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July 25, 2014

Via E-Mail and FedEx

Mark Slovick
County of San Diego
Planning & Development Services
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San Diego, CA 92123
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Re: Lilac Hills Ranch Project Revised Draft Environmental Impact Report

Dear Mr. Slovick:

This firm represents the Cleveland National Forest Foundation ("CNFF") in connection with the proposed Lilac Hills Ranch project ("Project"). CNFF previously submitted a comment letter dated August 16, 2013 in which it commented on the Project's inconsistency with the County's General Plan and other relevant plans, as well as the legal flaws in the County's draft environmental impact report. When the County issued its revised draft environmental impact report ("RDEIR"), the County did not respond to CNFF's prior comment letter and did not correct many of the deficiencies identified by CNFF. Accordingly, CNFF incorporates that comment by reference here and expects that the County will respond to the issues CNFF commented on in that letter almost all of which are still relevant even after the draft EIR was revised.

Unfortunately, the RDEIR still suffers from numerous flaws, and it contains no new information demonstrating that the Project is consistent with the General Plan and relevant Community Plans. Specifically, the RDEIR fails to comply with the requirements of the California Environmental Quality Act ("CEQA"), Public Resources Code § 21000 et seq., and the CEQA Guidelines, California Code of Regulations, title 14, § 15000 et seq. It is also conflicts with the County's General Plan, the Bonsall Community Plan and the Valley Center Community Plan, in violation of State Planning and Zoning Law, Gov't Code § 65000 et seq. For all of these reasons, the County may

not legally approve the Project as proposed. We urge the County to deny this ill-conceived Project.

I. The RDEIR Fails to Correct Numerous Deficiencies Regarding Analysis and Mitigation of Agricultural Resources.

A. The RDEIR Still Understates the Project's Agricultural Impacts.

As described in CNFF's prior comment letter, dated August 16, 2013, the Draft EIR significantly understated the Project's impacts on farmland. The RDEIR now correctly determines that the Project's impacts are significant, but continues to understate the severity of the impacts. In particular, the RDEIR does not correct the Draft EIR's error in ignoring the significant impacts to Unique Farmland, Farmland of Local Importance, and other productive agricultural lands. Instead, the RDEIR only recognizes impacts on 43.8 acres of Prime Farmland and Farmland of Statewide Importance as significant impacts of the Project. For all of the reasons described in CNFF's prior letter, this analysis is legally faulty.[1]

This understatement of the Project's impacts also infects the RDEIR's mitigation measures. Because the RDEIR only recognizes impacts on 43.8 acres of Prime Farmland and Farmland of Statewide Importance as significant impacts, it only requires 43.8 acres of mitigation land. RDEIR at 2.4-12, 2.4-27. However, as described above, the Project will have significant impacts on many more acres of productive agricultural land, and the RDEIR therefore must include mitigation to address these impacts as well. In addition, the proposed 1:1 mitigation ratio for impacts to agricultural land is insufficient. As the State Department of Conservation states, "if growth inducing or cumulative agricultural impacts are involved, we [DOC] recommend that this ratio be increased." San Diego County Guidelines for Determining Significance – Agricultural Resources, p. 47, attached as Exhibit 1. Here, the RDEIR recognizes that the Project will have significant growth-inducing impacts and cumulative impacts. RDEIR at 1-48 – 49, 2.4-24, 31. The County must therefore require farmland mitigation at a ratio greater than 1:1.

The RDEIR includes some new analysis and mitigation of indirect impacts to farmland, but still fails to address most of the deficiencies identified in our prior comment letter. In particular, the RDEIR still fails to analyze or mitigate the effects the

[1] The state recently recognized the importance of designated "unique" farmland in SB 375. *See* Gov. Code §§ 65080.01(b)(1), 65080(b)(2)(B).

Project will have on nearby agricultural land by making farming less viable from a financial and practical perspective. *See* p. 12 of CNFF's comment letter dated August 16, 2013. As the County's own guidelines acknowledge, these types of impacts are very real. *See* San Diego County Guidelines for Determining Significance – Agriculture, p. 32 (agricultural land is subject to economic pressure to develop when it's surrounded by urbanized uses). Relatedly, the RDEIR improperly fails to acknowledge that the Project's growth-inducing effect will impact farmland. RDEIR at 1-49. The RDEIR's mitigation measures, which address edge effects by requiring, for example, fencing and buffers, do not mitigate this type of impact and are therefore insufficient to mitigate these impacts.

The RDEIR also fails to correct other errors, such as its lack of analysis of impacts due to pets and pests, and its consequent failure to adopt all feasible mitigation to address these issues. The RDEIR contains a couple measures, such as fencing and buffers, that allegedly reduce impacts from domestic pets and pests; however, the RDEIR never attempts to describe the extent to which these measures will reduce impacts or describe whether other feasible mitigation is available.

II. The RDEIR Continues to Have a Faulty Analysis of the Project's Consistency with Policies to Protect Agriculture and the Character of the Area.

In response to comments regarding the Project's inconsistency with numerous general plan and community plan goals, and the DEIR's failure to accurately describe these inconsistencies, the RDEIR revised its analysis regarding plan consistency. However, the new analysis fares no better. For example, it claims that the Project is consistent with GOAL LU-7, which promotes land use plans that retain and protect farming, because the Project will concentrate development in a compact form, thereby reducing development pressure on other areas that contain farmland. RDEIR, Appdx F. at 115. This analysis is faulty; as the RDEIR shows, the Project will induce growth. RDEIR at 1-49. Thus, far from protecting nearby farmland, the Project will cause more development that will then impact more farmland.

Likewise, the RDEIR claims the Project is consistent with LU-7.1, which requires protection of low-density agricultural land, because the Project will modify the general plan and community plans to remove the existing regional category and land use designation and to re-designate the entire 608-acre site as "Village." RDEIR, Appdx F. at 115. But neither this redesignation nor any other part of the proposed Project approval changes policy LU-7.1. Thus, the Project remains in conflict with the policy notwithstanding the redesignation of the land. The policy would be meaningless if it

could simply be ignored whenever land was redesignated from low-density agricultural land to more developed uses. The RDEIR must recognize and discuss the inconsistency of the Project with this policy.

The Project also remains in conflict with numerous community plan policies, and the RDEIR fails to accurately analyze consistency with these policies or even to make a determination of consistency in some cases. For example, the Valley Center Community Plan has a goal to preserve and enhance existing and future agricultural uses in the Plan area. RDEIR, Appdx F. at 120. Though the Project now includes some partial mitigation for agricultural impacts in the form of easements, the Project is still inconsistent with the policy of preserving existing agricultural uses on site. The Project also does not support a rural lifestyle; instead, it creates a new suburban community that will induce more growth. *See id*. at 121. Nor does it maintain the existing rural lifestyle by continuing the existing pattern of residential, equestrian, and agricultural uses within the Bonsall Community Plan area. *Id*. at 123. Notably, County staff identified many dozens of policies with which the Project conflicts. *See* Project Issue Checklist, p. 6 et. seq. These conflicts have not been resolved, and CNFF agrees with staff that the Project conflicts with all of the policies listed in the Checklist.

In sum, CNFF's prior comments on the inconsistency of the Project with general plan and community plan policies remain valid. The RDEIR fails to accurately analyze consistency with these policies, and the County may not approve the Project as proposed because of these and other inconsistencies with relevant plans.

III. The RDEIR's Climate Change Analysis Remains Faulty.

A. The Analysis Is Confusing and Fails to Demonstrate That the Project Complies with Relevant Thresholds of Significance.

Despite containing a variety of revisions, the RDEIR's climate change analysis remains legally defective. First, the RDEIR now states that, because the County's Climate Action Plan ("CAP") was set aside by the courts, "the EIR was revised to remove the County CAP analysis." RDEIR, Reader's Guide to Draft Revised EIR; RDEIR at 3-30. However, the RDEIR still relies on the CAP in making its significance determination. In particular, it relies on the County's Guidelines for Determining Significance – Climate Change ("GHG Guidelines"), which are attached here as Exhibit 2. These GHG Guidelines, in turn, are based on the CAP. *See* GHG Guidelines at 11 ("The overall framework for assessing consistency with AB 32 is provided by the CAP"), 21 (the GHG Guidelines "provide guidance on assessing significance under the

framework provided by the County's CAP"), 23 ("The County's CAP provides the overall framework for assessing significance."). Indeed, the "performance" threshold of significance used in the RDEIR was developed "in order to allow projects to clearly demonstrate compliance with the CAP." *Id*. at 23; *see also* RDEIR GHG Report at 81 (admitting that the GHG Guidelines' thresholds are designed "to allow projects to clearly demonstrate compliance with the County CAP").

The RDEIR is confusing and fails to meet CEQA's requirement to foster informed decisionmaking by stating in one place that it does not include CAP analysis, yet then providing a detailed analysis of GHG impacts based on alleged compliance with the CAP. *See Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal.3d 376, 402 (describing "CEQA's fundamental goal of fostering informed decision making."). In addition, the RDEIR's continued use of a threshold of significance based on the now-invalidated CAP is improper. The CAP was thrown out by the Superior Court because it failed to ensure that the GHG reduction measures in the CAP would actually be carried out. *See* Exhibit 18 to CNFF's August 16, 2014 letter. Because the County's thresholds of significance were set at levels that assumed the CAP's mitigation and implementation measures would be carried out (GHG Guidelines at 11), the thresholds are no longer valid because the CAP's measures have been adjudicated to be uncertain and unenforceable. Accordingly, the GHG Guidelines' thresholds—including the one used in the RDEIR—are not supported by substantial evidence and may not be used to determine the significance of the Project's GHG impacts.

Second, the Project does not comply with the CAP. Thus, even if the RDEIR could properly rely on CAP compliance to demonstrate that the Project will not have significant GHG impacts, the document fails to demonstrate such compliance. The CAP lists certain steps agencies must take to determine whether a project has significant GHG impacts. One step is to compare a project's emissions with screening criteria to quickly determine whether their project may have significant GHG-related impacts. CAP at 17-19. If a project exceeds the screening criteria, the agency must "incorporate all applicable CAP measures" as part of the project. CAP at 20. Here, the Project exceeds the screening criteria. RDEIR GHG Report at 60; *id*., Appdx. G, at 1. However, the Project fails to incorporate all relevant CAP GHG reduction measures.

The RDEIR does not even attempt to demonstrate that the Project incorporates all relevant CAP GHG reduction measures. Instead, it merely states that the Project "includes *several* GHG-reducing design features that comply with County CAP measures . . . ." RDEIR GHG Report at 81 (discussing mixed-use design, neighborhood

walkability, energy efficiency measures, use of smart meters, and tree planting) (emphasis added). As demonstrated by Appendix G of the RDEIR GHG Report, these few measures are not the only relevant ones that the Project must incorporate. This Appendix, which contains a "CAP Compliance Checklist," acknowledges that the CAP requires that projects obtain 19% of overall water heating needs from solar energy and that 30% of residential electricity and 20% of commercial electricity be generated from alternative energy systems. However, it provides no detail for compliance, and the RDEIR nowhere appears to require or even encourage compliance with this measure. Likewise, the CAP Compliance Checklist ignores the CAP measures related to increasing transit use, increasing ridesharing and alternative-fuel vehicles, and three measures for agricultural impacts (A1, A2 and A3).[2] In addition, the checklist states that the Project will comply with the "tree planting" CAP measure by planting 35,000 trees.[3] However, the CAP makes clear that simply planting trees, with their carbon sequestration potential, is not what provides the main GHG reduction benefits. Rather, planting trees is supposed to shade buildings, thereby saving on the energy needed for cooling homes and businesses. CAP at 25. However, the Project does not commit to planting the trees in locations where they will shade buildings. *See* RDEIR GHG Report at Appdx 1, p. 3. The RDEIR therefore may not rely on a mere commitment to plant thousands of trees as

[2] These agriculturally-related measures would be applicable to the remaining agriculture on site, including the rows of orchard crops used as buffers, community gardens, and farmland that remains during Project development.

[3] Additionally, the RDEIR's reliance on tree planting and consequent carbon sequestration to meet CAP goals and reduce GHG emissions is misleading. Although planting trees may result in some carbon sequestration in the trees, the Project also proposes to bulldoze hundreds of acres of existing, mature trees, including orchard trees. RDEIR Appdx. F, Agricultural Resources Report at 33 (there are 293 acres of orchard crops on site). In addition, the Project would have growth-inducing effects that would impact surrounding orchards. RDEIR, Appdx. F, Agricultural Resources Report at 43 (there are 1,347 acres of orchard within a mile of the Project site). The Project therefore results in the loss of existing, larger trees that currently sequester CO_2. It is arbitrary and misleading for the RDEIR to calculate the benefits of the Project's proposed tree planting in terms of carbon sequestration, but to ignore the drawbacks of the Project in terms of loss of existing carbon sequestration. At the least, the number of trees cut down must be subtracted from the number of new trees planted in order to provide a net number of new trees.

demonstrating compliance with the CAP's requirement to plant trees *for purposes of shading*. Nor may it rely on any alleged benefit of that shading in terms of energy savings. *See* RDEIR GHG Report, Appdx. 6 (calculating that Project tree planting will result in CO_2 reductions from carbon sequestration, but not calculating energy efficiency benefits of trees).

Moreover, even if the Project were changed to include implementation of all CAP measures at the levels described in the CAP (e.g., obtain 19% of overall water heating needs from solar energy and that 30% of residential electricity and 20% of commercial electricity generated from alternative energy systems), this would still not support a conclusion that the Project has insignificant climate-related impacts. These measures were only designed to ensure compliance with the state's 2020 GHG-reduction goals. CAP at 24-25. As described in the CAP and in this letter below, the County and state must continue reducing GHG emissions far beyond the levels set in the 2020 goals. *See* CAP at 49. Thus, incorporation of existing CAP measures does not demonstrate that the Project will help the state and County achieve their GHG reduction goals for 2035 and 2050, or that it will help stabilize the climate. The Project would therefore still have significant climate impacts even if it incorporated all current CAP measures.

Further supporting the inexorable conclusion that the Project has significant climate impacts, the RDEIR GHG Report contains a brief discussion of the Project's compliance with the County's different, "efficiency" threshold. To meet the efficiency threshold, the Project would need to emit less than 4.32 metric tons of CO_2 equivalent per year per person (i.e., per employee/resident; the sum of residents and employees is called the "service population"). *See* RDEIR GHG Report, Efficiency Threshold Evaluation; RDEIR at 3-37. The document first discusses the uncertainty involved in calculating the Project's service population, but it uses various assumptions to calculate a high and low service population estimate. Based on the high and low estimates, the RDEIR shows that the Project would emit between 4.22 and 5.93 metric tons of CO_2 equivalent per year. In other words, the Project would almost certainly exceed the efficiency threshold of 4.32 metric tons of CO_2 equivalent per year per person unless the County utilized the lowest possible assumptions regarding service population.

The RDEIR may not simply ignore this evidence, which demonstrates that the Project will have significant GHG impacts. The RDEIR claims that the uncertainties involved in determining the service population render this threshold inappropriate for use in determining the Project's impacts, but this claim is not supported by substantial evidence. As the analysis of the efficiency threshold demonstrates, the County can use reasonable assumptions in order to determine the service population. Even if there is

some uncertainty regarding the service population, there is virtually *no* uncertainty about whether the Project would exceed the efficiency threshold—it would. The alleged uncertainties are nothing more than a smokescreen that the County attempts to utilize in order to discredit inconvenient information. The County may not do this. Even if the County could use the separate "performance" (i.e., BAU") threshold, the County is still required to consider other evidence—such as evidence that the Project will exceed the efficiency threshold—that the Project may cause a significant GHG-related impact. *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1109 ("in preparing an EIR, the agency must consider and resolve every fair argument that can be made about the possible significant environmental effects of a project, irrespective of whether an established threshold of significance has been met"). Here, all relevant evidence demonstrates that the Project will have significant GHG impacts.

Last, the Project significantly overstates the extent of the Project's alleged GHG emissions reductions from a "business as usual" scenario by providing a huge credit for installing gas-burning, rather than wood-burning, fireplaces. As CNFF commented in its prior letter, wood burning is, in the long term, carbon neutral because trees can grow back. Further, the RDEIR uses unrealistic and unsupported assumptions about the frequency with which residents would burn wood. For the "unmitigated" assumption, the RDEIR assumes that people would utilize their wood-burning fireplaces 180 days per year. RDEIR, GHG Report at 69. There is no support for the notion that people in mild San Diego County typically use their fireplace 180 days per year. Instead of representing a realistic, "business as usual" scenario, this represents an artificially inflated hypothetical situation that serves to mislead the public and improperly minimize the Project's true impacts. If the Project did not improperly take credit for the alleged GHG reductions attributable to installing gas, rather than wood, fireplaces, the Project would not achieve the 16% reduction from business as usual, and would have a significant impact. *See* RDEIR, GHG Report at 76.[4]

B. The RDEIR's Analysis of Long-Term GHG Impacts Is Woefully Inadequate.

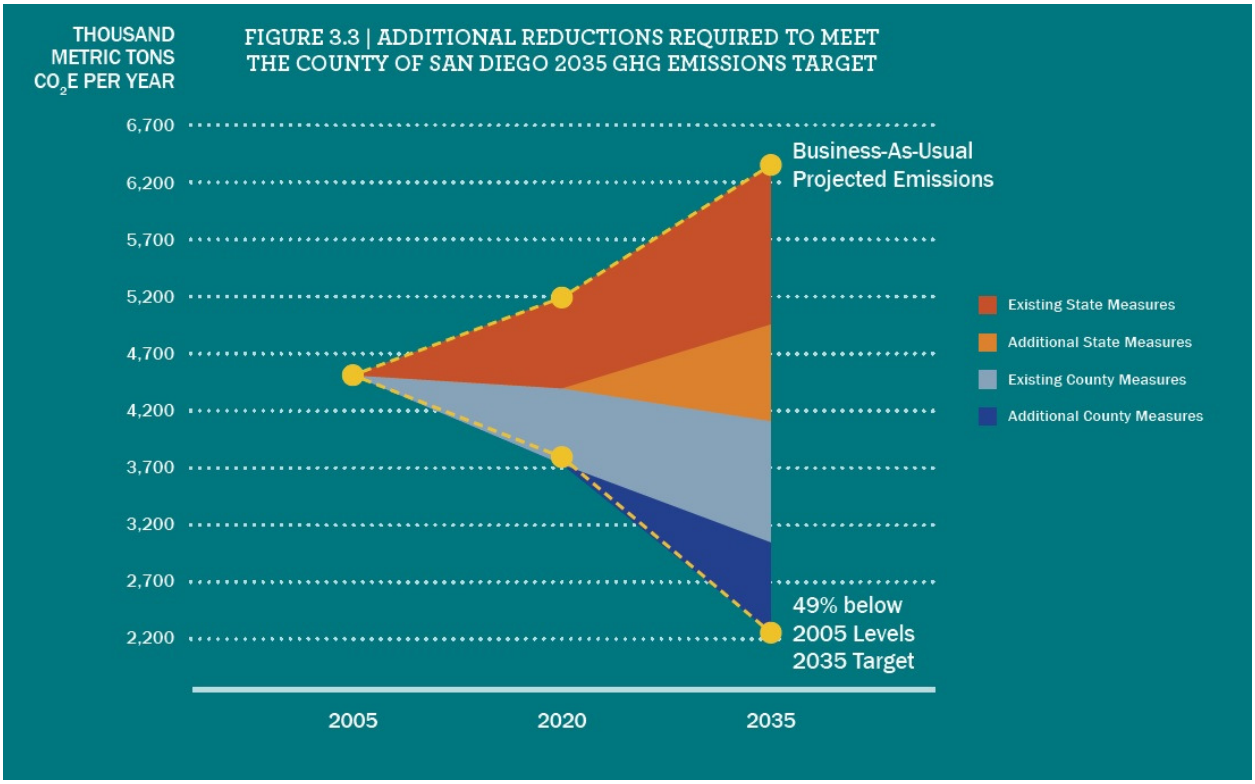
[4] The Project must have less than 34,252 tons/yr of mitigated emissions to meet the 16% reduction standard. Without the approximately 1,500 tons/yr assumed emission reductions from "area sources" such as fireplaces, the Project would have 34,545 tons/yr of mitigated emissions, which exceeds the threshold of significance. *See* RDEIR at 3-48.

The RDEIR also fails to adequately analyze the Project's long-term GHG emissions impacts. The RDEIR now acknowledges that the County's efforts to reduce GHG emissions do not end in 2020, but continue to 2035, 2050 and beyond. However, the document's analysis of the Project's consistency with these long-term GHG reduction goals is confusing and rife with errors.

The RDEIR's GHG Report admits that, in order to meet the 2035 GHG reduction goal adopted by the County, the County must reduce GHG emission levels 49% below 2005 levels. RDEIR, GHG Report at 79, 89; CAP at 20, 49. It then acknowledges that the Project will not come close to meeting this goal because it will only reduce emissions 19.1% below a business as usual scenario. RDEIR, GHG Report at 78-79. Incredibly, the Report does not then acknowledge the obvious: that the Project has a significant GHG-related impact because it fails to help the County achieve its 2035 GHG reduction goals. Instead, it states that this 19.1% reduction "is considered the fair-share contribution from the project in the current regulatory environment," and ends its analysis there. RDEIR, GHG Report at 79.

This is plainly inadequate. The RDEIR GHG Report provides the relevant GHG threshold—49% reduction by 2035—and states that the Project will not help achieve this goal. Yet the County refuses to find that this impact is significant and to require mitigation. Instead, the RDEIR GHG Report meekly suggests that some further mitigation measures "may not be currently economically, technically, or politically feasible." RDEIR, GHG Report at 79; *see also* CAP at 52. But neither the County nor the public knows whether such additional measures are actually feasible for this Project because the County never analyzes whether it is feasible to require solar power on homes and businesses, mandate green waste recycling, require that trees are planted in a manner to shade homes, increase ridesharing, increase transit use, require solar water heating, and require additional measures. It is the County's job to assess the feasibility of all of these measures as part of its environmental review for this Project.

The RDEIR also implies that the County is excused from not requiring more measures to reduce the Project's GHG emissions because the 2035 GHG emissions reduction goal is only achievable if state and federal authorities adopt new regulations and new technologies are developed. RDEIR, GHG Report at 79. But the RDEIR and the CAP contradict this theory; both documents acknowledge that achieving the County's reduction goal will require significant action not only at the state and federal level, but also at the *County* level. *Id.*



CAP at 52.

For example, in order to reach the 2035 goal, the County must get many more homes to supply their own solar or other carbon-free power, must reduce vehicle miles traveled by more than 20%, and may require homes to be net-zero energy, among other measures. CAP at 49-51. In fact, the County has already documented what it needs to do in order to meet its 2035 goal. This includes achieving a 40% per capita water reduction, 84% solid waste diversion rate, 100% of residential and commercial buildings have solar water heating, 10% of residential buildings have alternative energy systems, 20% reduction in vehicle miles traveled, and more. CAP, Appdx F at Table F.1. The RDEIR demonstrates that the Project does not meet any of these goals. *See* RDEIR, GHG Report, Appdx. G (Project will not require any solar water heating or alternative energy systems, nor will it increase transit use). In sum, the RDEIR is legally flawed because it fails to make an explicit determination of whether the Project's GHG emissions represent a significant impact compared to its chosen threshold of 49% reductions by 2035.

Further, the RDEIR fails to adopt all feasible mitigation to address the Project's unquestionably significant GHG impacts.[5]

Even more incredibly, although the RDEIR's GHG Report contains the entire analysis discussed above, the RDEIR itself completely omits any analysis of the significance of the Project's emissions vis-à-vis the 2035 GHG reduction goals. *See* RDEIR at 3-48. It is inappropriate for the RDEIR to contain substantive analysis in an appendix but not in the RDEIR. *Environmental Protection Information Center v. California Department. of Forestry and Fire Protection* (2003) 44 Cal.4th 459,493. To the extent the County did not include the 2035 analysis in the RDEIR itself because this analysis allegedly relates to the now-invalidated CAP, this is also improper.[6] Although the CAP was overturned, the court's ruling had nothing to do with the validity of the 2035 reduction target contained in the CAP. *See* Exhibit 18, p. 7 to CNFF letter dated August 16, 2013 (invalidating CAP because it should have been approved with a supplemental EIR, not an addendum to an EIR, and because it contained no detailed deadlines for meeting GHG reduction goals and contained no enforcement mechanisms). Accordingly, the County cannot disclaim its 2035 reduction target. The County still recognizes the need for the County and state to reduce GHG emissions beyond AB 32 levels on a trajectory consistent with EO-S-3-05. RDEIR at 3-48. The RDEIR therefore must analyze the Project's inconsistency with the County's 2035 GHG reduction target as part of its analysis of the Project's inconsistency with the state's long-term GHG reduction goals.

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[5] The RDEIR states that the Project might be able to achieve a much greater reduction in GHG emissions if all of the trees were planted in locations that would provide shading for homes, thereby reducing energy use. RDEIR, GHG Report at 78. Inexplicably, the RDEIR fails to actually require this mitigation measure. If the County ends up deciding to incorporate this measure, it will need to verify its GHG reduction potential and will also have to determine whether it will impede the ability of residential and commercial roofs to provide solar power.

[6] The County's 2035 GHG reduction goal was described in the CAP. CAP at 52. Notably, although the County states that the CAP was invalidated and purports not to rely on it in this RDEIR, the County still publishes a link to the CAP on its website, leading the public to believe that it is still valid and may be relied on. *See* http://www.sdcounty.ca.gov/pds/advance/climateactionplan.html.

The RDEIR contains an even less adequate analysis of the Project's GHG impacts compared to the statewide goal of reducing GHG emissions 80% below 1990 levels by 2050. The RDEIR acknowledges the relevancy of EO S-3-05 as a GHG reduction goal, but states that achieving the 2050 goal is speculative and analyzing the Project's consistency with the goal would not provide meaningful information for decisionmaking. RDEIR, GHG Report at 79; RDEIR at 3-48. But uncertainty does not get the County off the hook for making its best effort to find out and disclose all that it can. CEQA Guidelines, § 15144 (environmental analysis "necessarily involves some degree of forecasting. While seeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can"). Here, at the least, the RDEIR should have compared the Project's emissions trajectory against the trajectory necessary to meet the state's 2050 GHG reduction goals. And despite any uncertainty regarding how exactly to *measure* the Project's impacts in comparison to that goal, there is no uncertainty as to the *significance* of the Project's impacts. When compared to the 2050 goal, the Project's GHG impacts are clearly significant. The RDEIR failed by not acknowledging this fact and implementing all feasible mitigation to lessen the Project's emissions.

Last, the RDEIR fails to accurately compare the Project's GHG emissions against SB 375's requirements. Although the RDEIR claims that the Project is consistent with SB 375's goals and mandates, this is clearly inaccurate. RDEIR, GHG Report at 83. As the RDEIR acknowledges, SANDAG crafted a Regional Transportation Plan/Sustainable Communities Strategy ("RTP/SCS") that was intended to meet SB 375's GHG reduction targets. *Id*. at 82. This strategy assumed that 80% of new housing would be located within a half-mile of transit stations. *Id*. Yet this Project will not place any housing within a half-mile of transit stations, either existing or planned, and is therefore clearly inconsistent with the RTP/SCS.

The RDEIR also states that the Project will reduce vehicle miles traveled by more than 14% in comparison to the "unmitigated" Project, and that this reduction exceeds the targets adopted for the SANDAG region for vehicle emissions reductions. RDEIR at 3-57. But the RDEIR is comparing apples and oranges. The RDEIR's comparison of 2020 "mitigated" versus 2020 "unmitigated" *total project* vehicle trips is different than, and not comparable to, SB 375's requirement that the SANDAG region achieve a *regionwide, per capita* reduction of vehicle trips in 2020 as compared to 2005. This comparison is misleading, uninformative and does not promote intelligent decisionmaking. Because RTP/SCS's must achieve SB 375's regionwide GHG reduction target, the way to measure conformity with SB 375 is simply to determine whether a project complies with

an adopted RTP/SCS. Here it does not. In addition to not being within a half mile of transit stops,[7] the Project requires a massive amendment to the County General Plan in order to allow a new, sprawling suburb that is located far from any existing services or urban centers. This is the antithesis of the type of development envisioned under SB 375, and was not accounted for when SANDAG developed its RTP/SCS, which was based on current general plans. *See* SANDAG Sustainable Communities Strategy, Appendix D: Background Documentation, pp. D-3, D-11, D-19, attached as Exhibit 3. The RTP/SCS maps show the Project area as remaining in low-density rural and agricultural uses in 2020 and 2035. The Project is clearly inconsistent with these maps, and approving projects such as this may make it impossible for the San Diego region to achieve the GHG reductions required by SB 375.

C. The RDEIR Fails to Adopt All Feasible GHG Mitigation Measures.

As described extensively in CNFF's prior letter on this Project, the EIR fails to adopt numerous, feasible mitigation measures to reduce the Project's climate impacts. This letter describes other feasible measures in the section, below, regarding energy impacts. Still other measures are contained in the LEED ND standards, which provide a menu of ways in which projects can reduce their energy use and their environmental impact. *See* Exhibit 9 to August 16, 2013 CNFF letter.

The RDEIR does contain a few, sometimes contradictory references to project design measures that will allegedly reduce the Project's GHG impacts. However, not all of these measures are certain to occur or enforceable, and therefore do not qualify as adequate CEQA mitigation. CEQA Guidelines § 15126.4(a)(2). For example, the RDEIR describes how the Project could reduce its GHG emissions by planting trees that would shade buildings, thereby providing energy savings. RDEIR, GHG Report at 78. However, the document does not actually require this mitigation measure. *Id*. (stating that GHG reductions will occur "*if* the trees were located in proximity to buildings to provide shade.") (emphasis added). It also states that the Project will provide temporary transit services until such time as the local transit district provides linkage. RDEIR at 3-169; *see also id.* at 1-54. However, these vague standards are not certain to occur and

[7] As the RDEIR notes, SANDAG's RTP/SCS achieves its alleged GHG reductions in large part due to investments in transit such as light rail and bus rapid transit. RDEIR, GHG Report at 82. This Project would not utilize any such transit, further supporting the conclusion that the Project is inconsistent with the RTP/SCS, and therefore SB 375.

lack adequate performance standards. For example, the RDEIR merely states that certain transportation demand measures "could be incorporated" into the project design. But there is no binding commitment that they be so incorporated. Further, it states in one place that the Project will exceed Title 24 energy efficiency standards by 25% (RDEIR at 1-53), but in other places states that it will exceed such standards by 30% (RDEIR at 3-168).

Last, as previously noted, the RDEIR describes various "design features" that will allegedly reduce the Project's GHG emissions to meet the County's performance standard/threshold. However, it then provides an escape valve that allows a future project developer to forgo any of these design features if a later study shows that they are not needed to meet the County's GHG emission reduction goals. RDEIR at 3-55. This is completely unacceptable. While some flexibility may be warranted to allow a developer to take advantage of new technology in the future, this measure is not enforceable as written and provides far too much leeway. The County must provide a mechanism for future public review of any new project features and must provide a specific method for ensuring compliance. Most importantly, any future review of the Project's GHG reduction measures must account for then-current County requirements for GHG reduction. In other words, the RDEIR currently requires the developer only to reduce GHG emissions to meet AB 32's 2020 GHG reduction goal. As described in this letter, this is inappropriate. But it is even more inappropriate if the County lets a future developer, say in the year 2020, change the Project and yet incorporate only enough GHG reduction measures to meet the same 2020 goal. Any future modification to the Project must trigger an obligation to meet whatever County, state and federal GHG reduction goals and standards are applicable at that time.

IV. The RDEIR's Energy Impacts Analysis Is Deficient.

CEQA requires agencies to analyze whether their projects will result in the wasteful or inefficient use of energy. Pub. Res. Code § 21100(b)(3); CEQA Guidelines, Appdx. F. "Under CEQA, an EIR is 'fatally defective' when it fails 'to include a detailed statement setting forth the mitigation measures proposed to reduce wasteful, inefficient, and unnecessary consumption of energy.'" *Cal. Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173, 209 (quoting *People v. County of Kern* (1976) 62 Cal.App.3d 761, 774). In order to demonstrate that a project will not result in the wasteful use of energy, agencies must show that the project has decreased per capita energy consumption, decreased reliance on fossil fuel use and increased reliance on renewable energy sources. *Id.*

The RDEIR sets forth, for the first time, an analysis of the Project's energy impacts. However, this analysis does not meet CEQA's requirements. First, the document relies largely on the fact that the Project's residential and commercial development will exceed Title 24 requirements in order to conclude that it will not result in significant energy-related impacts. But Title 24 does not address many of the considerations required under Appendix F of the CEQA Guidelines, such as whether a building should be constructed at all, how large it should be, where it should be located, whether it should incorporate renewable energy resources, or anything else external to the building's envelope. Put simply, the building code does not address the energy impacts of a project intended to transform agricultural land into a new, suburban development, and the RDEIR thus may not rely on the code to find a less than significant impact.

Second, the RDEIR erroneously concludes that the Project will have less than significant energy impacts because the Project's per capita energy use will allegedly be "lower than average." RDEIR at 3-168. But this standard is legally flawed. Projects can have a lower than average impact on endangered species, air quality or noise and still have a significant impact. Whether or not an impact is significant does not depend on the project's impacts in comparison to other projects, but on a comparison to baseline conditions in the context of the existing regulatory environment. CEQA Guidelines § 15126.2. Here, California has committed to reducing fossil fuel-based energy consumption and production dramatically over the coming decades through AB 32, SB 375, EO S-03-05, the renewable portfolio standard, a requirement for zero-net energy homes by 2020, and other means. As described in the GHG section above, the Project does not come close to helping the state achieve its goals of reducing GHG emissions. Accordingly, the Project fails to do its part to reduce carbon-intensive energy use and promote clean energy, and therefore results in the inefficient or wasteful use of energy. Because the state has charted a path that requires deep reductions in average fossil-fuel based energy use, and steep increases in alternative energy production, simply comparing the Project's overall energy use to the current "average" is an inappropriate measurement.

Moreover, the RDEIR does not even conduct an adequate analysis of the Project's energy impacts compared to "average" energy use. For example, it never describes what it means by "average" energy use or discloses the amount of energy that similar new homes in similar locations use. It therefore provides no actual point of comparison. Instead, the RDEIR asserts that, because the Project exceeds Title 24 standards, it will result in lower-than-average energy use. This assumption is unsupported. In fact, Public Resources Code Section 25402.1(h) and Section 10-106 of the Building Energy Efficiency Standards establish a process which allows local adoption of energy standards

that are more stringent than the statewide Title 24 standards. More than 35 cities and counties in the state have applied to and/or received approval from the California Energy Commission to set energy efficiency standards that are more strict than Title 24. See Energy Commission fact sheet, attached as Exhibit 4 and available at http://www.energy.ca.gov/title24/2008standards/ordinances/. Accordingly, the mere fact that the Project may exceed the 2008 Title 24 standards does not demonstrate that the Project will have better than average energy efficiency, or that it will have insignificant energy-related impacts.

In fact, San Diego County itself has adopted more stringent energy efficiency standards for some types of development. As described in CNFF's August 16, 2013 letter, which it hereby incorporates in full by reference, the County General Plan requires that new leapfrog "village" developments such as this one must meet LEED ND standards. Among other things, these standards require that projects incorporate a variety of energy-saving measures into their design. But as described in CNFF's prior letter, as well as other letters submitted to the County, the Project does not come close to meeting the required LEED ND standards. It thus falls far below the energy efficiency requirements mandated by the County's own General Plan and, by definition, results in the wasteful and inefficient use of energy.

Further, the RDEIR's use of the 2008 Title 24 standards does not provide a useful point of comparison because these standards were recently updated, and the 2013 standards have gone into effect as of July 1, 2014. RDEIR at 3-25. Thus, while the RDEIR touts how the Project's homes will be more energy efficient than average homes because all residential units will be "solar-ready" (RDEIR at 3-168), the new (2013) Title 24 standards already *require* all residential homes to be "solar-ready." http://www.energy.ca.gov/title24/2013standards/2013-03-12_Changes_for_the_2013_Update_to_Building_Energy_Efficiency_Standards.pdf . Likewise, the RDEIR states that the Project will be 25% more efficient than the 2008 Title 24 standards,[8] yet the new 2013 standards – which are already mandatory – are already 25% more efficient than the 2008 standards. RDEIR at 3-25. Accordingly, by committing to exceed 2008 Title 24 standards by 25%, the Project is not mitigating its

[8] As described above, the RDEIR is contradictory in what standards the Project will meet: it states in one place that the Project will exceed Title 24 energy efficiency standards by 25% (RDEIR at 1-53), but in other places states that it will exceed such standards by 30% (RDEIR at 3-168).

energy impacts; it is merely complying with now-current law. *See* RDEIR at 3-43 (admitting that Project is only 5% more efficient than 2013 Title 24 standards, based on commitment to exceed 2008 standards by 30%). The measure therefore does not demonstrate that it will help reduce the Project's energy use below "average" levels.

In fact, Title 24 is slated to be updated again in 2016. http://www.energy.ca.gov/title24/2016standards/prerulemaking/. Accordingly, by the time any construction on this Project gets started, Title 24 efficiency standards may be more stringent that the Project now requires, even with its commitment to exceed the 2008 standards. At the least, the County should require the developer to apply the more stringent of 30% below 2008 measures or the standards that are in effect when the first building permits are issued for each phase of the development.

The RDEIR also distorts the Project's use of energy in the transportation sector. Instead of comparing the Project's transportation-related fuel use with a countywide average, or with what it would be if the Project conformed with the general plan, it compares it with a hypothetical, worst-case scenario. The RDEIR describes how the Project's design features allegedly result in a reduction of 1.5 million vehicle miles traveled compared to if the Project did not include the design features (e.g., interim transit service, an on-site pedestrian network, and providing higher density residential uses adjacent to planned mixed-use and commercial development). RDEIR at 3-169. However, this comparison is illusory. As described above, the Project is *required* to meet LEED ND or equivalent standards, which means that the developer is not allowed to build a project that does not include the current design features. Comparing the Project with an illegal, "what if" scenario distorts the RDEIR's analysis, misleads the public and fails to promote informed decisionmaking. *Communities for a Better Environment v. South Coast Air Quality Management District* (2010) 48 Cal.4th 310, 322 (EIRs must focus on realistic comparisons, not comparisons with merely hypothetical conditions);[9] *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439, 507 (EIRs must provide an analysis "that will give the public and decision makers the most accurate picture practically possible of the project's likely impacts.").

[9] In fact, *Communities for a Better Environment* rejected a comparison with hypothetical conditions that were *allowed*, whereas the RDEIR for the Project here compares the Project's impacts with hypothetical conditions that are flatly unlawful. Accordingly, the RDEIR's analysis is even more suspect that the analysis struck down by the Court in *Communities for a Better Environment.*

Here, if development of the Project area proceeded in accordance with the General Plan and consistent with existing legal lots under existing land use designations, there could be only 49 – 110 single family homes developed. RDEIR at 4-9, 4-13. This would cause only 588-1,320 average daily vehicle trips, which represents a 93-97% reduction in traffic compared to the project. *Id*. at 4-11, 4-15. Although the RDEIR fails to compare the GHG and energy impacts of the Project with these alternative scenarios—which is itself a legal error—a 93-97% reduction in traffic and corresponding decrease in the number of homes would obviously result in massive energy savings. Likewise, if the Project complied with the requirement to meet LEED ND or equivalent standards, which would require the Project to be more dense and be sited in a different location where it was adjacent to existing commercial uses, the Project would not cause so many long vehicle trips. Thus, compared with a realistic scenario—compliance with the General Plan—the Project will cause a profligate waste of energy.

By definition, a project will result in the inefficient and wasteful consumption of energy if it does not incorporate all technically, legally and financially feasible mitigation measures to reduce energy use. *See Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, 599-600 ("if [a] project can be economically successful with mitigation, then CEQA requires that mitigation"). Here, there are many, many more measures that the Project could, and therefore must, incorporate in order to reduce its wasteful use of energy. Because these measures also reduce the Project's GHG impacts, they are listed in the section of this letter regarding GHG impacts, and we request that the County refer back to that section. Briefly, these measures include, but are not limited to, requiring that new trees are planted in a manner to shade new homes and reduce energy consumption, requiring "cool roofs" and "cool pavement" that reduce the need for energy consumption and the heat island effect, and approving a project in a different location where residents will not have to drive so far to access services.

Finally, the RDEIR failed to comply with the requirements of Appendix F to the Guidelines by not discussing or analyzing renewable energy options for the Project. As demonstrated by the meteoric rise of distributed solar energy generation, installing such generation is feasible. In fact, other cities in California already require that all new housing within their city provide solar energy generation capacity. In 2013, the City of Lancaster, California updated its municipal code to require that all new homes constructed in the city provide a minimum average solar generating capability of .5 to 1.5 kW per unit depending on lot size and location. New multi-family developments are also covered by the ordinance. Developers may alternately elect to purchase solar energy credits from other facilities within the City in lieu of constructing solar equipment on site.

Spreading Sunshine All Over the Place, attached as Exhibit 4; *see also* http://www.greentechmedia.com/articles/read/Lancaster-CA-Becomes-First-US-City-to-Require-Solar. Likewise, the City of Sebastopol now requires "new residential and commercial buildings -- as well as major additions and remodelings -- to include a photovoltaic energy-generation system. The system would have to provide 2 watts of power per square foot of insulated building area or offset 75 percent of the building's annual electric load." *See* Press Democrat article at http://www.pressdemocrat.com/csp/mediapool/sites/PressDemocrat/News/story.csp?cid=2224191&sid=555&fid=181. Lancanster and Sebastopol have demonstrated that it is feasible to require all new homes to provide solar power, and the RDEIR is deficient because it fails to analyze and require this option for reducing the Project's energy impacts.

In sum, the RDEIR's energy impacts analysis is incomplete and misleading. When it is corrected, the County must recirculate the EIR so that the public can see and comment on the new analysis and mitigation measures.

V. Alternatives.

The RDEIR states that the County summarily dismissed the idea of analyzing an offsite alternative "because of the (1) lack of a suitable-sized site, (2) lack of a site located in proximity to I-15 and existing service areas, (3) lack of ability to reduce VMT the potential for greater GHG emissions and traffic impacts, and (4) that the proponent cannot reasonably acquire an alternative site." RDEIR at 4-6. None of these reasons are both supported by the evidence and legally tenable. Most obviously, an offsite alternative could be constructed in the City of Escondido. This City is adjacent to I-15 and is much closer to existing service areas, and would therefore drastically reduce VMT related to Project travel. As the recently adopted Escondido General Plan demonstrates, there is also plenty of room to put the Project's planned 1,700 units, as the General Plan anticipates development of more than 6,000 new residential units. *See* p. 3-23 of Escondido General Plan EIR, available at http://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1ProjectDescription.pdf; *see also* K. Johnson letter of July 25, 2013 (discussing and attaching the Downtown Escondido Specific Plan and requesting consideration of an alternative in this location). Thus, the first three reasons are not supported by substantial evidence because a downtown Escondido location would meet these criteria.

The fact that the Project proponent cannot reasonably acquire necessary sites in Escondido is no excuse either. *San Bernardino Valley Audubon Society v. County of San*

Bernardino (1984) 155 Cal.App.3d 738, 751 (overturning EIR that did not discuss possible land trade that would facilitate project in a different location). Although the RDEIR claims that the Project proponent cannot reasonably acquire an alternative site, it offers no support for this claim. Further, given that the Project is flatly inconsistent with the General Plan and may not be approved in the current location and configuration anyway, this Project will not be approved soon and the RDEIR may not use the fact that it could take the Project proponent some time to find other locations as an excuse for not analyzing this alternative.

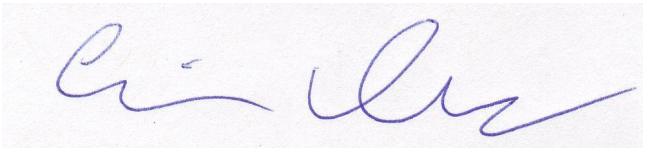
Finally, the alternatives analysis is also legally flawed because it fails to compare the relative impacts of the Project's and alternatives' GHG and energy impacts. *See generally*, RDEIR, Chapter 4.

Conclusion

We urge the County to deny this Project, which is fundamentally and irrevocably inconsistent with the General Plan and relevant Community Plans, and is wholly out of step with surrounding land uses. The RDEIR is also deeply flawed and fails to inform the public of the full impacts of the Project or to require legally adequate mitigation measures. These errors must be corrected and the RDEIR recirculated for further public review.

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP



Erin B. Chalmers

EXHIBIT LIST

Exhibit 1: San Diego County Guidelines for Determining Significance—Agricultural Resources

Exhibit 2: San Diego County Guidelines for Determining Significance—Climate Change

Exhibit 3: CA Energy Commission: Local Ordinances Exceeding the 2008 Building Energy Efficiency Standards (screenshot)

Exhibit 4: SANDAG Sustainable Communities Strategy, Appendix D: Background Documentation

Exhibit 5: Spreading Sunshine All Over the Place

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EXHIBIT 1

COUNTY OF SAN DIEGO

GUIDELINES FOR DETERMINING SIGNIFICANCE AND REPORT FORMAT AND CONTENT REQUIREMENTS

AGRICULTURAL RESOURCES

LAND USE AND ENVIRONMENT GROUP

Department of Planning and Land Use
Department of Public Works

March 19, 2007

APPROVAL

I hereby certify that these **Guidelines for Determining Significance and Report Format and Content Requirements for Agricultural Resources** are a part of the County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance and Technical Report Format and Content Requirements and were considered by the Director of Planning and Land Use, in coordination with the Director of Public Works on the 19th day of March, 2007.

GARY PRYOR
Director of Planning and Land Use

JOHN SNYDER
Director of Public Works

Attest: ERIC GIBSON
Deputy Director of Planning and Land Use

I hereby certify that these **Guidelines for Determining Significance and Report Format and Content Requirements for Agricultural Resources** are a part of the County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance and Technical Report Format and Content Requirements and have hereby been approved by the Deputy Chief Administrative Officer (DCAO) of the Land Use and Environment Group on the 19th day of March, 2007. The Director of Planning and Land Use is authorized to approve revisions to these Guidelines for Determining Significance and Report Format and Content Requirements for Agricultural Resources, except any revisions to the Guidelines for Determining Significance presented in Chapter 4.0 must be approved by the DCAO.

Approved, March 19, 2007

CHANDRA WALLAR
Deputy CAO

COUNTY OF SAN DIEGO

GUIDELINES FOR DETERMINING SIGNIFICANCE

AGRICULTURAL RESOURCES

LAND USE AND ENVIRONMENT GROUP

Department of Planning and Land Use
Department of Public Works

March 19, 2007

EXPLANATION

These Guidelines for Determining Significance for Agricultural Resources and information presented herein shall be used by County staff for the review of discretionary projects and environmental documents pursuant to the California Environmental Quality Act (CEQA). These Guidelines present a range of quantitative, qualitative, and performance levels for particular environmental effects. Normally, (in the absence of substantial evidence to the contrary), an affirmative response to any one Guideline will mean the project will result in a significant effect, whereas effects that do not meet any of the Guidelines will normally be determined to be "less than significant." Section 15064(b) of the State CEQA Guidelines states:

> "The determination 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 factual and scientific data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

The intent of these Guidelines is to provide a consistent, objective and predictable evaluation of significant effects. These Guidelines are not binding on any decision-maker and do not substitute for the use of independent judgment to determine significance or the evaluation of evidence in the record. The County reserves the right to modify these Guidelines in the event of scientific discovery or alterations in factual data that may alter the common application of a Guideline.

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List of Acronyms

AWM	County Department of Agriculture, Weights and Measures
CEQA	California Environmental Quality Act
CSA	Community Supported Agriculture
DOC	State of California, Department of Conservation
DWR	State of California, Department of Water Resources
FHA	Farm and Home Advisor
FMMP	California Farmland Mapping and Monitoring Program
FPPA	Federal Farmland Protection Policy Act
GIS	Geographic Information System
LAFCO	Local Agency Formation Commission
LARA	Local Agricultural Resource Assessment Model
LCC	Land Capability Classification
LESA Model	Land Evaluation and Site Assessment Model
MWD	Municipal Water District
NASS	National Agricultural Statistics Service
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
SWP	State Water Project
TDS	Total Dissolved Solids
UCCE	University of California Cooperative Extension
USDA	United States Department of Agriculture

INTRODUCTION

This document provides guidance for evaluating adverse environmental effects that a proposed project may have on agricultural resources[1]. Specifically, this document addresses the following questions that are adapted from the California Environmental Quality Act (CEQA) Guidelines, Appendix G, II. Agricultural Resources:

Would the project:

a) Convert Prime Farmland, Unique Farmland, Farmland of Statewide or Local Importance (Important Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency, or other agricultural resources, to non-agricultural use?

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Important Farmland or other agricultural resources, to non-agricultural use?

The definition of an agricultural resource has been broadened from the State definition (Important Farmlands mapped pursuant to the FMMP) to include any land with an active agricultural operation, or any site with a history of agricultural production based on aerial photography or other data sources identifying agricultural land uses. The reason for the broadening of the definition of an agricultural resource is to capture the large number of small farms in San Diego County that the State FMMP mapping effort does not capture due to the 10 acre minimum mapping unit. Confining evaluation of impacts to State definition would result in an inconsistent application of these significance guidelines among similar land uses. Similarly, if it is found that lands mapped as agriculture by the State or other public agencies have never been used for agriculture, these lands should not be considered agricultural resources.

[1] A detailed definition of this term is provided in Attachment A, Important Definitions.

1.0 GENERAL PRINCIPLES AND EXISTING CONDITIONS

The following sections discuss general agricultural resource principles and existing conditions in the County of San Diego.[2]

1.1 State of California

California's 28.1 million acres (2002) of agricultural lands produce important economic and environmental benefits to the people of the state, nation and world. Agricultural land supports one of California's major industries and is responsible for the production of a significant portion of the nation's food and fiber. Agricultural lands in the form of farmland or grazing land cover approximately one-third of the state. The state is also a major exporter of agricultural product to the rest of the world. A unique combination of geography, climate and soils enables California to produce efficiently many agricultural products and has led to California being the number one agricultural producer in terms of total agricultural value among all states in the nation.

In addition to its economic importance, the state's agricultural land also plays a critical environmental role. Farmland provides valuable areas of extensive pervious surfaces that allow stormwater infiltration in addition to groundwater recharge. Farms and ranches are wildlife habitats for many common game and endangered species. Agricultural land provides valuable open space, giving visual relief for urban dwellers, and protecting the rural way of life important to farmers, ranchers, and small-town residents. Studies have also shown that the public values highly the preservation of local agricultural land and the availability of locally grown food.

While California enjoys many economic, social and environmental benefits from agricultural land, there are constant pressures that affect its future. Some of these pressures include changes in market demand for agricultural products; introduction of exotic pests and diseases; increasing energy, infrastructure, land and water costs; urban sprawl; foreign imports of agricultural products; labor supply and costs; and increasing regulatory requirements.

1.2 San Diego County

San Diego County includes the City of San Diego, 17 other incorporated cities and a large unincorporated area that includes significant acreages of publicly owned lands. San Diego County is the only county in California that qualifies as both a major urban county and is ranked among the top ten agricultural counties in the state in terms of agricultural value., It is estimated that of the County's approximately 2.73 million acres, 273,176 acres (2005) are in agriculture. While San Diego County has the sixth highest urban population among counties in the United States, it has the twelfth largest agricultural economy nationwide. San Diego County agriculture produces the highest

[2] Statistics and agricultural production data in this document are from the 2005 San Diego County Annual Crop Report, the 2002 United States Department of Agriculture (USDA), National Agricultural Statistics Service (NASS) Agricultural Census, or the 2004 California Agriculture Overview from the USDA, NASS.

dollar value per acre ($5,612/acre) of any county in California according to the 2002 Census of Agriculture. San Diego County has also enjoyed 13 consecutive years of growth in agricultural value, with a total reported value of $1.53 billion in 2005. Agriculture in San Diego County has an estimated annual economic impact to the region of $5.36 billion and ranks fifth as a component of San Diego County's economy as reported by the Greater San Diego Chamber of Commerce.

San Diego County is the southwestern most county in the state, enjoying a subtropical climate that optimizes production of a variety of crops that may be more difficult to produce elsewhere in the state. Moreover, the way agriculture is conducted on the County's approximately 5,255 farms differs greatly from agricultural operations in the majority of California. Economically productive agriculture is conducted on small farms, with 63 percent of farms ranging from 1 to 9 acres in size, 77% of farmers living on their farms and 92% of farms being family owned. In contrast, the average size of farms statewide is 346 acres.

A variety of agricultural commodities make up San Diego County's agriculture. In terms of total value, nursery and flower crops account for 66%; fruits and nuts account for 21%; field crops account for 9%, vegetables account for 3%; and livestock and poultry products (i.e. milk and eggs), livestock and poultry (i.e. cattle, chickens, hogs, rabbits, sheep) specialty crops, and apiary products account for approximately 1% each. San Diego County is rated as one of the top five counties in California for production of fresh market tomatoes, lemons, mushrooms, grapefruit, tangerines, cucumbers, and squash. San Diego County leads California and the nation in the production value of avocados, nursery, floriculture, and sod.

In addition to conventional agricultural production, organic production[3] has growing importance in the County. San Diego County leads the State of California with over 300 growers registered with the AWM's Standards Enforcement program, the first step for a grower to become certified organic. San Diego organic growers produced over 140 different crops on 6,400 acres with gross sales topping 28.6 million dollars. Local organic products are sold across the country and a portion is sold directly to local restaurants, natural food stores, Certified Farmers' Markets and Community Supported Agriculture (CSA) programs. Members of a CSA program receive boxes of seasonal organic fruits and vegetables throughout the year.

The agricultural industry in San Diego County is shaped by a variety of local factors, including climate; soil quality; topography; water quality, cost and availability; land cost and availability; and surrounding land uses. Further, agriculture is greatly influenced by wider global markets and commodity price fluctuations.

[3] The USDA defines organic production as "A production system that is managed to respond to site-specific conditions by integrating cultural, biological and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity."

1.2.1 Climate

Climate varies widely throughout the County, from the coastal regions where some weather stations have never recorded freezing temperatures to the inland valleys that are often moderated by the maritime influence, but also are subject to the continental influence which can bring greater temperature extremes and freezing temperatures. Local mountainous areas, such as the community of Julian, receive adequate winter chill to support tree crops that require seasonal cold temperatures for optimal production. Further east, the desert subtropical climate supports successful citrus and nursery operations.

A 1970 University of California Cooperative Extension (UCCE) book titled, “Climates of San Diego County: Agricultural Relationships” identified five areaclimates of maritime, coastal, transitional, interior, and desert. Within each areaclimate, similar climatic conditions are found, affecting suitability for crop production. The UCCE book also identified more detailed plantclimates, defined as a “climate in which specific plants, groups, or associations are evident and will grow satisfactorily, assuming water and soil are favorable.” (Close, et. al., 1970) Adapted from the plantclimates outlined in the UC Cooperative Extension Study, Generalized Western Plantclimate Zones, or "Sunset Zones" (from the Sunset Western Garden Books which popularized their usage) were developed to further differentiate the effect that latitude, elevation, ocean vs. continental air mass influence, and local terrain topology have on microclimates, freezing, and air and water drainage. Detailed descriptions of the areaclimates and “Sunset Zones” present in San Diego County are found in Attachment B.

Coastal and transitional areaclimates allow year round production due to low annual temperature variation and reduced heating and cooling costs as compared to hotter desert areas further east. These climates are also located in proximity to transportation infrastructure facilitating efficient product delivery to market. These factors make agriculture highly favorable and productive in the coastal and transitional areaclimates, where agriculture is concentrated.

1.2.2 Soil Quality

Detailed information on soils present in the region and their capability for agricultural use are contained in the United States Department of Agriculture Soil Surveys: Parts I & II (1973) and the County of San Diego Soil Interpretation Manual, Part III (1975). Descriptions of various measures of soil quality are presented below.

Land Capability Classification (LCC)
LCC classifies soils according to their limitations when cultivated and according to the way that they respond to management practices. Class I soils have no significant limitation for raising crops. Classes VI through VIII have severe limitations, limiting or precluding their use for agriculture. Capability subclasses are also assigned by adding a small letter to the class designation. Capability subclasses include the letters *e*, *w*, *s*, or *c*. The letter *e* shows that the main limitation is risk of erosion. The letter *w* indicates that

water in or on the soil interferes with plant growth or cultivation. The letter *s* indicates that the soil is limited mainly because it is shallow, droughty, or stony. Finally, the letter *c* is used only in some parts of the United States where cold or dry climates are a concern. Groupings are made according to the limitation of the soils when used to grow crops and the risk of damage to soils when they are used in agriculture. Productive agriculture in San Diego County typically occurs on soils having LCC ratings of III and IV, and a significant number of local soils have the class designations *e* and *c*, indicating limitations related to erosion and shallow soils.

Storie Index (SI)

SI, another traditional measure of soil quality, expresses numerically on a 100 point scale the relative degree of suitability or value of a soil for general intensive agriculture. Higher SI ratings indicate higher quality soils. The SI rating is based on several factors including profile characteristics (affecting root penetration), surface soil texture (affecting ease of tillage and capacity of soil to hold water), slope (affecting soil erosion), and other unique limiting factors of the soil such as poor drainage, high water table, salts, and acidity. Productive agriculture in San Diego County typically occurs on soils with low SI ratings (typically in the 30's).

Prime Agricultural Land

Soils in the San Diego County region are generally considered poor, with only 6% of the region's soils considered prime agricultural land, defined within Government Code §51201(c) as any soils having a LCC of I or II or a SI of 80 or higher. In San Diego County, prime agricultural land is sparsely scattered throughout the region and is often constrained by protected biological resources such as wetlands, restricting the feasibility of their use. Because San Diego County has generally steep terrain and erodible soils, the soil quality measures of LCC and SI rate local soils as poor due to the importance of slope and erodibility in the formulas that determine these soil ratings.

Prime Farmland Soils and Soils of Statewide Importance

The Department of Conservation's (DOC) Farmland Mapping and Monitoring Program's (FMMP) Farmland categories are based on local soil characteristics and irrigation status, with the best quality land identified as Prime Farmland and Farmland of Statewide Importance. The DOC publishes a list of soils that meet the soil quality criteria for Prime Farmland soils and soils of Statewide Importance (Attachment C). The soil criteria are defined by the Natural Resources Conservation Service (NRCS) and are unique to each county. In San Diego County, 44 local soils qualify for the Prime Farmland designation and 65 soils qualify for the Farmland of Statewide Importance designation. These soil criteria include a much broader range of soils than the Prime Agricultural Land definition in Government Code §51201(c), with 70% of the soils that meet the Prime and Statewide Importance Farmland soil criteria having a LCC greater than II and 88% have SI ratings below 80.

1.2.3 Topography

Topography plays an important role in San Diego County, contributing to a variety of microclimates and agronomic conditions. For example, because cold air is heavier than warm air, topography directs cold air to valley bottoms, reducing frost damage on slopes. Avocado groves that thrive on steep, rocky slopes benefit from the effect that topography has on facilitating water drainage. The fractured rocks on steep slopes, considered unsuitable for agriculture according to traditional soil quality measures, provide rapid water and air drainage preventing frost damage and avocado root rot (*Phytophthora cinnamomi)*, the most frequently encountered disease of avocado trees.

In addition to the role that topography plays in air and water drainage, topography affects the range of crops that are feasible to produce at a site. A flatter site will more likely be able to support an agricultural operation than a steep slope. While avocadoes can thrive on steep slopes, those slopes are not likely feasible for other crops, reducing overall agricultural potential. Flatter sites also facilitate mechanization of production which can be important management and economic considerations for an agricultural operation.

The Tecate Divide

Topography separates the County into two major watershed basins defined by the Tecate Divide. The Tecate Divide is a brush-covered mountain range that stretches from the County's southern boundary with Mexico to the northern boundary with Riverside County. The Divide separates lands that descend to the Pacific Ocean in the west and to the Colorado Desert Basin in the east.

Land west of the Divide is characterized by significant urban land uses toward the coast, with rural residential land uses interspersed with small farms in the inland areas. West of the Divide, farms are generally higher value and smaller than farms located east of the divide, reflecting the availability of imported water and the high cost of land which encourages maximization of economic output.

East of the Divide agriculture primarily exists in and around the community of Borrego Springs. Borrego Springs is located in the northeast region of San Diego County, in the Colorado River Basin. Agriculture in the desert basin tends to occur on larger farms and takes advantage of an affordable but limited water resource, Borrego's groundwater desert basin. Groundwater in Borrego Springs allows agriculture to survive in an otherwise harsh desert environment. Borrego Springs also supports large portions of prime agricultural and alluvial soil, which is not as common in other of parts of the County and can be advantageous to desert agricultural production. However, Borrego Springs relies completely on a groundwater resource that is essentially non-renewable and currently in a state of overdraft.

1.2.4 Water Resources

Water quality, cost, and availability are key components of a productive agricultural industry. Locally derived water resources in San Diego County are limited. Rainfall is highly variable throughout the County, with coastal areas averaging approximately 10 inches per year, desert locations averaging from 3 to 12 inches per year, and the Laguna Mountains averaging 27 to 30 inches per year. The highest rainfall occurs in the Palomar and Cuyamaca Mountains where 33 to 35 inches fall on average per year. Except for extensive dryland farmed field crops, agriculture must be supplemented with imported water or groundwater resources for optimum production. The availability, cost, and quality of water resources are limiting factors for agricultural production in San Diego County**.**

Water Quality
Salinity or Total Dissolved Solids (TDS) is the concentration of mineral salts dissolved in water. A high concentration of sodium reduces soil moisture penetration, high concentrations of TDS can reduce crop yields, and a high concentration of chloride is toxic to plants (DWR, 2005). Salinity or TDS, occurring at levels above 500 milligrams per liter (mg/L) is problematic to many of the subtropical crops grown in the San Diego region as they do not produce well and irrigation management is more difficult when irrigated with high TDS water (San Diego County Water Authority website). In other words, as TDS levels rise above 500 mg/L, the water has diminishing value for agricultural use as it can restrict the range of crops that can be irrigated with the water source and increases cost of irrigation maintenance. Most of the imported water supply has average TDS content exceeding 500 mg/L. Approximately 80 percent of Municipal Water District (MWD) water deliveries come from the Colorado River, which has an average TDS of 700 mg/L while State Water Project (SWP) averages about 250 mg/L (Ibid). The MWD has adopted a 500 mg/L TDS objective, however they will not provide a guaranteed blend of SWP and Colorado River supplies, making long-term improvements in the salinity of imported supplies uncertain for growers (Ibid). The elevated concentrations of TDS in the imported water supply makes contributions of TDS from other sources compound the problem. Elevated concentrations of TDS can negatively impact both groundwater and recycled water resources, important water resources for the long term preservation of farming.

Water Cost and Availability
Water for agricultural use in the County will remain a serious constraint as users continue to demand larger quantities of imported water and as energy costs rise, contributing to increasing water costs. The supply of imported water is largely dependent on water deliveries from the Colorado River, rainfall and water deliveries from the north, and development of new water storage projects to supply projected demand. Seawater desalinization is another water supply option that is currently being considered by water providers. Overall, the high cost and increasing uncertainty of the availability and quality of agricultural water supply is a constraint for economically viable agriculture in San Diego County.

The most productive and highest value crops are grown within the County Water Authority (CWA) service area where imported water is available. Agriculture within the CWA occurs on smaller farms reflecting the increased population density, high land cost and greater cost of production, necessitating high value crop selections to maintain economic viability. East of the CWA service area, agriculture is dependent on groundwater resources or rainfall for water supply.

For agricultural lands reliant on imported water, economic viability is constrained by the cost of imported water. To illustrate and compare the water costs in San Diego to nearby farming counties, the cost for imported water from the Imperial Irrigation District (Imperial County) is $15 per acre foot (AF) while the average cost for agricultural water in San Diego County is $650 per AF (Imperial Irrigation District Website). Growers in Ventura County, an area similar to San Diego agriculturally, pay $379 per AF (San Diego County Water Authority website). Water cost is also affected by the price of energy. Many water districts have to pump water up to higher elevations for delivery, the cost of which has increased greatly with increases in the price of energy. These costs are passed directly to growers in the form of higher water rates. Growers themselves often need to pump water to higher elevations to reach their crop, resulting in additional overall water costs.

Farmers within the Metropolitan Water District service area, which includes San Diego County, can enroll in Interim Ag Water Program (IAWP) that provides a $127 discount per acre foot of water. In exchange for that discount enrolled farmers agree to take a 30% reduction in water deliveries in a time of drought or supply emergency before municipal and industrial users have their supplies reduced. While the IAWP discount is critically important to farmers, the interruptible status puts their crops at risk.

Groundwater Resources

The high cost of imported water makes the availability of onsite groundwater resources an important resource for producers.[4] When compared to the cost of imported water, groundwater is relatively inexpensive. The greatest cost associated with groundwater use is the initial capital investment required to drill and install a well or wells. Ongoing costs of groundwater after infrastructure has been installed are relatively low and are based on the costs of energy to pump the water and periodic maintenance. As a result, growers within the CWA service area with a groundwater well often supplement irrigation with well water to reduce overall water costs or rely completely on groundwater resources for irrigation, if the resource is adequate. Groundwater quality is also important. A well with high TDS or other specific constituents such as chloride can be problematic for crop production.

In the County there are three primary types of groundwater aquifers: fractured crystalline rock, alluvial and sedimentary aquifers, and desert basins. Fractured rock

[4] Some groundwater resources are pumped by water agencies and delivered to consumers on a fee basis. The discussion of groundwater resources in this section refers to groundwater resources derived from the site where an agricultural commodity is produced, not groundwater resources pumped by a water agency and delivered to a site.

underlies approximately 73% of the unincorporated area of the County, mostly in mountainous areas. The characteristics of fractured rock aquifers vary significantly. Wells drilled only a few tens of feet from one another may have significantly different water production rates because water-producing fracture locations and orientations are difficult to identify and predict. Fractured rock aquifers typically have much less storage capacity than alluvial and sedimentary aquifers. As a result, pumping from wells in fractured rock typically produces a greater decline in water levels than a similar pumping rate for wells located in alluvial and sedimentary aquifers. Wells in a fractured rock aquifer typically yield relatively low volumes of water and have a low rate of production when compared to other aquifer types. Many fractured rock wells have been drilled in the County to depths of over 1,000 feet.

Alluvial and sedimentary aquifers underlie approximately 13% of the unincorporated area of the County and have significant storage capacity. These aquifers are typically found in river and stream valleys, around lagoons, near the coastline, and in the intermountain valleys and are composed of either consolidated or unconsolidated gravel, sand, silt, and clay. Most of these aquifers have high water storage capacity although some have relatively thin saturated thickness and therefore limited storage. Alluvial and sedimentary aquifers can be underlain by fractured rock aquifers, which could potentially provide additional storage.

Desert basins are characterized by extremely limited recharge, but typically have large storage capacities. Desert basin wells typically yield relatively high volumes of water due to the coarse-grained nature of the alluvial sediments. Because desert basin wells may be capable of yielding in excess of 1,000 Gallons per Minute (GPM), and recharge rates can be extremely low, it is easy to pump more water from the basin than is naturally recharged. Excessive pumping that exceeds the rate of recharge results in a groundwater overdraft situation, which is not sustainable for long-term groundwater use.

Borrego Valley is located in the desert basin and is supplied by an aquifer characterized by limited recharge due to annual rainfall of approximately six inches. Groundwater recharge for the Valley is estimated to average approximately 5,000 acre-feet per year. Groundwater demand is high, in excess of 20,000 acre-feet per year and has continued to increase through the past 20 years, due to water uses from over 4,000 acres of agricultural land, golf courses, and continued residential growth. This high groundwater demand has resulted in an overdraft condition where groundwater extraction continually exceeds long-term groundwater recharge.

Water levels have been declining in Borrego Valley's groundwater basin for decades as a result of the overdraft condition. More than 500,000 acre-feet of groundwater has been removed from the aquifer over the past 50 years, and groundwater production at current rates is not sustainable. Water level declines in Borrego Valley are most significant in northern portion of the basin where agricultural use is concentrated. In this area of the aquifer, over 50 feet of water level decline has occurred since the County began collecting water level data in the 1980s. As water levels in the basin continue to decline, the sustainability of agricultural activities in the basin will decline due to

economic impacts such as increased costs of pumping water from deeper in the aquifer, the cost of replacing wells that go dry as water levels decline below the level of their pumps, and the potential need to treat groundwater due to deteriorating water quality in deeper parts of the aquifer.

1.2.5 Land Cost and Availability

The high price of land in San Diego County limits the ability of farmers to purchase land for agricultural expansion. The value of land in the most productive agricultural areas of the County is typically not driven by its agricultural potential; rather it is driven by the value of its potential for urban development or as a primary residence, making land purchase for agricultural expansion infeasible for a majority of producers. Important agricultural areas such as Valley Center, Fallbrook and Bonsall are interspersed with non-agricultural uses and have median home prices above $600,000 (DataQuick Real Estate News, 2006). The price of land directly affects the ability of farmers to expand their operations. Agricultural expansion is further constrained due to the costs associated with regulatory requirements to mitigate impacts to biological resources associated with agricultural expansion onto native habitats.

In 1997, the Agricultural Commissioner issued a memo (Attachment D), discussing the commercial viability of agriculture on two acre lots, indicating that 671 citrus farms of two acres or less existed in the County. The memo concludes “the cost of land in the County makes it prohibitive for many new farmers to begin an operation on a large parcel, so the ability to farm small parcels is crucial to the success of future agriculture in San Diego County.” To date, the conclusions of this memo still apply; land costs have continued to rise, making the ability to farm small parcels vital to continued agricultural productivity in the County.

2.0 EXISTING REGULATIONS AND STANDARDS

There are many laws, regulations, policies and programs that aim to protect, preserve and promote agriculture. The following discussion details the most relevant State and County regulations, policies and programs pertaining to agricultural land use as they relate to the processing of discretionary land use projects pursuant to the CEQA. Additional Federal and State regulations and agricultural conservation programs are included in Attachment E.

2.1 State Regulations and Programs

California Environmental Quality Act [Public Resources Code 21000-21178; Guidelines for Implementation of CEQA, Appendix G, California Code of Regulations, Title 14, §15000-15387. http://ceres.ca.gov/topic/env_law/ceqa/guidelines/]
Under CEQA lead agencies are required to consider a proposed project's impacts to agricultural resources. The CEQA Guidelines recommend focusing on analyzing impacts to: Farmland as defined by the Farmland Mapping and Monitoring Program developed by the California Department of Conservation; Williamson Act contracts; agricultural zoning; and agricultural conversion. The California LESA Model was developed to provide lead agencies with an optional methodology to ensure that potentially significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process.

Land Conservation (Williamson) Act [Government Code §51200-51297.4, http://www.leginfo.ca.gov and http://www.consrv.ca.gov/dlrp/site_index.htm]
Known formally as the California Land Conservation Act of 1965, it was designed as an incentive to retain prime agricultural land and open space in agricultural use, thereby slowing its conversion to urban and suburban development. The program entails a ten-year contract between the City or County and an owner of land whereby the land is taxed on the basis of its agricultural use rather than the market value. The land becomes subject to certain enforceable restrictions, and certain conditions need to be met prior to approval of an agreement.

The underlying goals of the Williamson Act are to protect agriculture and open space. In the Williamson Act, the legislature found that "the discouragement of premature and unnecessary conversion of agricultural land to urban uses is a matter of public interest" and that "agricultural lands have a definitive public value as open space" (Government Code, §51220[c][d]).

During the past 25 years, very few property owners have requested Williamson Act contracts on their land within San Diego County. This lack of interest in Williamson Act contracts may be due to the fact that Proposition 13 substantially slowed the increase in property taxes. According to information from the County Assessor's Office, only two contracts were executed in San Diego County between 1980 and 2005 and 40 parcels currently under a Williamson Act Contract are in the process of non-renewal. The non-renewal process takes ten years to complete, during which time property taxes are

incrementally raised to remove the tax benefit, and at the end of the ten year period restrictions to development are lifted.

The Right to Farm Act [Civil Code §3482.5, http://www.leginfo.ca.gov]
This act is designed to protect commercial agricultural operations from nuisance complaints that may arise when the operation is conducting business in a "manner consistent with proper and accepted customs." The code specifies established operations that have been in business for three or more years that were not nuisances at the time they began, shall not be considered a nuisance as a result of a new land use.

In Souza v. Lauppe, 59 Cal.App.3d 865, 874-75 (1997), the court explained that Civil Code section 3482.5 (The Right to Farm Act) protects an agricultural operation if the following seven factors are met: the activity alleged to be a nuisance must be (1) an agricultural activity (2) conducted or maintained for commercial purposes (3) in a manner consistent with proper and accepted customs and standards (4) as established and followed by similar agricultural operations in the same locality; (5) the claim of nuisance arises due to any changed condition in or about the locality (6) after the activity has been in operation for more than three years; and the activity (7) was not a nuisance at the time it began.

Farmland Mapping and Monitoring Program (FMMP)
[http://www.consrv.ca.gov/dlrp/FMMP/index.htm]
The California Department of Conservation (DOC) FMMP produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status; the best quality land is called Prime Farmland. Maps are updated every two years, with current land use information gathered from aerial photographs, a computer mapping system, public review, and field reconnaissance. The minimum mapping unit is 10 acres. The DOC Prime Farmlands, Farmlands of Statewide Importance, and Unique Farmlands are referenced in the CEQA Guidelines, Appendix G as resources to consider in an evaluation of agricultural impacts.

2.2 Local Regulations, Policies, Standards, and Programs

San Diego County General Plan [http://ceres.ca.gov/planning/counties/San_Diego/plans.html]
The County's General Plan provides guidance for the protection, promotion and preservation of agriculture in San Diego County. Aspects of agriculture are discussed in the General Plan's Open Space Element, Land Use Element, Conservation Element, and Community Plans. The Open Space Element establishes goals to encourage agriculture use in suitable areas; foster compatibility between agricultural and non-agricultural uses; enhance the economic viability of agriculture; preserve productive agricultural areas; recognize the value of agricultural areas as open space; facilitate agricultural lands as greenbelts; and highlight the importance of a rural lifestyle. The Regional Land Use Element explains the permitted uses of the County's agricultural land use designations: (19) Intensive Agriculture and (20) General Agriculture. The emphasis of these two designations is to promote agricultural use. The Conservation

Element addresses agriculture's relationship with soils, climate, drainage, water availability, and economics in the County. The element established policies and action programs to monitor the agricultural conversion; and to analyze, improve and promote agriculture. The Community Plans focus on the protection, promotion and preservation of agriculture, on a community-by-community basis. The majority of the Community Plans only provide guidance on directing agricultural land use; however, some plans such as the Valley Center Community Plan have strong prohibitions on uses that would impact agriculture in their community.

San Diego County Agricultural Enterprises and Consumer Information Ordinance
[San Diego County Code of Regulatory Ordinances, §63.401 *et seq*. http://www.amlegal.com/sandiego_county_ca]
This ordinance is similar to the State Right to Farm Act discussed above. The ordinance defines and limits the circumstances under which agricultural enterprise activities, operations, and facilities will constitute a nuisance The ordinance recognizes that the commercial agricultural industry in the County of San Diego is a significant element of the County's economy and a valuable open space/greenbelt resource for San Diego County residents. The ordinance establishes a procedure whereby prospective purchasers of property are notified of the inherent potential conditions associated with agricultural operations found throughout the unincorporated area. These conditions include, but are not limited to, noise, odors, dust, insects, rodents, and chemicals. In 2003 the ordinance was amended[5] to require that all sales of real property within the unincorporated area of the County receive a notice in writing that discloses the following information:

> "Agricultural operations are located throughout the unincorporated area of San Diego County and are often conducted on relatively small parcels. The subject property is also located in the unincorporated area and, as such, is likely to be located near an agricultural enterprise, activity, operation, or facility or appurtenances thereof (collectively, "agricultural use"). Occupants of the property to be purchased may be exposed to inconveniences, irritations or discomforts arising from the agricultural use, including but not limited to noise, odors, fumes, dust, smoke, insects, rodents, the operation of machinery of any kind (including aircraft) during any 24 hour period, the storage and disposal of manure, and the application by spraying or other means of agricultural chemicals, such as pesticides and fertilizers. Purchasers of the property may be required to accept such inconveniences, irritations and discomforts, unless the agricultural use constitutes a public or private nuisance under the provisions of Section 3482.5 of the Civil Code or Section 63.403 of the San Diego County Code. The agricultural use may be altered or expanded in the future."

The application of this ordinance is not to be construed to in any way modify or abridge the State law set out in California Civil Code, Section 3482.5, relative to agricultural nuisances.

[5] The 2003 amendment to the Agricultural Enterprises and Consumer Information Ordinance changed the optional requirement to notify prospective purchasers of property of potential agricultural nuisances, to a mandatory notification. The amendment also rendered the Agricultural Enterprise Program obsolete. The agricultural enterprise program is no longer an active program at AWM.

San Diego County Board of Supervisors Policy I-38 Agricultural Preserves [County of San Diego, Policies of the Board of Supervisors http://www.sdcounty.ca.gov/cob/policy/I-38.doc]
The Board of Supervisor Policy I-38 sets forth policies for the implementation of the California Land Conservation Act of 1965, known as the Williamson Act. In 1965 the State Legislature added to the Government Code Sections 51200 et. seq. which authorized the County to establish agricultural preserves. An agricultural preserve is an area devoted to agricultural use, open space use, recreational use, or any combination of such uses, and compatible uses which are designated by the County. Preserves are established for the purpose of defining the boundaries of those areas within which the County will be willing to enter into contracts pursuant to the Act. Landowners within a preserve may enter into a Contract with the County to restrict their land to the uses stated above whereby the assessment on their land will be based on its restricted use rather than on its market value. Board Policy I-38 establishes criteria for the establishment, modification and disestablishment of an agricultural preserve including processing requirements, application fees, and hearing requirements. The policy also establishes a minimum size for an agricultural preserve, requires that each preserve establish minimum ownership sizes that landowners must meet to be eligible for a contract, requires the application of Zoning Regulations, establishes eligibility criteria for filing an application for an agricultural preserve and contract with the County, and establishes criteria to cancel a contract including cancellation by eminent domain.

San Diego County Farming Program [http://sdfarmingprogram.org/]
The goals of the San Diego County Farming Program are to promote economically viable farming in San Diego County and to create land use policies and programs that recognize the value of working farms to regional conservation efforts. The Farming Program will showcase the distinctiveness of San Diego County farms and will provide recommendations to promote and encourage viable farming in the County, serving as a model for other urban counties. Development of a framework for the Farming Program is currently underway in a partnership with the County of San Diego, the San Diego County Farm Bureau, UC Cooperative Extension/Farm and Home Advisors, and the American Farmland Trust.

San Diego County Board of Supervisor's Policy I-133 Support and Encouragement of Farming in San Diego County [County of San Diego, Policies of the Board of Supervisors http://www.sdcounty.ca.gov/cob/policy/I-133.pdf]
In 2005, the Board of Supervisors adopted a policy to establish the County's support of agriculture. The policy established the Board's commitment, support, and encouragement of farming in San Diego County through establishment of partnerships with landowners and other stakeholders to identify, secure, and implement incentives that support the continuation of farming as a major industry in San Diego. The intent is to develop and implement programs designed to support and encourage farming in San Diego County.

3.0 DETERMINING THE IMPORTANCE OF AGRICULTURAL RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, the CEQA Guidelines references the California Agricultural LESA Model (1997) prepared by the California Department of Conservation (DOC), as an optional methodology that may be used to assess the relative value of agriculture and farmland. In the past, the LESA model has been applied to various agricultural properties throughout the County of San Diego to assess agricultural importance in association with proposed discretionary land use permits. After several years of practical experience with application of the LESA model in San Diego County, the inadequacy of the model in capturing the unique and varied character of San Diego agriculture has become apparent. An alternative approach, referred to as the Local Agricultural Resource Assessment (LARA) model has been developed to assess the relative value of agricultural resources in San Diego County.

Where it is feasible for County staff to apply the LARA model to discretionary land use projects to determine the importance of agricultural resources, this will be completed by County staff instead of requesting an agricultural technical report from an outside consultant. If the site is determined to be an important agricultural resource pursuant to the LARA model and if staff can provide recommendations that would reduce the significance of potential impacts, such as project redesign to avoid important agricultural resources, these recommendations will be provided to the applicant in the project's scoping letter. For larger or more complex projects where County staff cannot determine based on available information that the proposed project would not cause significant impacts, the County may request that an outside consultant complete the LARA model and prepare a technical agricultural resources report to determine the significance of potential impacts.

The LARA model takes into account the following factors in determining the importance of an agricultural resource:

Required Factors:

- Water
- Climate
- Soil Quality

Complementary Factors:

- Surrounding Land Uses
- Land Use Consistency
- Topography

The LARA model approach to analyzing agricultural resources is consistent with direction provided in policies of the Open Space Element of the General Plan, which states:

> "When considering a subdivision request, or other development proposal, the determination of productive agricultural area shall be made based on existing agricultural uses, and on the potential for future agricultural production, and the contribution to the agricultural sector of our economy. Consideration shall be given, but shall not be limited to soil types, climate, the availability of water and its quality, and the existence of Williamson Act preserves ad contracts. On-site

> and adjacent land use designations and zoning, ownership and parcelization patterns, as well as existing land uses, and cropping history shall all be considered."

The LARA model considers soils, climate and water as primary model factors while also considering the presence of Williamson Act Contracts, other preserved lands, and existing land uses in the surrounding area. The land use consistency factor takes into account parcelization patterns while the presence of existing agricultural use and cropping history is considered because these factors are among those that define agricultural resources.

The evaluation of agricultural resources pursuant to the LARA model is focused on the underlying physical resources present on the project site and not on the economic loss of a particular agricultural commodity that may have been grown there. This is based on the requirements under CEQA to evaluate the changes to the physical environment that would occur as a result of the conversion of agriculture to a non-agricultural use and not to consider economic changes as significant effects on the environment. The quality of the site's soil in combination with water availability and climate defines the quality of the physical agricultural resource that CEQA requires lead agencies to evaluate. Due to the fact that agriculture is an industry driven by markets and individual landowner's economic decisions, while also constituting a physical resource to be evaluated pursuant to CEQA, it is useful to consider the nature of San Diego County agricultural production in relation to the requirements of CEQA for evaluation of these resources. The State CEQA Guidelines §15064(d) and §15064(e) state:

> "In evaluating the significance of the environmental effect of a project, the lead agency shall consider direct physical changes in the environment which may be caused by the project and reasonably foreseeable indirect physical changes in the environment which may be caused by the project." (§15064(d))

> "Economic and social changes resulting from a project shall not be treated as significant effects on the environment. Economic or social changes may be used, however, to determine that a physical change shall be regarded as a significant effect on the environment." (§15064(e))

This importance of differentiating important physical agricultural resources from important economic agricultural resources becomes particularly clear when considering how this concept may be applied to an evaluation of the County's highest value agricultural commodity, indoor flowering and foliage plants. Typically, this industry does not rely on native soils. These commodities are often grown in greenhouses and in various artificial or imported growing mediums. Would then, the conversion of a nursery operation located on poor quality soils be considered a physical impact on the environment, assuming the conversion would not aversely impact surrounding agricultural land uses? Assuming a lack of unique site features and a lack of high quality soils, the site should not be considered an important agricultural resource since valuable physical agricultural resources would not be lost. The loss of the nursery operation would constitute a land use change, likely in response to economic factors

that make continued production infeasible. It is also an economic change to the agricultural industry; however these effects should not be considered impacts to or the loss of physical resources under CEQA. In contrast, if the nursery operation were located on high quality soils, its loss could constitute a potentially significant adverse effect on an important agricultural resource (the high quality soils).

The LARA model focuses on evaluating the quality of a site's physical agricultural resources. This approach recognizes the fact that the agricultural industry will change in response to markets and economic conditions over time, but that impacts to agricultural lands with inherent physical value must be analyzed pursuant to CEQA. Ultimately, if a site is determined to be important pursuant to the LARA model, quality soil is the primary resource that should be preserved to avoid significant impacts to the agricultural resource. While many crops currently produced in San Diego County do not rely on high quality soils, preserving quality soils will maintain the long term integrity of the fundamental non-renewable natural resource that supports agricultural production. This is important due to the changing nature of agricultural commodity profitability and viability. For example, commodities currently produced in San Diego County that do not rely on high quality soils could become threatened by imported pests, disease, or changes in market conditions that make their production economically infeasible. If this were to occur, the availability of locally important agricultural soils would be essential for ongoing local agricultural viability. Furthermore, quality agricultural soils are the fundamental physical agricultural resource that CEQA requires lead agencies to evaluate and protect where feasible.

Table 1, State LESA and County LARA Agricultural Model Comparison, provides details regarding the various factors that are included in each model, explains why certain factors or factor weights included in the LESA model are not conducive to rating the importance of agricultural lands, and explains why certain other factors and/or factor weights are used in the LARA model.

Table 1. State LESA and County LARA Agricultural Model Comparison

Model Factors	State LESA Model	County LARA Model	Discussion
Primary Factors			
Soils	Model applies 50% weight to soil quality	Soil quality is one of the three required factors for a determination of importance	The LESA model soil quality rating is based solely on LCC and SI ratings, with an assignment of 50% weight to soil quality using these ratings. San Diego County has limited quantities of high quality soil as defined by LCC and SI ratings. The use of these soil ratings in the LESA model does not adequately account for locally important soils that may not be rated highly using the LCC and SI rating system. The LARA model uses a more inclusive definition of soil quality that is based on locally important soils as defined by the USDA NRCS. The USDA NRCS soil quality criteria have been developed for San Diego County to define the soil characteristics that must be met for a site to qualify for the FMMP Prime Farmland and Farmland of Statewide Importance designation.
Water	Model applies 15% weight to Water Resource Availability	Water is one of the three required factors for a determination of importance	In San Diego County, the availability of imported water and/or availability of a reliable and clean groundwater resource are essential for productive agriculture. The 15% weight assigned to water resource availability within the LESA model and the LESA scoring focus on drought conditions and irrigation infrastructure does not adequately reflect the various factors that affect water reliability locally. The LARA model incorporates various local factors into the water score including the location of a site within or outside of the CWA, presence of imported water infrastructure, the underlying groundwater aquifer type and the presence of a groundwater well. The LARA model water resource factor also allows consideration of the effects of water quality on the ultimate water score. While the LARA model water score is highly suited to the unique conditions of San Diego County, the LESA model is tailored to deal with conditions that affect areas such as California's Central Valley.
Climate	Climate is not included in the LESA model	Climate is one of the three required factors for a determination of importance	San Diego County's climate varies greatly from the coast to the desert and agricultural productivity also varies with the climate conditions. The moderating influence of the ocean is one of San Diego County's most valuable agricultural resources as this influence encourages low annual temperature variation which allows year round production. The coastal and transitional climates are also benefited by their proximity to transportation infrastructure, as compared to mountainous and desert areas further east.

Model Factors	State LESA Model	County LARA Model	Discussion
Complementary Factors			
Land Use Factors	15% weight assigned to the presence of surrounding agricultural lands; 5% weight assigned to the presence of protected resource lands	Surrounding Land Uses and Land Use Consistency are complementary factors in the model	Two land use factors are included as complementary factors in the LARA model: surrounding land use and land use consistency. The LARA model surrounding land use factor rates more highly sites that are surrounded by agricultural lands, protected resource lands, and rural residential lands than sites that are surrounded by fewer of these types of land uses. This recognizes that a site surrounded by compatible surrounding land uses will more likely be viable for ongoing agricultural use due to lower likelihood of incompatible land use conflicts. This factor is similar to the LESA model factors of surrounding agricultural lands and protected resource lands except that the LARA model includes rural residential lands as a compatible land use. Land use consistency is a second land use factor included in the LARA model that is not considered in the LESA model. This factor takes into account the range of parcel sizes that agriculture is conducted on by relating the project parcel size to surrounding parcel sizes. This is an important factor due to the large variation of environments where agriculture occurs and the need to tailor an evaluation of the resources to the specific land use conditions that exist in a particular location. Overall, the land use factors in the LARA model provide a better measure of local agricultural viability because they take into account the variability of farm sizes and recognize that agriculture occurs among non-agricultural land uses in San Diego County.
Project Size	Model applies 15% weight to project size	Project size is not included as a model factor	Project size is not included in the LARA model to account for the fact that agriculture commonly occurs on small parcel sizes in San Diego County. The size of the parcel in relationship to the size of surrounding parcels is a more important factor in determining agricultural viability in San Diego County. This is in contrast to the LESA model which assigns higher points to larger parcels, reflecting farming characteristics of the Central and Imperial Valleys, for example. Large farm size is not characteristic of agriculture in San Diego County and as such, farm size is not a useful measure of agricultural importance.
Topography	Topography not included in the LESA model	Included as a complementary factor in the LARA model	Varied topography is present in San Diego County, with agriculture occurring on various degrees of slope. To account for the greater flexibility and benefits of farming on flatter land, the LARA model includes topography (average slope) as a complementary factor.

3.1 LARA Model Instructions[6]

Application of the LARA model is intended for use in evaluating the importance of agricultural resources when it is determined that a discretionary project could adversely impact agricultural resources located onsite. The LARA model takes into account the following factors in determining importance of the agricultural resource:

Required Factors:	**Complementary Factors:**
Water	Surrounding Land Uses
Climate	Land Use Consistency
Soil Quality	Topography

Directions for determining the rating for each LARA model factor are provided in sections 3.1.1 through 3.1.6 of this document. Upon rating each factor, it is necessary to refer to Table 2, Interpretation of LARA Model Results, to determine the agricultural importance of the site.

Table 2. Interpretation of LARA Model Results

LARA Model Results			**LARA Model Interpretation**
Possible Scenarios	**Required Factors**	**Complementary Factors**	
Scenario 1	All three factors rated high	At least one factor rated high or moderate	The site is an important agricultural resource
Scenario 2	Two factors rated high, one factor rated moderate	At least two factors rated high or moderate	
Scenario 3	One factor rated high, two factors rated moderate	At least two factors rated high	
Scenario 4	All factors rated moderate	All factors rated high	
Scenario 5	At least one factor rated low importance	N/A	The site is *not* an important agricultural resource
Scenario 6	All other model results		

Data Availability

To complete the LARA model, various data sources are needed. The most efficient approach to completing the model is through analysis within a GIS. To facilitate this approach, the GIS data layers required to complete the LARA model are available upon request from DPLU. Available data sources include: groundwater aquifer type, Generalized Western Plantclimate Zones or "Sunset Zones", and Prime Farmland and

[6] Various data sources referenced in this document are available from DPLU in hard copy format (maps) or in digital format for use within a Geographic Information System (GIS). Obtaining various data sources will be required to determine the importance of the resource.

Farmland of Statewide Importance soil candidates. Other data sources are available from the SANGIS webpage at http://www.sangis.org/.

3.1.1 Water

The water rating is based on a combination of a site's CWA service status, the underlying groundwater aquifer type and the presence of a groundwater well (Table 3). Due to the variability of well yields and the potential for groundwater quality problems to adversely impact the viability of the well for agricultural purposes, the water factor allows for a reduction in the water rating based on site specific well yield and quality data, if that data is available (Table 4).

Table 3. Water Rating [7]

County Water Authority (CWA) Service Status	Groundwater Aquifer Type and Well Presence	Rating
Inside CWA service area with existing water infrastructure connections and a meter	Any groundwater aquifer type	High
Inside CWA service area with infrastructure connections to the site, but no meter has been installed	The site is located in an Alluvial or Sedimentary Aquifer *and* has an existing well	High*
	The site is located in an Alluvial or Sedimentary Aquifer, but has no existing well	Moderate*
	The site is located on Fractured Crystalline Rock and has an existing well	Moderate*
	The site is located on Fractured Crystalline Rock, but has no existing well	Low*
Outside CWA or inside CWA but infrastructure connections are not available at the site and no meter is installed	The site is located in an Alluvial or Sedimentary Aquifer *and* has an existing well	Moderate*
	The site is located in an Alluvial or Sedimentary Aquifer, but has no existing well	Low*
	The site is located on Fractured Crystalline Rock (with or without a well)	Low*
	The site is located in a Desert Basin (with or without a well)	Low*

*These water ratings may be reduced based on available groundwater quantity and quality information, in accordance with Table 4. If no additional groundwater quantity or quality data is available, the ratings above shall apply.

[7] If more than one underlying groundwater aquifer type exists at a site, usually the aquifer type that could produce the most water should be used to obtain the water rating. If it would be more reasonable to apply the rating based on the aquifer that would produce less water, a clear justification and reason for doing so must be provided.

Water Quality and Quantity Limitations

Site specific limitations to groundwater availability and quality exist and can lower the overall water rating of a site when data is available to support the limitation. Sites with imported water availability may not receive a lower water rating based on groundwater quality or yield data. Table 4 outlines potential water availability and quality limitations and the associated effect on the LARA model water rating.

Table 4. Groundwater Availability and Quality Effects on Water Rating

Groundwater Availability and Quality	Effect on Water Rating
The site has inadequate cumulative well yield (<1.9 GPM per acre of irrigated crops); TDS levels above 600 mg/L; or another documented agricultural water quality or quantity limitation exists	Reduces water rating by one level (i.e. from high to moderate or from moderate to low)

A determination of inadequate cumulative well yield as stated in Table 4 means that a site's well cannot produce at least enough water for each acre of irrigated crops at the site. At least 1.9 GPM is required per acre of irrigated crops, equating to production of 3 Acre Feet/Year (AFY) based on the following conversion factor: 1 AFY = 325,851 Gallons per Year / 365 days / 1440 minutes = 0.62 GPM. Cumulative well yield means that the combined yield of all wells on site may be summed to meet the required groundwater yield. As an example, if a site has 5 acres of irrigated crops, then production would need to be at least 9.5 GPM to produce enough water to irrigate the 5 acres, equating to approximately 15 AFY. If residence(s) exist on the project site, the groundwater analysis must demonstrate that an additional supply of 0.5 AFY can be achieved to account for residential water use associated with each existing onsite residence. To allow a reduction in the water quality score, TDS levels above 600 mg/L must be documented. If other documented water quality limitations exist that are not captured in the water quality measure of TDS, the water quality data must be provided and an associated water rating reduction justified. Although these requirements assume that water needs are consistent for a crop throughout the year while water requirements are typically higher in the dryer months, average annual required yield is used as the best available general measure of the adequacy of groundwater yields.

The quality and availability of imported water is not included as a factor to allow a reduction in the water rating due to an assumption that the MWD will continue to deliver water with the 500 mg/L TDS objective. However, it should be recognized that the degradation of the quality of Colorado River water is a known issue that could preclude the production of certain crops in the future. If in the future, the MWD is unable to meet their adopted water quality objectives, a similar reduction for imported water quality may need to be developed for consideration in the water score. Similarly, there is uncertainty regarding the continued future reliability of agricultural water deliveries based on various external issues that may affect local imported water supply such as protection of the Salton Sea and the stability of the Sacramento/San Joaquin Delta. As the impacts from external sources to local agricultural water deliveries become realized, the treatment of the water score in this document may need to be reevaluated.

Water Rating Explanation

Sites with availability of imported water always receive the highest water rating regardless of groundwater availability because the availability of imported water is essential for the long term viability of agriculture due to the limited natural rainfall and limited availability of groundwater resources in the County. Sites within the CWA service area that have no existing water meter, but that have water infrastructure connections to a site (in or near an adjacent street), are assigned a higher water rating than sites without existing water infrastructure connections. This is because the cost of extending off-site water infrastructure and obtaining a water meter is much higher than only obtaining a water meter and constructing onsite infrastructure connections to existing adjacent imported water infrastructure. Furthermore, the presence of existing imported water infrastructure adjacent to a site is a good indication that imported water is likely to become available to the site in the future (more likely than for a site far from infrastructure for imported water).

The underlying groundwater aquifer type and the presence of a well are two additional factors that affect the water rating. In general, sites underlain by an alluvial or sedimentary aquifer receive the highest ratings because these substrates have a much greater capacity to hold water than fractured crystalline rock. A site underlain by an alluvial or sedimentary aquifer with an existing well receives a higher rating than a site underlain by these geologic formations but having no existing well because of the cost associated with well installation. Well installation costs are added to the initial capital outlay required to begin an agricultural operation, thereby reducing the water rating if no well is present. The availability of groundwater in fractured crystalline rock is highly uncertain. However, a site underlain by fractured crystalline rock that has an existing well and is located adjacent to imported water infrastructure receives a moderate rating to take into account the cost of well installation, and the increased likelihood that imported water may become available at the site in the near future. Additionally, while groundwater yield in fractured crystalline rock is generally limited compared to other aquifer types, it can provide a good source of groundwater, especially in valley areas where there may be saturated residuum overlying the fractured crystalline rock. Sites with a well located on fractured crystalline rock, but without imported water infrastructure connections to the site, always receive a low rating because such sites would likely be reliant on a limited groundwater resource for the foreseeable future.

Nearly all agriculture in the desert basins is located in Borrego Valley, where documented groundwater overdraft conditions limit the long-term sustainability of agricultural use. A site located in a desert basin receives a low water rating due to the absence of imported water, and low groundwater recharge rates, which can easily result in groundwater overdraft conditions as documented in Borrego Valley, where extraction rates far exceed natural recharge. The Borrego Municipal Water District is taking measures to reduce water use in the basin through encouraging the fallowing of agricultural land. In addition, the County of San Diego requires proposed projects to mitigate for significant impacts to groundwater supply in accordance with CEQA. Mitigation may be achieved through the fallowing of agricultural land. These factors make preservation of agriculture in Borrego Valley infeasible in the long term when

considering the need to reduce overall groundwater use to protect the public health and the sustainability of the community.

Groundwater Quantity and Quality Explanation

The following discussion explains the reasoning behind the water rating reductions detailed in Table 4, Groundwater Availability and Quality Effects on Water Rating. The lack of a well with adequate yield (1.9 GPM for each acre of irrigated crops) reduces the water rating by one factor. This standard is based on the well yield needed to achieve production of 3 AFY per acre, an average crop irrigation requirement for crops produced locally (Table 5).

Table 5. Crop Water Use Averages

Crop	Typical Water Usage Per Acre (AFY)
Indoor Flowering and Foliage Plants	3-4
Ornamental Shrubs and Trees	3
Avocados	3
Bedding Plants	3
Cut Flowers	2-3
Tomatoes	2
Citrus	2.5-3
Poinsettias	3-4
Strawberries	3
Average	**3**

Source: UC Cooperative Extension, County of San Diego

A well with poor water quality (as measured by TDS levels above 600 mg/L or another documented water quality limitation) may reduce the water rating by one factor to account for agricultural limitations associated with using poor quality water for crop production. Groundwater with TDS concentrations above 600 mg/L is the guideline for allowing a reduction in the water factor based on available research on the effects of TDS on crop production, with specific focus on the effects on crops important to the San Diego region. In general, as TDS levels rise, water has diminishing value for agricultural use as it can restrict the range of crops that can be irrigated with the water and increases the cost of irrigation system maintenance.

According to the San Diego County Water Authority Agricultural Irrigation Water Management Plan, TDS levels above 500 mg/L are problematic for many of the subtropical crops produced in San Diego County, and TDS levels over 1,000 mg/l are virtually unusable for many of the subtropical crops grown here (2001). While TDS concentrations above 500 mg/L can be problematic for many subtropical crops, concentrations above 600 mg/L was selected as the guideline to take into account the already elevated TDS concentrations in imported water sources. Another study (Peterson, 1999) identified the TDS tolerance of selected crops. Field crops such as oat hay, wheat hay and barley were found to tolerate water with TDS levels up to 2,500

mg/L, but these are among the lowest value crops produced in the County. Strawberries were found to be intolerant to TDS levels greater than 500 mg/L; apples, grapes, potato, onion, and peppers slightly tolerant to TDS levels up to 800 mg/L; and cucumbers, tomatoes, and squash moderately tolerant to TDS levels up to 1,500 mg/L. The Florida Container Nursery BMP Guide prepared by the University of Florida Agricultural Extension (2006) identified TDS levels and the associated degree of problem that will be experienced for microirrigated container nursery production at different TDS levels. TDS of 525 mg/L or less was identified as producing no problems, TDS from 525 to 2100 mg/L having increasing problems, and TDS greater than 2100 mg/L having severe problems. High levels of TDS can be overcome through planting more salt resistant crops; however salt resistant crops are typically lower in value and would not produce the economic returns necessary to sustain a viable farming industry in San Diego County (high cost of production and land generally require production of high value crops). In general as TDS levels rise, crop yields decline, maintenance of irrigation systems becomes more difficult, and the range of crops (particularly high value crops) that can be supported is reduced.

In summary, TDS levels in groundwater above 600 mg/L substantially impair the water as a source of irrigation for agriculture, justifying a reduction in the water rating by one factor to account for the potential for reduced yields, increased difficulty in maintaining irrigation systems, and reduction in the range of crops that can be produced.

It is important to note that TDS is only one measure of water quality and does not differentiate between the various types of dissolved solids or contaminants that may be present in water. High levels of certain constituents can cause severe problems for agricultural production. For example, high chloride content can damage certain crops, while nitrates can cause problems for livestock. If specific documented limitations exist that reduce the viability of the water supply for agriculture, the water rating should be reduced. The quality of imported water is not considered because it is assumed that the MWD will deliver water with a maximum TDS of 500 mg/L, their adopted TDS objective for imported water deliveries.

3.1.2 Climate

Ratings associated with each Generalized Western Plantclimate Zone or “Sunset Zone” are included in Table 6, Climate Rating. The table identifies and describes each zone and justification for the associated rating.[8] Detailed descriptions of the Sunset Zones in San Diego County are included in Attachment B.

[8] All Sunset Zones in the County are not included in the table. Zone 22 is a small area that occurs entirely within Camp Pendleton, therefore no rating is assigned to this zone. Zone 24 is the maritime influenced zone. Only limited portions of unincorporated communities exist in this zone (County Islands in National City and the west Sweetwater area). Although this zone is valuable for certain high value crops, it is not assigned any importance rating due to the very small area of unincorporated land that occurs in this zone and the fact that the land is fully urbanized.

Table 6. Climate Rating

Climate (Sunset Zone) Description	Rating	Justification
Zone 23 represents thermal belts of the Coastal Areaclimate and is one of the most favorable for growing subtropical plants and most favorable for growing avocados. Zone 23 occurs in coastal incorporated cities and also occurs in the unincorporated communities of Fallbrook, Rainbow, Bonsall, San Dieguito, Lakeside, western portions of Crest and Valle De Oro, Spring Valley, Otay, and western portion of Jamul-Dulzura.	**High**	Zone 23 is rated high because this climate zone is the most favorable for growing some of the County's most productive crops. Year round mild temperatures allow year round production and the proximity to urban areas and infrastructure facilitates efficient delivery to market.
Zone 21 is an air drained thermal belt that is good for citrus and is the mildest zone that gets adequate winter chilling for some plants. Low temperatures range from 23 to 36 degrees F, with temperatures rarely dropping far below 30 degrees.	**High**	Zone 21 is rated high because of the mild year round temperatures and lack of freezing temperatures that allow year round production of high value crops. The importance of this zone is also related to the conversion pressure that exists due to urban encroachment. Preserving agriculture in Zone 21 is essential to maintain the high returns per acre that are common in this County. Climate is the essential factor that allows high value production. The loss of significant agricultural lands in Zone 21 would eventually relegate agriculture to areas further east where most of the County's high value crops cannot be viably produced. Zone 21 is also favorable due to its location close to urban areas and transportation infrastructure which facilitates product delivery to market.
Zone 20 is a cold air basin that may be dominated by coastal influence for a day, week or month and then may be dominated for similar periods of time by continental air. Over a 20 year period, winter lows in Zone 20 ranged from 28 to 23 degrees F.	**High**	Zone 20 occurs the Ramona area. Citrus groves are common in Zone 20 in addition to a concentration of animal agriculture operations and vineyards. Most of Zone 20 falls within the 89,000-acre Ramona Valley viticultural area which was designated as its own appellation in 2006 and contains 17 vineyards currently cultivating an estimated 45 acres of wine grapes. The distinguishing factors of the Ramona Valley viticultural area include its elevation, which contrasts with the surrounding areas, and climatic factors related to its elevation and inland location. Due to the favorable climate, proximity to urban areas, and its potential to become a more widely recognized viticultural area, Zone 20 is rated as a climate of high importance.
Zone 19 is prime for citrus, and most avocadoes and macadamia nuts can also be grown here.	**High**	Zone 19 is rated high due to the suitability for growing the County's high value crops and its location close to urban areas.

Zone 18 is a mountainous zone subject to frosts. Citrus can be grown in Zone 18, but frosts require the heating of orchards to reduce fruit loss. Zone 18 is the home of Julian's apple orchards.	**Moderate**	Zone 18 is assigned a medium rating due to its frost susceptibility, reducing its potential for supporting year round production and frost sensitive crops. However, the ability to produce crops that require winter chilling makes it a climate zone of moderate importance.
Zone 13 covers low elevation desert areas (considered subtropical) and is the most extensive of the County's desert Plantclimate zones. Zone 13 includes the extensive agricultural uses in the Borrego Valley.	**Moderate**	Zone 13 is assigned a moderate rating due to the temperature extremes characteristic of this zone. These temperature extremes exclude some of the subtropicals grown in Zones 22 to 24, however numerous subtropicals with high heat requirements thrive in this climate such as dates, grapefruit, and beaumontia and thevetia (ornamentals).
Zone 11 is located below the high elevation Zone 3 and above the subtropical desert Zone 13.	**Low**	Zone 11 is assigned a low climate rating due the agricultural hazards of the climate including late spring frosts and desert winds.
Zone 3 occurs in the high elevation Palomar Mountains in addition to high elevation areas east of the Tecate Divide. These are locations where snow can fall and wide swings in temperature occur.	**Low**	Most of these lands are pubic lands, reducing their potential for commercial agriculture. The wide swings in temperature, including freezing temperatures in winter make this zone of low importance agriculturally. This zone is also far from transportation infrastructure; an important consideration for crop delivery to market.

While it is anticipated that the climate ratings would normally not be modified, it is important to acknowledge that microclimate conditions do exist that cannot be captured in the Sunset Zone definitions. For example, topography can create certain microclimate conditions such as frost susceptibility that could downgrade the climate importance of a site to marginal if frost tolerant crops cannot be grown at the site. Any downgrading or upgrading of a climate rating must be accompanied by site specific climate data to support the modification, and any identified climate limitations must be based on the range of crops that could be viable at the site. For example, if frost sensitive crops are the only crop identified to be viable at the site and the site would be subject to frequent frosts, this should be documented and a lower rating may be applied. It is not anticipated that climate modifications would be commonly used given the diversity of crops that a site would usually be able to support.

Sunset Zones are used as a standard measure of climate suitability due to the variability of microclimate conditions that the Sunset zones take into account. Recognizing that the Sunset Zones were not developed as a tool to determine the suitability for commercial agricultural production, their use is not intended to determine suitability for specific crops, rather they are a measure of overall climate suitability for the typical agricultural commodities produced in San Diego County. For example, the Sunset Zone designations take into account the USDA hardiness rating which identifies the lowest temperature at which a plant will thrive. Sunset Zones start with the USDA hardiness zones and add the effects of summer heat in ranking plant suitability for an area. The American Horticulture Society (AHS) heat zone map ranks plants for suitability to heat, humidity and dryness. The AHS heat zone map was developed under the direction of

Dr. H. Marc Cathey, who was instrumental in the organization of the USDA Plant Hardiness Map. Each AHS heat zone has "heat days," those days with temperatures of 86° F or above. 86° F is the point at which some plants suffer damage to cellular proteins. The USDA plant hardiness zone maps and/or the AHS heat zone map may be used to supplement the Sunset Zone information if the Sunset Zone descriptions are not accurate.

3.1.3 Soil Quality

The project's soil quality rating is based on the presence of Prime Farmland Soils or Soils of Statewide Significance (Attachment C) that are available for agricultural use and that have been previously used for agriculture. Land covered by structures, roads, or other uses that would preclude the use of the land for agriculture, are not typically considered in the soil quality rating. To determine the soil quality rating, the soil types on the project site must be identified. The soils data for the project site must be entered into Table 7, Soil Quality Matrix as detailed in the steps below:

Step 1.
Identify the soil types that are on the project site. Enter each soil type in Rows 1 through 13 of Column A. If the site has more soil types than available rows, add additional rows as needed.

Step 2.
Calculate the acreage of each soil type that occurs on the project site and enter the acreage of each in Column B. Enter the total acreage in Row 14, Column B. This number should equal the total acreage of the project site.

Step 3.
Calculate the acreage of each soil type that is unavailable for agricultural use[9] and enter the total in the corresponding rows of Column C.

Step 4.
Subtract the values in Column C from the acreages of each soil type identified in Column B**.** Enter the result in Column D.

[9] Soils unavailable for agricultural use include: 1) lands with existing structures (paved roads, homes, etc.) that preclude the use of the soil for agriculture, 2) lands that have been disturbed by activities such as legal grading, compaction and/or placement of fill such that soil structure and quality have likely been compromised (e.g., unpaved roads and parking areas), 3) lands that are primarily a biological habitat type that have never been used for agriculture, and 4) lands constrained by biological conservation easements, biological preserve, or similar regulatory or legal exclusion that prohibits agricultural use. The distinction between agriculture and biological resources is not always clear because agricultural lands commonly support sensitive biological species. Agricultural lands that incidentally support sensitive species should still be considered an agricultural resource; however, biological habitats that have never been used for agriculture should not be considered an agricultural resource. It is possible that non-native grasslands will be classified as both a biological resource and an agricultural resource since many non-native grasslands have been established based on a history of agricultural use.

Step 5.
Sum the acreage values in Column D and enter the total in Column D, Row 14.

Step 6.
Divide the acres of each soil type in Column D by the total acreage available for agricultural use (Column D, Row 14) to determine the proportion of each soil type available for agricultural use on the project site. Enter the proportion of each soil type in the corresponding row of Column E.

Step 7.
Determine whether each soil type is a soil candidate for Prime Farmland or Farmland of Statewide Importance. If yes, enter 1 in the corresponding row of Column F. If no, enter zero in the corresponding row of Column F.

Step 8.
Multiply Column E x Column F. Enter the result in the corresponding row of Column G.

Step 9.
Sum the values in Column G and enter the result in Column G, Row 15 to obtain the total soil quality matrix score.

Step 10.
Based on the total soil quality matrix score from Table 7, identify the corresponding soil quality rating using Table 8 Soil Quality Matrix Interpretation

Table 7. Soil Quality Matrix

	Column A	Column B	Column C	Column D	Column E	Column F	Column G
	Soil Type	Size of project site (acreage)	Unavailable for agricultural use	Available for agricultural use	Proportion of project site	Is soil candidate for prime farmland or farmland of statewide significance? (Yes = 1, No = 0)	Multiply Column E x Column F
Row 1							
Row 2							
Row 3							
Row 4							
Row 5							
Row 6							
Row 7							
Row 8							
Row 9							
Row 10							
Row 11							
Row 12							
Row 13							
Row 14	Total		Total				
Row 15						***Soil Quality Matrix Score***	

Table 8. Soil Quality Matrix Interpretation

Soil Quality Matrix Score	Soil Quality Rating
The site has a Soil Quality Matrix score ranging from 0.66 to 1.0 and has a minimum of 10 acres of contiguous Prime Farmland or Statewide Importance Soils	High
The site has a Soil Quality Matrix score ranging from 0.33 to 0.66 or the site has a minimum of 10 acres of contiguous Prime Farmland or Statewide Importance Soils	Moderate
The site has a Soil Quality Matrix score less than 0.33 and does not have 10 acres or more of contiguous Prime Farmland or Statewide Importance Soils	Low

Soil Quality Rating Justification

The presence of Prime Farmland Soils or Soils of Statewide Significance is used as the measure of quality soil in the LARA soil quality rating based on their use in defining soil candidates for the FMMP Farmland categories of Prime Farmland and Farmland of Statewide Importance. Soil candidates for the FMMP Prime Farmland designation are soils with the best combination of physical and chemical characteristics for the production of crops. Soil candidates for the FMMP Farmland of Statewide Importance designation are similar to the soil criteria for Prime Farmland, but include minor shortcomings, such as greater slopes or less ability to store soil moisture. Soil candidates for Farmland of Statewide Importance do not have any restrictions regarding permeability or rooting depth. Soil candidates for Farmland of Statewide Significance are included in this rating to capture quality soils with minor shortcomings that may not have been included, if the typical definition of Prime Agricultural Land as stated in Government Code Section 51201(c) was used. Soil criteria used in Government Code Section 51201(c) identifies any land with a LCC rating of I or II or a Storie Index Rating from 80 to 100 as land that meets the definition of prime agricultural land. Because San Diego County has limited quantities of soils that meet these criteria, locally defined NRCS soil candidates for Prime Farmland and Farmland of Statewide Importance are included to define quality soils in this locale given that 70% of these soils have LCC higher than I or II and 88% have SI ratings below 80. Details regarding the soil criteria that determine the applicability of a soil for the respective Farmland designation is included in Attachment C, Soil Candidate Criteria and Candidate Listing for Prime Farmland and Farmland of Statewide Importance.

Table 8, Soil Quality Matrix Interpretation, identifies high, moderate, or low importance ratings based on the soil quality matrix score from Table 7. The maximum possible soil quality matrix score is one and the minimum is zero because the score is based on the amount of the agricultural resources onsite that are Prime and Statewide Importance soil candidates. A site with a soil quality matrix score of 0.66 or higher means that two-thirds of the agricultural resources onsite have soils that meet the soil quality criteria for Prime Farmland or Farmland of Statewide Importance. A minimum of 10 contiguous acres is required for a site to be assigned the highest soil quality rating to reflect the need for high quality soils to be contiguous in order for them to be considered useful

agriculturally. If the site has a soil quality score from 0.33 to 0.66 or has 10 acres or more of contiguous soils that meet the soil quality criteria for Prime Farmland or Farmland of Statewide Importance, the site is assigned the moderate importance rating. If less than one-third of the site or less than 10 contiguous acres of the agricultural resources onsite have soils that meet the Prime or Statewide Importance soil criteria, the site is assigned the low importance rating for soil quality. A ten acre threshold is included in the ratings to capture the potential for a large project site to have a substantial quantity of high quality soils and still receive a low importance rating due to the project's size in relation to the acreage of quality soils. Ten acres is an appropriate acreage to use in this context because ten acres would typically be able to support a wide range of agricultural uses in San Diego County. Furthermore, to be eligible for a Williamson Act Contract in an Agricultural Preserve, the County of San Diego Board of Supervisor's Policy I-38 (Agricultural Preserves) recommends various minimum ownership sizes, with ten acres being the minimum, to be eligible for a contract. Ten acres is listed as the minimum size for various agricultural activities including poultry, tree crops, truck crops, and flowers. The requirement that the land be contiguous recognizes that small, scattered pockets of high quality soils are less valuable for agricultural use than an area of contiguous high quality soils.

3.1.4 Surrounding Land Use

Surrounding land use is a factor in determining the importance of an agricultural resource because surrounding land uses that are compatible with agriculture make a site more attractive for agricultural use due to lower expectations of nuisance issues and other potential impacts from non-farm neighbors. This factor also accounts for the degree to which an area is primarily agricultural, assigning a higher rating to areas dominated by agricultural uses than an area dominated by higher density, urban development. Surrounding land use is a complementary factor in the LARA model because the presence of compatible surrounding land uses can support the viability of an agricultural operation; however a lack of compatible surrounding land uses would not usually prohibit productive agriculture from taking place (depending on the type of production). Similarly, agriculture can be viable among urban uses, but its long term viability would generally be less than an agricultural operation conducting operations in an area dominated by agricultural uses because of lesser economic pressures to convert to urban uses. To determine the surrounding land use rating, the following information must be determined:

Step 1.
Calculate the total acreage of lands compatible with agricultural use[10] within the defined Zone of Influence (ZOI).[11] The location of agricultural lands can be determined using information from the DOC's Important Farmland Map Series, agricultural land use data available from the DPLU, aerial photography, and/or direct site inspection. Land within a ZOI that is observed to be fallow or with a history of agricultural use will usually be considered agricultural land, unless there is evidence that it has been committed to a non-agricultural use (such as having an approved subdivision map). The Department of Planning and Land Use may consult the Department of Agriculture, Weights and Measures if there are disputed interpretations.

Step 2.
Calculate the percentage of the acreage within the project's ZOI that is compatible with agricultural use.

Step 3.
Based on the proportion of lands within the ZOI that are compatible with agricultural use, identify the appropriate surrounding land use rating in accordance with Table 9, Surrounding Land Use Rating.

Table 9. Surrounding Land Use Rating

Percentage of Land within ZOI that is Compatible with Agriculture	Surrounding Land Use Rating
50% or greater	High
Greater than 25% but less than 50%	Moderate
25% or less	Low

Considering surrounding land uses within the ZOI is intended to provide a measurement of the long term sustainability of agriculture at the project site. Agriculture is generally

[10] Lands compatible with agricultural uses include existing agricultural lands, protected resource lands, and lands that are primarily rural residential. Protected resource lands are those lands with long-term use restrictions that are compatible with or supportive of agricultural uses including but not limited to Williamson Act contracted lands; publicly owned lands maintained as park, forest, open space, or watershed resources; and lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses. For the purposes of this factor rating, rural residential lands include any residential development with parcel sizes of two acres or greater and that contain elements of a rural lifestyle such as equestrian uses, animal raising, small hobby type agricultural uses, or vacant lands. Residential parcels with swimming pools, children's play areas, second dwelling units, or other accessory uses that occupy a majority of the usable space of a residential parcel should not be identified as land compatible with agriculture.

[11] Attachment F details the steps required to determine the Zone of Influence (ZOI). The ZOI methodology is taken from the Department of Conservation's Land Evaluation Site Assessment (LESA) model and includes a minimum area of ¼ mile beyond project boundaries and includes the entire area of all parcels that intersect the ¼ mile boundary. The ZOI developed by the Department of Conservation is the result of several iterations during development of the LESA model for assessing an area that would generally be a representative sample of surrounding land use. For example, a 160 acre project site would have a ZOI that is a minimum of eight times greater (1280 acres) than the project itself.

compatible with other agricultural land uses because they are more likely be tolerant of the typical activities and nuisances associated with agricultural operations than urban land uses would be. Primarily rural residential lands are included as a land use compatible with agriculture because rural residential lands are already common among agricultural uses and most active farms also have residences on the site. Although not all types of agriculture are compatible with rural residential land uses (i.e. confined animal facilities); many typical San Diego County farming operations are compatible with rural residential land uses as is evidenced by the existing viability of agricultural operations that are located among rural residential land uses. For example, in many North County communities, small parcels (two acres, for example) with a single family residence and a small orchard or other farming or equestrian use are common. These residential uses, due to their direct involvement in agriculture or a rural lifestyle, would tend to be more compatible with agriculture than a high density development where homeowners would be less likely to be directly involved in rural lifestyle activities (e.g. agriculture, equestrian, animal raising, etc.). Occupants of higher density residential uses are more likely to be disturbed by noise, dust, pesticides or other nuisances that do not fit with the peaceful perceptions of living in the countryside.

3.1.5 Land Use Consistency

The median parcel size associated with the project site compared to the median parcel size of parcels located within the ZOI is a complementary factor used in the LARA model. In order to determine the land use consistency rating for the project, the following information must be determined:

Step 1.
Identify the median parcel size associated with the proposed project if the proposed project consists of at least three parcels. If the proposed project consists of two parcels, use an average. If the proposed project consists of only one parcel, then no median or average is needed.

Step 2.
Identify the median parcel size of the parcels located within the project's ZOI.

Step 3.
Considering the project's median parcel size and the ZOI median parcel size, identify the land use consistency rating in accordance with Table 10.

Table 10. Land Use Consistency Rating

Project's median parcel size compared to ZOI median parcel size	Land Use Consistency Rating
The project's median parcel size is smaller than the median parcel size within the project's ZOI	High
The project's median parcel size is up to ten acres larger than the median parcel size within the project's ZOI	Moderate
The project's median parcel size is larger than the median parcel size within the project's ZOI by ten acres or more	Low

Land use consistency is used as a measure of importance to recognize the effect that surrounding urbanization has on the viability of ongoing agricultural uses and to recognize that as urbanization surrounds agricultural lands, opportunity costs[12] for agricultural operators increase, thus reducing the viability of an agricultural operation. A site surrounded by larger parcels indicates that the site is located in an area that has not already been significantly urbanized and the area is more likely to continue to support viable agricultural uses. On the other hand, a site surrounded by smaller parcels indicates a lower likelihood of ongoing commercial agriculture viability considering the greater expectations of land use incompatibilities that the site is likely to experience and the reduction in economic viability when considering forgone opportunity costs. The median parcel size is used instead of an average to account for the potential for a very large or very small parcel to exist that would skew the result if using an average.

3.1.6 Slope

To determine the Slope Rating for the site, the average slope for the area of the site that is available for agricultural use must be determined. Refer to Column D of Table 7, Soil Quality Rating Matrix, for the areas of the site considered available for agricultural use. When the average slope of the areas of the site that is available for agricultural use is determined, identify the corresponding topography rating as outlined in Table 11, below.

Table 11. Slope Rating

Average Slope	Topography Rating
Less than 15% slope	High
15% up to 25% slope	Moderate
25% slope and higher	Low Importance

[12] Opportunity cost is an economic term. It means the cost of something in terms of an opportunity foregone (and the benefits that could be received from that opportunity), or the most valuable foregone alternative. For example, if a land owner decides to farm his land, the opportunity cost is the value of one or more alternative uses of that land, such as a residential subdivision. If he continues to farm the land, the opportunity cost is the revenue that he does not receive from building houses. Thus, as opportunity costs rise, the viability of continuing the current action (i.e. agricultural use) decreases. This conclusion is based on the fact that agricultural use of land is primarily an economic decision. When factors, such as increased opportunity costs, make use of the land for agriculture less profitable than other uses, the long term viability of agriculture decreases.

Slope is included as a complementary factor in the LARA model to account for the importance that slope plays in the viability of a piece of land for agricultural production, a flat site allowing a greater range of potential agricultural uses and facilitating mechanization of operations. Gentle topography has other benefits such as reduced difficulty in managing irrigation runoff and reduced soil erosion as compared to more steep sites. Topography is not a required factor for a determination of importance because topography limitations can be overcome at a cost if the expected return on investment is high enough to warrant the expense (i.e. container based production, mass grading).

4.0 TYPICAL ADVERSE EFFECTS AND GUIDELINES FOR DETERMINING SIGNIFICANCE

4.1 Typical Adverse Effects

Typical adverse effects to agricultural resources are best considered in relation to the various types of impacts that are considered under CEQA: direct, indirect and cumulative. Direct impacts are straightforward: important agricultural resources are converted to a non-agricultural use, significantly reducing or eliminating the productive capacity of the land. Indirect effects are widely varied and require careful analysis of particular site conditions and farming operations. Indirect effects include significant impacts to active agricultural operations, Williamson Act Contracts, or to the viability of important agricultural resources. Indirect effects can result from growth inducement and the associated extension of infrastructure that can change rural character and increase the likelihood of agriculture urban interface conflicts. Indirect impacts can be caused by significant economic impacts to active agricultural operations that compromise their on-going viability and result in increased likelihood of conversion. Significant cumulative impacts result when a project's impacts are considerable when viewed in connection with the effects of past, present and probable future projects. Cumulative impacts are difficult to assess given the market driven and adaptable nature of agriculture. For example, a loss of agricultural land may occur in one area, while new land is converted to agriculture use elsewhere. Similarly, changes in agricultural commodity market prices could result in a shift in the type of agricultural commodities produced locally. Changes in the agricultural industry that result from external market factors could appear to be significant cumulative impacts to agriculture when they may only be a result of market adaptation to external economic conditions.

4.1.1. Direct Impacts

Direct impacts occur when a project would adversely impact locally important agricultural soils on a site that is determined to be important pursuant to the County LARA model. In San Diego County, important agricultural soils include not only soils with the USDA LCC ratings of I and II or Storie Index ratings of 80 or higher, but also includes soils of lesser quality as defined by the soil candidate listing for Prime Farmland and Farmland of Statewide Importance compiled by the USDA NRCS for San

Diego County. These soil definitions expand the range of agricultural soils that are considered locally important based on the fact that soil quality in San Diego County is generally low, with very few soils having the above stated LCC and Storie Index ratings that define Prime Agricultural Land. By including the soil candidates that qualify for the FMMP Prime Farmland and Farmland of Statewide Importance category in the LARA model evaluation, an additional 168,505 acres[13] of land could potentially be considered an important agricultural resource than what would be considered important using the traditional soil quality definition of Prime Agricultural Land (soils having LCC I or II or SI of 80 or higher).

When considering the significance of direct impacts, the focus of a CEQA analysis is on impacts to physical resources. In the case of agriculture, the physical resources include those areas of the site that contain soil of a sufficiently high quality to support crop production. The FMMP soil criteria for Prime Farmland and Farmland of Statewide Importance are the measures used to define high quality soil. This approach recognizes the market driven nature of agriculture by focusing on the underlying physical resource in the analysis of impacts versus focusing on the actual agricultural commodity that may have been produced at a site. By focusing on underlying physical resources, this approach recognizes that conversion of a particular agricultural use may not be a significant environmental effect, if the agricultural use is not dependent on a valuable agricultural resource such as good soil.

4.1.2. Indirect Impacts

Various project features can cause significant indirect impacts to agriculture. One example is the placement of public trails on agricultural lands. Trails on agricultural lands can result in increased trespassing, theft, and disease to crops. Trails in avocado orchards can increase exposure and susceptibility to avocado root rot. Root rot is easily transmitted to avocadoes because the spores of the disease move naturally through the soil and are spread on horse hoofs and on the shoes of trail users (Platt and Zentmyer, no date).

A project proposed near an active agricultural use also has the potential to cause significant indirect effects to agricultural resources because of the potential incompatibility between the proposed use and existing agricultural activities. Adverse impacts caused by incompatible development near agricultural uses include, but are not limited to:

- Farm practice complaints;
- Pesticide use limitations;
- Liability concerns;
- Economic instability caused by urbanization and changing land values;
- Trespassing, theft, and vandalism;
- Damage to equipment, crops, and livestock;

[13] These acreage figures are based on USDA NRCS soil survey acreages and do not account for developed or restricted lands whose soils may not be available for agricultural use

- Crop and irrigation spraying limitations due to urban use encroachment;
- Introduction of urban use pollutants entering farm water sources;
- Competition for water;
- Development affecting recharge of groundwater;
- Soil erosion and storm water runoff emanating from urban use;
- Shading of crops from inappropriate buffering;
- Importation of pests and weeds from urban areas or introduced pest populations from unmaintained landscaping;
- Increased traffic;
- Effects of nighttime lighting on growth patterns of greenhouse crops;
- Interruption of cold air drainage.

The Farmland Protection Action Guide published by the Institute for Local Self Government (2002) summarizes the conflicts that occur at the agriculture urban interface as follows:

> "This situation is a common one: A fast-growing community approves a subdivision located on farmland, placing new homes right next to farms. Proximity to the bucolic landscape is one of the development's most attractive features. But the new homeowners are soon disillusioned by pesticide drift, night harvesting, odor, flies, dust and slow-moving tractors.
>
> Farmers also have concerns about adjacent development. Theft and vandalism increase when the surrounding area urbanizes. Imported pests and increased traffic also affect operations. As a result, farmers see the next wave of development as inevitable, and accordingly reduce investments in their operation. The operation becomes less profitable, real estate becomes more valuable, and soon another farmer is willing to entertain offers from developers.
>
> Farming and residential uses are fundamentally incompatible. When they are located next to one another, local agencies can anticipate significant complaints and problems. However, there are several strategies that local agencies can use to head off or reduce such problems, such as creating physical barriers and educating residents to create more appropriate expectations. Such approaches can improve both the quality of life in new subdivisions and farmers' ability to remain a viable part of the local agricultural economy."

As described above, conflicts at the agriculture urban interface flow in two directions: from existing agricultural use to a newly established non-agricultural use and from a newly established non-agricultural use, to existing agricultural use. Nuisances perceived by new non-agricultural uses near farms may include dust; insects, pests and vectors; lighting; noise; odor; seasonal harvesting; farm-worker housing, smoke; truck traffic; pollution, and pesticide use. Although the focus of this document is on the impacts to agricultural resources and not the impacts that farms may have on new residential or urban uses, the adverse effects perceived by new urban neighbors near farms must be recognized as a contributor to the degradation of the viability of surrounding farms, as detailed below.

Nuisances perceived by urban neighbors can trigger complaints about farming practices to the farmers themselves or to regulatory authorities. The conflicts can result in increased liabilities for farmers and legal challenges. Farmers may feel pressure to discontinue their agricultural operation as urban uses encroach, reducing investments in the operation or causing reduced productivity and income when complaints force changes in normal farming practices. Nuisance complaints filed with regulatory authorities may force agricultural operators to modify farm practices to comply with requirements and avoid monetary fines. In some cases, restrictions on pesticide use near residences or schools may force abandonment of portions of farm fields to meet buffer distances required by law.

Potentially significant indirect impacts must be identified during the planning process to ensure that a proposed project is designed to reduce or eliminate an impact before it would occur. Through effective planning, "mitigation by design," and implementation of appropriate land use policies and tools, some or all of the significant effects that may occur at the agriculture urban interface can be partially or fully mitigated.

4.1.3. Cumulative Impacts

The typical adverse effects discussed in previous sections may result in significant cumulative impacts when other projects in the area contribute to similar significant direct or indirect impacts to agricultural resources and those impacts are determined to be cumulatively considerable.

Growth inducement can also contribute to a significant cumulative impact to agricultural resources by removing barriers to growth in an agricultural area, ultimately causing the conversion of agricultural land. This may occur when infrastructure is extended to previously unserved areas; when a jurisdiction or district's Sphere of Influence is expanded; when density is increased above designated general plan or zoning limits; or when land use intensity is changed or increased. Growth often improves the attractiveness and feasibility of non-agricultural uses in historically rural and agricultural areas, resulting in agricultural conversion. Growth into agricultural areas can significantly impact agricultural lands by facilitating agricultural conversion through lower costs of development as urban level services become available. Growth also results in increased land values which increases pressure for agricultural uses to convert and makes agricultural expansion less economically feasible. Growth in an agricultural area can also significantly increase urban/agricultural interface conflicts in the long term, creating additional pressure to convert the agricultural use to a non-agricultural use.

4.2 Guidelines for Determining Significance

When a lead agency determines that a project may have a potentially significant adverse effect to agricultural resources, an agricultural resources technical report may be required to assess the significance of the potential impacts and to identify measures to reduce the significance of identified impacts. Where it is feasible for County staff to assess the significance of agricultural resource impacts and to provide recommendations for reducing the significance of potential impacts without completion of a technical report, County staff will provide such recommendations instead of requesting completion of a technical report. County staff will base their determinations and recommendations on these significance guidelines.

An affirmative response to or confirmation of any one of the following Guidelines will generally be considered a significant impact to Agricultural Resources as a result of project implementation, in the absence of scientific evidence to the contrary:

4.2.1 Impacts to important onsite agricultural resources

> ***The project site has important agricultural resources as defined by the LARA Model; and the project would result in the conversion of agricultural resources that meet the soil quality criteria for Prime Farmland or Farmland of Statewide Importance, as defined by the FMMP; and as a result, the project would substantially impair the ongoing viability of the site for agricultural use.***[14]

The following are examples of projects that would not typically substantially impair the ongoing viability of the site for agricultural use:

- Minor expansions or alterations of an existing use, such as uses approved under an administrative or minor use permit;
- Single family residence grading permits;
- Boundary adjustments and Certificates of Compliance;
- Agricultural intensification;
- Accessory or auxiliary uses such as wireless telecommunication facilities and installation of stormwater treatment or drainage facilities;
- Road improvements/widening and other minor public facility improvements; and
- Any project, including residential subdivisions, that would substantially avoid impacts to Prime and Statewide Importance soils while maintaining agricultural viability.

[14] Significance Guideline 4.2.1. This significance guideline recognizes that projects proposed on an important agricultural resource as defined by the LARA model may not result in significant impacts to the resource if the project avoids the important soil resources (Prime and Statewide importance soils) on the project site or if the project would not substantially impair the ongoing viability of the site for agricultural use.

The determination whether the project would substantially impair the viability of an important agricultural resources that meets the soil quality criteria for Prime or Statewide Importance is primarily based on the extent to which the project avoids the resources and the extent to which the remaining resource would be viable for agricultural use. A variety of interrelated factors need to be considered to determine the viability of a site for agricultural use; such as the size of the area, topographic relief, and surrounding land use. Consideration of the surrounding types of agricultural uses is also important as this will give an indication of the type, size and requirements of agricultural use typical for the area. Residential subdivisions that would result in parcel sizes that could support agriculture and that substantially avoid the important physical soil resources onsite would not usually impair the viability of the resource, based on the prevalence of small farms in the County and high land prices that promote high value production on small parcels. Agricultural resources are not considered avoided when they are placed within biological open space easements or other easements that would preclude the use of the land for agriculture. In addition, resources are not avoided when they are placed within a road right of way; in the location of proposed structures or paving, and generally within 15 feet of front and side yards of residences and within 30 feet from the rear yard of residences as a result of project implementation. An assumption is made that no agriculture will occur within the stated distances from residences based on the fact that an average homeowner will usually maintain landscaping and outdoor recreation areas around a residence.

4.2.2 Indirect Impacts to Agricultural Resources

a. The project proposes a non-agricultural land use within one-quarter mile of an active agricultural operation[15] or land under a Williamson Act Contract (Contract) and as a result of the project, land use conflicts between the agricultural operation or Contract land and the proposed project would likely occur and could result in conversion of agricultural resources to a non-agricultural use.[16]

b. The project proposes a school, church, day care or other use that

[15] Active Agricultural Operation is defined in Attachment A of this document.

[16] Significance Guideline 4.2.2.a. The extent to which the project proposes a use that is similar to those already present in the surrounding area is an important factor in considering the significance of the placement of a non-agricultural use in proximity to an agricultural operation. For example, if a residential subdivision consistent with existing densities in the surrounding area is proposed, the likelihood that the residential subdivision would constitute a significant indirect impact to agricultural resources is reduced based on the fact that similar land uses already exist in the area. On the other hand, if a high density residential subdivision is proposed that is not consistent with existing densities in the surrounding area, the proposed project would have a greater likelihood of resulting in indirect impacts to agricultural resources based on the likely introduction of increased traffic, new and improved roads (whose users may not appreciate agricultural trucks and traffic), and increased potential for land use conflicts that did not exist in the more rural environment prior to the project. In both scenarios however, the placement of the proposed use in relation to the surrounding active agricultural operation is of central importance to the determination of significance. A project proposed contiguous to an agricultural operation or Contract land would require greater scrutiny that a project separated from the agricultural operation or Contract land by other land uses.

involves a concentration of people at certain times within one mile of an agricultural operation or land under Contract and as a result of the project, land use conflicts between the agricultural operation or Contract land and the proposed project would likely occur and could result in conversion of agricultural resources to a non-agricultural use.[17]

c. The project would involve other changes to the existing environment, which due to their location or nature, could result in the conversion of offsite agricultural resources to a non-agricultural use or could adversely impact the viability of agriculture on land under a Williamson Act Contract.[18]

A determination of whether the project could cause a potentially significant impact in accordance with the above guidelines requires consideration of the customary agricultural activities associated with surrounding agricultural operations and the degree to which those activities would be compatible with the proposed project. The distance guidelines included within Significance Guidelines 4.2.2.a and 4.2.2.b. are based on the typical distances that land use conflicts would be expected to potentially occur based on the sensitivity of the proposed land use. For most types of agriculture, interface conflicts would usually be less than significant, if the land uses are separated by 300 feet (the distance required by several land use jurisdictions to address agriculture urban interface conflicts); however agricultural uses within one-quarter mile from the project site will be reviewed to determine if potential indirect impacts could occur to those operations. One-quarter mile is chosen as the minimum screening distance for identification of potential indirect impacts based on available literature on the typical distances that agricultural interface issues such as dust, noise, and conflicts with pesticide use typically occur.[19]

[17] Significance Guideline 4.2.2.b. Projects that would have sensitive receptors (i.e. children, elderly, etc.) located near an agricultural operation or Williamson Act Contract land require additional scrutiny to ensure the uses will be compatible. The presence of a school can result in pesticide use limitations for agricultural operators, and the impact of those limitations must be assessed. It should be noted that the County of San Diego does not have jurisdiction over the approval of public schools, however large projects, such as subdivisions, may propose a location for a future public school. The environmental analysis of the project must include an assessment of the school's potential impacts to surrounding agricultural resources. The County does have jurisdiction over private schools proposed within its jurisdiction.

[18] Significance Guideline 4.2.2.c. This significance guideline is taken directly from the CEQA Guidelines, Appendix G, II(c) Agricultural Resources. It is similar to the two guidelines that precede it except that it is more general and does not include any distance guidelines. This guideline is included to capture potential indirect impacts to agricultural operations that may not be captured in the more specific Significance Guidelines 4.2.2.a and 4.2.2.b.

[19] The State of Queensland Planning Guidelines (1997) identifies 0.19 miles as an adequate separation for most nuisance issues such as dust, noise and pesticide use. Depending on the types of conflicts identified in addition to local conditions, the distance where conflicts could occur may be more or less than 0.19 miles. One-quarter mile is provided as a conservative screening tool.

The type of agricultural uses surrounding the project site will affect the degree of agriculture interface conflicts that would be expected to occur. For example, orchard crops such as avocadoes and citrus are often compatible with residential uses, while confined animal facilities can be highly incompatible with residential uses. The degree of compatibility of the agricultural use with non-agricultural uses will determine the distance that an evaluation of potential impacts will be required. For example, a project proposed near but not adjacent to orchard crops, will not usually result in significant indirect impacts to these resources. In contrast, projects proposed near but not adjacent to a confined animal facility, would more likely have significant indirect impacts to the agricultural use. Orchard crops such as avocadoes and citrus typically have fewer compatibility issues than nurseries, confined animal facilities, and row crop production due to lower chemical treatments, less farmworker presence, less truck traffic, and fewer odors. Where appropriate, available information and technical opinion from the Department of Agriculture, Weights and Measures will be obtained to aid in the determination of agricultural compatibility.

Any project that proposes a school must evaluate potential impacts within one mile from the project site because existing regulations can restrict certain normal agricultural activities within one mile of a school. Furthermore, when sensitive receptors and uses that would involve large concentrations of people are proposed near agriculture, the potential for agriculture interface conflicts increases significantly. Significance Guideline 4.2.2.c. is a more general guideline to address the variety of potential indirect impacts that may not be foreseen in the more specific significance guidelines.

4.2.3 Conflicts with Agricultural Zoning and Williamson Act Contracts[20]

The project conflicts with a Williamson Act Contract (Contract) or the provisions of the California Land Conservation Act of 1965 (Williamson Act).

The above significance guideline addresses conflicts with the Williamson Act. Any conflict with a Contract or the Williamson Act is significant because conflicts with Contract provisions and the Williamson Act are prohibited by law. Furthermore, no project may be approved that is in conflict with a Contract or the Williamson Act. Indirect impacts to offsite Williamson Act Contract land will be addressed in significance guideline 4.2.2.

4.2.4 Cumulative Impacts

The guidelines for determining the significance of cumulative impacts are based on the same guidelines used to determine the significance of project level impacts (Guidelines 4.2.1, 4.2.2, and 4.2.3) except the analysis considers the significance of the cumulative impact of the individual project impact in combination with the impacts caused by the projects in the cumulative study area that would also impact important agricultural

[20] Conflicts with zoning for agricultural use should not occur in the County of San Diego because there are no exclusive agricultural zones in the County. In general, a variety of land uses are permitted in agricultural zones either by right, subject to limitations, or by issuance of a conditional use permit.

resources. A project that is determined not to be an important agricultural resource under the LARA model, that would not have significant indirect impacts to agricultural resources, and that would not conflict with agricultural zoning or a Williamson Act Contract would not have the potential to contribute to a cumulative impact.

Cumulative impacts are those caused by the additive effects of other project's impacts to agricultural resources over time. A project's impact may not be individually significant, but the additive effect when viewed in connection with the impacts of past projects, present projects, and probable future projects may cause a significant cumulative impact to agricultural resources. If the project would impact agricultural resources, the project must assess the potential for significant cumulative impacts to occur. If the project would directly impact important onsite agricultural resources, the focus of the cumulative impact analysis should be on the cumulative direct impact to agricultural resources that the proposed project and other projects in the cumulative analysis area would cause. If the project could indirectly impact agricultural resources, the cumulative analysis should focus on the indirect impacts that the proposed project and other projects in the cumulative analysis area would cause when implemented.

To identify the significance of the potential cumulative impact to agriculture, both a quantitative and a qualitative analysis of the potential loss of agricultural resources must be undertaken. In general the qualitative analysis will evaluates the cumulative loss of agricultural resources based on past, present and future projects within a cumulative study area. More specific direction for completing the quantitative portion of the analysis of cumulative impacts is provided in the Report Formats. For the qualitative analysis, consideration should be given to the extent that the land within the cumulative study area is primarily agricultural versus residential or another dominant land use. Cumulative losses of agriculture in primarily agricultural communities is viewed as having a higher likelihood of contributing to a significant cumulative impact since the degradation of an entire agricultural community would usually be more severe than the loss of remnant portions of scattered agricultural land located among another more dominant land uses. Another qualitative consideration for the cumulative analysis is the extent that the land within the cumulative study area is experiencing development pressure to convert agricultural land to a non-agricultural use. The potential for conversion is evaluated based on the qualitative assessment of the past, present, and future projects that could impact agriculture. Careful consideration must be given both the potential direct and indirect agricultural conversion that could result from the cumulative projects. In general, if the agriculture in the cumulative study area is not under significant pressure to convert to non-agricultural uses, or a significant amount of lands would remain available for agricultural use after consideration of the potential cumulative impacts, the likelihood of the project having a significant cumulative impact is reduced.

5.0 STANDARD MITIGATION AND PROJECT DESIGN CONSIDERATIONS

In the event a potentially significant impact may occur, mitigation must be proposed or the project redesigned to lessen, avoid or compensate for the impact. As defined by the CEQA Guidelines Section 15370, mitigation includes measures to avoid, minimize or rectify impacts or to compensate for impacts by replacing or providing substitute resources. Agricultural resource mitigation measures and design considerations will depend on the specific resources and conditions for each project under consideration. The following discussion addresses a range of mitigation measures and design considerations that may be used to lessen or compensate for the identified impact.

5.1 Direct Impacts

5.1.1 Onsite Preservation

If a project would exceed Significance Guideline 4.2.1, redesign of the project will usually be required to minimize impacts to agricultural resources that meet the Prime and Statewide soil criteria and/or to provide a project design where agricultural use could remain viable. To the extent feasible, preservation of agricultural resources should occur onsite. As discussed in Section 4.1.1, soils that qualify for the Prime or Statewide Importance Farmland designations are the resources that should be avoided. Therefore, when a project exceeds Significance Guideline 4.2.1, mitigation or project design measures to minimize the project's direct impacts to agricultural resources is required. Table 12, Agricultural Preservation Requirements identifies minimum agricultural preservation ratios that would usually be adequate to mitigate for direct project impacts.

Table 12. Agricultural Preservation Requirements

Project Impact	Minimum Agricultural Preservation Ratio
The project will impact agricultural resources that meet the soil quality criteria for Prime Farmland and Farmlands of Statewide Importance	1:1

Preserved agricultural resources must remain viable for continued or future agricultural production. The following factors should be considered in determining the viability of the area to be preserved for agricultural use:

- The adequacy of the area to be preserved to accommodate agricultural use;
- Land use compatibility between preserved agricultural resources onsite and non-agricultural land uses located offsite or proposed onsite;
- The likelihood that the area to be preserved will remain available for agricultural use.[21]

To determine the adequacy of the area to be preserved for agricultural use, a variety of

[21] Preservation of agricultural resources ensures that the land would remain available for agricultural use; however, the choice to use the land for agriculture is the decision of the individual property owner.

site specific factors must be taken into account. For example, an area of the site with significant topography or rock outcroppings would not be considered adequate to accommodate agricultural use. Similarly, while it may be viable to preserve a five acre area of land within a residential parcel for agricultural use, preservation of one-half acre areas within individual residential parcels would not likely be considered viable.

Project Design Considerations

The following approaches should be considered in designing a project to preserve onsite agricultural resources:

- Locate proposed development (i.e. residential pads) in areas least suitable for agricultural use;
- Where the General Plan Designation allows, cluster residential parcels and provide larger agricultural parcels to protect long-term agricultural viability;
- Where the General Plan does not allow clustering, design lot configuration or reduce parcel yield to achieve agricultural preservation and agricultural viability;
- For planned developments, propose a common ownership parcel over quality agricultural lands to achieve preservation requirements;
- Locate development on the least productive agricultural soils wherever possible; and
- Minimize locating development on the most productive soils wherever possible.

Limited Building Zones (LBZ)

Where necessary, LBZ easements will be used as the typical mechanism to ensure that land on the project site will remain available for agricultural use. LBZ easements would typically restrict habitable structures, swimming pools, and other structures that would preclude the use of the land for agriculture. Accessory structures incidental to an agricultural use would be permitted. The requirement to apply a LBZ easement to preserve the availability of agricultural resources depends on the likelihood that the land would remain available for agricultural use without the easement. For example, a ten acre parcel with important onsite agricultural resources would not usually require a LBZ easement to protect the land as available for agriculture; however a one or two acre parcel would usually require a LBZ easement due to the higher likelihood that the land could be precluded from future agricultural use by future accessory structures such as second dwelling units or swimming pools. Where agricultural resource preservation is proposed on residential parcels smaller than two acres, a LBZ would typically be required. Where agricultural resource preservation is proposed on residential parcels larger than two acres, the need to apply a limited building zone will be considered, but is not usually anticipated to be required.

Justification for Onsite Preservation

Avoiding agricultural resources on residential parcels may be a viable mechanism to preserve agricultural resources, because in San Diego County small farms typically support high value agriculture and high land values make purchase of large farms

financially prohibitive for most farmers. Creating smaller parcels that could be used for agriculture may increase the economic feasibility of starting an agricultural operation. As stated by the County Agricultural Commissioner in 1997, “The cost of land in the County makes it prohibitive for many new farmers to begin an operation on a large parcel so the ability to farm small parcels is crucial to the success of future agriculture in San Diego County.”

The viability of farming on residential parcels is further supported by the fact that in San Diego County there are no exclusive agricultural zones. Farming is allowed in any zone, providing flexibility for agricultural operations to occur where the resources and site conditions make it favorable to do so. This is in contrast to other areas of the state where large tracts of farmland exist with few non-agricultural land uses intermixed among the farmland. In San Diego County, farming typically occurs among residential land uses. The creation of smaller, more affordable, and viable agricultural parcels creates opportunities for farming when considering the cost of land in San Diego County and the fact that high value agriculture on small parcels is common here.

Furthermore, the high cost of land cannot be separated from the economic viability associated with starting an agricultural operation or activity on a piece of land. The purchase of land for farming is increasingly both a farming decision and a decision regarding one’s place of residence, as is demonstrated by the fact that in San Diego County, 77% of farmers live on farm and 90% of farms operate under full ownership versus operating as tenants or under leasehold (USDA NASS, 2002). These statistics combined with high land costs supports the rationale that residential subdivisions do not always constitute a significant adverse impact to agriculture if important soil resources are preserved and it can be demonstrated that farming would remain viable after development.

The one-to-one agricultural resource preservation requirement shown in Table 12 is consistent with recommendations typically provided by the DOC to address impacts to agricultural resources under CEQA. The DOC “encourages the use of agricultural conservation easements on land of at least equal quality and size as partial compensation for the direct loss of agricultural land. If a Williamson Act contract is terminated, or if growth inducing or cumulative agricultural impacts are involved, we [DOC] recommend that this ratio be increased. We [DOC] highlight this measure because of its acceptance and use by lead agencies as mitigation under CEQA.” (DOC, 2006).

While agricultural conservation easements are provided as an option for project proponents, it would generally be difficult to implement an agricultural conservation easement within a reasonable period of time on a project-by-project basis. Without a program to identify the areas where agricultural resources should be protected and to fund and administer such a program, implementation of agricultural conservation easements will be difficult. Therefore, one to one agricultural resource preservation will generally be accomplished onsite, including within residential parcels where the resource would be viable for agricultural use.

The approach to agricultural preservation in these guidelines is consistent with policies in the Open Space Element of the General Plan. The Open Space Element includes the following land use policy to achieve the objectives of the Agriculture Land Use Designations:

> "Permit low density residential and other compatible uses supportive of agricultural uses in agricultural areas. Non-agricultural development, including residential uses, shall be encouraged to occur in those areas least suitable for agricultural use."

This policy is consistent with the approach taken in this document to preserve important agricultural resources on residential parcels where the resource would remain viable and to avoid the most valuable agricultural resources by locating non-agricultural uses in areas least suitable for agriculture.

Finally, the long-term preservation of agricultural land in San Diego County depends on numerous factors. One factor that significantly affects agricultural land use is the planned distribution of land use and density laid out in the General Plan. The County of San Diego is currently preparing an update to the General Plan. Although not yet completed, a major goal of the plan is to shift planned residential density from rural areas to town centers to facilitate the preservation of important biological and agricultural resources. Adoption of a new General Plan that includes shifts of density to urban centers and that includes allowances for flexibility in project design (i.e. clustering), would contribute significantly to the preservation of agricultural land uses in the long term.

The County is also currently developing a Farming Program to promote economically viable farming in San Diego County and to create land use policies and programs to support agriculture. When the elements of the Farming Program are developed, they will be referenced in these guidelines and may provide an additional means to mitigate impacts to agriculture.

Although avoidance and minimization of impacts to important agricultural resources as discussed in Section 5.1.1 is adequate to mitigate a project's impact to agricultural resources, it should be recognized that other approaches to preserve and protect agriculture are needed. The County's current efforts to update the General Plan and develop a Farming Program are key approaches to preserve and protect agriculture that are being actively pursued by the County.

5.1.2 Agricultural Conservation Easements

A variety of agricultural mitigation mechanisms may be available to mitigate impacts to agriculture. One option includes the purchase of an offsite agricultural conservation easement. Recognizing that in many cases conversion of agricultural lands is unavoidable, an increasing number of lead agencies require acquisition of conservation

easements on other agricultural lands to mitigate the impact of conversion. The California DOC routinely states in its letters to lead agencies the following:

> "One of the tools…is the purchase of agricultural conservation easements on lands of at least equal quantity and size as a partial compensation for the direct loss of agricultural land. We highlight this measure because of its growing acceptance and use by lead agencies as mitigation under the California Environmental Quality Act (CEQA)."

The American Farmland Trust defines a conservation easement as:

> "a deed restriction landowners voluntarily place on their property to protect resources such as productive agricultural land, ground and surface water, wildlife habitat, historic sites or scenic views. They are used by landowners ("grantors") to authorize a qualified conservation organization or public agency ("grantee") to monitor and enforce the restrictions set forth in the agreement. Conservation easements are flexible documents tailored to each property and the needs of individual landowners. They may cover an entire parcel or portions of a property. The landowner usually works with the prospective grantee to decide which activities should be limited to protect specific resources. Agricultural conservation easements are designed to keep land available for farming."

The County of San Diego recognizes the value of agricultural conservation easements for the preservation of agricultural land. As such, the County has initiated a major effort to develop the San Diego County Farming Program[22] that would support economically viable farming in San Diego County and create land use policies and programs that recognize the value of working farms to regional conservation efforts. As the components of this program are developed, a purchase of agricultural conservation easement program may be developed. Until such a program is approved and funded, any purchase of offsite agricultural conservation easements will have to be implemented on a project by project basis.

Although it is significantly more complex to implement agricultural conservation easements as mitigation on a project-by-project basis, it is included as a mitigation option that a project proponent may explore. To implement the purchase of an agricultural conservation easement for an individual project, the project proponent would first have to identify a landowner who is willing to sell an agricultural conservation easement of equal or greater value than the resource that is being impacted, as determined by the lead agency. The price of the conservation easement is usually based on the fair market value of the property minus its restricted value, as determined by a qualified appraiser. Rights that would be restricted and would be retained in the easement must be determined. To be accepted as a project mitigation measure the conservation easement would have to be identified, approved and secured prior to discretionary project approval.

[22] More information about the San Diego County Farming Program can be found at www.sdfarmingprogram.org.

5.2 Indirect Impacts

When a project may have a potentially significant indirect impact to offsite agricultural operations or to onsite agricultural resources proposed for preservation or avoidance in accordance with Significance Guidelines 4.2.2.a through 4.2.2.d, the following project design elements should be considered to reduce the significance of identified impacts.

5.2.1 Project Design Elements

Indirect impacts to agricultural resources can occur from inadequate consideration of the proposed project design as it relates to offsite agricultural operations or to onsite agricultural resources proposed for preservation or avoidance. A variety of potential conflicts can occur between agricultural and non-agricultural land uses. The site specific conditions of each project must be evaluated to identify the potential conflicts that could occur. Once these potential conflicts have been identified, project design elements should be considered that would eliminate the potential conflicts. Some examples of design elements that may reduce potentially significant indirect impacts to agricultural resources are identified below:

- Do not locate trails adjacent to accessible (e.g., not fenced) farm fields;
- Design project access to direct future occupants away from active farms and not towards active farms;
- Incorporate appropriate fencing or other barriers to minimize trespass;
- Orient project features that would be considered high-use areas (balconies, backyards, parks, etc.) away from active farms;
- Incorporate internal compatibility buffers to separate agricultural parcel(s) from non-agricultural land uses to ensure long term viability of the onsite agricultural parcel(s);
- Locate parks away from agricultural uses so the agricultural uses would not be adversely affected;
- Restrict uses incompatible with agriculture in areas adjacent to areas intended for agricultural preservation; and
- Incorporate appropriate land use transitions such as reduced density near adjacent farmland to decrease the number of residents that abut farms.

The selection and application of project design elements should be based on the identified potentially significant indirect impacts that could occur as a result of the proposed project. The above list of project design elements is a guide and is not a comprehensive list of measures that may be used to reduce potentially significant indirect impacts.

Compatibility Buffers

Use of compatibility buffers between a proposed non-agricultural use and offsite agricultural operations or between proposed onsite non-agricultural uses and onsite preserved or avoided agricultural resources is the primary tool to increase compatibility between agricultural resources and non-agricultural uses. Compatibility buffers should

be located on the site being developed, and be provided/funded by the proponent of that development. The establishment of compatibility buffers, where necessary, works toward achieving safe and livable communities in the County of San Diego by affording land use transitions to reduce real or perceived conflicts between agricultural operations and new non-agricultural neighbors. Establishment of compatibility buffers within Agricultural Use Designations is consistent with existing policies in the Open Space Element of the General Plan to "foster compatibility between agricultural uses and non-agricultural uses" and to "[consider] the impacts of increased residential density on the agricultural area, as well as the location of the non-agricultural uses and their relationship to agriculturally designated areas."

By designing projects with sensitivity to the ongoing surrounding agricultural operations and with sensitivity to the expectations of future homeowners, adverse impacts to agriculture at the agriculture urban interface can be minimized. Recognizing that no buffer width is scientifically proven to address the entire potential range of compatibility issues, buffers are, nonetheless, the best planning tool currently available to minimize interface conflicts. In a study of buffers in 16 counties and 6 cities, great variations were found among farmers and urban neighbors in the perceived effectiveness of different forms of buffers to limit specific negative impacts. Farmers generally found setbacks or open space buffers to be ineffective in dealing with trespass, vandalism, litter, theft, and dogs, while urban residents viewed them as generally effective in reducing impacts from agricultural chemical use, odor, and dust from farm operations (Handel, 1994). Given this research, where trespass is identified as a potential interface conflict, consideration should be given to providing barriers or fences, locating project access points away from farm fields, or providing no trespass signs where the project would most likely cause increased trespass.

The design and width of compatibility buffers should be based on the site specific conditions of topography, weather patterns, and the commodity uses in the area and should be related to the anticipated interface conflicts. For example, if offsite agricultural uses are separated by a topographic feature that provides an adequate buffer, additional project features to reduce a potential impact may not be required. If odor or chemical use was a potential interface issue and the project was located downwind from the project site, the potential for conflicts would be reduced, reducing requirements for site specific project design measures. The type of commodity production will affect the severity of potential interface conflicts because each agricultural commodity is managed differently (i.e. frequency of harvesting, truck traffic, chemical use, odors, etc.) and those management activities result in varying degrees of potential conflict. A specific required buffer width is not provided in these guidelines to allow for flexibility in project and buffer width design and to enable consideration of the variety of site specific conditions that would affect the adequacy of a compatibility buffer.

Compatibility buffers can be achieved in a variety of ways, including but not limited to, the following:

- Natural barriers created by landscape features such as waterways,

topographic relief, or natural and/or planted vegetation;

- Physical barriers such as roads or walls;
- Multi-use barriers such as open space greenbelts, biological open space easements or stormwater detention facilities;
- Easements that restrict incompatible land uses such as habitable or accessory structures and swimming pools adjacent to offsite agriculture; and
- Incorporating land use transitions such as providing larger lots near farmland to increase long term compatibility.

5.2.2 Right to Farm Acts

State and local Right-to-Farm Acts have been implemented to establish the rights of agricultural activities to operate and not be considered a nuisance. State and local Right-to-Farm Acts, specifically, Civil Code §3482.5 (State Right to Farm Act) and the County Code of Regulatory Ordinances Section 64.401 (Agricultural Enterprises and Consumer Information Ordinance) may be referenced as mechanisms to help protect agriculture, but they may not be relied on to mitigate significant indirect impacts to agriculture.

According to the State Right to Farm Act, if a commercial agricultural use operates according to proper and accepted customs and standards, existed in a location for three years and was not a nuisance when it began, the agricultural use shall not become a private or public nuisance due to any changed condition in the locality. Moreover, the Right to Farm Act does not prohibit new neighbors from complaining about farm practices, filing complaints with regulatory authorities regarding agricultural practices, or hiring lawyers to challenge the rights of agricultural operators. Therefore, although the principle of the “Right to Farm Act” is that no agricultural activity shall be deemed a nuisance if it existed there for more than three years and was not a nuisance at the time it began, such legislation has had minimal effect in reducing the actual conflicts that occur at the agriculture urban edge (Wacker et. al, 2001).

In spite of right to farm laws, complaints and/or legal challenges to agricultural operations can reduce the viability of agricultural operations due to a variety of economic impacts to farmers that result from nuisance complaints. Farmers often respond to neighbor complaints by upgrading farm operations to eliminate nuisances or by abandoning use of portions of farm fields. Often, farm operation upgrades resulting from neighbor complaints have no benefit to the operation itself and are simply economic impacts that the farmer must bear as a result of new neighbors.

Therefore, while the Right to Farm Act and the County Consumer Information Ordinance may be referenced in a discussion of existing regulation that protects the rights of agricultural operators, reliance on these Right to Farm laws alone in addressing the significance of indirect impacts is not adequate to reduce an identified adverse indirect effects to agricultural resources.

5.3 Cumulative Impacts

When a project may have a potentially significant cumulative impact to agricultural resources, additional agricultural preservation or offsite purchase of an agricultural conservation easement beyond a 1:1 preservation ratio may be required to mitigate for the cumulative loss of agricultural resources. The adequacy of mitigation for significant cumulative impacts will need to be determined on a case by case basis taking into consideration the value and extent of the resources that would be impacted and the mitigations proposed.

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Attachment A
Important Definitions

Agricultural Resource

Within this document, the term "agricultural resource" refers to any of the following:

- a site with an active agricultural operation;
- a site designated as, *and that meets the definition of,* an Important Farmland Category (Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance) as defined in the DOC's FMMP;
- a site with a history of agricultural production based on aerial photography or other data sources identifying agricultural land uses. Examples of other data sources that identify agricultural land use include data from the County Department of Agriculture Weights and Measures (AWM), the State Department of Water Resources (DWR) Land Use data, and vegetation data from the County Department of Planning and Land Use (DPLU).

Active Agricultural Operations

The term "active agricultural operation" refers to the routine and ongoing commercial operations associated with a farm, grove, dairy, or other agricultural business and shall includes: a) the cultivation and tillage of soil; crop rotation; fallowing for agricultural purposes; the production, cultivation, growing, replanting and harvesting of any agricultural commodity including viticulture, vermiculture, apiculture, or horticulture; b) the raising of livestock, fur bearing animals, fish or poultry, and dairying; c) any practices performed by a farmer on a farm as incident to or in conjunction with those farming or grove operations, including the preparation for market, delivery to storage or to market, or delivery to carriers for transportation to market; and d) ordinary pasture maintenance and renovation and dry land farming operations consistent with rangeland management. All such activities must be consistent with the economics of commercial agricultural operations and other similar agricultural activities.

Fallow Land

The California General Plan Glossary of Terms defines "fallow land" as follows: "Agricultural land that is not currently being cultivated but has been cultivated at least one year in the past five years unless:

1. The land is enrolled in a habitat conservation program that has been approved by a county, state or federal government agency; or
2. The land has not been cultivated in any of the past five years due to accepted farm management practices; or
3. The land has not been cultivated in any of the past five years because of enrollment in a federal program that requires it to remain unfarmed.

Important Agricultural Resource

An agricultural resource determined to be important pursuant to the County LARA model.

Attachment B
Areaclimates and "Sunset Zones" Descriptions

Four factors combine to make up the Generalized Western Plantclimate Zones ("Sunset Zones"); these include latitude, elevation, ocean vs. continental air mass influence, and local terrain topology. Latitude affects day-length, average temperature, and severity and length of winter. Elevation affects nighttime temperatures and severity and the length of winter while the ocean vs. continental air mass influence affects the severity of weather fluctuations and influences seasonal rainfall patterns. The presence of mountain or hill barriers between the ocean and inland zones can also affect how much influence ocean and continental air masses will have. Finally, local terrain topology affects the movement of cold air because cold air is heavier than warm air resulting in the collection and trapping of cold air in lowlands, valley centers, and river bottoms. These are called cold-air basins. Hillsides and tilted valley floors that allow easy drainage of cold air are called thermal belts. Above the thermal belts, winter temperatures can be even lower than in the cold-air basins. The Generalized Western Plantclimate Zones present in San Diego County are described below and grouped according to the five areaclimates present in the County: maritime, coastal, transitional, interior, and desert.

The Sunset Zones range from Zone 1 representing the coldest winters in the west to Zone 24 representing maritime influence. In San Diego County, Zones 3, 11, 13, and 18 through 24 are represented. Zone 24 falls within the Maritime Areaclimate, Zone 22 and 23 in the Coastal Areaclimate, Zone 20 and 21 in the Transitional Areaclimate, Zone 3, 18, and 19 in the Interior Areaclimate, and Zone 11 and 13 is in the Desert Areaclimate.

Maritime Areaclimate

The Maritime Areaclimate occupies a long, narrow belt along the ocean and is limited in width to a few hundred yards but can extend 5 or 6 miles inland where canyons or valleys open into the coastal plain. Zone 24 is the maritime influenced Plantclimate, which is completely dominated by the ocean. Incorporated Cities and Camp Pendleton occupy this zone in San Diego County with the only unincorporated communities in this zone being the westernmost portions of the unincorporated San Dieguito community, the County Islands within National City and the western portions of Bonita. Because of the cold air that descends out of the mouth of canyons, low temperatures in this Zone have ranged from 24° to 44° F over a 20-year period.

Coastal Areaclimate

The Coastal Areaclimate is continuous from north to south and lies inland from the shoreline strip, which is dominated exclusively by the Maritime influence. Topographically this area comprises an area of hills, mesas, and ridges extending from beaches and cliffs on the west to the seaward slopes of the low elevation mountains in the east.

Zone 22 is within the Coastal Areaclimate represented by the cold winter portions of the coastal climate that is influenced by the ocean about 85% of the time. It is either a cold-air basin in winter or a hilltop above the air-drained slopes. The coldest temperatures here occur in canyons and near canyon mouths where cold air drainage can cause frost damage. Winter lows have been recorded from 21° to 24° F. In San Diego County Zone 22 is limited to the northwestern most portion of the County, within Camp Pendleton.

Zone 23 represents thermal belts of the Coastal Areaclimate and is one of the most favorable for growing subtropical plants and most favorable for growing avocadoes. Zone 23 encompasses some of San Diego County's most important agricultural areas, including Bonsall, Fallbrook, and Twin Oaks Valley. The role of topography in the success of avocado production in this zone is of particular note. Foothills and steep, rocky slopes provide ideal conditions for excellent air and water drainage; air drainage necessary to prevent freezes and rapid water drainage being essential for the prevention of root rot in avocadoes. Zone 23 lacks the summer heat necessary to grow crops such as apples, pears and peaches. Zone 23 temperatures are mild; however, severe winters have resulted in lows in some areas ranging from 23° to 38° F.

Transitional Areaclimate

The Transitional Areaclimate occupies a series of valleys partially screened from maritime influences by low mountains to the west, and limited by the western extension of the Peninsular Range to the east. These valleys may be dominated by coastal influence for a day, week or month and then may be dominated for similar periods by continental air. Zones 20 and 21 fall in this Areaclimate and have the same pattern of cold-air basins (Zone 20) and air drained thermal belts (Zone 21) as Zones 18 and 19 (Interior Areaclimates), however they get more ocean influence and therefore are better suited for plants that need moisture like fuchsias and tuberous begonias. These zones are a transitional area where climate boundaries often move 20 miles in 24 hours with the movements of marine or interior weather. Zone 21 is good for citrus and is the mildest zone that gets adequate winter chilling for some plants. Over a 20-year period, winter lows in Zone 20 ranged from 28° to 23° F while in Zone 21, low temperatures ranged from 23° to 36° F, with temperatures rarely dropping far below 30°. In San Diego County, the cold air basin of Zone 20 is generally located in the Ramona Community Planning area with the Zone 21 air drained thermal belt surrounding it, extending northward through North County Metro, Valley Center and Pala-Pauma and south through Alpine, Crest-Dehesa, and Jamul-Dulzura. Zone 21 covers the majority of the transitional areaclimate.

Interior Areaclimate

The Interior Areaclimate is dominated by continental air at least 85% of the time and is characterized by wide diurnal and seasonal temperature fluctuations. The air here is warm and dry in the summer. Topographically, this areaclimate consist of valleys and foothills, mountain valleys, and the seaward slopes of high mountains. Zone 3 is the

coldest of high-elevation and interior climates having minimum temperatures ranging from -24° F to 13° F and a growing season of about 160 days. Snow can fall in Zone 3 and the zone covers high elevations of the Palomar Mountains, east of Julian continuing south through the Cuyamaca and Laguna Mountains; and the Santa Rosa Mountains that extend south into the Anza Borrego State Park from Riverside County.

Zones 18 and 19 are interior climates with little influence from the Ocean. Zone 18 represents cold air basins above and below thermal belts of the interior valleys. Due to Zone 19 being favorably situated on slopes and hillsides where cold air drains off on winter nights to the cold air basins of Zone 18, winters are less severe than Zone 18. Zone 19 is prime for citrus, and most avocadoes and macadamia nuts can be grown here. Citrus can be grown in Zone 18, but frosts require the heating of orchards to reduce fruit loss. Over a 20-year period, winter lows in Zone 18 ranged from 10° to 28° F while in Zone 19, the lows ranged from 22° to 27° F.

Desert Areaclimate

The desert areaclimate begins at the line of high peaks in the Peninsular Range and extends east into the rain shadow created by the Peninsular Range. The desert areaclimate is dominated to a greater extent by continental air masses than the Interior Areaclimate, has high daytime summer temperatures with very low humidity, drying and occasional extremely winds; and slight, variable rainfall generally under 5 inches per year and often very unevenly distributed.

Zone 11 is limited to the northeastern portion of San Diego County below the mountainous Zone 3 areas and above the lower subtropical desert areas of Zone 13. Zone 11 is characterized by wide swings in temperature, both between summer and winter and between day and night. Winter lows of 0° to 11° F and high summer temperatures of 111° to 117° F have been recorded. Late spring frosts and desert winds are agricultural hazards of the climate. Zone 13 covers low elevation desert areas (considered subtropical) and is the most extensive of the County's desert Plantclimate Zones. These areas have mean daily maximum temperatures in the hottest month of 106° to 108° F. Winters are short with frosts to be expected from December 1 to February 15. The average low temperature is 37° F. These temperature extremes exclude some of the subtropicals grown in Zones 22 to 24; however numerous subtropicals with high heat requirements thrive in this climate such as dates, grapefruit, and beaumontia and thevetia (ornamentals).

Attachment C
Soil Candidate Criteria and Candidate Listing for Prime Farmland and Farmland of Statewide Importance in San Diego County

Prime Farmland Soil Criteria

WATER: The soils have xeric, ustic, or aridic (torric) moisture regimes in which the available water capacity is at least 4.0 inches (10 cm) per 40 to 60 inches (1.02 to 1.52 meters) of soil.

SOIL TEMPERATURE RANGE: The soils have a temperature regime that is frigid, mesic, thermic, or hyperthermic (pergelic and cryic regimes are excluded). These are soils that, at a depth of 20 inches (50.8 cm), have a mean annual temperature higher than 32° F (0° C). In addition, the mean summer temperature at this depth in soils with an O horizon is higher than 47° F (8° C); in soils that have no O horizon, the mean summer temperature is higher than 59° F (15° C).

ACID ALKALI BALANCE: The soils have a pH between 4.5 and 8.4 in all horizons within a depth of 40 inches (1.02 meters).

WATER TABLE: The soils have no water table or have a water table that is maintained at a sufficient depth during the cropping season to allow cultivated crops common to the area to be grown.

SOIL SODIUM CONTENT: The soils can be managed so that, in all horizons within a depth of 40 inches (1.02 meters), during part of each year the conductivity of the saturation extract is less than 4 mmhos/cm and the exchangeable sodium percentage is less than 15.

FLOODING: Flooding of the soil (uncontrolled runoff from natural precipitation) during the growing season occurs infrequently, taking place less often than once every two years.

ERODIBILITY: The product of K (erodibility factor) multiplied by the percent of slope is less than 2.0.

PERMEABILITY: The soils have a permeability rate of at least 0.06 inch (0.15 cm) per hour in the upper 20 inches (50.8 cm) and the mean annual soil temperature at a depth of 20 inches (50.8 cm) is less than 59° F (15° C); the permeability rate is not a limiting factor if the mean annual soil temperature is 59° F (15° C) or higher.

ROCK FRAGMENT CONTENT: Less than 10 percent of the upper 6 inches (15.24 cm) in these soils consists of rock fragments coarser than 3 inches (7.62 cm).

ROOTING DEPTH: The soils have a minimum rooting depth of 40 inches (1.02 meters).

Prime Farmland Soil Candidates

THESE SOIL MAPPING UNITS MEET THE CRITERIA FOR PRIME FARMLAND AS OUTLINED IN THE U.S. DEPARTMENT OF AGRICULTURE'S LAND INVENTORY AND MONITORING (LIM) PROJECT FOR THE SAN DIEGO AREA SOIL SURVEY.

Symbol	Name
AtC	Altamont clay, 5 to 9 percent slopes
AwC	Auld clay, 5 to 9 percent slopes
BuB	Bull Trail sandy loam, 2 to 5 percent slopes
BuC	Bull Trail sandy loam, 5 to 9 percent slopes
CaB	Calpine coarse sandy loam, 2 to 5 percent slopes
CaC	Calpine coarse sandy loam, 5 to 9 percent slopes
ChA*	Chino fine sandy loam, 0 to 2 percent slopes
ChB*	Chino fine sandy loam, 2 to 5 percent slopes
CkA*	Chino silt loam, saline, 0 to 2 percent slopes
Co	Clayey alluvial land
CsB	Corralitos loamy sand, 0 to 5 percent slopes
CsC	Corralitos loamy sand, 5 to 9 percent slopes
EdC	Elder shaly fine sandy loam, 2 to 9 percent slopes
FaB	Fallbrook sandy loam, 2 to 5 percent slopes
FaC	Fallbrook sandy loam, 5 to 9 percent slopes
GoA*	Grangeville fine sandy loam, 0 to 2 percent slopes
GrA	Greenfield sandy loam, 0 to 2 percent slopes
GrB	Greenfield sandy loam, 2 to 5 percent slopes
GrC	Greenfield sandy loam, 5 to 9 percent slopes
HoC	Holland fine sandy loam, deep, 2 to 9 percent slopes
InA	Indio silt loam, 0 to 2 percent slopes
InB	Indio silt loam, 2 to 5 percent slopes
IsA	Indio silt loam, dark variant
Lu*	Loamy alluvial land
MlC	Marina loamy coarse sand, 2 to 9 percent slopes
MnA	Mecca coarse sandy loam, 0 to 2 percent slopes
MnB	Mecca coarse sandy loam, 2 to 5 percent slopes
MpA2	Mecca fine sandy loam, 0 to 2 percent slopes, eroded
RaA	Ramona sandy loam, 0 to 2 percent slopes
RaB	Ramona sandy loam, 2 to 5 percent slopes
RkA	Reiff fine sandy loam, 0 to 2 percent slopes
RkB	Reiff fine sandy loam, 2 to 5 percent slopes
SbA	Salinas clay loam, 0 to 2 percent slopes

SbC	Salinas clay loam, 2 to 9 percent slopes
ScA	Salinas clay, 0 to 2 percent slopes
ScB	Salinas clay, 2 to 5 percent slopes
VaA[#]	Visalia sandy loam, 0 to 2 percent slopes
VaB	Visalia sandy loam, 2 to 5 percent slopes
VaC	Visalia sandy loam, 5 to 9 percent slopes
VbB	Visalia gravelly sandy loam, 2 to 5 percent slopes
VbC	Visalia gravelly sandy loam, 5 to 9 percent slopes
WmB	Wyman loam, 2 to 5 percent slopes
207	Sorrento loam, 2 to 9 percent slopes
HcC	Hanford coarse sandy loam, 2 to 8 percent slopes

* Prime farmland if drained.
[#] Prime farmland if either protected from flooding or not frequently flooded during the growing season.

Farmland of Statewide Importance Soil Criteria

The soil candidate criteria for the FMMP Farmland of Statewide Importance designation are similar to the soil criteria for Prime Farmland but include minor shortcomings, such as greater slopes or less ability to store soil moisture. Soil candidates for Farmland of Statewide Importance do not have any restrictions regarding permeability or rooting depth. Soil candidates for the FMMP Farmland of Statewide Importance designation must meet all the following criteria:

WATER: The soils have xeric, ustic, or aridic (torric) moisture regimes in which the available water capacity is at least 3.5 inches (8.89 cm) within a depth of 60 inches (1.52 meters) of 16 soil; or within the root zone if it is less than 60 inches (1.52 meters) deep.

SOIL TEMPERATURE RANGE: The soils have a temperature regime that is frigid, mesic, thermic, or hyperthermic (pergelic and cryic regimes are excluded). These are soils that, at a depth of 20 inches (50.8 cm), have a mean annual temperature higher than 32° F (0° C). In addition, the mean summer temperature at this depth in soils with an O horizon is higher than 47° F (8° C); in soils that have no O horizon, the mean summer temperature is higher than 59° F (15° C).

ACID ALKALI BALANCE: The soils have a pH between 4.5 and 9.0 in all horizons within a depth of 40 inches (1.02 meters) or in the root zone if the root zone is less than 40 inches (1.02 meters) deep.

WATER TABLE: The soils have no water table or have a water table that is maintained at a sufficient depth during the cropping season to allow cultivated crops common to the area to be grown.

SOIL SODIUM CONTENT: The soils can be managed so that, in all horizons within a depth of 40 inches (1.02 meters), or in the root zone if the root zone is less than 40 inches (1.02 meters) deep, during part of each year the conductivity of the saturation

extract is less than 16 mmhos/cm and the exchangeable sodium percentage is less than 25.

FLOODING: Flooding of the soil (uncontrolled runoff from natural precipitation) during the growing season occurs infrequently, taking place less often than once every two years

ERODIBILITY: The product of K (erodibility factor) multiplied by the percent of slope is less than 3.0.

ROCK FRAGMENT CONTENT
Less than 10 percent of the upper 6 inches (15.24 cm) in these soils consists of rock fragments coarser than 3 inches (7.62 cm).

Farmland of Statewide Importance Soil Candidates

THESE SOIL MAPPING UNITS MEET THE CRITERIA FOR FARMLAND OF STATEWIDE IMPORTANCE AS OUTLINED IN THE U.S. DEPARTMENT OF AGRICULTURE'S LAND INVENTORY AND MONITORING (LIM) PROJECT FOR THE SAN DIEGO AREA SOIL SURVEY.

Symbol	Name
AtD	Altamont clay, 9 to 15 percent slopes
AtD2	Altamont clay, 9 to 15 percent slopes, eroded
AuC	Anderson very gravelly sandy loam, 5 to 9 percent slopes
AvC	Arlington coarse sandy loam, 2 to 9 percent slopes
BlC	Bonsall sandy loam, 2 to 9 percent slopes
BlC2	Bonsall sandy loam, 2 to 9 percent slopes, eroded
BlD2	Bonsall sandy loam, 9 to 15 percent slopes, eroded
BmC	Bonsall sandy loam, thick surface, 2 to 9 percent slopes
BnB	Bonsall-Fallbrook sandy loams, 2 to 5 percent slopes
BoC	Boomer loam, 2 to 9 percent slopes
BsC	Bosanko clay, 2 to 9 percent slopes
CaC2	Calpine coarse sandy loam, 5 to 9 percent slopes, eroded
CaD2	Calpine coarse sandy loam, 9 to 15 percent slopes, eroded
CbB	Carlsbad gravelly loamy sand, 2 to 5 percent slopes
CbC	Carlsbad gravelly loamy sand, 5 to 9 percent slopes
CbD	Carlsbad gravelly loamy sand, 9 to 15 percent slopes
CfB	Chesterton fine sandy loam, 2 to 5 percent slopes
CfC	Chesterton fine sandy loam, 5 to 9 percent slopes
CfD2	Chesterton fine sandy loam, 9 to 15 percent slopes, eroded
CsD	Corralitos loamy sand, 9 to 15 percent slopes
DaC	Diablo clay, 2 to 9 percent slopes
DaD	Diablo clay, 9 to 15 percent slopes
EsC	Escondido very fine sandy loam, 5 to 9 percent slopes

EvC	Escondido very fine sandy loam, deep, 5 to 9 percent slopes
FaC2	Fallbrook sandy loam, 5 to 9 percent slopes, eroded
GrD	Greenfield sandy loam, 9 to 15 percent slopes
HmD	Holland fine sandy loam, 5 to 15 percent slopes
HrC	Huerhuero loam, 2 to 9 percent slopes
HrC2	Huerhuero loam, 5 to 9 percent slopes, eroded
IoA	Indio silt loam, saline, 0 to 2 percent slopes
KcC	Kitchen Creek loamy coarse sand, 5 to 9 percent slopes
KcD2	Kitchen Creek loamy coarse sand, 9 to 15 percent slopes, eroded
LeC	Las Flores loamy fine sand, 2 to 9 percent slopes
LeC2	Las Flores loamy fine sand, 5 to 9 percent slopes, eroded
LeD	Las Flores loamy fine sand, 9 to 15 percent slopes
LeD2	Las Flores loamy fine sand, 9 to 15 percent slopes, eroded
LpB	Las Posas fine sandy loam, 2 to 5 percent slopes
LpC	Las Posas fine sandy loam, 5 to 9 percent slopes
LpC2	Las Posas fine sandy loam, 5 to 9 percent slopes, eroded
MoA	Mecca sandy loam, saline, 0 to 2 percent slopes
MvA	Mottsville loamy coarse sand, 0 to 2 percent slopes
MvC	Mottsville loamy coarse sand, 2 to 9 percent slopes
MvD	Mottsville loamy coarse sand, 9 to 15 percent slopes
PeA	Placentia sandy loam, 0 to 2 percent slopes
PeC	Placentia sandy loam, 2 to 9 percent slopes
PeC2	Placentia sandy loam, 5 to 9 percent slopes, eroded
PfA	Placentia sandy loam, thick surface, 0 to 2 percent slopes
PfC	Placentia sandy loam, thick surface, 2 to 9 percent slopes
RaC	Ramona sandy loam, 5 to 9 percent slopes
RaC2	Ramona sandy loam, 5 to 9 percent slopes, eroded
RkC	Reiff fine sandy loam, 5 to 9 percent slopes
RoA	Rositas fine sand, 0 to 2 percent slopes
RrC	Rositas fine sand, hummocky, 5 to 9 percent slopes
RsA	Rositas loamy coarse sand, 0 to 2 percent slopes
RsC	Rositas loamy coarse sand, 2 to 9 percent slopes
RsD	Rositas loamy coarse sand, 9 to 15 percent slopes
SuA	Stockpen gravelly clay loam, 0 to 2 percent slopes
SuB	Stockpen gravelly clay loam, 2 to 5 percent slopes
TuB	Tujunga sand, 0 to 5 percent slopes
VsC	Vista coarse sandy loam, 5 to 9 percent slopes
WmC	Wyman loam, 5 to 9 percent slopes
136	Capistrano sandy loam, 9 to 15 percent slopes
FfC2	Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded
HcD2	Hanford coarse sandy loam, 8 to 15 percent slopes, eroded
MmD2	Monserate sandy loam, 8 to 15 percent slopes, eroded

Also available online at:
http://www.consrv.ca.gov/DLRP/fmmp/pubs/soils/SANDIEGO_ssurgo.pdf

Attachment D
Agricultural Commissioner's Memo

KATHLEEN A. THUNER
AGRICULTURAL COMMISSIONER
SEALER OF WEIGHTS
AND MEASURES

County of San Diego

DEPARTMENT OF AGRICULTURE, WEIGHTS & MEASURES
5555 Overland Ave., Bldg. 3, San Diego, CA 92123-1292

AGRICULTURE
(619) 694-2739
FAX
(619) 565-7046
WEIGHTS & MEASURES
(619) 694-2778

June 2, 1997

TO: David Nagel
Department of Planning and Land Use

FROM: Kathleen A. Thuner

COMMERCIAL VIABILITY OF TWO ACRE LOTS—TM 5091 (BARRETT/HIBBARD)

Recently you contacted this office concerning the viability of two acre parcels for agriculture in the (19) Intensive Agriculture land use designation. Specifically, you requested information pertaining to the allowance for two acre parcel sizes when "the land is planted, and has been planted, for at least the previous one-year period, in one or more commercial crops that remain commercially viable on two acre lots."

The overall value of citrus per acre in San Diego County in 1996 was $5,078. For purposes of comparison, the dollar values per acre in San Diego County range from a low of about $5 (range) to a high of $588,310 (indoor decoratives).

According to our pesticide operator identification database, citrus farms in San Diego County that have registered to use pesticides are as small as 1/10th of an acre. Our records show that there are currently 671 citrus farms of two or fewer acres.

It is also important to note that "commercial viability" does not necessarily imply the ability to support oneself from income solely derived from the farm. Nationwide and in San Diego County as well, farmers traditionally have additional income from other sources. In San Diego County, only 36% of farmers list farming as their primary occupation. In California that figure stands at 52%; nationwide it is 54%.

San Diego County's 1.1 billion dollar agricultural industry is composed of many small farms—4,298 of them are nine or fewer acres. Recent trends indicate that pattern will continue. The average farm size in San Diego County has been falling and is currently only 21% of the average farm size statewide. The cost of land in the county makes it prohibitive for many new farmers to begin an operation on a large parcel, so the ability to farm small parcels is crucial to the success of future agriculture in San Diego County.

I hope this information is helpful. If you have additional questions, please contact Jennifer Tierney of my staff at (S50) 694-3122.

Sincerely,

KATHLEEN A. THUNER
Agricultural Commissioner/
Sealer of Weights and Measures

RECEIVED
JUN 03 1997
San Diego County
DEPT. OF PLANNING & LAND USE

Attachment E
Federal and State Regulations and Agricultural Conservation Programs

Federal

National Environmental Policy Act as amended [Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, § 4(b), Sept. 13, 1982 http://ceq.eh.doe.gov/nepa/regs/nepa/nepaeqia.htm.]
Federal agencies that implement the National Environmental Policy Act (NEPA) are required to consider conversion of farmland and loss of prime agricultural soils when assessing environmental impacts of proposed federal projects.

Farmland Protection Policy Act [Pub. L. 97-98, US Code, Title 7, Chapter 73, §4201 *et seq*. http://www4.law.cornell.edu/uscode/7/ch73.html; and http://water.usgs.gov/eap/env_guide/farmland.html.]
Congress initiated the Farmland Protection Policy Act (FPPA) to address the substantial decrease in the amount of open farmland. As a part of the FPPA, Federal programs that contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses are to be minimized. Additionally, Federal programs shall be administered in a manner that, as practicable, will be compatible with state and local government and private programs and policies to protect farmland.

Land Evaluation and Site Assessment System [http://www.info.usda.gov/nrcs/fpcp/lesa.htm]
The USDA, Natural Resources Conservation Service (NRCS), developed a LESA system to assist state and local officials to make sound decisions about land use. Combined with forest measures and rangeland parameters, LESA can provide a technical framework to numerically rank land parcels through local resource evaluation.

State

Open Space Subvention Act [Government Code, Title 2, Division 4, Part 1, Chapter 3, §16140-16154http://www.leginfo.ca.gov; and http://www.consrv.ca.gov/dlrp/site_index.htm]
The Open Space Subvention Act allows local governments to receive an annual subvention of forgone property tax revenues from the state due to a reduction in property taxes on open space lands and often linked to the Williamson Act.

California Farmland Conservancy Program [California Code of Regulations, Title 14, Division 2, Chapter 6, and Public Resources Code §10200 to 10277 http://www.leginfo.ca.gov]
The California Farmland Conservancy Program (CFCP) is a voluntary program that seeks to encourage the long-term, private stewardship of agricultural lands through the use of agricultural conservation easements. The CFCP, formerly known as the Agricultural Land Stewardship Program, was created in 1996, and provides grant funding for projects which use and support agricultural conservation easements for protection of agricultural lands.

Land Evaluation Site Assessment Model [http://www.consrv.ca.gov/dlrp/LESA/LESA.htm]
LESA is a point-based approach for rating the relative importance of agricultural land resources based upon specific measurable features. The California LESA Model was

developed to provide lead agencies with an optional methodology to ensure that potentially significant conversions of agricultural land are quantitatively and consistently considered in the environmental review process (Public Resources Code Section 21095), including CEQA reviews. The California Agricultural LESA Model evaluates soil resource quality, project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. For a given project, the factors are rated, weighted, and combined, resulting in a single numeric score. The project score becomes the basis for making a determination of a project's potential significance. The California Department of Conservation encourages local agencies to develop local agricultural models to account for the variability of local agricultural resources and conditions.

Attachment F
Defining a Project's Zone of Influence (ZOI)

Consideration of the surrounding agricultural land uses and protected resource lands is designed to provide a measurement of the level of agricultural land uses and protected lands in close proximity to the project site. The definition and methodology for defining the ZOI is the result of work conducted during the development of the California LESA Model, through an iterative review and sampling process that determined this distance would generally be a representative sample of surrounding land use. In a simple example, a single one quarter mile square project (160 acres) would have a ZOI that is a minimum of eight times greater (1280 acres) than that of the parcel itself. The direction below for defining the ZOI requires reference to the ZOI figure found on the following page.

Step 1

Locate the proposed project on an appropriate map. Outline the boundary of the proposed project site.

Step 2

Determine the smallest rectangle that will completely contain the project site (see next page, Rectangle A).

Step 3

Create a second rectangle (see next page, Rectangle B) that extends 0.25 mile (1320 feet) beyond Rectangle A on all sides.

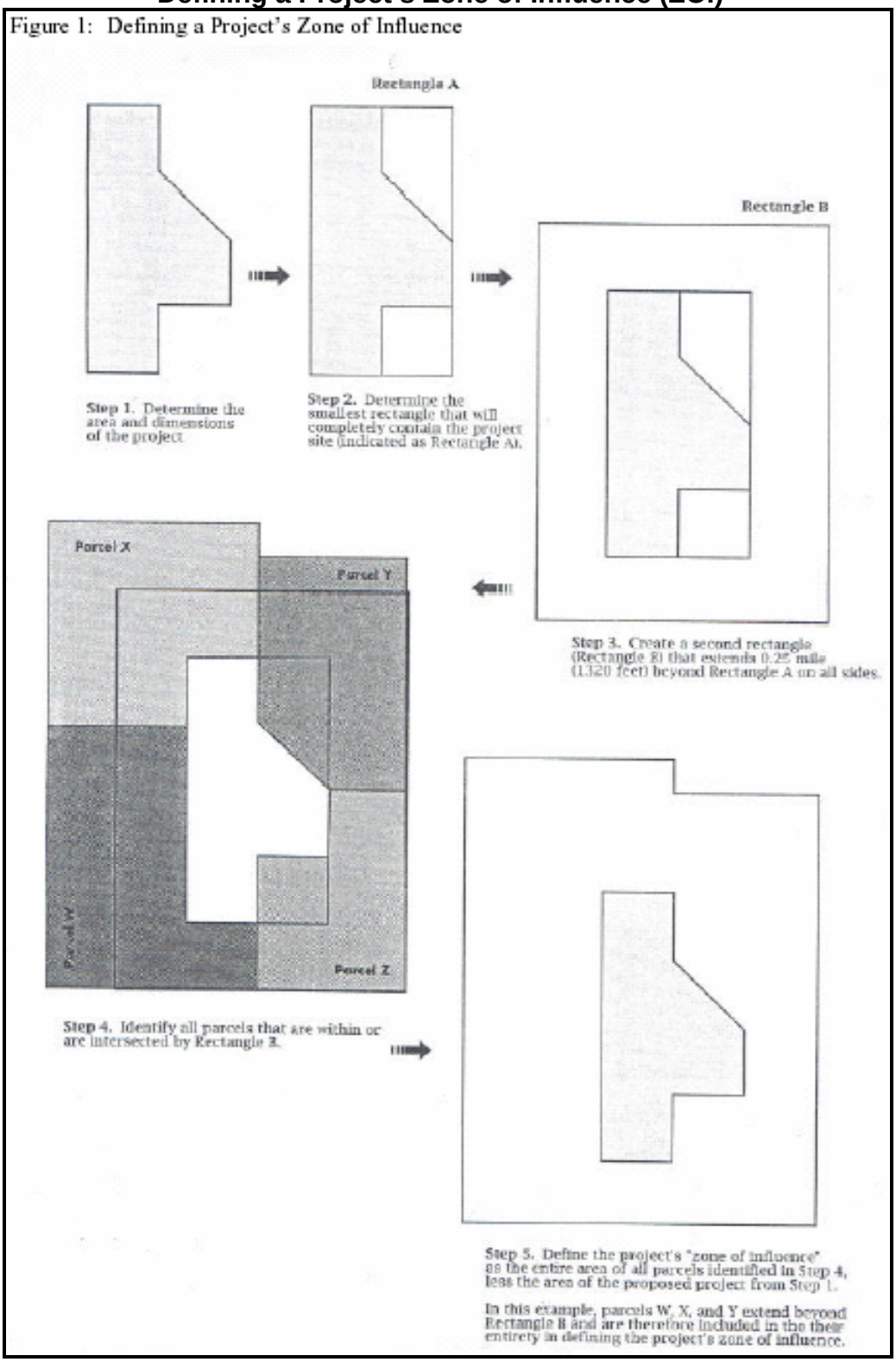
Step 4

Identify all parcels that are within *or* are intersected by Rectangle B.

Step 5

Define the project site's ZOI as the entire area of all parcels identified in Step 4, less the area of the proposed project from Step 1. (In the illustration provided in on the next page, Parcels W, X, and Y extend beyond Rectangle B and are therefore included in their entirety in defining the project site's ZOI.)

Defining a Project's Zone of Influence (ZOI)[23]



[23] This figure illustrates the approach to measuring a ZOI as defined in the California Agricultural Land Evaluation and Site Assessment (LESA) Instruction Manual.

California Department of Conservation, September 1997

EXHIBIT 2

COUNTY OF SAN DIEGO

GUIDELINES FOR DETERMINING SIGNIFICANCE AND REPORT FORMAT AND CONTENT REQUIREMENTS

CLIMATE CHANGE

LAND USE AND ENVIRONMENT GROUP

Planning & Development Services
Department of Public Works

November 7, 2013

APPROVAL

I hereby certify that these **Guidelines for Determining Significance and Report Format and Content Requirements for Climate Change** are a part of the County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance and Technical Report Format and Content Requirements and were considered by the Director of Planning & Development Services, in coordination with the Director of Public Works on the 7th day of November, 2013.

MARK WARDLAW
Director of Planning & Development Services

RICHARD CROMPTON
Director of Public Works

I hereby certify that these **Guidelines for Determining Significance and Report Format and Content Requirements for Climate Change** are a part of the County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance and Technical Report Format and Content Requirements and have hereby been approved by the Deputy Chief Administrative Officer (DCAO) of the Land Use and Environment Group on the 7th day of November, 2013. The Director of Planning & Development Services is authorized to approve revisions to these Guidelines for Determining Significance and Report Format and Content Requirements for Climate Change, except revisions to the Guidelines for Determining Significance presented in Chapter 4.0 must be approved by the Deputy CAO.

Approved, November 7, 2013

SARAH E. AGHASSI
Deputy Chief Administrative Officer

COUNTY OF SAN DIEGO

GUIDELINES FOR DETERMINING SIGNIFICANCE

CLIMATE CHANGE

LAND USE AND ENVIRONMENT GROUP

Planning & Development Services
Department of Public Works

November 7, 2013

EXPLANATION

These Guidelines for Determining Significance for Climate Change (Significance Guidelines) and the information presented herein shall be used by County staff for the review of discretionary projects and environmental documents pursuant to the California Environmental Quality Act (CEQA). These Significance Guidelines present a range of quantitative, qualitative, and performance levels for particular environmental effects. Normally (in the absence of substantial evidence to the contrary), an affirmative response will mean the project will result in a significant effect, whereas effects that do not meet any of the Significance Guidelines will normally be determined to be "less than significant." Section 15064(b) of the State CEQA Guidelines states:

> *"The determination 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 factual and scientific data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."*

The purpose of these Significance Guidelines is to provide for a consistent and objective evaluation of significant effects. These Significance Guidelines are not binding on any decision-maker and do not substitute for the use of independent judgment to determine significance or the evaluation of evidence in the record. The County reserves the right to modify these Significance Guidelines in the event of scientific discovery or new factual data that may alter the common application of a significance threshold.

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List of Acronyms

APCD	Air Pollution Control District
AB 32	Assembly Bill 32, The Global Warming Solutions Act of 2006
APS	Alternative Planning Strategy
ARB	Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BACM	Best Available Control Measure
BOS	County of San Diego Board of Supervisors
CalEEMod	California Emissions Estimator Model
CAP	Climate action plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CH_4	Methane
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
EIR	Environmental Impact Report
EPIC	Univ. of San Diego School of Law Energy Policy Initiative Center
GHG	Greenhouse Gas
GWP	Global Warming Potential
HFC	Hydrofluorocarbon
IPCC	Intergovernmental Panel on Climate Change
MPO	Metropolitan Planning Organization
MT	Metric tons
MMT	Million metric tons
N_2O	Nitrous Oxide
NF_3	Nitrogen triflouride
OPR	Governor's Office of Planning and Research
PFC	Perfluorocarbon
RTP	Regional Transportation Plan
SANDAG	San Diego Association of Governments
SCS	Sustainable Communities Strategy
S-3-05	Executive Order S-3-05
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SF_6	Sulfur hexafluoride
UNFCCC	United Nations Framework Convention on Climate Change
URBEMIS	Urban Emissions Model
VMT	Vehicle miles traveled
VOC	Volatile organic compound

INTRODUCTION

Based on the serious risk that climate change poses to the economic well-being, public health, natural resources, and the environment of California, the State of California enacted legislation intended to reduce greenhouse gas (GHG) emissions. The Global Warming Solutions Act of 2006, also known as Assembly Bill 32 (AB 32) establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions.

AB 32 requires reduction of statewide GHG emissions to 1990 levels by 2020. The Air Resources Board (ARB) adopted its Climate Change Scoping Plan to identify the main strategies California will implement to achieve GHG emissions reductions from each emissions sector of the state's GHG inventory, consistent with the provisions of AB 32.

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. 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 SB97 [Chapter 185, Statutes 2007]).[1,2] These changes took effect in 2010.

Local governments throughout California have enacted plans, programs, policies, and standards intended to reduce GHG emissions, including the County of San Diego (the County) and cities within San Diego County. Local governments throughout California are taking advantage of the various co-benefits of GHG-efficient planning. Even if reducing GHG emissions is not a priority, there are many local co-benefits of GHG-efficient planning.[3] Land use and transportation policies that reduce vehicle miles traveled (VMT) and promote alternatives to automobile travel also can reduce household and business transportation costs, reduce harmful air pollution (other than GHGs), enhance mobility, and reduce time spent commuting. Compact development (which reduces GHGs) can also be more efficient to serve with public infrastructure and services. GHG-reducing measures and policies that promote energy efficiency reduce GHGs and can also save on household and business utility costs. Encouraging reinvestment and revitalization of existing developed areas can reduce VMT and GHGs, but also helps to conserve important open space functions elsewhere, such as agriculture, recreation, watershed protection, and others, by accommodating population and employment growth in already developed areas.[4]

Local lead agencies have taken a variety of approaches to addressing GHG emissions impacts in the context of local CEQA documents. This document provides a viable and substantiated approach to assessing significance for use by the County. The foundation of

[1] The CEQA Guidelines are found in the California Code of Regulations, title 14, sections 15000-15387.

[2] 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.

[3] Bollen, J. et al. "Co-Benefits of Climate Change Mitigation Policies: Literature Review and New Results", OECD Economics Department Working Papers, No. 693, OECD Publishing. 2009.

[4] A sampling of co-benefits was outlined in Governor Schwarzenegger's Executive Order S-3-05.

this document is regional data – inclusive of San Diego County cities, as well as the unincorporated areas. While this document was created for use by the County, it offers an approach that may be used by other lead agencies in the San Diego region, which have substantial discretion in analytical approaches and assessing significance under CEQA.

This report summarizes the County's approach for developing Significance Guidelines to address GHG emissions impacts; guidance in determining the appropriate threshold for projects, assessing significance, and mitigating impacts; and updating the Significance Guidelines over time. An Appendix includes additional information related to analysis methods, assumptions, and background documentation related to the development of these Significance Guidelines. In addition, the County's "*Report Format and Content Requirements*" document, under separate cover, provides instructions for analyzing and reporting GHG emissions for projects and plans.

In addition to GHG emissions, another important component of climate change for local governments is adapting to the future effects of a changing climate. Changing climate conditions are expected to have serious repercussions for public health, biodiversity, water supply and flooding, agriculture and forestry, wildfire risk, public infrastructure and facilities, and other issues. Communities prone to these effects will need to analyze and mitigate the impacts of climate change on projects, identify areas most vulnerable to these impacts, and develop risk reduction strategies. The State of California intends to work collaboratively to address these impacts, as noted in the 2009 California Climate Adaptation Strategy.[5]

Climate change analysis should include a discussion of the potential impacts of climate change on a project. Due to the specific nature of these potential effects on proposed projects, such impacts would typically be addressed in the other associated CEQA issue areas (water supply, water quality, habitat, wildfire risk, etc.), and only cross-referenced in the GHG section of the CEQA document.

1.0 GENERAL PRINCIPLES AND EXISTING CONDITIONS

GHGs play a critical role in determining the earth's surface temperature. Outgoing infrared radiation is absorbed by GHGs, resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on Earth. Some human activities have increased atmospheric GHG levels in excess of natural ambient concentrations. This has led to a trend of unnatural warming of the earth's atmosphere and oceans, with corresponding effects on global circulation patterns and climate.[6]

Although there are dozens of GHGs, State law defines GHG as being any of the following compounds: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons

[5] California Natural Resources Agency. (2009). California Climate Adaptation Strategy. Available online at: http://www.climatechange.ca.gov/adaptation/. Accessed July 16, 2011.

[6] Intergovernmental Panel on Climate Change. 2007. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC. Geneva, Switzerland. Available: http://www.ipcc.ch/ipccreports/ar4-wg1.htm.

(HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen triflouride (NF_3).[7,8] CO_2 equivalent (CO_2e) is a measurement used to account for the fact that different GHGs have different global warming potentials based on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, 1 ton of CH_4 has the same contribution to the greenhouse effect as approximately 21 tons of CO_2 on a 100-year timescale, making CH_4 a much more potent GHG than CO_2.[9]

1.1 Sources of GHG Emissions

It is important to consider the main sources of GHG emissions when lead agencies conduct analysis and assess GHG emissions related impacts attributable to discretionary projects.

ARB maintains a statewide GHG emissions inventory. The ARB inventory includes estimates of the amount of GHGs emitted to and removed from the atmosphere. ARB's current inventory covers the seven compounds defined as GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3) for the years 2000 through 2008 (Table 1). Emissions estimates are presented by "Scoping Plan categories" which represent the major sectors identified for emissions reductions strategies in the ARB Scoping Plan. These include: transportation, electric power, commercial and residential, industrial, recycling and waste, high global warming potential, agriculture, and forestry.[10] ARB's GHG inventory and forecast 2020 emissions are used as important metrics in implementing AB 32. The Scoping Plan identifies the main GHG emission sectors that account for the majority of GHG emissions generated within California. A brief description of each of the GHG emission sectors is provided below:

- **Transportation**: This sector represents the GHG emissions associated with motor vehicles, recreational vehicles, aviation, ships, and rail.

- **Electric Power**: This sector represents the GHG emissions associated with use and production of electrical energy. GHG emissions associated with out-of-state electricity production are also included as part of this sector.

- **Commercial and Residential**: Commercial and residential GHG emission sources include area sources, such as landscape maintenance equipment, fireplaces, and natural gas consumption for space and water heating.

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[7] California Health and Safety Code Section 38505(g).

[8] The first six compounds listed here were also highlighted in the 2009 U.S. EPA Proposed Endangerment and Cause or Contribute Findings for GHGs under the Clean Air Act (Endangerment Finding) in the Federal Register. The Endangerment Finding is based on Section 202(a) of the CAA, which states that the EPA Administrator should regulate and develop standards for "emission[s] of air pollution from any class of classes of new motor vehicles or new motor vehicle engines, which in [its] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare."

[9] California Climate Action Registry. 2009 (January). California Climate Action Registry General Reporting Protocol, Version 3.1. Los Angeles, CA. Available: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf. Last updated January 2009. Accessed July 12, 2011. See Appendix C, "Calculation References."

[10] California Air Resources Board. Greenhouse Gas Inventory Data - 2000 to 2008. Available: http://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed July 12, 2011.

- **Industrial**: This sector represents the GHG emissions associated with industrial land uses (e.g., manufacturing plants, refineries). Industrial sources are predominately comprised of stationary sources (e.g., boilers, engines) associated with process emissions.

- **Recycling and Waste**: This sector represents the GHG emissions associated with waste management facilities and landfills.

- **High Global Warming Potential**: This sector represents the generation of high global warming potential GHGs. Examples of high global warming potential GHG sources include refrigerants (e.g., HFCs), industrial gases (i.e. PFCs and NF_3), and electrical insulation (e.g., SF_6). Although these GHGs are typically generated in much smaller quantities than CO_2, their high global warming potential results in considerable CO_2e.

- **Agriculture**: This sector represents the GHG emissions associated with agricultural processes. Agricultural sources of GHG emissions include off-road farm equipment, irrigation pumps, residue burning, livestock, and fertilizer volatilization.

- **Forestry**: This sector includes emissions from forest and rangeland fires; disturbances, such as pest damage; development of rangelands; timber harvest slash; fuel wood; wood waste; and other sources. ARB also tracks sinks, or sequestration, associated with forestry.

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, inclusive of the cities (Table 2).[11]

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.

[11] The document is titled, "San Diego County Greenhouse Gas Inventory: An Analysis of Regional Emissions and Strategies to Achieve AB 32 Targets" and is available online at http://www.sandiego.edu/epic/ghginventory/.

Table 1 – State of California GHG Emissions by Sector in 2008

Sector	Total Emissions (MMT CO_2e)	Percent of Total Emissions
Transportation	174.99	37%
Electric Power	116.35	24%
Commercial and Residential	43.13	9%
Industrial	92.66	19%
Recycling and Waste	6.71	1%
High Global Warming Potential	15.65	3%
Agriculture	28.06	6%
Forestry	0.19	0%
Total	477.74	100%

Note: Table above does not include estimated carbon sinks from forestry of 3.98 million metric tons.
Source: ARB 2011.

Table 2 – San Diego County GHG Inventory (2005)

Sector	Total Emissions (MMT CO_2e)	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%
Waste	0.4	1%
Other/Other Fuels	1.3	4%
Agriculture (Livestock)	0.1	0%
Wildfires	0.3	1%
Development (Loss of Vegetation)	0.2	1%
Sequestration from Land Cover	-0.7	-2%
Total	34	100%

Source: EPIC 2011.

2.0 EXISTING REGULATIONS AND POLICIES

International, federal, state, regional, local, and governmental efforts have addressed GHG emissions and climate change. The following is a brief summary of these efforts.

2.1 Federal and International Efforts

A variety of international and federal actions have sought to address climate change. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC). IPCC reports provide scientific consensus on measurable changes to the climate; establish that these changes are caused by human activity; and identify that significant adverse impacts on the environment, the economy, and human health and welfare are unavoidable.[12] In October 1993, President Clinton introduced the Climate Change Action Plan, with the goal of returning GHG emissions to 1990 levels by the year 2000.[13] In 1994, the United States joined countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). The U.S Supreme Court ruled on April 2nd, 2007 that CO_2 is an air pollutant as defined under the CAA, and that the Environmental Protection Agency (EPA) has the authority to regulate GHG emissions.[14]

2.2 State Regulations and Standards

Assembly Bill 32, The California Global Warming Solutions Act of 2006[15]

The California Global Warming Solutions Act of 2006 (AB 32) enacted Sections 38500–38599 of the California Health and Safety Code. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires reduction of statewide GHG emissions to 1990 levels by 2020. In 2008, ARB adopted the Climate Change Scoping Plan, which identifies the main strategies California will implement to achieve the required reductions. The Scoping Plan states that land use planning and urban growth decisions will play an important role in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions.

Senate Bill 97

SB 97 (Chapter 185, Statutes of 2007; Public Resources Code, Sections 21083.05 and 21097) acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. The California Natural Resources Agency adopted amendments to the CEQA Guidelines (California Code of Regulations, title 14, sections 15000-15387) to address

[12] Intergovernmental Panel on Climate Change. Available: http://www.ipcc.ch/. Accessed: July 13, 2011.
[13] President William J. Clinton and Vice President Albert Gore, Jr. 1993 (October). The Climate Change Action Plan.
[14] United States Environmental Protection Agency (U.S. EPA). 2011. Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act. Available: http://www.epa.gov/climatechange/endangerment.html. Accessed: July 21, 2011.
[15] Health and Safety Code Section 38500 *et seq*.

GHG emissions, consistent with Legislature's directive in Public Resources Code section 21083.05 (enacted as part of SB97 (Chapter 185, Statutes 2007)). These changes took effect in 2010.

Senate Bill 375

SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and fair-share housing allocations under state housing law. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) to address GHG reduction targets from cars and light-duty trucks in the context of that MPO's Regional Transportation Plan (RTP).[16] City or County land use policies (including General Plans) are not required to be consistent with the RTP (and associated SCS or APS).[17] The ARB targets for the San Diego Association of Governments (SANDAG) region call for a 7% reduction in GHG emissions per capita from automobiles and light duty trucks compared to 2005 levels by 2020, and a 13% reduction by 2035.[18]

Executive Order S-3-05

Executive Order S-3-05 proclaims that California is vulnerable to the impacts of climate change, including increased temperatures that could reduce the Sierra Nevada'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 targets for emissions reductions to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050.

Executive Order S-13-08

Executive Order S-13-08 directs state agencies to address sea level rise in assessment, coordination, and planning based on scenarios for the years 2050 and 2100.

[16] This bill also extends the minimum time period for the Regional Housing Needs Allocation (RNHA) cycle to create a closer match with the timelines for revising RTPs (for the Metropolitan Planning Organizations affected by the bill). The RHNA is used to guide the amount of housing to be accommodated for the full range of household incomes in mandatory local housing plans (Housing Elements).

[17] Provisions of CEQA directed under this legislation create streamlining for certain projects that are consistent with an approved SCS or APS. Residential or mixed-use projects that are consistent with the SCS/APS and incorporate mitigation measures from relevant prior CEQA document/s are not required to reference, describe, or discuss growth-inducing impacts or impacts of cars and light-duty truck trips on climate change or on the regional transportation network. "Transit priority projects," as defined in this legislation and future RTPs, are exempt from CEQA review.

[18] California Air Resources Board (ARB). News Release: California Takes the First Step Toward More Livable, Sustainable Communities. Release #: 10-50. September 23, 2010. Available: http://www.arb.ca.gov/newsrel/newsrelease.php?id=154. Accessed September 19, 2011. California Air Resources Board (ARB). Staff Report. Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375. Date of Release: August 9th, 2010. Available: http://arb.ca.gov/cc/sb375/staffreport_sb375080910.pdf. Accessed September 19, 2011.

2.3 Local Policy

Legislation and executive orders related to climate change in California have established a statewide context and process for evaluating GHG emissions. Different GHG emission sectors would experience varying degrees of state regulation and would be reduced overall on a statewide level. Legislation already in effect will achieve statewide reductions of GHG emissions associated with electricity production, industry, vehicle miles traveled (VMT), and motor vehicle emission rates. Certain GHG emission sectors regulated by statewide or federal measures are beyond the control of local government (e.g., vehicle emissions standards, renewable energy portfolio standards). However, other sources of GHG emissions are strongly influenced by local policy.

Local land use authorities guide development patterns, community design, transportation facilities planning, and other factors known to influence VMT, which, in turn, influence GHG emissions associated with the transportation sector. Application of the Guidelines for Determining Significance to discretionary projects will identify projects that have cumulatively considerable contributions to climate change effects and that require feasible mitigation under the requirements of CEQA.

In addition, the County's General Plan incorporates smart growth and land planning principles intended to reduce VMT, and thus result in a reduction of GHGs. This will be accomplished by locating future development within and near existing infrastructure. The General Plan also directs preparation of a Climate Action Plan with reduction targets; development of regulations to encourage energy efficient building design and construction; and development of regulations that encourage energy recovery and renewable energy facilities, among other actions.[19] These planning and regulatory efforts, in combination with application of the Significance Guidelines, will ensure that actions of the County of San Diego do not impede AB 32 and SB 375 mandates.

3.0. ADVERSE EFFECTS

California should anticipate hotter and drier conditions, reduced winter snow, increased winter rain, and accelerating sea level rise. Extreme weather events, such as heat waves, wildfires, droughts, and floods are expected to become more common. By 2050, temperatures are projected to increase by 1.8 to 5.4 °F.[20] Associated effects of climate change are briefly summarized in the material that follows.

3.1 Public Health

Climate change can trigger a range of public health effects. Extreme heat waves, increases in pollen, more frequent wildfires, and changes in the spread of vector-borne diseases represent threats to the public health. Climate change can also impact public health through changes to food supply, water systems, and shelter.[21]

[19] San Diego County. General Plan Update – News. Available: http://www.sdcounty.ca.gov/dplu/gpupdate/. Accessed July 13, 2011.
[20] California Natural Resources Agency. (2009). California Climate Adaptation Strategy.
[21] California Natural Resources Agency. (2009). California Climate Adaptation Strategy.

Health effects of increased temperature include heat exhaustion; heat stroke; and exacerbating existing cardiovascular and respiratory diseases, diabetes, nervous system disorders, emphysema, and epilepsy.[22] Climate change can promote the formation of ground-level pollutants, such as ozone and particulate matter, which have been shown to have adverse health effects, particularly among sensitive populations.[23]

3.2 Water

California can expect a 12 to 35% decrease in precipitation levels by mid-century, along with increased evaporation from higher temperatures. Snowpack serves a critical role in California's water supply. With increased temperatures, decreases in winter snow, and increases in winter rain, storage and conveyance of water supply will become more of a challenge.[24]

The average early spring snowpack runoff has decreased by about 10% over the last century. The Sierra Nevada snowpack is projected to decrease by 25 to 40% by 2050 compared to its mid-20th century average.[25] The loss of snowpack would also hamper hydropower generation and snow-related recreational activities.

3.3 Sea Level Rise

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Recent estimates suggest sea level rise of up to 55 inches by the end of this century.[26] Sea level rise of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten levees and inland water systems, and disrupt natural habitats. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers.

Saltwater intrusion caused by rising sea levels is a major threat to water quality within the southern edge of the Sacramento/San Joaquin River Delta. Salt water intrusion will reduce water supply for plants, wildlife, agriculture, and metropolitan use.[27] The Delta accounts for a portion of San Diego County's water supply and is important to the state as a whole.

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[22] McGeehin, Michael A. and Mirabelli, Maria. (2001). The potential impacts of climate variability and change on temperature-related morbidity and mortality in the United States. Environmental Health Perspectives. Available: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1240665/pdf/ehp109s-000185.pdf. Accessed: July 13, 2011.

[23] California Natural Resources Agency. (2009). California Climate Adaptation Strategy.

[24] California Natural Resources Agency. (2009). California Climate Adaptation Strategy.

[25] California Department of Water Resources (2008). California Drought, An Update.

[26] California Ocean Protection Council. 2011. Resolution of the California Ocean Protection Council on Sea-Level Rise. Available: <http://www.opc.ca.gov/webmaster/ftp/pdf/docs/OPC_SeaLevelRise_Resolution_Adopted031111.pdf>. Accessed September 21, 2011. California Natural Resources Agency. (2009). California Climate Adaptation Strategy.

[27] California Natural Resources Agency. (2009). California Climate Adaptation Strategy.

3.4 Agriculture

Increased GHG emissions are expected to cause widespread changes to agriculture, reducing the quantity and quality of agricultural products statewide. Reductions in available water supply to support agriculture will impact production. Although higher CO_2 levels can stimulate plant production and increase plant water-use efficiency, farmers will face greater water demand for crops and a less reliable water supply as temperatures rise. Crop growth and development will change, as will the intensity and frequency of pest and disease outbreaks.

Rising temperatures promote ozone formation, which will, in turn, make plants more susceptible to disease and pests and interfere with plant growth. Plant growth tends to be slow at low temperatures and increase up to a certain point with rising temperatures. Faster growth, however, can result in less-than-optimal development for many crops, thus decreasing the quantity and quality of yield for a number of agricultural products.

3.5 Ecosystems and Habitats

Climate change is anticipated to adversely affect biological resources in a number of ways. Various temperature-sensitive plant and animal species would have to adapt to warmer temperatures or shift their geographic range, which may not be feasible in certain instances. Species migration and invasions will alter species interactions. Longer fire seasons will affect vegetation and help to spread invasive species. Sea level rise may wipe out critical habitat for coastal species.[28]

The timing and amounts of water released from reservoirs and diverted from streams are constrained by their effects on various native fish, including rare species. Several potential hydrological changes associated with global climate change could influence the ecology of aquatic life and have several negative effects on cold-water fish. If climate change raises air temperature by just a few degrees, this could raise the water temperatures above the tolerance of salmon and trout in many streams, favoring non-native fish, such as sunfish and carp. Unsuitable summer temperatures would be particularly problematic for many of the threatened and endangered fish that spend summers in cold-water streams, either as adults, juveniles, or both.

3.6 Wildfire

Climate change is predicted to increase the number of wildfires and the acreage affected. Wildfire occurrence statewide could increase from 57% to 169% by 2085, depending on the emissions scenario, and events are predicted be more severe.[29] The wildfire season is apparently already increasing in intensity, starting sooner, and lasting longer.[30]

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[28] California Natural Resources Agency. (2009). California Climate Adaptation Strategy.

[29] Westerling, A.L, B. P. Bryant, H. K. Preisler, H. G. Hidalgo, T. Holmes, T.P. Das, S. R. Shrestha. 2009 (August). Climate Change, Growth and California Wildfire. California Energy Commission, Climate Change Center.

[30] Keithley, Chris and Bleier, Cathy. 2008 (December). An adaptation plan for California's forest sector and rangelands. Sacramento, CA: California Department of Forestry and Fire Protection.

Increased fire activity can threaten life and property and can have harmful effects on air quality, watersheds and water quality, natural habitats, recreation, and forestry resources.

4.0 GUIDELINES FOR DETERMINING SIGNIFICANCE

GHG emissions have the potential to adversely affect the environment since such emissions contribute, on a cumulative basis, to the significant cumulative impact of global climate change. Cumulative impacts are those that result from the combination of past, present, and probable future projects, producing related effects.[31] The proper context for addressing GHG emissions is within an assessment of cumulative impacts because, although it is unlikely that a single project will contribute significantly to climate change, cumulative emissions from many projects could impact global GHG concentrations and the global climate system. State law has established that global climate change is a significant impact. This document is to be used to determine whether projects would have a cumulatively considerable incremental contribution to the significant impact of global climate change.

The County's Climate Action Plan (CAP) demonstrates a range of feasible reduction measures that will be implemented in order to achieve an overall communitywide reduction target. A set of project-specific implementing thresholds (4.3.1 through 4.3.4) will be used to ensure consistency of new projects with the County's CAP and the County's GHG emission reduction target. Please refer to Section 4.2 of this document, which provides a detailed, step-by-step guide to selecting the correct implementing threshold and use of the thresholds. Please refer to Section 4.3 and the Appendix for details on the approach embodied in each implementing threshold.

The overall framework for assessing consistency with AB 32 is provided by the CAP. The CAP includes GHG reduction measures that, if fully implemented, would achieve an emissions reduction target that is consistent with, and supports the state-mandated reduction target embodied in AB 32. For some project types, many of these CAP reduction measures would be relevant and should be incorporated as a part of project design or mitigation. For other project types, fewer CAP reduction measures would apply. To further ensure that the County's overall reduction target is achieved, considering the wide range of project types the County may approve during buildout of the General Plan, the County has prepared a companion set of quantified GHG emissions thresholds, as a supplement to the measures outlined in the CAP. The "dual approach" of using the County's CAP with quantified implementing significance thresholds provides the flexibility in addressing GHG emissions that will be needed for the diverse range of projects considered by the County, while also maintaining certainty that the County's reduction targets will actually be met, and that new development in the County will achieve its "fair share" of emissions reductions needed to reach the AB 32 mandate statewide.

The development of GHG Significance Guidelines involved both efficiency-based threshold development (i.e., how GHG efficient is the project at hand relative to reduction targets per resident + employee?), as well as a "bright line" for assessing significance. Conceptually, both the Efficiency-Based and the Bright Line Thresholds rely on determining the proportional

[31] CEQA Guidelines Section 15130.

or fair-share of emission reductions required to meet the legislative mandate established in AB 32 that would be required within San Diego County. The Performance Threshold permits the application of project-specific mitigation measures that demonstrate a fair share of emissions reductions necessary statewide to achieve AB 32 targets. As mentioned previously, AB 32 requires that statewide GHG emissions must be reduced to 1990 levels by 2020.

This guidance document focuses on a 2020 timeline, consistent with the legislative mandate embodied in AB 32. Although it is possible that some projects and plans considered under the threshold guidance provided herein would be built out after 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, new state regulatory programs, technological advancement, and other new information will require the County to periodically consider whether revisions to this document are necessary. Please refer to Section 6.0 for more details on monitoring and updating of this document.

Future planning efforts that do not consider GHG emissions reduction strategies could conflict with AB 32, impeding California's ability to comply with the statewide mandate. The approach summarized in this document allows a comparative assessment of whether proposed projects would provide a fair share of emissions reductions needed to achieve the state's overall GHG emissions reduction mandate. Plans or projects that emit more than their fair share of GHG emissions could have a cumulatively considerable contribution to the significant cumulative impact of global climate change.

The Appendix provides more detail on the development of the implementing thresholds.

4.1 Purpose and Intent

Lead agencies are encouraged to develop and publish thresholds of significance for assessing environmental impacts under CEQA.[32] The County's purpose and intent is to provide clear and consistent guidance for assessing the significance of GHG emissions impacts of proposed projects under CEQA.[33] The County has prepared this document to promote clarity and provide support for regional significance determinations related to GHG emissions. The significance criteria provided in this document will help to ensure that new development projects implement project design features and/or feasible mitigation measures to reduce GHG emissions. The structure of the significance thresholds allows for appropriate consideration of GHG reducing features of projects that can be a part of a project description (such as the project's location, design, density, mix of uses, surrounding land use context, and other elements), as well as modifications to the project's operational characteristics, materials, construction methods, and other mitigation measures.

[32] CEQA Guidelines Section 15064.7 (a).

[33] GHG emissions have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change, which has been shown to result in sea level rise, changes in rainfall and snowfall (leading to changes in water supply), changes in temperatures and habitats (affecting biological resources), and many other adverse effects. The proper context for addressing this issue is within an assessment of cumulative impacts.

The process described in this document incorporates the precision needed for certainty in the environmental review process and also the flexibility needed to work within the context of a range of policy approaches to this complex and dynamic issue.

The County has drafted this document using guidance 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. To this end, the County's work constitutes a good-faith effort, based on available scientific and factual data, using quantified standards, as well as qualitative guidance to assess significance of impacts under CEQA (CEQA Guidelines Section 15064.4). This document is consistent with state-of-the-practice methods for estimating net GHG emissions changes attributable to development projects. The methods and assumptions used in developing the Guidelines for Determining Significance are consistent with CEQA practice for GHG emissions analysis.

As noted previously, the approach embodied in this document is consistent with and supportive of the state's approach to reducing GHG emissions, as established by AB 32. This document provides the methods the County will use for determining, on a consistent basis, whether projects have contributed their fair share toward meeting the AB 32 legislative mandate and supporting efforts to reduce emissions beyond 2020.

Given the critical importance of land use and transportation planning for GHG emissions generation, oftentimes the most effective way to reduce emissions is through broad-scale planning efforts. General plans, community plans, specific plans, and GHG reduction plans are the most appropriate place for many communities to establish community GHG goals, policies, and standards for existing and new development. A long-term, comprehensive, integrated plan for reducing overall GHG emissions to a less-than-significant level can be preferable to a project-by-project analysis and mitigation of impacts. A programmatic approach can help to provide more predictable and consistent mitigation requirements based on an overall plan and emissions reduction target. When communities take a proactive approach to GHG emissions in their planning documents, they can create a context wherein more projects can succeed in providing GHG-efficient places. For example, a general plan or GHG reduction plan could involve the development of a more complete and connected transportation network that encourages walking, bicycling, and transit. Each project proposed within this jurisdiction would be able to increase its GHG efficiency by taking advantage of this complete and connected transportation network. Addressing GHG emissions at the planning level can help to build GHG emissions goals, policies, and performance standards into the selection of project sites and create a more supportive land use context. A programmatic approach can reduce the need to use the CEQA process to add mitigation requirements to projects after they are already located and designed. The County's General Plan and CAP take advantage of the aforementioned benefits of comprehensive and proactive planning to reduce GHG emissions.

4.2 Use of the Guidelines for Determining Significance

CEQA lead agencies use thresholds to differentiate between significant and less-than-significant adverse physical impacts on the environment. CEQA Guidelines Section 15064.7 provides guidance for lead agencies that wish to develop their own thresholds. 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*."[34]

Lead agencies have substantial discretion in analytical approaches and assessing significance under CEQA. Although it is imperative to ground significance determinations in factual and scientific data, where possible, policy judgments are unavoidable in drawing the line between significant and insignificant impacts.[35]

In order to make use of this document, there are three general guidelines:

1. Estimate GHG emissions associated with construction and operation of proposed projects. This includes both direct and reasonably foreseeable indirect GHG emissions from operations. Detailed instructions for GHG analysis and reporting are included in the County's "*Report Format and Content Requirements*," under separate cover.

2. Do not include "life cycle" emissions embodied in manufactured materials. Construction materials (primary manufacturing and transport) or other materials used in projects are intended to meet general market demand, regardless of whether any particular project proceeds.[36]

3. GHG emissions from permitted stationary sources are estimated separately from a project or plan's operational emissions. The County has provided a different set of guidance for determining significance for stationary sources.

The focus of the implementing thresholds in this document is on *net new* emissions.[37] 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 some share of GHG emission reductions needed to achieve AB 32 targets.[38] Measures to reduce GHG emissions in existing development (as well as new development) are often

[34] CEQA Guidelines Section 15064.7.

[35] CEQA Guidelines Section 15064(b)

[36] In order to clarify whether life cycle 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*.

[37] Emissions from existing development in San Diego County are also factored into the analysis that was used to develop the significance guidelines contained herein.

[38] GHG emissions reductions to existing developed areas can occur through revisions to codes and standards. This could occur through investments in non-automobile transportation facility improvements that increase non-automobile mode shares, as well as transportation facility investments that would have the effect of reducing trip lengths in existing developed areas. This could occur through infill and reinvestment, as well as federal and state actions related to emissions standards, renewable energy generation, and other regulations over activities beyond local authority, but that would effectively apply to both existing and new development. Improvements in the efficiency of existing development could also occur through actions described in climate action plans (also known as greenhouse gas reductions plans). Such actions could include requirements for new development, as well as prescriptive, incentive-based, or strictly voluntary measures to reduce emissions from on-the-ground existing land uses.

considered as a part of local GHG reduction plans (also called climate action plans). The County has also developed measures to reduce emissions from existing development as a part of the CAP. So, while the application of the implementing thresholds included herein would be to new projects, the County is pursuing reductions from existing development, as well.

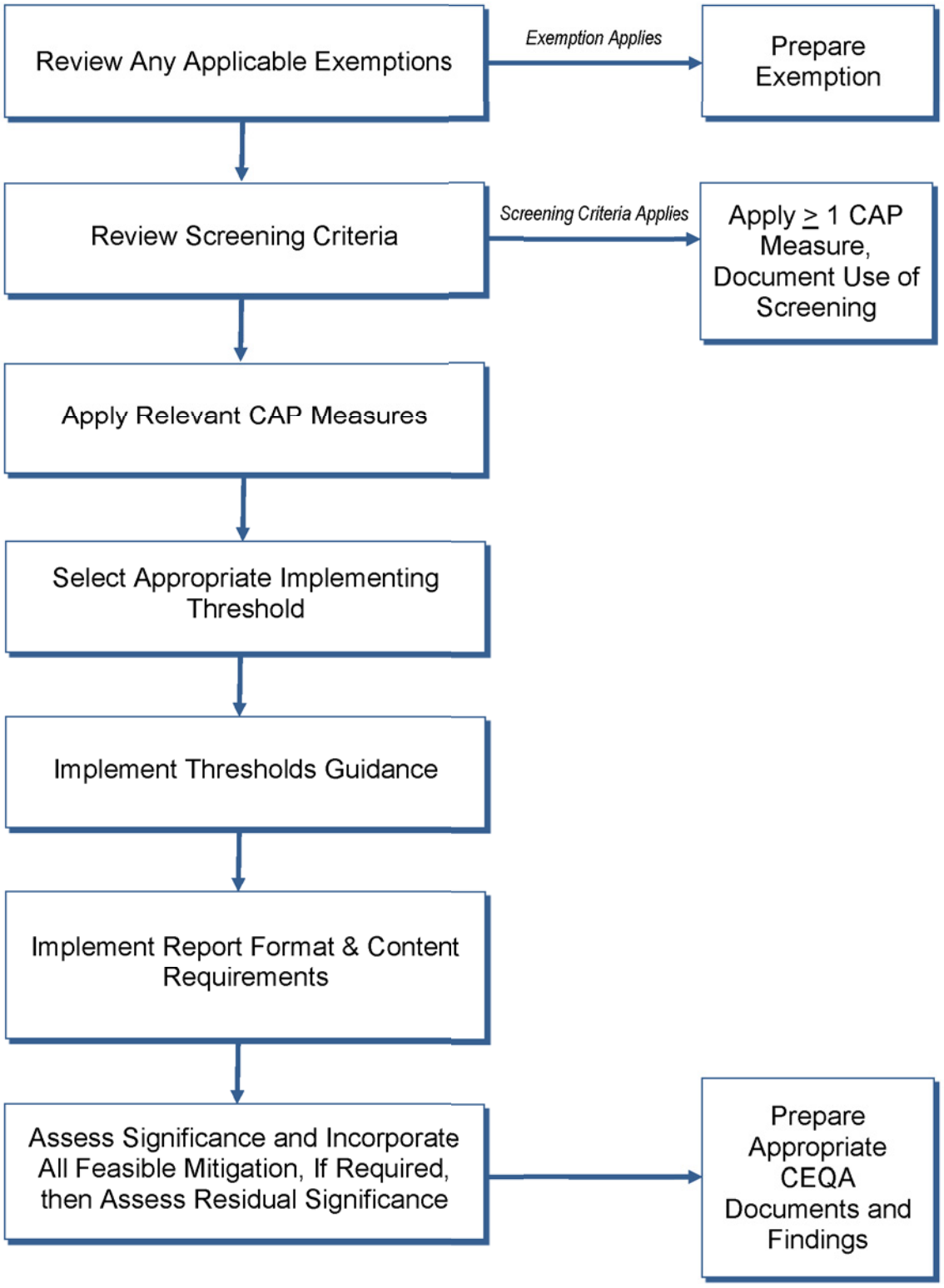
Net increases in GHG emissions relative to the existing baseline include only those emissions attributable to the project and take into account emissions displaced by the project, as well as verifiable emission offsets incorporated into the project design or mitigation (see Section 5.0 for more detail on mitigation strategies). Depending on the nature and purpose of a project, the net emissions increase could be positive, neutral, or negative. Certain infrastructure projects, for example, might have no net additional operational emissions if they simply reconstruct or remodel existing facilities without expanding capacity. Some projects may provide for more efficient operations compared to existing conditions and could actually reduce operational GHG emissions. Exhibit 1 provides a step-by-step guide to the Guidelines for Determining Significance.

Step 1. Review and Apply Exemptions

This Significance Guidelines document does not limit the County's use of tiering or statutory, categorical, general rule, or disapproved project exemptions. Project applicants should first coordinate with the County to determine whether the proposed project is subject to CEQA. If a project does not require CEQA analysis and documentation, then it would also not require the use of these Guidelines for Determining Significance. The County will also consider whether the project has been analyzed as a part of a prior environmental impact report (EIR), consistent with CEQA Guidelines Section 15183. Exemptions for "transit priority projects" that are consistent with the applicable Sustainable Communities Strategy or Alternative Planning Strategy, as described in Public Resources Code Section 21155, could apply to certain proposals.[39] If a proposed project is determined to be exempt from CEQA review for any reason, the Significance Guidelines would not apply.

[39] Streamlining for residential or mixed-use residential projects consistent with a sustainable communities strategy or alternative planning strategy may also be available for certain proposals, using guidance in Public Resources Code Section 21159.28.

Exhibit 1 – Steps in Applying Guidelines for Determining Significance



This Guidelines for Determining Significance document does not limit the County's administration of CEQA requirements or streamlining, as described in Section 15152 (Tiering), Section 15162 (Subsequent EIRs and Negative Declarations), Section 15163 (Supplement to an EIR), Section 15164 (Addendum to an EIR or Negative Declaration), Section 15168 (Program EIR), Section 15175 (Master EIR), Section 15179.5 (Focused EIRs and Small Projects), or similar provisions of CEQA and the CEQA Guidelines.

Step 2. Apply Screening Criteria

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 County developed screening criteria for a range of project types and sizes to identify smaller projects that would have less-than-cumulatively considerable GHG emissions effects (Table 3). 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_2e 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 County's screening approach is not designed to address projects with high global warming potential emissions. If a project does involve unusually extensive construction and operational characteristics the project shall select the appropriate implementing threshold and follow the guidance provided herein.

The screening criteria were developed using conservative assumptions so that the County can ensure projects of the types and sizes listed would, in fact, produce GHG emissions of less than 2,500 MT CO_2e per year. In this case, the term, "conservative," means that the assumptions used to develop the screening criteria are based on emissions estimates that may be somewhat higher than actual GHG emissions for projects of the types and sizes listed. For example, the single-family housing screening criteria is 86 dwelling units. If, however, the site in question is close to public transit, within walking distance of parkland and a school, within an easy bike ride of commercial retail and services, and has good quality pedestrian and bicycle facilities, it is possible that a 90- or 100-unit project in such a location could have GHG emissions of less than 2,500 MT CO_2e per year. Conservative assumptions were employed in this analysis, in part, to account for GHG emissions reductions needed beyond 2020.

It is not possible within a list of screening criteria to account for all the potential project location and design features that would increase or decrease GHG emissions. The objective is to ease administrative burden for small projects, while ensuring that projects that are screened out actually would have GHG emissions that are lower than the County's Bright Line Threshold (see Section 4.3.2 for more detail).

Table 3 – Screening Criteria

Project / Plan Type	Screening Threshold
Single-Family Housing	86 dwelling units
Low-Rise Apartment Housing	121 dwelling units
Mid-Rise Apartment Housing	136 dwelling units
High-Rise Apartment Housing	144 dwelling units
Condominium or Townhouse Housing	120 dwelling units
Congregate Care (Assisted Living) Facility	239 dwelling units
Elementary or Middle School	91,000 square feet
High School	103,000 square feet
University/College (four years)	336 students
Library	81,000 square feet
Restaurant	12,000 square feet
Hotel	106 rooms
Free-Standing Retail Store	31,000 square feet
Shopping Center	33,000 square feet
Convenience Market (24 hour)	2,000 square feet
Office Building	61,000 square feet
Office Park	56,000 square feet
Hospital	47,000 square feet
Warehouse	141,000 square feet
Light Industrial Facility	74,000 square feet

Notes: Land use types outlined in the table above are intended to correlate with those presented in the Institute of Transportation Engineers' Trip Generation Manual (8th Edition). Proposed project land use types will be compared with the land use types included in the screening table above to determine applicability. Low-rise apartments have one or two stories, such as garden apartments. Mid-rise apartments have between 3 and 10 stories. High-rise apartments are normally rental units in buildings with more than 10 stories. A shopping center includes a group of commercial establishments that is developed as a unit. A free-standing retail store (also known as "free-standing discount store") is a free-standing store with off-street parking that offers a wide range of customer services and would typically be open 7 days per week with relatively long hours. Office parks are normally in a suburban context and contain office buildings and support services arranged in a campus-type setting, whereas an office building would accommodate multiple tenants in a single structure. Light industrial facilities would 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. Light industrial facilities would not typically generate dust, other air pollutants, light, or noise that it perceptible beyond the boundary of the subject property.

The screening criteria can be used for multi-use projects, as well. For each use, determine the ratio of the screening threshold. For example, a project that proposes 43 single-family dwelling units would represent 50% of the Single-Family Housing screening level. Then, add the calculated ratios for each individual land use. An example project proposes 43 single-family dwelling units (50% of the threshold), 36 low-rise apartment units (29% of the threshold), and 6,000 square feet in a retail store (19% of the threshold). Adding the ratios of the screening thresholds together yields a total of 0.991. If the sum of the ratios is less than 1.0, the GHG emissions for that project would not exceed 2,500 MT CO_2e per year, and there would be a less-than-cumulatively considerable impact.

Construction Screening Criteria

The County has also developed screening criteria for projects that would only increase GHG emissions during the construction phases. This would include projects to improve existing facilities, without increasing the operational capacity of such facilities. This screening approach does not apply to new roads or new pipelines that the County determines could induce growth. As noted elsewhere, the criteria presented here do not in any way limit the County's ability to apply CEQA streamlining techniques, such as CEQA exemptions. For example, the Class I statutory exemption for existing facilities and the Class 2 exemption for replacement or reconstruction of facilities would still apply and, if used, the screening criteria would not be required. The screening criteria only apply to projects with typical construction techniques and schedules, and would not apply to projects that have characteristics that would produce unusually high GHG emissions from equipment use or other sources. If a project has significant earthmoving activities (greater than 20 acres per day), involves substantial demolition, or has additional haul trips associated with construction activities, the screening criteria would not apply. Applicants shall consult with County staff to determine if project construction activities are consistent with the underlying assumptions used in development of the screening criteria.

As with the above screening criteria, the construction screening criteria was developed to ensure that projects of the types and sizes listed would, in fact, produce GHG emissions of less than 2,500 MT CO_2e per year. Projects of the types listed below would generally have less-than-cumulatively considerable impacts:

- Grading and clearing of land involving no more than 1,285 acres of land per year with no soil hauling, and no other aspect of construction or site preparation.

- Grading and clearing of land involving no more than 100 acres per year, assuming up to 3,100 cubic yards per day of soil hauling.

- Based on an average truck size of 20 cubic yards and an average hauling distance of 30 miles round trip, a project that would haul less than 3,300 cubic yards per day, not including emissions from any other activities, including off-road construction equipment.

- New pipeline of no more than 11 miles that would disturb no more than 81 acres of land assuming no more than 3,100 cubic yards per day of soil hauling.

- Roadway construction and facility maintenance activities include rubberized emulsion aggregate slurry (REAS) seals, asphalt concrete resurfacing, roadway widening, concrete and sewer repair, and culvert rehabilitation or construction. Screening levels shown here are only applicable to projects that generate GHG emissions during construction alone. If a project may have the potential to increase operations-related GHG emissions (e.g., vehicle emissions due to roadway widening), such emissions need to be estimated and analyzed according to the guidance provided herein. Below is a list of typical distances and emissions for these types of projects:

Construction Activities	Maximum Project Length & MT CO_2e value*	Based on Average Rated Horsepower/Project Area
REAS Seals	7,500 Miles / 2,250 MT CO_2e	2,227 HP/ 3 miles
Asphalt-Concrete Resurfacing	291.9 Miles / 2,248 MT CO_2e	2,514 HP/ 12 miles
Roadway Widening	23 Miles / 2,248 MT CO_2e	2,835 HP/ 6 miles
Concrete Repair	32 Miles / 2,184 MT CO_2e	2,877 HP/ 19 miles
Sewer Repair	5.9 Miles / 2,252 MT CO_2e	2,050 HP/ 4.55 miles
Culvert Rehabilitation	1,900 acres / 2,280 MT CO_2e	1,269 HP / 12.5 acres

* Greenhouse Gas Emission Study, January 4, 2013, RECON

- Construction project that would use a total horsepower in all equipment of no more than 1,984 per day, not including any soil hauling; or a construction project that includes up to 3,100 cubic yards of soil hauling per day and has a total equipment horsepower of no more than 742 per day. These daily horsepower limits are based on a project that would take approximately one year and would involve 262 working days in this year. Projects with a shorter duration may increase these horsepower limits proportionally.

Step 3. Apply Relevant Climate Action Plan Measures

If the project complies with the Bright Line screening criteria, at least one CAP measure shall be incorporated. Impacts would be considered less than cumulatively considerable. Refer to the "*County of San Diego CAP Compliance Checklist for Greenhouse Gas Analysis*," which illustrates how to comply with the CAP.

If the project is of a type or size that does not comply with the screening criteria, the project should incorporate all applicable CAP measures and estimate emissions relative to one of the quantified implementing thresholds: Efficiency Threshold; Bright Line Threshold; Stationary Source Threshold; or Performance Threshold. The project requires a technical analysis to demonstrate that the project's design features, along with relevant CAP measure/s and, if necessary, additional feasible mitigation measures, are incorporated that would allow the project to be below the Efficiency Threshold; Bright Line Threshold; Stationary Source Threshold; or Performance Threshold.

Step 4. Consider Project Type and Select Appropriate Implementing Threshold

The next step is to identify which implementing significance threshold to use for GHG analysis (Table 4). The County has provided implementing thresholds that are specifically designed to assess the significance of different types of projects. The appropriate implementing threshold/s must be used, as intended, for the project type. The type-specific implementing thresholds (4.3.1 through 4.3.4) provide guidance on assessing significance under the framework provided by the County's CAP. Table 4 illustrates the proper use of implementing thresholds for different types of projects.

As shown in Table 4, projects with different emissions sources need to use different thresholds. For example, projects that involve both area/mobile and stationary sources would use the Stationary Source Threshold to evaluate the stationary sources and either the Efficiency Threshold, Bright Line Threshold, or Performance Threshold to evaluate the area and mobile sources.

Table 4 – Implementing Threshold by Project Type

Project Type	Implementing Threshold/s	Notes
Residential; retail; commercial service; private and government offices; warehouse and light industrial; lodging; public/quasi-public projects, including schools, libraries, clinics and hospitals, parks; and projects or plans proposing a mix of these or similar	4.3.1 Efficiency Threshold, or 4.3.2 Bright Line Threshold, or 4.3.4 Performance Threshold	Land use development projects can use the Efficiency, Bright Line, or Performance Threshold to assess significance.
Stationary sources, such as cogeneration facilities, boilers, flares, heaters, refineries, and other types of facilities, including stationary sources that are a part of a project or plan with other sources of GHG emissions.	4.3.3 Stationary Source Threshold	Projects that propose stationary sources use the Stationary Source Threshold. Projects that involve both area/mobile sources AND stationary sources would use the Stationary Source Threshold to evaluate the stationary sources AND either the Efficiency Threshold, Bright Line Threshold, or Performance Threshold to evaluate other emissions sources (area, mobile).
Mining, agriculture, forestry, landfill, airport, water and wastewater treatment, roadway, and other infrastructure projects.	4.3.2 Bright Line, Threshold or 4.3.3 Stationary Source Threshold or 4.3.4 Performance Threshold	Other project types that are not typically considered "land use development" projects have the option of using the Bright Line Threshold or the Performance Threshold. The Stationary Source Threshold shall be used for those portions of projects that involve stationary source emissions.

Step 5. Implement the Significance Thresholds (4.3.1 through 4.3.4)

The County has provided detailed guidance for the use of each implementing significance threshold. This guidance ensures consistent analysis and consistency of significance determinations. The guidance also ensures that the type-specific implementing thresholds (4.3.1 through 4.3.4) accurately assess whether projects contribute their fair share of GHG emissions reductions necessary to meet the AB 32 legislative mandate.

Step 6. Implement the Report Format and Content Requirements

The County has prepared detailed guidance for GHG analysis reports. The County's "*Report Format and Content Requirements*" document provides instructions for analyzing and reporting GHG emissions for projects and plans. This includes quantification (wherever feasible) of GHG emissions attributable to the subject project or plan. Once GHG emissions estimates are available, they can be compared against the appropriate implementing threshold.

Step 7. Assess Significance and Incorporate Feasible Mitigation, if Required

If impacts would be cumulatively considerable, according to the appropriate implementing threshold, feasible mitigation shall be incorporated (see Section 5.0 for detailed mitigation guidance). The emissions reduction benefit of mitigation must be quantified in a technical report, where feasible. Feasible mitigation is required to reduce total project emissions or project emissions per service population below the relevant type-specific implementing threshold level.

To estimate the effectiveness of mitigation, the County recommends using guidance in the California Air Pollution Control Officers Association document, "*Quantifying Greenhouse Gas Mitigation Measures*."[40] The acceptable tools to estimate the emissions with project mitigation include the Urban Emissions Model (URBEMIS), the California Emissions Estimator Model (CalEEMod), and spatially sensitive models, such as INDEX, I-PLACE^{3}S, Sustainable Systems Integrated Model (SSIM), and others. Additional guidance on estimating mitigation effectiveness is provided in the County's "*Report Format and Content Requirements*" document.

If the effectiveness of mitigation cannot be quantified, specific performance targets may be established for mitigation measures to guide outcomes, as appropriate. Once all feasible mitigation is identified, the residual significance is assessed and reported.

In addition to any required mitigation, there may be other federal, state, regional, or local standards or requirements that may apply to projects and may reduce potential GHG emissions. This guidance document does not supersede or supplant any such requirements.

[40] California Air Pollution Control Officers Association (CAPCOA). 2010 (August). 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 July 16, 2011.

4.3 Thresholds for Determining Significance

The County's CAP provides the overall framework for assessing significance. The County's General Plan EIR identifies potentially significant effects related to GHG emissions, which are addressed by numerous General Plan policies and mitigation measures. The centerpiece of the County's efforts to avoid cumulative GHG emissions impacts associated with implementation of the General Plan is preparation of the CAP. The CAP demonstrates a range of feasible reduction measures that can be implemented to achieve an overall reduction target that is supportive of the state-mandated reduction target embodied in AB 32. Type-specific implementing thresholds (4.3.1 through 4.3.4) are provided in order to allow projects to clearly demonstrate compliance with the CAP and identify the significance of cumulative contributions to GHG emissions effects.

The overarching threshold, as embodied in the County's CAP is:

A proposed project would have a cumulatively considerable contribution to climate change impacts if it would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment or would conflict with an applicable plan, policy, or regulation that was adopted for the purpose of reducing the emissions of greenhouse gases.[41]

CEQA analysis for projects in San Diego County can take advantage of tiering and streamlining provisions related to climate action plans described in Section 15183.5 of the CEQA Guidelines.[42] The County's General Plan and EIR anticipated preparation of a CAP, which has since been prepared. If a project is consistent with an adopted plan adopted to reduce GHG emissions, lead agencies may tier from and/or incorporate by reference that existing programmatic review.[43] Based on consistency with relevant requirements of a GHG reduction plan, a lead agency may determine that a project's incremental contribution to climate change impacts is not cumulatively considerable. However, as noted in CEQA Guidelines Section 15064(h)(3), if "*there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding that the project complies with the specified plan… an EIR must be prepared*..."

If lead agencies intend to rely on GHG reduction plans in the manner contemplated by CEQA

[41] This text is similar to that used in the CEQA Guidelines Appendix G to address Greenhouse Gas Emissions.

[42] See also CEQA Guidelines Section 15130(d).

[43] In addition to tiering/streamlining from a climate action plan, analysis of GHG emissions impacts, along with other impacts, can implement various other tiering and analysis streamlining techniques allowed under CEQA. For example, project-level CEQA documents can rely on a program EIR that addressed GHG emissions, as specified in CEQA Guidelines Section 15152. Also relevant for use would be the provisions for program EIRs; master EIRs; EIRs for Specific Plans; and EIRs for zoning, community plans, and general plans; and focused EIRs for small projects. Please refer to CEQA Guidelines Sections 15162, 15168, 15175-17179.5, 15182, and 15183 for more details. The County will continue to apply CEQA exemptions and tiering, as appropriate, in the context of new projects. Lead agencies have additional streamlining that is available for certain residential and mixed-use projects and transit priority projects that are included as a part of an adopted sustainable communities strategy (SCS) or alternative planning strategy, as described in CEQA Guidelines Section 15183.5(c). GHG emissions from cars and light duty trucks do not need to be analyzed in the environmental analysis for such projects.

Guidelines Section 15183.5, there are specific components to include in such plans:

1. Quantified estimates of GHG emissions within a defined geographic area and over a specified period of time, and, where appropriate, estimates of population and employment;

2. Emissions reduction target or GHG efficiency target that is consistent with, and supportive of the legislative mandate embodied in AB 32;

3. Reduction measures, performance standards, incentives, and/or verifiable offsets that would collectively achieve the specified emissions reduction target or GHG efficiency target and could apply to both existing and new development; and

4. Provision to monitor implementation of each measure and progress of the GHG reduction plan in meeting the specified target, including a mechanism to consider changes to the plan, as necessary, to ensure progress toward the specified target.

GHG reduction plans are subject to CEQA review, public noticing, and public comment requirements. Methodologies and assumptions used in developing the GHG reduction plan should be documented and presented as a part of the public review process. The County has incorporated each of the above components in development of the CAP.

4.3.1 Efficiency Threshold

A proposed plan or project would have a cumulatively considerable contribution to climate change impacts if it would result in a net increase of construction and operational greenhouse gas emissions, either directly or indirectly, at a level exceeding 4.32 metric tons of CO_2e per year, per service population.

This guidance for determining significance represents the rate of emissions needed to achieve a fair share of the state's emissions mandate embodied in AB 32. The use of "fair share" in this instance indicates the GHG efficiency level that, if applied statewide, would meet the AB 32 emissions target and support efforts to reduce emissions beyond 2020. The intent of AB 32 is to accommodate population and economic growth in California, but do so in a way that achieves a lower *rate* of GHG emissions. With a reduced rate of emissions per resident + employee, California can accommodate expected population growth and achieve economic development objectives, while also abiding by AB 32's emissions target and supporting efforts to reduce emissions beyond 2020.

The level of emissions in 1990 represents the goal of AB 32 (i.e., reduce 2020 emissions to 1990 levels). The County identified the land use related parts of the 1990 emissions inventory and separated these sources of emissions from other emissions sources for the purpose of analysis.[44] The statewide inventory in 1990 for land use related emissions is approximately 264 MMT CO_2e. Using 1990 emissions levels and 2020 forecast population

[44] California Air Resources Board. 2010. *Inventory Data Archive – 1990 to 2004 Inventory.* Available: http://www.arb.ca.gov/cc/inventory/archive/archive.htm

and employment, this equates to 4.32 CO_2e emissions per resident + employee (service population).

Focusing on per-unit rather than mass emissions levels is sometimes called "GHG efficiency." For land development projects, the use of an efficiency approach that considers emissions per resident + employee correlates with the activities that are accommodated by development: population growth and additional employment opportunities. Development projects and plans do not *create* new population or employment (except temporary construction related employment), but rather *accommodate* population and employment growth. One of the benefits of the Efficiency Threshold is that, because it does not focus on mass emissions, it is not necessary to isolate new emissions sources from exiting 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.[45]

"Service population" is a term used to express the total population plus employment of proposed projects. 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 any relevant density and intensity standards in a general plan, community plan, specific plan, or zoning. The Southern California Association of Governments conducted an extensive study of employment density, published in 2001, that may be helpful in estimating the service population of proposed projects.[46] 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. Locally appropriate assumptions should be used, whenever available, to estimate the

[45] The AB 32 emissions limit applies to statewide emissions levels. Through implementation of ARB's Scoping Plan, various emissions sources will be reduced to achieve the statewide target. Economic feasibility is an important aspect of AB 32. From the language of the legislation (Health and Safety Code Section 38501 (h): "*It is the intent of the Legislature that the State Air Resources Board design emissions reduction measures to meet the statewide emissions limits for greenhouse gases established pursuant to this division in a manner that minimizes costs and maximizes benefits for California's economy…*" Overall, implementation of the Scoping Plan has been shown to include benefits related to overall economic production, gross state product, personal income, per-capita income, household cost savings, and business cost savings. However, these economic benefits and cost savings will not necessarily be evenly distributed. The legislation directs the State to implement AB 32 in a way that minimizes costs and maximizes benefits, but not in a way that necessarily distributes costs and benefits equally across the regions of the state. The Efficiency Threshold provides a straightforward approach for projects to demonstrate consistency with the AB 32 mandate, without adjustments for local conditions. Other Thresholds provide a more locally tailored approach. The Bright Line Threshold, for example, uses regional growth forecasts and the San Diego region's emissions profile. The Climate Action Plan includes measures that would achieve a specific local unincorporated County emissions reduction. Through the Climate Action Plan, the County was able to balance between those measures that are more or less efficient, given the specific local context. With the various options outlined in the Thresholds document, the County has provided both approaches that are directly connected to the AB 32 emissions limit (Efficiency Threshold, Performance Threshold) and those that take into account local conditions (Bright Line Threshold).

[46] The Natelson Company, Inc. 2001 (October). Employment Density Study Summary Report.

buildout service population of proposed projects.

This threshold is not designed to be used for projects or portions of projects that propose agricultural, forestry, or mining uses, manufacturing uses where the GHG emissions profile is largely a result of industrial processing, or permitted stationary sources of GHG emissions. This threshold is designed to be used to evaluate the operational emissions for projects and plans that include residential, commercial, civic, light industrial development, or a mix of these uses.[47] Analysis of mixed-use projects and plans will include GHG estimates for all land uses proposed – both residential and non-residential. For mixed-use projects or plans, full analysis of all proposed land uses – those that provide for a residential population and those that would provide employment – will balance with the "denominator" of the efficiency ratio, which includes population + employment.

To ensure that the Efficiency Threshold provides an accurate assessment tool, it is important to carefully consider the relationship between land uses proposed within a project, as well as the variety of land uses in the area surrounding the proposed project. Accurate GHG assessment techniques are needed to ensure that the GHG efficiency of mixed use and other project types is not understated or overstated. For example, if a retail project is proposed for a residential area that does not have any existing retail, this project could help to shorten existing trips or increase the mode shares for walking and bicycling, which would promote GHG efficiency. If a mixed-use residential and retail project was proposed instead, this may not achieve the same benefit in terms of GHG efficiency as a retail-only project located in a housing-rich location. Therefore, proper application of the GHG efficiency metric per service population would not create any undue "reward" for mixed-use projects. The GHG emissions for both the residential and non-residential components of mixed-use projects are included in the GHG emissions estimate, in balance with the inclusion of both population and employment in the "denominator" of the efficiency ratio. Proper use of the Efficiency Threshold reveals the benefits of projects that enhance land use diversity of the type that would be needed to provide a more "complete" community, with the requisite services. Proper use of the Efficiency Threshold will demonstrate the GHG efficiency benefits of projects that are located and designed to provide opportunities to reduce the rate of growth in vehicular travel demand, including the project's location, design, land use context, and other important factors.[48]

Net GHG emissions attributable to a proposed project or plan should be estimated using a cumulative scenario.[49] Use of the term "net emissions" in this context connotes a flexible

[47] Correctional facilities can count inmates as residents since inmates are included as a part of the statewide population estimates used to derive the Efficiency Threshold. Schools cannot count students as residents in the service population unless the students actually do reside at the school. Hospitals cannot count inpatients as residents as a part of the service population for the purposes of determining compliance with the Efficiency Threshold.

[48] If the same percentage GHG reduction were required of transit-oriented, infill, and/or compact development as dispersed, lower-density, automobile-dependent development, this could have the unintended consequence of discouraging the former and encouraging more of the latter. This same conceptual observation was observed by the California Energy Commission in considering the mitigation responsibility of new, efficient power plants vis-à-vis existing, less efficient and more polluting plants. See California Energy Commission. 2009 (March). Committee Guidance on Fulfilling California Environmental Quality Act Responsibilities for Greenhouse Gas Impacts in Power Plant Siting Applications.

[49] Net emissions would consider plans and projects that reduce emissions through selection of a project site, adding land use diversity, GHG-efficient design, and other on-site strategies, as well as taking actions off-site. Net emissions

approach that would consider both on-site and off-site emissions reduction strategies. If offset or credit programs are used, it is important to ensure consistency of metrics used in the offset or credit program and the metrics used in the thresholds presented in this document (CO_2e rather than CO_2, annual emissions over the life of the proposed project rather than total emissions or emissions at a single point in time, etc.). The emissions estimate should focus on net new emissions attributable to project or plan operations. If there are existing legal sources of GHG emissions on the subject site at the time of analysis and the project proposes to remove these emissions, they can be "netted out" of the final GHG emissions estimate.

VMT used in deriving GHG estimates for comparison against the Efficiency Threshold should account for the relationships between project land uses and surrounding land uses, as well as the transportation network. The VMT used in estimating GHG emissions should represent the difference between: (1) cumulative areawide VMT *without* the project and (2) cumulative areawide VMT *with* the project. 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.

There are many tools available today that are routinely used to derive more accurate measures of VMT than historically had been used for transportation and air quality analysis, including estimates that are sensitive to the surrounding land context, urban design elements, access to non-automobile travel options, density, demographics, and other important factors. This continues to be an active area of research, as well. VMT estimates and methods must be verifiable and approved by County staff. The guidance to estimate VMT by examining the difference between cumulative with project and cumulative without project conditions is for the purposes of assessing GHG emissions estimates only. Local guidance on estimating travel demand should be used, as appropriate, for the purpose of traffic impact assessment.

All applicable, adopted statewide measures that would be implemented by 2020 can be included when estimating GHG emissions under the Efficiency Threshold. Applicants shall coordinate with the County 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. Please refer to the County's "*Report Format and Content Requirements*," under separate cover, which provides additional detailed guidance.

Construction-related emissions must be analyzed and included as a part of the assessment

represent the total after cumulative emissions are calculated, along with other GHG-reducing components of a project. Carbon offset programs are designed to achieve a net emissions objective by allowing additional emissions but also requiring purchase of offsetting credits. Funds from these credits could be used for a variety of projects, such as planting trees (which absorb carbon dioxide), converting vehicle fleets to more efficient/less polluting technologies, funding for energy efficiency retrofits of existing buildings, renewable energy projects, and other activities. For a discussion of the potential for carbon offsets in the context of "indirect" GHG emissions and the California regulatory context, see Timothy P. Duane and Joanna D. Malaczynski, "Reducing Greenhouse Gas Emissions from Vehicle Miles Traveled: Integrating the California Environmental Quality Act with the California Global Warming Solutions Act," Ecology Law Quarterly, Vol. 36:71.

of project effects relative to the Efficiency Threshold. Total construction-related emissions must be quantified and amortized over the lifetime of the proposed project to extrapolate an annual estimate of construction emissions. The average yearly emissions from amortized construction would be added to the operational emissions and evaluated against the Efficiency Threshold for assessing significance. The operational life of buildings will vary by building type and purpose. State Executive Order D-16-00 suggests that useful building lifetime is more than 25 years. A report commissioned for the Sustainable Building Task Force, a group of over 40 California state government agencies, estimates the life of a building to conservatively be 20 years. Average building life could change over time, with changes in building materials and construction techniques. At this time, the County recommends amortizing over a 20-year period to estimate annual emissions, when using the Efficiency Threshold, unless evidence is presented establishing a longer project life.

4.3.2 Bright Line Threshold

A proposed project would have a cumulatively considerable contribution to climate change impacts if it would result in a net increase of operational greenhouse gas emissions, either directly or indirectly, at a level exceeding 2,500 metric tons of CO_2e per year.

This guidance for determining significance was derived by estimating the mass emission reductions needed throughout the County from land use development projects to achieve the local fair share of the state's emissions mandate embodied in AB 32 and to support efforts to reduce emissions beyond 2020.

The County identified land use related emissions (residential, retail, service, office, and industry) in ARB's revised 2020 "business as usual" scenario (311 MMT CO_2e per year). The County estimated the effect of statewide GHG emission reduction measures, ensuring that the most up-to-date and accurate estimates were used and that there is no double counting (approximately 39 MMT CO_2e per year in 2020). The County then estimated the remaining emissions reductions needed to get to 1990 levels for land use related emissions at the statewide level. This percentage "gap" for statewide emissions (approximately 3%) was then applied to total 2020 land use related emissions in San Diego County to yield a mass emissions reduction target that would be achieved through feasible mitigation. This level of regional mass emissions reductions needed is the "land use gap."

Population and employment growth was translated into URBEMIS project types and sizes according to a frequency distribution based on a list of historic projects located throughout San Diego County. A sensitivity analysis was conducted using this database of URBEMIS projects to determine where to set the Bright Line Threshold so that feasible mitigation (for projects above the Bright Line) would meet or exceed the land use gap.

This threshold is designed to be used for projects or plans that include residential, commercial, civic, light industrial uses, or a mix of these uses. This threshold could also be used for projects or portions of projects that propose agricultural, forestry, or mining uses. This threshold cannot be used for permitted stationary sources of GHG emissions.

As with the Efficiency Threshold, GHG emissions attributable to a proposed project should be estimated using a cumulative scenario. Consistent with the guidance for the Efficiency Threshold, VMT used in deriving GHG emissions estimates must account for the relationships between project land uses and surrounding land uses and transportation facilities. VMT estimates should reflect aspects of the project's location, design, access to non-automobile transportation facilities, travel behavior of inhabitants, and other relevant characteristics that affect travel demand and mode choice. The level of emissions for any given project depends on its location, design, and other project-specific characteristics. For example, a 100-unit apartment complex adjacent to light rail with frequent headways would have lower GHG emissions compared to the same apartment building that did not have access to transit. GHG analysis should take into account project- and plan-specific characteristics that pertain to the level of GHG emissions generation.

All applicable, adopted statewide measures that would be implemented by 2020 can be included when estimating GHG emissions under the Bright Line Threshold. Applicants shall coordinate with the County 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.

Construction-related emissions do not need to be separately analyzed and included as a part of the assessment of projects against the Bright Line Threshold. Instead, construction emissions for San Diego County land use projects between present and 2020 were quantified and incorporated into the Bright Line Threshold. The Bright Line is set such that the land use gap and construction emissions are both addressed by feasible mitigation for projects above the Bright Line. In other words, the feasible mitigation that will be triggered by projects above the Bright Line will reduce GHG emissions at a level that is sufficient both to meet the land use gap and to make up for construction-related emissions.

4.3.3 Stationary Source Threshold

A proposed project would have a cumulatively considerable contribution to climate change impacts if it would result in a net increase of greenhouse gas emissions, either directly or indirectly, at a level exceeding 10,000 metric tons of CO_2e per year.

This guidance for determining significance is intended to apply a significance level that would capture the vast majority of stationary source emissions. Based on information collected from the San Diego Air Pollution Control District (APCD) on permitted sources, the significance threshold established here would capture more than 90% of GHG emissions (91.3%).

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. Single facilities can have many individual emission points. Many of these types of facilities would require a permit from APCD. The permit issued by APCD would normally include certain permit conditions. Facilities that are subject to APCD permits may be required to implement Best Available Control Technology (BACT) or Best Available Control Measures (BACM). BACT or BACM may include equipment or operational thresholds to reduce air pollutant emissions, including GHG

emissions. The definition of BACT and BACM for the purposes of CEQA analysis should key to the meaning of "feasibility" for mitigation as provided in the CEQA Guidelines and relevant case law. Among BACM for stationary sources may be verifiable GHG emissions offsets or credits administered through a third party or registry. Please refer to Section 5.0, "Mitigation and Project Design Considerations," for additional guidance.

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 County is interested in 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 implementing thresholds.

To support this document, the County collected data from APCD 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 the theoretical level of use that may be allowed under the subject permit. Of the 925 permits where the permitted facility reported use, 11% have emissions levels above 900 MT CO_2e/yr, 3% have emissions levels above 10,000 MT CO_2e/yr, and 2% have emissions levels above 25,000 MT CO_2e/yr.

Air districts in California have identified 10,000 MT CO_2e/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).[50,51,52,53] The use of the County's Stationary Source Threshold provides consistency relative to thresholds adopted for use in other parts of the state. For most industrial operations, 25,000 MT CO_2 is the level at which the State of California requires mandatory reporting and verification of GHG emissions.

The County's intent is to set the Stationary Source Threshold at a level that would require the vast majority of new development emission sources to analyze and quantify direct stationary source GHG emissions and incorporate feasible mitigation in order to reduce such

[50] Bay Area Air Quality Management District (BAAQMD). 2011 (May). California Environmental Quality Act. Air Quality Guidelines.

[51] 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.

[52] 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 CO2e/yr threshold.

[53] San Luis Obispo County Air Pollution Control District (SLOAPCD). 2011 (December 8th). Proposed Greenhouse Gas Thresholds and Supporting Evidence.

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. For example, according to data provided by EPA, vapor recovery or control can reduce 90-95% of emissions for different types of storage tanks, while tuning and optimization of boilers can reduce 3-4% of emissions.[54] 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.

As noted, GHG emissions from stationary sources must be estimated separately from other operational sources of emissions in the comparison with the appropriate implementing threshold. For projects that would include a stationary source of emissions, the guidance in this section must be used for assessing significance. 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.

If the stationary source emissions estimate would exceed the significance criteria, BACT or BACM shall be used to reduce emissions. If the GHG emissions level still exceeds the significance level, verifiable offsets can be used, where feasible, to reduce GHG emissions impacts below the significance level.[55]

It may not be feasible for projects of a certain scale to mitigate GHG emissions levels to a less-than-cumulatively considerable level. This determination must be made by the lead agency on a case-by-case basis according to CEQA statutory guidance, the CEQA Guidelines, and relevant case law.

Stationary source evaluations should occur within the context of regulations intended to implement AB 32. It is anticipated at this time that future state regulations will address stationary sources of GHG emissions. CEQA analysis by lead agencies of these types of projects should account for the evolving regulatory setting in conducting this type of analysis.

4.3.4 Performance Threshold

A proposed project would have a cumulatively considerable contribution to climate change impacts if it would result in a net increase of construction and operational greenhouse gas emissions, either directly or indirectly, and if the project would incorporate mitigation that achieves less than a 16-percent total reduction compared to unmitigated emissions.

[54] United States Environmental Protection Agency (U.S. EPA). Clean Air Act Permitting for Greenhouse Gases. Available online at: http://www.epa.gov/nsr/ghgpermitting.html. Accessed July 12, 2011.

[55] Offsets, or emissions credits, are a technique to achieve a net emission reduction associated with a project through funding of GHG emission reducing activities off-site, such planting trees (which absorb carbon dioxide), converting vehicle fleets to more efficient/less polluting technologies, funding for energy efficiency retrofits of existing buildings, renewable energy projects, and other activities. Please refer to Section 5.0 of this document, which discusses mitigation techniques, including offsets.

Unmitigated GHG emissions attributable to the project at full buildout in 2020 would be compared to GHG emissions with mitigation. Unmitigated GHG emissions represent the proposed project as described in the application, in compliance with any applicable standards and regulations. If, compared to the unmitigated project, proposed mitigation would reduce GHG emissions by at least 16%, this level of mitigation would represent a fair share of what is necessary statewide to achieve AB 32 targets. This is because the 2020 "business as usual" (no action is taken) scenario would need to be reduced by 15.75% to get to 1990 levels, according to analysis provided by ARB.[56] A project that provided mitigation of 16% would be reducing potential GHG emissions at the same rate as is needed throughout the state to achieve the AB 32 emissions reduction target. This level of mitigation would represent a fair share of what is needed throughout the state 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.

Early coordination with the County is necessary for projects that contemplate use of this percentage mitigation approach to assessing significance. Impact analysis shall occur relative to the existing environmental baseline and consider whether project-related emissions are cumulatively considerable.

Overall, the County's focus in developing this guidance document for assessing the significance of GHG emissions is focused on the most common project types that would need CEQA analysis. However, there are a range of other proposals and actions that could represent "projects" as defined by CEQA, but may require case-by-case assessment of significance. Mining projects, airport and wastewater treatment plant expansions, landfills, agricultural operations, road and other infrastructure replacement projects, along with other project types may not lend themselves to the application of the Efficiency Threshold or Bright Line Threshold. These project types may require an approach to gauging significance that is tailored to the project type, character, location, and size. The Performance Threshold provides a viable option for these types of projects.

There are several types of projects that could be initiated by the County Department of Public Works, other public agencies, or other private or nonprofit entities that could include GHG reduction during operations as a co-benefit. Examples may include:

- **Wastewater Treatment Plant Improvements**. Improvements to wastewater treatment facilities can reduce fugitive emissions of methane (CH_4) from wastewater and nitrous oxides (N_2O) from nitrification/denitrification processes. CH_4 and N_2O are both GHGs. Improvements to facilities can also improve the energy efficiency, resulting in lower indirect emissions from electricity generation.

[56] 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 (ARB). 2010 (October 29). Greenhouse Gas Inventory - 2020 Emissions Forecast. Available: http://www.arb.ca.gov/cc/inventory/data/forecast.htm. Accessed July 16, 2011.

- **Congestion Management**. Projects to alleviate congestion, reduce trip lengths, reduce idling, and otherwise address congestion could also reduce vehicular GHG emissions and improve overall efficiency of vehicular movement.

- **Habitat Restoration**. Restoring habitat can improve ecosystem function and can be designed to avoid the need for supplemental irrigation. Habitat restoration projects sometimes replace paved surfaces with trees, which would reduce GHG emissions compared to existing conditions.

- **Xeriscaping**. Landscaping projects that use low-water plans can reduce water demand and the energy associated with moving water and associated GHG emissions. Introducing landscaping can also increase carbon sequestration.

- **Flood Control, Bridges, and Other Infrastructure Improvements**. Improvements to infrastructure and facilities can help to reduce lifetime maintenance requirements and maintain efficiency of vehicular movement. Depending on the specifics of the project, these types of improvement projects could have GHG reduction benefits.

- **Construction of Bicycle and Pedestrian Facilities**. Projects that increase the convenience or otherwise promote bicycle and pedestrian travel would be expected to reduce vehicular travel and the associated VMT and GHG emissions.

The operation of projects that improve GHG efficiency of communities, such as a project to extend public transit or a project to reduce congestion and vehicle idling, would normally have less-than-cumulatively considerable effects. For many project types, however, the extent to which the project would enhance GHG efficiency of the community that it serves may not be as clear-cut. For some project types, the project would serve market demand that could be either focused or dispersed and dynamic, rather than demand generated within a static and identifiable community.

It is important in assessing impacts of non-land use projects to carefully consider what *new* emissions are attributable to the project. Depending on the nature and purpose of a project, the *net* emissions increase could be positive, neutral, or negative. For example, the State Department of General Services and State Department of Forestry and Fire Protection concluded that the relocation of the Ukiah Air Attack Base could provide for more efficient ground-based operations and therefore, reduced GHG emissions compared to baseline conditions.[57] The City of Los Angeles found that, for the LAX Crossfield Taxiway Project, the changes analyzed under the EIR would reduce both natural gas and electricity related GHG emissions. For this same project, the EIR indicates that GHG emissions associated with aircraft operations would also decrease, due to a reduction in the amount of idling time.[58] For a project that would involve rehabilitation of an existing roadway, there may be no change in the long-term operational GHG emissions, and rather, the analysis would focus on

[57] State Department of General Services and Department of Forestry and Fire Protection. 2008 (January) Draft Environmental Impact Report. Ukiah Air Attack Base Relocation Project.

[58] City of Los Angeles. 2008 (September) Draft Environmental Impact Report for Los Angeles International Airport (LAX) Crossfield Taxiway Project.

construction-related emissions. It is possible that an airport project could provide service to a greater number of people in closer proximity to their residences, reducing GHG emissions associated with reaching the airport compared to the baseline condition. An agricultural project could be intended to meet existing demand in closer proximity to the end market. Depending on the details of the existing baseline and the project characteristics, this type of project could have GHG reduction benefits compared to existing conditions. Just as with other aspects of the analysis report, evidence would be required to demonstrate that projects would provide a net GHG benefit.[59]

Early coordination with the County is required for applicants that wish to use the Performance Threshold to ensure that mitigation levels toward the 16% target are appropriately estimated. Mitigation to achieve the 16% requirement cannot include a reduction in the project size or scale. Mitigation identified toward this 16% target cannot include the effects of the Pavley I clean car standard or the 20% Renewable Portfolio Standard because these programs are already included in the calculations that support the 16% mitigation requirement.[60] Other statewide measures, however, can be included without risk of "double counting." Renewable Portfolio Standards beyond 20% can be included toward the minimum 16% mitigation requirement. The Low Carbon Fuel Standard can be included as a part of the 16% mitigation requirement. Since some GHG emissions models build in different statewide measures, it is important to coordinate with County 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 certain of these measures are likely to be included in updates to GHG emissions models.

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 shall estimate VMT using County-approved trip rates for the subject land use and average trip lengths for the same land use specific to the area of the unincorporated County where the project is proposed. The County has developed estimates of trip lengths by land use for different parts of the unincorporated County to support the development of traffic impact fees. These estimates, or those deemed by the County to be more appropriate or more up to date must be used for the pre-mitigation 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 is subject to County staff approval.

[59] County staff should be consulted before such an approach is used.

[60] Other significance threshold efforts have relied on 28-30% as the reduction from business as usual conditions in order to achieve the 2020 emissions limit. However, ARB revised the business as usual estimate downward recently.

5.0 MITIGATION AND PROJECT DESIGN CONSIDERATIONS

Projects that have cumulatively considerable (i.e. significant) impacts according to the Guidelines for Determining Significance shall include project design features and/or adopt mitigation to reduce or avoid impacts to below the cumulatively considerable level. The benefits of proposed mitigation should be quantified, wherever feasible. Refer to Section 4.2 under "Step 7" for examples of acceptable emission models that can be used to estimate mitigation benefits. Refer also to the County's "*Report Format and Content Requirements*," under separate cover, for additional detailed direction.

The County 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 entirely 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. Local policy, implementation programs, and standards can provide guidance for identifying feasible mitigation. However, if a project design or operational features is already required, this would be required as a part of the project description, rather than serving as mitigation.

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 County, including, but not limited to:

- **Governor's Office of Planning and Research. 2008. Technical Advisory. CEQA AND CLIMATE CHANGE: Addressing Climate Change through California Environmental Quality Act (CEQA) Review.** See Attachment 3, "Examples of GHG Reduction Measures." Available: http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf. Accessed: July 16, 2011.
- **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.** See page 79, "Mitigation Strategies for GHG." Available: http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf. Accessed July 16, 2011.
- **California Air Pollution Control Officers Association (CAPCOA). 2010 (August). 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 July 16, 2011.
- **Attorney General of the State of California. 2008 (December). The California Environmental Quality Act. Addressing Global Warming Impacts at the Local Agency Level**. Available: http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf. Accessed July 21, 2011.

The above documents, in addition to lists of mitigation measures and design features maintained by other organizations cover a wide range of topics, including:

- **Land use, urban design, transportation measures.** Locating projects in higher-density, mixed-use areas with access to jobs, services, infrastructure, and transit can reduce GHG emissions. As noted previously, the level of GHG emissions associated with a project will depend on its land use profile, as well as the relationship with surrounding land uses. The degree to which a project is able to reduce VMT and GHG emissions will depend on the existing and planned transportation network in and around the subject project site. Other options may include carpool programs; strategies to increase the operational efficiency of transportation systems; improvements to transit level of service, bicycle and pedestrian facilities; limiting parking; pricing strategies; and measures to limit idling. Increased transportation connectivity may help improve the mode share for non-automobile trips, but also can shorten vehicle trips (and thus reduce VMT and GHG emissions). There are many other potentially feasible land use, urban design, and transportation mitigation strategies and design features available to proposed projects that may be considered to reduce potentially significant impacts.

- **Shade and sequestration**. Urban forestry projects and tree-planting programs can help reduce the net increase in GHG emissions attributable to projects. In addition to the direct benefit associated with sequestration, planting trees or constructing other shade structures can reduce the need for air conditioning and associated energy demand and GHG emissions.

- **Energy conservation.** There are a wide variety of structural enhancements that can be used to increase the energy efficiency of structures beyond that required by current codes. More energy efficient equipment and vehicles or those that use zero carbon fuels can help to cut GHG emissions. Educational programs can help to make the operation of physical energy efficiency improvements more effective. Replacing traffic lights, street lights, and other lights with more energy efficient technologies and installation of renewable energy systems, including use of landfill gas, can help to reduce indirect emissions. Water and wastewater systems and other types of infrastructure can be built new or retrofitted to increase efficiency. Codes that require proper solar orientation, passive heat/cooling, insulation, and climate-appropriate landscaping and shade trees can reduce energy demand and therefore reduce indirect GHG emissions.

  The County is committed to promoting the expansion of electric vehicle use, solar water heating and alternative energy systems in San Diego consistent with the CAP. Residential and commercial projects are encouraged to implement one or more of the following energy conservation measures to meet the required GHG reductions. These measures may also be used to demonstrate CAP consistency for those projects below the Bright Line Threshold:

- ✓ Accommodate the installation of residential EV charging stations by providing sufficient electrical capacity and appropriate circuitry in proximity to vehicle parking areas.
- ✓ Provide solar panels on residential projects and/or construct residences with appropriate infrastructure (e.g. wiring, plumbing) to allow for future installation of solar panels.
- ✓ Provide EV charging stations in parking areas of commercial projects.
- ✓ Provide solar panels on commercial rooftops and/or parking areas.

- **Solid waste.** Increasing recycling and greenwaste collection programs and otherwise reducing solid waste generation can help to cut GHG emissions. This could occur both during construction and demolition phases, as well as operational phases of projects. Collecting organic waste more frequently and implementing waste to energy (i.e. digestion and biogas production) projects can also have GHG reduction benefits.

- **Water conservation.** Water conservation measures can help to reduce GHG emissions since energy is used to move water, particularly for projects in southern California. This can include the use of landscaping that does not require much water, reuse of water, and other approaches for outdoor water use, as well as a range of physical improvements and education programs to decrease indoor use.

- **Construction**. Feasible mitigation could include strategies that would reduce GHG emissions from construction equipment, which may include, but is not limited to the use of alternative fuels and recycling or reuse of construction/demolition debris.[61] Other examples include minimizing idling time of equipment, maintaining equipment in proper working condition, training on the proper use of equipment, and using the right equipment for the job. There could be a minor benefit for GHG reductions attributable to use of coatings with low volatile organic compound (VOC) content.[62]

- **Carbon reduction credits (offsets).** After feasible on-site methods to reduce construction and operation emissions are incorporated, if effects would still be cumulatively considerable, the County may allow the use of verified carbon reduction credits (also known as offsets). The emission credit must be in addition to any GHG reduction otherwise required by law or regulation, and any GHG emission reduction that otherwise would occur.[63] The required amount of credits shall be calculated on an annual basis for the lifetime of the proposed project to correlate with the implementing thresholds, which are presented on an annual basis. A key consideration of the use of carbon credits as mitigation is enforceability. Per CEQA Guidelines §15126.4(a)(2) mitigation measures must be fully enforceable through permit conditions, agreements, or another legally binding instrument. An enforcement

[61] Secondary effects related to other air pollutants or co-benefits should be identified if alternative fuel use is proposed as mitigation.
[62] National Oceanic and Atmospheric Administration National Climatic Data Center. Greenhouse Gases, Frequently Asked Questions. Available: <http://www.ncdc.noaa.gov/oa/climate/gases.html> .Accessed September 21, 2011.
[63] See CEQA Guidelines Section 15126.4 (c).

mechanism of some type must be implemented so that the offset requirement is tracked through the planning, subdivision, and entire project approval process.

The responsibility for demonstrating adequacy of GHG emission reductions resides with the project proponent. There are many registries and exchanges that can be utilized to obtain GHG emission reduction credits. The County requires the use of an emissions registry with protocols that have undergone extensive review and include procedures for review, verification and issuance of credits. In addition, the GHG emission reduction credits should be part of a program that includes ongoing enforcement of operational conditions to ensure that the GHG reductions are real and permanent. Project applicants may purchase offset credits issued by ARB. Registries currently approved by ARB as part of California's Cap-and-Trade program include the American Carbon Registry and the Climate Action Reserve. Other registries with rigorous protocol standards include The Gold Standard Registry, the Markit Registry, and the APX VCS Registry.

Alternatively, a project applicant may propose additional options for offsite mitigation of GHG impacts for consideration by the County; however, the proposed mitigation should include a mechanism to ensure that the GHG reductions are real, additional, transparent, measureable, permanent, verifiable, and enforceable. This guidance does not supersede the County's discretion as a CEQA lead agency in determining the adequacy and feasibility of off-site GHG mitigation for a specific project.

Additional protocols for generating GHG emission reduction credits may be developed and approved by ARB, the Climate Action Reserve and/or CAPCOA, and additional registries and trading platforms may surface. The County will consider these new protocols and registries during project review. The County recognizes that future markets for offsets are uncertain and price volatility may be a concern. Should offsets as a mitigation option become economically infeasible, the County may consider other options to ensure projects can feasibly mitigate their GHG impacts. Developing a locally controlled GHG mitigation program is one option that may be considered if the need arises.

Offsets used for mitigation should have a mechanism to monitor the effectiveness of offsets over time to ensure that they accurately account for the needed level of mitigation for the lifetime of the subject project. Off-site mitigation may only be employed once all feasible on-site mitigation measures have been exhausted. The use of offsets for mitigation must be approved by the County.

Some mitigation and design approaches that reduce GHG emissions are built into the location, design, and context of project, while other mitigation measures may require ongoing monitoring. In general, projects that exceed the screening criteria and implementing thresholds would be larger discretionary projects that would likely include ongoing permits or site plans. These projects would have ongoing GHG emissions mitigation enforced through permit conditions. In the event that the project is a subdivision or required only a one-time approval, enforcement of ongoing GHG emissions mitigation would require application of an additional permit or easement to ensure the mitigation is satisfied.

In addition to any required mitigation, there may be other federal, state, regional, or local standards or requirements that may apply to projects and may reduce potential GHG emissions. This guidance document does not supersede or supplant any such requirements.

The above guidance is not necessarily exhaustive and is not prescriptive. Projects are encouraged to incorporate relevant measures from the County of San Diego CAP and, if necessary, identify measures tailored to address project-specific emissions sources.

6.0 MONITORING AND UPDATE MECHANISMS

This guidance document focuses on a 2020 timeline, consistent with the legislative mandate embodied in AB 32. Some projects and plans considered under the Guidelines for Determining Significance provided herein would build out after 2020, and while there is not a comprehensive regulatory or legislative framework for addressing GHG emissions beyond 2020, this guidance document and its updates will also support efforts to reduce emissions beyond 2020.

There are several factors that will require the County to revise the CEQA approach to analyzing and mitigating GHG emissions over time. There will be new assessment tools and new mitigation techniques. Revised and new legislation, incentive programs, and regulations will affect the implementation of CEQA, including, potentially, the need for revised approaches to assessing significance. Revisions to the statewide and regional GHG emissions inventory could affect certain aspects of this document.

Lead agencies that establish GHG emission reduction targets and reduction plans should monitor progress toward those targets over time and consider whether changes to their reduction plan are necessary. In order to achieve GHG emission-related policies in general plans or measures included in GHG reduction plans, it may be necessary to revise street standards, drainage requirements, zoning and development standards, and other implementing mechanisms related to local land use and development policy.

New statewide regulatory programs may be enacted that did not exist when the local agency adopted the reduction target. This is important since there can be an interaction between local GHG reduction measures and those implemented at the state level (for example a statewide program to reduce the GHG intensity of vehicle fuels would increase the reduction benefits of local programs to reduce vehicle miles traveled).

Therefore the County will provide for annual monitoring of the CAP and the reduction targets, considering the current environmental, technological, economic, and regulatory context.

It may become appropriate to revise certain of the guidance contained in this document in the context of future Sustainable Communities Strategy work, CEQA Guidelines updates and new precedent case law, new emission factors and modeling tools, new AB 32-related regulatory rollouts that create new statewide GHG reduction measures, and other changes. It is possible that programs for sequestration, offsets, and GHG emission credits could provide new opportunities for communities and businesses, which could be taken into account in

local GHG reduction plans. It is possible that new indirect source review programs may become enacted, which could address GHG emissions. It is anticipated that the state may release guidelines for climate action plans/GHG reduction plans, which could influence somewhat the guidance provided herein. The ARB could consider and adopt statewide GHG significance thresholds. It is possible that state regulations could supersede local air quality thresholds or rules.

The Bright Line Threshold is based, in part, on conservative assumptions regarding the effectiveness of feasible mitigation incorporated into new development projects in San Diego County. If the actual level of mitigation achieved by new development projects is substantially different from these assumptions, the County will need to revise the Bright Line Threshold. Similarly, the implementing thresholds outlined in this document are based on the framework established in the County's CAP. If GHG emissions reductions achieved under the CAP are dramatically different than anticipated in this document, the County may need to revisit both the CAP and this Significance Guidelines document and consider appropriate revisions.

The County envisions that the guidance contained within this document and the County's Guidelines for Determining Significance will be updated, as necessary, to be consistent with the County's CAP.

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APPENDIX TO GUIDELINES FOR DETERMINING SIGNIFICANCE
CLIMATE CHANGE
November 7, 2013

Approach

The development of greenhouse gas (GHG) significance thresholds for the County of San Diego involves both efficiency based threshold development (i.e., how GHG efficient is the project at hand relative to reduction targets per person and per employee?), as well as a "bright line" threshold.

The bright line threshold is set at a level that would capture enough projects so that, through feasible mitigation, GHG emissions would be reduced through the CEQA process at a level sufficient to achieve the San Diego region's fair-share of GHG emissions reductions for land use sectors.

This effort involved substantial research and analysis related to the details of the state's inventory, as well as the effectiveness of various statewide reduction measures (Pavley, Renewable Portfolio Standard, etc.). AECOM disaggregated the 1990 and 2020 statewide GHG inventory estimates for local application.

Conceptually, both the efficiency-based and the bright line approaches rely on determining the proportional or fair-share of emission reductions required to meet the legislative mandate established in The Global Warming Solutions Act (AB 32) that would be required within San Diego County. AB 32 requires that statewide GHG emissions must be reduced to 1990 levels by 2020. Future planning efforts that do not consider GHG emissions reduction strategies could conflict with AB 32, impeding California's ability to comply with the statewide mandate.

This guidance document allows the County to assess the extent to which projects account for their "fair share" of the statewide emissions reductions necessary to achieve the AB 32 legislative mandate. This fair share approach can be used to assess the significance of impacts for special project types, as well, consistent with CEQA Guidelines Section 15130(c)(3):

> *(3) An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable.*

In the case of GHG emissions, the fair share of mitigation may come through the selection of a project site, design, incorporation of emissions reducing technologies, and other elements that may be built into the project description, as well as adopted mitigation measures.

Cumulatively Considerable Greenhouse Gas Emissions

The approach summarized the County's guidance document allows a comparative assessment of whether proposed land use projects would meet their fair share of the state's overall GHG emissions reduction mandate. Plans or projects that emit more than their fair share of GHG emissions could have a cumulatively considerable contribution to the significant cumulative impact of global climate change.

The efficiency approach allows projects to demonstrate rates of GHG emissions that, if applied statewide, would achieve the AB 32 emissions target and support efforts to reduce emissions beyond 2020. The intent of AB 32 is to accommodate population and economic growth in California, but do so in a way that achieves a lower rate of GHG emissions. With a reduced rate of emissions per capita and per employee, California can accommodate expected population growth and achieve economic development objectives, while also abiding by AB 32's emissions target and supporting efforts to reduce emissions beyond 2020. The Efficiency Threshold is presented as annual emissions per service population (population + employment).

The bright line approach assesses mass emission levels that could be cumulatively considerable. Projects below the bright line would not be required to incorporate mitigation measures, although emissions of these projects would still be reduced through compliance with codes and regulations that would directly or indirectly increase energy efficiency or otherwise reduce GHG emissions.

Existing and New Emissions

The methods and analysis provided as a part of the development of this guidance document allow the County to assess the significance of GHG emissions in the context of proposed plans and projects that would require discretionary action. The focus of development of thresholds is on new emissions, although existing emissions levels are also being factored into the analysis. The continued operation of existing buildings and development patterns would not represent "projects" subject to review under CEQA.

The fair-share approach summarized in the County's guidance document assumes that *existing* development would be responsible for a share of GHG emission reductions needed to achieve AB 32 targets. This would occur through infill and reinvestment, as well as federal and state actions related to emissions standards, renewable energy generation, and other regulations over activities beyond local authority, but that would apply to both existing and new development. Improvements in the efficiency of existing development could also occur through actions described in climate action plans (also known as greenhouse gas reductions plans). Such actions could include requirements for new development and prescriptive, incentive-based, or strictly voluntary measures to reduce emissions from on-the-ground existing land uses. These measures and similar measures are routinely required as a part of local GHG reduction plans (also called climate action plans) and the implementation of these GHG reduction plans through revisions to codes and standards and other actions.

Land Use Related Emissions

Both the efficiency based and bright line thresholds are focused on emissions associated with typical land development projects, such as residential, retail, commercial service, office, and light industrial developments. The focus on land use related emissions reflects the nature of local government entitlement authority. Rather than considering explicitly *all* sources of GHG emissions, the focus here is on transportation; electricity; natural gas; water and wastewater; and recycling and waste.

GHG emissions produced by manufacturing processes and other sources that are mostly outside of the control of local jurisdictions are not included as a part of the efficiency or bright line thresholds. Lead agencies approving CEQA projects would not typically review or condition projects to include or prohibit specific manufacturing processes or certain materials used as a part of an industrial use. State and federal regulatory actions would more typically control industrial process and selection of materials. The thresholds will instead be keyed to those sectors over which the County would exercise some influence through typical planning, development, or environmental policies and

standards. Light industrial uses that do not have industrial process related emissions could be treated using the thresholds developed for land development projects.

CEQA Analytical Protocols

The CEQA thresholds approach is also structured to be consistent with typical CEQA analysis. Based on direction from air districts and ARB, as well as industry standard CEQA practice, certain emissions sources for land use projects are included and excluded from analysis. The thresholds will explicitly take into account those emissions sources that are included in CEQA analysis that is prepared consistent with current CEQA practice. The thresholds exclude those emissions sources that are not analyzed as a part of CEQA documentation. In so doing, the County will have an appropriate "apples to apples" comparison for proposed CEQA projects – a theme that is woven throughout the County's guidance document. This will be an aspect of the CEQA thresholds that may need to evolve over time as new emissions sources are embodied in typical CEQA analysis. For example, until recently, it was unusual for CEQA project analysis to fully consider landfill-related emissions. The Bay Area Air Quality Management District Guidelines recommends not including landfill related emissions in CEQA analysis, in fact. Previous CEQA project analysis did not always include project-related wastewater emissions. The County's approach allows a project comparison to certain parts of the state's inventory. The more types of emissions included in CEQA project analysis, the more emissions sources need to be included in the comparison version of the statewide inventory.

Lifecycle Emissions

"Life cycle" emissions – those emissions that are embodied in manufactured materials, for example – are not taken into account. GHG emissions embedded in construction materials or other materials used in projects may be manufactured to meet general market demand, regardless of whether one particular project proceeds. 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."[1]

The 1990 GHG Emissions Inventory

The level of emissions in 1990 represents the goal of AB 32 (i.e., reduce 2020 emissions to 1990 levels). For CEQA assessment purposes, the County isolated land use related components of the 1990 emissions inventory.[2] The statewide inventory in 1990 for land use related emissions was approximately 264.1 million metric tons (MMT) of carbon dioxide equivalent (CO_2e) (Table 1). Using 1990 emissions levels and 2020 forecast population and employment, this equates to 4.3 to 4.4 MT CO_2e emissions per resident + employee (service population).[3] Details regarding the development of the land-use emissions in 1990 are provided below.

[1] 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*.
[2] California Air Resources Board. 2010. *Inventory Data Archive – 1990 to 2004 Inventory.* Available: http://www.arb.ca.gov/cc/inventory/archive/archive.htm
[3] "Service population" measures the number of residents plus the number of employees in a specified area.

Table 1 Statewide Land Use-Adjusted 1990 GHG Emissions Inventory			
Emissions Sector/ Subcategory	**Emissions (MMT CO_2e/yr)**	**Notes/Adjustments**	**Omitted Emissions (MMT CO_2e/yr) (Percent of Sector Total)**
Electricity (In State and Imports)	74.3	Applied CEC 1990 electricity consumption rates for industrial land uses to remove industrial electricity consumption.	36.3 (33%)
Transportation	138.0	Removed aviation, non specified transportation, rail, and water borne transportation.	12.7 (8%)
Landfills	5.5	Removed industrial solid waste disposal.	0.8 (12%)
Wastewater Treatment	2.8	Removed industrial wastewater treatment emissions (i.e., fruits and vegetables, poultry, and red meat processing).	0.3 (11%)
Commercial	13.9	Removed national security emissions.	0.6 (4%)
Residential	29.7	Includes all emissions.	none
Total	**264.1**		
GHG Efficiency Target per Service Population: 4.32 MT			
Notes: GHG = greenhouse gas; MMT CO_2e/yr = million metric tons of carbon dioxide equivalent per year; CEC = California Energy Commission. Totals may not appear to add exactly due to rounding. Source: ARB 2010a, CEC 2009, AECOM 2011			

Non-land use sectors in the ARB inventory that were removed include agriculture, forestry, and "not specified". 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. As noted earlier, light industrial uses could be addressed using the thresholds developed for land use projects.

The AB 32 emissions limit applies to statewide emissions levels. Through implementation of ARB's Scoping Plan, various emissions sources will be reduced over time, with the ultimate objective of achieving this statewide target. Overall, implementation of the Scoping Plan has been shown to benefits related to overall economic production, gross state product, personal income, per-capita income, household cost savings, and business cost savings. But these economic benefits and cost savings will not necessarily be evenly distributed. The legislation directs the State to implement AB 32 in a way that minimizes costs and maximizes benefits, but not in a way that necessarily distributes costs and benefits equally across the regions of the State. An important element of the language of this legislation relates to the economic feasibility of different GHG reduction approaches. From the language of the legislation (Health and Safety Code Section 38501 (h):

> *"It is the intent of the Legislature that the State Air Resources Board design emissions reduction measures to meet the statewide emissions limits for greenhouse gases*

established pursuant to this division in a manner that minimizes costs and maximizes benefits for California's economy…"

So, while the County recognizes that the costs, benefits, and GHG reductions under AB 32 will not be experienced at the same proportion for each county, the Efficiency Threshold is focused on assessing whether projects do their "fair share" of emissions reductions required statewide. The Efficiency Threshold allows projects to demonstrate consistency in a straightforward way with the AB 32 mandate, without any taking into account any specific adjustments for local conditions. However, other Thresholds in the County's document envision a more locally tailored approach, in order to provide options and flexibility. The Bright Line Threshold, for example, was developed using regional growth forecasts and the San Diego region's emissions profile. The County has also developed a Climate Action Plan that establishes measures that would achieve an overall unincorporated County emissions reduction. Through this process, the County was able to, among other things, balance between those measures that are more or less efficient, given the specific local context.

With the various options outlined in the Thresholds document, the County has provided both approaches that are directly connected to the AB 32 emissions limit (Efficiency Threshold, Contingency Threshold) and those that take into account local conditions (Bright Line Threshold, Climate Action Plan Threshold).

Electricity

ARB's 1990 inventory did not separate out electricity generation by end use sector. A portion of electricity generated is used by industrial land uses. The County researched data sources that could be used to separate the land use-related electricity consumption from the industrial.

The California Energy Commission's (CEC) California Energy Demand 2010-2020 Commission-Adopted Forecast was used to determine the amount of electricity consumption associated with residential, commercial, and industrial land uses in the year 1990.[4] The CEC's California Energy Demand report provides the amount of electricity consumption by land use sector for years 1990 to 2020. According to this report, land use sectors accounted for 67% of electricity consumption in 1990 (i.e., residential 29%; commercial 32%; transportation, communication, utilities 5%; and streetlights 1%). The remaining 33% consists of industrial (21%), mining (3%), and agriculture (9%). Therefore, this analysis removed 33% of electricity-related emissions as non-land-use. It should be noted that the CEC report only identifies industrial as one entity and does not separate industrial process emissions from industrial building/office emissions.

Transportation

For 1990 transportation sector, all on-road emissions are assumed to be associated with land use projects. All other transportation subcategories such as aviation, rail, water-borne, and non-specified transportation were removed from the inventory. Although these transportation emission sources can be related to land use projects, these emissions are not quantified as part of typical CEQA analyses of residential, commercial retail, commercial services, and office developments. Therefore, aviation, rail, water-borne, and non-specified transportation emissions are not included. These sources collectively comprise approximately 8% of the total 1990 transportation emissions.

[4] California Energy Commission. 2009. *California Energy Demand 2010-2020 Commission-Adopted Forecast: Statewide Demand Forecast Forms.* Available: < http://www.energy.ca.gov/2009publications/CEC-200-2009-012/index.html>.

Fuel Combustion

The 1990 residential and commercial fuel combustion sectors (e.g., natural gas for water and space heating) were both included in the analysis. For the commercial emission sector, the national security natural gas combustion subcategory was removed from the inventory since these emissions would not be associated with land use projects.

For the 1990 industrial sector, all fuel combustion emissions (e.g., natural gas, coal, distillate, etc.) were removed from the inventory with the exception of landfill and wastewater treatment emissions.

Landfill and Wastewater Treatment

Both the landfill and wastewater treatment subcategories include activities associated with land use projects and industrial uses. The County investigated the potential to separate the land use related portion of these subcategories in order to allow San Diego jurisdictions to have a more "apples to apples" comparison for land use projects.

For landfills, the County researched solid waste tonnage reporting from CalRecycle. However, CalRecycle separates solid waste disposal by residential and commercial land uses. The commercial category includes both commercial and industrial land uses. The County separated the industrial solid waste disposal using the California Integrated Waste Management Board's (CIWMB) *California 1999 Statewide Waste Composition Study*.[5] (CIWMB is now known as CalRecycle).

It was determined from the CIWMB report that industrial solid waste makes up approximately 12.4% of the total waste disposed in landfills. For wastewater, the County researched the method used to develop 1990 wastewater treatment inventory emissions, which is based on population (i.e., domestic wastewater) and tons of fruits and vegetables, poultry, and red meat processed in the year (i.e., industrial wastewater). For this analysis, the GHG emissions associated with industrial wastewater (i.e., fruits and vegetables, poultry, and red meat processing) were removed from the inventory, which represented approximately 10.5% of the total wastewater emissions. Therefore, only the land use portions of the landfill gas and wastewater treatment sectors were included in the inventory.

The 2020 GHG Inventory

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" scenario.

The County evaluated ARB's 2020 GHG emissions inventory to isolate the emissions associated with comparable residential and commercial land uses.[6] Similar to the 1990 inventory analysis described above, the County evaluated the 2020 inventory to remove the industrial-related emissions for threshold development purposes. There are slight differences in how the 1990 and 2020 inventories were assembled. Where possible and applicable, the County used the same methods to separate industrial emissions from land use-related emissions were used for both the 1990 and 2020 inventory.

[5] California Integrated Waste Management Board. 1999 (December). California 1999 Statewide Waste Composition Study. Available: <http://www.calrecycle.ca.gov/publications/LocalAsst/34000009.pdf>. Accessed March 29, 2011.
[6] California Air Resources Board. 2010. *Greenhouse Gas Inventory – 2020 Emissions Forecast.* Available: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

Total land use related emissions in 2020, as calculated below, are estimated to be approximately 311 MMT CO_2e/yr (Table 2).

Table 2
Statewide Land Use-Adjusted 2020 GHG Emissions Inventory

Emissions Sector/ Subcategory	Emissions (MMT CO_2e/yr)	Notes/Adjustments	Omitted Emissions (Percent of Sector Total) (MMT CO_2e/yr)
Electricity	86.4	Applied CEC 2020 electricity consumption rates for industrial land uses to remove industrial electricity consumption.	24.0 (22%)
Transportation	168.2	Removed ships and commercial boats, aviation, rail, and unspecified transportation. Includes on-road passenger and heavy-duty vehicles.	15.8 (9%)
Commercial and Residential	45.3	Includes all emissions.	none
Recycling and Waste	7.5	Removed industrial solid waste disposal.	1.1 (12.4%)
Wastewater Treatment	2.8	Originally embedded within the "Other Process Emissions" industrial sector. Worked with ARB to separate emissions and used same 1990 proportion of industrial versus land use projects to isolate land use wastewater treatment emissions.	4.2 (59%)
High GWP	0.8	Only include electricity grid SF_6 losses with application of CEC 2020 electricity consumption rates for land use-related uses.	37.1 (98%)
Total	**311.0**		

Notes: GHG = greenhouse gas; MMT CO_2e/yr = million metric tons of carbon dioxide equivalent per year; CEC = California Energy Commission; SF_6 = sulfur hexafluoride; GWP = global warming potential. Totals may not add exactly due to rounding. Source: ARB 2010b, CEC 2009, AECOM 2011

Non Land Use Emissions for 2020

For the forecasted 2020 electric power sector, the CEC's California Energy Demand Forecast (described above) was also used to separate industrial-related electricity consumption.[7] For the transportation sector, all on-road emissions were included, while ships and commercial boats, aviation, rail, and unspecified transportation were removed.

Similar to the 1990 inventory, the entire agriculture and forestry sectors were removed from the inventory. All emissions from the commercial and residential fuel combustion sector were included in the inventory, while all emissions associated with the industrial fuel combustion sector were removed. The industrial portion of the recycling and waste sector was removed using similar methods to those described above for landfill emissions.

[7] CEC. 2009. California Energy Demand 2010-2020 Commission-Adopted Forecast: Statewide Demand Forecast Forms. Available: < http://www.energy.ca.gov/2009publications/CEC-200-2009-012/index.html>.

For the High Global Warming Potential (GWP) sector, the electricity grid sulfur hexafluoride (SF_6) losses subcategory was included since it relates to electricity use. However, all other portions of the high GWP sector were removed. The electricity grid SF_6 losses subcategory was separated by land use using the CEC's California Energy Demand Forecast. It was assumed that the amount of SF_6 loss is proportional to the amount of electricity consumed.

A majority of the high global warming potential (GWP) emissions were removed in either the 1990 or 2020 inventories for this analysis. ARB's 1990 inventory does not list high GWP emissions as a separate line item in the inventory. It is anticipated that a significant portion of high GWP emissions are attributable to land use projects, such as homes, motor vehicles, supermarkets, and commercial storage facilities. However, the question is not only whether or not high GWP conceptually fits within land use development projects for the purposes of CEQA assessment. It also depends on current CEQA protocols for GHG analysis. Today, high GWP emissions are not normally analyzed as a part of most CEQA projects. If these emissions were incorporated into the "bright line" development, all future CEQA GHG analyses would be required to quantify high GWP emissions in order to maintain consistency between the threshold and evaluated emissions.

The County contacted ARB to explore to possibility of separating the industrial portion of high GWP emissions. However, high GWP emissions for the statewide inventories are developed using end use equipment (e.g., chillers, cold storage, transport refrigeration), which do not provide a clear indication of the land use type. ARB will be developing the high GWP portion of the statewide inventory using more refined methods for the new statewide inventory.

Lead agencies and air districts could work to develop a standardized statewide methodology for quantifying high GWP emissions and attributing emissions for land use projects. Once ARB has refined its methods, the high GWP emissions could be incorporated into modified inventory estimates, a modified bright line threshold, and future CEQA analysis. In addition, all interested parties should continue to work with ARB to develop inventories with consistent methodologies and levels of detail for future analysis and comparison efforts.

Statewide Reduction Measures

The next step towards the "bright line" threshold is to determine what future emission reductions will be achieved through the implementation of statewide GHG reduction measures.

Many measures and potential 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 emissions would be achieved through 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 2020 inventory is estimated to be reduced by approximately 39.08 MMT CO_2e/yr through implementation of statewide GHG reduction measures (Table 3).

As additional measures from the Scoping Plan or other sources are implemented, this estimate should be revised when new measures would change the level of GHG reduction substantially.

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

Table 3 Additional Statewide AB 32 Scoping Plan GHG Emission Reductions		
Scoping Plan Measure	**Emission Reductions (MMT CO_2e/yr)**	**Notes/Adjustments**
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[8]	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]	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[10]	4.737	Represents the annual CO_2 emissions saved from incorporation of 2008 Title 24 building standards from electricity and natural gas consumption for land use projects as calculated by CEC.
Total	**39.08**	
Notes: GHG = greenhouse gas; MMT CO_2e/yr = million metric tons of carbon dioxide equivalent per year. Values may not appear to add exactly due to rounding. Source: ARB 2010c, ARB 2010d, CEC 2009, AECOM 2011		

[8] Based on the Scoping Plan documentation (pages 53-54), 1.4 MMT CO2e is the estimated total GHG reductions in 2020 from two measures (T-7 and T-8). Measure T-7 HDV GHG Emission Reduction Measure – Aerodynamic Efficiency was estimated to provide a reduction of 0.93 MMT CO2e and Measure T-8 Medium/Heavy-Duty Vehicle Hybridization 0.5 MMT CO2e. Measure T-7 is based on US EPA SmartWay program and was adopted, but during the rulemaking (in 2010), the benefits were revised to be 0.7 MMT CO2e based on updated VMT and vehicle population operating in California, which went down because of the economic recession. Measure T-8 is not yet adopted and therefore the County has elected not to include this measure as a part of the Bright Line Threshold calculation process. According to Daniel Hawelti of the California Air Resources Board, scaling the inventory down to a local jurisdiction (e.g., based on VMT proportions) would be appropriate if the fleet characteristics and activity for the local jurisdiction is similar to that used to estimate the statewide inventory (Daniel Hawelti, California Air Resources Board, Personal Correspondence with Cheryl Laskowski of AECOM, July 20th, 2011).

[9] The previous ARB calculations for RPS (20%) and RES (33%) were 7.9 and 13.4 MMT, respectively (see ARB's "Scoping Plan Measures Implementation Timeline, October 28, 2010, authors: Dave Mehl (RES) and Paul Douglas (RPS). The total of these was updated to be 20 MMT. However, to reflect a recent revision for the estimated reduction for this measure, the County took the proportion of each RPS (7.9/(7.9+13.4)) and RES (13.4/(7.9+13.4)) and multiplied by the new estimate of 20 MMT. In addition, the County only used the land use emission related portion of total electricity consumption (78.26%) to avoid an overestimate of reductions from this statewide measure for the purpose of calculating the Bright Line Threshold.

[10] Page 7 of the California Energy Commission's (CEC) document entitled "Impact Analysis 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings" states that the implementation of 2008 Title - 24 energy efficiency standards will reduce approximately 473,282 tons of carbon dioxide for each year of construction activity (in both newly constructed buildings and alterations to existing buildings). Assuming that 2008 T-24 standards apply to construction between 2010 and 2020, the total reductions in 2020 would be 5.2 million tons of carbon dioxide. Converting short tons to metric tons results in total reduction of 4.737 MMT CO2e. See California Energy Commission (CEC). 2007 (November 7). Impact Analysis, 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available online at: http://www.energy.ca.gov/title24/2008standards/rulemaking/documents/2007-11-07_IMPACT_ANALYSIS.PDF. Last accessed December 3, 2011.

The County conducted research into ARB's 2020 forecasted emissions inventory methodology 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.

The thresholds approach will need to be updated over time as new measures become fixed in regulation and as future GHG emissions inventory estimates are revised.

Pavley I and Renewable Portfolio Standard

ARB's forecasted 2020 emission inventory incorporated the emission reductions associated with Pavley I and Renewable Portfolio Standard. Therefore, no further emission reductions were taken for these programs.

Pavley II, Low Carbon Fuel Standard, Renewable Electricity Standard, and Water Efficiency

The County evaluated the list of AB 32 Scoping Plan measures for feasibility and applicability to land use projects. It was determined that emission reductions from Pavley II,[11] Low Carbon Fuel Standard,[12] Renewable Electricity Standard (RES) (ARB 2010d),[13] and Water Efficiency[14] should be applied to adjust the forecasted 2020 emission level.

It is anticipated that for some of these programs, a portion of the emission reductions would occur from industrial land uses. For example, RES and Water Efficiency would also affect electricity and water efficiency, respectively, for industrial land uses. The County used the CEC's Energy Demand Forecast to separate the amount of RES emission reductions that would affect industrial versus land use projects, similar to the method described above for 1990 and 2020 inventories.[15]

For Water Efficiency, the County evaluated the potential to separate industrial water efficiency emission reductions from land use reductions. It is not currently possible to differentiate industrial from land use related emission reductions for Water Efficiency Measures. Therefore, a portion of the Water Efficiency emission reductions included in the estimate would actually apply to industrial land uses. However, Water Efficiency is a very small portion (i.e., approximately 7%) of the total emission reductions applied to the 2020 inventory.

The State's Low Carbon Fuel Standard (LCFS) will reduce the carbon intensity of transportation-related fuels purchased in California.[16,17] This program has the potential to provide substantial GHG reduction benefits throughout the period of implementation. ARB has provided a tool (i.e., EMFAC Postprocessor) for estimating the benefits of the LCFS at the project level. Other attempts to

[11] California Air Resources Board. 2010. *Updated Economic Impacts Analysis by the Economic Impacts Subcommittee of the Economic and Allocation Advisory Committee*. Available: <http://www.climatechange.ca.gov/eaac/documents/eaac_reports/2010-04-19_EAAC_REPORT_Appendix.pdf>.

[12] California Air Resources Board. 2010. *Updated Economic Impacts Analysis by the Economic Impacts Subcommittee of the Economic and Allocation Advisory Committee*. Available: <http://www.climatechange.ca.gov/eaac/documents/eaac_reports/2010-04-19_EAAC_REPORT_Appendix.pdf>.

[13] California Air Resources Board. 2010. *Scoping Plan Measures Implementation Timeline.* Sacramento, CA.

[14] California Air Resources Board. 2010. *Scoping Plan Measures Implementation Timeline*. Sacramento, CA.

[15] California Energy Commission. 2009. *California Energy Demand 2010-2020 Commission-Adopted Forecast: Statewide Demand Forecast Forms.* Available: < http://www.energy.ca.gov/2009publications/CEC-200-2009-012/index.html>.

[16] California Air Resources Board, 2011, *AECOM Personal Communication with John Courtis and Kevin Cleary, of ARB on April 13, 2011.* Sacramento, CA.

[17] California Air Resources Board. 2010. *Updated Economic Analysis of AB 32 Scoping Plan. Pg 37.* Sacramento, CA.

estimate the benefits of statewide measures for reducing land use-related emissions have included LCFS reductions.

It is important in the context of a thresholds development effort focused land use, however, to carefully consider what aspects of LCFS would apply to fuel production-related lifecycle emissions versus what portion would relate to direct transportation emissions. The County communicated extensively with ARB staff regarding estimates of the GHG reduction benefits of the LCFS and reviewed reports made available by ARB on this program. GHG emissions reductions from LCFS would result from:

> *"production and use of lower carbon transportation fuels in California and changes in the vehicle fleet composition due to new, lower carbon fuels being available to the transportation fuel pool. [ARB] staff has estimated the GHG emissions reductions for the combustion of transportation fuels to be about 16 MMT CO2e by 2020."*[18]

The above mentioned ARB estimate (16 MMT) was used in the assessment of the effectiveness of statewide measures.

Tire Pressure and Tire Tread Standard

The Tire Pressure Program and Tire Tread Standard are part of the AB 32 Scoping Plan and would affect land use projects, as well as industrial projects, to some extent.[19] The Tire Pressure Program is a Discrete Early Action and enforcement of the program commenced in January 2010. The Tire Tread Standard is enforced by regulations. Although a portion of these measures would affect industrial land uses, similar to Water Efficiency, these measures represent a very small portion of the overall statewide emission reductions (i.e., approximately 4%).

Heavy-Duty Vehicle GHG Emissions Reduction Program

The Heavy-Duty Vehicle GHG Emission Reduction program will be enforced by regulation and require existing trucks/trailers to be retrofitted with aerodynamic efficiency technologies.[12] This measure is a Discrete Early Action and requires trucks and trailers to comply through a phase-in schedule starting in 2010 and achieve 100% compliance by 2014.

Landfill Methane Capture Control Measure

The Landfill Methane Control Measure will require owners and operators of municipal solid waste landfills and other uncontrolled landfills to install gas collection and control systems[12]. Additionally, all affected landfills will be required to satisfy enhanced methane monitoring requirements to ensure that their gas collection and control system is operating optimally and that fugitive emissions are minimized. The measure is a Discrete Early Action and is enforced by regulation. The measure will likely have a phase-in period to become fully effective.

[18] California Air Resources Board. 2009 (March). Proposed Regulation to Implement the Low Carbon Fuel Standard. Volume I. Staff Report: Initial Statement of Reasons. Page VII-1. Available: <http://www.arb.ca.gov/regact/2009/lcfs09/lcfsisor1.pdf>

[19] California Air Resources Board. 2008. *Climate Change Scoping Plan Appendices Volume I: Supporting Document and Measure Detail*. Available: <http://www.arb.ca.gov/cc/scopingplan/document/appendices_volume1.pdf>. Accessed April 4, 2011.

Title 24

The County investigated the GHG reduction potential of implementing the 2008 Title 24 standards into land use projects. CEC quantified the GHG emissions saved from reduced electricity and natural gas consumption with implementation of 2008 Title 24 Standards.[20]

Total Effect of Reliable Statewide Measure

Following application of the additional feasible and reasonably foreseeable AB 32 Scoping Plan measures, the gap to achieve the AB 32 emission reduction goal can be calculated by subtracting 1990 emissions (Table 1) from 2020 emissions with AB 32 Scoping Plan reductions (Table 2 minus Table 3). This gap represents the amount of emissions in the land use sectors that would need to be filled 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% 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% reduction to San Diego County's 2020 forecasted land use-related emissions would provide an estimate of the land use related mass emissions reductions needed to achieve the emission reduction goal of AB 32.

Statewide 2020 Land Use Emissions	⇨	Statewide 1990 Land Use Emissions	⇨	Statewide GHG Reduction Measures
311.0 MMT CO_2e/yr		264.1 MMT CO_2e/yr		39.08 MMT CO_2e/yr

Percent Reduction Required to get to 1990 Emissions by 2020	Percentage Reduction Achieved from Statewide Measures	Land Use Emissions Reduction "Gap"
15%	**12%**	**3%**

Equations

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	–	Foreseeable AB 32 Measures	–	Statewide 1990 Emissions	=	Emission Reduction Gap
311.0 MMT CO_2e/yr	–	39.08 MMT CO_2e/yr	–	264.1 MMT CO_2e/yr	=	7.8 MMT CO_2e/yr
Emission Reduction Gap	**÷**	**(Statewide 2020 Emission**	**–**	**Foreseeable AB 32 Measures)**	**=**	**Percent Reduction Gap**
7.8 MMT CO_2e/yr	÷	(311.0 MMT CO_2e/yr	–	39.08 MMT CO_2e/yr)	=	2.87%

Notes: Numbers may not appear to exact due to rounding.

[20] CEC. 2007. Impact Analysis 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available: <http://www.energy.ca.gov/title24/2008standards/rulemaking/documents/2007-11-07_IMPACT_ANALYSIS.PDF>.

The County reviewed, in detail, all available documentation on the Countywide GHG inventory by the Energy Policy Initiatives Center (EPIC). This inventory includes several non land use emissions sources. The next step is to translate the statewide land use gap 3.05%) to the 2030 forecast GHG emissions inventory derived by EPIC. The total estimated 2020 emissions in San Diego County for land use related activities is estimated at 33.57 MMT CO_2e per year. Multiplying this total by the statewide land use gap of 2.87% yields 964,966 MT CO_2e per year. New development (between 2011 and 2020) represents approximately 10.54% of the total population and employment in San Diego County in 2020. Multiplying 10.54% by the mass land use gap of 964,966 million MT yields a share of the land use gap for new development of approximately 101,707 MT CO_2e per year. Assuming new development would account for twice its share of the needed regional GHG emissions reduction targets, the total reduction target to achieve through the Bright Line Threshold would be 203,415 MT CO_2e per year.

Development Projections Methodology

The County created growth projections for new development from 2011 to 2020 based on (1) the 2050 San Diego Association of Governments (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 due to the accuracy of the projections, but also because the data is reported at a level of specificity that allows for simple translation into URBEMIS 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 URBEMIS land use category. In instances in which there were asymmetries between the DOF/EDD data and the URBEMIS land use categories, development projections were aggregated into the most similar category based on development density and trip capture assumptions in the URBEMIS model. Table 4 illustrates the conversion between industry classification and URBEMIS land uses.

Table 4
Lookup Table: NAICS Code to URBEMIS Code

NAICS Code	Industry Title	Urbemis
1133,21	Natural Resources and Mining	General Heavy Industry
1133	Logging	General Heavy Industry
21	Mining	General Heavy Industry
211	Oil and Gas Extraction	General Heavy Industry
212	Mining (except Oil and Gas)	General Heavy Industry
213	Support Activities for Mining	General Heavy Industry
23	Construction	General Light Industry
236	Construction of Buildings	General Light Industry
2361	Residential Building Construction	General Light Industry
2362	Nonresidential Building Construction	General Light Industry
237	Heavy and Civil Engineering Construction	General Light Industry
2371	Utility System Construction	General Light Industry
2372	Land Subdivision	General Light Industry

Table 4 Lookup Table: NAICS Code to URBEMIS Code		
2373	Highway, Street, and Bridge Construction	General Heavy Industry
2379	Other Heavy and Civil Engineer Construction	General Heavy Industry
238	Specialty Trade Contractors	General Light Industry
2381	Foundation, Structure, and Building Exterior Contractors	General Light Industry
2382	Building Equipment Contractors	General Light Industry
2383	Building Finishing Contractors	General Light Industry
2389	Other Specialty Trade Contractors	General Light Industry
2399	Residual-Other Heavy and Civil Engineering Construction (includes 2371-2372,2379)	General Heavy Industry
31-33	Manufacturing	General Heavy Industry
321	Durable Goods(321,327,331-339)	General Heavy Industry
321	Wood Product Manufacturing	General Heavy Industry
3211	Saw mills and Wood Preservation	General Heavy Industry
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing	General Heavy Industry
3219	Other Wood Product Manufacturing	General Heavy Industry
3299	Residual-Miscellaneous Manufacturing (includes 321,327,331-333,335,337,339)	General Heavy Industry
327	Nonmetallic Mineral Product Manufacturing	General Heavy Industry
331	Primary Metal Manufacturing	General Heavy Industry
3311	Residual-Iron and Steel Mills and Ferralloy (includes3311-3312,3314-3315)	General Heavy Industry
3313	Alumina and Aluminum Production	General Heavy Industry
332	Fabricated Metal Product Manufacturing	General Heavy Industry
3323	Architectural and Structural Metals Manufacturing	General Heavy Industry
	Residual-Forging and Stamping Mfg.(includes 3321-3322,3324-3326)	General Heavy Industry
3327	Machine Shops,Turned Product,and Screw,Nut and Bolt Manufacturing	General Heavy Industry
3328	Coating,Engraving,Heat Treating,and Allied Activities	General Heavy Industry
3329	Other Fabricated Metal Product Manufacturing	General Heavy Industry
333	MachineryManufacturing	General Heavy Industry
	Residual-Agriculture,ConstructionandMiningMachineryMfg(includes3331,3334)	General Heavy Industry
3332	IndustrialMachineryManufacturing	General Heavy Industry
3333	CommercialandServiceIndustryMachineryManufacturing	General Heavy Industry
3335	MetalworkingMachineryManufacturing	General Heavy Industry
3336	Engine,Turbine,andPowerTransmissionEquipmentManufacturing	General Heavy Industry
3339	OtherGeneralPurposeMachineryManufacturing	General Heavy Industry
334	ComputerandElectronicProductManufacturing	Manufacturing
3341	ComputerandPeripheralEquipmentManufacturing	Manufacturing
3342	CommunicationsEquipmentManufacturing	Manufacturing
3343	AudioandVideoEquipmentManufacturing	Manufacturing
3344	SemiconductorandOtherElectronicComponentManufacturing	Manufacturing
3345	Navigational,Measuring,Electromedical,andControlInstrumentsManufacturing	Manufacturing
3346	ManufacturingandReproducingMagneticandOpticalMedia	Manufacturing
335	ElectricalEquipment,Appliance,andComponentManufacturing	Manufacturing
336	TransportationEquipmentManufacturing	Manufacturing
3361	MotorVehicleManufacturing	General Heavy Industry
3363	MotorVehiclePartsManufacturing	General Heavy Industry
3364	AerospaceProductandPartsManufacturing	General Heavy Industry
3366	ShipandBoatBuilding	General Heavy Industry
	Residual-	Manufacturing

Table 4 Lookup Table: NAICS Code to URBEMIS Code		
	OtherTransportationEquipmentManufacturing(includes3362,3365,3369)	
337	FurnitureandRelatedProductManufacturing	Manufacturing
3371	HouseholdandInstitutionalFurnitureManufacturing	Manufacturing
3372	Residual-OtherFurnitureRelatedProductManufacturing(includes3372,3379)	Manufacturing
339	MiscellaneousManufacturing	Manufacturing
3391	MedicalEquipmentandSuppliesManufacturing	Manufacturing
3399	OtherMiscellaneousManufacturing	Manufacturing
311	NondurableGoods(311-316,322-326)	Manufacturing
311	FoodManufacturing	Manufacturing
3119	Residual-AnimalFoodManufacturng(includes3111-3112,3117)	Manufacturing
3113	SugarandConfectioneryProductManufacturing	Manufacturing
3114	FruitandVegetablePreservingandSpecialtyFoodManufacturing	Manufacturing
3115	DairyProductManufacturing	Manufacturing
3116	AnimalSlaughteringandProcessing	Manufacturing
3118	BakeriesandTortillaManufacturing	Manufacturing
3119	OtherFoodManufacturing	Manufacturing
312	BeverageandTobaccoProductManufacturing	Manufacturing
313	TextileMills	Manufacturing
314	TextileProductMills	Manufacturing
315	ApparelManufacturing	Manufacturing
3151	ApparelKnittingMills	Manufacturing
3152	CutandSewApparelManufacturing	Manufacturing
3159	ApparelAccessoriesandOtherApparelManufacturing	Manufacturing
316	LeatherandAlliedProductManufacturing	General Heavy Industry
322	PaperManufacturing	General Heavy Industry
3221	Pulp,Paper.andPaperboardMills	General Heavy Industry
3222	ConvertedPaperProductManufacturing	General Heavy Industry
323	PrintingandRelatedSupportActivities	General Heavy Industry
324	PetroleumandCoalProductsManufacturing	General Heavy Industry
325	ChemicalManufacturing	General Heavy Industry
3254	PharmaceuticalandMedicineManufacturing	General Heavy Industry
3256	Soap,CleaningCompound,andToiletPreparationManufacturing	General Heavy Industry
	Residual-OtherChemicalProdsandPrepMfg(includes3251-3253,3255,3259)	General Heavy Industry
326	PlasticsandRubberProductsManufacturing	General Heavy Industry
3261	PlasticsProductManufacturing	General Heavy Industry
3262	RubberProductManufacturing	General Heavy Industry
22,42-49	Trade,Transportation,andUtilities	Warehouse
42	WholesaleTrade	Warehouse
423	Merchantwholesalers,DurableGoods	Warehouse
4231	MotorVehicleandMotorVehiclePartsandSuppliesMerchantWholesalers	Warehouse
4232	FurnitureandHomeFurnishingMerchantWholesalers	Warehouse
4233	LumberandOtherConstructionMaterialsMerchantWholesalers	Warehouse
4234	ProfessionalandCommercialEquipmentandSuppliesMerchantwholesalers	Warehouse
4235	MetalandMineral(exceptPetroleum)Merchantwholesalers	Warehouse
4236	ElectricalandElectronicGoodsMerchantwholesalers	Warehouse
4237	Hardware,andPlumbingandHeatingEquipmentandSuppliesMerchantwholesalers	Warehouse

Table 4 Lookup Table: NAICS Code to URBEMIS Code		
4238	Machinery,Equipment,andSuppliesMerchantwholesalers	Warehouse
4239	MiscellaneousDurableGoodsMerchantwholesalers	Warehouse
424	Merchantwholesalers,NondurableGoods	Warehouse
4241	PaperandPaperProductMerchantwholesalers	Warehouse
	Residual-DrugandDruggistsSundriesMerchWholesalers(includes4242,4245,4247-4248)	Warehouse
4243	Apparel,Piece Goods,and Notions Merchant Wholesalers	Warehouse
4244	Grocery and Related Products Wholesalers	Warehouse
4246	Chemical and Allied Products Merchant wholesalers	Warehouse
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	Warehouse
425	Wholesale Electronic Markets and Agents and Brokers	General Office Building
44-45	Retail Trade	Free-Standing Discount Superstore
441	Motor Vehicle and PartsDealers	Free-Standing Discount Superstore
4411	Automobile Dealers	Free-Standing Discount Superstore
4412	Other MotorVehicle Dealers	Free-Standing Discount Superstore
4413	Automotive Parts, Accessories, and Tire Stores	Free-Standing Discount Superstore
442	Furniture and Home Furnishings Stores	Free-Standing Discount Store
4421	Furniture Stores	Free-Standing Discount Superstore
4422	Home Furnishings Stores	Free-Standing Discount Superstore
443	Electronics and Appliance Stores	Electronic Superstore
444	Building Material and Garden Equipment and Supplies Stores	Home Improvement Superstore
4441	Building Material and Supplies Dealers	Home Improvement Superstore
4442	Lawn and Garden Equipment and Supplies Stores	Home Improvement Superstore
445	Food and Beverage Stores	Supermarket
4451	Grocery Stores	Supermarket
4452	Specialty Food Stores	Convenience Market (24 Hour)
4453	Beer, Wine, and Liquor Stores	Convenience Market (24 Hour)
446	Health and Personal Care Stores	Pharmacy/Drugstore without drive-through
447	Gasoline Stations	Convenience Market with Gas Pumps
448	Clothing and Clothing Accessories Stores	Strip Mall
4481	Clothing Stores	Strip Mall
4482	Shoe Stores	Strip Mall
4483	Jewelry, Luggage, and Leather Goods Stores	Strip Mall
451	Sporting Goods, Hobby, Book, and Music Stores	Strip Mall
4511	Sporting Goods, Hobby, and Musical Instrument Stores	Strip Mall
4512	Book, Periodical, and Music Stores	Strip Mall
452	General Merchandise Stores	Strip Mall
4521	Department Stores	Strip Mall
4529	Other General Merchandise Stores	Strip Mall
453	Miscellaneous Store Retailers	Strip Mall

Table 4 Lookup Table: NAICS Code to URBEMIS Code		
4531	Florists	Strip Mall
4532	Office Supplies,Stationery,andGiftStores	Strip Mall
4533	UsedMerchandiseStores	Strip Mall
4539	OtherMiscellaneousStoreRetailers	Strip Mall
454	NonstoreRetailers	Warehouse
4541	ElectronicShoppingandMail-OrderHouses	Warehouse
	Residual-VendingMachineOperatorsandDirectSellingEstablishments(includes4542-4543)	Warehouse
22,48-49	Transportation,Warehousing,andUtilities	General Heavy Industry
22	Utilities	General Heavy Industry
2211	ElectricPowerGeneration,TransmissionandDistribution	General Heavy Industry
2212	NaturalGasDistribution	General Heavy Industry
2213	Water,SewageandOtherSystems	General Heavy Industry
48-49	TransportationandWarehousing	Warehouse
481	Airtransportation	Warehouse
4811	ScheduledAirTransportation	Warehouse
4812	NonscheduledAirTransportation	Warehouse
482	RailTransportation	Warehouse
484	TruckTransportation	Warehouse
4841	GeneralFreightTrucking	Warehouse
4842	SpecializedFreightTrucking	Warehouse
485	TransitandGroundPassengerTransportation	Warehouse
4854	SchoolandEmployeeBusTransportation	Warehouse
	Residual-OtherTransitandGroundPassengerTransp(includes4851-4853,4855,4859)	Warehouse
	Residual-Water,Pipeline,Scenic,andSightseeingTransp(includes483,486-487)	Warehouse
488	SupportActivitiesforTransportation	Warehouse
4883	SupportActivitiesforWaterTransportation	Warehouse
4884	SupportActivitiesforRoadTransportation	Warehouse
4885	FreightTransportationArrangement	Warehouse
	Residual-OtherSupportActivitiesforTransportation(includes4881-4882,4889)	Warehouse
492	CouriersandMessengers	Warehouse
4921	Couriers	Warehouse
4922	LocalMessengersandLocalDelivery	Warehouse
493	WarehousingandStorage	Warehouse
51	Information	General Office Building
511	PublishingIndustries(exceptInternet)	General Office Building
5111	Newspaper,Periodical,Book,andDirectoryPublishers	General Office Building
5112	SoftwarePublishers	General Office Building
512	MotionPictureandSoundRecordingIndustries	General Office Building
5121	MotionPictureandVideoIndustries	General Office Building
5122	SoundRecordingIndustries	General Office Building
515	Broadcasting(exceptInternet)	Office Park
5151	RadioandTelevisionBroadcasting	Office Park
5152	CableandOtherSubscriptionProgramming	Office Park
517	Telecommunications	General Office Building
5171	WiredTelecommunicationsCarriers	General Office Building

Table 4 Lookup Table: NAICS Code to URBEMIS Code		
5172	WirelessTelecommunicationsCarriers	General Office Building
5173	TelecommunicationsResellers	General Office Building
5174	SatelliteTelecommunications	General Office Building
5175	CableandOtherProgramDistribution	General Office Building
5179	OtherTelecommunications	General Office Building
518	InternetServiceProviders,WebSearchPortals,andDataProcessingServices	General Office Building
5181	InternetServiceProvidersandWebSearchPortals	General Office Building
5182	DataProcessing,Hosting,andRelatedServices	General Office Building
	Residual-OtherInformationServices(includes516,519)	General Office Building
52-53	FinancialActivities	General Office Building
52	FinanceandInsurance	General Office Building
522	CreditIntermediationandRelatedActivities	General Office Building
5221	DepositoryCreditIntermediation	General Office Building
5222	NondepositoryCreditIntermediation	General Office Building
5223	ActivitiesRelatedtoCreditIntermediation	General Office Building
523	Securities,CommodityContracts,andOtherFinclInvestmentsandRelatedActivities	General Office Building
5231	SecuritiesandCommodityContractsIntermediationandBrokerage	General Office Building
5232	SecuritiesandCommodityExchanges	General Office Building
5239	OtherFinancialInvestmentActivities	General Office Building
524	InsuranceCarriersandRelatedActivities	General Office Building
5241	InsuranceCarriers	General Office Building
5242	Agencies, Brokerages, and Other Insurance Related Activities	General Office Building
	Residual-Financial Activities (includes521,525)	General Office Building
53	Real Estate and Rental and Leasing	General Office Building
531	Real Estate	General Office Building
5311	Lessors of Real Estate	General Office Building
5312	Offices of Real Estate Agents and Brokers	General Office Building
5313	Activities Related to Real Estate	General Office Building
532	Rental and Leasing Services	General Office Building
5321	Automotive Equipment Rental and Leasing	General Office Building
5322	Consumer Goods Rental	General Office Building
5323	General Rental Centers	General Office Building
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	General Office Building
533	Lessors of Nonfinancial Intangible Assets(except Copyrighted Works)	General Office Building
5399	Residual-Rental and Leasing Services (includes 532-533)	General Office Building
54-56	ProfessionalandBusinessServices	General Office Building
54	Professional,Scientific,andTechnicalServices	Office Park
5411	LegalServices	General Office Building
5412	Accounting,TaxPreparation,Bookkeeping,andPayrollServices	General Office Building
5413	Architectural,Engineering,andRelatedServices	General Office Building
5414	SpecializedDesignServices	General Office Building
5415	ComputerSystemsDesignandRelatedServices	General Office Building
5416	Management,Scientific,andTechnicalConsultingServices	General Office Building
5417	ScientificResearchandDevelopmentServices	Office Park
5418	AdvertisingandRelatedServices	General Office Building
5419	OtherProfessional,Scientific,andTechnicalServices	General Office Building
5499	Residual-Other Professional, Scientific and Technical Services	General Office Building

Table 4 Lookup Table: NAICS Code to URBEMIS Code		
	(includes 5411-5412,5414, 5416-5419)	
55	ManagementofCompaniesandEnterprises	General Office Building
56	AdministrativeandSupportandWasteManagementandRemediationServices	General Office Building
561	AdministrativeandSupportServices	General Office Building
5611	OfficeAdministrativeServices	General Office Building
5612	FacilitiesSupportServices	General Office Building
5613	EmploymentServices	General Office Building
5614	BusinessSupportServices	General Office Building
5615	TravelArrangementandReservationServices	General Office Building
5616	InvestigationandSecurityServices	General Office Building
5617	ServicestoBuildingsandDwellings	General Office Building
5619	OtherSupportServices	General Office Building
5699	Residual-Other Support Services (includes 5611-5612,5614-5615,5619)	General Office Building
562	WasteManagementandRemediationServices	General Office Building
61-62	EducationServices,HealthCareandSocialAssistance	Elementary School
61	EducationalServices(Private)	Elementary School
6111	ElementaryandSecondarySchools	Elementary School
6112	JuniorColleges	Junior College (2 years)
6113	Colleges,Universities,andProfessionalSchools	University/College (4 years)
	Residual-BusinessSchoolsandComputerandMgmt.Training(includes6114-6115,6117)	Government Office Building
6116	OtherSchoolsandInstruction	Elementary School
62	HealthCareandSocialAssistance	Hospital
621	AmbulatoryHealthCareServices	Hospital
6211	OfficesofPhysicians	Hospital
6212	OfficesofDentists	Hospital
6213	OfficesofOtherHealthPractitioners	Hospital
6214	OutpatientCareCenters	Hospital
6215	MedicalandDiagnosticLaboratories	Hospital
6216	HomeHealthCareServices	Hospital
6219	OtherAmbulatoryHealthCareServices	Hospital
622	Hospitals(Private)	Hospital
6221	GeneralMedicalandSurgicalHospitals	Hospital
6222	Psychiatric and Substance Abuse Hospitals	Hospital
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	Hospital
623	Nursing and Residential Care Facilities	Congregate Care (Assisted Living) Facility
6231	Nursing Care Facilities	Congregate Care (Assisted Living) Facility
6232	Residential Mental Retardation, Mental Health and Substance Abuse Facilities	Congregate Care (Assisted Living) Facility
6233	Community Care Facilities for the Elderly	Congregate Care (Assisted Living) Facility
6239	Other Residential Care Facilities	Congregate Care (Assisted Living) Facility
624	Social Assistance	Government Office Building
6241	Individual and Family Services	Government Office Building
6242	Community Food and Housing, and Emergency and Other Relief Services	Government Office Building
6243	Vocational Rehabilitation Services	Government Office Building

Table 4 Lookup Table: NAICS Code to URBEMIS Code		
6244	Child Day Care Services	General Office Building
71-72	Leisure and Hospitality	Place of Worship1
71	Arts, Entertainment, and Recreation	Place of Worship1
711	Performing Arts, Spectator Sports, and Related Industries	Place of Worship1
7111	Performing Arts Companies	Place of Worship1
7112	Spectator Sports	Place of Worship1
7199	Residual-PromotersofPerformingArts,Sports,andSimilarEvents(includes7113-7114)	Place of Worship1
7115	Independent Artists, Writers, and Performers	Place of Worship1
712	Museums, Historical Sites, and Similar Institutions	Place of Worship1
713	Amusement, Gambling, and Recreation Industries	Regional Shopping Center
7131	Amusement Parks and Arcades	Regional Shopping Center
7132	Gambling Industries	Regional Shopping Center
7139	Other Amusement and Recreation Industries	Regional Shopping Center
72	Accommodation and Food Services	Hotel
721	Accommodation	Hotel
722	Food Services and Drinking Places	High Turnover (sit-down) Restaurant
7221	Full-Service Restaurants	Quality Restaurant
7222	Limited-Service Eating Places	High Turnover (sit-down) Restaurant
7223	Special Food Services	Fast Food Restaurant without Drive Thru
7224	Drinking Places (Alcoholic Beverages)	High Turnover (sit-down) Restaurant
81	Other Services (excludes 814 - Private Household Workers)	General Light Industry
811	Repair and Maintenance	General Light Industry
8111	Automotive Repair and Maintenance	General Light Industry
8112	Electronic and Precision Equipment Repair and Maintenance	General Light Industry
8113	Commercial and Industrial Machinery and Equipment Repairand Maintenance	General Light Industry
8114	Personal and Household Goods Repair and Maintenance	General Light Industry
812	Personal and Laundry Services	General Light Industry
8121	Personal Care Services	General Light Industry
8122	Death Care Services	Medical Office Building
8123	Dry cleaning and Laundry Services	General Light Industry
8129	Other Personal Services	General Light Industry
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	General Office Building
8131	Religious Organizations	Place of Worship
8132	Grantmaking and Giving Services	General Office Building
8133	Social Advocacy Organizations	General Office Building
8134	Civic and Social Organizations	General Office Building
8139	Business, Professional, Labor, Political, and Similar Organizations	General Office Building
9999	Government	Government Office Building
9999	Federal Government	Government Office Building
9999	State and Local Government	Government Office Building
9999	State Government	Government Office Building
9999	State Government Education	Government Office Building
9999	Other State Government	Government Office Building
9999	Local Government	Government Office Building

Table 4 Lookup Table: NAICS Code to URBEMIS Code		
9999	Local Government Education	Government Office Building
9999	Other Local Government	Government Office Building
Note: 1 - Urbemis Trip Rate for "Place of Worship" most closely represents the trip for recreational entertainment areas		

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 passed through the CEQA process from 2000-2010 for the County of San Diego, the development size (dwelling units, square footage, rooms, etc.) annual projections were translated into units and project size distributions for each URBEMIS land use category. These projections were used to develop a "projected development inventory" for new development in San Diego County's jurisdiction between 2012 and 2020.

The County researched available documentation, contacted Air District representatives, and assembled information on assembling a list of historic land use projects with different greenhouse gas (GHG) emissions profiles. This additional work helped to determine the appropriate methods to compile a CEQA database that can be used to develop CEQA thresholds for GHG emissions. For other efforts involving thresholds development, Air Districts have considered different strategies, including compiling data kept by the County Clerk's office. The preferred method of assembling a CEQA database involves a search of records kept by the Office of Planning and Research (OPR) State Clearinghouse (SCH). The SCH was contacted to retrieve electronic files for San Diego County projects. The data were sorted and scrubbed to eliminate duplicative information, non land use projects, and projects without sufficient information to use in the frequency distribution analysis. Using a dataset of CEQA projects supplied by SCH, each application was coded for the URBEMIS land use category and size of development being permitted. Using these 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 emissions modeling exercise described below.

2020 Emissions and Mitigation Modeling

Since URBEMIS does not contain emission assumptions specific to San Diego County, assumptions from the South Coast Air Quality Management District were used as a proxy. The County used the year 2020 to model all operational and area source emissions, and assumed an approximate 15 month construction period occurring over the years 2020 and 2021. This was a conservative estimate because year 2020 will have lower emission rates for vehicle and off-road construction equipment, which are the primary sources of GHG emissions for construction and operations. The reasoning for this assumption is that URBEMIS accounts for changes in emissions technology and fleet turnover. 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 and water demands. Estimates of these emissions were derived using methods described below.

URBEMIS2007 Version 9.2.4 was used to quantify mobile- and area-source GHG emissions associated with land use projects. URBEMIS2007 was primarily developed to evaluate regional air quality criteria air pollutants. However, when analyzing GHG emissions, long-term operational

activities associated with land use projects also generate indirect GHG emissions. Indirect GHG emissions may not occur at the point of consumption, but would occur at an off-site location (e.g., wastewater treatment plant, power plant, landfill). Because of the global nature of GHG emissions, it is equally important to capture and account for indirect GHG emissions. For this analysis, supplemental GHG emissions were quantified and added to the URBEMIS mobile- and area-source GHG emissions to represent the total operational GHG emissions that would be analyzed to develop GHG thresholds. Supplemental GHG emissions include those occurring from electricity consumption, potable water consumption, wastewater generation, and solid waste disposal. The following section describes the methods used to quantify these supplemental GHG emissions.

Electricity

Electricity consumption and associated GHG emissions were added to the total operational emissions using information from the California Energy Commission (CEC) and the Local Government Operations Protocol Version 1.1. Electricity intensities for the various land uses in units of kilowatt-hours per dwelling unit or kilowatt-hours per thousand square feet were obtained from CEC's California Statewide Residential Appliance Saturation Study (CEC 2004) and California Commercial End-Use Survey (CEC 2006a), respectively.[21,22] Electricity consumption by residential and commercial land uses were then used to calculate GHG emissions using electricity production emission factors specific to San Diego Gas and Electric from the Local Government Operations Protocol.[23] Because the Local Government Operations Protocol only provides a CO_2 emission factor for San Diego Gas and Electric, California statewide factors for methane (CH_4) and nitrous oxide (N_2O) from USEPA's eGRID were used to quantify the carbon dioxide equivalent (CO_2e) emissions.

Potable Water

The electricity consumption and GHG emissions associated with supplying potable water to residential and commercial land uses were quantified using residential and commercial water consumption rates and water electricity intensity factors from CEC. For residential water consumption, statewide per capita water consumption per year was obtained from the Pacific Institute's Waste Not, Want Not study.[24] For commercial water consumption, statewide per employee water consumption (gallons per employee per year) for the various land uses were also obtained from the Waste Not, Want Not study. The commercial land uses in each size category were converted to number of employees using employee density factors (i.e., square feet per employee) from the Southern California Association of Governments (SCAG).[25] SCAG has developed employment density factors for various commercial and industrial land uses. The electricity consumption associated with residential and commercial water consumption was quantified using water supply electricity intensity factors developed by CEC.[26] CEC developed water supply intensity factors for Southern and Northern California that incorporates the supply, conveyance, treatment, distribution, and wastewater treatment. For this analysis, the Southern

[21] CEC. 2004 (June). California Statewide Residential Appliance Saturation Study, Vol 2 Study Results Final Report [KEMA-XENERGY, Itron, RoperASW]. CEC-300-00-004. Tables 2-3, 2-19.
[22] CEC. 2006a (March). California Commercial End-Use Survery [prepared by Itron, Inc.]. CEC-400-2006-005. Table 11-1.
[23] ARB. 2010 (May). Local Government Operations Protocol Version 1.1. Available: <http://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf>.
[24] Gleick, Peter. 2003 Waste Not, Want Not: The Potential for Urban Water Conservation in California Appendix A. Pacific Institute. November 2003.
[25] Southern California Association of Governments (SCAG). 2001. Employee Density Study. Table IIa and IIb.
[26] CEC. 2006b (December). Refining Estimates of Water-Related Energy Use in California [prepared by Navigant Consulting, Inc.] CEC-500-2006-118 Table C-5.

California factor was used. The GHG emissions associated with electricity consumption to supply potable water were quantified using the San Diego Gas and Electric factors described above.

Wastewater

The treatment of wastewater generates GHG emissions (i.e., methane and nitrous oxide) through the wastewater processing, as well as the energy required to treat water. As described above, the energy involved in wastewater treatment has been accounted for in the potable water emissions. The process emissions associated with wastewater processes were quantified using methodologies from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.[27] IPCC has developed methods and standard factors to quantify methane emissions during wastewater treatment and nitrous oxide emissions associated with effluent discharge. Standard factors for the US provided by IPCC were used to quantify emissions.

Solid Waste

Solid waste GHG emissions were quantified using statewide solid waste disposal rates and quantification methods from the Local Government Operations Protocol Version 1.1. Solid waste disposal rates per employee and per capita were obtained from the California Integrated Waste Management Board's (now known as CalRecycle) California 1999 Statewide Waste Characterization Study.[28] The study provided waste disposal rates in units of tons per employee per year for various commercial and industrial land uses. Similar to potable water, the SCAG Employment Density study was used to determine the number of employees for each land use and size category. Total waste generated by residential and commercial land uses was then inputted into the Local Government Operations Protocol equation to calculate solid waste GHG emissions.[29] Waste categorization (statewide) was also obtained from the Local Government Operations Protocol.

Feasible Mitigation

The County derived estimates of feasible mitigation to use with the modeled operational emissions, using a sensitivity analysis to determine the level of the bright line necessary to trigger feasible mitigation at a level necessary to achieve the "land use gap." Draft Climate Action Plan measures that could apply to development projects were used as a proxy for feasible mitigation measures. The bright line is set at a level that assumes that new land use development would achieve twice its fair share of the land use gap through mitigation.

Construction Emissions

Construction emissions for new development projects between present and 2020 were also modeled. Air districts typically recommend that construction of land use development projects should be estimated using the most recent version of URBEMIS. URBEMIS allows users to model construction criteria air pollutants and precursor emissions from demolition, site grading, asphalt paving, building construction, and architectural coating activities (SMAQMD 2009). The default values in URBEMIS tend to provide a conservative estimate of emissions. In other words, use of

[27] IPCC. 2006. 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 5, Chapter 6. Available: <http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/5_Volume5/V5_6_Ch6_Wastewater.pdf>

[28] CIWMB. 1999 (December). Statewide Waste Characterization Study. Available: <http://www.calrecycle.ca.gov/publications/LocalAsst/34000009.pdf>.

[29] ARB. 2010 (May). Local Government Operations Protocol Version 1.1. Available: <http://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf>.

defaults normally would overestimate actual emissions.[30] The bright line operational threshold is set at a level such that feasible mitigation for projects above the bright line would make up the "land use gap" and construction emissions associated with all land use development projects.

Construction emissions were included as a part of the County's work on development of significance thresholds. For use of the efficiency threshold, total construction emissions should be quantified and amortized over the life of the project to estimate annual emissions. This average annual construction emissions rate should be used with annual operational emissions to assess the project, when using the efficiency threshold. The operational life of buildings will vary by building type and purpose. State Executive Order D-16-00 suggests that useful building lifetime is more than 25 years. A report commissioned for the Sustainable Building Task Force, a group of over 40 California state government agencies, estimates the life of a building to conservatively be 20 years. Average building life could change over time, with changes in building materials and construction techniques.

Construction emissions are built into the bright line threshold. As noted above, the bright line has been set at a level so that feasible mitigation will be required at a level that would meet or exceed the regional "land use gap" and construction emissions associated with regional land use projects between present and 2020.

Screening Criteria

The screening thresholds were developed based on conservative GHG emissions estimate for mobile sources; area sources including fireplace and landscaping equipment; and indirect emissions related to electricity use, water and wastewater use, and solid waste generation and disposal. Mobile and area source emissions were estimated using default assumptions in the Urban Land Use Emissions Model (URBEMIS). However, trip length data specific to San Diego County were used to develop for mobile source emissions. The County has estimated average trip lengths for different land uses in different locations. The longest applicable average trip length was used to develop these screening criteria. Electricity use, water and wastewater use, and solid waste generation and disposal were estimated using methodology consistent with the Local Government Operations Protocol.

Construction Screening Criteria

In addition to the project size screening levels, construction screening levels have been developed for use in assessing cumulative significance. Construction screening levels were developed for projects that ONLY have construction-related GHG emissions and would not have associated operational emissions. Proposed projects that would affect an area (e.g., in acreage or mileage) that is equal or smaller to screening criteria would have a less than cumulatively considerable contribution. If a project has significant earthmoving activities (greater than 20 acre/day), involves substantial demolition, or has additional haul trips associated with the construction activities, the screening criteria would not apply. Construction screening criteria include:

- Grading (includes only site grading and no other aspects of construction or site preparation): 1,285 acres; or
- Repaving: 6.0 miles and 241 acres; or
- New Roadway: 3.5 miles and 107 acres; or

[30] Sacramento Metropolitan Air Quality Management District. 2009 (December). Guide to Air Quality Assessment in Sacramento County. Page 3-5.

- Pipeline: 13.5 miles and 81 acres

Construction screening thresholds were developed using default assumptions URBEMIS and the Roadway Construction Emissions Model, which is maintained by the Sacramento Metropolitan Air Quality Management District.

Grading projects were estimated using the Fine Site Grading Phase of URBEMIS. Emissions were estimated assuming a project timeframe of 12 months and converted to metric tons by multiplying by 0.91 to account for non-CO_2 emissions. Emissions were estimated for a variety of project sizes to determine a per-acre emission rate based on default equipment assumptions.

Construction screening levels for repaving, new roadway, and pipeline projects were estimated using the Roadway Construction Emissions Model, which is a spreadsheet-based model able to use basic project information (e.g., total construction months, project type, total project area) to estimate a construction schedule and quantify GHG emissions from heavy-duty construction equipment, haul trucks, and worker commute trips associated with linear construction projects. The model includes construction phases for (1) Grubbing/Land Clearing, (2) Grading/Excavation, (3) Drainage/Utilities/Sub-grade, and (4) Paving. New roadway and pipeline projects include all construction phases. Repaving projects only include emissions from the Paving phase. Default equipment assumptions were used for the analysis.

Emissions developed by the Roadway Construction Emissions Model are sensitive to both the length of the project and the disturbed area. Project examples from published environmental impact reports were used to develop a range of project sizes for repaving, new roadway, and pipeline projects. Emissions were estimated using the range of project sizes and assuming a project timeframe of 12 months to determine the appropriate screening levels for linear construction projects. If a proposed project is less than both the length and the disturbed acreage listed, the project would have a less than cumulatively considerable contribution.

Mitigation and Design Considerations

Many local, regional, and state agencies have produced lists of feasible mitigation strategies that can be used to reduce GHG emissions, including, but not limited to:

Governor's Office of Planning and Research. 2008. Technical Advisory. CEQA AND CLIMATE CHANGE: Addressing Climate Change through California Environmental Quality Act (CEQA) Review. See Attachment 3, "Examples of GHG Reduction Measures."

California Air Pollution Control Officer's Association (CAPCOA). 2008 (January). CEQA & Climate Change. Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. See page 79, "Mitigation Strategies for GHG."

California Air Pollution Control Officer's Association (CAPCOA). 2010 (August). Quantifying Greenhouse Gas Mitigation Measures. A Resource for Local Government to Assess Emission Reduction from Greenhouse Gas Mitigation Measures.

Attorney General of the State of California. 2008 (December). The California Environmental Quality Act. Addressing Global Warming Impacts at the Local Agency Level.

Existing Regulations and Policy

Federal, state, regional, local, and even international governmental efforts have addressed greenhouse gas emissions and climate change. The following is a brief summary of these efforts.

National and International Efforts

International and federal legislation have been enacted to address climate change issues. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC) to assess the scientific, technical, and socioeconomic information needed to understand the scientific basis for human-induced climate change, potential impacts, and options for adaptation and mitigation. IPCC reports have provided the scientific consensus on measurable changes to the climate; have established that these changes are caused by human activity; and have identified that have significant adverse impacts on the environment, the economy, and human health and welfare are unavoidable. The IPCC's Fifth Assessment Report is now underway, to be completed in 2013 or 2014.[31]

In October 1993, President Clinton introduced the Climate Change Action Plan, which had a goal of returning GHG emissions to 1990 levels by the year 2000. This was to be accomplished through 50 initiatives that relied on innovative voluntary partnerships between the private sector and government aimed at producing cost-effective reductions in GHG emissions. This Plan includes measures to reduce all significant greenhouse gases in all sectors of the economy that emit greenhouse gases, with the intent to stimulate investments in technologies that can generate additional economic activity.[32]

In 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, governments agreed to gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

The Supreme Court of the United States ruled on April 2, 2007 that CO_2 is an air pollutant as defined under the CAA, and that the Environmental Protection Agency (EPA) has the authority to regulate GHG emissions. In 2009, EPA published their Endangerment Finding and Cause or Contribute Finding for GHGs under the CCA in the Federal Register. The Endangerment Finding is based on Section 202(a) of the Clean Air Act, which states that the Administrator (of EPA) should regulate and develop standards for "emission[s] of air pollution from any class of classes of new motor vehicles or new motor vehicle engines, which in [its] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." The Cause or Contribute Finding establishes that GHG emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.[33] These Findings do not directly create new regulations for automobile manufacturers or other industrial users. However, EPA is required to make these Findings prior to adopting new regulations, such as emission standards for light-duty vehicles.

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[31] Intergovernmental Panel on Climate Change. Available: http://www.ipcc.ch/. Accessed: July 13, 2011.

[32] President William J. Clinton and Vice President Albert Gore, Jr. 1993 (October). The Climate Change Action Plan. Available: http://www.gcrio.org/USCCAP/toc.html.

[33] United States Environmental Protection Agency (U.S. EPA). 2011. Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act. Available: http://www.epa.gov/climatechange/endangerment.html. Accessed: July 21, 2011.

State Regulations and Standards

Assembly Bill 32, California Global Warming Solutions Act of 2006[34]

The California Global Warming Solutions Act of 2006 (AB 32) recognizes that global climate change poses a serious threat to the economy, public health, and natural resources of California and that there are substantial amounts of GHG emissions associated with activities in California. AB 32 enacted Sections 38500–38599 of the California Health and Safety Code. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires reduction of statewide GHG emissions 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 arrives at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves the reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

In 2008, ARB adopted the Climate Change Scoping Plan, which identifies the main strategies California will implement to achieve reduction of approximately 169 million metric tons (MMT) of CO_2e. The Scoping Plan includes ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing improved emissions standards for light-duty vehicles, the Low-Carbon Fuel Standard, energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems, and a renewable portfolio standard for electricity production. The Scoping Plan states that land use planning and urban growth decisions will play an important role in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions.

Senate Bill 97

SB 97 (Chapter 185, Statutes of 2007; Public Resources Code, Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the Governor's 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) to address GHG emissions, consistent with Legislature's directive in Public Resources Code section 21083.05 (enacted as part of SB97 (Chapter 185, Statutes 2007)). These changes took effect in 2010.

Senate Bill 375

SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and fair-share housing allocations under state housing law. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) to address GHG reduction targets in the context of that MPO's Regional Transportation Plan (RTP).[35] City or County land use policies (including General Plans) are not

[34] Health and Safety Code Section 38500 *et seq*.

[35] This bill also extends the minimum time period for the Regional Housing Needs Allocation (RNHA) cycle to create a closer match with the timelines for revising RTPs (for the Metropolitan Planning Organizations affected by the bill). The RHNA is used to guide the amount of housing to be accommodated for the full range of household incomes in mandatory local housing plans (Housing Elements).

required to be consistent with the RTP (and associated SCS or APS).[36] The ARB targets for the San Diego Association of Governments (SANDAG) region call for a 7% reduction in GHG CO_2 emissions per capita from automobiles and light duty trucks compared to 2005 levels by 2020, and a 13% reduction by 2035.[37]

Executive Order #S-3-05

Executive Order S-3-05 proclaims that California is vulnerable to the impacts of climate change, including increased temperatures that could reduce the Sierra Nevada'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 targets for emissions reductions to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050.

Local Policy

Legislation and executive orders related to climate change in California have established a statewide context and process for evaluating GHG emissions. Different GHG emission sectors would experience varying degrees of state regulation and would be reduced overall on a statewide level. Legislation already in effect will achieve statewide reductions of GHG emissions associated with electricity production, industry, vehicle miles traveled (VMT), and motor vehicle emission rates. Certain GHG emission sectors regulated by statewide or federal measures are beyond the control of local government (e.g., vehicle emissions standards, renewable energy portfolio standards). However, other sources of GHG emissions are strongly influenced by local policy.

Local land use entitlement authority guides development patterns, community design, transportation facilities planning, and other factors known to influence VMT, which, in turn, influences GHG emissions associated with the transportation sector. Although local government does not have control over vehicle emissions technology or fuel economy standards, cities and counties can promote development patterns that expand mobility options for residents and hold down VMT. Similarly, while energy facility permitting and renewable energy requirements are outside of local government's control, cities and counties can participate in energy efficiency incentive programs, guide solar orientation of buildings, and implement other measures related to improving energy efficiency (and therefore reduce GHG emissions). Local lead agencies will play a role in achieving statewide emission reduction goals through managing land use change and transportation planning to reduce VMT, providing more GHG efficient services (e.g., recycling service, waste management, and wastewater treatment), providing public education and incentives (e.g., energy and water conservation), along with other strategies, many of which are already being implemented by agencies in San Diego County. A brief set of examples follows.

The City of San Marcos comprehensive General Plan update is incorporating state-of the-art, dynamic land use, transportation, and emissions modeling to develop long-term strategies that ensure a vibrant environment for future generations, while also addressing greenhouse gas emissions reduction and environmental sustainability.[38]

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[36] Provisions of CEQA directed under this legislation create streamlining for certain projects that are consistent with an approved SCS or APS. Residential or mixed-use projects that are consistent with the SCS/APS and incorporate mitigation measures from relevant prior CEQA document/s are not required to reference, describe, or discuss growth-inducing impacts or impacts of cars and light-duty truck trips on climate change or on the regional transportation network. "Transit priority projects," as defined in this legislation and future RTPs, are exempt from CEQA review.

[37] San Diego Association of Governments (SANDAG). Draft 2050 Regional Transportation Plan. Available: http://www.sandag.org/index.asp?projectid=349&fuseaction=projects.detail#RTP. Accessed July 13, 2011.

[38] City of San Marcos. General Plan Update – News. Available: http://www.ourcityourfuture.com/documents/newsletter_1.pdf. Accessed May 7, 2012.

The City of San Diego's General Plan (City of Villages) places great emphasis on enhancing its communities and neighborhoods by encouraging growth in mixed-use, pedestrian-friendly activity centers that are served by transit. Among other social, economic, and environmental benefits, this planning framework can help minimize GHG emissions.[39]

The City of Chula Vista's General Plan – Vision 2020 – is built on a vision that includes neighborhood design that promotes walking, a variety of local housing and job opportunities, expanded transit accessibility, and other complementary framework policy emphases that help to minimize GHG emissions.[40]

The City of El Cajon revised its Downtown Specific Plan, in part, to encourage development in the Transit Center and the Main Street/Civic Center areas.[41] The City of La Mesa endorsed the U.S. Mayor's Climate Protection Agreement and directed staff to report back on the City's actions towards climate protection, including preparation of a GHG inventory.[42] The City of Encinitas has adopted a Climate Action Plan (CAP) that outlines a series of measures to reduce GHG emissions.[43] The City of Solana Beach participated in SANDAG's Sustainable Region's Program, which is intended to assist with energy efficiency projects and programs, including building retrofits, new building design, and policy development.[44] The policy initiatives outlined above are just a sampling of the recent activities by local governments within San Diego County related to GHG emissions.

The County's updated General Plan incorporates smart growth and land planning principles intended to reduce VMT, and thus result in a reduction of GHGs. This will be accomplished by locating future development within and near existing infrastructure. The General Plan directs preparation of a climate action plan with reduction targets, development of regulations to encourage energy efficient building design and construction, and development of regulations that encourage energy recovery and renewable energy facilities, among other actions.[45]

Currently, the County has a number of assistance programs that promote ways to reduce air and water pollution, including a Green Building Program designed to educate builders and provide incentives for the incorporation of green building standards.[46] Additionally, there are outreach programs that focus on the importance of reducing air quality impacts (e.g. lawn mower trade-in program) and reducing solid waste by recycling (subsidized compost bin programs and transfer station events).

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[39] City of San Diego. City of San Diego General Plan: City of Villages. Available: http://www.sandiego.gov/planning/genplan/pdf/generalplan/fullversion.pdf. Accessed May 7, 2012.
[40] City of Chula Vista. Chula Vista Vision 2020. Available: http://www.chulavistaca.gov/City_Services/Development_Services/Planning_Building/General_Plan/documents.asp. Accessed May 7, 2012.
[41] City of El Cajon. Downtown El Cajon Specific Plan 182. Available: http://www.ci.el-cajon.ca.us/dept/comm/Forms/SP%20182.pdf. Accessed May 7, 2012.
[42] City of La Mesa. Update on La Mesa's Climate Protection Actions. Available: http://www.cityoflamesa.com/DocumentView.aspx?DID=1734. Accessed May 7, 2012.
[43] City of Encinitas. Climate Action Plan. Available: http://www.ci.encinitas.ca.us/index.aspx?page=285. Accessed May 7, 2012.
[44] City of Solana Beach. Sustainable Regions Program – News. Available: http://www.ci.solana-beach.ca.us/csite/cms/321.htm. Accessed May 7, 2012.
[45] San Diego County. General Plan Update – News. Available: http://www.sdcounty.ca.gov/dplu/gpupdate/. Accessed July 13, 2011.
[46] San Diego County. The Green Building Program. Available: http://www.sdcounty.ca.gov/dplu/greenbuildings.html. Accessed May 7, 2012.

EXHIBIT 3

Appendix D

Sustainable Communities Strategy Background Documentation

Appendix Contents

Sustainable Communities Strategy (SCS) Documentation

Appendix D provides the documentation to support conclusions identified in the Sustainable Communities Strategy (Chapter 3) of the 2050 Regional Transportation Plan (RTP or the Plan). The SCS is a new element of the RTP, the goal of which is to show how integrated land use and transportation planning will help the region reduce its greenhouse gas (GHG) emissions from light trucks and automobiles and meet the targets established by the California Air Resources Board (CARB).

A reference tool included in Appendix D is a matrix that demonstrates where the requirements of the SCS contained in SB 375 can be found in the SCS (Chapter 3). The matrix specifies the page number of the SCS and other sections of the 2050 RTP where each of the requirements of SB 375 can be found.

Other documents in this Appendix include the SANDAG Board report regarding the alternative scenarios and the RHNA allocation report. See Appendix B and Technical Appendix 15 for additional travel demand model information.

The following documents are included in Appendix D:

1. Figure D.1 – 2020 Planned Land Use North County Subregional Map
2. Figure D.2 – 2020 Planned Land Use North City Subregional Map
3. Figure D.3 – 2020 Planned Land Use Mid-City and East County Subregional Map
4. Figure D.4 – 2020 Planned Land Use South County Subregional Map
5. Figure D.5 – 2035 Planned Land Use North County Subregional Map
6. Figure D.6 – 2035 Planned Land Use North City Subregional Map
7. Figure D.7 – 2035 Planned Land Use Mid-City and East County Subregional Map
8. Figure D.8 – 2035 Planned Land Use South County Subregional Map
9. Figure D. 9 – 2050 Transit Network and Higher Density Land Uses North County Subregional Area
10. Figure D.10 – 2050 Transit Network and Higher Density Land Uses North City Subregional Area
11. Figure D.11 – 2050 Transit Network and Higher Density Land Uses Mid-City and East County Subregional Area
12. Figure D.12 – 2050 Transit Network and Higher Density Land Uses South County Subregional Area
13. Sustainable Communities Strategy Content/Government Code Section Requirements Matrix
14. SANDAG Board of Directors Report - 2050 RTP Alternative Scenarios
15. SANDAG Methodology Memo to CARB
16. CARB Response to SANDAG Methodology Memo
17. CEQA Exemption Criteria
18. SANDAG Regional Housing Needs Determination from HCD
19. Draft RHNA for the 2013 – 2020 Housing Element Cycle – Report to SANDAG Board of Directors and RHNA Fact Sheet

Figure D.1

2020 Land Use for North County Subregional Area

October 2011

Figure D.2

2020 Land Use for North City Subregional Area

October 2011

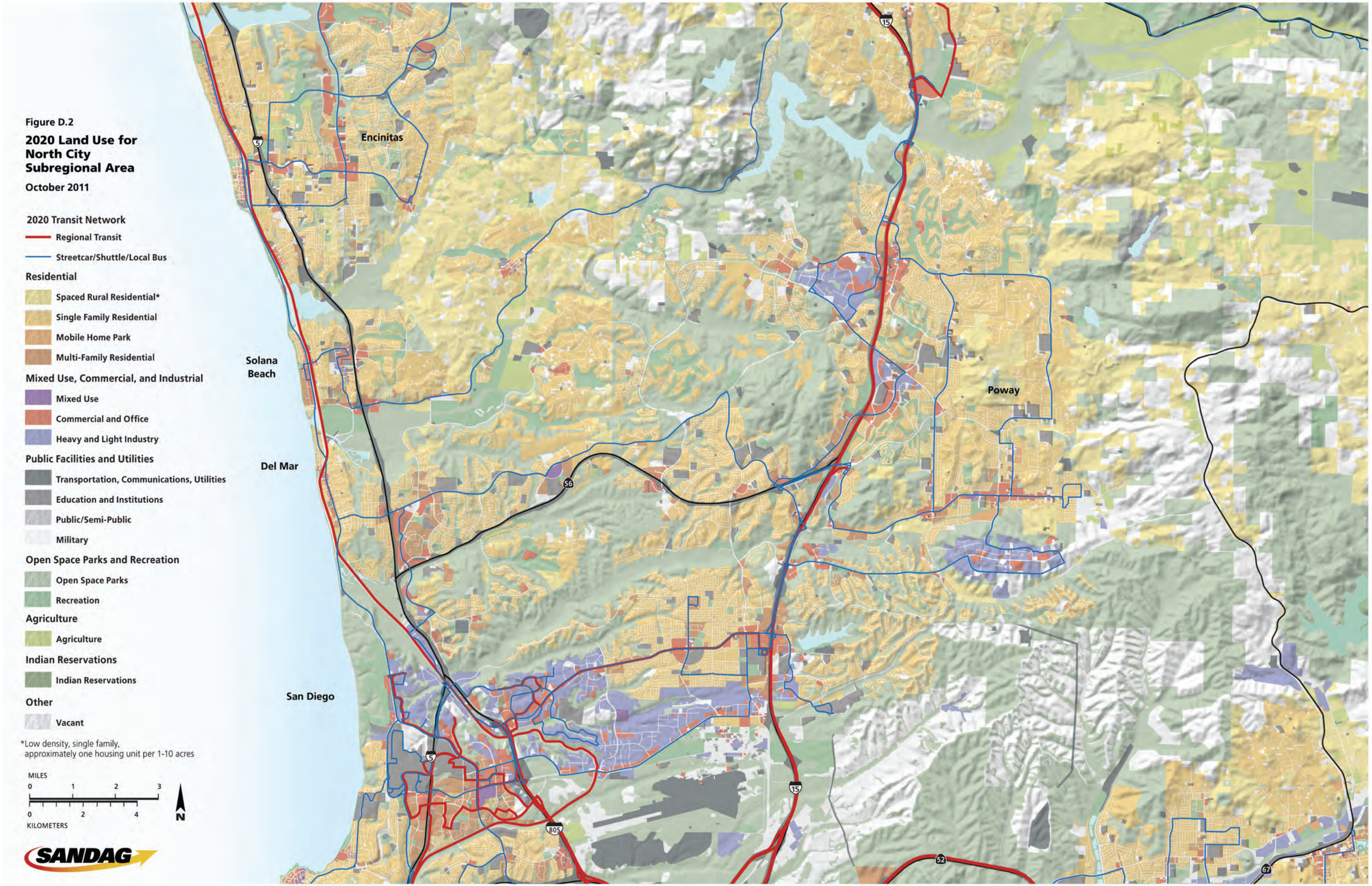

Figure D.3

2020 Land Use for Mid-City and East County Subregional Areas

October 2011

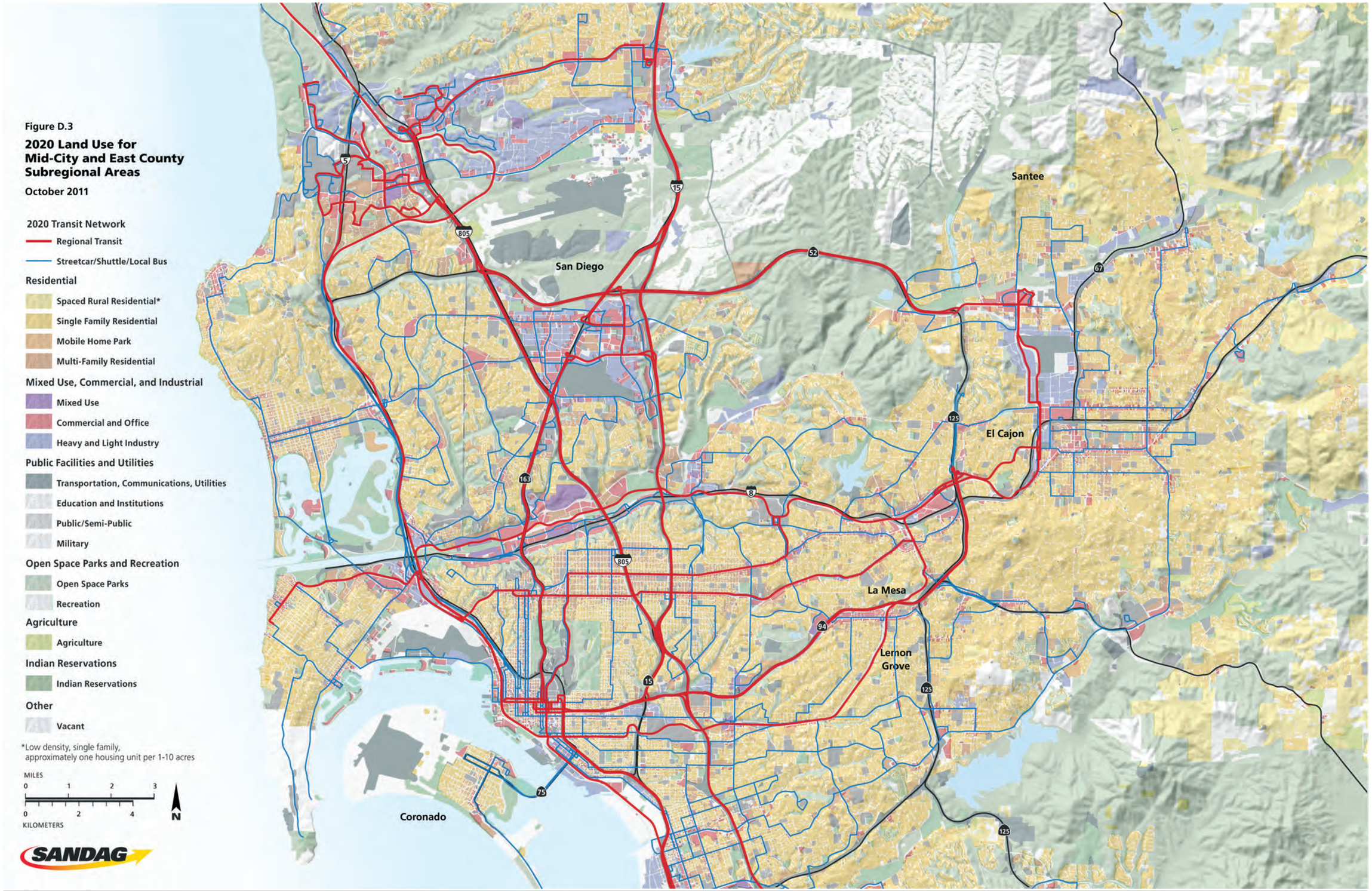

Figure D.5

2035 Land Use for North County Subregional Area

October 2011

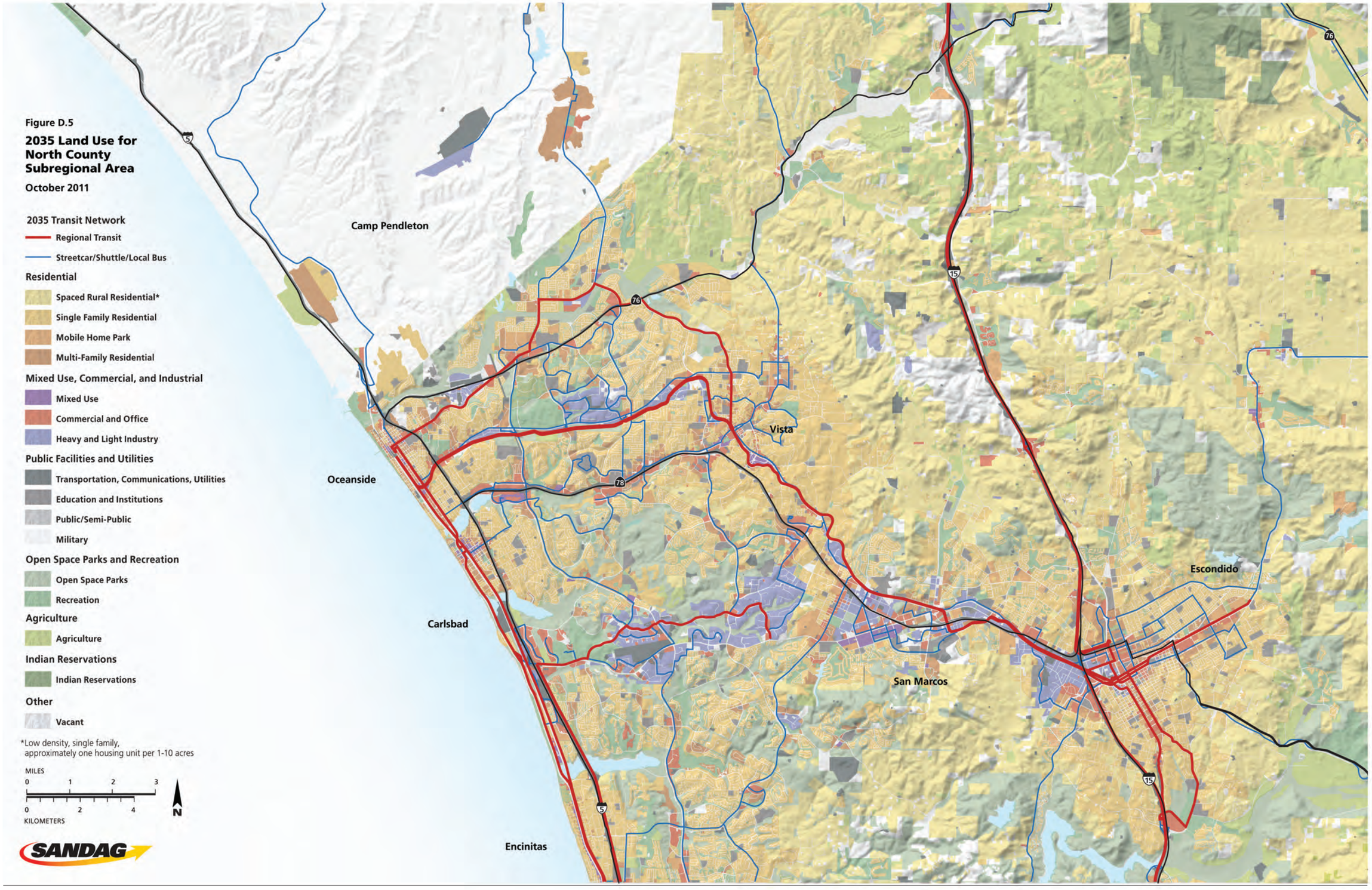

Figure D.7

2035 Land Use for Mid-City and East County Subregional Areas

October 2011

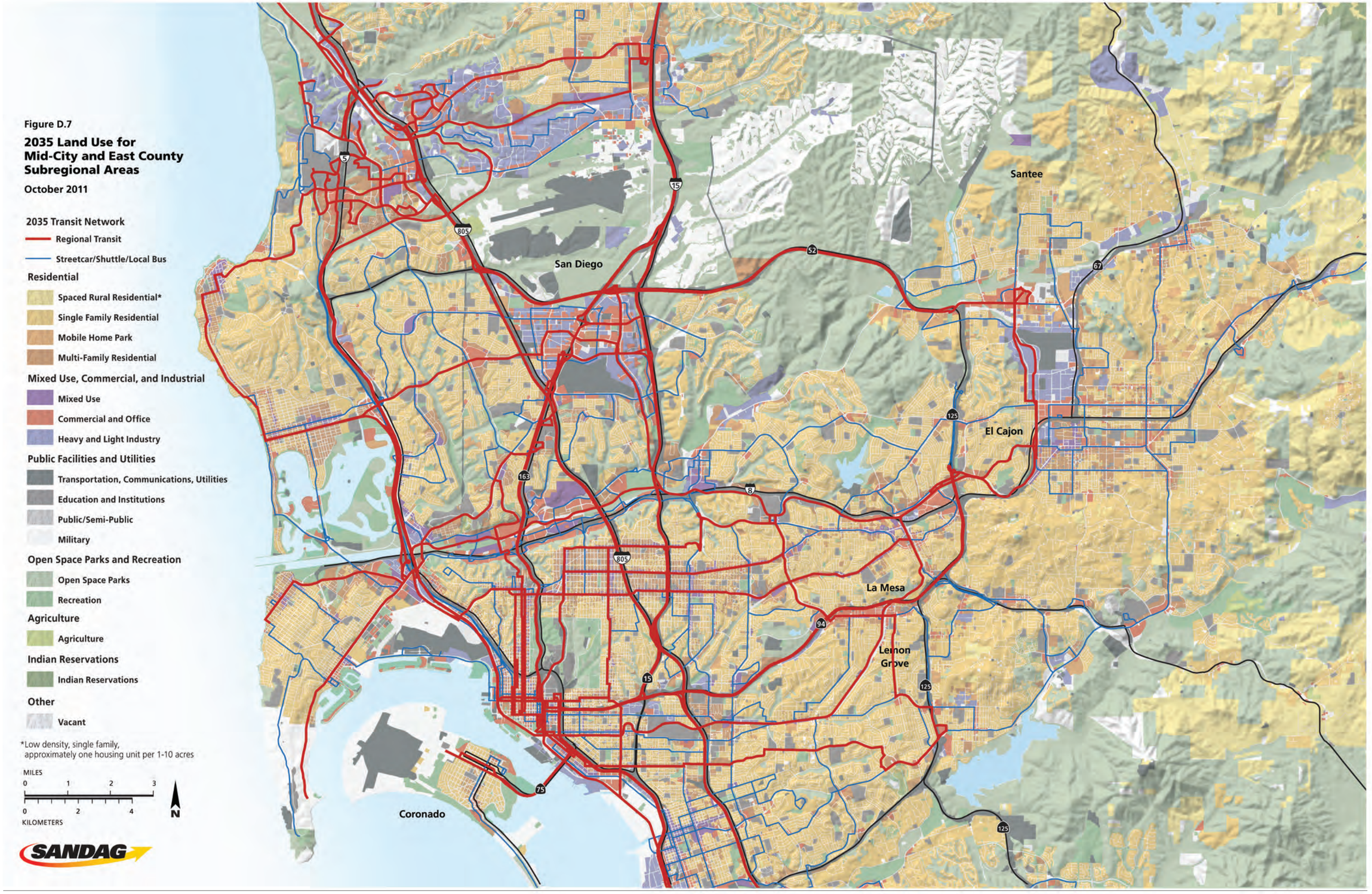

Figure D.8

2035 Land Use for South County Subregional Area

October 2011

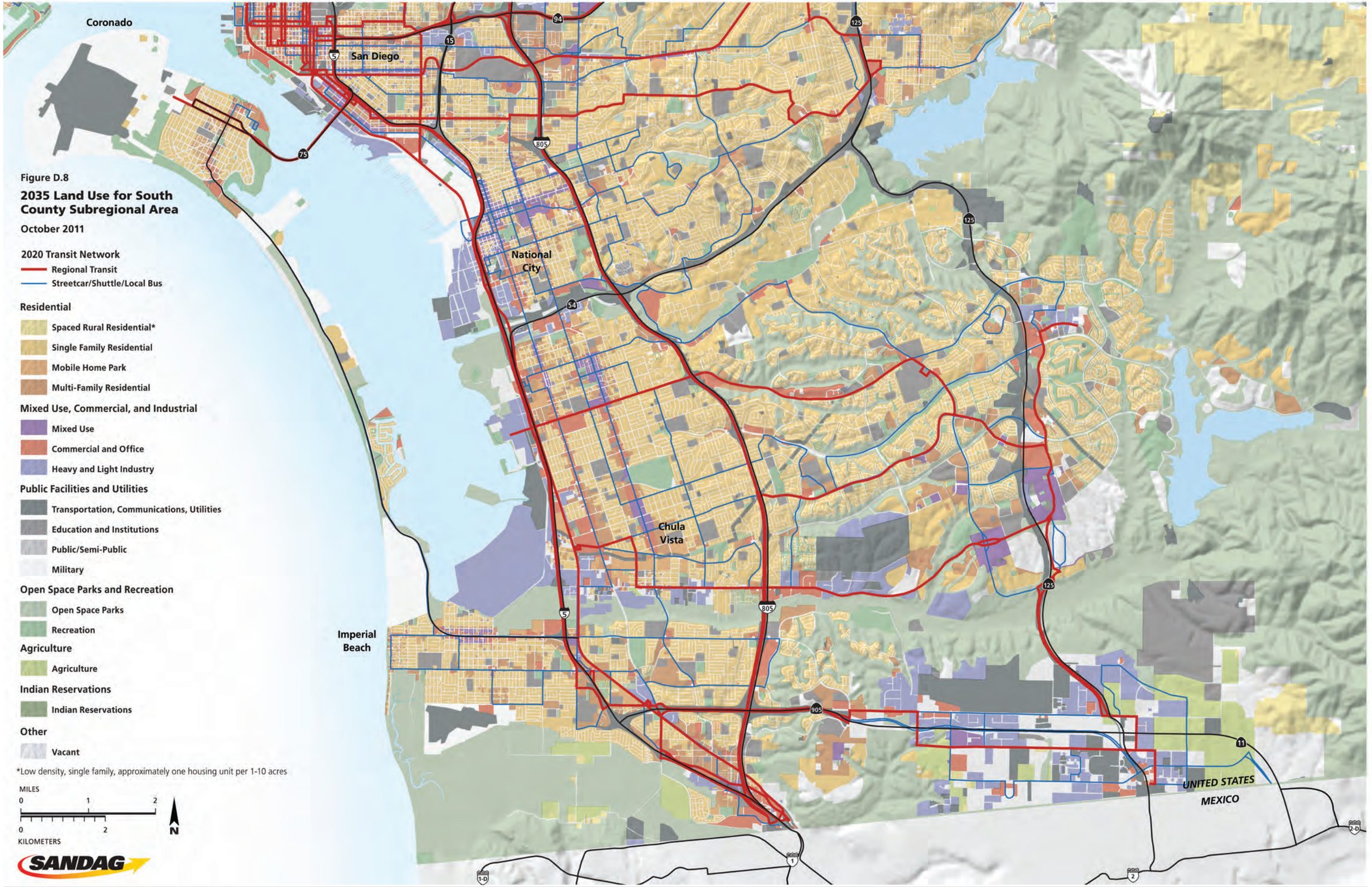

Figure D.9
2050 Transit Network and Higher Density Land Uses North County Subregional Area
October 2011

High Density Land Uses

- **Mixed Use**
  20 or more dwelling units per acre and 30 or more jobs per acre
- **Residential**
  10 or more dwelling units per acre
- **Residential**
  20 or more dwelling units per acre
- **Employment**
  30 or more jobs per acre

Transit Network

- **High Quality Transit Corridors**
  major transit stops and/or 15-minute peak period services
- **1/2-mile from center of transit line**

MILES
0 1 2 3
0 2 4
KILOMETERS

N

SANDAG

Camp Pendleton
Oceanside
Vista
Carlsbad
San Marcos
Escondido
Encinitas

Figure D.10

2050 Transit Network and Higher Density Land Uses North City Subregional Area

October 2011

High Density Land Uses

- **Mixed Use**
  20 or more dwelling units per acre and 30 or more jobs per acre
- **Residential**
  10 or more dwelling units per acre
- **Residential**
  20 or more dwelling units per acre
- **Employment**
  30 or more jobs per acre

Transit Network

- **High Quality Transit Corridors**
  major transit stops and/or 15-minute peak period services
- **1/2-mile from center of transit line**

MILES
0 1 2 3
0 2 4
KILOMETERS

N

SANDAG

Figure D.11

2050 Transit Network and Higher Density Land Uses Mid-City and East County Subregional Areas

October 2011

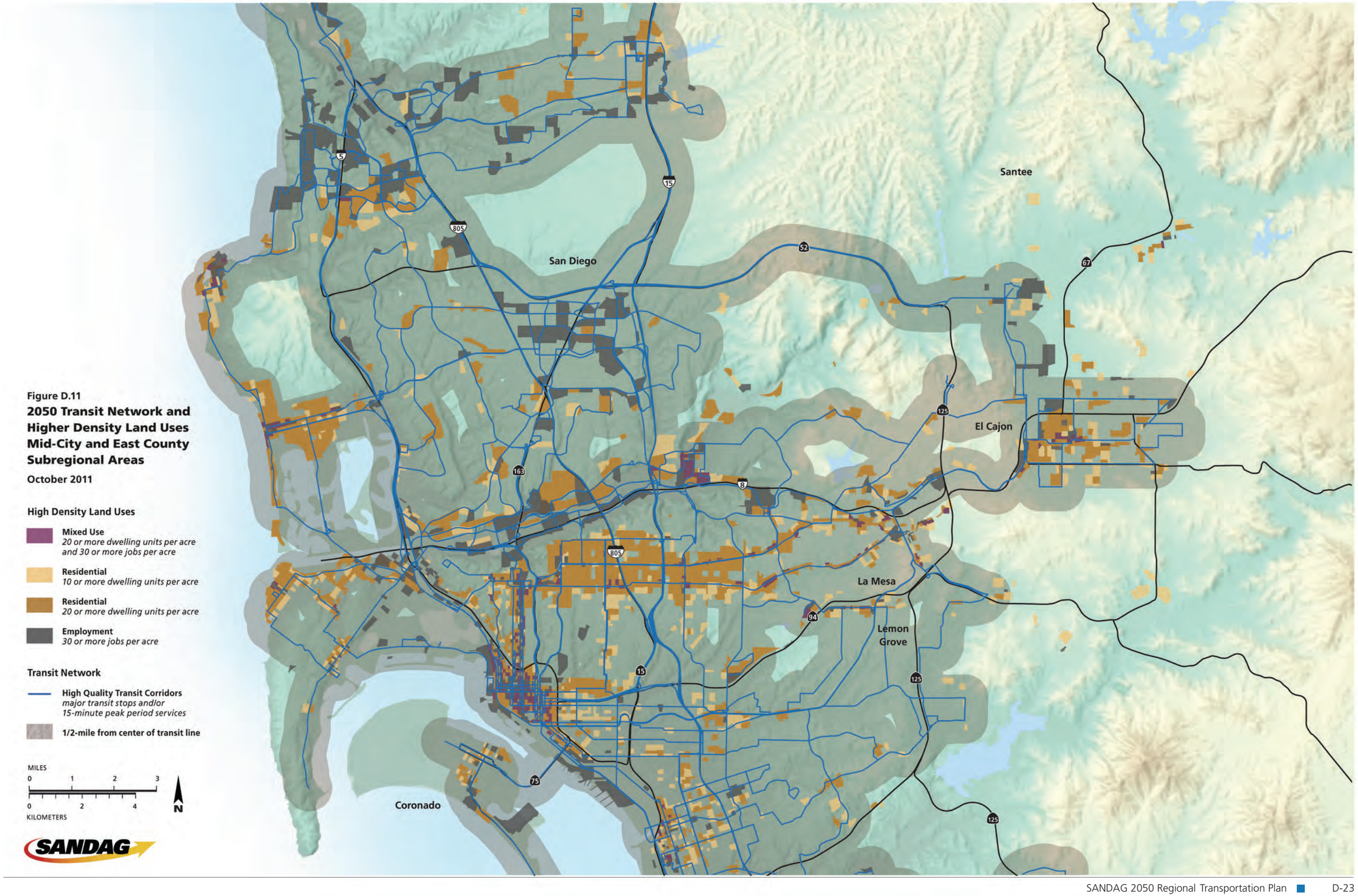

Figure D.12

2050 Transit Network and Higher Density Land Uses South County Subregional Area

October 2011

High Density Land Uses

- **Mixed Use**
  20 or more dwelling units per acre and 30 or more jobs per acre
- **Residential**
  10 or more dwelling units per acre
- **Residential**
  20 or more dwelling units per acre
- **Employment**
  30 or more jobs per acre

Transit Network

- **High Quality Transit Corridors**
  major transit stops and/or 15-minute peak period services
- **1/2-mile from center of transit line**

MILES
0 1 2 3
0 2 4
KILOMETERS

N

SANDAG

EXHIBIT 4

Local Ordinances
Exceeding the 2008 Building Energy Efficiency Standards

Public Resources Code Section 25402.1(h)2 and Section 10-106 of the Building Energy Efficiency Standards (Standards) establish a process which allows local adoption of energy standards that are more stringent than the statewide Standards. This process allows local governments to adopt and enforce energy standards before the statewide Standards effective date, require additional energy conservation measures, and/or set more stringent energy budgets. Local governments are required to apply to the Energy Commission for approval, documenting the supporting analysis for how the local government has determined that their proposed Standards will save more energy than the current statewide Standards and the basis of the local government's determination that the local standards are cost-effective. Once the Energy Commission staff has verified that the local standards will require buildings to use no more energy than the current statewide Standards and that the documentation requirements in Section 10-106 are met, the application is brought before the full Energy Commission for approval.

Please note that under the authority of Section 10-106, only those local ordinances that have been approved by the Energy Commission are legally enforceable.

The California Energy Commission commends the following local agencies that have adopted energy ordinances requiring more stringent energy requirements than those set by California's 2008 Building Energy Efficiency Standards Title 24, Part 6.

Local Ordinances	Date Approved	Documents (PDF files)
Anselmo, City of	December 1, 2010	Application to the Energy Commission Letter to the Energy Commission
Belmont, City of	July 13, 2011	Ordinance Adopting the Energy Efficiency Standards Climate Zone 3 Cost Effectiveness Report
Burlingame, City of	December 29, 2010	City of Burlingame Draft Green Building Ordinance Letter to the Energy Commission Climate Zone 3 Energy Cost Effictiveness Study
Chula Vista, City of	March 14, 2012	Local Ordinance Application: City of Chula Vista
	December 16, 2009	Chula Vista Application to Energy Commission Chula Vista Letter Regarding Title 24 Standards
Cotati, City of	July 13, 2011	Letter to the Commission Application to Energy Commission Ordinance of the City Council Adding Chapter 14.04.130, Local Energy Efficiency Standards Ordinance Amending 14.04.130 in its Entirety and Adopting by Reference Codes
Cupertino, City of	March 20, 2013	Letter to the Commission Application to Energy Commission
Daly City, City of	December 29, 2010	Green Building Ordinance Cost Effectiveness Study
Fremont, City of	June 15, 2011	Adoption Letter of Energy Efficiency Standards Application to Energy Commission

Glendale, City of	August 15, 2012	Application to Energy Commission
Goleta, City of	December 29, 2010	Application to the Energy Commission Letter to the Energy Commission
Hayward, City of	March 23, 2011	Letter to the Energy Commission City of Hayward Green Building Ordinance Attachment XI Green Building Amendment Resolution Attachment XII Amendment of Green Building Ordinance Attachment XII Green Building Checklist
Healdsburg, City of	September 7, 2011	Request for City Council Action City of Healdsburg Ordinance City of Healdsburg Green Building Ordinance Energy Cost-Effectiveness Study
Lancaster, City of	December 11, 2013	Submittal to the California Energy Commission (105 pages, 4.1 mb)
Los Altos, City of	May 5, 2010	Los Altos Application to Energy Commission Los Altos Letter to Energy Commission
Malibu, City of	August 10, 2011	Application to Energy Commission
Manhattan Beach, City of	May 4, 2011	City of Manhatan Beach Adoption of Energy Efficiency Standards City of Manhattan Beach Ordinance 2136, Construction and Energy Code Amendments Cost Effective Study for Locally Adopted Energy Efficiency Ordinances
Marin, County of	May 5, 2010	Marin County Letter to Energy Commission Marin County Application Marin County Amendments Letter
Menlo Park, City of	November 30, 2011	City of Menlo Park Green Building Ordinance and the Building Energy Efficiency Standards Climate Zone 3 Cost-Effectiveness Study
Morgan Hill, City of	January 27, 2010	Morgan Hill Application to Energy Commission Morgan Hill Letter to Energy Commission
Mountain View, City of	June 29, 2011	Application to Energy Commission
Napa, City of	May 18, 2011	City of Napa Adoption of Energy Efficiency Standards City of Napa Application to Energy Commission
Oakland, City of	September 22, 2010	Application to the Energy Commission
Palo Alto, City of	December 16, 2009	Palo Alto Application to Energy Commission
Pacifica, City of	May 18, 2011	City of Pacifica Adoption of Energy Efficiency Standards City of Pacifica Application to Energy Commission
Petaluma, City of	June 15, 2011	Adoption Letter of Energy Efficiency Standards City of Petaluma 2393 NCS Building Code Building Code Ordinance Part 1 Building Code Ordinance Part 2 Energy Cost-Effectiveness Report
Portola Valley, Town of	December 29, 2010	Green Building Ordinance Letter to the Energy Commission Additional Follow-Up Letter San Mateo County Green Building Ordinance Energy Cost-Effectiveness Study
Redwood, City of	May 5, 2010	Redwood City Letter to Energy Commission Redwood City Ordinance Energy Cost-Effectiveness Study
Richmond, City of	December 16, 2009	Richmond Application to Energy Commission Richmond Green Building Ordinance
San Carlos, City of	December 12, 2012	Adoption Letter to the Energy Commission Amendments and Modifications to the Ordinance San Carlos Green Building Ordinance Compliance Matrix
	December 29, 2010	Green Building Ordinance PG&E Climate Zone 3 Cost Effectiveness Study Letter to the Energy Commission
San Francisco, City and County of	December 29, 2010	

		Letter to the Energy Commission Green Building Ordinance 2010 San Francisco Building Code Amendments to the 2010 California Green Building Standards Code Standard Findings for San Francisco Building Standards Code Amendments Climate Zone 3 Energy Cost-Effectiveness Study
San Jose, City of	December 16, 2009	San Jose Application to Energy Commission Green Building Ordinance
San Luis Obispo, County of	October 10, 2012	Board of Supervisors Hearing Notice Board of Supervisors Minutes from August 21, 2012 Notice of General Rule Exemption Cover Letter from the Building Permit Department Energy Cost-Effectiveness Study - Zone 4 Energy Cost-Effectiveness Study - Zone 5 Green Building Ordinance for Adoption Findings and Resolution Clarification Letter
San Mateo, City of	July 13, 2011	Letter to the Commission Resolution 155(2010) Adopting Energy Efficiency Standards Ordinance for Adopting of Energy Efficiency Standards San Mateo Cost Effectiveness Report
San Rafael, City of	May 5, 2010	San Rafael Application San Rafael Ordinance
Santa Clara, County of	December 15, 2010	Locally Adopted Energy Standards Letter to the Energy Commission Local Ordinance Green Building Ordinance Green Building Attachment 1
Santa Monica, City of	February 8, 2012	Application to the Energy Commission Climate Zone 6 Cost-Effectiveness Study Green Building Ordinance Amendment Draft
Santa Rosa, City of	July 13, 2011	Application to Energy Commission
Sebastopol, City of	December 15, 2010	Application to the Energy Commission Local Ordinance 1040 Green Building Ordinance
Simi Valley, City of	August 25, 2010	City of Simi Valley Request for Approval Cost Effectiveness Study
Sonoma, City of	December 29, 2010	City of Sonoma Application to the Energy Commission Letter to the Energy Commission
Sonoma, County of	May 4, 2011	Green Building Resolution Sonoma County Application to Energy Commission
Tiburon, Town of	July 13, 2011	Adoption Letter of Energy Efficiency Standards Application to Energy Commission
Union City, City of	February 10, 2010	Union City Application to Energy Commission Union City Letter to Energy Commission
West Sacramento, City of	September 22, 2010	Application to the Energy Commission Cost Effectiveness Study
Windsor, Town of	September 7, 2011	Application to Energy Commission

For questions about the 2008 Standards and program proceeding, contact the Energy Standards Hotline.

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State of California, Edmund G. Brown Jr., Governor

EXHIBIT 5

Spreading Sunshine All Over the Place

City moves forward with new solar initiative

The City of Lancaster has become the first city in America to require all new residential construction projects to include solar power beginning in 2014.

Part of Lancaster's ongoing commitment to produce more clean energy than it consumes, the new rules were adopted on a 5-0 vote by the City Council, after previously being recommended unanimously by the City's Planning Commission.

The new regulations do not require solar panels to be installed on every home within a new subdivision, but do call for a minimum average solar generating capability of .5 to 1.5 kW per unit depending on lot size and location. New multi-family developments are also covered by the ordinance. Developers may alternately elect to purchase solar energy credits from other facilities within the City in lieu of constructing solar equipment on site.

"We've taken a forward looking approach to this new ordinance. It is much more about the future than the past," said Brian Ludicke, Planning Director for the City. "This plan will help reduce our residents' energy costs while lessening the impact of fossil fuel on our environment."

In developing the new "Residential Zone Update," the Planning Commission and City staff tried to balance the needs of builders with the desires of the City to reduce its environmental impact and improve overall quality of life.

"City planning staff and commissioners did a great job in collaborating with the residential building industry, as well as real estate and building trade associations to obtain the necessary input and feedback on the ordinance," offered Planning Commission Chair James Vose. "We spent a year discussing this in public meetings, workshops and field trips before recommending these regulations to the City Council."

In addition to the solar requirements, the new ordinance provides builders with greater flexibility in their site designs, to help improve the walkability of neighborhoods. The new regulations also call for increased use of porches and recessed garages in new developments, thus encouraging more front yard activity. It has been shown that such architectural features help create a more cohesive neighborhood while discouraging crime by putting more "eyes on the street."

The new zoning rules also provide incentives for infilling existing vacant parcels within the City rather than consuming raw land along the edges of the City. The rules also make it easier to accommodate "granny flats" and similar accessory dwellings in new developments, for use by family members. They also ease regulations on live/work situations in homes along major thoroughfares.

For more information on the new Residential Zone Update, visit the City's website at **www.cityoflancasterca.org/residentialzoneupdate**.

"We've taken a forward looking approach to this new ordinance. It is much more about the future than the past. This plan will help reduce our residents' energy costs while lessening the impact of fossil fuel on our environment."

– Brian Ludicke
Planning Director