

4. ENVIRONMENTAL IMPACT ANALYSIS

F. GREENHOUSE GAS EMISSIONS

1. INTRODUCTION

This section describes applicable federal, state, and local regulations that address greenhouse gas (GHG) emissions and global climate change in California and the City of Newport Beach. Existing climate conditions and influences on global climate change are also described, and an analysis is provided to assess potential cumulative and project related contributions to global climate change. This analysis has been prepared using standards assumptions and defaults, as no specific development is proposed at this time and no specific project would be fully authorized by the requested legislative approvals, without further site development review and permitting. The analysis accounts for energy and resource conservation measures that have been incorporated into the proposed project and pertinent state-mandated GHG emission reduction measures. GHG emission calculations prepared for the proposed project are provided in Appendix F of this Draft EIR.

2. ENVIRONMENTAL SETTING

a. Regulatory Framework

(1) Federal

The U.S. Environmental Protection Agency (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 the GHG intensity 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. The USEPA implements several voluntary programs that substantially contribute to the reduction of GHG emissions. These programs play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

- The State Climate and Energy Partner Network that allows for the exchange of information between federal and state agencies regarding climate and energy,
- The Climate Leaders program for companies,
- The Energy Star labeling system for energy-efficient products, and
- The Green Power Partnership for organizations interested in buying green power.

In *Massachusetts v. Environmental Protection Agency* (Docket No. 05-1120), the U.S. Supreme Court held in April of 2007 that the USEPA has statutory authority under Section 2020 of the federal Clean Air Act (CAA) to regulate GHGs. The court did not hold that the USEPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare.

The President signed Executive Order 13432 on May 14, 2007, directing the USEPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a regulatory process that responds to the Supreme Court's decision. Executive Order 13432 was codified into law by the 2009 Omnibus Appropriations Law signed on February 17, 2009. The order sets goals in the areas of energy efficiency, acquisition, renewable energy, toxics reductions, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. In addition the order requires more widespread use of Environmental Management Systems as the framework in which to manage and continually improve these sustainable practices. This Executive Order requires federal agencies to lead by example in advancing the nation's energy security and environmental performance by achieving the following goals:

- **Energy Efficiency:** Reduce energy intensity 30 percent by 2015, compared to an FY 2003 baseline.
- **Greenhouse Gases:** Reduce greenhouse gas emissions through reduction of energy intensity 30 percent by 2015, compared to an FY 2003 baseline.
- **Renewable Power:** At least 50 percent of current renewable energy purchases must come from new renewable sources (in service after January 1, 1999).
- **Building Performance:** Construct or renovate buildings in accordance with sustainability strategies, including resource conservation, reduction, and use; siting; and indoor environmental quality.
- **Water Conservation:** Reduce water consumption intensity 16 percent by 2015, compared to an FY 2007 baseline.
- **Vehicles:** Increase purchase of alternative fuel, hybrid, and plug-in hybrid vehicles when commercially available.
- **Petroleum Conservation:** Reduce petroleum consumption in fleet vehicles by 2 percent annually through 2015, compared to an FY 2005 baseline.
- **Alternative Fuel:** Increase use of alternative fuel consumption by at least 10 percent annually, compared to an FY 2005 baseline.
- **Pollution Prevention:** Reduce use of chemicals and toxic materials and purchase lower risk chemicals and toxic materials.
- **Procurement:** Expand purchases of environmentally sound goods and services, including bio-based products.
- **Electronics Management:** Annually, 95 percent of electronic products purchased must meet Electronic Product Environmental Assessment Tool standards where applicable; enable Energy Star® features on 100 percent of computers and monitors; and reuse, donate, sell, or recycle 100 percent of electronic products using environmentally sound management practices.

On May 19, 2009, the President announced a national policy for fuel efficiency and emissions standards in the U.S. auto industry. The policy is a collaboration between the U.S. Department of Transportation (USDOT) and the USEPA. The proposed federal standards apply to passenger cars and light-duty trucks built in model years 2012 through 2016. The proposed rule would surpass the prior Corporate Average Fuel Economy (CAFE) standards and require an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO₂ per mile by model year 2016, based on USEPA calculation methods. Based on USDOT calculation methods, the standards set a requirement to meet an average fuel economy of 34.1 mpg by 2016.

Although this is lower than the 35.5 mpg, the USEPA method gives automakers credits for improvements to air-conditioning systems that also reduce leakage of refrigerants into the atmosphere or reduce fuel consumption while the system is operating. The improvements to these systems equate to an overall reduction of GHGs. These standards were formally adopted by the USEPA and USDOT on April 1, 2010.

In August 2012, the USEPA and USDOT adopted standards for model year 2017 through 2025 passenger cars and light-duty trucks. By 2020, vehicles are required to achieve a combined standard of 41.7 mpg and 213 grams of CO₂ per mile. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO₂ per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle.¹

On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the federal CAA. The USEPA adopted a Final Endangerment Finding for the six defined GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) on December 7, 2009. The Endangerment Finding is required before USEPA can regulate GHG emissions under Section 202(a)(1) of the CAA in fulfillment of the U.S. Supreme Court decision. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not themselves impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

(2) State

(a) California Air Resources Board

The California Air Resources Board (CARB), a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards (California Ambient Air Quality Standards (CAAQS)), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB 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. CARB 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. The SIP is required for the state to take over implementation of the Clean Air Act.

(b) Executive Order S-3-05

California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following GHG emission reduction targets:

- By 2010, California shall reduce GHG emissions to 2000 levels;
- By 2020, California shall reduce GHG emissions to 1990 levels; and

¹ U.S. Environmental Protection Agency, "EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks," <http://www.epa.gov/oms/climate/documents/420f12051.pdf>. 2012.

- By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels.

The Secretary of CalEPA is required to coordinate efforts of various agencies in order to collectively and efficiently reduce GHGs. Some of the agency representatives involved in the GHG reduction plan include the Secretary of the Business, Transportation and Housing Agency, the Secretary of the Department of Food and Agriculture, the Secretary of the Resources Agency, the Chairperson of CARB, the Chairperson of the California Energy Commission, and the President of the Public Utilities Commission. Representatives from these agencies comprise the California Climate Action Team (CCAT).

The CCAT provides biennial reports to the Governor and Legislature on the state of GHG reductions in the state as well as strategies for mitigating and adapting to climate change. The first CCAT Report to the Governor and the Legislature in 2006 contained recommendations and strategies to help meet the targets in Executive Order S 3-05.² The 2010 CCAT Report, finalized in December 2010, expands on the policy oriented 2006 assessment.³ The new information detailed in the CCAT Report includes development of revised climate and sea-level projections using new information and tools that have become available in the last two years; and an evaluation of climate change within the context of broader social changes, such as land-use changes and demographic shifts.

(c) Assembly Bill 32, The Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted the California Global Warming Solutions Act of 2006 (AB 32), focusing on reducing GHG emissions in California to 1990 levels by 2020. As required by AB 32, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MMT CO₂e. CARB also projected the state's 2020 GHG emissions under business as usual (BAU) conditions—that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions. CARB originally used an average of the state's GHG emissions from 2002 through 2004 and projected the 2020 levels at approximately 596 MMT CO₂e. Therefore, under this original projection, the state must reduce its 2020 BAU emissions by 28.4 percent in order to meet the 1990 target. CARB updated their 2020 BAU emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were recently adopted for motor vehicles and renewable energy.⁴ CARB's revised 2020 BAU emissions estimate is 507 MMT CO₂e. Therefore, the emission reductions necessary to achieve the 2020 emissions target of 427 MMT CO₂e would be 80 MMT CO₂e, or a reduction of GHG emissions by 15.8 percent.

AB 32 defines GHGs as CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆ and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further required that reduction measures be technologically feasible and cost effective. Under AB 32, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing state actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020. On or before June 30, 2007, CARB was required to publish a list of discrete early action GHG emission reduction measures that would be implemented to be made enforceable by 2010. In

² California Environmental Protection Agency, *California Climate Action Team Report to the Governor and the Legislature*, (2006).

³ California Environmental Protection Agency, *California Climate Action Team Report to the Governor and the Legislature*, (2010).

⁴ California Air Resources Board, "Greenhouse Gas Inventory - 2020 Emissions Forecast," <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>, 2012.

2007, CARB published its Final Report for Proposed Early Actions to Mitigate Climate Change in California.⁵ This report described recommendations for discrete early action measures to reduce GHG emissions as part of California's AB 32 GHG reduction strategy. Resulting from this are three new regulations proposed to meet the definition of "discrete early action greenhouse gas reduction measures," including the following: a low carbon fuel standard; reduction of HFC 134a emissions from non-professional servicing of motor vehicle air conditioning systems; and improved landfill methane capture. CARB estimates that by 2020, the reductions from those three measures would range from 13 to 26 MMT CO₂e. Six additional early-action regulations were on October 25, 2007 that targeted: motor vehicles; auxiliary engines from docked ships; PFCs from the semiconductor industry; propellants in consumer products; automotive maintenance; and SF₆ from non-electricity sectors.

(d) Assembly Bill 1493, Greenhouse Gas Emission Standards for Automobiles (Pavley)

In response to the transportation sector accounting for more than half of California's CO₂ emissions, AB 1493, enacted on July 22, 2002, required CARB to set GHG emission standards for passenger vehicles, light duty trucks, and other vehicles whose primary use is non-commercial personal transportation manufactured in and after 2009. In setting these standards, CARB must consider cost effectiveness, technological feasibility, economic impacts, and provide maximum flexibility to manufacturers. The State of California in 2004 submitted a request for a waiver from federal clean air regulations, which ordinarily preempts state regulation of motor vehicle emission standards, to allow the state to require reduced tailpipe emissions of CO₂. In late 2007, the USEPA denied California's waiver request. In early 2008, the state brought suit against USEPA related to this denial. In January 2009, the President directed the USEPA to assess whether its denial of the waiver was appropriate under the federal CAA. In June 2009, the USEPA granted California the waiver.

However, as discussed previously, the USEPA and USDOT have adopted federal standards for model year 2012 through 2016 light-duty vehicles. In light of the USEPA and USDOT standards, California—and states adopting California emissions standards—have agreed to defer to the proposed national standard through model year 2016. The 2016 endpoint of the federal and state standards is similar, although the federal standard ramps up slightly more slowly than required under the state standard. The state standards (called the Pavley standards) require additional reductions in CO₂ emissions beyond model year 2016 (referred to as Pavley Phase II standards). As noted above, the USEPA and USDOT have adopted GHG emission standards for model year 2017 through 2025 vehicles. These standards are slightly different from the Pavley Phase II standards, but the State of California has agreed not to contest these standards, in part due to the fact that while the national standard would achieve slightly less reductions in California, it would achieve greater reductions nationally. CARB is in the process of adopting regulations that would allow manufacturers to comply with the 2017-2025 national standards to meet state law.

(e) Executive Order S-01-07

Executive Order S-01-07 was enacted by Governor Schwarzenegger on January 18, 2007. The order mandates the following: (1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020; and (2) that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established in California.

⁵ California Air Resources Board, *Proposed Early Actions to Mitigation Climate Change in California, 2007*.

(f) Senate Bill 97

SB 97, enacted in 2007, amended the California Environmental Quality Act (CEQA) to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directed the California Office of Planning and Research (OPR) to develop revisions to the State CEQA Guidelines “for the mitigation of GHG emissions or the effects of GHG emissions” and directed the Resources Agency to certify and adopt these revised State CEQA Guidelines by January 2010. The revisions were completed March 2010 and codified into the California Code of Regulations and became effective within 120 days pursuant to CEQA. The amendments provide regulatory guidance for the analysis and mitigation of the potential effects of GHG emissions. The CEQA Guidelines require:

- Inclusion of GHG analyses in CEQA documents;
- Determination of significance of GHG emissions; and,
- If significant GHG emissions would occur, adoption of mitigation to address significant emissions.

(g) Senate Bill 375

Senate Bill 375 (SB 375), which establishes mechanisms for the development of regional targets for reducing passenger vehicle greenhouse gas emissions, was adopted by the state on September 30, 2008. Under SB 375, CARB is required, in consultation with the metropolitan planning organizations (MPOs) to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035. On September 23, 2010, CARB adopted the vehicular GHG emissions reduction targets for the Southern California Association of Governments (SCAG), which is the MPO for the region in which the City of Newport Beach is located. The target is a per capita reduction of 8 percent for 2020 and 13 percent for 2035 compared to the 2005 baseline. Of note, the proposed reduction targets explicitly exclude emission reductions expected from the AB 1493 and the low carbon fuel standard regulations.

Under SB 375, the target must be incorporated within that region’s Regional Transportation Plan (RTP), which is used for long-term transportation planning, in a Sustainable Communities Strategy (SCS). Certain transportation planning and programming activities would then need to be consistent with the SCS; however, SB 375 expressly provides that the SCS does not regulate the use of land, and further provides that local land use plans and policies (e.g., general plan) are not required to be consistent with either the RTP or SCS. On April 4, 2012, SCAG adopted the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Using growth forecasts and economic trends, the RTP provides a vision for transportation throughout the region for the next 20 years. It considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address mobility needs. The RTP/SCS successfully achieves and exceeds the greenhouse gas emission-reduction targets set by CARB by achieving a 9 percent reduction by 2020 and 16 percent reduction by 2035 compared to the 2005 level on a per capita basis. This RTP/SCS also meets criteria pollutant emission budgets set by the USEPA.

(h) Title 24, Building Standards Code and CALGreen Code

The California Energy Commission (CEC) first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG

emissions, increased energy efficiency, and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods.

Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code (CALGreen Code). The purpose of the CALGreen Code is to “improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality.”⁶ The CALGreen Code is not intended to substitute for or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission (CBSC). When the CALGreen code went into effect in 2009, compliance through 2010 was voluntary. As of January 1, 2011, the CALGreen code is mandatory for all new buildings constructed in the state. The CALGreen code establishes mandatory measures for new residential and non-residential buildings. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design and overall environmental quality.⁷

(i) Renewables Portfolio Standard

Senate Bill 1078 (SB 1078) (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Energy Standard (RPS) to 33 percent renewable power by 2020. Pursuant to Executive Order S-21-09, CARB was also preparing regulations to supplement the RPS with a Renewable Energy Standard that will result in a total renewable energy requirement for utilities of 33 percent by 2020. But on April 12, 2011, Governor Jerry Brown signed SB X1-2 to increase California's RPS to 33 percent by 2020. Notably, unlike the prior 20 percent RPS, the current 33 percent RPS applies to Publicly Owned Utilities, such as Southern California Edison, which is the utility provider for the City of Newport Beach.

(3) Regional

The project is located in the South Coast Air Basin (Basin). Air emissions are regulated by the SCAQMD. The SCAQMD is responsible for promoting and improving the air quality of the Basin. This is accomplished through air quality monitoring, evaluation, education, implementation of control measures to reduce emissions from stationary sources, permitting and inspection of pollution sources, enforcement of air quality regulations, and by supporting and implementing measures to reduce emissions from motor vehicles. After AB 32 was passed, SCAQMD formed a Climate Change Committee along with a GHG CEQA Significance Thresholds Working Group and the SoCal Climate Solutions Exchange Technical Advisory Group. On September 5, 2008, the SCAQMD Board approved the SCAQMD Climate Change Policy, which outlines actions the SCAQMD will take to assist businesses and local governments in implementing climate change measures, decrease the agency's carbon emissions, and provide information to the public regarding climate change. On

⁶ *California Building Standards Commission, 2010 California Green Building Standards Code, (2010).*

⁷ *California 2010 Green Building Standards code, California Code of Regulations Title 24, Part 11.*

December 5, 2008, the Board approved interim CEQA GHG significance thresholds for stationary source projects where it is the lead agency, and related rules, and plans. The threshold is a tiered approach to determine a project's significance, with 10,000 metric tons of CO₂ equivalent (MTCO_{2e}) as a screening numerical threshold for stationary source projects.

In order to provide guidance to local lead agencies on determining the significance of GHG emissions identified in CEQA documents, the GHG CEQA Significance Threshold Working Group drafted thresholds with the intent of capturing 90 percent of development projects.⁸ At present time, the SCAQMD has not formally adopted thresholds for residential or commercial projects such as the one analyzed in this study. The SCAQMD draft threshold is based on a tiered approach to determine the significance of residential and commercial projects. The SCAQMD has not announced when staff is expecting to present a finalized version of these thresholds to the Governing Board. The most recent draft approach that was published in September 2010 is as follows:

- Tier 1: Is the project exempt from further analysis under existing statutory or categorical exemptions? If yes, there is a presumption of less-than-significant impacts with respect to climate change.
- Tier 2: Is the project's GHG emissions within the GHG budgets in an approved regional plan? (The plan must be consistent with CEQA Guidelines §§15064(h)(3), 15125(d), or 15152(s).) If yes, there is a presumption of less-than-significant impacts with respect to climate change.
- Tier 3: Is the project's incremental increase in GHG emissions below or mitigated to less than the significance screening level (10,000 MTCO_{2e} per year for industrial projects; 3,500 MTCO_{2e} for residential projects; 1,400 MTCO_{2e} for commercial projects; 3,000 MTCO_{2e} for mixed-use or all land use projects)? If yes, there is a presumption of less-than-significant impacts with respect to climate change.
- Tier 4: Does the project meet one of the following performance standards? If yes, there is a presumption of less-than-significant impacts with respect to climate change.
 - Option #1: Achieve some percentage reduction in GHG emissions from a base case scenario, including land use sector reductions from AB 32 (e.g., 15.8 percent reduction compared to a BAU project).
 - Option #2: For individual projects, achieve a project-level efficiency target of 4.8 MTCO_{2e} per service population by 2020 or a target of 3.0 MTCO_{2e} per service population by 2035. For plans, achieve a plan-level efficiency target of 6.6 MTCO_{2e} per service population by 2020 or a target of 4.1 MTCO_{2e} per service population by 2035.⁹
- Tier 5: Mitigation measures should achieve the target thresholds for any of the above Tiers. Otherwise, project impacts would remain significant.

⁸ South Coast Air Quality Management District, "Greenhouse Gases (GHG) CEQA Significance Thresholds Working Group Meeting #15," <http://www.aqmd.gov/ceqa/handbook/GHG/2010/sept28mtg/sept29.html>. 2010.

⁹ The project-level efficiency target is not evaluated for the future development pursuant to the PCDP. Visitor and customer trips to the site would be expected to generate a high percentage of the total GHG emissions; however, visitors and customers are typically not included in the definition of "service population." As such, future development pursuant to the PCDP would likely not meet the project-level efficiency target.

(4) Local

(a) City of Newport Beach General Plan

The General Plan for the City of Newport Beach was adopted in 2006. As Newport Beach is almost fully built out, the General Plan focuses on conserving the existing pattern of land uses and establishes policies for their protection and long-term maintenance. While the General Plan contains no policies specifically pertaining to GHG emissions, the Natural Resources Element of the General Plan provides direction regarding the conservation, development, and utilization of natural resources. This element addresses water supply (as a resource) and water quality (including bay and ocean quality and potable drinking water); air quality; terrestrial and marine biological resources; open space; mineral resources; visual resources; and energy. The Circulation Element includes policies to achieve reduced automobile travel. Specific policies that could result in GHG emissions reductions and that could relate to the proposed project are addressed later in this EIR section under Impact Statement 4.F-5.

(b) City of Newport Beach Living & Building “Green” Program

The City of Newport Beach started the Living & Building “Green” Program in 2008. This program provides information to the City and its residents on ways to reduce environmental impacts and encourage green building. The City developed Green Building Guidelines, which are voluntary, in the area of planning and design; energy efficiency; water efficiency; material conservation and resource efficiency; and environmental quality for both new construction and remodels.¹⁰ These guidelines are based after the CALGreen standards.

b. Existing Conditions

(1) Current Greenhouse Gas Inventory

Global climate change refers to changes in average climatic conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation and storms. Historical records indicate that global climate changes have occurred in the past due to natural phenomena; however, data indicates that the current global conditions differ from past climate changes in rate and magnitude. The current changes in global climate have been attributed to anthropogenic activities by the IPCC.¹¹ The term GHG refers to gases that trap long-wave radiation or heat in the atmosphere, which in turn heats the surface of the Earth. Without human intervention, the Earth maintains an approximate balance between the GHG emissions in the atmosphere and the storage of GHGs in the oceans and terrestrial ecosystems. GHGs are the result of both natural and anthropogenic activities. Forest fires, decomposition, industrial processes, landfills, and consumption of fossil fuels for power generation, transportation, heating, and cooking are the primary sources of GHG emissions.

The Federal Government and State of California recognized that anthropogenic (human-caused) GHG emissions are contributing to changes in the global climate, and that such changes are having and will have adverse effects on the environment, the economy, and public health. While worldwide contributions of GHG emissions are expected to have widespread consequences, it is not possible to link particular changes to the

¹⁰ *City of Newport Beach, Green Building Guidelines*, <http://www.newportbeachca.gov/Modules/ShowDocument.aspx?documentid=13942>. Accessed April 2013.

¹¹ *Intergovernmental Panel on Climate Change, Fourth Assessment Report: The Physical Science Basis, Summary for Policy Makers, 2007.*

environment of California or elsewhere to GHGs emitted from a particular source or location. In other words, emissions of GHGs have the potential to cause global impacts rather than local impacts. Increased concentrations of GHGs in the Earth's atmosphere have been linked to global climate change and such conditions as rising surface temperatures, melting icebergs and snowpack, rising sea levels, and the increased frequency and magnitude of severe weather conditions. Existing climate change models also show that climate warming portends a variety of impacts on agriculture, including loss of microclimates that support specific crops, increased pressure from invasive weeds and diseases, and loss of productivity due to changes in water reliability and availability. In addition, rising temperatures and shifts in microclimates associated with global climate change are expected to increase the frequency and intensity of wildfires.

State law defines GHGs to include the following compounds: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).¹² The most common GHG that results from human activity is CO₂, which represents 77 percent of total anthropogenic GHG emissions in the atmosphere (as of 2004 data),¹³ followed by CH₄ and N₂O. Scientists have established a Global Warming Potential (GWP) to gauge the potency of each GHG's ability to absorb and re-emit long-wave radiation. The GWP of a gas is determined using CO₂ as the reference gas with a GWP of 1 over 100 years. For example, a gas with a GWP of 10 is 10 times more potent than CO₂ over 100 years. The sum of each GHG multiplied by its associated GWP is referred to as carbon dioxide equivalents (CO₂e). The measurement unit CO₂e is used to report the combined potency of GHG emissions. Standard GWP values have been established for the GHGs defined by state law, such as CH₄, which has a GWP of 21, and NO₂, which has a GWP of 310.¹⁴

California is the second largest contributor of GHGs in the U.S. (Texas is number one) and the 14th largest in the world.¹⁵ CARB compiles GHG inventories for the State of California. Based on the 2010 GHG inventory data (i.e., the latest year for which data are available), California emitted 451.6 million metric tons of CO₂ equivalent (MMTCO₂e) including emissions resulting from imported electrical power and 408.1 MMTCO₂e excluding emissions related to imported power.¹⁶ Between 1990 and 2010, the population of California grew by approximately 7.5 million (from 29.8 to 37.3 million).¹⁷ This represents an increase of approximately 25 percent from 1990 population levels. In addition, the California economy, measured as gross state product, grew from \$773 billion in 1990 to \$1.87 trillion in 2010 representing an increase of approximately 142 percent (over twice the 1990 gross state product).¹⁸ Despite the population and economic growth, California's net GHG emissions only grew by approximately 6 percent. The CEC attributes the slow rate of growth to the success of California's renewable energy programs and its commitment to clean air and clean

¹² CEQA Guidelines Section 15364.5; Health and Safety Code, section 38505(g).

¹³ Intergovernmental Panel on Climate Change, Fourth Assessment Report: Synthesis Report, 2007.

¹⁴ In accordance with international and U.S. convention to maintain the value of the carbon dioxide 'currency', GHG emission inventories are calculated using the GWPs from the IPCC Second Assessment Report (Climate Change 1995: The Science of Climate Change – Contribution of Working Group I to the Second Assessment Report of the Intergovernmental Panel on Climate Change, 1996).

¹⁵ CARB, "California Greenhouse Gas 2000-2009 Inventory by Scoping Plan Category - Summary," <http://www.arb.ca.gov/cc/inventory/data/data.htm>. Accessed March 2013.

¹⁶ *Ibid.*

¹⁷ U.S. Census Bureau, "Data Finders," <http://www.census.gov/>. 2009; California Department of Finance, "E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark," <http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2001-10/>. 2010.

¹⁸ California Department of Finance, "Financial & Economic Data: Gross Domestic Product, California," http://www.dof.ca.gov/HTML/FS_DATA/LatestEconData/FS_Misc.htm. Accessed March 2013. Amounts are based on current dollars as of the date of the report (June 2012).

energy.¹⁹ **Table 4.F-1**, *State of California GHG Emissions*, identifies and quantifies statewide anthropogenic GHG emissions and sinks in 1990 and 2010 (the most recent year in which data is available from CARB). As shown, the transportation sector is the largest contributor to statewide GHG emissions at 38 percent in 2010. California emissions are due in part to its large size and large population. By contrast, California had the fifth lowest CO₂ emissions per capita from fossil fuel combustion in the U.S., 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.²⁰

Table 4.F-1**State of California GHG Emissions**

Category	Total 1990 Emissions (MMTCo₂e)	Percent of Total 1990 Emissions	Total 2010 Emissions (MMTCo₂e)	Percent of Total 2010 Emissions
Transportation	150.7	35%	173.2	38%
Electric Power	110.6	26%	93.3	21%
Commercial	14.4	3%	13.5	3%
Residential	29.7	7%	29.4	7%
Industrial	103.0	24%	86.0	19%
Recycling and Waste ^a	-	-	7.0	2%
High GWP/Non-Specified ^b	1.3	<1%	15.7	3%
Agriculture	23.4	5%	32.5	7%
Forestry	0.2	<1%	0.2	<1%
Forestry Sinks	-6.7		-- ^c	--
Net Total	426.6	100%	451.6	100%

^a Included in other categories for the 1990 emissions inventory.

^b High GWP gases are not specifically called out in the 1990 emissions inventory.

^c Revised methodology under development (not reported for 2010).

Sources: CARB, *Staff Report – California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit*, (2007); CARB, *“California Greenhouse Gas 2000-2010 Inventory by Scoping Plan Category – Summary,”* <http://www.arb.ca.gov/cc/inventory/data/data.htm>. Accessed April 2013.

(2) Effects of Global Climate Change

The scientific community's understanding of the fundamental processes responsible for global climate change has improved over the past decade, and its predictive capabilities are advancing. However, there remain significant scientific uncertainties, for example, in predictions of local effects of climate change, occurrence of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of the Earth's climate system, the uncertainty surrounding climate change may never be completely eliminated. Nonetheless, the

¹⁹ CEC, *Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004*, (2006).

²⁰ CARB, *“California Greenhouse Gas 2000-2009 Inventory by Scoping Plan Category – Summary,”* <http://www.arb.ca.gov/cc/inventory/data/data.htm>. Accessed March 2013.

IPCC, in its *Fourth Assessment Report*, stated that “it is likely that there has been significant warming due to human activity over the past 50 years.”²¹ In addition, the *Fourth Assessment Report* holds that the impacts of future climate change will vary across regions. While “large-scale climate events have the potential to cause very large impacts,” the impacts of future climate change will be mixed across regions.²²

According to CARB, the potential impacts in California due to global climate change may include: loss in snow pack; sea level rise; more extreme heat days per year; more high ozone days; more large forest fires; more drought years; increased erosion of California’s coastlines and sea water intrusion into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest infestation.²³ Below is a summary of some of the potential effects, reported by an array of studies that could be experienced in California as a result of global warming and climate change:

Air Quality. Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore, its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (CEC, February 2006).

In 2009, the California Natural Resources Agency (CNRA) published the *California Climate Adaptation Strategy*²⁴ as a response to the Governor’s Executive Order S-13-2008. The CNRA report lists specific recommendations for state and local agencies to best adapt to the anticipated risks posed by a changing climate. In accordance with the *California Climate Adaptation Strategy*, the California Energy Commission (CEC) was directed to develop a website on climate change scenarios and impacts that would be beneficial for local decision makers.²⁵ The website, known as Cal-Adapt, became operational in 2011.²⁶ The information provided from the Cal-Adapt website represents a projection of potential future climate scenarios. The data are comprised of the average values from a variety of scenarios and models and is meant to illustrate how the climate may change based on a variety of different potential social and economic factors. According to the Cal-Adapt website, the project region could result in an average increase in temperature of approximately 6 to 10 percent (about 3.5 to 5.9°F) by 2070-2090, compared to the baseline 1961-1990 period.

Water Supply. Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. Studies have found that, “Considerable uncertainty about precise impacts of

²¹ Intergovernmental Panel on Climate Change, *Fourth Assessment Report, Summary for Policy Makers*, (2007).

²² Intergovernmental Panel on Climate Change, *Fourth Assessment Report, Summary for Policy Makers*.

²³ California Environmental Protection Agency, *Climate Action Team*, Climate Action Team Report to Governor Schwarzenegger and the Legislature, (2006).

²⁴ California Natural Resources Agency, *Climate Action Team*, 2009 *California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008*, (2009).

²⁵ California Natural Resources Agency, 2009 *California Climate Adaptation Strategy*, (2009).

²⁶ The Cal-Adapt website address is: <http://cal-adapt.org>.

climate change on California hydrology and water resources will remain until we have more precise and consistent information about how precipitation patterns, timing, and intensity will change.”²⁷ For example, some studies identify little change in total annual precipitation in projections for California while others show significantly more precipitation.²⁸ Even assuming that climate change leads to long-term increases in precipitation, analysis of the impact of climate change is further complicated by the fact that no studies have identified or quantified the runoff impacts such an increase in precipitation would have in particular watersheds.²⁹ Also, little is known about how groundwater recharge and water quality would be affected. Higher rainfall could lead to greater groundwater recharge, although reductions in spring runoff and higher evapotranspiration could reduce the amount of water available for recharge.³⁰

The California Department of Water Resources report on climate change and effects on the State Water Project (SWP), the Central Valley Project, and the Sacramento-San Joaquin Delta, concludes that “[c]limate change will likely have a significant effect on California’s future water resources...[and] future water demand.” It also reports that “much uncertainty about future water demand [remains], especially [for] those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain”. It also reports that the relationship between climate change and its potential effect on water demand is not well understood, but “[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future.” Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows.³¹

Hydrology. As discussed above, climate changes could potentially affect: the amount of snowfall, rainfall and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise can be a product of global warming through two main processes: expansion of sea water as the oceans warm, and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California’s water supply. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events. According to the most recent data provided via the California Coastal Commission website, the project region could experience increased risk of flooding from anticipated future sea level rise.³² The seaside portions of the project site could have an increased risk of flooding from a 100-year flood event with a 5.48-foot (1.67-meter) rise in sea level. In response to projected sea level rise, the City of Newport Beach has recommended a harbor-wide minimum height of 10 feet above mean lower low water (MLLW) for new seawalls for the purposes of planning for sea level rise.

²⁷ Pacific Institute for Studies in Development, Environment and Security, *Climate Change and California Water Resources: A Survey and Summary of the Literature*, July, 2003. http://www.pacinst.org/reports/climate_change_and_california_water_resources.pdf

²⁸ Pacific Institute for Studies in Development, Environment and Security, *Climate Change and California Water Resources: A Survey and Summary of the Literature*, July, 2003. http://www.pacinst.org/reports/climate_change_and_california_water_resources.pdf

²⁹ *California Climate Change Center (2006)*.

³⁰ *California Climate Change Center (2006)*.

³¹ *California Department of Water Resources Climate Change Report, Progress on Incorporating Climate Change into Planning and Management of California’s Water Resources*, July 2006. http://baydeltaoffice.water.ca.gov/climatechange/DWRClimateChangeJuly06_update8-2-07.pdf

³² *State of California Ocean Protection Council, State Of California Sea-Level Rise Guidance Document, Updated March 2013*. http://www.opc.ca.gov/webmaster/ftp/pdf/docs/2013_SLR_Guidance_Update_FINAL1.pdf

Agriculture. California has a \$30 billion agricultural industry that produces half the country's fruits and vegetables. Higher CO₂ levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater ozone pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thus affect their quality.³³

Ecosystems and Wildlife. Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists expect that the average global surface temperature could rise 1.0-4.5°F (0.6- 2.5°C) in the next fifty years, and 2.2-10°F (1.4-5.8°C) in the next century, with significant regional variation (USEPA, 2000). In 2009, the California Natural Resources Agency (CNRA) published the *California Climate Adaptation Strategy*³⁴ as a response to the Governor's Executive Order S-13-2008. In accordance with the *California Climate Adaptation Strategy*, the CEC was directed to develop a website on climate change scenarios and impacts that would be beneficial for local decision makers.³⁵ The website, known as Cal-Adapt, became operational in 2011.³⁶ According to the Cal-Adapt website, the project region could result in an average increase in temperature of approximately 6 to 11 percent (about 3.8 to 6.6° Fahrenheit) by 2070–2090, compared to the baseline 1961-1990 period. According to the Cal-Adapt website, these numbers represent a projection of potential future climate scenarios. The data are comprised of the average values from a variety of scenarios and models and is meant to illustrate how the climate may change based on a variety of different potential social and economic factors. Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Sea level could rise as much as two feet along most of the U.S. coast. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes such as carbon cycling and storage.³⁷

3. PROJECT IMPACTS

a. Methodology

(1) Construction

Construction of the proposed project has the potential to generate GHG emissions through the use of heavy-duty construction equipment and through vehicle trips generated from construction workers traveling to and from the project site. GHG emissions during construction were compiled using the California Emission Estimator Model (CalEEMod), which is an emissions estimation/evaluation model developed by the SCAQMD. The CalEEMod model is capable of evaluating various subphases during the construction process. During the demolition phase, the model calculates emissions resulting from debris haul truck trips, equipment exhaust, and worker commute exhaust. During the grading phase, the model calculates emissions

³³ *California Climate Change Center, (2006).*

³⁴ *California Natural Resources Agency, Climate Action Team, 2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008, (2009).*

³⁵ *California Natural Resources Agency, 2009 California Climate Adaptation Strategy, (2009) 9.*

³⁶ *The Cal-Adapt website address is: <http://cal-adapt.org>.*

³⁷ *Parmesan, C., 2004. Ecological and Evolutionary Response to Recent Climate Change. Parmesan, C and Galbraith, H, 2004. Observed Ecological Impacts of Climate Change in North America. Arlington, VA: Pew. Cent. Glob. Clim. Change*

resulting from soil haul truck trips, equipment exhaust, and worker commute exhaust. The building construction phase is typically subdivided into building equipment, architectural coating, asphalt, and worker commute. Emissions from this phase of construction include equipment exhaust from building construction asphalt paving and coating, and worker commute exhaust.

Mobile source emissions would result from the use of construction equipment such as bulldozers, wheeled loaders, and cranes. Construction emissions can vary substantially from day to day, depending on the level of activity and the specific type of equipment operation. Therefore, it was generally assumed that equipment would operate for a substantial number of hours throughout the workday. The number and types of construction equipment, vendor trips (e.g., transport of building materials), and worker trips were based on relatively conservative assumptions for a project of this type and scale as provided in the CalEEMod model. A complete listing of the construction equipment by phase and construction phase duration assumptions used in this analysis is included within the CalEEMod printout sheets that are provided in Appendix F.

(2) Operations

The CalEEMod software was also used to compile the mass daily emissions estimates from mobile (vehicular traffic), stationary (natural gas usage), and area (landscape equipment) sources that would occur during long-term project operations. In calculating mobile-source emissions, daily trip rates provided in the traffic study for the proposed project were utilized.³⁸ The CalEEMod default trip length assumptions were applied to the average daily trip estimates provided by the project traffic study to arrive at vehicle miles traveled. Stationary-source and area source emissions were also calculated using CalEEMod default assumptions. A complete listing of the operational assumptions used in this analysis is included within the CalEEMod printout sheets that are provided in Appendix F of this Draft EIR.

b. Significance Thresholds

Section 15064.7 of the CEQA Guidelines defines a threshold of significance as an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant. CEQA gives wide latitude to lead agencies in determining what impacts are significant and does not prescribe thresholds of significance, analytical methodologies, or specific mitigation measures. CEQA leaves the determination of significance to the reasonable discretion of the lead agency and encourages lead agencies to develop and publish thresholds of significance to use in determining the significance of environmental effects. However, the SCAQMD, the City of Newport Beach, and Orange County have not yet established specific quantitative significance thresholds for GHG emissions. The regulations required to meet the state goals under AB 32 are still under development. Additionally, OPR released preliminary draft CEQA guideline amendments for GHG emissions in January 2009. OPR does not identify a threshold of significance for GHG emissions, nor has it prescribed assessment methodologies or specific mitigation measures. The preliminary draft amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The guideline amendments augmented Appendix G of the CEQA Guidelines, the environmental checklist form, to include a section on greenhouse gas emissions. The draft guideline amendments suggested thresholds to determine the significance of greenhouse gas emissions impacts. As such, a project would have a significant impact relative to greenhouse gas emissions if it would:

³⁸ *Kunzman Associates, Inc., Back Bay Landing Traffic Impact Analysis, (2013).*

- Threshold 1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance (refer to Impact Statement 4.F-1 below); and
- Threshold 2: Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases (refer to Impact Statement 4.F-2 below).

CEQA leaves the determination of significance to the reasonable discretion of the lead agency and encourages lead agencies to develop and publish thresholds of significance to use in determining the significance of environmental effects. To date, the City of Newport Beach has not yet established specific quantitative significance thresholds for GHG emissions for residential or commercial projects. In the latest CEQA Guidelines amendments, which went into effect on March 18, 2010, OPR encourages lead agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses. However, currently the City of Newport Beach does not have a programmatic mitigation plan to tier from, such as a Greenhouse Reduction Plan that meets the requirements set forth in the latest OPR guidelines.

SCAQMD released a draft guidance document regarding interim CEQA GHG significance thresholds in October 2008. SCAQMD proposed a tiered approach, whereby the level of detail and refinement needed to determine significance increases with a project's total GHG emissions. SCAQMD also proposed a screening level of 3,000 metric tons per year for commercial or residential projects, under which project impacts are considered "less than significant." The 3,000 metric ton screening level was intended "to achieve the same policy objective of capturing 90 percent of the GHG emissions from new development projects in the residential/commercial sectors."³⁹ For projects with GHG emissions increases greater than 3,000 metric tons per year, the use of a percent emission reduction target (e.g., 30 percent) was proposed to determine significance. This emission reduction target is a reduction below what is considered "business as usual." SCAQMD also proposes that projects amortize construction emissions over the 30-year lifetime of any given project. Project construction emissions can be amortized by calculating total construction period emissions and dividing by the 30-year lifetime of the project. The SCAQMD draft Tier 3 and Tier 4 thresholds, as discussed previously, will be used for determining significance on a project level, in accordance with Appendix G amendments discussed above. As discussed, the SCAQMD draft Tier 3 threshold is 3,000 metric tons CO₂e per year for mixed use or all land use projects and the draft Tier 4 threshold is a percent reduction target consistent with the overall AB 32 target.

While it is difficult to predict the specific impact of one project's incremental contribution to the global effects of GHG emissions due to a variety of factors, including the complex and long term nature of such effects and the global scale of climate change, it is possible to quantify a project's incremental increase in GHG emissions. The thresholds of significance proposed by the SCAQMD GHG Working Group are considered most appropriate for the proposed project. Based on the foregoing, a proposed project would have a significant impact if project emissions exceed the threshold of 3,000 metric tons per year CO₂e.

Further, if a project results in emissions less than the applicable project-level quantitative threshold and implements design and operational strategies consistent with an applicable GHG reduction policy (i.e.

³⁹ SCAQMD, *Board Meeting, December 5, 2008, Agenda No. 31, Interim GHG Significance Threshold Proposal – Key Issues/Comments Attachment D.*

CALGreen requirements), it is considered to have a less than significant impact with respect to its contribution to the cumulative impact of global climate change. These criteria are consistent with Appendix G draft amendments discussed above.

c. Project Design Features

As discussed in Chapter 2, *Project Description*, of this Draft EIR, future development on-site would be designed as a sustainable community which will allow residents, tenants and visitors to enjoy a high quality of life while minimizing their impact on the environment. A wide range of project design features would be incorporated into future development on-site as part of the PCDP with the aims of reducing GHG emissions and improving the sustainability of the proposed project. The following Project Design Feature (PDF) commitments and additional GHG mitigation measures (which are also provided as PDF B-1 and PDF B-2 in Section 4.B, *Air Quality*, of this Draft EIR) are intended to reduce GHG emissions from construction, energy consumption, and transportation sources.

- PDF F-1:** The City of Newport Beach shall require a Sustainability Plan that addresses topics such as water and energy efficiency, indoor environmental quality and waste reduction would be submitted with a future Site Development Review application.
- PDF F-2:** The City of Newport Beach shall require the project applicant to reduce waste and energy consumption and to increase the efficiency of its operations in order to minimize impacts to the environment and enhance the sustainability of its operations. Toward that end, the City shall require the following commitments into the Sustainability Plan:
1. The project applicant shall commit to evaluating and implementing energy efficiency programs and procedures, including the use of solar photovoltaic panels on new structures where feasible, use of energy-efficient light fixtures, implementation of energy-saving devices and equipment, and energy-efficient design of new facilities.
 2. The project applicant shall commit to evaluating and implementing water conservation measures, including the use of drought-tolerant landscaping in public areas, low-flow water fixtures, and reclaimed water where feasible to reduce water demand and associated energy.
 3. The project applicant shall commit to evaluating and implementing waste reduction measures, including office recycling, source reduction, waste reduction and reuse, purchase of recycled content products, source separation and recycling of materials, including composting of biodegradable materials, and reducing or recycling non-hazardous construction and post-construction waste.
 4. The project applicant shall commit to evaluating and implementing transportation reduction measures, including a walkable community design to promote walking and bicycling. The walkable community design shall include development of a multi-use trail across the property, construction of new Class 1 (off-road) and Class 3 (shared use) bicycle lanes on Bayside Drive, and providing a connection to existing regional trails.
 5. The project applicant shall commit to evaluating and implementing vehicle emission reduction measures, including such measures as requiring that the parking structure include electric vehicle charging stations and providing a boat storage facility that would reduce the need for boat owners to tow their boats to a launching site resulting

in fewer vehicle emissions compared with a vehicle towing a boat due to the increased weight.

d. Analysis of Project Impacts

(1) Greenhouse Gas Emissions

Threshold	Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?
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Impact 4.F-1: Project construction and operation would result in the increased generation of greenhouse gases and would exceed the screening level resulting in a significant impact with regard to GHG emissions. However, with implementation of applicable mitigation measures, the proposed project would have a less than significant impact related to GHG emissions.

(a) Construction

Construction emissions are calculated using CalEEMod, which is an emissions estimation/evaluation model developed by SCAQMD to calculate emissions from construction activities. The output values used in this analysis were adjusted to be project-specific, based on usage rates of construction equipment, type of fuel, and construction schedule. These values were then applied to the construction phasing assumptions used in the criteria pollutant analysis to generate GHG emissions values for each construction year (refer to Appendix F of this Draft EIR). The CalEEMod model outputs CO₂ equivalent (CO₂e) emissions, which includes CH₄ and N₂O emissions estimated based on the emissions ratios for construction and industrial equipment from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

Construction tends to occur over a short duration compared to the overall project lifetime. In order to provide a representative equivalent annual emission rate, the SCAQMD recommends that construction GHG emissions be amortized over a presumed lifetime period of 30-years and added to the annual operational emissions. To amortize construction emissions, GHG emissions due to construction are divided by the project's expected operating life (30-years).

Emissions of GHGs were calculated for each year of project construction. Construction of the project is projected to emit approximately 1,649 metric tons of CO₂e. Consistent with SCAQMD methodology, total construction GHG emissions are amortized over 30 years to account for project life. Results of this analysis are presented in **Table 4.F-2, Construction Greenhouse Gas Emissions**. Due to the potential persistence of GHGs in the environment, impacts are based on annual emissions and, in accordance with SCAQMD methodology, construction-period impacts are not assessed independent of operational-period impacts.⁴⁰

Project design features implemented during construction activities include: recycling site construction waste, salvaging reusable building materials, and implementing construction site stormwater practices. Construction of the project is projected to emit a total of 1,649 tons of CO₂e, and would emit 55 tons of CO₂e amortized over the 30-year lifetime. Results of this analysis are presented in Table 4.F-2. As mentioned

⁴⁰ <http://www.aqmd.gov/ceqa/handbook/GHG/2009/july29mtg/ghgmtg12.pdf>

Table 4.F-2

Construction Greenhouse Gas Emissions

Emission Source	CO ₂ e (Metric Tons)
Construction - Year 2015	695
Construction - Year 2016	885
Construction - Year 2016	69
Total	1,649
Construction (Amortized - 30 years)	55

Source: PCR Services Corporation, 2013.

previously, construction emissions are amortized across the 30-year lifetime of the proposed project and added with operational GHG emissions below.

(b) Operational

Mobile source emission calculations associated with operation of the proposed project utilize a projection of trip rate and annual vehicle miles traveled (VMT), which is derived from CalEEMod defaults. Mobile source emissions are generated from vehicle traffic traveling to and from the project site. Mobile source calculations are estimated with CalEEMod and also utilize EMFAC2007 and the CCAR GRP, Version 3.1 to generate emission factors for CO₂ and CH₄, and N₂O. It should be noted that GHG reduction factors from *Alternative Compliance Strategies*, contained in AB 1493, are applied in the CalEEMod software for fleet mixes containing post 2009 vehicles. Trip rates for the Back Bay Landing mixed-use village were provided by Kunzman Associates, Inc. The project is expected to generate 2,760 new trips per day, which includes a reduction of 30 trips per day due to the mixed-use nature of the project design, represented as pass-by trips in the Traffic Impact Analysis.⁴¹

The consumption of fossil fuels to generate electricity and to provide heating and hot water creates GHG emissions. Future fuel consumption rates and water demand are estimated based on square footage of the project. Natural gas and electricity usage factors derived from the California Commercial End Use Survey (CEUS)⁴² for non-residential energy usage and the Residential Appliance Saturation Survey (RASS) for residential uses. Embodied energy rates associated with the proposed project's future water supply needs are calculated using factors derived from the California Energy Commission (CEC). GHG emission factors from the CCAR protocol are then applied to the respective usage rates, to calculate annual greenhouse gas emissions in metric tons. These emission factors do not reflect targeted future reductions in GHG emissions under SB 1368. Thus, these emission factors are considered conservative and representative.

The CEC estimate for energy intensity of the water use cycle in southern California is used to calculate the energy usage related to water conveyance. Emission factors from the CCAR GRP, Version 3.1 are implemented in calculating the associated GHGs. Because water conveyance associated with the proposed

⁴¹ Kunzman Associates, Inc., Back Bay Landing Traffic Impact Analysis, Table 2, Project Trip Generation, (2013).

⁴² California Energy Commission (CEC), California Commercial End-Use Survey Results. Data available from Itron Inc. at <http://capabilities.itron.com/CeusWeb/Chart.aspx>

project is regional in nature, the emission factors used in this component of the analysis represent a state-wide average of known power producing facilities, utilizing various technologies and emission control strategies.

Emissions of GHGs were calculated for the implementation of the proposed project for the buildout year (2016). Existing site GHG emissions were estimated based on 39 daily trips from the existing RV/Boat Storage and Kayak Launch facilities, as provided in the Traffic Impact Analysis.⁴³ The net change in emissions is based on the sum of the amortized construction and operational GHG emissions for the project minus the emissions from the existing site. The net GHG emissions were compared against the 3,000 metric ton screening threshold drafted by SCAQMD for mixed-use or all land use projects, as discussed previously.

The proposed project would comply with CALGreen Code requirements and project features will be incorporated consistent with applicable mandatory measures. A Sustainability Plan that addresses topics such as water and energy efficiency, indoor environmental quality and waste reduction would be submitted with a future Site Development Review application. Sustainable programming would be used to maximize efficiency by conserving water, minimizing construction impacts, minimizing energy use and reducing construction and post-construction waste. California-friendly landscaping would be utilized in public areas and reclaimed water use (if available) on-site or off-site will further reduce water demand. Appropriate Best Management Practices (BMPs) would be incorporated into landscape design. Energy reduction, recycling, and the smart use of existing resources would be implemented. Future development would incorporate a walkable community design to promote walking and bicycling, and thus reduce reliance on automotive transport. The development would include Low Impact Development (LID) features for storm water quality improvement where none exist today. Potential LID features may include storm water planters, permeable pavement and proprietary bioretention systems. Through the development of a project-specific Water Quality Management Plan (WQMP), the appropriate site design, source control and LID control features would be implemented to improve water quality in Newport Bay.

As shown in **Table 4.F-3, Annual Greenhouse Gas Emissions**, net GHG emissions resulting from vehicle, water conveyance, waste disposal, electricity, and natural gas usage associated with operation of the proposed project plus amortized construction GHG emissions were estimated to be a maximum of 3,271 metric tons CO_{2e} per year. This would exceed the SCAQMD's draft screening threshold of 3,000 metric tons CO_{2e} per year. The proposed project would not meet the SCAQMD draft Tier 4 threshold of a reduction of GHG emissions by 15.8 percent compared to a similar BAU project. As the project would exceed the thresholds, GHG emissions resulting from project construction and operations could directly or indirectly have a significant impact on the environment based on the above mentioned threshold. Therefore, the project would result in a significant impact with regard to GHG emissions and mitigation measures are required, which will reduce the impacts to less than significant.

There are many uncertainties involved in the quantification of GHGs from any individual project. For example, it is reasonable to assume that most of the future residents of the proposed project currently engage in similar activities (working, shopping, attending medical appointments, and driving) that generate GHG emissions. It is not feasible to estimate with reasonable certainty how the levels of these activities compare to the predicted future usage rates. Newer construction materials and practices, current energy efficiency requirements, and newer appliances tend to emit lower levels of air pollutant emissions, including

⁴³ Kunzman Associates, Inc., Back Bay Landing Traffic Impact Analysis, (2013).

Table 4.F-3

Annual Greenhouse Gas Emissions

Emission Source	CO ₂ e (Metric Ton/Year) ^a	
	Project as Designed	BAU Project
Proposed Project		
On-Road Mobile Sources	2,298	2,323 ^c
Electricity	391	391
Natural Gas	183	183
Water Conveyance	61	72
Waste	57	57
Boat (Lift/Traffic)	147	147
Construction (Amortized)	55	55
Subtotal	3,192	3,228
Existing Site ^b	32	32
Net Total	3,160	3,196
Percent Reduction from BAU	1.1%	
GHG Threshold (SCAQMD Draft Tier 3)	3,000	-
GHG Threshold (SCAQMD Draft Tier 4, Percent Reduction)	15.8%	
Exceeds Threshold?	Yes	-

^a Numbers may not add up exactly due to rounding.

^b Existing emissions were estimated based on the ratio of existing trips to project trips multiplied by the project's on-road mobile source GHG emissions (i.e., 39 / 2,760 × 2,298 = 32).

^c Business As Usual (BAU) Project on-road mobile source emissions were estimated based on the ratio of project trips (without pass-by reduction) and project trips (with pass-by-reduction) multiplied by the project's on-road mobile source GHG emissions (i.e., 2,790 / 2,760 × 2,298 = 2,323).

Source: PCR Services Corporation, 2013.

GHGs, as compared to those built years ago, but the net effect is difficult to quantify. Thus, the estimated net increase in emissions resulting from implementation of the proposed project presented above may be an over- or under-estimation. These same uncertainties and assumptions exist throughout the accepted analytical methodologies for performing criteria air pollutant assessments.

(2) Conflicts with Greenhouse Gas Reduction Plans or Policies

Threshold	Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?
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Impact 4.F-2: Project implementation would not conflict with applicable plans, policies, or regulations for reducing GHG emissions and impacts relative to this threshold would be less than significant.

(a) GHG Reduction Plans

As discussed the GHG emissions analysis presented above was performed in accordance with SCAQMD and ARB guidance. Due to the complex physical, chemical and atmospheric mechanisms involved in global climate change, there is no basis for concluding that the project's emissions increase could actually cause a measurable increase in global GHG emissions necessary to influence global climate change. Newer construction materials and practices, current energy efficiency requirements, and newer appliances tend to

emit lower levels of air pollutant emissions, including GHGs, as compared to those built years ago, but the net effect is difficult to quantify. Thus, the estimated net increase in emissions resulting from implementation of the proposed project presented above may be an over- or under-estimation. The GHG emissions of the project alone would not likely cause a direct physical change in the environment. It is global emissions in their aggregate that contribute to climate change, not any one source of emissions alone. Nevertheless, without mitigation, due to the incremental amount of GHG emissions estimated for this project, the proposed project is considered inconsistent with AB 32. However, incorporating the mitigation measures provided below would address impacts related to consistency with applicable GHG reduction measures.

In support of AB 32, the state has promulgated specific laws aimed at GHG reductions applicable to the proposed project. A number of measures that have been or will be adopted under AB 32, while applicable to the project, are not under the control of the project. For example, vehicle emission standards have been adopted at the state and federal level that would reduce vehicle tailpipe GHG emissions; however, the project does not have jurisdiction to implement or enforce the standards. The responsibility lies with the state and federal government. Another example includes measures to reduce the amount of high-GWP gases contained and utilized in consumer and industrial products and processes. Again, the implementation and enforcement of the standards is largely with the state. That being said, the proposed project would not hinder or conflict with the implementation or enforcement of these standards. In particular, the vehicle emission standards would result in future GHG emissions reductions for the proposed project as GHG emissions associated with visitor and employee trips to the site would tend to decline as newer vehicles meeting more stringent GHG emission standards are purchased to replace older vehicles.

Future development pursuant to the PCDP would meet the mandatory measures of the CALGreen Code by incorporating strategies such as providing Energy Star dishwashers, low flow water fixtures, tankless gas water heaters, on-demand hot water circulation pumps, installation of energy-efficient double-paned windows and high-efficiency irrigation systems, on-site water catchment and retention, and use of carpets and trims which contain recycled content (it should be noted that the GHG reductions from these design features are not all reflected in the project GHG emissions shown in Table 4.F-3).

Since AB 32 sets statewide targets for future GHG emissions, the Scoping Plan and other implementing tools of the law are clear that the reductions are not expected to occur uniformly from all sources or sectors. **Table 4.F-4, *GHG Reduction Strategies***, contains a list of numerous GHG-reduction strategies potentially applicable to the project, the identified related projects, and future development similar in scope and location. Included are the regulations or guidelines from which the strategies were developed. The project-level analysis above highlights the manner by which the project intends to meet many of these strategies. Because the proposed project would not conflict with local policies and ordinances, it is consistent with the overarching regulation to reduce GHG emissions. Therefore, implementation of the proposed project would not conflict with plans for reducing GHG emissions and impacts relative to this threshold would be less than significant.

Table 4.F-4

GHG Reduction Strategies

Source	Description	General Project Consistency Statement
AB 1493 (Pavley Regulations) SB 1368	Reduces GHG emissions in new passenger vehicles from 2012 through 2016. Also reduces gasoline consumption to a rate of 31 percent of 1990 gasoline consumption (and associated GHG emissions) by 2020	Applies to all new vehicles.
Low Carbon Fuel Standard CALGREEN Requirements	Establishes an emissions performance standard for power plants within the State of California.	SCE-provided power is subject to performance standards.
	Establishes protocols for measuring life-cycle carbon intensity of transportation fuels and helps to establish use of alternative fuels.	Applies to fuels utilized by the project.
	All bathroom exhaust fans shall be Energy Star compliant	Future development pursuant to the PCDP would be consistent with this requirement.
	Parking spaces shall be designed for carpool or alternative fueled vehicles.	Future development pursuant to the PCDP would be consistent with this requirement.
	Indoor water usage must be reduced by 20 percent compared to current California Building Code Standards for maximum flow.	Future development pursuant to the PCDP would be consistent with this requirement.
	Exceed California Energy Code requirements, based on the 2008 Energy Efficiency Standards, by 15 percent	Future development pursuant to the PCDP would be consistent with this requirement.
	All irrigation controllers must be installed with weather sensing or soil moisture sensors	Future development pursuant to the PCDP would be consistent with this requirement.
	Wastewater usage shall be reduced by 20 percent compared to current California Building Standards.	Future development pursuant to the PCDP would be consistent with this requirement.
	Requires a minimum of 50 percent recycle or reuse of nonhazardous construction and demolition debris.	Future development pursuant to the PCDP would be consistent with this requirement.
	Requires documentation of types of waste recycled, diverted or reused.	Future development pursuant to the PCDP would be consistent with this requirement.
CALGREEN Voluntary Actions	Solar reflective index shall be consistent with CalGREEN or Cool Roof requirements	Implementation will be determined at the Site Development Review stage. Other factors, including aesthetics and visual considerations, will influence whether or not specific voluntary measures are determined feasible when a specific development project is proposed.
Climate Action Team	Reduce diesel-fueled commercial motor vehicle idling.	Future development pursuant to the PCDP would be consistent with required limits for diesel-fueled commercial motor vehicle idling.
	Implement efficient water management practices and incentives, as saving water saves energy and GHG emissions.	Future development pursuant to the PCDP would be consistent with required water management practices.
	The CEC updates building energy efficiency standards that apply to newly constructed buildings and additions to and alterations to existing buildings. Both the Energy Action Plan and the Integrated Energy Policy Report call for ongoing updating of the standards	CalGreen Code implements this goal, and the future development pursuant to the PCDP would be consistent with the requirements.

Table 4.F-4 (Continued)

GHG Reduction Strategies

Source	Description	General Project Consistency Statement
	Reduce GHG emissions from electricity by reducing energy demand. The CEC updates appliance energy efficiency standards that apply to electrical devices or equipment sold in California. Recent policies have established specific goals for updating the standards; new standards are currently in development.	CalGreen Code implements this goal, and the future development pursuant to the PCDP would be consistent with the requirements.
	Apply strategies that integrate transportation and land-use decisions, including but not limited to promoting jobs/housing proximity, high-density residential/ commercial development along transit corridors, and implementing intelligent transportation systems.	Future development pursuant to the PCDP would be located adjacent to an existing major transportation corridor.

Source: PCR Services, CALGreen Building Code, Climate Action Team, Attorney General’s Office, 2011

(b) Newport Beach General Plan

The Newport Beach General Plan does not have specific policies that relate to greenhouse gas emissions or global climate change. However, the General Plan does contain many goals and policies in various Elements that relate to water and energy conservation, alternative transportation, and sustainability. The proposed project would not conflict with applicable policies contained in the City’s General Plan regarding these issues, which indirectly relate to greenhouse gas emissions, as discussed below in **Table 4.F-5, General Plan Consistency Analysis**. For some policies, consistency can only be determined at a general level, since no specific development is proposed and none would be authorized by the requested approvals without further City review and action. As shown in Table 4.F-5, impacts related to consistency with the Newport Beach General Plan related to greenhouse gas emissions would be less than significant.

Table 4.F-5

General Plan Consistency Analysis

Applicable Policies	General Project Consistency Statement
Land Use Element	
Policy LU 2.2: Sustainable and Complete Community. Emphasize the development of uses that enable Newport Beach to continue as a self-sustaining community and minimize the need for residents to travel outside of the community for retail, goods and services, and employment.	Consistent. The proposed legislative approvals will allow for the future development of a mixed-use commercial and residential project, which would provide complementary uses such as residential, retail, and restaurant uses on the same site, thereby reducing the need for off-site trips for many goods and services. Additionally, the future development of the site would incorporate various sustainability features such as water- and energy efficient buildings, lighting, and landscaping, as well as improved water quality features that will protect sensitive species and habitats within the adjacent Upper Newport Bay. Additionally, mitigation measures provided below would also be implemented, as appropriate, to reduce the water end energy demands of future development on-site. In addition, the PCDP requires the preparation of a Sustainability Plan that

Table 4.F-5 (Continued)

General Plan Consistency Analysis

Applicable Policies	General Project Consistency Statement
	addresses topics such as water and energy efficiency, indoor air quality, and waste reduction which would be reviewed in conjunction with Site Development Review.
<i>Natural Resources Element</i>	
<p>Policy NR 1.1: Water Conservation in New Development. Enforce water conservation measures that limit water usage, prohibit activities that waste water or cause runoff, and require the use of water-efficient landscaping and irrigation in conjunction with new construction projects.</p>	<p>Consistent. Future development pursuant to the PCDP would require the implementation of water conservation features, such as low-flow fixtures and water efficient landscaping irrigation systems.</p>
<p>Policy NR 1.2: Use of Water Conserving Devices. Establish and actively promote use of water conserving devices and practices in both new construction and major alterations and additions to existing buildings. This can include the use of rainwater capture, storage, and reuse facilities.</p>	<p>Consistent. Future development on-site will be required to incorporate various water conservation features, which at the discretion of the City of Newport Beach during Site Development Review, may include rainwater capture, storage, and reuse. Additionally, mitigation measures provided below would also be implemented, as appropriate, to reduce the water demands of future development on-site.</p>
<p>Policy NR 1.4: Alternative Conservation Measures. Explore implementation of alternative conservation measures and technology as they become available.</p>	<p>Consistent. Future development pursuant to the PCDP would require water conservation and efficiency in future on-site development, which may include alternative conservation measures and technology, if determined feasible and appropriate by the City of Newport Beach. The PCDP requires the preparation of a Sustainability Plan that addresses topics such as water and energy efficiency, indoor air quality, and waste reduction, which would be reviewed in conjunction with Site Development Review.</p>
<p>Policy NR 6.1: Walkable Neighborhoods. Provide for walkable neighborhoods to reduce vehicle trips by siting amenities such as services, parks, and schools in close proximity to residential areas.</p>	<p>Consistent. Future development pursuant to the PCDP would result in the development of a mixed-use project on the project site, which is situated in close proximity to various recreational amenities and services. The future development of the site would provide residential uses and supporting retail and restaurant uses that would serve both on-site residents and residents in neighboring communities, including the adjacent Bayside Village Mobile Home Park. Future development pursuant to the PCDP would include development of a multi-use trail across the property and construction of new Class 1 (off-road) and Class 3 (shared use) bicycle lanes on Bayside Drive, providing a connection to existing regional trails.</p>
<p>Policy NR 6.2: Mixed-Use Development. Support mixed-use development consisting of commercial or office with residential uses in accordance with the Land Use Element that increases the opportunity for residents to live in proximity to jobs, services, and entertainment.</p>	<p>Consistent. The proposed legislative approvals would allow for the future development of a mixed-use commercial and residential project on the project site, which may provide a range of job opportunities, services, and entertainment.</p>

Table 4.F-5 (Continued)

General Plan Consistency Analysis

Applicable Policies	General Project Consistency Statement
<p>Policy NR 6.3: Vehicle-Trip Reduction Measures. Support measures to reduce vehicle-trip generation such as at-work day care facilities, and on-site automated banking machines.</p>	<p>Consistent. While the specific mix of land uses to be constructed on-site as part of a future development is not currently known, on-site banking machines and other measures that result in reduced vehicle trips may be implemented on-site to the extent deemed appropriate by the applicant and/or City. The project also provides for access by boat and provides dry stack storage for boats. At the time a specific development project is proposed, the applicant will evaluate whether any other vehicle trip reduction measures are feasible.</p>
<p>Policy NR 6.4: Transportation Demand Management Ordinance. Implement the Transportation Demand Management (TDM) Ordinance, which promotes and encourages the use of alternative transportation modes, and provides those facilities such as bicycle lanes that support such alternate modes.</p>	<p>Consistent. The TDM ordinance in Chapter 20.44 of the Newport Beach Municipal Code only applies to nonresidential developments that are estimated to employ over 250 persons. Based on the standard employment generation factors in the Code, the proposed project is not anticipated to exceed 250 employees. However, the final determination will be made at Site Development Review. If found to apply, a program that reduces vehicle trips, encourage alternative modes of transportation, and provides facilities for alternative modes of transportation shall be provided.</p> <p>Future development pursuant to the PCDP would require the provision of non-vehicular transportation improvements, such as the proposed multi-use bayfront access and trail, and future development of the site would be carried out in conformance with the requirements of the Orange County Transportation Authority (OCTA) regarding existing and future public transit facilities (including the existing bus stop on East Coast Highway adjacent to the project site). The proposed project, therefore, would encourage and promote the use of alternative transportation modes.</p>
<p>Policy NR 6.5: Local Transit Agency Collaboration. Collaborate with local transit agencies to: develop programs and educate employers about employee rideshare and transit; establish mass transit mechanisms for the reduction of work-related and non-work-related vehicle trips; promote mass transit ridership through careful planning of routes, headways, origins and destinations, and types of vehicles; and develop bus shelters, bicycle lanes, and other bicycle facilities.</p>	<p>Consistent. Future development of the project site with proposed uses would be carried out in collaboration with local transit agencies to the extent necessary and appropriate. Future development pursuant to the PCDP would include development of a multi-use trail across the property and construction of new Class 1 (off-road) and Class 3 (shared use) bicycle lanes on Bayside Drive, providing a connection to existing regional trails.</p>
<p>Policy NR 7.1: Fuel Efficient Equipment. Support the use of fuel efficient heating equipment and other appliances.</p>	<p>Consistent. The proposed project includes provisions for the use of energy efficient lighting, fixtures, appliances, and other equipment as part of a future development project. To the extent feasible, fuel efficient heating equipment and other appliances would be incorporated into the future development on-site.</p>

Table 4.F-5 (Continued)

General Plan Consistency Analysis

Applicable Policies	General Project Consistency Statement
<p>Policy NR 7.3: Incentives for Air Pollution Reduction - Provide incentives to promote siting or to use clean air technologies and building materials (e.g., fuel cell technologies, renewable energy sources, UV coatings, hydrogen fuel).</p>	<p>Consistent. To the extent feasible and appropriate, clean air technologies and building materials would be employed as part of future on-site development. The PCDP requires the preparation of a Sustainability Plan that addresses topics such as water and energy efficiency, indoor air quality, and waste reduction, which would be reviewed in conjunction with Site Development Review.</p>
<p>Policy NR 24.2: Energy-Efficient Design Features. Promote energy-efficient design features.</p>	<p>Consistent. The future development of the project site with allowable uses would be required to incorporate energy-efficient design features, the specific features for which would be determined by the City during Site Development Review. The PCDP requires the preparation of a Sustainability Plan that addresses topics such as water and energy efficiency, indoor air quality, and waste reduction, which would be reviewed in conjunction with Site Development Review.</p>
<p>Policy NR 24.3: Incentives for Green Building Program Implementation. Promote or provide incentives for “Green Building” programs that go beyond the requirements of Title 24 of the California Administrative Code and encourage energy efficient design elements as appropriate to achieve “green building” status.</p>	<p>Consistent. Although no specific development project is currently proposed for the project site, the City may require sustainability features for a future project that go beyond the requirements of Title 24, as appropriate, during future Site Development Review. The PCDP requires the preparation of a Sustainability Plan that addresses topics such as water and energy efficiency, indoor air quality, and waste reduction, which would be reviewed in conjunction with Site Development Review.</p>
<p><i>Circulation Element</i></p>	
<p>Policy CE 6.2.1: Alternative Transportation Modes. Promote and encourage the use of alternative transportation modes, such as ridesharing, carpools, v vanpools, public transit, bicycles, and walking; and provide facilities that support such alternate modes.</p>	<p>Consistent. The proposed project provides for the future construction of a public bayfront access path and multi-use trail that would provide non-vehicular transportation connections to off-site facilities and access for pedestrians and cyclists through the site. The project also provides for access by boat and provides dry stack storage for boats. At the time a specific development project is proposed, the applicant will evaluate whether any other vehicle trip reduction measures are feasible.</p>
<p>Policy CE 6.2.2: Support Facilities for Alternative Modes. Require new development projects to provide facilities commensurate with development type and intensity to support alternative modes, such as preferential parking for carpools, bicycle lockers, showers, commuter information areas, rideshare vehicle loading areas, water transportation docks, and bus stop improvements.</p>	<p>Consistent. The proposed project encourages non-vehicular transportation through the provision of pedestrian and bicycle access and facilities, voluntary employee trip reduction programs, and enhanced public transit access and facility improvements (e.g., bus shelter). The project also provides for access by boat and provides dry stack storage for boats. At the time a specific development project is proposed, the applicant will evaluate whether any other vehicle trip reduction measures are feasible.</p>

Table 4.F-5 (Continued)

General Plan Consistency Analysis

Applicable Policies	General Project Consistency Statement
<p>Policy CE 6.2.3: Project Site Design Supporting Alternative Modes. Encourage increased use of public transportation by requiring project site designs that facilitate the use of public transportation and walking.</p>	<p>Consistent. The proposed project would allow for future development on-site that would include various pedestrian and bicycle facilities to encourage non-vehicular modes of transportation, as well as convenient access to public transit on East Coast Highway. Future development pursuant to the PCDP would include development of a multi-use trail across the property and construction of new Class 1 (off-road) and Class 3 (shared use) bicycle lanes on Bayside Drive, providing a connection to existing regional trails.</p>

Source: PCR Services Corporation, 2013.

(c) California Coastal Act

The proposed project’s consistency with the applicable policies of the California Coastal Act relative to greenhouse gas emissions is evaluated below in **Table 4.F-6, California Coastal Act Consistency Analysis**. As discussed in Table 4.F-6, the proposed project would not conflict with the applicable policies of the CCA, and as such impacts in this regard would be less than significant.

4. CUMULATIVE IMPACTS

Emitting GHGs into the atmosphere is not itself an adverse environmental effect. Rather, it is the increased accumulation of GHGs in the atmosphere that may result in global climate change. The resultant consequences of that climate change can cause adverse environmental effects. Due to the complex physical, chemical, and atmospheric mechanisms involved in global climate change, it is not possible to predict the specific impact, if any, to global climate change from one project’s relatively small incremental increase in emissions.

As shown in Table 4.F-4, there exist numerous options for related project developers to reduce their contribution to city-, county-, and state-wide GHG emissions, while helping to meet the region’s future housing, jobs, and infrastructure needs. However, it is not possible at this time to accurately quantify GHG emissions expected from the related projects or the GHG reductions anticipated from the above-listed strategies. Because of the complex physical, chemical and atmospheric mechanisms involved in global climate change, there is no basis for concluding that an emissions increase resulting from the project and the related projects could actually cause a measurable increase in global GHG emissions sufficient to force global climate change. In addition, emissions models used for project-level evaluations do not fully reflect improvements in technology and other reductions in GHG emissions that are likely to occur pursuant to state regulations, such as AB 1493, SB 1368, AB 32, and Executive Order S-3-5, as well as future federal and/or state regulations. Therefore, it is not possible or meaningful to calculate emissions from each of the identified related projects and compare that with a numeric threshold or reduction target.

Table 4.F-6

California Coastal Act Consistency Analysis

Coastal Act Policy	General Project Consistency Statement
<i>Development</i>	
<p>Section 30253 Minimization of adverse impacts. New development shall do all of the following: (d) Minimize energy consumption and vehicle miles traveled.</p>	<p>Consistent. The proposed legislative approvals will allow for the future development of a mixed-use commercial and residential project, which would provide complementary uses such as residential, retail, and restaurant uses on the same site, thereby reducing the need for off-site trips for many goods and services. Additionally, the future development of the site would incorporate various sustainability features such as water- and energy efficient buildings, lighting, and landscaping, and efficient recreational boat access. Future development of the project site would be required to implement various energy conservation features, such as energy efficient lighting fixtures, lighting timers, Energy Star®-rated heating, cooling, and appliances. In addition, the PCDP requires the preparation of a Sustainability Plan that addresses topics such as water and energy efficiency, indoor air quality, and waste reduction which would be reviewed in conjunction with Site Development Review.</p>

Source: PCR Services Corporation, 2013.

Understanding of the fundamental processes responsible for global climate change has improved over the past decade, and predictive capabilities are advancing. As discussed above, however, there remain significant scientific uncertainties, for example, in predictions of local effects of climate change, occurrence of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of the Earth’s climate system, the uncertainty surrounding climate change may never be completely eliminated. Because of these uncertainties, there continues to be significant debate as to the extent to which increased concentrations of GHGs have caused or will cause climate change, and with respect to the appropriate actions to limit and/or respond to climate change. In addition, it is not possible to label a single development project as the cause of future specific climate change impacts.

While the project would be consistent with the state’s plans for reducing GHG emissions, it would exceed the SCAQMD draft screening threshold of 3,000 metric tons CO₂e per year, which was developed to capture 90 percent of sector GHG emissions. As the project would exceed this screening level, GHG emissions resulting from project construction and operations could directly or indirectly have a significant impact on the environment based on the above mentioned threshold. Since GHGs act on a global scale, the project is conservatively considered to have a cumulatively considerable impact and therefore mitigation measures are required.

5. MITIGATION MEASURES

As discussed previously, the proposed project would result in GHG emissions that exceed the SCAQMD draft screening threshold of 3,000 metric tons CO₂e per year and would not meet the GHG reduction target of 15.9 percent below BAU. As the project would exceed the screening level, GHG emissions resulting from project construction and operations could directly or indirectly have a significant impact on the environment based on the above mentioned threshold. Therefore, the following mitigation measures are proposed. Since there is no specific development proposal, the level of detail of the mitigation measures is similarly tailored to the legislative approvals. Specific actions and methods will be determined when a specific development project is proposed.

Mitigation Measure F-1: Prior to issuance of a building permit, the Project Applicant shall demonstrate that the design of the proposed buildings or structures would exceed the Title 24 California Building Standards energy code requirements, based on the 2008 Energy Efficiency Standards, by 15 percent.

Mitigation Measure F-2: Prior to issuance of a building permit, the Project Applicant shall demonstrate that the design of the proposed buildings or structures incorporates ENERGY STAR®-rated, energy efficient T-8 high-output fixtures, and/or compact fluorescent light (CFL), light-emitting diode (LED) and/or other comparable lighting fixtures. This measure shall apply to all exterior and publicly accessible interior lighting fixtures at the project site, including those outside the building envelope (e.g., on-site parking areas and walkway lighting). Documentation of compliance with this measure shall be provided by the project engineer to the City of Newport Beach Director of Community Development, or designee, for review and approval. Installation of the identified design features or equipment will be confirmed by the City of Newport Beach Director of Community Development, or designee, prior to issuance of a certificate of occupancy.

Mitigation Measure F-3: Prior to issuance of a building permit, the Project Applicant shall demonstrate that the operation of outdoor lighting is limited by the use of time-controlled exterior lighting. Documentation of compliance with this measure shall be provided by the project engineer to the City of Newport Beach Director of Community Development, or designee, for review and approval. Installation of the identified design features or equipment will be confirmed by the City of Newport Beach Director of Community Development, or designee, prior to issuance of a certificate of occupancy.

Mitigation Measure F-4: Prior to issuance of a building permit, the Project Applicant shall demonstrate that the design of the proposed buildings or structures incorporates heating, cooling, and lighting devices and appliances that meet or exceed ENERGY STAR® rated standards. Documentation of compliance with this measure shall be provided by the project engineer to the City of Newport Beach Director of Community Development, or designee, for review and approval. Installation of the identified design features or equipment will be confirmed by the City of Newport Beach Director of Community Development, or designee, prior to issuance of a certificate of occupancy.

Mitigation Measure F-5: Prior to issuance of a building permit, the Project Applicant shall demonstrate that the design of the proposed buildings or structures incorporates enhanced insulation such that heat transfer and thermal bridging is minimized in

structures that will be mechanically heated and/or cooled. Documentation of compliance with this measure shall be provided to the City of Newport Beach Director of Community Development, or designee, for review and approval. Installation of the identified design features or equipment will be conducted by the contractor and confirmed by the City of Newport Beach Director of Community Development, or designee, prior to issuance of a certificate of occupancy.

Mitigation Measure F-6: Prior to issuance of a certificate of occupancy, the City of Newport Beach Director of Community Development, or designee, and the Project Applicant will document and verify, installation of the identified design features or equipment designed to limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption in structures that will be mechanically heated and/or cooled.

Mitigation Measure F-7: Prior to issuance of a building permit, the Project Applicant shall demonstrate that the design of the proposed buildings or structures incorporates water-efficient products (bathroom sink faucets, low-flush urinals, dual-flush toilets, etc.) that meets or exceeds the CALGreen requirements. Documentation of compliance with this measure shall be provided to the City of Newport Beach Director of Community Development, or designee, for review and approval. Installation of the identified design features or equipment will be confirmed by the City of Newport Beach Director of Community Development, or designee, prior to issuance of certificate of occupancy.

Mitigation Measure F-8: The project applicant shall provide designated parking for alternative fueled, hybrid, or electric vehicles. City of Newport Beach Director of Community Development, or designee, will verify compliance and confirm implementation during construction.

Mitigation Measure F-9: The Project Applicant shall provide designated on-site bicycle parking areas and bicycle racks accessible to residents, employees, and commercial uses. City of Newport Beach Director of Community Development, or designee, will verify compliance and confirm implementation during construction.

Mitigation Measure F-10: Prior to issuance of a grading or building permit, the project plans and specifications shall include a statement that delivery of construction equipment and materials will be scheduled such that queuing of trucks on and off site shall be minimized. The requirement will be implemented by the contractor and verified by the City of Newport Beach Director of Community Development, or designee.

Mitigation Measure F-11: Prior to issuance of a grading or building permit, the City of Newport Beach Director of Community Development, or designee, shall verify that project plans and specifications include a statement that construction equipment shall be shut off when not in use, shall not idle for more than 15 minutes, and that vehicles greater than 10,000 pounds shall be shut off when not in use and shall not idle for more than 5 minutes.

Mitigation Measure F-12: Prior to issuance of a grading or building permit, the City of Newport Beach Director of Community Development, or designee, shall verify that project plans and specifications include a statement that the Construction Contractor shall select the construction equipment used on site based on low-emission factors and high-energy

efficiency and that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications.

Mitigation Measure F-13: Prior to issuance of a grading or building permit, the City of Newport Beach Director of Community Development, or designee, shall verify that project plans and specifications include a statement that the Construction Contractor shall utilize electric or alternative-fuel powered equipment in lieu of gasoline or diesel powered engines where feasible.

Mitigation Measure F-14: Prior to issuance of a grading or building permit, the City of Newport Beach Director of Community Development, or designee, shall verify that project plans and specifications include a statement that the Construction Contractor shall support and encourage ridesharing and transit incentives for the construction crew.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of these mitigation measures would reduce GHG emissions from the proposed project. The project's mitigated emissions are shown in **Table 4.F-7, *Mitigated Annual Greenhouse Gas Emissions***. It is not possible to quantify the reductions from all of the mitigation measures due to limited data and since there is no specific development proposed at this time. For example, while Mitigation Measure F-7 would encourage users of the site to utilize low emitting vehicles, it not possible to determine the number of project site visitors that would choose to do so. Thus, the GHG reductions shown in Table 4.F-7 provide a reasonably conservative estimate of the actual reductions that would occur with implementation of the mitigation measures. Nonetheless, as shown in Table 4.F-7, future development pursuant to the proposed project legislative approvals would not exceed the SCAQMD draft Tier 3 screening level after implementation of the above feasible mitigation measures. Therefore, the proposed project would have a less than significant impact after mitigation with respect to GHG emissions. As the proposed project would be required to implement feasible GHG-reduction measures as part of a future on-site development, as required by GHG reduction plans and policies, impacts related to GHG plan consistency would be less than significant.

Table 4.F-7

Mitigated Annual Greenhouse Gas Emissions

Emission Source	CO_{2e} (Metric Ton/Year) ^a	
	Mitigated Project	BAU Project
Proposed Project		
On-Road Mobile Sources	2,060	2,323 ^c
Electricity	349	391
Natural Gas	170	183
Water Conveyance	61	72
Waste	57	57
Boat (Lift/Traffic)	147	147
Construction (Amortized)	55	55
Subtotal	3,010	3,339
Existing Site ^b	32	32
Net Total	2,867	3,196
GHG Threshold (SCAQMD Draft Tier 3)	3,000	-
Exceeds Threshold?	No	-

^a Numbers may not add up exactly due to rounding.

^b Existing emissions were estimated based on the ratio of existing trips to project trips multiplied by the project's on-road mobile source GHG emissions (i.e., $39 / 2,760 \times 2,298 = 32$).

^c BAU Project on-road mobile source emissions were estimated based on the ratio of project trips (without pass-by reduction) and project trips (with pass-by-reduction) multiplied by the project's on-road mobile source GHG emissions (i.e., $2,790 / 2,760 \times 2,298 = 2,323$).

Source: PCR Services Corporation, 2013.