

City of Escondido

Greenhouse Gas Emissions

Adopted CEQA Thresholds and Screening Tables

Prepared for:



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Note: The Screening Tables may be administratively amended

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Introduction

The Escondido Climate Action Plan (E-CAP) includes reducing 26,807 Metric Tons of Carbon Dioxide Equivalents (MT CO₂e) per year from new development by 2020 as compared to the 2020 unmitigated conditions.

Mitigation of GHG emissions impacts through the Development Review Process (DRP) provides one of the most substantial reduction strategies for reducing community-wide emissions associated with new development. The DRP procedures for evaluating GHG impacts and determining significance for CEQA purposes will be streamlined by (1) applying an emissions level that is determined to be less than significant for small projects, and (2) utilizing Screening Tables to mitigate project GHG emissions that exceed the threshold level. Projects will have the option of preparing a project-specific technical analysis to quantify and mitigate GHG emissions. A threshold level of 2,500 MT CO₂e per year will be used to identify projects that require the use of Screening Tables or a project-specific technical analysis to quantify and mitigate project emissions. A flow chart for the E-CAP development review process is provided in Appendix A. A list of sample project sizes by land use category that would typically emit less than 2,500 MT CO₂e per year is provided in Appendix B. Appendix C provides the rationale used in determining the 2,500 MT CO₂e threshold level, and the methodology for the development and application of the screening table is found in Appendix D.

The California Environmental Quality Act (“CEQA”) requires assessment of the environmental impacts of proposed projects including the impacts of greenhouse gas (GHG) emissions. The purpose of this document is to provide guidance on how to analyze GHG emissions and determine the significance of those emissions during CEQA review of proposed development projects within the City of Escondido. The analysis, methodology, and significance determination (thresholds) are based upon the E-CAP, the GHG emission inventories within the E-CAP, and the GHG reduction measures that reduce emissions to the AB-32 compliant reduction target of the E-CAP. The Screening Tables can be used by the City of Escondido Community Development Department for review of development projects in order to ensure that the specific reduction strategies in the E-CAP are implemented as part of the CEQA process for development projects. The Screening Tables provide a menu of options that both—ensures implementation of the reduction strategies and flexibility on how development projects will implement the reduction strategies to achieve an overall reduction of emissions, consistent with the reduction target of the E-CAP.

California Environmental Quality Act

CEQA MANDATES FOR ANALYSIS OF IMPACTS

CEQA requires that Lead Agencies inform decision makers and the public regarding the following: potential significant environmental effects of proposed projects; feasible ways that environmental damage can be avoided or reduced through the use of feasible mitigation measures and/or project alternatives; and the reasons why the Lead Agency approved a project if significant environmental effects are involved (CEQA Guidelines §15002). CEQA also requires Lead Agencies to evaluate potential environmental effects based to the fullest extent possible on scientific and factual data (CEQA Guidelines §15064[b]). A determination of whether or not a particular environmental impact will be significant must be based on substantial evidence, which includes facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts (CEQA Guidelines §15064f[5]).

The recently amended CEQA Guidelines (CEQA Guidelines §15064.4[a] [b]) explicitly requires Lead Agencies to evaluate GHG emissions during CEQA review of potential environmental impacts generated by a proposed project. To assist in this effort, two questions were added to Appendix G of the CEQA Guidelines:

- Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

Finally, under the “rule of reason,” an EIR is required to evaluate impacts to the extent that is reasonably feasible ([CEQA Guideline § 15151; *San Francisco Ecology Center v. City and County of San Francisco* (1975) 48 Cal.App.3rd 584]). While CEQA does require Lead Agencies to make a good faith effort to disclose what they reasonably can, CEQA does not demand what is not realistically possible ([*Residents at Hawks Stadium Committee v. Board of Trustees* (1979) 89 Cal.App.3rd 274, 286]).

Greenhouse Gas Impact Determination

STATEWIDE OR REGIONAL THRESHOLDS OF SIGNIFICANCE

There are currently no published statewide thresholds of significance for measuring the impact of GHG emissions generated by a proposed project. CEQA Guidelines §15064.7 indicates only that, “each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects.” The County of San Diego has published draft thresholds that, when finalized, jurisdictions within the County can use if they do not have their own thresholds and GHG mitigation plans. However, the E-CAP for the City of Escondido addresses

cumulative GHG emissions, has a reduction target that reduces the cumulative GHG impacts to less than significant, has a set of reduction measures that achieves the reduction target and provides an implementation plan to implement the reduction measures. This document provides guidance in how to address GHG emissions in CEQA analysis and determine the significance of project generated GHG emissions.

QUANTITATIVE ANALYSIS RELATIVE TO THE ESCONDIDO CLIMATE ACTION PLAN

METHODOLOGY OVERVIEW

An individual project cannot generate enough GHG emissions to influence global climate change. The project participates in this potential impact by its incremental contribution combined with the cumulative increase of all other sources of GHGs, which when taken together may have a significant impact on global climate change. To address the State's requirement to reduce GHG emissions, the City prepared the E-CAP with the target of reducing GHG emissions within Escondido by 15 percent below existing levels by 2020. The City's target is consistent with AB 32 and ensures that Escondido is providing GHG reductions locally that will complement statewide efforts.

Because the City's E-CAP addresses GHG emissions reduction, is in concert with AB 32 and statewide efforts to address global climate change, and includes specific local requirements that will substantially lessen the cumulative problem, compliance with the E-CAP fulfills the description of mitigation found in CEQA Guidelines §15130(a)(3) and §15183.5.

Because GHG emissions are only important in the context of cumulative emissions, the focus of the analysis is on answering the question of whether incremental contributions of GHGs are a cumulatively considerable contribution to climate change impacts. The E-CAP includes a set of mitigation measures designed to substantially lessen cumulative impacts associated with GHG emissions as described in CEQA Guidelines §15130(a)(3), in determining if a project's effects will result in significant impacts. The E-CAP has the following components that fulfill cumulative mitigation for GHG emissions:

1. The E-CAP provides a community-wide GHG emissions reduction target that will substantially lessen the cumulative impact;
2. The E-CAP provides measures that new development projects must follow to meet the City's reduction target and substantially lessen the cumulative impact;
3. The E-CAP provides a set of GHG emission inventories that provides quantitative facts and analysis of how the measures within the E-CAP meet the reduction target that substantially lessens the cumulative impact:
4. The E-CAP provides an implementation, monitoring and update program to insure that the reduction target is met.

CEQA THRESHOLDS AND SCREENING TABLES

The E-CAP satisfies the first condition by adopting a target of reducing GHG emissions down to 15 percent below existing levels within the City of Escondido by 2020. This reduction target is compliant with AB 32; the AB 32 Climate Change Scoping Plan states: “In recognition of the critical role local governments will play in the successful implementation of AB 32, ARB recommended a greenhouse gas reduction goal for local governments of 15 percent below today’s levels by 2020 to ensure that their municipal and community-wide emissions match the State’s reduction target” (Scoping Plan page ES-5, CARB, December 2008). In this way, the City is teaming with the State’s efforts to reduce GHG emissions and substantially lessen the cumulative problem.

The E-CAP satisfies the second condition through the implementation of the reduction measures for new development. This document supplies the specific criteria that new development must follow to ensure that the reduction measures associated with new development are implemented and the reduction target is met.

The E-CAP satisfies the third criteria by providing a set of community-wide GHG emissions inventories for existing conditions, for future 2020 GHG emissions that are anticipated without the reduction measures (Business As Usual; BAU), and reduced levels of 2020 GHG emissions which demonstrates how the implementation of reduction measures achieves the reduction target (15 percent below existing GHG emission levels by 2020). These community-wide GHG emission inventories are found in the appendices of the E-CAP.

METHODOLOGY FOR THE CALCULATION OF GHG EMISSIONS

Analysis of development projects can either be done through emissions calculations or by using the screening tables beginning on page 6.

Total GHG emissions are the sum of emissions from both direct and indirect sources. Direct sources include mobile sources such as construction equipment, motor vehicles, landscape equipment; and stationary sources such as cooling and heating equipment. Indirect sources are comprised of electrical, and potable water use, and the generation of solid waste, and waste water.

Direct GHG emissions from mobile and stationary sources are determined as the sum of the annual GHG emissions from construction equipment, motor vehicles, landscape equipment, and heating and cooling equipment.

Indirect sources are determined based on source as follows. Electrical usage is reported as annual emissions from electrical usage. Potable water usage is reported as the annual emissions from electricity used for potable water treatment and transportation. Solid waste is reported as the sum of annual emissions from solid waste disposal treatment, transportation, and fugitive emissions of methane at the solid waste facilities. Wastewater usage is reported as the annual emissions from wastewater transport and treatment.

Analysis of development projects not using the screening tables should use the emission factors found in the latest version of the California Climate Action Registry (CCAR) General Reporting Protocol. Quantification of emissions from electricity used for potable water treatment and transportation as well as wastewater transport and treatment can be found in the California Energy Commission (CEC) document titled “Refining Estimates of Water-Related Energy Use in California (CEC December 2006). Where a project does not use the screening tables, the project is required to quantify its unmitigated emissions and provide a 20.6 percent reduction of those emissions in order to be considered less than significant. The methodology for estimating project-level mitigated and unmitigated emissions is provided in Appendix E.

2,500 MT CO₂e Emission Level

The City determined the size of development that is too small to be able to provide the level of GHG emission reductions expected from the Screening Tables or alternate emission analysis method (described in Appendix E) based upon the 90th percentile capture rate concept. To do this the City determined the GHG emission amount allowed by a project such that 90 percent of the emissions on average from all projects would exceed that level and be “captured” by the Screening Table or alternate emission analysis method.

In determining this level of emissions the City used an analysis completed by the County of San Diego that reviewed projects within San Diego County (both incorporated and unincorporated areas) and used a 90th percentile capture rate of emissions. Note that the County of San Diego’s database of projects used in the San Diego County analysis is a countywide database and includes emissions within Escondido. This method was considered relevant because the database closely reflects projects within the City of Escondido in determining threshold levels of emissions.

The analysis of projects within the County of San Diego sample population combined commercial, residential, and light industrial projects. Also note that the sample of projects did not include industrial processes (i.e. oil refineries, heavy manufacturing, electric generating stations, mining operations, etc.). In addition, the analysis of projects used to derive the 2,500 MT CO₂e per year value did not include mixed use projects. Because mixed use projects tend to provide energy and water efficiencies due to shared infrastructure and reduced vehicle trips due to the proximity of uses, mixed use projects are allowed to use the 2,500 MT CO₂e per year threshold and screening tables. By contrast, because heavy industrial uses that include industrial processes tend to have large, unique emission sources within the industrial process, heavy industrial projects need to have a customized analysis of emissions using the alternative emissions analysis method.

The 2,500 MT CO₂e per year value is used in defining small projects that are considered less than significant and do not need to use the Screening Tables or alternative GHG mitigation analysis described below.

Screening Threshold Tables

The purpose of this Screening Table is to provide guidance in measuring the reduction of greenhouse gas emissions attributable to certain design and construction measures incorporated into development projects. The analysis, methodology, and significance determination (thresholds) are based upon the E-CAP, which includes GHG emission inventories, a year 2020 emission reduction target, the goals and policies to reach the target, together with the Programmatic EIR prepared for the E-CAP. Note that many of the design features within the Screening Table menu match features within the United States Green Building Council Leadership in Energy and Environmental Design (LEED) for new construction and major renovations. Those buildings that have LEED Certification credits can convert the credits into points within the Screening Tables by determining the GHG reductions afforded the LEED design and converting the GHG reductions into points using the Screening Table methodology.

Some measures require further analysis to determine the appropriate point value attributed to that feature. For those measures, “To Be Determined” or TBD is listed in the Assigned Point Value column. The point value would be determined based upon engineering and design criteria of the project and documentation would be required to justify the assigned point value. The Screening Table methodology for the development and application of the point values is set forth in Appendix D of this document.

Instructions for Residential, Commercial, or Industrial Projects

The Screening Table assigns points for each option incorporated into a project as mitigation or a project design feature (collectively referred to as “feature”). The point values correspond to the minimum emissions reduction expected from each feature. The menu of features allows maximum flexibility and options for how development projects can implement the GHG reduction measures. Projects that garner at least 100 points will be consistent with the reduction quantities anticipated in the City’s E-CAP. As such, those projects that garner a total of 100 points or greater would not require quantification of project specific GHG emissions. Consistent with CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.

Instructions for Mixed Use Projects

Mixed use projects provide additional opportunities to reduce emissions by combining complimentary land uses in a manner that can reduce vehicle trips. Mixed use projects also have the potential to complement energy efficient infrastructure in a way that reduces emissions. For mixed use projects, fill out both Screening Table 1 and Table 2, but proportion the points identical to the proportioning of the mix of uses. As an example, a mixed use project that includes 50% commercial uses and 50% residential uses (based upon the total square footage of the project) will show ½ point for each assigned point value in Table 1 and Table 2. Add the points from both tables. Mixed use projects that garner at least 100 points will be consistent with the reduction quantities in the City’s E-CAP and are considered to have less than significant impacts per CEQA associated with GHG emissions.

Those projects that do not garnish 100 points using the screening tables will need to provide additional analysis to determine the significance of GHG emissions. Nothing in this guidance shall be construed as limiting the City’s authority to adopt a statement of overriding considerations for projects with significant and unavoidable GHG emission impacts per CEQA. The following tables provides a menu of performance standards/options related to GHG mitigation measures and design features that can be used to demonstrate consistency with the reduction measures and GHG reduction quantities in the E-CAP.

Table 1: Screening Table for Implementation of GHG Reduction Measures for Residential Development

Feature	Description	Assigned Point Values	Project Points
Reduction Measure R2 E1: Energy Efficiency for New Residential			
Building Envelope			
Insulation	Title 24 standard (required)	0 points	
	Modestly Enhanced Insulation (5% > Title 24)	2 points	
	Enhanced Insulation (15%> Title 24)	6 points	
	Greatly Enhanced Insulation (20%> Title 24)	8 points	
Windows	Title 24 standard (required)	0 points	
	Modestly Enhanced Window Insulation (5% > Title 24)	2 points	
	Enhanced Window Insulation (15%> Title 24)	6 points	
	Greatly Enhanced Window Insulation (20%> Title 24)	8 points	
Doors	Title 24 standard (required)	0 points	
	Modestly Enhanced Insulation (5% > Title 24)	2 points	
	Enhanced Insulation (15%> Title 24)	6 points	
	Greatly Enhanced Insulation (20%> Title 24)	8 points	

CEQA THRESHOLDS AND SCREENING TABLES

Feature	Description	Assigned Point Values	Project Points
Air Infiltration	<p>Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage.</p> <p>Title 24 standard (required)</p> <p>Modest Building Envelope Leakage (5% > Title 24)</p> <p>Reduced Building Envelope Leakage (15%> Title 24)</p> <p>Minimum Building Envelope Leakage (20% > Title 24)</p>	<p>0 points</p> <p>2 points</p> <p>6 points</p> <p>8 points</p>	
Thermal Storage of Building	<p>Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls.</p> <p>Thermal storage designed to reduce heating/cooling by 5°F within the building</p> <p>Thermal storage to reduce heating/cooling by 10°F within the building</p> <p>Note: Engineering details must be provided to substantiate the efficiency of the thermal storage device.</p>	<p>5 points</p> <p>9 points</p>	
Building Envelope Performance Standard	<p>Alternatively, projects that have not been designed to a level of detail to know the specific attributes of the building envelope needed to utilize the points for the measures listed above can use this option instead in committing to one of the following performance standards:</p> <p>Modestly Enhanced building envelope (5% > Title 24)</p> <p>Enhanced building envelope (15%> Title 24)</p> <p>Greatly Enhanced building envelope (20%> Title 24)</p>	<p>8 points</p> <p>24 points</p> <p>32 points</p>	
Indoor Space Efficiencies			
Heating/Cooling Distribution System	<p>Title 24 standard (required)</p> <p>Modest Distribution Losses (5% > Title 24)</p> <p>Reduced Distribution Losses (15%> Title 24)</p> <p>Greatly Reduced Distribution Losses (15%> Title 24)</p>	<p>0 points</p> <p>2 points</p> <p>6 points</p> <p>8 points</p>	
Space Heating/Cooling Equipment	<p>Title 24 standard (required)</p> <p>Efficiency HVAC (5% > Title 24)</p> <p>High Efficiency HBAC (15%> Title 24)</p> <p>Very High Efficiency HBAC (20%> Title 24)</p>	<p>0 points</p> <p>2 points</p> <p>6 points</p> <p>8 points</p>	
Water Heaters	<p>Title 24 standard (required)</p> <p>Efficiency Water Heater (Energy Star conventional that is 5% > Title 24)</p> <p>High Efficiency Water Heater (Conventional water heater that is 15%> Title 24)</p> <p>High Efficiency Water Heater (Conventional water heater that is 20%> Title 24)</p> <p>Solar Water Heating System</p>	<p>0 points</p> <p>2 points</p> <p>6 points</p> <p>8 points</p> <p>11 points</p>	

CEQA THRESHOLDS AND SCREENING TABLES

Feature	Description	Assigned Point Values	Project Points
Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours.		
	All peripheral rooms within the living space have at least one window (required)	0 points	
	All rooms within the living space have daylight (through use of windows, solar tubes, skylights, etc.) such that each room has at least 800 lumens of light during a sunny day	2 points	
	All rooms daylighted to at least 1,000 lumens	4 points	
Artificial Lighting	Title 24 standard (required)	0 points	
	Efficient Lights (5% > Title 24)	2 points	
	High Efficiency Lights (LED, etc. 15%> Title 24)	6 points	
	Very High Efficiency Lights (LED, etc. 20%> Title 24)	8 points	
Appliances	Title 24 standard (required)	0 points	
	Efficient Appliances (5% > Title 24)	2 points	
	High Efficiency Energy Star Appliances (15%> Title 24)	6 points	
	Very High Efficiency Appliances (20%> Title 24)	8 points	
Indoor Space Performance Standard	Alternatively, projects that have not been designed to a level of detail to know the specific attributes of the interior design of the buildings needed to utilize the points for the features listed above can use this option instead in committing to one of the following performance standards:		
	Modestly Enhanced Interior and appliances (5% > Title 24)	12 points	
	Enhanced Interior and appliances (15%> Title 24)	32 points	
	Greatly Enhanced Interior and appliances (20%> Title 24)	44 points	
Miscellaneous Residential Building Efficiencies			
Building Placement	North/South alignment of building or other building placement such that the orientation of the buildings optimizes natural heating, cooling, and lighting.	3 point	
Independent Energy Efficiency Calculations	Provide point values based upon energy efficiency modeling of the project. Note that engineering data will be required documenting the energy efficiency and point values based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	
Other	This allows innovation by the applicant to provide design features that increases the energy efficiency of the project not provided in the table. Note that engineering data will be required documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	
Existing Residential Retrofits	The applicant may wish to provide energy efficiency retrofit projects to existing residential dwelling units to further the point value of their project. Retrofitting existing residential dwelling units within the City is a key reduction measure that is needed to reach the reduction goal. The potential for an applicant to take advantage of this program will be decided on a case by case basis and must have the approval of the Escondido Planning Department. The decision to allow applicants to ability to participate in this program will be evaluated based upon, but not limited to the following:	TBD	

CEQA THRESHOLDS AND SCREENING TABLES

Feature	Description	Assigned Point Values	Project Points
	<p>Will the energy efficiency retrofit project benefit low income or disadvantaged residents?</p> <p>Does the energy efficiency retrofit project fit within the overall assumptions in Reduction Measure R2 E3?</p> <p>Does the energy efficiency retrofit project provide co-benefits important to the City?</p> <p>Point value will be determined based upon engineering and design criteria of the energy efficiency retrofit project.</p>		
Reduction Measure R2 E2: New Home Renewable Energy			
Photovoltaic	<p>Solar Photovoltaic panels installed on individual homes or in collective neighborhood arrangements such that the total power provided augments:</p> <p>Solar Ready Homes (sturdy roof and electric hookups)</p> <p>10 percent of the power needs of the project</p> <p>20 percent of the power needs of the project</p> <p>30 percent of the power needs of the project</p> <p>40 percent of the power needs of the project</p> <p>50 percent of the power needs of the project</p> <p>60 percent of the power needs of the project</p> <p>70 percent of the power needs of the project</p> <p>80 percent of the power needs of the project</p> <p>90 percent of the power needs of the project</p> <p>100 percent of the power needs of the project</p>	<p>1 point</p> <p>9 points</p> <p>14 points</p> <p>19 points</p> <p>27 points</p> <p>34 points</p> <p>37 points</p> <p>41 points</p> <p>45 points</p> <p>49 points</p> <p>55 points</p>	
Wind turbines	<p>Some areas of the City lend themselves to wind turbine applications. Analysis of the area's capability to support wind turbines should be evaluated prior to choosing this feature.</p> <p>Individual wind turbines at homes or collective neighborhood arrangements of wind turbines such that the total power provided augments:</p> <p>10 percent of the power needs of the project</p> <p>20 percent of the power needs of the project</p> <p>30 percent of the power needs of the project</p> <p>40 percent of the power needs of the project</p> <p>50 percent of the power needs of the project</p> <p>60 percent of the power needs of the project</p> <p>70 percent of the power needs of the project</p> <p>80 percent of the power needs of the project</p> <p>90 percent of the power needs of the project</p> <p>100 percent of the power needs of the project</p>	<p>9 points</p> <p>14 points</p> <p>19 points</p> <p>27 points</p> <p>34 points</p> <p>37 points</p> <p>41 points</p> <p>45 points</p> <p>49 points</p> <p>55 points</p>	
Off-site renewable energy project	<p>The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing homes that will help implement R2 E4. These off-site renewable energy retrofit project proposals will be determined on a case by case basis and must be accompanied by a detailed plan that documents the quantity of renewable energy the proposal will generate. Point values will be determined based upon the energy generated by the proposal.</p>	TBD	

CEQA THRESHOLDS AND SCREENING TABLES

Feature	Description	Assigned Point Values	Project Points
Other Renewable Energy Generation	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed will be decided based upon engineering data documenting the ability to generate electricity.	TBD	
Reduction Measure R2 W1: Water Use Reduction Initiative			
Irrigation and Landscaping			
Water Efficient Landscaping	Limit conventional turf to < 20% of each lot (required)	0 points	
	Eliminate conventional turf from landscaping	2 points	
	Eliminate turf and only provide drought tolerant plants	3 points	
	Xeroscaping that requires no irrigation (after plants are established)	5 points	
Water Efficient irrigation systems	Drip irrigation	1 point	
	Smart irrigation control systems combined with drip irrigation (demonstrate 20 reduced water use)	2 points	
Recycled Water	Graywater (purple pipe) irrigation system on site	3 points	
Storm water Reuse Systems	Innovative on-site stormwater collection, filtration and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD	
Potable Water			
Showers	Title 24 standard (required)	0 points	
	EPA High Efficiency Showerheads (15% > Title 24)	2 points	
Toilets	Title 24 standard (required)	0 points	
	EPA High Efficiency Toilets (15% > Title 24)	2 points	
Faucets	Title 24 standard (required)	0 points	
	EPA High Efficiency faucets (15% > Title 24)	2 points	
Potable Water Performance Standard	Alternatively, projects that have not been designed to a level of detail to know the specific attributes of the interior design of the buildings needed to utilize the points for the features listed above can use this option instead in committing to a potable water supply performance standard: EPA High Efficiency water fixtures (15% > Title 24)	6 points	

CEQA THRESHOLDS AND SCREENING TABLES

Feature	Description	Assigned Point Values	Project Points
Reduction Measure R2 T1: Land Use Based Trips and VMT Reduction			
Mixed Use	Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions. The point value of mixed use projects will be determined based upon a Transportation Impact Analysis (TIA) demonstrating trip reductions and/or reductions in vehicle miles traveled. Suggested ranges: Diversity of land uses complementing each other (2-28 points) Increased destination accessibility other than transit (1-18 points) Increased transit accessibility (1-25 points) Infill location that reduces vehicle trips or VMT beyond the measures described above (points TBD based on traffic data).	TBD	
Residential Near Local Retail (Residential only Projects)	Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled (VMT)	TBD	
Other Trip Reduction Measures	Other trip or VMT reduction measures not listed above with TIA and/or other traffic data supporting the trip and/or VMT for the project.	TBD	
Reduction Measure R2 T3: Bicycle Master Plan Development			
Bicycle Infrastructure	Escondido's Bicycle Master Plan is extensive and describes the construction on 11.5 miles of Class I bike paths and 23 miles of Class II and Class III bikeways to build upon the current 8 miles of bikeways. Provide bicycle paths within project boundaries. Provide bicycle path linkages between residential and other land uses. Provide bicycle path linkages between residential and transit.	TBD 3 points 5 points	
Reduction Measure R2 T4: Neighborhood Electric Vehicle Plan			
Electric Vehicle Recharging	Provide circuit and capacity in garages of residential units for use by an electric vehicle. Charging stations are for on-road electric vehicles legally able to drive on all roadways including Interstate Highways and freeways. Provide connections to neighborhood electric vehicle (NEV) approved roads and bicycle lanes. NEVs are similar in size to golf carts and run entirely on electricity with maximum speeds between 30 to 60 MPH. They are not legal to drive on public roadways except when that roadway is NEV approved. NEV approved roads are those roadways with class I, class II, or class III bicycle lanes. The NEV must drive within the bicycle lane on these types of roadways.	1 point 4 points	
Total Points Earned by Residential Project:			

Table 2: Screening Table for Implementation of GHG Reduction Measures for Commercial Development

Feature	Description	Assigned Point Values	Project Points
Reduction Measure R2 E5: Energy Efficiency for Commercial Development			
Building Envelope			
Insulation	Title 24 standard (required) Modestly Enhanced Insulation (5% > Title 24) Enhanced Insulation (15%> Title 24) Greatly Enhanced Insulation (20%> Title 24)	0 points 3 points 7 points 11 points	
Windows	Title 24 standard (required) Modestly Enhanced Window Insulation (5% > Title 24) Enhanced Window Insulation (15%> Title 24) Greatly Enhanced Window Insulation (20%> Title 24)	0 points 3 points 7 points 11 points	
Doors	Title 24 standard (required) Modestly Enhanced Insulation (5% > Title 24) Enhanced Insulation (15%> Title 24) Greatly Enhanced Insulation (20%> Title 24)	0 points 3 points 7 points 11 points	
Air Infiltration	Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage. Title 24 standard (required) Modest Building Envelope Leakage (5% > Title 24) Reduced Building Envelope Leakage (15%> Title 24) Minimum Building Envelope Leakage (20% > Title 24)	0 points 3 points 7 points 11 points	
Thermal Storage of Building	Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls. Thermal storage designed to reduce heating/cooling by 5°F within the building Thermal storage to reduce heating/cooling by 10°F within the building Note: Engineering details must be provided to substantiate the efficiency of the thermal storage device.	5 points 11 points	
Building Envelope Performance Standard	Alternatively, projects that have not been designed to a level of detail to know the specific attributes of the building envelope needed to utilize the features listed above can use this option instead in committing to one of the following performance standards: Modestly Enhanced building envelope (5% > Title 24) Enhanced building envelope (15%> Title 24) Greatly Enhanced building envelope (20%> Title 24)	12 points 28 points 44 points	

CEQA THRESHOLDS AND SCREENING TABLES

Feature	Description	Assigned Point Values	Project Points
Indoor Space Efficiencies			
Heating/ Cooling Distribution System	Title 24 standard (required) Modest Distribution Losses (5% > Title 24) Reduced Distribution Losses (15%> Title 24) Greatly Reduced Distribution Losses (15%> Title 24)	0 points 3 points 7 points 11 points	
Space Heating/ Cooling Equipment	Title 24 standard (required) Efficiency HVAC (5% > Title 24) High Efficiency HBAC (15%> Title 24) Very High Efficiency HBAC (20%> Title 24)	0 points 3 points 7 points 11 points	
Commercial Heat Recovery Systems	Heat recovery strategies employed with commercial laundry, cooking equipment, and other commercial heat sources for reuse in HVAC air intake or other appropriate heat recovery technology. Point values for these types of systems will be determined based upon design and engineering data documenting the energy savings.	TBD	
Water Heaters	Title 24 standard (required) Efficiency Water Heater (Energy Star conventional that is 5% > Title 24) High Efficiency Water Heater (Conventional water heater that is 15%> Title 24) High Efficiency Water Heater (Conventional water heater that is 20%> Title 24) Solar Water Heating System	0 points 3 points 7 points 11 points 13 points	
Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours. All peripheral rooms within building have at least one window or skylight All rooms within building have daylight (through use of windows, solar tubes, skylights, etc.) such that each room has at least 800 lumens of light during a sunny day All rooms daylighted to at least 1,000 lumens	1 points 4 points 6 points	
Artificial Lighting	Title 24 standard (required) Efficient Lights (5% > Title 24) High Efficiency Lights (LED, etc. 15%> Title 24) Very High Efficiency Lights (LED, etc. 20%> Title 24)	0 points 3 points 5 points 7 points	
Appliances	Title 24 standard (required) Efficient Appliances (5% > Title 24) High Efficiency Energy Star Appliances (15%> Title 24) Very High Efficiency Appliances (20%> Title 24)	0 points 3 points 7 points 11 points	

CEQA THRESHOLDS AND SCREENING TABLES

Feature	Description	Assigned Point Values	Project Points
Indoor Space Performance Standard	<p>Alternatively, projects that have not been designed to a level of detail to know the specific attributes of the interior design of the buildings needed to utilize the points for the features listed above can use this option in committing to one of the following performance standards:</p> <p>Modestly Enhanced Interior and appliances (5% > Title 24)</p> <p>Enhanced Interior and appliances (15%> Title 24)</p> <p>Greatly Enhanced Interior and appliances (20%> Title 24)</p>	<p>16 points</p> <p>37 points</p> <p>50 points</p>	
Miscellaneous Commercial Building Efficiencies			
Building Placement	North/South alignment of building or other building placement such that the orientation of the buildings optimizes conditions for natural heating, cooling, and lighting.	3 point	
Other	This allows innovation by the applicant to provide design features that increases the energy efficiency of the project not provided in the table. Note that engineering data will be required documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	
Existing Commercial building Retrofits	<p>The applicant may wish to provide energy efficiency retrofit projects to existing residential dwelling units to further the point value of their project. Retrofitting existing commercial buildings within the City is a key reduction measure that is needed to reach the reduction goal. The potential for an applicant to take advantage of this program will be decided on a case by case basis and must have the approval of the Escondido Planning Department. The decision to allow applicants to ability to participate in this program will be evaluated based upon, but not limited to the following:</p> <p>Will the energy efficiency retrofit project benefit low income or disadvantaged communities?</p> <p>Does the energy efficiency retrofit project fit within the overall assumptions in Reduction Measure R2 E7?</p> <p>Does the energy efficiency retrofit project provide co-benefits important to the City?</p> <p>Point value will be determined based upon engineering and design criteria of the energy efficiency retrofit project.</p>	TBD	
Reduction Measure R2 E6: New Commercial/Industrial Renewable Energy			
Photovoltaic	<p>Solar Photovoltaic panels installed on commercial buildings or in collective arrangements within a commercial development such that the total power provided augments:</p> <p>Solar Ready Roofs (sturdy roof and electric hookups)</p> <p>10 percent of the power needs of the project</p> <p>20 percent of the power needs of the project</p> <p>30 percent of the power needs of the project</p> <p>40 percent of the power needs of the project</p> <p>50 percent of the power needs of the project</p> <p>60 percent of the power needs of the project</p>	<p>1 points</p> <p>7 points</p> <p>13 points</p> <p>19 points</p> <p>25 points</p> <p>31 points</p> <p>37 points</p>	

CEQA THRESHOLDS AND SCREENING TABLES

Feature	Description	Assigned Point Values	Project Points
	70 percent of the power needs of the project 80 percent of the power needs of the project 90 percent of the power needs of the project 100 percent of the power needs of the project	43 points 49 points 52 points 57 points	
Wind turbines	Some areas of the City lend themselves to wind turbine applications. Analysis of the areas capability to support wind turbines should be evaluated prior to choosing this feature. Wind turbines as part of the commercial development such that the total power provided augments: 10 percent of the power needs of the project 20 percent of the power needs of the project 30 percent of the power needs of the project 40 percent of the power needs of the project 50 percent of the power needs of the project 60 percent of the power needs of the project 70 percent of the power needs of the project 80 percent of the power needs of the project 90 percent of the power needs of the project 100 percent of the power needs of the project	7 points 13 points 19 points 25 points 31 points 37 points 43 points 49 points 52 points 57 points	
Off-site renewable energy project	The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing residential that will help implement R2 E4, or existing commercial/industrial that will help implement R2 E7. These off-site renewable energy retrofit project proposals will be determined on a case by case basis accompanied by a detailed plan documenting the quantity of renewable energy the proposal will generate. Point values will be based upon the energy generated by the proposal.	TBD	
Other Renewable Energy Generation	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed will be decided based upon engineering data documenting the ability to generate electricity.	TBD	
Reduction Measure R2 W1: Water Use Reduction Initiative			
Irrigation and Landscaping			
Water Efficient Landscaping	Limit conventional turf to < 20% of each lot (required) Eliminate conventional turf from landscaping Eliminate turf and only provide drought tolerant plants Xeroscaping that requires no irrigation (after plants are established)	0 points 2 points 3 points 5 points	
Water Efficient irrigation systems	Drip irrigation Smart irrigation control systems combined with drip irrigation (demonstrate 20 reduced water use)	1 point 4 points	
Recycled Water	Graywater (purple pipe) irrigation system on site	4 points	

CEQA THRESHOLDS AND SCREENING TABLES

Feature	Description	Assigned Point Values	Project Points
Storm water Reuse Systems	Innovative on-site stormwater collection, filtration and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD	
Potable Water			
Showers	Title 24 standard (required) EPA High Efficiency Showerheads (15% > Title 24)	0 points 3 points	
Toilets	Title 24 standard (required) EPA High Efficiency Toilets/Urinals (15% > Title 24) Waterless Urinals (note that commercial buildings having both waterless urinals and high efficiency toilets have a combined point value of 6 points)	0 points 3 points 3 points	
Faucets	Title 24 standard (required) EPA High Efficiency faucets (15% > Title 24)	0 points 3 points	
Commercial Dishwashers	Title 24 standard (required) EPA High Efficiency dishwashers (20% water savings)	0 points 3 points	
Commercial Laundry Washers	Title 24 standard (required) EPA High Efficiency laundry (15% water savings) EPA High Efficiency laundry Equipment that captures and reuses rinse water (30% water savings)	0 points 2 points 5 points	
Commercial Water Operations Program	Establish an operational program to reduce water loss from pools, water features, etc., by covering pools, adjusting fountain operational hours, and using water treatment to reduce draw down and replacement of water. Point values for these types of plans will be determined based upon design and engineering data documenting the water savings.	TBD	
Potable Water Performance Standard	Alternatively, projects that have not been designed to a level of detail to know the specific attributes design needed to utilize the points for the measures listed above can instead commit to a potable water efficiency: EPA High Efficiency water fixtures (15% > Title 24) EPA High Efficiency water fixtures and waterless urinals	14 points 17 points	
Reduction Measure R2 T1: Land Use Based Trips and VMT Reduction Policies			
Mixed Use	Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions. The point value of mixed use projects will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled	TBD	
Local Retail Near Residential (Commercial only Projects)	Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled	TBD	

CEQA THRESHOLDS AND SCREENING TABLES

Feature	Description	Assigned Point Values	Project Points
Reduction Measure R2 T2: Bicycle Master Plan Development			
Bicycle Infrastructure	Escondido's Bicycle Master Plan is extensive and describes the construction on 11.5 miles of Class I bike paths and 23 miles of Class II and Class III bikeways to build upon the current 8 miles of bikeways.	TBD	
	Provide bicycle paths within project boundaries.	TBD	
	Provide bicycle path linkages between project site and other land uses.	3 points	
	Provide bicycle path linkages between project site and transit.	5 points	
Reduction Measure R2 T4: Neighborhood Electric Vehicle Plan			
Electric Vehicles	Provide public charging station for use by an electric vehicle.	7 points	
Total Points from Commercial/Industrial Project:			

References

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- California Air Pollution Control Officers Association (CAPCOA), White Paper: CEQA and Climate Change, January 2008
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- California Air Resources Board, AB 32 Scoping Plan, December 2009
- California Climate Action Team's Final Report to the Governor and Legislature, March 2007
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- South Coast Air Quality Management District, Rules and Regulations, 2010
- U.S. Environmental Protection Agency, AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, September 1995
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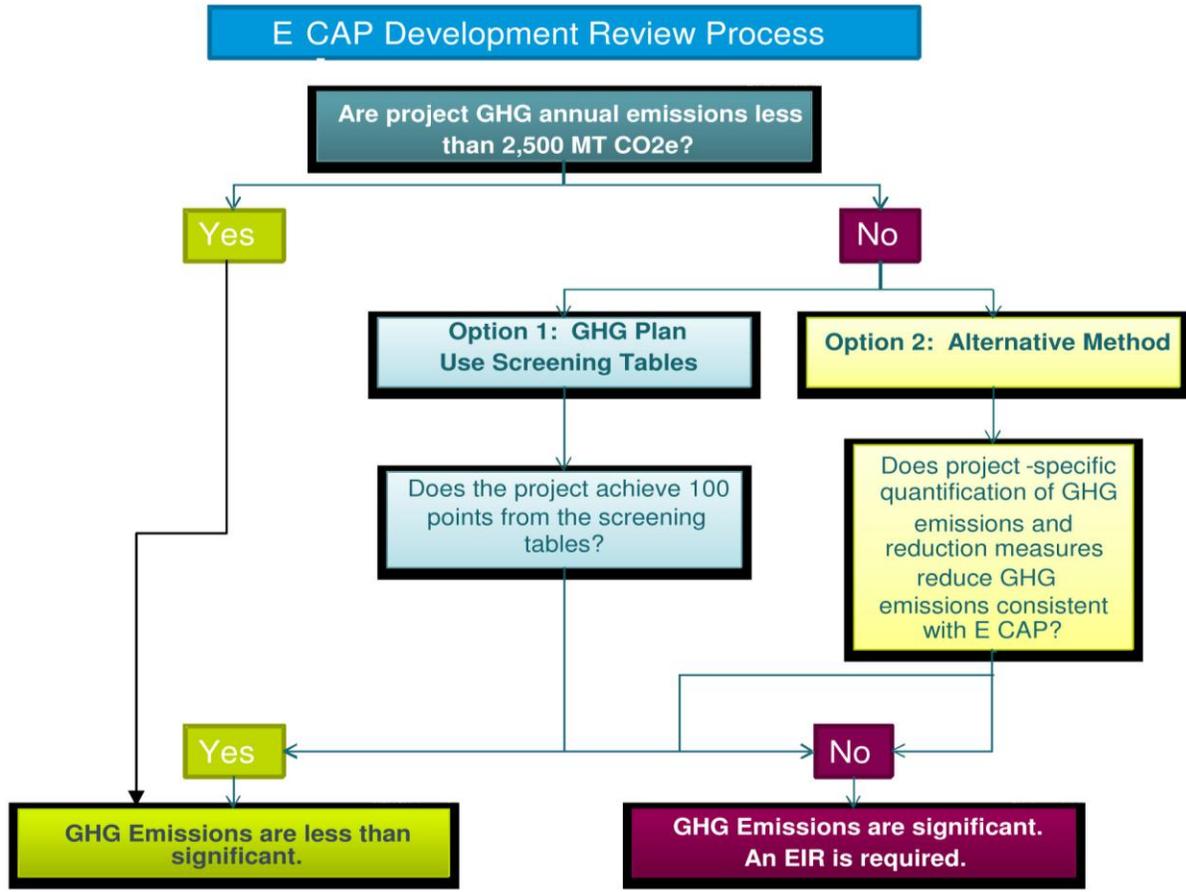
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**APPENDIX A:
DEVELOPMENT REVIEW PROCESS FLOW CHART**

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APPENDIX B
SAMPLE PROJECT SIZES BY LAND USE CATEGORY
THAT GENERATE LESS THAN 2,500 MT CO₂E PER YEAR

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Sample Project Sizes by Land Use Category that Generate 2,500 MT CO₂e⁽¹⁾ per year	
Project Type	Project Size
Single Family Residential	86 dwelling units
Low Rise Apartments	121 dwelling units
Mid-Rise Apartments	136 dwelling units
High-Rise Apartments	144 dwelling units
Condominiums or Townhouses	120 dwelling units
Retirement Community (age restricted)	112 dwelling units
Congregate Care (Assisted Living) Facility	239 dwelling units
Elementary or Middle School	91,000 square feet of interior area
High School	103,000 square feet of interior area
University or College	336 students
Library	81,000 square feet of interior area
Hospital/Medical Facility	47,000 square feet of interior area
General Office Space	61,000 square feet of interior area
Office Park	56,000 square feet of interior area
Retail Commercial Space (no refrigeration)	33,000 square feet of interior area
Retail Commercial Space (with refrigeration)	31,000 square feet of interior area
Supermarket / Grocery Space	32,000 square feet of interior area
Restaurants (sit down)	12,000 square feet of interior area
Fast-Food Restaurants	5,200 square feet of interior area
Convenience Store/Gas Station (24 hour)	2,000 square feet of interior area
Warehousing	141,000 square feet of interior area
Light Duty Manufacturing	74,000 square feet of interior area

⁽¹⁾ Based upon statistical analysis of projects run in the CalEEMod model.

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**APPENDIX C:
RATIONALE USED IN DETERMINING THE
2,500 MT CO₂E THRESHOLD LEVEL**

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METHODS SUMMARY

In determining this level of emissions, the City used an analysis completed by the County of San Diego that reviewed projects within San Diego County (both incorporated and unincorporated areas) and used a 90th percentile capture rate of emissions. Note that the County of San Diego's database of projects used in the San Diego County analysis is a countywide database and includes emissions within Escondido. This method was considered relevant because the database closely reflects projects within the City of Escondido in determining a threshold level of GHG emissions.

The analysis of projects within the County of San Diego sample population combined commercial, residential, and light industrial projects. Also note that the sample of projects did not include industrial processes (i.e. oil refineries, heavy manufacturing, electric generating stations, mining operations, etc.). In addition, the analysis of projects used to derive the 2,500 MT CO₂e per year value did not include mixed use projects. Because mixed use projects tend to provide energy and water efficiencies due to shared infrastructure and reduced vehicle trips due to the proximity of uses, mixed use projects are allowed to use the 2,500 MT CO₂e per year threshold and screening tables. By contrast, because heavy industrial uses that include industrial processes tend to have large, unique emission sources within the industrial process heavy industrial projects need to have a customized analysis of emissions using the alternative emissions analysis method.

The **2,500 MT CO₂e per year** value is used in defining small projects that are considered less than significant and do not need to use the Screening Tables or alternative GHG mitigation analysis.

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**APPENDIX D:
METHODOLOGY FOR THE DEVELOPMENT AND
APPLICATION OF THE SCREENING TABLES**

CEQA THRESHOLDS AND SCREENING TABLES

METHODS SUMMARY

The point values in the Screening Tables were derived from the projected emissions reductions that would be achieved by each of the R2 reduction measures within the E-CAP. The reduced emissions for each of the R2 measures are shown in aggregate terms, meaning that the total emission reductions afforded each measure is based on both changes in existing land use activities as well as how new development is designed and built. In order to correctly allocate the emission reductions within the Screening Table, the amount of emission reductions afforded new development had to be segregated out of the aggregate total. Once this process of desegregating new development out of the aggregate reduction totals was completed, the points were then proportioned by residential unit or square feet of commercial/industrial uses. This was accomplished by taking the predicted growth in households and commercial uses in 2020 and proportioning the appropriate R2 reduction quantities for new development to the residential, commercial, and industrial land use sectors within the Screening Table. The result is point values that are proportioned by residential unit or commercial/industrial square feet. Because of this, the size of the project is not relevant to the Screening Table. Regardless of size, each project needs to garnish 100 points to demonstrate consistency with the E-CAP. Efficiency, not size of the project, is critical. The following equations can be used in determining the amount of emissions reduced per point in the Screening Table:

For Residential Projects:

0.028 MT CO₂e per Point per Residential Unit

For Commercial and Industrial Projects:

0.04 MT CO₂e per Point per 1,000 Square Feet of gross Commercial/Industrial building area

Note that the Screening Table and point values are best used for typical development projects processed by the City. Examples of typical development projects include residential subdivisions, multi-family residential apartments, condominiums and townhouses, retail commercial, big box retail, office buildings, business parks, and typical warehousing. Mixed use projects can use the instructions at the beginning of the Screening Tables. Transit oriented development (TOD), and infill projects are able to use the Screening Tables, but the Screening Tables points are likely to underestimate total emission reductions afforded these types of projects. Note that the Screening Tables include the opportunity to custom develop points (using the formula above) in order to provide points in the sections of the Screening Tables marked TBD and account for the predicted reductions in vehicle trips and vehicle miles traveled within a project specific traffic study and GHG analysis. TOD and infill projects can be more accurately assessed and allocated points using this method.

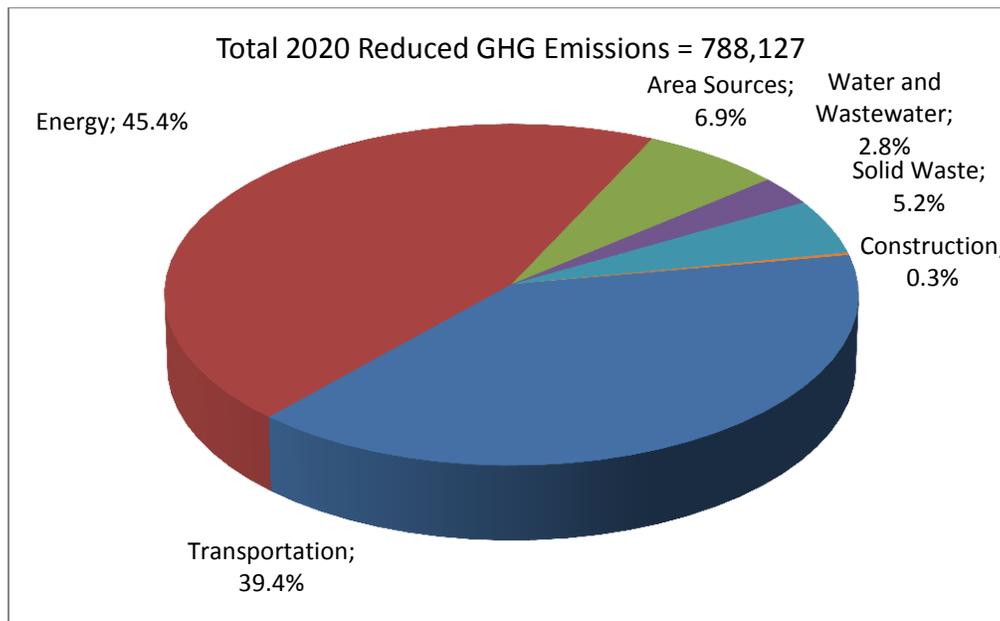
However, more unusual types of industrial projects such as cement manufacturing, metal foundries, refrigerant manufacturing, electric generating stations—including large alternative energy electric

generation, and oil refineries cannot use the Screening Tables because the emission sources for those types of uses were not contemplated in the tables.

DEVELOPMENT OF THE POINT VALUES

The first step in developing the point system was the need to determine the total reductions afforded the E-CAP. Figure 1 below shows the total emission reductions achieved by the E-CAP.

Figure 1



In total 219,976 MT CO₂e will be reduced as a result of the E-CAP.

The next step in developing the point system is to segregate out the State efforts in reducing GHG emissions within Escondido. Table 1 shows the reductions allocated to State measures and City strategies.

As shown in Table 1, the City's R2 measures result in a reduction of 51,182 MT CO₂e. This amount includes reductions afforded existing building retrofits, other changes to activities associated with existing land uses, as well as reductions associated with new development.

The next step is to segregate out of the City strategies total the amount of emissions that will be reduced within new development.

CEQA THRESHOLDS AND SCREENING TABLES

Table 1			
Sector	2020 Reduction (MT CO₂e)		
	State Strategies	City Strategies	Total
Transportation and Land Use	97,398	11,681	207,447
Energy	67,351*	31,279	253,487
Area Source	0	526	7,912
Water Conservation	4,044	1,256	8,798
Solid Waste	0	6,212	
Construction	0	229	
Total	168,793	51,182	219,976

Table 2 summarizes the reduction in emissions afforded new development from the R2 measures. Table 2 shows 26,807 MT CO₂e being reduced from new development as a result of the City strategies (R2 measures in the E-CAP). Within the 26,807 MT CO₂e of new development reductions afforded City strategies, 17,574 MT CO₂e of emissions reduced is accomplished through new Commercial and Industrial Projects, and 9,233 MT CO₂e of emissions reduced is accomplished through new residential projects.

Table 2			
Reduction Number	Reduction Measure Name	Reduced Emissions(MT CO₂e)	
		Commercial/Industrial	Residential
R2 T1	Land Use Based trips and VMT Reduction	-	-
R2 T2	Bicycle Master Plan	668.76	2,006.28
R2 T3	Transit Improvements (BRT)	931.54	310.51
R2 T3	Transit Improvements (Sprinter)	1,907.32	635.77
R2 T4	TDM	3,915.66	1,305.22
R2 E1	New Homes Energy Efficiency		2,538.28
R2 E2	New Commercial Energy Efficiency	5,253.42	
R2 E3	New Residential Renewable Energy		1,105.57
R2 E4	New Commercial/Industrial Renewable Energy	3,565.93	
R2 A1	Electric Landscape Equipment Incentive Program	263	263
R2 W1	Energy Efficient Water Treatment	6.51	6.51
R2 W2	Water Use Reduction Initiative	163.3	163.3
R2 S1	City Waste Diversion Program	326.13	326.13
R2 C1	Construction Emissions Reduction	114.39	114.39
Total R2 Reductions for New Development		17,574.04	9,233.05

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Table 3 summarizes the reductions associated with the Screening Tables. The Screening Tables reduce 16,310.15 MT CO₂e for commercial/industrial projects and 8,690.98 MT CO₂e for residential. The next step in allocating point values is to determine the number of new homes and commercial buildings that are anticipated by year 2020. The City predicts that 3,413 new residential units will be needed by 2020 to accommodate the population growth by 2020 and a total of approximately 4,589,480 square feet of new commercial and industrial buildings within Escondido is needed to accommodate anticipated job growth. Of all new development anticipated by 2020, a total of approximately 341 new residential units and 458,948 square feet of new commercial and industrial buildings within Escondido are anticipated to be built as small projects using the efficiency measures. Approximately 3,072 new residential units and 4,130,532 square feet of new commercial and industrial buildings within Escondido are anticipated to either use the screening tables or provide an independent analysis demonstrating reductions.

Table 3		
Project Size	Reduced Emissions(MT CO ₂ e)	
	Commercial/Industrial	Residential
Reductions from Screening Tables	16,310.15	8,690.98

Dividing the 8,691 MT CO₂e reductions of emissions afforded the Screening Table implementation of the R2 measures for new residential development by the anticipated 3,072 new residential units that will be built yields 2.83 MT CO₂e per residential unit that needs to be reduced to fulfill the anticipated reductions of the E-CAP. That amount equals 100 points, producing the following equation for the point values:

0.028 MT CO₂e per Point per Residential Unit

A similar process was used to derive the point value for new commercial/industrial development:

0.04 MTCO₂e per point per 1,000 Sq. Ft. of gross Commercial/Industrial building area

The final step was to allocate points to each of the reduction measures in order to provide the menu of point values. Table 2 on the next page shows emission reductions afforded each measure. Note that emissions associated with new development are reduced by the State’s R1 measures, as well as the City’s R2 measures. The Screening Tables focus on those measures the City is implementing associated with new development within the City boundaries. For this reason, the menu of options pertains to all of the R2 measures pertaining to new development.

**APPENDIX E:
ALTERNATIVE ANALYSIS APPROACH FOR
DETERMINING PROJECT GREENHOUSE GAS EMISSIONS**

CEQA THRESHOLDS AND SCREENING TABLES

CEQA THRESHOLDS AND SCREENING TABLES

The City of Escondido intends to use a Development Review Process to review individual projects for compliance with the Escondido Climate Action Plan (E-CAP). Screening tables have been developed utilizing a 100-point scale that corresponds to approximately 26,807 metric tons of carbon dioxide equivalents per year (MT CO₂e) of emissions reductions attributable to new development within the E-CAP. That level of emissions reductions is approximately 20.6 percent reduction of new development greenhouse gas (GHG) emissions (in the aggregate) compared to an unmitigated condition. The scale has been derived from calculations of the 2020 unmitigated emissions at the City level and the reductions from different strategies included in the E-CAP. Where projects utilize the screening table and qualify for 100 points, the project’s GHG emission impacts can be considered less than significant under CEQA and would not be required to quantify their individual project emission reductions. If the screening tables are not used, the project would be required to quantify its unmitigated (“business as usual”) emissions and provide a 20.6 percent reduction of those emissions in order for the GHG impact to be considered less than significant. The following methodology may be used to estimate project-level unmitigated and mitigated emissions.

E-CAP Greenhouse Gas Inventory and Reduction Target		
Inventory	GHG Emissions	Description
2010 Emissions	886,118 MT CO ₂ e	Baseline Inventory
2020 Unmitigated Emissions (BAU)	992,583 MT CO ₂ e	Growth rate applied to the baseline inventory
2020 Reduction Target	788,176 MT CO ₂ e	Requires new development to achieve a 20.6% reduction (in the aggregate) from the 2020 unmitigated emissions scenario.

The E-CAP includes a forecast of 2020 unmitigated emissions from a benchmark of 2010 emissions. No emission reductions from future regulations or standards were afforded the 2020 unmitigated emission forecast. This means that the unmitigated emissions shown for 2020 are forecast using the predicted growth in each of the sectors but have an average GHG efficiency equivalent to that of buildings, transportation, and other emission sectors as they were in 2010. As such, 2010 constitutes the benchmark for all projects under evaluation through the development review process. Thus, calculation of unmitigated project GHG emissions is a calculation of what the project’s GHG emissions would be under average efficiency assumptions for 2010. Project proponents then must calculate their estimate of current GHG emissions including any post-2010 California regulations and applicant-proposed reduction measures to determine whether or not the project will provide a 20.6 percent or more reduction.

Methods are described below for the building energy, transportation, waste, water conveyance emissions. Other source categories will require custom calculations. Due to the complexity of some of the calculations for unmitigated and mitigated emissions, the need for accuracy, and the challenge of avoiding double-counting, it is recommended that emissions estimates only be prepared by qualified air quality experts. All estimates should provide full documentation of all assumptions and methods

utilized. City staff will review all provided estimates for adequacy and will only accept sufficiently detailed and supported estimates prepared by qualified individuals.

Project GHG Emission Sources

Total GHG emissions are the sum of emissions from both direct and indirect sources. Direct sources include mobile sources such as off-road equipment, motor vehicles, landscape equipment; and stationary sources such as cooling and heating equipment. Indirect sources are comprised of electrical generation, and energy use in supplying potable water, as well as the disposal of solid waste, and the treatment of waste water.

Direct GHG emissions from mobile and stationary sources are determined as the sum of the annual GHG emissions from off-road equipment, motor vehicles, landscape equipment, and heating and cooling equipment.

Indirect sources are determined based on source as follows. Electrical usage is reported as annual emissions from electrical usage. Potable water usage is reported as the annual emissions from electricity used for potable water treatment and transportation. Solid waste is reported as the sum of annual emissions from solid waste disposal treatment, transportation, and fugitive emissions of methane at the solid waste facilities. Wastewater usage is reported as the annual emissions from wastewater transport and treatment.

Building Energy

Building energy emissions associated with electricity and natural gas assumption are estimated by determining the amount of electricity (in kilowatt-hours) and natural gas consumption (in therms) and then multiplying by the GHG emission factors corresponding to electricity generation (per kwh) and natural gas combustion (per therm).

Project proponents can use the default values for energy consumption in the California Emissions Estimator Model (CalEEMod) version 2011 1.1 (or later). The Residential Energy Consumption Survey (RECS) prepared by the U.S. Energy Information Administration (EIA) can also be used to determine the approximate average kwh per residential unit for residential projects of similar character as the proposed project. At present, the closest set of data to 2010 is the 2009 version of the RECS.

Project proponents can either use the CalEEMod defaults or utilize the 2011 Commercial Buildings Energy Consumption Survey (CBECS) prepared by EIA to determine the approximate average therms per thousand square feet of commercial buildings of similar character as the proposed project.

Where buildings are not comparable to the CalEEMod defaults, RECS or CBECS category, then project proponents must derive a separate rationale for 2010 average building energy consumption by

CEQA THRESHOLDS AND SCREENING TABLES

obtaining data on at least three comparable “average” buildings in Escondido by which to derive appropriate factors.

Once the baseline electricity and natural gas usage have been estimated, then they should be multiplied by the GHG emission factors in Table 1.

RECS is available at <http://www.eia.doe.gov/emeu/recs/>

CBCECS is available at <http://www.eia.doe.gov/emeu/cbecs/>

Table 1: Emission Factors to Use for Estimating Unmitigated (BAU) Emissions		
Fuel	Emissions Factor	Source
Compressed Natural Gas (CNG) (Vehicle)	0.054 Kg CO ₂ /Standard Ft ³	USEPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2010 (2012) Provided in the California Local Government Operations Protocol (CARB et al. 2010)
Motor Gasoline (Vehicle)	8.81 Kg CO ₂ /US gal	
Propane (Vehicle)	5.74 Kg CO ₂ /US gal	
Diesel (Vehicle)	10.15 Kg CO ₂ /US gal	
Natural Gas	0.0546 Kg CO ₂ /Standard Ft ³ 0.1 g NO ₂ /MMBTU 5 g CH ₄ /MMBTU	
Other Fuels	Variable ⁽¹⁾	SCAQMD
Electricity	290.87 kg CO ₂ /MWh 2.04 kg NO ₂ /GWh 13.88 kg CH ₄ /GWh	CCAR (2012) Public Reports and USEPA eGrid2007 (latest data)

⁽¹⁾ Other fuels were included in the SCAQMD inventory. Associated emissions are based on emission factors from CARB’s Regulation for the Mandatory Reporting of GHG Emissions and fuel High Heating Values (HHVs) from USEPA’s AP-42 document.

Transportation

Project proponents can estimate their unmitigated on-road transportation emissions level by utilizing the current CalEEMod land use emissions model and using the 2010 model year. CalEEMod uses default trip generation factors, but these factors can be adjusted to reflect site-specific details. Also, CalEEMod uses default trip lengths that may or may not be appropriate in order to capture the full length of project-related trips. Important steps for running CalEEMod are as follows:

1. If a traffic study was prepared specifically for the project, the following information must be provided:
 - a. Total number of average daily vehicle trips or trip-generation rates by land use type per number of units; and,

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- b. Average vehicle miles traveled (VMT) per residential and nonresidential trip.
 - c. The user overwrites the “Trip Rate (per day)” fields for each land use in CalEEMod such that the resultant “Total Trips” and the “Total VMT” match the number of total trips and total VMT contained in the traffic study.
 - d. Overwrite “Trip Length” fields for residential and nonresidential trips in CalEEMod with the project-specific lengths obtained from the traffic study.
2. If the project does not include a traffic study:
 - a. Provide the density of the project in CalEEMod (residential units per acre and/or square feet of commercial building per acre), and
 - b. The user should consult with the local air district for direction on which default options should be used in the modeling exercise. Some air districts have recommendations in the CEQA guidelines.
 3. Calculate results and obtain the GHG emissions from the CalEEMod output file.

Off-road emissions (including construction equipment) can be estimated by identifying the types of equipment and operational timeframes. CARB’s EMFAC model can provide carbon dioxide emission factors for a wide variety of equipment.

Alternatively, if fuel consumption totals can be estimated, then they can be multiplied by the GHG factors in Table 1, above.

CalEEMod is available at <http://www.caleemod.com/>

EMFAC is available at http://www.arb.ca.gov/msei/onroad/latest_version.htm

Waste

Project proponents need to estimate their level of annual waste generation using CalEEMod defaults or factors from the CIWMB reporting for San Diego County in 2010. CIWMB reports are available at <http://www.calrecycle.ca.gov/LGCentral/Tools/MARS/DRMCMMain.asp>

If CalEEMod is not used, once the unmitigated annual level of waste generation has been identified, then it should be multiplied by the GHG emission factor as follows:

- 2010 average GHG emissions per metric ton of waste (2010) = 0.005526 metric tons

For those using CalEEMod, GHG emissions for solid waste are automatically calculated.

Water

Project proponents need to estimate the annual amount of water consumption on an annual basis for the proposed project either using CalEEMod defaults or water consumption factors on a 2010 average basis:

If CalEEMod is not used, once the unmitigated level of annual water consumption has been identified, then it should be multiplied by the GHG emission factors as follows:

- 2010 average GHG emissions per acre-feet of water = 0.49 metric tons/

For those using CalEEMod, GHG emissions for water consumption are automatically calculated.

Wastewater

Project proponents need to estimate the annual amount of wastewater generation on an annual basis for the proposed project either using CalEEMod defaults or wastewater factors on a 2010 average basis.

If CalEEMod is not used, once the unmitigated level of annual wastewater generation has been identified, then it should be multiplied by the GHG emission factors as follows:

- 2010 average GHG emissions for wastewater = 0.096 metric tons per resident

For those using CalEEMod, GHG emissions for water consumption are automatically calculated.

Point Sources and Other Sources

If the project includes point sources of GHGs, such as industrial consumption of fuels other than natural gas, cement manufacture, or other sources, then custom calculations will have to be made in order to determine the 2010 unmitigated level.

Estimating Project Mitigated Emissions

Once the unmitigated 2010 emissions for the project have been calculated, then the mitigated project emissions can be calculated. Mitigated project emissions can and should take into account the following:

The current level of GHG efficiency. Since the benchmark year is 2010, the current level of GHG efficiency may be improved since 2010. Where a source sector is not covered by adopted state and local measures (see discussion below), analysis of development projects should use the emission factors found in the latest version of the California Climate Action Registry (CCAR) General Reporting Protocol. Quantification of emissions from electricity used for potable water treatment and transportation as well as wastewater transport and treatment can be found in the California Energy Commission (CEC) document titled “Refining Estimates of Water-Related Energy Use in California (CEC December 2006).

The effect of adopted state and local measures by 2020. The state has adopted numerous measures to reduce GHG emissions, including vehicle standards, a low carbon fuel standard, a renewable energy standard, and other measures. The state mandates listed in Table 2 can be included in the City-required

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20.6 percent reduction if they specifically relate to the proposed project. Table 3 provides an example of which measures would apply to a standard residential project. All of the calculations in Table 2 are reduction percentages compared to a 2010 benchmark efficiency. Thus, if a project takes credit for an adopted state or local measure, then it should not take additional credit for the difference between current year GHG efficiency and 2010 because the credit in Table 2 already accounts for potential improvements from 2010 to 2020.

Table 2: E-CAP State and Local Measures that can be included in Project Level Reduction Requirements			
Reduction Measure Number	Sector	Description	Sectoral Percent Reduction
R1E1	Building Energy	RPS-33% by 2020	7.0%
R1E2	Building Energy	AB 1109 Residential Lighting	1.6%
R1E3	Building Energy	AB 1109 Commercial Lighting	1.0%
R1E4	Building Energy	Electricity Energy Efficiency (Title 24)	7.2%
R1E5	Building Energy	Natural Gas Energy Efficiency (Title 24)	0.6%
		Building Energy Subtotal	17.4%
R1T1	Transportation	Pavely I Standards	8.4%
R1T2	Transportation	Pavely II Standards	1.2%
R1T3	Transportation	Low Carbon Fuel Standard	6.7%
R1T4	Transportation	Tire Pressure Program	0.2%
R1T5	Transportation	Low Rolling Resistance Tires	0.1%
R1T6	Transportation	Low Friction Engine Oils	0.8%
R1T7	Transportation	Goods Movement Efficiency Measures	0.3%
R1T8	Transportation	Heavy-Duty Vehicle Efficiency	0.5%
R1T9	Transportation	Med-& Heavy Duty Hybrid.	0.3%
		Transportation Subtotal	18.5%
R1W1	Waste	Increase Methane Recovery at Landfills	27.0%
		Waste Subtotal	27.0%
R1WC1	Water Conveyance	RPS-33% by 2020	15.2%
		Water Conveyance Subtotal	15.2%

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Table 3: Example of which E-CAP State and Local Measures can be included in the Mitigated Emissions Estimate for a Standard Residential Project				
Reduction Measure Number	Sector	Description	Sectoral Percent Reduction	Include?
R1 E1	Building Energy	RPS-33% by 2020	7.0%	Yes
R1 E2	Building Energy	AB 1109 Residential Lighting	1.6%	Yes
R1 E3	Building Energy	AB 1109 Commercial Lighting	1.0%	No
R1 E4	Building Energy	Electricity Energy Efficiency (Title 24)	7.2%	Yes
R1 E5	Building Energy	Natural Gas Energy Efficiency (Title 24)	0.6%	Yes
R1 T1	Transportation	Pavely I Standards	8.4%	Yes
R1 T2	Transportation	Pavely II Standards	1.2%	Yes
R1 T3	Transportation	Low Carbon Fuel Standard	6.7%	Yes
R1 T4	Transportation	Tire Pressure Program	0.2%	Yes
R1 T5	Transportation	Low Rolling Resistance Tires	0.1%	Yes
R1 T6	Transportation	Low Friction Engine Oils	0.8%	Yes
R1 T7	Transportation	Goods Movement	0.3%	No
R1 T8	Transportation	Heavy-Duty Vehicle Efficiency	0.5%	No
R1 T9	Transportation	Med-& Heavy Duty Hybrid.	0.3%	No
R1 S1	Waste	Increase Methane Recovery Landfills	27.0%	Yes
R2 S1	Waste	City Diversion Programs — 75% Diversion	13.1%	Yes
R1 W1	Water Conveyance	RPS-33% by 2020	15.2%	Yes
R2 W1	Water Conveyance	Energy Efficient Water Treatment	0.1%	Yes
R2 W2	Water Conveyance	Water Conservation Strategies	1.4%	Yes
R2 W3	Water Conveyance	Recycled Water Use	4.1%	Yes

The effect of proponent-proposed measures. The adopted state and local measures will not be sufficient in and of themselves to reduce project level unmitigated emissions by 20.6%. Thus, project proponents, who do not use the screening tables, will be required to propose and quantify their individual reduction measures. Measures may include energy efficiency, renewable energy, VMT reductions, water conservation strategies that result in emissions more than the unmitigated levels. Proponents should calculate the effectiveness of proposed strategies such that the total of the adopted state and local measures above and the applicant-proposed measures totals a minimum of 20.6% of the unmitigated emissions. When determining the GHG reduction effectiveness, one may only count reductions that are in excess of the adopted state and local measures noted above. For example, for energy efficiency, all projects will be required to meet Title 24 efficiency standards that are in effect at

the time of the project. Thus, additional credit can only be taken if the project's energy efficiency exceeds Title 24 requirements. Similarly, waste diversion strategies can only provide additional credit if the project will result in greater than 75 percent diversion by 2020 of site generated waste. Finally, caution must be exercised in avoiding double-counting of emissions between adopted state and local measures, improvements in average GHG efficiency between the current year and 2010, and proponent-proposed measures. For this reason, it is recommended that GHG emission estimates only be prepared by qualified air quality experts.

RESOURCES

California Climate Action Registry. General Reporting Protocol. Public Reports for Reporting Entities
<http://www.climateregistry.org>

California Energy Commission. Refining Estimates of Water-Related Energy use in California.
http://www.energy.ca.gov/pier/project_reports/CEC-500-2006-118.html

EMFAC. Factor model for on-road mobile emissions sources from the California Air Resources Board.
http://www.arb.ca.gov/msei/onroad/latest_version.htm

OFF-ROAD. Model for factors for off-road equipment from the California Air Resources Board.
<http://www.arb.ca.gov/msei/offroad/offroad.htm>

CalEEMod. Public domain software for calculation criteria pollutant and GHG emissions from land use projects. <http://www.caleemod.com>