent through 2009. A 5.8 percent decrease in emissions from 2008 through 2009 occurred, but has been attributed to the slower economy. In 2009 the United States GHG emissions were 6,633.2 MMT CO_2e (US Environmental Protection Agency, 2011), of which California's emissions represents 6.9 percent, and indicating a decreasing trend.

Climate Change and Global Warming

The term climate change is often used interchangeably with the term global warming, but according to the National Academy of Sciences, "the phrase 'climate change' is growing in preferred use to 'global warming' because it helps convey that there are [other] changes in addition to rising temperatures." When used in this analysis, the term climate change refers to any distinct change in measures of climate lasting for a long period of time. In other words, "climate change" means major changes in temperature, rainfall, snow, or wind patterns lasting for decades or longer. Global warming is an average increase in temperatures near the Earth's surface and in the lowest layer of the atmosphere. Increases in temperatures in our Earth's atmosphere can contribute to changes in global climate patterns. Global warming can be considered part of climate change along with changes in precipitation, sea level, etc. Global change is a broad term that refers to changes in the global environment, including climate change, ozone depletion, and land use change.

[2] Also expressed in teragrams. One teragram equals approximately 1,000,000 metric tons.

Primary Greenhouse Gas Emissions

According to the US Environmental Protection Agency (EPA), a GHG is any gas that absorbs infrared radiation in the atmosphere. This absorption traps heat within the atmosphere creating a greenhouse effect that is slowly raising global temperatures. California law defines GHG to include the following: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) (Health and Safety Code, § 38505(g)).

Although CO_2 is the most common of these gases, the other gases generally have a higher global warming potential (GWP). CO_2 equivalent (CO_2e) is a measure of GHG emissions that compares the global warming potential (GWP) of the individual greenhouse gases with the GWP of CO_2. CO_2e emissions are calculated by multiplying the metric tons of a gas by the appropriate GWP factor and are commonly expressed as metric tons of carbon dioxide equivalents ($MTCO_2e$). Below is a description of each GHG, as described by the California Climate Action Registry (CCAR) General Reporting Protocol, including their sources of emissions and GWP.

Carbon Dioxide (CO_2)

Consisting of a single carbon and two oxygen atoms. CO_2 is the most common of the six GHGs and provides the reference point for the GWP of other gases. Thus, the GWP of CO_2 is equal to one.

The production and absorption of carbon dioxide occurs through the burning of fossil fuels (e.g., oil, natural gas, and coal), solid waste, trees and wood products, and as a result of other chemical reactions, such as those required to manufacture cement. Globally, the largest source of human based CO_2 emissions is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, and industrial facilities. A number of specialized industrial production processes and product uses, such as mineral or metal production, and the use of petroleum-based products, leads to CO_2 emissions.

CO_2 is removed from the atmosphere (or sequestered) when it is absorbed by plants as part of the biological carbon cycle. Natural sources of CO_2 occur within the carbon cycle where billions of tons of atmospheric CO_2 are removed by oceans and growing plants and are emitted back into the atmosphere through natural processes. When in balance, total CO_2 emissions and removals from the entire carbon cycle are roughly equal. Since the Industrial Revolution in the 1700s, most scientists agree that human activities, including burning of oil, coal, and gas and deforestation, increased CO_2 concentrations in the atmosphere by 35 percent as of 2005.

Nitrous Oxide (N_2O)

Consisting of two nitrogen atoms and a single oxygen atom. N_2O possesses a GWP of 310.

Concentrations of nitrous oxide began to rise at the beginning of the Industrial Revolution reaching 314 parts per billion (ppb) by 1998. Microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen, produce nitrous oxide. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to the atmospheric load of N_2O.

Methane (CH_4)

Consisting of a single carbon atom and four hydrogen atoms. CH_4 possesses a GWP of 21. Methane is emitted from a variety of both human-related and natural sources. CH_4 is emitted during the production and transport of coal, natural gas, and oil, from livestock and other agricultural practices, and from the decay of organic waste in municipal solid waste landfills. It is estimated that 60 percent of global CH_4 emissions are related to human activities. Natural sources of CH_4 include wetlands, gas hydrates,[3] permafrost, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. CH_4 emissions levels from a particular source can vary significantly from one country or region to another. These variances depend on many factors, such as climate, industrial and agricultural production characteristics, energy types and usage, and waste management practices. For example, temperature and moisture have a significant effect on the anaerobic digestion process, which is one of the key biological processes resulting in CH_4 emissions from both human and natural sources. Also, the implementation of technologies to capture and utilize CH_4 from sources such as landfills, coalmines, and manure management systems affects the emissions levels from these sources.

Chlorofluorocarbons

Chlorofluorocarbons are not naturally occurring. They were synthesized for uses as refrigerants, aerosol propellants, and cleaning solvents. Since their creation in 1928, the concentrations of CFCs in the atmosphere have risen. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and levels of the major CFCs are now remaining static or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years. Since they are also a GHG, along with such other long-lived synthesized gases as CF_4 (carbontetrafluoride) and SF_6 (sulfurhexafluoride), they are of concern. Another set of synthesized compounds called HFCs (hydrofluorocarbons) are also considered GHGs, though they are less stable in the atmosphere and therefore have a shorter lifetime and less of an impact. CFCs, CF_4, SF_6, and HFCs have been banned and are no longer available. Therefore, these GHGs are not included further in this analysis.

Potential Effects of Global Climate Change

Climate change could have a number of adverse effects. Although these effects would have global consequences, in most cases they would not disproportionately affect any one site or activity. In other words, many of the effects of climate change are not site-

[3] Gas hydrates are crystalline solids that consist of a gas molecule, usually methane, surrounded by a “cage” of water molecules.

specific. Emission of GHGs would contribute to the changes in the global climate, which would in turn, have a number of physical and environmental effects. A number of general effects are discussed below.

Sea Level Rise and Flooding. The California Climate Change Center predicts that sea level in California would rise between 10.9 to 71.6 centimeters (cm) (0.36 to 2.3 feet) above existing mean sea level (MSL) by 2099 as a result of climate change.[4] Measurements taken in the City of Alameda indicate that the current rate of sea level rise is about 0.29 foot per century. Therefore, projected climate change effects on sea level would increase the existing rate of sea level rise by 0.07 to 1.94 feet per century.[5] When combined with astronomical tides, even a 1-foot increase in MSL would result in the 100-year event high tide peak occurring at the 10-year event frequency.[6] In other words, the frequency of a current 100-year high tide (about 9.5 feet above current MSL) would occur 10 times more often if sea levels increase by 1 foot above current MSL.

In the future, precipitation events are predicted to vary in terms of timing, intensity, and volume according to many climate change models. Extreme storm events may occur with greater frequency. Changes in rainfall and runoff could affect flows in surface water bodies, causing increased flooding and runoff to the storm drain system.

Water Supply. Health and Safety Code § 38501(a) recognizes that climate change "poses a serious threat to the economic well-being, public health, natural resources, and the environment of California," and notes, "the potential adverse impacts of [climate change] include…reduction in the quality and supply of water to the state from the Sierra snowpack."

Most of the scientific models addressing climate change show that the primary effect on California's climate would be a reduced snow pack and a seasonal shift of peak flows in streams. A higher percentage of the winter precipitation in the mountains would likely fall as rain rather than as snow in some locations, reducing the overall snowpack. Further, as temperatures rise, snowmelt is expected to occur earlier in the

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[4] California Climate Change Center, *Projecting Future Sea Level*, A Report from the California Climate Change Center, CEC-500-2005-202-SF, Prepared by D. Cayan, P. Bromirski, K. Hayhoe, M. Tyree, M. Dettinger, and R. Flick, Table 3 (Projected global sea level rise (SLR) (cm) for the SRES A1fi, A2, and B1 greenhouse gas emission scenarios. SLR for A2 and B1 scenarios is estimated by combining output recent global climate change model simulations with MAGICC projections for the ice melt component. SLR estimates for A1fi estimated from MAGICC based on A2 temperature changes scaled according to those in A1fi) (March 2006), p. 19.

[5] California Climate Change Center, *Climate Warming and Water Supply Management in California: White Paper*, A Report from Climate Change Center, CEC-500-2005-195-SF, Prepared by J. Medelin, J. Harou, M. Olivares, J. Lund, R. Howitt, S. Tanaka, M. Jenkins, K. Madani, and T. Zhu. Chapter 2 (Potential Impacts of Climate Change on California's Water Resources), Table 2-6 (Relative Sea Level Trends for Eight Tide Gauges Along the Coast of California with 50 Years or More of Record) (March 2006).

[6] California Climate Change Center, *Climate Warming and Water Supply Management in California: White Paper*, A Report from Climate Change Center, CEC-500-2005-195-SF, Prepared by J. Medelin, J. Harou, M. Olivares, J. Lund, R. Howitt, S. Tanaka, M. Jenkins, K. Madani, and T. Zhu. Chapter 2 (Potential Impacts of Climate Change on California's Water Resources), Table 2-6 (Relative Sea Level Trends for Eight Tide Gauges Along the Coast of California with 50 Years or More of Record) (March 2006).

year. As a result, peak runoff would likely come a month or so earlier. The end result of this would be that the state may not have sufficient surface storage to capture the early runoff, and so, absent construction of additional water storage projects, a portion of the current supplies would flow to the oceans and be unavailable for use in the state's water delivery systems.

Water Quality. Climate change could have adverse effects on water quality, which would in turn affect the beneficial uses (habitat, water supply, etc.) of surface water bodies and groundwater. The changes in precipitation discussed above could result in increased sedimentation, higher concentration of pollutants, higher dissolved oxygen levels, increased temperatures, and an increase in the amount of runoff constituents reaching surface water bodies. Sea level rise, discussed above, could result in the encroachment of saline water into freshwater bodies.

Ecosystems and Biodiversity. Climate change could have effects on diverse types of ecosystems, from alpine to deep-sea habitat. As temperatures and precipitation change, seasonal shifts in vegetation would occur, which would potentially have an effect on the distribution of associated flora and fauna species. As the range of species shifts, habitat fragmentation could occur, with acute impacts on the distribution of certain sensitive species. The IPCC states that "20 percent to 30 percent of species assessed may be at risk of extinction from climate change impacts within this century if global mean temperatures exceed 2 to 3°C (3.6 to 5.4°F) relative to pre-industrial levels."[7] Shifts in existing biomes[8] could also make ecosystems vulnerable to invasive species encroachment. Wildfires, which are an important control mechanism in many ecosystems, may become more severe and more frequent, making it difficult for native plant species to repeatedly re-germinate. In general terms, climate change would put a number of stressors on ecosystems, with potentially catastrophic effects on biodiversity.

Human Health Impacts. Climate change may increase the risk of vector-borne infectious diseases, particularly those found in tropical areas and spread by insects—malaria, dengue fever, yellow fever, and encephalitis.[9] While these health impacts would largely affect tropical areas in other parts of the world, effects would also be felt in California. Warming of the atmosphere would be expected to increase smog and particulate pollution, which could adversely affect individuals with heart and respiratory problems, such as asthma. Extreme heat events would also be expected to occur with more frequency, and could adversely affect the elderly, children, and the homeless. Finally, the water supply impacts and seasonal temperature variations which could

[7] Intergovernmental Panel on Climate Change, *Climate Change 2007: Impacts, Adaptation, and Vulnerability*, Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change [Parry, Martin L., Canziani, Osvaldo F., Palutikof, Jean P., van der Linden, Paul J., and Hanson, Clair E. (eds.)] (Cambridge, United Kingdom: Cambridge University Press, 2007).
[8] A biome is a major ecological community classified by the predominant vegetation, and hence animal inhabitants.
[9] U.S. Environmental Protection Agency, Climate Change—Health and Environmental Effects (2008), http://www.epa.gov/climatechange/effects/health.html#climate (accessed December 13, 2009)

occur as a result of climate change could affect the viability of existing agricultural operations, making the food supply more vulnerable.

Potential Effects of Human Activity on Climate Change

The burning of fossil fuels, such as coal and oil, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO_2 emissions (and thus substantial increases in atmospheric concentrations). In 1994, atmospheric CO_2 concentrations were found to have increased by nearly 30 percent above pre-industrial (c. 1760) concentrations.

The effect each GHG has on climate change is measured as a combination of the volume of its emissions, and its global warming potential (GWP), and is expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of CO_2 equivalents (CO_2e), and are often expressed in metric tons of CO_2 equivalents (MT CO_2e) or millions of metric tons of CO_2 equivalents (MMT CO_2e).

- **Global Emissions.** Worldwide emissions of GHGs in 2004 were nearly 30 billion tons of CO_2e per year (including both on-going emissions from industrial and agricultural sources, but excluding emissions from land-use changes).[10]
- **U.S. Emissions.** In 2004, the United States emitted 7.1 billion tons of CO_2e. Of the four major sectors nationwide—residential, commercial, industrial, and transportation—transportation accounts for the highest percentage of GHG emissions (approximately 35 to 40 percent); these emissions are entirely generated from direct fossil fuel combustion. In 2008, the United States emitted 6.9 billion tons of CO_2e, with transportation accounting for the highest percentage of GHG emissions, approximately 32 percent.[11]
- **State of California Emissions.** In 2004, California emitted approximately 483 million tons of CO_2e, or about 6 percent of the U.S. emissions. This large number is due primarily to the sheer size of California compared to other states. By contrast, California has one of the fourth lowest per-capita GHG emission rates in the country, due to the success of its energy-efficiency and renewable energy programs and commitments that have lowered the state's GHG emissions rate of growth by more than half of what it would have been otherwise. Another factor that has reduced California's fuel use and GHG emissions is its mild climate compared to that of many other states. In 2008, California's GHG emissions were approximately 478 MMT CO_2e, generally attributed to the reduced travel, and therefore, transportation emissions.[12]

[10] United Nations Framework Convention on Climate Change, Sum of Annex I and Non-Annex I Countries Without Counting Land Use, Land-Use Change, and Forestry (LULUCF), Predefined Queries: GHG total without LULUCF (Annex I Parties). Bonn, Germany. http://unfccc.int/ghg_emissions_ data/predefined_queries/items/3814.php (accessed May 2, 2007).
[11] U.S. Environmental Protection Agency, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2009, EPA# 430-R-11-005 (April 15, 2011).
[12] U.S. Environmental Protection Agency, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2008, EPA# 430-R-10-006 (April 2010).

The California Energy Commission found that transportation is the source of approximately 41 percent of the state's GHG emissions, followed by electricity generation (both in-state and out-of-state) at 23 percent, and industrial sources at 20 percent. Agriculture and forestry is the source of approximately 8.3 percent, as is the source categorized as "other," which includes residential and commercial activities.[13]

Various aspects of constructing, operating, and eventually discontinuing (demolition and disposal of waste) the use of industrial, commercial and residential development will result in GHG emissions. Operational GHG emissions result from energy use associated with heating, lighting, and powering buildings (typically through natural gas and electricity consumption), pumping and processing water (which consumes electricity), as well as fuel used for transportation and decomposition of waste associated with building occupants. New development can also create GHG emissions in its construction and demolition phases in connection with the use of fuels in construction equipment, creation and decomposition of building materials, vegetation clearing, and other activities. However, it is noted that new development does not necessarily create entirely new GHG emissions. Occupants of new buildings are often relocating and shifting their operational-phase emissions from other locations.

8.2 Regulatory Framework

Global climate change is addressed through the efforts of various federal, state, regional, and local government agencies as well as national and international scientific and governmental conventions and programs. These agencies work jointly and individually to understand and regulate the effects of greenhouse gas emissions and resulting climate change through legislation, regulations, planning, policy-making, education, and a variety of programs. The significant agencies, conventions, and programs focused on global climate change are discussed below.

Federal U.S. Environmental Protection Agency

The USEPA is responsible for implementing Federal policy to address global climate change. The federal government administers a wide array of public-private partnerships to reduce GHG emissions generated by the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions.

Currently, there are no federal regulations that address GHG emissions. However, in *Massachusetts v. Environmental Protection Agency*, 579 U.S. 497, 127 S. Ct. 1438 (2007), the United States Supreme Court found that the United States Environmental Protection Agency (EPA) has statutory authority under the Clean Air Act to regulate

[13] California Energy Commission, Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004—Final Staff Report, publication # CEC-600-2006-013-SF (Sacramento, CA, December 22, 2006, updated January 23, 2007).

"greenhouse gas" emissions (including CO_2 emissions) from new motor vehicles.[14] In response to this court case's decision, the EPA is drafting regulations that address GHG emissions.

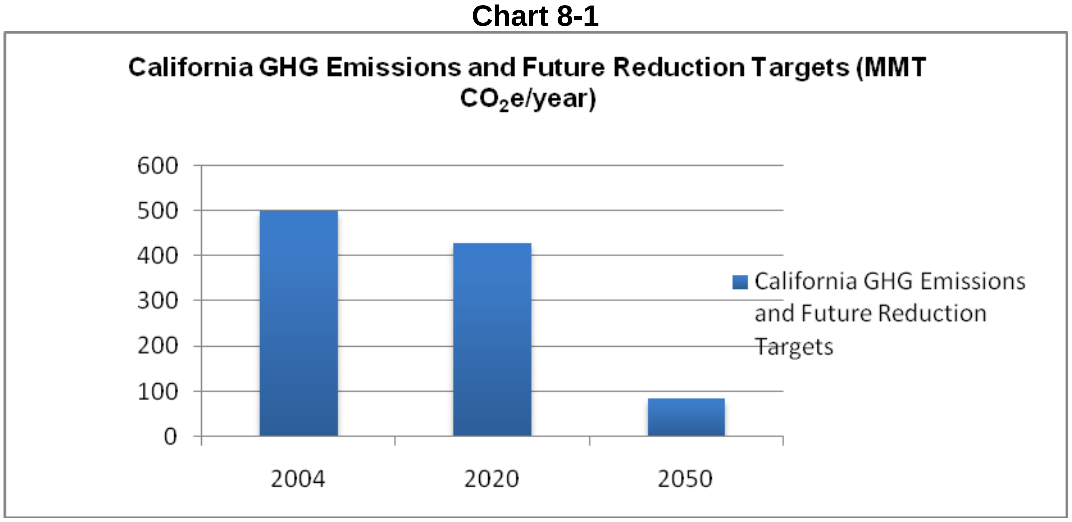
California Air Resources Board

The California Air Resources Board (ARB), a part of the California EPA, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, ARB conducts research, sets state ambient air quality standards, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. ARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. ARB has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

<u>California Executive Order S-3-05</u>

In 2005, Governor Arnold Schwarzenegger issued California Executive Order S-3-05 establishing the following emission targets for California: 1) reduce GHG emissions to 2000 levels by 2010; 2) reduce GHG emissions to 1990 levels (427 MMT CO_2e) by 2020; and 3) reduce GHG emissions to 80 percent below 1990 levels (85 MMT CO_2e) by 2050 (see Chart 8-1, below). Executive Orders are binding on State agencies. Accordingly, S-3-05 will guide State agencies' efforts to control and regulate GHG emissions but will have no direct binding effect on local efforts.

Chart 8-1



[14] Abreu, Heidy and Miguel Loza, *Massachusetts v. Environmental Protection Agency (05-1120). The Legal Information Institute, Cornell Law School.* 2007, August 5, 2007 http://www.law.cornell.edu/supct/cert/05-1120.html.

California Executive Order S-13-08

This Executive Order requests that the National Academy of Sciences (NAS) convene an independent panel to complete the first California Sea Level Rise Assessment Report and initiate an independent sea level rise science and policy committee made up of state, national and international experts.

It also requires that (before release of the final Sea Level Rise Assessment Report from the NAS) all state agencies that are planning construction projects in areas vulnerable to future sea level rise consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. The order does not specify sea level rise scenarios.

The Executive Order also directs the California Resources Agency, through the Climate Action Team, to develop a state Climate Adaptation Strategy. The strategy will summarize the best known science on climate change impacts to California, assess California's vulnerability to the identified impacts and then outline solutions that can be implemented within and across state agencies to promote resiliency.

California Global Warming Solutions Action of 2006 (AB 32)

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the *California Global Warming Solutions Act of 2006* (Health and Safety Code se § 38500, *et seq.*). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide greenhouse gas (GHG) emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also includes guidance to institute emission reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions. AB 32 demonstrates California's commitment to reducing the rate of GHG emissions and the State's associated contribution to climate change, without intent to limit population or economic growth. Although AB 32 did not amend CEQA, it identifies the environmental problems in California caused by global warming (*see e.g.,* Health and Safety Code § 38501).

Senate Bill (SB) 97

SB 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. In March 2010, the California Office of Administrative Law promulgated CEQA amendments that provide regulatory guidance with respect to the analysis and mitigation of the potential effects of GHG emissions, as found in CEQA Guidelines § 15183.5. To streamline analysis, CEQA provides for analysis through compliance with a previously adopted plan or mitigation program under special circumstances.

State of California Climate Change Proposed Scoping Plan

In October 2008, CARB published its *Climate Change Proposed Scoping Plan* (*Proposed Scoping Plan*), which is the State's plan to achieve GHG reductions required by AB 32.The *Proposed Scoping Plan* contains the main strategies California will implement to achieve a reduction of 169 MMT of CO_2e, or approximately 30 percent from the state's projected 2020 emission level of 596 MMT of CO_2e under a business-as-usual scenario. The *Proposed Scoping Plan* states that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The *Proposed Scoping Plan* was approved by the ARB on December 11, 2008.

In addition to the Scoping Plan, ARB has also released the Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act (ARB Draft Staff Proposal). The ARB Draft Staff Proposal includes potential interim performance standards for project types and emissions sources including construction, energy, water use, waste, transportation, and total mass GHG emissions. Specific thresholds and performance criteria for these categories have yet to be developed.

<u>Senate Bill (SB) 375</u>

Senate Bill 375 (SB 375), which establishes mechanisms for the development of regional targets for reducing passenger vehicle greenhouse gas emissions, was adopted on September 30, 2008. On September 23, 2010, California ARB adopted the vehicular greenhouse gas emissions reduction targets that had been developed in consultation with the metropolitan planning organizations (MPOs); the targets require a 7 to 8 percent reduction by 2020 and between 13 to 16 percent reduction by 2035 for each MPO. SB 375 recognizes the importance of achieving significant greenhouse gas reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs will work with local jurisdictions in developing sustainable communities strategies (SCS) designed to integrate development patterns and the transportation network in a way that reduces greenhouse gas emissions while meeting housing needs and other regional planning objectives. The MPOs will prepare their first SCS according to their respective regional transportation plan (RTP) update schedule.

Regional

<u>Santa Barbara County Air Pollution Control District (APCD)</u>

The Santa Barbara County Air Pollution Control District (APCD) is the agency principally responsible for comprehensive air pollution control in Santa Barbara County. In order to provide GHG emission guidance to the local jurisdictions, the APCD to date has been developing a proposal to adopt greenhouse gas thresholds of significance for stationary source projects. A public workshop was held on February 2011, and the District's Community Advisory Council received a briefing on this topic on May 2011. Additional public review for consideration and adoption of greenhouse gas thresholds is expected, but the timing of the adoption of but the timing of the adoption of greenhouse gas thresholds for stationary source projects is unknown.

Local

City of Goleta Energy Efficiency Standards

The Conservation Element of the Goleta General Plan/Coastal Land Use Plan addresses protection of air quality (Policy CE 12) and energy conservation (Policy CE 13). It also includes an implementation action calling for the preparation of a Greenhouse Gas Reduction Plan, which is currently in progress. On November 2, 2010, the Goleta City Council adopted the 2010 Edition of the California Green Building Standards Code (CALGreen Code) (24 California Code of Regulations Part 11) as the Green Building Code of the City. The Green Building Code is set forth in Goleta Municipal Code Chapter 15.12. That action became effective January 1, 2011. The Green Building Code mandates new requirements for planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, environmental quality, and installer and special inspector qualifications. Also on November 2, 2010, the City adopted Goleta Municipal Code Chapter 15.13, entitled “Energy Efficiency Standards,” establishing minimum energy efficiency standards for new building construction. The GMC requires that new residential and nonresidential construction and additions greater than 500 square feet use the performance approach to demonstrate that they exceed the energy efficiency standards of the California Energy Code (Title 24 California Code of Regulations, Part 6) by 15 percent, or, in the case of nonresidential buildings, that a permit applicant may use an alternative Envelope Only or Lighting Only compliance path that requires exceeding the standards by 10 percent according to prescriptive envelope and lighting metrics.

8.3 Thresholds of Significance

As noted above, the State Natural Resources Agency adopted amendments to the CEQA Guidelines for GHG emissions that became effective on March 18, 2010. These new CEQA Guidelines provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents. According to the amendments made to Appendix G of the CEQA Guidelines, the project would have a significant impact if it would:

A. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
B. Conflict with an applicable plan, policy, or regulation adopted for the purposed of reducing the emissions of GHGs.

The adopted CEQA amendments require a lead agency to make a good-faith effort based, to the extent possible, on scientific and factual data in order to describe, calculate, or estimate the amount of GHG emissions resulting from a project. They give discretion to the lead agency in whether to:

1. Use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use; and/or

2. Rely on a qualitative analysis or performance-based standards.

In addition, a lead agency should consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

The amendments encourage lead agencies to establish significance thresholds for their respective jurisdictions and clarify that the effects of GHG emissions are cumulative, and should be analyzed in the context of CEQA's requirements for cumulative impact analysis.

Currently, neither the City of Goleta nor the State of California has adopted significance thresholds for GHG emissions. Establishment of thresholds at the State and/or local level has been a point of discussion and analysis by various agencies and boards (i.e., OPR, ARB, CAPCOA [California Air Pollution Control Officers Association]).

In June 2010, the Bay Area Air Quality Management District (BAAQMD) became the first regulatory agency in the nation to approve guidelines that establish thresholds of significance for GHG emissions. These thresholds are summarized in **Table 8-1**.

Table 8-1
Bay Area Air Quality Management District GHG Thresholds of Significance

GHG Emission Source Category	Operational Emissions
Commercial and Residential (land use projects)	1,100 MT CO_2e/yr or 4.6 MT CO_2e/SP/yr [a]
Stationary Sources[b]	10,000 MT CO_2e /yr
Source: Santa Barbara County Planning & Development Department, *Support for Use of Bay Area Air Quality Management District Greenhouse Gas Emissions Standards. Interim GHG Emissions – Evidentiary Support*, June 10, 2010. [a] SP = Service Population(residents + employees). [b] Stationary Sources include stationary combustion sources (industrial-type uses) regulated by the APCD.	

On June 10, 2010, the Santa Barbara County Planning & Development Department produced a memorandum "*Support for Use of Bay Area Air Quality Management*

District Greenhouse Gas Emissions Standards,"[15] which states, "While Santa Barbara County land use patterns differ from those in the Bay Area as a whole, Santa Barbara County is similar to certain Bay Area counties (in particular, Sonoma, Solano, and Marin) in terms of population growth, land use patterns, General Plan/Coastal Land Use Plan policies, and average commute patterns and times. Because of these similarities, the methodology used by BAAQMD to develop its GHG emission significance thresholds, as well as the thresholds themselves, have applicability to Santa Barbara County and represent the best available interim standards for Santa Barbara County." In accordance with CEQA Guidelines §§15064.4(b)(2), and 15064.7(c), the City has consistently relied upon Santa Barbara County's "*Support for Use of Bay Area Air Quality Management District Greenhouse Gas Emissions Standards,"* as the expert recommended threshold for establishing greenhouse gas impacts of a project. The City of Goleta is located in Santa Barbara County and shares meteorological attributes, as well as similar land use patterns and policies, and thresholds deemed applicable in Santa Barbara County would also reasonably apply to projects within the City Goleta. In addition, the City of Goleta would rely upon the Santa Barbara County Air Pollution Control District (APCD), as a commenting agency, to review the GHG analysis, and these thresholds would represent a consistent approach and uniformity for impact determinations for City and County projects under the District's review. Therefore, this analysis uses the BAAQMD/Santa Barbara County Interim Thresholds of Significance to determine the significance of GHG emissions related to this project, based on the 1,100 MT CO_2e/year or 4.6 MT CO_2e per service population per year threshold for commercial and residential land uses. There is no BAAQMD threshold of significance for construction emissions.

In 2012, a court judgment determined that the BAAQMD GHG emissions thresholds of significance were not properly adopted under CEQA and cannot be readopted until compliance with CEQA occurs.[16] Nevertheless, thresholds of significance that are adopted or recommended by other public agencies or by experts may be considered as appropriate thresholds of significance. As previously explained, a significant amount of public and expert opinion and input went into the development of the BAAQMD thresholds of significance. Moreover, since adoption of these thresholds, there have been numerous expert opinions and evaluations of these thresholds, including the applicability within Santa Barbara County.

According to the applicable thresholds for this project, the project would result in a significant impact if it:

A. Generates operational emissions in an amount more than 1,100 MT CO_2e/yr[17], and/or results in significant construction or operational GHG emissions based on a qualitative analysis.

[15] Santa Barbara County Planning & Development Department, *Support for Use of Bay Area Air Quality Management District Greenhouse Gas Emissions Standards*. *Interim GHG Emissions – Evidentiary Support*, June10, 2010.

[16] California Building Industry Assoc. v. Bay Area Air Quality Management District, (March 5, 2012) Alameda Super. Ct. Case No. RG10-548693.

[17] The other threshold option would result in a higher threshold (4.6 MT CO_2e/service population/yr X 375 current employees = 1,725 MT CO2e/yr). Therefore, the lower, more conservative threshold is being applied to the FLIR Project.

B. Fails to employ reasonable and feasible means to minimize GHG emissions from a qualitative standpoint, in a manner that is consistent with the goals and objectives of AB 32.

It is also noted that the use of the BAAQMD threshold does not imply that it is a threshold that the City has formally adopted or should adopt as a GHG emissions significance threshold.

8.4 FLIR Project Impacts

FLIR Project-related GHG emissions would include emissions from direct and indirect sources. The FLIR Project would result in construction and operational emissions of CO_2, N_2O, and CH_4, however, it would not result in the emission of other GHGs such that it would facilitate a meaningful analysis. Therefore, this analysis focuses on these first three forms of GHG emissions. *Table 8-2, Estimated Greenhouse Gas Emissions*, presents the FLIR Project's estimated CO_2, N_2O, and CH_4.

The CalEEMod computer model outputs were used to calculate mobile source, area source, and construction GHG emissions. Operational GHG estimations are based on energy emissions from electricity usage and automobile emissions. The CalEEMod model relies upon trip data within the *FLIR Commercial Systems Project Traffic Impact Study* prepared by Penfield & Smith (November 8, 2012) and FLIR Project-specific land use data to calculate emissions.

Construction Emissions. Using estimated annual emissions for demolition, grading, construction, painting, and paving, project-related annual construction emissions were converted from CO_2 pounds per year (without mitigation) to CO_2 equivalent (CO_2e) emissions. For the estimated duration of construction (12 months), the FLIR Project's construction would generate approximately 853 MT CO_2e. These emissions are temporary during construction and the construction would not conflict with CARB's greenhouse gas emissions reduction targets under AB 32 (as described above in the Regulatory Framework section). The project's construction emissions would be less than significant. No further mitigation measures are recommended.

Operational Emissions. As listed below in Table 8-2, operational emissions were calculated using the CalEEMod model and FLIR Project-specific land use data. Electricity would be provided to the FLIR Project site by Southern California Edison. The mitigated condition includes projected reductions in emissions due to implementing local regulations for waste reduction (50% diversion pursuant to AB 939) and energy efficiency (pursuant to the City's Energy Efficiency Standards).

Table 8-2
Estimated Operational Greenhouse Gas Emissions

Emission Source	**Unmitigated CO_2e (MT/year)**	**Mitigated CO_2e (MT/year)**
Area	0.00	0.00
Energy	62.63	59.29
Waste	0.56	0.28
Water	17.51	17.51
Total Non-transportation Sources	***80.70***	***77.08***
Mobile	79.19	79.19
Total Metric Tons CO_2(e)	**159.89**	**156.27**

The FLIR Project would generate approximately 160 MT CO_2e (or 156 MT CO_2e under the mitigated condition), which is below the 1,100 MT CO_2e threshold of significance. The FLIR Project will be subject to conditions of approval for the existing CBP Project for energy efficiency and transportation demand management, thereby employing reasonable and feasible means to minimize GHG emissions from a qualitative standpoint. Therefore, the FLIR Project's operational emissions are less than significant. No further mitigation measures are recommended.

9. Hazardous Materials/Risk of Upset

Section 4.8 of the Final EIR describes the hazardous materials/risk of upset setting relative to the CBP Project, impacts that would result from the CBP Project, and mitigation measures that would reduce potentially significant impacts. The FLIR Project does not include any elements that would affect hazardous materials/risk of upset in a new or different manner. Therefore, no new impacts are expected to occur and no changes to mitigation measures are necessary.

Project-Specific Impacts: The following previously identified impacts in the Final EIR are still expected to occur:

Impacts HAZ-1, HAZ-2, HAZ-3, HAZ-4, HAZ-5, HAZ-6

Cumulative Impacts: Cumulative hazardous materials/risk of upset impacts remain the same.

Mitigation Measures: The following mitigation measures are still required:

HAZ-1.1, HAZ-1.2, HAZ-2, HAZ-3.1, HAZ-3.2, HAZ-4.1, HAZ-4.2, HAZ-4.3, HAZ-4.4, HAZ-5.1, HAZ-5.2, HAZ-6.1, HAZ-6.2

Residual Impacts: Under the above mitigation measures, residual project-specific and cumulative impacts are less than significant.

10. Land Use

Section 4.9 of the Final EIR describes the land use setting relative to the CBP Project, land use impacts that would result from the CBP Project, and mitigation measures that would reduce potentially significant and potentially adverse but not significant impacts.

The FLIR Project's new 16,175-square foot office building will be located between the existing Administration building and Research Building on Lot 20. The overall distribution of structural development relative to the Santa Barbara Municipal Airport (SBMA) Airport Approach Zone remains the same. The CBP Project includes Buildings 3, 8, and 11 within the Clear Zone area of the Approach Zone and all other buildings just outside the Approach Zone.

The FLIR Project changes the intensity of development slightly. On Lots 13 and 20, onsite population density would decrease from 24.88 persons/acre to 24.82 persons/acre. The overall decrease is attributable to a decrease in projected population within Building C (Manufacturing Building) from 2.63 persons per thousand square feet to 2.24 persons per thousand square feet. The population would remain below the Santa Barbara County Airport Land Use Plan guideline for the Approach Zone of 25 persons/acre.

Project building heights of 31.75 feet have been preliminarily evaluated relative to flight path safety. The FLIR Project is below maximum allowed heights by approximately 3 feet. Project landscaping remains relatively unchanged and would continue to be subject to a 25-foot height limitation within the Clear Zone.

Accordingly, no new impacts are expected to occur as a result of the FLIR Project.

Project-Specific Impacts: The following previously identified impacts in the Final EIR are still expected to occur:

Impact LU-1, -LU-2, LU-3, LU-4, LU-5, LU-6, LU-7

Cumulative Impacts: Cumulative land use impacts remain the same.

Mitigation Measures: The following mitigation measures are still required:

LU-1, AES-6, AES-7, LU-4.1, LU-4.2, LU-4.3, LU-6, Land Use Mitigation Measure from Addendum dated May 27, 2011

Residual Impacts: Under the above mitigation measures, residual project-specific impacts are less than significant, for those impacts identified as potentially significant. Residual impacts associated with potentially adverse project-specific and cumulative impacts remain adverse but not significant.

11. Noise

Section 4.10 of the Final EIR describes the noise setting relative to the CBP Project, impacts on related to noise that would result from the CBP Project, and mitigation measures that would reduce potentially significant impacts. The FLIR Project does not include any elements that would affect noise in a new or different manner. Therefore, no new impacts would be expected to occur and no changes to mitigation measures are necessary.

Project-Specific Impacts: The following previously identified impacts in the Final EIR are still expected to occur:

Impacts NOISE-1, NOISE-2, NOISE-3, NOISE-4, NOISE-5

Cumulative Impacts: Cumulative noise impacts remain the same. (Class III)

Mitigation Measures: The following mitigation measures are still required:

NS-1.1, NS-1.2

The following mitigation measure is still recommended:

NS-4

Residual Impacts: Under the above mitigation measures, residual project-specific impacts are less than significant, for those impacts identified as potentially significant. Residual impacts associated with potentially adverse project-specific and cumulative impacts remain adverse but not significant.

12. Public Facilities

Section 4.11 of the Final EIR describes the public facilities setting relative to the CBP Project, public facilities impacts that would result from the CBP Project, and mitigation measures that would reduce potentially significant and potentially adverse but not significant impacts.

Solid Waste
Solid waste generation would increase by 92.49 tons/year as a result of the FLIR Project (from 265.25 tons/year to 357.74 tons/year). This solid waste generation impact remains significant and unavoidable, as previously identified in the Final EIR. Solid Waste Management Plans for construction and demolition waste and ongoing operations will continue to be required as mitigation measures for the FLIR Project (Mitigation Measures PF-1 and PF-2). No new mitigation measures or changes to existing mitigation measures are necessary.

Wastewater Collection and Disposal
Impacts on wastewater collection and disposal would be relatively similar in that population and overall onsite demand would be similar to the CBP Project. This wastewater collection impact remains adverse but not significant. Therefore, no new impacts would be expected to occur and no changes to mitigation measures are necessary.

Other Public Facilities and Services
The FLIR Project would function similar to the CBP Project in terms of demand on police protection services; this police protection services impact remains adverse but

not significant. The additional cumulative impact to library facilities and public administration facilities arising from the new building would be mitigated by participation in development mitigation impact fee programs for such facilities. Therefore, no new impacts would be expected to occur and no changes to mitigation measures are necessary.

Project-Specific Impacts: The following previously identified impacts in the Final EIR are still expected to occur:

Impacts PF-1, PF-2, PF-3, PF-4

Cumulative Impacts: Cumulative public facilities impacts remain the same.

Mitigation Measures: The following mitigation measures are still required:

PF-1, PF-2

The following mitigation measures are still recommended:

PF-3.1, PF-3.2, PF-3.3

Residual Impacts: Under Mitigation Measure PF-2, residual project-specific and cumulative impacts on long-term generation of solid waste remain significant.

Under the remaining above mitigation measures, all other residual project-specific impacts are less than significant, for those impacts identified as potentially significant. Residual impacts associated with potentially adverse project-specific and cumulative impacts remain adverse but not significant.

13. Recreation

Section 4.12 of the Final EIR describes the recreation setting relative to the CBP Project, impacts on recreational resources that would result from the CBP Project, and mitigation measures that would reduce potentially adverse impacts. The FLIR Project does not include any elements that would affect recreational resources in a new or different manner. The FLIR Project would comply with the recreation development impact mitigation fee program. Therefore, no new impacts are expected to occur and no changes to mitigation measures are necessary.

Project-Specific Impacts: The following previously identified impacts in the Final EIR are still expected to occur:

Impacts REC-1, REC-2, REC-3

Cumulative Impacts: Cumulative recreation impacts remain the same.

Mitigation Measures: The following mitigation measures are still recommended:

REC-3

Residual Impacts: Under the above mitigation measure, residual impacts associated with potentially adverse project-specific and cumulative impacts remain adverse but not significant.

14. Transportation/Circulation

Section 4.13 of the Final EIR describes the area transportation/circulation setting, impacts on transportation/circulation that would result from the CBP Project, and mitigation measures that would reduce potentially significant impacts.

The FLIR Project would result in the following changes to transportation/circulation (Derek Rapp, Penfield & Smith, *FLIR Commercial Systems Project Traffic Impact Study, November 8, 2012):*

- Additional trip generation consisting of 94 new average daily trips (ADT), including 18 new AM peak hour trips and 17 new PM peak hour trips. The trips are distributed and assigned to the local street network using distribution percentages previously developed for the CBP Project.
- The Project would not result in any new project-specific impacts to intersections serving the Project.
- The Project would add 10 PM peak hour trips to the Los Carneros Road/U. S. 101 Southbound Ramps intersection, which is projected to operate at LOS F during the PM peak hour during cumulative conditions. This intersection is designated as a Congestion Management Program (CMP) intersection facility by the Santa Barbara County Association of Governments (SBCAG) (*2009 Santa Barbara County Congestion Management Program*).

Project-Specific Impacts: The following previously identified impacts in the Final EIR are still expected to occur:

Impacts TR-1, TR-2, TR-3, TR-4, TR-5, TR-6, TR-7, TR-8, TR-9, TR-10, TR-11

Cumulative Impacts: The following previously identified impacts in the Final EIR are still expected to occur:

Impacts TR-12, TR-13, TR-14, TR-15, TR-16, TR-17, TR-18, TR-19, TR-20, TR-21,-TR-22, TR-23, TR-24, TR-25, TR-26, TR-27, TR-28

The following new impact is expected to occur as a result of the project:

Impact TR-29: The FLIR Project would generate additional vehicular trips that would have a potentially significant contribution to cumulative impact to level of service at the Los Carneros Road/U. S. 101 Southbound Ramps intersection during the PM peak hour, as defined by SBCAG thresholds of significant impacts to the CMP network.

Mitigation Measures: The following previously identified mitigation measures are still required:

TR-1, TR-2, TR-3, TR-5, TR-6, TR-7, TR-8, TR-9, TR-12, TR-13, TR-14, TR-16, TR-17, TR-18, TR-19, TR-20, TR-21, TR-22, TR-23, TR-25, TR-26, TR-27, TR-28

The following new mitigation measure will be required:

Mitigation Measure TR-29: The FLIR Project applicant must pay a cumulative traffic mitigation fee for the FLIR Project's fair share of cumulative transportation impacts to the Los Carneros/U. S. Highway 101 southbound ramp

intersection before the City issues any Land Use Permit for the FLIR Project. The improvement project required to mitigate the cumulative traffic impact at the Los Carneros/U. S. Highway 101 southbound ramp intersection includes, without limitation, the following:

A. Installation of a free right-turn from Los Carneros northbound onto the Highway 101 on-ramp.

B. Modifications to the on-ramp to accommodate metering as required by Caltrans.

The FLIR Project's fair share mitigation fee amount must be calculated by multiplying the estimated transportation improvement project cost by the ratio of the number of project generated trips divided by the total cumulative trips at the Los Carneros/U. S. Highway 101 southbound ramp intersection.

Residual Impacts: Under Mitigation Measures TR-3, TR-7, TR-14, and TR-23, residual project-specific and cumulative impacts on Los Carneros Road south of the City limits to El Colegio Road and at Los Carneros Road/El Colegio Road remain significant.

Under the remaining above mitigation measures, all other residual project-specific and cumulative impacts are less than significant, for those impacts identified as potentially significant. Residual impacts associated with potentially adverse project-specific and cumulative impacts remain adverse but not significant.

15. Water Resources/Flooding

Section 4.14 of the Final EIR describes the water resources/flooding setting relative to the CBP Project, impacts on related to water resources/flooding that would result from the CBP Project, and mitigation measures that would reduce potentially adverse impacts. The FLIR Project does not include any elements that would affect water resources/flooding in a new or different manner. Therefore, no new impacts are expected to occur and no changes to mitigation measures are necessary.

Project-Specific Impacts: The following previously identified impacts in the Final EIR are still expected to occur:

Impacts WS-1, WS-2, WS-3, WS-4, WS-5

Cumulative Impacts: Cumulative water resources/flooding impacts remain the same.

Mitigation Measures: The following mitigation measures are still recommended:

WR-1.1, 1.2, 1.3, 1.4, 1.5, 1.20

The following measures are required components of a Storm Water Prevention Plan (SWPP):

WR-1.6, WR-1.7, WR-1.8, WR-1.9, WR-1.10, WR-1.11, WR-1.12, WR-1.13, WR-1.14, WR-1.15, WR-1.16, WR-1.17, WR-1.18, WR-1.19

Residual Impacts

Under the above mitigation measure, residual impacts associated with potentially adverse project-specific and cumulative impacts remain adverse but not significant.

I. CONCLUSION

The FLIR Project is expected to result in only one new environmental impact relating to transportation/circulation, which will be mitigated to a less than significant level under a new mitigation measure. No other new environmental impacts or substantive changes to mitigation measures identified in the Final EIR are expected.

ATTACHMENTS

1. FLIR Project Plans (Site Plans, Parcel Plan, Floor Plans, Elevations, Preliminary Grading Plan, Preliminary Master Utility Plan, Preliminary Landscape Plan)