

**DRAFT**  
**SIGNIFICANCE THRESHOLDS**  
**FOR GREENHOUSE GAS EMISSIONS**  
**California Environmental Quality Act**

**City of San Diego**  
**Development Services Department**

**March 2013**

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# Funding Support

California utility ratepayer under the auspices of the California Public Utilities Commission and through a Partnership between the City of San Diego and San Diego Gas and Electric.

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# List of Acronyms

AB 32	Assembly Bill 32 Global Warming Solutions Act of 2006
APS	Alternative Planning Strategy
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BACM	Best Available Control Measure
BACT	Best Available Control Technology
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH <sub>4</sub>	Methane
CMAP	Climate Mitigation and Adaptation Plan
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
EPIC	University of San Diego School of Law Energy Policy Initiatives Center
GHG	Greenhouse Gas
GWP	Global Warming Potential
HFC	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LGOP	Local Government Operations Protocol
MPO	Metropolitan Planning Organization
MMT	Million Metric Tons
MT	Metric Tons
N <sub>2</sub> O	Nitrous Oxide
OPR	Governor's Office of Planning and Research
Ppm	Parts per million
RTP	Regional Transportation Plan
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SDAPCD	San Diego Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SLOAPCD	San Luis Obispo Air Pollution Control District
UNFCCC	United Nations Framework Convention on Climate Change
URBEMIS	Urban Emissions Model
VMT	Vehicle miles traveled

# Executive Summary

The Significance Thresholds for Greenhouse Gas Emissions (GHG Thresholds) are intended to be used in the review of discretionary projects pursuant to the California Environmental Quality Act (CEQA). The City developed four GHG thresholds: (1) a Bright Line Threshold of 2,500 Metric Tons (MT) per year; (2) an Efficiency Threshold of 4.46 MT per year, per service population; (3) a Performance Threshold of 16 percent below unmitigated project emissions; and (4) a Stationary Source Threshold of 10,000 MT per year. The first three thresholds apply generally to land use projects, whereas the stationary source threshold typically applies to heavy industrial projects. The first three thresholds are designed to assess the significance of different types of land use projects.

The Bright Line Threshold may be used for all land use development projects other than stationary sources. The Bright Line Threshold was developed to provide small projects with a clear threshold that is easily applied. To provide further guidance for small projects to determine when they are below the Bright Line Threshold, the City developed screening criteria for various types of land use projects. The Efficiency Threshold is appropriate for projects that are above the Bright Line Threshold but that have a less than cumulatively significant impact on climate change because they are otherwise GHG-efficient. The Performance Threshold is appropriate for projects that are above the Bright Line Threshold but that include design features that, in combination with mitigation measures, demonstrate the project's fair share of the reductions consistent with AB 32. An applicant may select the threshold that is most appropriate to their project type in accordance with the guidance provided in this document.

The purpose of the GHG Thresholds is to provide guidance for a consistent and objective evaluation of significant climate change impacts. Because the GHG Thresholds were developed based on 2020 GHG emissions projections according to AB 32, the City anticipates changes to the GHG Thresholds may be necessary after 2020. The City may modify the GHG Thresholds in the event of changes in the law, scientific discovery, new factual data that alters the common application of a significance threshold, or for any other reason deemed necessary by the City. This document also describes the requirements for GHG analyses and reporting for projects where the City of San Diego is the lead agency under CEQA. The GHG Thresholds are intended to be used during the City's review process for private and public discretionary projects. The guidance provided in this document does not supersede the City's discretionary authority. Project analyses prepared consistent with this guidance document will need to be reviewed and verified by the City and would be subject to City staff approval.

# 1. Introduction

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 declares, “Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California.” AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020, and establishes regulatory reporting, voluntary and market-based mechanisms to achieve quantifiable reductions in GHG emissions to meet the statewide goal.

The California Environmental Quality Act (CEQA) requires public agencies to review the environmental impacts of proposed projects and consider feasible alternatives and mitigation measures to reduce significant adverse environmental effects. In 2007, through the adoption of Senate Bill 97 (SB 97), California’s lawmakers identified the need to analyze GHG emissions as a part of the CEQA process. The California Natural Resources Agency adopted amendments to the CEQA Guidelines to address GHG emissions, consistent with Legislature’s directive in Public Resources Code section 21083.05 (enacted as part of SB 97 [Chapter 185, Statutes 2007]).<sup>1,2</sup> These amendments took effect in 2010.

The purpose of the GHG Thresholds is to assist City of San Diego staff, project applicants, and the public in determining whether a project may have a significant effect on the environment with respect to GHG emissions, under CEQA Section 21082.2. They are not intended to be stand-alone policies and are to be used in conjunction with commonly accepted professional standards, judgments, and practices. The GHG Thresholds are intended to be used during the City’s review process for private and public discretionary projects. The guidance provided in this document does not supersede the City’s discretionary authority. Project analyses prepared consistent with this guidance document will need to be reviewed and verified by the City and would be subject to City staff approval.

The GHG Thresholds provide a practical approach, supported by substantial evidence,<sup>3</sup> for assessing the significance of GHG emissions for projects in the City. CEQA Guidelines Section 15064.7 encourages public agencies to develop and publish such analytical tools. The GHG Thresholds provide technical guidance in evaluating the potential significance of a project’s GHG emissions impact and provide a consistent and objective basis for determining the level of impacts.

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<sup>1</sup> The CEQA Guidelines are found in the California Code of Regulations, Title 14, Sections 15000-15387.

<sup>2</sup> The Natural Resources Agency, in consultation with the Office of Planning and Research (OPR), is required to certify, adopt, and amend the Guidelines at least once every two years.

<sup>3</sup> California Public Resources Code § 21080(c) defines “Substantial evidence” to include facts, reasonable assumptions, predicted upon facts, or an expert opinion supported by facts, but does not include argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly inaccurate or erroneous, or evidence of social or economic impacts that do not contribute to, or are not caused by, physical impacts on the environment.; *see also* CEQA Guidelines §15384.

## 2. Scientific and Regulatory Background

Various gases in the earth's atmosphere, classified as GHGs, play a critical role in determining its surface temperature. Solar radiation enters earth's atmosphere from space, and a portion of the radiation is absorbed by the earth's surface. Earth re-radiates this energy back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation (that otherwise would have escaped back into space) is now retained in the atmosphere, and results in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

### 2.1 Climate Science Overview

Prominent GHG emissions that contribute to the greenhouse effect are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the natural greenhouse effect. This has led to a trend of unnatural warming of the earth's climate, known as global climate change or global warming.

According to Article 2 of the United Nations Framework Convention on Climate Change (UNFCCC), "Avoiding Dangerous Climate Change" means: "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."<sup>4</sup> Dangerous climate change defined in the UNFCCC is based on several key indicators including the potential for severe degradation of coral reef systems, disintegration of the West Antarctic Ice Sheet, and shut down of the large-scale, salinity- and thermally-driven circulation of the oceans. The global atmospheric concentration of carbon dioxide has increased from a pre-industrial value of about 280 parts per million (ppm) to 370 ppm currently.<sup>5</sup> "Avoiding dangerous climate change" can be achieved by stabilizing global average temperature to 2 degrees Celsius above pre-industrial levels. It is estimated that global atmospheric levels of carbon dioxide equivalent (CO<sub>2</sub>e) cannot exceed 450 ppm in order to prevent global temperatures from rising above 2 degrees Celsius.<sup>6</sup>

### 2.2 Greenhouse Gas Emission Sources

According to the scientific literature on this topic, emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors. In California,

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<sup>4</sup> United Nations Framework Convention on Climate Change. 2009. Article 2 of the UNFCCC. Available: [http://unfccc.int/essential\\_background/convention/background/items/2536.php](http://unfccc.int/essential_background/convention/background/items/2536.php). Accessed December 2012.

<sup>5</sup> United Nations Framework Convention on Climate Change. 2011. Essential Background > Basic Facts & Figures. Available: [http://unfccc.int/essential\\_background/basic\\_facts\\_figures/items/6246.php](http://unfccc.int/essential_background/basic_facts_figures/items/6246.php). Accessed December 2012.

<sup>6</sup> *Ibid.*

the transportation sector is the largest emitter of GHGs, followed by electricity generation. Emissions of CO<sub>2</sub> are byproducts of fossil fuel combustion. CH<sub>4</sub>, a highly potent GHG, results from off gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N<sub>2</sub>O is also largely attributable to agricultural practices and soil management. CO<sub>2</sub> sinks, or reservoirs, include vegetation and the ocean, which absorb CO<sub>2</sub> through sequestration and dissolution, respectively, and are two of the most common processes of CO<sub>2</sub> sequestration.

California produced 478 million gross metric tons of CO<sub>2</sub>e in 2008 (Table 1).<sup>7</sup> CO<sub>2</sub>e is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. Expressing emissions in CO<sub>2</sub>e takes the contributions to the greenhouse effect of all GHG emissions and converts them to the equivalent effect that would occur if only CO<sub>2</sub> were being emitted. This measurement, known as the global warming potential (GWP) of a GHG, is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, as described in Appendix B, Global Warming Potentials, of the General Reporting Protocol of The Climate Registry, 1 ton of CH<sub>4</sub> has the same contribution to the greenhouse effect as approximately 21 tons of CO<sub>2</sub>.<sup>8</sup> Therefore, CH<sub>4</sub> is a much more potent GHG than CO<sub>2</sub>.

Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2008, accounting for 37 percent of total GHG emissions in the state. This sector was followed by the electric power sector (including both in-state and out-of-state sources) (25 percent) and the industrial sector (20 percent).

**Table 1**  
**California GHG Emissions by Sector – 2008**

Sector	Emissions (MMT CO <sub>2</sub> e)	Percent of Total Emissions
Transportation	174.99	37%
Electric Power	116.35	24%
Industrial	92.66	19%
Commercial and Residential	43.13	9%
Agriculture	28.06	6%
High Global Warming Potential	15.65	3%
Recycling and Waste	6.71	1%
Forestry	0.19	0%
<b>Total</b>	<b>477.74</b>	<b>100%</b>

Notes: MMT = Million metric tons; CO<sub>2</sub>e = Carbon dioxide equivalent; Source: California Air Resources Board, 2011.

<sup>7</sup> California Air Resources Board. 2011. *California Greenhouse Gas Inventory for 2000-2009 — by IPCC Category*. Available: [http://www.arb.ca.gov/cc/inventory/data/tables/ghg\\_inventory\\_ipcc\\_00-09\\_all\\_2011-10-26.pdf](http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_ipcc_00-09_all_2011-10-26.pdf). Accessed December 2012.

<sup>8</sup> The Climate Registry. 2008 (May). General Reporting Protocol. Version 1.1. Available: <http://www.theclimateregistry.org/downloads/GRP.pdf>. Accessed December 2012.



The University of San Diego School of Law Energy Policy Initiative Center (EPIC) prepared a regional GHG inventory to examine specific emissions sources and levels in San Diego County (Table 2) in 2005 (most recent inventory year).<sup>9</sup> Transportation is the most important emissions sector for the state and for the San Diego region. Transportation accounts for a higher proportion of GHG emissions in San Diego compared to the state, while electricity-related emissions represent the same proportion relative to the state as a whole. Industrial and agricultural emissions are substantially less represented in San Diego County compared to the state.

**Table 2**  
**San Diego County GHG Inventory – 2005**

Sector	Emissions (MMT CO <sub>2</sub> e)	Percent of Total Emissions
Transportation	19.7	58%
Electricity	8.3	24%
Natural Gas End Uses	2.9	9%
Industrial Processes and Products	1.6	5%
Other/Other Fuels	1.3	4%
Waste	0.4	1%
Wildfires	0.3	1%
Development (Loss of Vegetation)	0.2	1%
Agriculture (Livestock)	0.1	0%
Sequestration from Land Cover	-0.7	-2%
<b>Total</b>	<b>34</b>	<b>100%</b>

Notes: MMT = Million metric tons; CO<sub>2</sub>e = Carbon dioxide equivalent  
Source: EPIC, 2011.

## 2.3 Regulatory Framework

There are various federal, state, regional, and local regulations in place to address GHG emissions and climate change. These efforts are summarized below.

### 2.3.1 Federal Regulations

The federal Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to define national ambient air quality standards to protect public health and welfare. On April 2, 2007 the U.S. Supreme Court in *Massachusetts v. U.S. Environmental Protection Agency*, determined that GHGs are pollutants that can be regulated under the Clean Air Act. Currently, there are no federal regulations that establish ambient air quality standards for GHGs.

<sup>9</sup> San Diego County Greenhouse Gas Inventory: An Analysis of Regional Emissions and Strategies to Achieve AB 32 Targets”. Available: <http://www.sandiego.edu/epic/ghginventory/>. Accessed December 2012.

## 2.3.2 State Regulations

The California Air Resources Board (ARB) is the agency responsible for coordination and oversight of state and local air pollution control programs in California. Various statewide and local initiatives to reduce the state's contribution to GHG emissions have raised awareness that global climate change is under way and there is a real potential for severe adverse environmental, social, and economic effects in the long term. California has passed laws directing ARB to develop actions to reduce GHG emissions, and several state legislative actions related to climate change and GHG emissions have come into play in the past decade.

### **Executive Order S-3-05**

Executive Order S-3-05, signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total statewide GHG emission targets. Specifically, emissions statewide are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

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

In September 2006, Governor Arnold Schwarzenegger signed the California Global Warming Solutions Act (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020.

AB 32 requires ARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

In 2008, ARB adopted the Climate Change Scoping Plan (Scoping Plan), which identifies the main strategies California will implement to achieve the required reductions. In August 2011, the Scoping Plan was re-approved by the Board and includes the Final Supplement to the Scoping Plan Functional Equivalent Document. This document includes expanded analysis of project alternatives and updates the 2020 emission projections in light of current economic forecasts. According to the Scoping Plan, the 2020 target of 427 million metric tons (MMT) CO<sub>2</sub>e requires

the reduction of 80 MMTCO<sub>2</sub>e from the state's projected 2020 business-as-usual (BAU) emissions level of 507 MMTCO<sub>2</sub>e. This is equivalent to a 16 percent reduction below the estimated BAU levels that to return to 1990 levels by 2020.

The Scoping Plan acknowledges that land use planning and urban growth decisions will play an important role in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions.

## **Senate Bill 97**

SB 97, signed August 2007 (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. The bill directed the California Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency, guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA. The California Natural Resources Agency adopted amendments to the CEQA Guidelines (California Code of Regulations, Title 14, Sections 15000-15387) consistent with the directive. The amendments became effective on March 18, 2010.

## **Senate Bill 375**

SB 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS), or Alternative Planning Strategy (APS) that prescribes how land use will be allocated in their Regional Transportation Plan (RTP). ARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. New provisions of CEQA incentivize qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects." The ARB targets for the San Diego Association of Governments (SANDAG) region require a 7 percent reduction in GHG emissions per capita from automobiles and light duty trucks compared to 2005 levels by 2020, and a 13 percent reduction by 2035.<sup>10</sup>

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<sup>10</sup> California Air Resources Board (ARB). 2011. Approved Regional Greenhouse Gas Emission Reduction Targets Available: [http://www.arb.ca.gov/cc/sb375/final\\_targets.pdf](http://www.arb.ca.gov/cc/sb375/final_targets.pdf). Accessed December 2012.

### 2.3.3 Local Policies

The City has prepared a Draft Climate Mitigation and Adaptation Plan (CMAP<sup>11</sup>) that identifies strategies and measures to meet GHG reduction targets, and lists general approaches to adapt to a changing climate. Attainment of the reduction targets requires commitment to local and regional actions as well as continued implementation of federal and state mandates. These actions and associated benefits will contribute to the City's current and future prosperity and sustainability by: 1) conserving resources such as energy and water; 2) fostering the creation of green jobs; and 3) furthering San Diego's leadership in clean technology industries.

The CMAP establishes a planning horizon of 2013-2035 and quantifies GHG emissions from the community-at-large and City operations; establishes reduction targets for 2020, 2035 and 2050; identifies strategies and measures to reduce GHG levels, focusing on those that the City has authority to implement; and provides guidance for monitoring progress on an annual basis. In addition, the CMAP highlights climate change vulnerabilities, adaptation strategies, and recommendations for further research.

## 3. Significance Thresholds

GHG emissions have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. Cumulative impacts are those that result from the combination of past, present, and probable future projects, producing related effects.<sup>12</sup> No single land use project could generate enough GHG emissions to noticeably change the global average temperature. Thus, the GHG Thresholds are to be used to determine whether a project may have a cumulatively considerable incremental contribution to the significant impact of global climate change.

### 3.1 Justification for Establishing GHG Thresholds

The City's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project may have a cumulatively considerable contribution to climate change impacts. If a project does generate GHG emissions above the applicable threshold level, the project would be considered to have a substantial contribution to a cumulative impact and, therefore, may have a significant impact. If mitigation can be applied to reduce the emissions such that the project meets its share of emission reductions needed to address the cumulative impact, the project's impacts would normally be considered less than significant.

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<sup>11</sup> The City of San Diego's Draft Climate Mitigation and Adaptation Plan (CMAP) and related Initial Study/Negative Declaration (IS/ND) was circulated for public comments on August 28, 2012. The documents were revised in response to public comments. This document specifically refers to the Revised CMAP and Final IS/ND dated December 19, 2012.

<sup>12</sup> CEQA Guidelines Section 15130.

The GHG Thresholds focus on a 2020 timeline, consistent with the legislative mandate established in AB 32. Although some projects and plans considered under the threshold guidance provided herein would have GHG impacts beyond 2020, there is not a comprehensive regulatory or legislative framework for addressing GHG emissions beyond 2020. Advances in science, new models for analysis, new mitigation, changes in the law, technological advancement, and other new information may require the City to periodically consider whether revisions to the GHG Thresholds are warranted.

## 3.2 Significance Thresholds Framework

There are several types of thresholds that can be supported by substantial evidence and be consistent with existing California legislation and policy to reduce statewide GHG emissions. In determining which thresholds to adopt, the City studied multiple options, relying on reasonable assumptions on growth in the land use sector, predicted emissions reductions from statewide regulatory measures and resulting emissions inventories, and the effectiveness of GHG mitigation measures.

The City developed four specific GHG significance thresholds based on AB 32 GHG emission reduction goals after taking into account the emission reductions expected from the strategies outlined in ARB's Scoping Plan. The City has prepared these GHG Thresholds using direction provided by the Natural Resources Agency in amendments to the CEQA Guidelines (California Code of Regulations, title 14, sections 15000-15387) to address GHG emissions. The methods and assumptions used in developing these GHG Thresholds are consistent with CEQA practice for GHG emissions analysis.

There are four different significance thresholds that may be used for new development:

- 1) **Bright Line Threshold:** numerical value to determine the significance of a project's annual GHG emissions (2,500 MT/year).
- 2) **Efficiency Threshold:** assesses the GHG efficiency of a project on a per capita basis (4.46 MT/year/service population).
- 3) **Performance Threshold:** a quantitative threshold that is consistent with level of reductions required under AB 32 (16 percent below unmitigated GHG emissions).
- 4) **Stationary Source Threshold:** a numerical threshold for stationary source (heavy industrial) projects (10,000 MT/year).

Applicants for land use projects besides heavy industrial projects may select any of the first three thresholds in accordance with the guidance in this document. The Bright Line Threshold may be used for all land use development projects other than stationary sources. The Bright Line Threshold was developed to provide small projects with a clear threshold that is easily applied. To provide further guidance for small projects to determine when they are below the Bright Line

Threshold, the City developed screening criteria for various types of land use projects. The Efficiency Threshold is appropriate for projects that are above the Bright Line Threshold but have a less than cumulatively significant impact on climate change because they accommodate growth in a GHG-efficient manner. The Performance Threshold is appropriate for projects that are above the Bright Line Threshold but include design features that, in combination with mitigation measures, demonstrate the project's fair share of the reductions consistent with AB 32. Sections 3.2.1 through 3.2.4 provide guidance on assessing significance utilizing each threshold.

For projects that would include a stationary source of emissions, the Stationary Source Threshold must be used for assessing significance. Stationary source emissions must be analyzed separately from non-stationary source emissions. Project analysis must also include analysis of construction emissions and operational emissions associated with mobile sources, electricity use, water delivery, and other non-stationary sources associated with the facility. Non-stationary sources of emissions must be analyzed using one of the three significance thresholds, i.e., Bright Line Threshold, Efficiency Threshold, or Performance Threshold.<sup>13</sup>

Appendix A provides more detail on the development of the four thresholds.

### 3.2.1 Land Use Projects Bright Line Threshold

*A proposed project would have a cumulatively considerable contribution to climate change impacts if it would result in an increase of operational GHG emissions at a level exceeding 2,500 metric tons of CO<sub>2</sub>e per year.*

The methodology used in developing the Bright Line Threshold is intended to help reach the AB 32 emission reduction targets by requiring an appropriate share of the GHG reductions from new land use development projects subject to CEQA in the City of San Diego. This approach is referred to as the “gap-based approach” and is consistent with methodology employed by the Bay Area Air Quality Management District (BAAQMD), the San Luis Obispo County Air Pollution Control District (SLOAPCD), and the County of San Diego (County). This method focuses on the limited set of state mandates that are currently expected to have the greatest potential to reduce land use development-related GHG emissions. This approach is based on the premise that there is a shortfall, or “gap” between the current emissions trajectory (projected emissions with existing control measures) and the desired emissions trajectory needed to reach a defined emissions level by the target year. Further, it should be noted that this Threshold was derived with amortized construction emissions in the individual project analyses. Therefore, projects do not need to add construction emissions, as they are already included in the development of the threshold. Additional details are included in Section 4.1.

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<sup>13</sup> An example of this type of project may include a commercial development that proposes the use of diesel generators requiring permits from San Diego Air Pollution Control District. Project applicants are encouraged to coordinate with City staff early in the review process. City staff will review such projects and determine the appropriate analysis approach on a case-by-case basis.

The Bright Line Threshold derived from the gap-based approach is intended to reduce a certain level of emissions from each new land use project expected to be built by the AB 32 target year of 2020. Thus the Bright Line Threshold defines the level of a project's emissions that, under CEQA, would require the project to include emission reduction measures (mitigation) to reduce the project's impact to a less than significant level. The threshold level is achieved when the total amount of all new land use projects' reductions closes the emissions gap attributable to new development. The Bright Line Threshold was set at a level that would account for both operational and construction emissions attributable to new development projects developed in the City through 2020.

The methodology for the Bright Line Threshold is outlined below:

1. Estimate the growth in emissions between 1990 and 2020 attributable to "land use-driven" sectors of ARB's statewide GHG emissions inventory. Land use-driven emission sectors include Transportation (On-Road Passenger Vehicles; On-Road Heavy Duty), Electric Power (Electricity; Cogeneration), Commercial and Residential (Residential Fuel Use; Commercial Fuel Use); and Recycling and Waste.
2. Estimate the anticipated GHG emission reductions affecting the same land use-driven emissions inventory sectors associated with adopted statewide regulations identified in the AB 32 Scoping Plan. Applicable regulations include AB 1493 (Pavley), the Low Carbon Fuel Standard, Heavy/Medium Duty (Vehicle?) Efficiency, Passenger Vehicle Efficiency, Energy-Efficiency Measures, Renewable Portfolio Standard, and Solar Roofs.
3. Determine the "gap" between the 2020 statewide emission inventory estimates and the anticipated emission reductions from adopted Scoping Plan regulations. This "gap" represents additional GHG emission reductions needed statewide from the land use-driven emissions inventory sectors, which represents land use development's share of the emission reductions needed to meet statewide GHG emission reduction goals.
4. Determine the percent reduction this "gap" represents in the "land use-driven" emissions inventory sectors from the City's projected 2020 GHG emissions inventory. Identify the mass of emission reductions needed in the City from land use-driven emissions inventory sectors. The City's 2020 projected GHG inventory in the Draft CMAP is used for this step.
5. Assess the City's historical CEQA database to determine the frequency distribution trend of project sizes and types that have been subject to CEQA over the past several years. Determine historical patterns of residential, commercial and industrial development by ranges of average sizes of each development type. To ensure that data collected is representative of growth in the City, the analysis is based on development in the City over a 10-year period (2001-2010).

6. Forecast new land use development for the City using the California Department of Finance (DOF) and the California Economic Development Department (EDD) population and employment projections. Data from SANDAG as used in the Draft CMAP is preferred over State data, where available, because it accounts for local conditions and maintains consistency with other planning documents developed by the City. Distribute the anticipated growth into appropriate land use types and sizes needed to accommodate the anticipated growth (based on the trend analysis in Step 5 above). Translate the land use development projections into land use categories consistent with those contained in the California Emissions Estimator Model (CalEEMod).
7. Estimate the amount of GHG emissions from each land use development project type and size using CalEEMod. Determine the amount of GHG emissions that can reasonably and feasibly be reduced through currently available mitigation measures (“mitigation effectiveness”) for future land use development projects subject to CEQA (based on land use development projections and frequency distribution from Step 6 above).
8. Conduct a sensitivity analysis of the numeric GHG mass emissions threshold needed to achieve the desired emissions reduction (i.e., “gap”) determined in Step 4. This mass emission GHG threshold is the emissions level that would be needed to achieve the emission reductions necessary by 2020 to meet the City’s share of the statewide “gap” needed from the land use-driven emissions inventory sectors.

## 1990 and 2020 State GHG Inventory

The level of emissions in 1990 represents the goal of AB 32 (i.e., reduce 2020 emission to 1990 levels). For CEQA purposes, land use-related portions of the statewide 1990 emissions inventory were segregated.<sup>14</sup> The statewide inventory in 1990 for land use related emissions were approximately 264 MMT CO<sub>2</sub>e (Table 3).

Some emissions sectors in the ARB inventory (e.g., agriculture, forestry, and “not specified”) were removed for comparison purposes. Other sectors (e.g., development of energy sources) include both land use related emissions (residential, commercial), as well as emissions related to industrial processing. Industrial process related emissions have been disaggregated, wherever possible, to allow CEQA analyses of land use projects to focus only on relevant emissions sources. The GHG Thresholds also apply to light industrial uses that typically involve assembly of processed or partially processed materials into products and would have an energy demand that is not substantially higher than office buildings of the same size and scale.

The next step to develop the Bright Line Threshold is to determine the amount of GHG emissions anticipated to occur in 2020 associated with land use projects under ARB’s “Business as Usual”

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<sup>14</sup> California Air Resources Board. 2010. *Inventory Data Archive – 1990 to 2004 Inventory*. Available: <http://www.arb.ca.gov/cc/inventory/archive/archive.htm>. Accessed December 2012.



scenario. ARB’s 2020 GHG emissions inventory was evaluated to separate the emissions associated with comparable residential and commercial land uses.<sup>15</sup> Similar to the 1990 inventory analysis described above, the 2020 inventory was adjusted to remove the heavy industry-related emissions for threshold development purposes. Total statewide land use related emissions in 2020, as calculated below, are estimated to be approximately 311 MMT CO<sub>2</sub>e/year.

**Table 3**  
**Statewide Land Use-Adjusted 1990 and 2020 GHG Emissions Inventory<sup>16</sup>**

<b>Emissions Sector/Subcategory</b>	<b>1990 Emissions (MMT CO<sub>2</sub>e)</b>	<b>2020 Emissions (MMT CO<sub>2</sub>e)</b>
Electricity (In State and Imports)	74.3	86.4
Transportation	138.0	168.2
Recycling and Waste	5.5	7.5
Wastewater Treatment	2.8	2.8
High GWP	–	0.8
Commercial	13.9	45.3
Residential	29.7	
<b>Total</b>	<b>264.1</b>	<b>311.0</b>

Notes: GHG = greenhouse gas; MMT CO<sub>2</sub>e/yr. = million metric tons of carbon dioxide equivalent per year; GWP = global warming potential

Totals may not appear to add exactly due to rounding.

## Impact of State Reduction Measures

The next step in developing the Bright Line Threshold is to determine the future emission reductions that will be achieved through the implementation of statewide measures.

Many current and prospective measures are outlined in the AB 32 Scoping Plan. Statewide measures associated with the AB 32 Scoping Plan will achieve some portion of the emission reduction goal (i.e., achieve 1990 levels by 2020), while the remaining reductions would be achieved through either a project design feature such as a building or site plan feature and/or mitigation within the context of land use development projects, improvements to existing buildings and development patterns, investments in transit and non-vehicular transportation facilities, and other measures. The State’s 2020 inventory was reduced by approximately 39.08 MMT CO<sub>2</sub>e/yr. through implementation of statewide measures (Table 4).<sup>17</sup> As additional measures from the Scoping Plan or other sources are implemented, this estimate may need to be revised when new measures would change the level of GHG reduction substantially.

<sup>15</sup> California Air Resources Board. 2010. *Greenhouse Gas Inventory – 2020 Emissions Forecast*. Available at: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>. Accessed December 2012.

<sup>16</sup> County of San Diego Draft Guidelines for Determining Significance: Climate Change – Appendix. 2012. Available: <http://www.sdcounty.ca.gov/pds/advance/climateactionplan.html>. Accessed December 2012.

<sup>17</sup> California Air Resources Board. 2010. *Greenhouse Gas Inventory –2020 Emissions Forecast*. Available: <<http://www.arb.ca.gov/cc/inventory/data/forecast.htm>>

Emissions reductions associated with the AB 32 Scoping Plan measures were taken into account to accurately identify the portion of emission reductions that are the responsibility of land use development. The City accounted for all known statewide measures that would reduce emissions from land use projects (i.e., residential and commercial) and existing development.

**Table 4  
Statewide AB 32 Scoping Plan GHG Emission Reductions**

<b>Scoping Plan Measure</b>	<b>Emission Reductions (MMT CO<sub>2</sub>e/yr.)</b>	<b>Adjustments</b>
Pavley II	4.0	Represents additional emission reductions beyond Pavley I as stated in the Scoping Plan.
Low Carbon Fuel Standard	16.0	As identified for fuel combustion only (not all lifecycle related emissions) by ARB.
Tire Pressure Program	0.6	Represents fuel efficiency benefits from program as stated in the Scoping Plan.
Tire Tread Standard	0.30	Represents fuel efficiency benefits from standard as stated in the Scoping Plan.
Heavy-Duty Vehicle GHG Emission Reduction Program	0.7	Aerodynamic efficiency requirement that will improve fuel efficiency in heavy-duty trucks as stated in the Scoping Plan.
Landfill Methane Control Measure	1.50	Represents enhanced control and monitoring of methane emissions from municipal solid waste landfills.
Renewable Electricity Standard	9.847	Adjusted to remove industrial portion of emission reduction.
Water Efficiency	1.40	Likely includes some portion of industrial water efficiency reductions. Water districts are currently actively implementing efficiency measures to achieve this target.
2008 Title 24 Standards	4.737	Represents the annual CO <sub>2</sub> emissions saved from incorporation of 2008 Title 24 building standards from electricity and natural gas consumption for land use projects as calculated by CEC.
<b>Total Emission Reductions</b>	<b>39.08</b>	

Notes: GHG = greenhouse gas; MMT CO<sub>2</sub>e/yr. = million metric tons of carbon dioxide equivalent per year

Values may not appear to add exactly due to rounding.

Pavley I is not included in the above table as it is accounted for in ARB's revised 2020 projections. Only measures that are not included in the projections are included as additional reductions.

Source: California Air Resources Board Climate Change Scoping Plan. See Appendix A for additional detail.

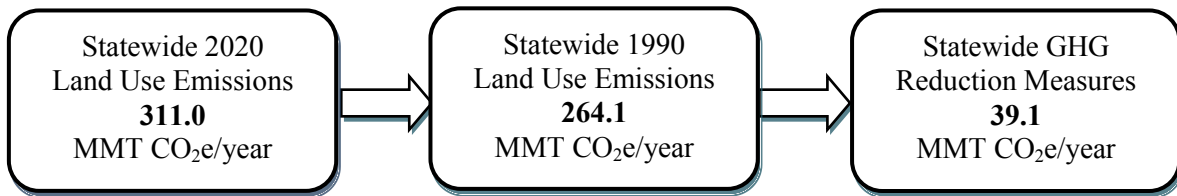
ARB's 2020 forecasted emissions inventory methodology was evaluated to determine which AB 32 Scoping Plan measures were already accounted for in the forecast. It is important not to "double count" measures that were already assumed in the statewide 2020 inventory estimate. Voluntary measures, measures that did not have regulatory support and incentive-based programs without funding were not included in the anticipated reductions from statewide measures. The

effects of statewide reductions may need to be updated over time as new measures become fixed in regulation and as future GHG emissions inventory estimates are revised.

## Land Use Gap Derivation

The gap to achieve the AB 32 emission reduction goal is calculated by subtracting 1990 emissions from 2020 emissions (Table 3) with AB 32 Scoping Plan reductions (Table 4). This gap represents the reductions in emissions in the land use sectors for new development that would need to be achieved in order to meet the emission reduction goal of AB 32.

At the statewide level, land use projects would need to reduce 2020 emissions by approximately 2.87 percent of Business-as-Usual (BAU) to meet the emission reduction goal of AB 32. This percentage can be considered a fair-share reduction goal for land use projects throughout the state. Therefore, applying the 2.87 percent reduction to the City’s 2020 forecasted land use-related emissions provides an estimate of the land use related mass emissions reductions needed to achieve the emission reduction goal of AB 32.



The following equations show the reductions needed to get to 1990 emissions by 2020, the share attributable to statewide measures, and the “gap” left for land use emissions.

Statewide 2020 Emissions	–	Statewide 1990 Emissions	–	Foreseeable AB 32 Measures	=	Emission Reduction Gap
311.0 MMT CO <sub>2</sub> e/year	–	264.1 MMT CO <sub>2</sub> e/year	–	39.1 MMT CO <sub>2</sub> e/year	=	7.8 MMT CO <sub>2</sub> e/year

Emission Reduction Gap	÷	(Statewide 2020 Emission	–	Foreseeable AB 32 Measures)	=	Percent Reduction Gap
7.8 MMT CO <sub>2</sub> e/year	÷	(311.0 MMT CO <sub>2</sub> e/year	–	39.1 MMT CO <sub>2</sub> e/year)	=	2.87 percent

The next step is to translate the statewide land use gap (2.87 percent) to the 2020 forecast GHG emissions inventory for the City. The total estimated 2020 emissions in the City are reported at

14.64 MMT CO<sub>2</sub>e per year in the Draft CMAP. Multiplying this total by the statewide land use gap of 2.87 percent yields a local land use gap of 420,168 MT CO<sub>2</sub>e per year. This land use gap includes both existing development in the City and new development between 2011 and 2020. The reductions required to meet the land use gap in the City need to be achieved by both the existing development and the new development as a result of anticipated growth between 2011 and 2020.

The City's CMAP includes GHG reduction measures that would reduce emissions from existing and new development. In order to determine the fair share of reductions that new development would be responsible for, the reductions attributed to each local measure in the CMAP were segregated between existing and new development. A review of the CMAP shows that a majority of measures proposed apply to existing development in the City. Even measures that apply to both existing uses and new development would achieve larger reductions from existing uses due to the relatively small number of new projects built each year relative to the existing building stock. Measures in the CMAP focused on existing uses are expected to achieve 80 percent of the overall reductions by 2020 as compared to new development, which would be expected to achieve a little over 20 percent of the reductions. Reductions for new and existing development were apportioned based on activity indicators for each measure. All measures related to energy retrofits or retro-commissioning would achieve reductions from existing uses only. In contrast, measures related to new construction efficiency were applied to new development projected in the City. CMAP measures related to residential and commercial solar water heating were attributed to existing development since reductions were applied to these uses alone in the CMAP. All transportation-related measures were apportioned to new development based on the projected vehicle miles traveled increase from 2010 to 2020 while the balance was applied to existing development. Measures related smart growth strategies are focused on promoting new development in proximity to jobs, services, and public facilities; therefore, these reductions were attributed to new development. Solid waste-related measures were apportioned for new development based on the projected increase in waste deposition from 2010 to 2020 and the balance was applied to existing development. For further explanation, please refer to the Appendix that details the apportionment of new reductions versus existing development. For development of the Bright Line Threshold, the City used the same proportion to calculate the reductions attributable to new development's fair share of the land use gap. Therefore, approximately 20.18 percent of the mass emissions land use gap will be attributable to new development by the AB 32 target year of 2020. The total reduction target for new development is approximately 84,793 MT CO<sub>2</sub>e (please note rounding). Detailed calculations showing the derivation of the land use gap are included in Appendix A.

## **Growth Projections and Sensitivity Analysis**

Growth projections for new development from 2011 to 2020 were developed based on (1) the 2050 SANDAG Regional Growth Forecast; (2) the California Department of Finance (DOF) for population, household size, and residential unit distribution projections; and (3) the California

Economic Development Department (EDD) for employment projections by North American Industry Classification System (NAICS) code. These data sources were selected primarily because of the accuracy of the projections, but also because the data is reported at a level of specificity that allows for simple translation into CalEEMod land use categories. DOF and SANDAG data were used for population estimates and EDD for employment. SANDAG data were used for population and housing projections, and DOF data were used to distribute future housing across more specific housing types. The DOF and EDD data were not at a fine enough resolution to develop projections for every CalEEMod land use category. In instances in which there were differences between the DOF/EDD data and the CalEEMod land use categories, development projections were aggregated into the most similar category based on development density and trip capture assumptions in the CalEEMod model. The conversion between industry classification and CalEEMod land uses is shown in Appendix A.

For residential development, the DOF projections of population, household size, and residential unit distribution were used to develop population-driven residential square footage projections. For non-residential development, EDD projections for employment by NAICS code were used to develop employment-driven commercial, retail, and industrial development square footage projections.

Using project type and size distribution data from projects that were subject to CEQA from 2000-2010 for the City of San Diego, the development size (dwelling units, square footage, rooms, etc.) annual projections were translated into units and project size distributions for each CalEEMod land use category. These projections were used to develop a “projected development inventory” for new development in the City’s jurisdiction between 2011 and 2020.

The historical CEQA database was assembled using a combination of OPR’s State Clearinghouse (SCH) database and permit data archived and maintained by the City. Electronic files for the City of San Diego projects were retrieved from the SCH. The data were sorted and processed to eliminate duplicative information, non land use projects, and projects without sufficient information to use in the frequency distribution analysis. Using the resulting dataset of CEQA projects, each application was coded for the CalEEMod land use category and size of development being permitted. Using this data, frequency distributions and average project sizes were calculated. These calculations were used to translate the development projections described above into numbers of future projects by type and size category. These projections were used as a basis for the CalEEMod emissions modeling.

Emission modeling was performed using emission assumptions specific to the city of San Diego, as contained in CalEEMod. The year 2020 and default construction durations based on the size of the project were used to model all operational emissions. CalEEMod estimates operational emissions from all direct and indirect sources of emissions, including mobile and area source emissions, emissions that would occur off-site at utility providers associated with the project’s energy and water demands, and emissions from a project’s solid waste generation and disposal. Modeling results were post-processed to adjust for the impact of state regulations that are

accounted for in CalEEMod default emission factors (e.g., Pavley regulations and Low Carbon Fuel Standard).

Estimates of feasible mitigation to use with the modeled operational emissions were derived using a sensitivity analysis to determine the level of mass emissions necessary to trigger feasible mitigation at a level necessary to achieve the “land use gap.” The sensitivity (e.g., emissions reduction and capture rates) of the threshold level was assessed using the modeled emissions. Projects of a certain size would trigger the CEQA threshold, and would require mitigation. The sensitivity analysis (presented in Appendix A) involved adjusting the threshold in order to achieve a balance that attains the desired emissions reduction. Project size intervals (i.e., “bins”) of 50,000 square feet were used to assess the sensitivity of GHG emissions levels at different increments to determine a reasonable emissions capture rate which achieves a feasible (as defined by CEQA) amount of emission reductions when considering mitigation effectiveness.

For each future project, a baseline unmitigated emissions level (i.e. assuming all projects were built in conformance with currently adopted building codes) was calculated using CalEEMod. In an iterative process referred to as a “threshold sensitivity analysis,” various threshold levels and mitigation effectiveness options were analyzed. Each future project with emissions greater than a potential threshold level was assumed to mitigate down to the threshold level or, if unable to feasibly reduce emissions to the threshold level, was assumed to reduce emissions by a given percentage of their total emissions (mitigation effectiveness). Through this iterative analytical process, a threshold level was found that achieved sufficient mass reductions from all future projects to equal the predicted City-wide 2020 gap for the land use sectors.

The sensitivity analysis demonstrates a mass emissions significance threshold level based on the mitigation effectiveness and performance anticipated to be achieved per project to meet the aggregate emission reductions of 84,793 MT CO<sub>2</sub>e for new development projects by 2020. A 2,500 MT mass emissions significance threshold level results in an adequate number of projects being above the significance threshold and having to implement feasible mitigation measures in order to collectively achieve the land use gap for new development, and thereby ensure that cumulative impacts would be less than significant.

### **3.2.2 Land Use Projects Efficiency Threshold**

*A proposed project would have a cumulatively considerable contribution to climate change impacts if it would result in a net increase in GHG emissions at a level exceeding 4.46 metric tons of CO<sub>2</sub>e per year, per service population.*

The Efficiency Threshold represents the rate of emission reductions needed to achieve a fair share of California’s GHG emissions reduction target established under AB 32. The GHG efficiency level applied statewide would meet the AB 32 target. The statewide AB 32 GHG emissions reduction context allows the GHG efficiency of a project to be evaluated independent of jurisdiction in which it is located. The goal of AB 32 is to accommodate population and economic

growth in California while achieving a lower rate of GHG emissions statewide. Comparing the projected 2020 emissions from land use sectors to demographics units (i.e., population and employment) allows for evaluation of project consistency with AB 32 targets.

It is appropriate to base the land use Efficiency Threshold on the service population metric for the land use-driven emissions inventory. “Service population” is a term used to express the total population plus employment of proposed projects. This approach allows the threshold to be applied evenly to all project types (residential, commercial/retail and mixed use) and uses an emissions inventory comprised only of emission sources from land-use related sectors. For new land development projects, the use of an efficiency approach that considers emissions per service population (including residents and employees) correlates with the activities that are accommodated by development: population growth and additional employment opportunities. Development projects and plans generally do not create new population or employment (except temporary construction related employment), but rather accommodate population and employment growth. The Efficiency Threshold does not focus on mass emissions; new emissions sources are not isolated from existing emissions sources that are moved to the subject project site. The efficiency approach allows lead agencies to assess whether any given project or plan would accommodate population and employment growth in a way that is consistent with the emissions limit established under AB 32.

Projects that accommodate only employment and no residences would estimate the level of employment accommodated at buildout and use this figure to represent the service population. Projects that would accommodate only residences would estimate the population accommodated by the project when fully occupied. The population and employment estimates should be consistent, where applicable, with SANDAG methods and assumptions, as well as density and intensity standards in a general plan for the applicable land use, community plan, or specific plan. The State Department of Finance provides information related to household sizes that can be used to estimate residential populations of proposed projects. Household sizes differ depending on demographic characteristics, housing type and density, and location, among other factors. For example, each City Community Plan has prescribed persons per household that could be utilized in such cases. Locally appropriate assumptions should be used, whenever available, to estimate the buildout service population of proposed projects. Project analyses prepared consistent with the Efficiency Threshold will need to be reviewed and verified by the City and would be subject to City staff approval.

All applicable, adopted statewide measures that would be implemented by 2020 may be included when estimating GHG emissions under the Efficiency Threshold. Applicants are encouraged to coordinate with the City prior to conducting the analysis to ensure that applicable statewide measures are included and to ensure that the emissions reductions levels from statewide measures are appropriate for the subject project.

AB 32 requires the state to reduce 2020 GHG emissions to 1990 levels. Therefore, the 1990 emissions level divided by the projected 2020 population and employment represents the

statewide efficiency level. Land use related portions of the state 1990 emissions inventory were isolated from other sources for this analysis. The statewide inventory in 1990 for land use related emissions is approximately 264 MMT CO<sub>2</sub>e. Using this emissions level and 2020 forecasted population and employment, this equates to 4.46 CO<sub>2</sub>e emissions per resident + employee (service population) as shown in Table 5.

**Table 5  
Greenhouse Gas Efficiency Threshold**

<b>Scoping Plan Measure</b>	<b>Emission Reductions (MMT CO<sub>2</sub>e/yr.)</b>
California 2020 Emissions Target (MMT CO <sub>2</sub> e)	264.1
California 2020 Population	40,643,643
California 2020 Employment	18,511,200
<b>Project Level Efficiency Threshold Allowable GHG Emissions per Service Population (MT CO<sub>2</sub>e/SP/Year)</b>	4.46

Notes: MMT = Million metric tons; CO<sub>2</sub>e = Carbon dioxide equivalent; MT = Metric tons; SP = Service Population  
 Source: California Department of Finance, Report P-1: Summary Population Projections by Race/Ethnicity and by Major Age Groups (dated January 31, 2013). Available at: <http://www.dof.ca.gov/research/demographic/reports/projections/P-1/>  
 California Employment Development Department Labor Market Information Division Industry Employment Projections (dated May 23, 2012).

This Efficiency Threshold accommodates larger, GHG-efficient projects that otherwise exceed the Bright-Line Threshold. To calculate the efficiency of an individual project for comparison to the efficiency threshold, annual CO<sub>2</sub>e emissions for a project must be estimated in MT CO<sub>2</sub>e/yr.; this value is then divided by the project’s service population (population + employment).

### 3.2.3 Land Use Projects Performance Threshold

*A proposed project would have a cumulatively considerable contribution to climate change impacts if it would result in a net increase in GHG emissions and if the project, with mitigation, does not achieve at least a 16 percent total reduction in GHG emissions.*

Under the Performance Threshold, unmitigated GHG emissions attributable to the project at full buildout in 2020 would be compared to GHG emissions with mitigation. This case could also be applied to projects with and without GHG reduction measures. Unmitigated GHG emissions represent the proposed project as described in the development application at the time of initial submission, in compliance with applicable standards and regulations the project would need to comply with under the CEQA baseline conditions. If, compared to the unmitigated project, proposed mitigation would reduce GHG emissions by at least 16 percent; this level of mitigation would represent a fair share of the requisite reductions to achieve AB 32 targets. This is because the 2020 statewide “business as usual” emissions would need to be reduced by approximately 16 percent to get to 1990 levels, according to analysis provided by ARB.<sup>18</sup> This level of mitigation

<sup>18</sup> ARB has updated 2020 estimates of GHG emissions to account for new estimates for future fuel and energy demand, the effects of the recent economic recession, and other factors. California Air Resources Board. 2010.



would represent the project's fair share of requisite state level reductions to achieve the AB 32 emissions reduction target and would be considered adequate to avoid a cumulatively considerable contribution to the significant cumulative impact of climate change. The City may update the Performance Threshold depending on changes in the law, scientific discovery, or new data.

Early coordination with the City is advisable for applicants that wish to use the Performance Threshold to ensure that mitigation levels toward the 16 percent target are appropriately estimated. Mitigation to achieve the 16 percent requirement cannot include a reduction in the project size or scale. Mitigation identified toward this 16 percent target cannot include the effects of the Pavley I clean car standards or the 20 percent Renewable Portfolio Standard because these programs are already included in the calculations that support the 16 percent mitigation requirement. Other statewide measures, however, can be included without risk of double counting. Renewable Portfolio Standards beyond 20 percent can be included toward the minimum 16 percent mitigation requirement. The Low Carbon Fuel Standard can be included as a part of the 16 percent mitigation requirement. Since some GHG emissions models build in different statewide measures, it is important to coordinate with City staff to ensure that the correct approach is being used to estimate the effects of mitigation, particularly since new statewide measures will be established over time and may be included in updates to GHG emissions models. Project analyses prepared consistent with the Performance Threshold will need to be reviewed and verified by the City and would be subject to City staff approval.

Mitigation for land use and transportation reduction measures can be included for the Performance Threshold. In order to estimate the effect of such measures, applicants must estimate vehicle miles traveled (VMT) using City-approved trip rates for the subject land use and average trip lengths for the same land use specific to the area of the City where the project is proposed. These estimates, or those deemed by the City to be more appropriate or applicable, must be used for the unmitigated emissions scenario. VMT for the post-mitigation scenario is used to estimate the percentage mitigation that is appropriate for proposed land use and transportation reduction measures. This should be based on a transportation study that is relevant to the subject project and requires City staff approval.

### 3.2.4 Stationary Source Threshold

***A proposed project would have a cumulatively considerable contribution to climate change impacts if it would result in a net increase in GHG emissions at a level exceeding 10,000 metric tons of CO<sub>2</sub>e per year.***

The City's significance threshold for stationary source GHG emissions uses the state's GHG emission reduction goals as its basis. To avoid hindering attainment of these goals, new or

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Greenhouse Gas Inventory - 2020 Emissions Forecast. Available:  
<http://www.arb.ca.gov/cc/inventory/data/forecast.htm>. Accessed December 2012.

modified stationary source projects above the threshold will need to be analyzed under CEQA and mitigated to the maximum extent feasible. The proposed level for requiring that analysis and potential mitigation is based on capturing at least 90 percent of the GHG emissions from all new or modified stationary source projects. This means at least 90 percent of total emissions from all new or modified stationary source projects would be subject to a CEQA analysis, including a negative declaration, a mitigated negative declaration, or an environmental impact report, which includes analyzing feasible alternatives and imposing feasible mitigation measures.

A 90 percent minimum emission capture rate results in an emission threshold low enough to capture a substantial portion of future stationary source projects that will be constructed to accommodate future population and economic growth, yet high enough to exclude small projects that will in aggregate contribute a relatively small portion of the cumulative statewide GHG emissions. These small sources are already subject to Best Available Control Technology requirements for other pollutants and are more likely to be single-permit facilities, which limit the opportunities readily available to reduce GHG emissions from other parts of their facility.

A stationary source is one with an identified emission point or points, often associated with industrial processes. Stationary sources can include cogeneration facilities, boilers, flares, heaters, refineries, and other types of facilities associated with industrial processes. Single facilities can have many individual emission points. Many of these types of facilities would require a permit from the San Diego Air Pollution Control District (SDAPCD). The permit issued by SDAPCD would normally include certain permit conditions.

For San Diego County, local stationary sources of emissions represent a relatively small portion of the total emissions profile. Local agencies are not normally responsible for permitting stationary source projects. Nonetheless, the City is providing some clarity and guidance for a range of project types, including industrial/stationary source emissions. For projects that have a direct stationary source component in addition to other sources of emissions, the stationary source component must be analyzed separately using guidance provided in this section. Non-stationary sources of emissions must be analyzed using other type-specific thresholds.

The County of San Diego developed a region-wide stationary source threshold as part of their *Guidelines for Determining Significance for Climate Change*.<sup>19</sup> To support the guidelines, the County collected data from SDAPCD and analyzed the GHG emissions associated with permitted stationary source projects of different types and representing a range of industries. Data includes actual use of permitted sources, as opposed to the theoretical level of use that may be allowed under the subject permit. Of the 925 permits where the permitted facility reported use, 11 percent have emissions levels above 900 MT CO<sub>2</sub>e/yr, 3 percent have emissions levels above 10,000 MT CO<sub>2</sub>e/yr, and 2 percent have emissions levels above 25,000 MT CO<sub>2</sub>e/yr. Based on information

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<sup>19</sup> County of San Diego. 2012. *Draft Guidelines for Determining Significance – Climate Change*. Available: [http://www.sdcounty.ca.gov/pds/advance/Draft\\_Guidelines\\_for\\_Determining\\_Significance\\_Climate\\_Change.pdf](http://www.sdcounty.ca.gov/pds/advance/Draft_Guidelines_for_Determining_Significance_Climate_Change.pdf). Accessed December 2012. As of the time of this publication, the County has not adopted its stationary source threshold.

collected from SDAPCD on permitted sources, the significance threshold of 10,000 MT CO<sub>2</sub>e/yr. would capture more than 90 percent of GHG emissions (91.3 percent).

Air districts in California have identified 10,000 MT CO<sub>2</sub>e/yr for permitted, stationary source emissions (industrial projects, for example) as a level below which the project would not be expected to substantially conflict with existing legislation adopted to reduce statewide GHG emissions and would therefore represent a less-than-cumulatively considerable contribution to the significant cumulative impact of global climate change. Use of this emissions level is explained and justified in documents developed by the Bay Area Air Quality Management District (BAAQMD), the South Coast Air Quality Management District (SCAQMD), and the San Luis Obispo County Air Pollution Control District (SLOAPCD).<sup>20,21,22,23</sup> The use of the County's stationary source threshold provides consistency relative to thresholds adopted for use in other parts of the state.

The County set its stationary source threshold at a level that would require most new development emission sources to analyze and quantify direct stationary source GHG emissions and incorporate feasible mitigation in order to reduce such emissions. The availability and effectiveness of mitigation is highly variable for stationary sources, just as the level of emissions associated with stationary sources is highly variable. What constitutes "feasible" mitigation for the purposes of CEQA would be subject to a case-by-case analysis. Feasible mitigation will likely change over time as new technologies, materials, and methods become available to address GHG emissions for stationary sources.

Based on these findings, the Stationary Source Threshold is 10,000 MT CO<sub>2</sub>e per year, which captures at least 90 percent of the GHG emissions from new stationary sources in the city of San Diego. This threshold is appropriate for projects in the city since it was derived by the County using data for the entire region. Region-wide data is more relevant to this threshold because of the relatively small number of stationary source projects expected within a single jurisdiction. The Stationary Source Threshold is consistent with precedence established throughout the state and would focus on the larger, most significant GHG sources to realize feasible reductions.

GHG emissions from stationary sources must be estimated separately from other operational sources of emissions. For projects that would include a stationary source of emissions, the Stationary Source Threshold must be used for assessing significance. Project analysis must also include analysis of construction emissions and operational emissions associated with mobile

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<sup>20</sup> Bay Area Air Quality Management District (BAAQMD). 2009. Revised Draft Options and Justification Report California Environmental Quality Act Thresholds of Significance. Available: <http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/Revised%20Draft%20CEQA%20Thresholds%20Justification%20Report%20Oct%202009.ashx?la=en>. Accessed December 2012.

<sup>21</sup> California Air Pollution Control Officers Association (CAPCOA). 2008 (January). CEQA & Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act.

<sup>22</sup> SCAQMD directs that CEQA analysis of industrial projects should include construction emissions amortized over a 30-year time period when assessing impacts relative to the 10,000 MT CO<sub>2</sub>e/yr threshold.

<sup>23</sup> San Luis Obispo County Air Pollution Control District (SLOAPCD). 2012 (March 28<sup>th</sup>). Greenhouse Gas Thresholds and Supporting Evidence.

sources, electricity use, water delivery, and other non-stationary sources associated with the facility. Non-stationary sources of emissions must be analyzed using one of the three significance thresholds, i.e., Bright Line Threshold, Efficiency Threshold, or Performance Threshold.<sup>24</sup>

If the stationary source emissions estimate would exceed the significance criteria, best available control technology (BACT) or best available control measures (BACM) shall be used to reduce emissions.

## 4. Application of GHG Significance Thresholds

CEQA lead agencies use thresholds of significance to differentiate between significant and less than significant adverse physical impacts on the environment. A threshold of significance is “*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.*”<sup>25</sup>

The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data, as stated in the CEQA Guidelines. Lead agencies have substantial discretion in analytical approaches and assessing significance under CEQA.<sup>26</sup>

The focus of the significance thresholds in this document is on net new emissions. The continued operation of existing facilities, buildings, neighborhoods, communities, and cities would not typically represent “projects” subject to review under CEQA. The approach summarized in this document acknowledges that existing development is responsible for a portion of the GHG emission reductions needed to achieve AB 32 targets. Measures to reduce GHG emissions in existing development (as well as new development) are often considered as a part of local GHG reduction plans (also called climate action plans). The City has also developed measures to reduce emissions from existing development as a part of the Draft CMAP.

The GHG Thresholds do not limit the City’s use of streamlining or exemptions, or any other provision under CEQA or the CEQA Guidelines. If a proposed project is determined to be exempt from CEQA review for any reason, the GHG Thresholds do not apply.

If the project is determined to be subject to CEQA review, the next step is to compare the project to a list of screening criteria. The City developed screening criteria for a range of project types

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<sup>24</sup> An example of this type of project may include a commercial development that proposes the use of diesel generators requiring permits from San Diego Air Pollution Control District. Project applicants are encouraged to coordinate with City staff early in the review process. City staff will review such projects and determine the appropriate analysis approach on a case-by-case basis.

<sup>25</sup> CEQA Guidelines Section 15064.7.

<sup>26</sup> CEQA Guidelines Section 15064(b)

and sizes to identify smaller projects that would have less than cumulatively considerable GHG emissions effects (Table 6).

**Table 6  
GHG Emissions Screening Criteria**

<b>Land Use Type</b>	<b>Screening Level (Size)</b>
Single Family Housing	110 dwelling units
Low Rise Apartments	155 dwelling units
Mid Rise Apartments	174 dwelling units
High Rise Apartments	184 dwelling units
Condominiums/Townhomes	154 dwelling units
Congregate Care (Assisted Living Facility)	270 dwelling units
Elementary/Middle/High School	150,000 square feet
University/College (4 years)	600 students
Library	100,000 square feet
Restaurant	20,000 square feet
Hotel	120 rooms
Free Standing Retail Store	40,000 square feet
Shopping Center	43,000 square feet
Convenience Market (24 hour)	2,600 square feet
Office Building	115,000 square feet
Office Park	105,000 square feet
Hospital	70,000 square feet
Warehouse	160,000 square feet
Light Industrial Facility	84,000 square feet

If a proposed project is the same type and equal to, or smaller than the project size listed, it is presumed that the construction and operational GHG emissions for that project would not exceed 2,500 MT CO<sub>2</sub>e per year, and there would be a less-than-cumulatively considerable impact. This assumes that the project does not involve unusually extensive construction and does not involve operational characteristics that would generate unusually high GHG emissions. For example, the City’s screening approach is not designed to address projects with high global warming potential emissions. If a project does involve extensive construction and operational characteristics with high GHG emissions, the project applicant shall consult with the City to select the appropriate threshold and prepare a project-specific analysis to assess impacts. The City applied conservative assumptions in developing the screening criteria to ensure that projects of the types and sizes listed would, in fact, produce GHG emissions of less than 2,500 MT CO<sub>2</sub>e per year.

If a project does not meet the screening criteria in Table 6, a project-specific GHG analysis is required. The City has provided significance thresholds that are specifically designed to assess the significance of different types of projects. This analysis must include GHG emissions that would be generated by project construction and operations. The analysis shall clearly identify the input parameters, assumptions, and computer model(s) and/or off-model calculation methodologies used to estimate GHG emissions.

Land use development projects typically include the following sources of GHG emissions:

- Construction-related emissions;
- Operational emissions associated with: mobile sources; on-site fuel combustion for space and water heating; landscape maintenance equipment; fireplaces/stoves; off-site emissions at utility providers associated with the project's electricity and water and wastewater demands; and solid waste generation and disposal.

The analysis should account for each relevant source of GHG emissions, but should not include "life cycle" emissions embodied in manufactured materials, for example, that were manufactured to meet general market demand, regardless of whether any particular project proceeds.<sup>27</sup> The approach for construction and operational emissions is described below.

## 4.1 Construction Emissions

Construction-related exhaust emissions would be generated by sources, such as off-road heavy-duty diesel- and gasoline-powered equipment, trucks hauling materials to the site, and worker commute trips. Methodologies for quantifying construction GHGs include using the most recent version of the Urban Land Use Emissions (URBEMIS) model (currently 9.2.4) or the California Emission Estimator Model (CalEEMod) for proposed land use development projects. Tools and models used to estimate GHG emissions are updated over time and new tools become available. Emissions models or off-model calculation methods may be used.

It should be noted that URBEMIS provides the modeled emissions output in tons. If URBEMIS is used, conversion of the URBEMIS output to metric tons by multiplying by 0.91 is necessary. Emissions must be estimated for the year(s) in which construction is intended to occur. URBEMIS does not generate emissions estimates for CH<sub>4</sub> or N<sub>2</sub>O, so if URBEMIS is used, the output must be supplemented in order to provide estimates of other GHGs.

For linear construction projects, such as construction of a new roadway, road widening, roadway overpass, levees, or pipelines, one recommended model is the most recent version of the Roadway Construction Emissions Model, which is maintained by and available from the Sacramento Metropolitan Air Quality Management District (SMAQMD). Please refer to SMAQMD's web site for more information: <http://www.airquality.org/ceqa/index.shtml>. The Roadway Construction Emissions Model is a spreadsheet-based model that uses basic project information (e.g., total construction months, project type, total project area, equipment types and

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<sup>27</sup> In order to clarify whether lifecycle emissions should be a part of CEQA analyses, 2010 amendments to the CEQA Guidelines removed the term "lifecycle," since "the term could refer to emissions beyond those that could be considered indirect effects of a project as that term is defined in section 15358 of the State CEQA Guidelines." California Natural Resources Agency. 2009 (December). *Final Statement of Reasons for Regulatory Action. Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97.*

numbers) to estimate a construction schedule and quantify GHG emissions attributable to construction equipment, haul trucks, and worker commute trips associated with linear construction projects.

Construction-related emissions can also be estimated using emission factors from the OFFROAD model developed by ARB or emissions factors from the United States Environmental Protection Agency's (EPA) AP-42, Compilation of Air Pollutant Emission Factors, as appropriate. Please refer to EPA's website for more information: <http://www.epa.gov/ttnchie1/ap42/>.

The analysis shall disclose the model outputs for construction-related GHG emissions, and treat these emissions as a net increase in total GHG emissions. For consistency, the project's total construction-related GHG emissions shall be reported in units of metric tons CO<sub>2</sub>e in the technical report and in the CEQA document.

For use with the Efficiency and Performance Thresholds, construction emissions should be amortized over the expected (long-term) operational life of a project, which can conservatively be estimated at 20 years, unless evidence is provided demonstrating a longer or shorter project life. Average building life could change over time, with changes in building materials and construction techniques.

For use with the Bright Line Threshold, construction emissions should be analyzed and reported, but not included as a part of the total project emissions. The Bright Line Threshold was set at a level that would account for both operational and construction emissions attributable to new development projects developed in the City through 2020.

For projects that propose stationary sources, the Stationary Source Threshold shall be used. This threshold is used to evaluate operational stationary source emissions. Construction emissions are to be analyzed and reported separately.

## 4.2 Operational Emissions

Operational GHG emissions may be both direct and indirect emissions and would be generated by area, mobile, and stationary sources. Direct area-source emissions are associated with activities, such as combustion of natural gas and landscaping fuels, as well as wood-burning or pellet stoves. Direct on- and off-site mobile-source emissions of GHGs would include project-generated vehicle trips for residents, employees, and visitors. Water and wastewater generation would result in direct and indirect, off-site emissions of GHGs. Solid waste emissions result from disposal and decomposition of waste. Indirect emissions sources include stationary source emissions from electricity generation at off-site utility providers that would supply power to the proposed project site.

Direct emissions from area and mobile sources associated with the operation of land use development projects must be estimated using a City-approved model or City-approved

calculation methodologies. For land use projects, URBEMIS and CalEEMod both quantify emissions from area sources (e.g., natural gas fuel combustion for space and water heating, wood stoves and fireplace combustion, landscape maintenance equipment) and operational-related emissions (mobile sources). Where default consumption or emission factors are outdated (e.g., natural gas emissions in URBEMIS), project emissions are to be estimated using current and appropriate data provided by the CEC and/or ARB.

URBEMIS and CalEEMod use mobile source emission factors and Institute of Transportation Engineers (ITE) trip generation rates to calculate GHG emissions and total vehicle trips. URBEMIS does not generate emissions estimates for CH<sub>4</sub> or N<sub>2</sub>O and if URBEMIS is used, the output must be supplemented in order to provide estimates of other GHGs.

The default trip generation and trip length information included in these models should be adjusted to reflect project-specific conditions. The determination of VMT used in deriving GHG estimates must be explained in the analysis. VMT estimates account for the relationships between project land uses and surrounding land uses, as well as the transportation network. VMT estimates should reflect aspects of the project's location, density, design, access to non-automobile transportation facilities, travel behavior of inhabitants, and other relevant characteristics that affect travel demand and mode choice.

The analysis report must incorporate and substantiate the adjustments to a project's emission totals to reflect reductions from adopted state regulations, such as Pavley clean car standards and the Low Carbon Fuel Standard so that it is clear that the adjustments are appropriate. URBEMIS does not currently include these state regulations into the mobile source emissions factors. Adjustments using methodology consistent with ARB, including a post-processor model, must be incorporated into the results. CalEEMod currently includes these regulations in the emission factors, and no further adjustment is necessary when using that model.<sup>28</sup> If the project is using the Performance Threshold, mitigation identified toward the 16 percent target cannot include the effects of the Pavley I clean car standard or the 20 percent Renewable Portfolio Standard. Renewable Portfolio Standards beyond 20 percent can be included toward the minimum 16 percent mitigation requirement. For the other thresholds, all applicable and adopted statewide measures can be included in the GHG emissions estimates.

The analysis should report incremental increases in energy production, water consumption, wastewater generation, and solid waste disposal associated with operational-related activities to estimate the project's total GHG emissions.

URBEMIS does not provide modeled emissions from indirect sources of emissions, such as those emissions that would occur off-site at utility providers associated with the project's energy, water,

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<sup>28</sup> If the Performance Threshold is used, CalEEMod output will need to be adjusted to remove LCFS from pre-mitigated emissions in order to calculate the percentage reduction associated with LCFS in the post-mitigation scenario.



and waste requirements. Therefore, these estimates must be developed using methodology consistent with ARB's Local Government Operations Protocol (LGOP) if URBEMIS is used. CalEEMod includes estimates of indirect emissions. Default values can be used if detailed information about the project is not known at the time of analysis, but the estimate may require updating when project details are known.

The analysis should include an estimate of the electricity consumption for the project in 2020. If project-specific information is not available, data from the CEC for electrical demand per household or per square foot of commercial/light industrial space may be used to estimate the project's electricity consumption. Utility-specific emission factors from the LGOP will be used to quantify associated GHG emissions.

Project-specific water demand and wastewater generation is the best source to use to estimate GHG emissions associated with these sources. Water consumption data based on California Green Building Standards Code may be used if project-specific information is not available. However, the City recommends that the analyst obtain project-specific water demand, whenever feasible. CEC routinely reports data on water-related energy use in California, which accounts for the electricity consumption associated with the conveyance, storage, treatment, distribution, wastewater collection, treatment, and discharge sectors of the water use cycle. Once the level of electricity consumption related to water use is estimated, the emission factors from the LGOP will be used to quantify associated GHG emissions.

Solid waste generated by the proposed project would also contribute to GHG emissions. The analyst should obtain project-specific estimates of solid waste generation and disposal. Waste disposal rates by land use and overall composition of municipal solid waste in California can be based on information available from CalRecycle (<http://www.calrecycle.ca.gov/>). Emission factors from the LGOP should be used to quantify associated GHG emissions.<sup>29</sup> Project-specific information should be used for trip lengths to the relevant landfill, as well as moisture content.

### 4.3 Impact Assessment and Mitigation

A project that may have a significant impact according to the applicable GHG threshold must include project design features and/or adopt mitigation to reduce or avoid impacts to below that threshold. The City does not have a standard list of mitigation that would be required for projects with potentially significant GHG emissions impacts. The type, character, and level of mitigation will depend on the project type, size, location, context, and other factors. The availability of mitigation measures changes over time, as well, with new technologies, building materials, building and design practices, and other changes.

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<sup>29</sup> California Air Resources Board. 2010. Local Government Operations Protocol for the Quantification and Reporting of Greenhouse Gas Emissions Inventories. Version 1.1. Available: [http://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo\\_protocol\\_v1\\_1\\_2010-05-03.pdf](http://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf). Accessed December 2012.

The emissions reduction benefit of mitigation must be quantified in the analysis. To estimate the effectiveness of mitigation, the City recommends using guidance in the California Air Pollution Control Officers Association (CAPCOA) document, “Mitigation Strategies for GHG.”<sup>30</sup> If the effectiveness of mitigation cannot be quantified, specific performance standards may be established for mitigation measures. Once all feasible mitigation is identified, the residual significance should be assessed and reported.

Many local, regional, and state agencies have produced lists of feasible mitigation strategies that can be used to reduce GHG emissions. These lists of mitigation strategies can be consulted when developing feasible mitigation for projects within the City, including, but not limited to:

- CAPCOA Guide to Quantifying Greenhouse Gas Mitigation Measures (2010)
- CAPCOA White Paper CEQA & Climate Change (2008)
- Attorney General of the State of California Guidance to the California Environmental Quality Act – Addressing Global Warming Impacts at the Local Agency Level (2008)
- Governor’s Office of Planning and Research Technical Advisory – CEQA and Climate Change (2008)

Mitigation measures and design features can cover various GHG emissions sectors and measure types, including:

- Land use, urban design, transportation measures
- Energy efficiency and conservation
- Water conservation
- Solid waste
- Construction

Some project features that reduce GHG emissions are built into the location, design, and context of the project, while other mitigation measures may require ongoing monitoring as set forth in the Mitigation, Monitoring and Reporting Program (MMRP). Projects are encouraged to incorporate relevant measures from the City of San Diego Draft CMAP and, if necessary, identify measures tailored to address project-specific emissions sources.

The GHG Thresholds are intended to be used during the City’s review process for private and public discretionary projects. The guidance provided in this document does not supersede the City’s discretionary authority. Project analyses prepared consistent with this guidance document will need to be reviewed and verified by the City and would be subject to City staff approval.

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<sup>30</sup> California Air Pollution Control Officers Association (CAPCOA). 2010. Quantifying Greenhouse Gas Mitigation Measures. A Resource for Local Government to Assess Emission Reduction from Greenhouse Gas Mitigation Measures. Available: <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf> Accessed December 2012.