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**By Overnight Mail and Facsimile**

David Bryant  
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Tulare County Resource Management Agency  
Government Plaza  
5961 South Mooney Boulevard  
Visalia, CA 93277

RE: Draft Environmental Impact Report for Tulare County General Plan 2030 Update  
SCH # 2006041162

Dear Mr. Bryant:

The Attorney General submits these comments pursuant to the California Environmental Quality Act ("CEQA") on the Draft Environmental Impact Report ("DEIR") for the Tulare County General Plan 2030 Update ("General Plan").<sup>1</sup>

**1. Introduction**

The general plan is "at the top of the hierarchy of local government law regulating land use[.]"<sup>2</sup> As the California Supreme Court has noted, this basic land use charter governing the direction of future land use is in the nature of a planning "constitution."<sup>3</sup> Taking some measure of control over future land use is the local government's affirmative duty. "The planning law . . .

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<sup>1</sup>The Attorney General provides these comments pursuant to his independent power and duty to protect the natural resources of the State from pollution, impairment, or destruction in furtherance of the public interest. (See Cal. Const., art. V, § 13; Cal. Govt. Code, §§ 12511, 12600-12; *D'Amico v. Board of Medical Examiners* (1974) 11 Cal.3d 1, 14-15.) These comments are made on behalf of the Attorney General and not on behalf of any other California agency or office.

<sup>2</sup>*DeVita v. County of Napa* (1995) 9 Cal.4th 763, 773 (internal citation omitted).

<sup>3</sup>*Ibid*; *Leshar Communications, Inc. v. City of Walnut Creek* (1990) 52 Cal.3d 531, 542.

compels cities and counties to undergo the discipline of drafting a master plan to guide future local land use decisions.”<sup>4</sup> The Tulare County General Plan thus presents both an opportunity and a responsibility to the County – an opportunity to shape the future growth of the County, and a responsibility to ensure that such growth is consistent with State and local goals, including protecting the public health and welfare of the County’s inhabitants and protecting the environment.

According to the DEIR, the Plan anticipates that the population of Tulare County will reach 621,549 by 2030, an increase of approximately 254,000 people,<sup>5</sup> and that emissions of carbon dioxide (CO<sub>2</sub>) from this growth will increase by approximately 1.7 million tons/year. As you are aware, global warming presents profoundly serious challenges to California and the nation. While we commend the County for addressing greenhouse gas (“GHG”) emissions in the DEIR, we have concluded that the DEIR is not in compliance with the requirements of CEQA in significant respects. First, the DEIR does not disclose the actual growth that may occur under the proposed General Plan – which leaves much of the control over land uses and growth patterns to the market – and the GHG emissions that will result from such growth. Second, the DEIR considers only vehicle miles traveled and dairies as sources of GHG emissions, and neglects to consider other significant new sources of GHG emissions, including emissions from construction, residential and non-residential energy use, and other activities that will result from the build-out of the Plan. Third, the DEIR considers only a narrow range of alternatives, ignoring any alternative that would aggressively foster “smart growth” by more significantly limiting development to existing urban areas. Finally, the DEIR does not impose enforceable and quantifiable mitigation measures to mitigate the impact of the GHG emissions.

Because the analysis of GHG emissions is inadequate and incomplete, the DEIR does not comply with CEQA, and does not provide substantial evidence to support the County’s finding that the impacts of GHG emissions will be “significant and unavoidable.”

## **2. Climate Change Background**

Before discussing the General Plan and legal adequacy of the DEIR, it is important to understand why human-caused climate change is of particular concern to California and to the San Joaquin Valley.<sup>6</sup>

The impacts of climate change are not limited to remote parts of the world – they are being

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<sup>4</sup>*DeVita, supra*, 9 Cal.4th at p. 773.

<sup>5</sup>The County indicates that the General Plan is intended to accommodate 25% of this growth in the unincorporated areas, an increase of approximately 64,000 residents.

<sup>6</sup>The physics of climate change are well described in the Intergovernmental Panel on Climate Change, Fourth Assessment Report, “Frequently Asked Questions” (available at [http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1\\_Print\\_FAQs.pdf](http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Print_FAQs.pdf)) and need not be repeated here.

felt in California today. In California, global warming is causing damage to agriculture, losses to the Sierra snowpack, higher risks of fire, eroding coastlines, and habitat modification and destruction. Global warming affects public health directly, through heat-related illnesses and deaths caused by more hot days, and longer heat waves, and indirectly as higher temperatures favor the formation of ozone and particulate matter in areas that already have severe air pollution problems.<sup>7</sup>

The impacts of climate change are of particular concern to the San Joaquin Valley and Tulare County, especially in the areas of agriculture and public health. According to a whitepaper from the California Climate Action Team on the impacts of climate change on agriculture, “California’s cornucopia is predicated on its current climate and its supply and distribution of irrigation water[.]”<sup>8</sup> Rising temperatures will cause larger crops growing in warmer climates to use more water and also may stimulate more weeds and insect pests. Pollination – essential to many Valley crops – will be negatively affected if warming causes asynchronization between flowering and the life cycle of insect pollinators. And the occurrence of adequate winter chill, necessary for fruit trees to flower, may be lost for many fruit species.<sup>9</sup> Higher temperatures due to global warming also have an impact on the dairy industry, which is of special importance to Tulare County, by causing lower milk production and heat-related animal deaths. Dairy producers will no doubt recall the extended heat wave of 2006, which caused the death of thousands of cows and created a backlog of carcasses for disposal.<sup>10</sup>

The health related impacts of climate change are also of substantial importance to the County. A Stanford study details how for each increase in temperature of 1 degree Celsius (1.8 degrees Fahrenheit) caused by climate change, the resulting air pollution would lead annually to about a thousand additional deaths and many more cases of respiratory illness and asthma.<sup>11</sup> The effects of warming are most significant where the pollution is already severe. Thus, the study has serious implications for California overall and for the San Joaquin Valley in particular. Given that California is home to six of the ten U.S. cities with the worst air quality, including Visalia-Tulare, and that the San Joaquin Valley has some of the worst air quality in the nation, the State and the

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<sup>7</sup>A summary of impacts to California, together with citations, is available on the Attorney Generals’ website at <http://ag.ca.gov/globalwarming/impact.php>.

<sup>8</sup>California Climate Change Center, *An Assessment of the Impacts of Future CO2 and Climate on Californian Agriculture* (March 2006) at p. 1, available at <http://www.energy.ca.gov/2005publications/CEC-500-2005-187/CEC-500-2005-187-SF.PDF>.

<sup>9</sup>*Id.*, Abstract.

<sup>10</sup>Williams, “Dairy producers regroup after cow deaths,” *Bakersfield Californian* (Aug. 5, 2006) available at <http://www.bakersfield.com/102/story/66292.html>.

<sup>11</sup> Jacobson, Mark Z., *On the causal link between carbon dioxide and air pollution mortality*, *Geophysical Research Letters*, Vol. 35 L03809 (2008).

Valley are likely to bear an increasingly disproportionate public health burden if we do not significantly reduce our GHG emissions.

The atmospheric concentration of CO<sub>2</sub>, the leading GHG, is now 380 parts per million (ppm),<sup>12</sup> higher than any time in the last 650,000 years,<sup>13</sup> and rising at about 2 ppm per year. According to experts, an atmospheric concentration of CO<sub>2</sub> “exceeding 450 ppm is almost surely dangerous” to human life because of the climate changes it will cause.<sup>14</sup> Thus, we are fast approaching a “tipping point,” where the increase in temperature will create unstoppable, large-scale, disastrous impacts for all the inhabitants of the planet.<sup>15</sup>

We must take prompt action and control of our future. In the words of Rajendra Pachauri, Chairman of the United Nations Intergovernmental Panel on Climate Change, “If there’s no action before 2012, that’s too late. What we do in the next two to three years will determine our future. This is the defining moment.”<sup>16</sup>

### **3. Description of the General Plan**

Pursuant to Government Code section 65302, subdivision (a) a general plan must contain a land use element that

designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space . . . and other categories of public and private uses of land. . . .

The distribution and general location of land uses under the Tulare County General Plan Update is almost impossible to discern from Plan documents. Maps typically accompany general plans.<sup>17</sup> While the General Plan does identify a limited number of land use designations (General Plan at pp. 5-5 to 5-12), it does not include any maps or diagrams identifying where the

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<sup>12</sup><http://www.esrl.noaa.gov/gmd/ccgg/trends/>

<sup>13</sup>IPCC 4<sup>th</sup>, WGI, Frequently Asked Question 7.1, *Are Increases in Atmospheric Carbon Dioxide and Other Greenhouse Gases During the Industrial Era Caused by Human Activities?* [http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1\\_Print\\_FAQs.pdf](http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Print_FAQs.pdf).

<sup>14</sup> See [http://www.nasa.gov/centers/goddard/news/topstory/2007/danger\\_point.html](http://www.nasa.gov/centers/goddard/news/topstory/2007/danger_point.html).

<sup>15</sup> See *ibid.*

<sup>16</sup>Rosenthal, *U.N. Chief Seeks More Leadership on Climate Change*, N.Y. Times (November 18, 2007).

<sup>17</sup>See *Las Virgenes Homeowners Federation, Inc. v. County of Los Angeles* (1986) 177 Cal.App.3d 300, 307 [general plan maps are visual depictions of planned development policies indicating the geographic or spatial aspects of the plan].

designations are, or the acreage available for development within each designation. A document entitled Board Update, dated April 2006, which was provided to the Board of Supervisors, includes detailed land use maps for certain limited areas – specifically, each of the 21 existing unincorporated communities “hamlets.” These maps, however, are not included in the General Plan. Nor does the Plan contain a table or tables indicating the general location, extent and type of land uses that could occur in the various geographic areas of the County. Ultimately, it is “impossible to relate any tabulated density standard of population to any location in the County.”<sup>18</sup>

The General Plan contains a Goals and Policies Report that purports to set forth a “hierarchy of goals, policies, and implementation measures designed to guide future development in the County.” (General Plan at p. 1-3.) The policies and implementation measures are in many cases nothing more than statements of preferences and opinions, rather than definite commitments to adopt enforceable policies and specific standards, or to use the powers the County has to enact ordinances and control development.

For example, one policy states that the County shall “encourage” residential growth to locate in existing Urban Development Borders (“UDBs”), Urban Area Boundaries (“UABs”), and Hamlet Development Boundaries (“HDBs”), but none of the accompanying implementation measures provide enforceable requirements or standards that would ensure that this policy is followed.<sup>19</sup> (General Plan at pp. 2-16 to 2-21.) Similarly, while the Plan states a policy of discouraging “new towns” (*id.* at p. 2-12), the policy has only very broad, general criteria and appears to allow new planned communities at an unlimited number of locations in the County as controlled by the market.<sup>20</sup> In the area of Land Use, the Plan again states a series of policies that are said to promote smart growth, encourage mixed use and infill development, etc. (General Plan at pp. 5-12 to 5-19), but the accompanying implementation measures contain no enforceable requirements that would ensure that development occurs consistent with these policy statements. (*Id.* at pp. 5-22 to 5-24.)

Thus, despite the general goals of the Plan to direct development in urban areas and in unincorporated hamlets and communities, nothing in the Plan will prevent a significant portion of

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<sup>18</sup>See *Camp v. Board of Supervisors of Mendocino County* (1981) 123 Cal.App.3d 334, 350.

<sup>19</sup> According to the 2003 State of California General Plan Guidelines (“General Plan Guidelines”) at pp. 16-17, published by the Governor’s Office of Planning and Research, a general plan should contain implementation measures which are actions, procedures, programs, or techniques, that carry out the general plan policy, as well as standards, which are rules or measures establishing a level of quality or quantity that must be complied with or satisfied.

<sup>20</sup> Similarly the Plan states a policy to “discourage the creation of ranchettes. . . .” (Plan at p. 4-4), which are residences built on large lots from 1.5 acres up. This policy does not, however, impose any enforceable limitations on ranchette development.

the future growth from occurring outside the UDBs, for example in the foothill areas in the far eastern part of the County that are far from services, jobs, and transportation.

Ultimately, it appears that, rather than being a “constitution” for future development, the General Plan will largely leave the shape of new development, in amount and in location, primarily to the control of the market. This is as much as acknowledged in the DEIR which states repeatedly that “[w]hile the proposed General Plan Update includes policies intended to control the amount and location of new growth. . . it does not solidly advocate, promote or represent any one development scenario because any attempt to predict the exact pace and locations of future market-driven growth is considered speculative.” (DEIR at p. ES-7.)

#### 4. CEQA Requirements

An EIR is an informational document intended to provide both the public and government agencies with detailed information about the effects of a proposed project on the environment, to list ways in which those effects can be mitigated, and to discuss and analyze alternatives to the project.<sup>21</sup> A “project” is defined as “the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment. . . .”<sup>22</sup> The project must be adequately described in the EIR,<sup>23</sup> and the entirety of the project must be considered, not just some smaller portion of it.<sup>24</sup> A decision to approve a project “is a nullity if based upon an EIR that does not provide the decision-makers, and the public, with the information about the project that is required by CEQA.”<sup>25</sup>

CEQA was enacted to ensure that public agencies do not approve projects unless feasible measures are included that mitigate the project’s significant environmental effects.<sup>26</sup> CEQA therefore requires that “[e]ach public agency shall mitigate or avoid the significant effects on the

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<sup>21</sup> *Laurel Heights Improvement Ass’n v. Regents of University of California* (1988) 47 Cal.3d 376, 390-91 (citing Pub. Res. Code, § 21061; Cal.Code Regs., tit. 14, § 15003, subd. (b)-(e) (hereafter “Guidelines”).

<sup>22</sup> Guidelines, § 15378, subd. (a).

<sup>23</sup> Guidelines, § 15124.

<sup>24</sup> *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 654.

<sup>25</sup> *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 721-22 (quoting *Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 829).

<sup>26</sup> Pub. Res. Code, § 21002.

environment of projects that it carries out or approves whenever it is feasible to do so.”<sup>27</sup> The mitigation measures must be enforceable and the benefits quantifiable, rather than just vague policy statements.<sup>28</sup>

The CEQA Guidelines further provide that the EIR must discuss a “range of reasonable alternatives to the project or to the location of the project which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.”<sup>29</sup> The EIR must include sufficient information about each alternative to provide meaningful analysis and comparison,<sup>30</sup> and must consider alternatives that could eliminate significant effects or reduce them to a less than significant level, even if the alternatives could impede the attainment of the project’s objectives to some degree.<sup>31</sup>

## **5. The DEIR Does Not Adequately Analyze GHG Emissions Under CEQA**

As the Legislature has recognized, global warming is an “effect on the environment” under CEQA, and an individual project’s incremental contribution to global warming can be cumulatively considerable and therefore significant.<sup>32</sup> The DEIR briefly and generally discusses global climate change, noting that California has passed Assembly Bill 32 (“AB 32”), the Global Warming Solutions Act of 2006, which requires the Air Resources Board to implement regulations to reduce GHG emissions statewide to 1990 levels by 2020. (DEIR at pp. 4-44 to 4-46.) The DEIR concludes that, even with mitigations, the GHG emissions from the project will be significant and unavoidable and will conflict with the goals of AB 32. (*Id.* at pp. 4-64 to 4-68). This analysis is deficient for the reasons discussed below.

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<sup>27</sup>Pub. Res. Code, §§ 21002.1, subd. (b); *City of Marina Board of Trustees* (2006) 39 Cal.4th 341, 360.

<sup>28</sup>See Publ. Res. Code, § 21081.6, subd. (b); *Federation of Hillside and Canyon Associations v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1261 (agency must take steps to ensure mitigation measures are fully enforceable through permit conditions, agreements, or other measures).

<sup>29</sup> Guidelines, § 15126.6, subd. (a).

<sup>30</sup> Guidelines § 15126.6, subd. (d).

<sup>31</sup> Guidelines § 15126.6, subd. (b); see also *Save Round Valley Alliance v. County of Inyo* (2007) 157 Cal.App.4th 1437, 1456-57 [cannot exclude alternative simply because it impedes project objectives or is more costly].

<sup>32</sup>See Pub. Res. Code, § 21083.05 subd. (a); see also Sen. Rules Com., Off. of Sen. Floor Analyses, Analysis of Sen. Bill No. 97 (2007-2008 Reg. Sess.) Aug. 22, 2007.

**a. The DEIR Does Not Adequately Disclose and Analyze All of the Potential Growth and GHG Emissions that May Result from the General Plan**

A general plan embodies an agency's decisions as to how to guide future development, and any evaluation of the general plan "must necessarily include a consideration of the larger project, i.e., the future development permitted by the amendment."<sup>33</sup> Thus, in order to comply with CEQA, the DEIR must describe and consider the full extent of the growth permitted by the Plan and must quantify the GHG emissions, both direct and indirect from that growth.<sup>34</sup>

Because the Plan does not include enforceable measures guiding how and where development will occur in Tulare County, the DEIR performs its analysis based on "assumptions" about "population growth and the market distribution of that growth throughout the County." (DEIR at p. 2-7.) The DEIR states that the population of Tulare County is anticipated to reach 621,549 by 2030, an increase of approximately 254,000 people, and assumes that approximately 75% of that growth is expected to occur within the UDBs of the incorporated cities, with the remaining 25%, or approximately 64,000 new residents, in unincorporated communities, hamlets and development corridors. (*Id.* at pp. ES-5, 2-7.)

In fact, however, as discussed above, the proposed General Plan is so open-ended that it does nothing to constrain market-driven population growth in the County and appears to allow unlimited development far beyond the scope of what is assumed in the DEIR. The actual remaining capacity for development within the existing UABs and UDBs of unincorporated communities in Tulare County is over 126,000 residents, indicating that the existing potential for growth in unincorporated areas is nearly twice the 64,000 that the DEIR assumes.<sup>35</sup> Further, development is not limited to existing communities and hamlets, but can occur at the discretion of the County in new towns located in rural, undeveloped areas of the County. Such development is not only likely in the future – it is already in progress; the County is currently considering just such a development project, the Yokohl Valley Ranch, a 10,000 unit residential development to be located in the Sierra Nevada foothills on land that is currently set aside for agriculture.<sup>36</sup>

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<sup>33</sup> *City of Redlands v. County of San Bernardino* (2002) 96 Cal.App.4th 398, 409.

<sup>34</sup> See Guidelines, §§ 15126, 15358, subd. (a)(1), (2); *Las Virgenes Homeowners Federation, supra*, 177 Cal.App.3d at p. 307 [in adopting General Plan, County "necessarily addressed the cumulative impacts of buildout to the maximum possible densities allowed by those plans"]; see also *Christward Ministry v. Superior Court* (1986) 184 Cal.App. 3d 180, 194 [evaluation of general plan must include future development permitted by amendment].

<sup>35</sup> Tulare County General Plan Board Update (2006) at p. 8 [table showing estimate of population capacity within existing UDBs and UABs of unincorporated communities].

<sup>36</sup> See Notice of Preparation and Initial Study for Yokohl Ranch Project, available at <http://www.ceqanet.ca.gov/DocDescription.asp?DocPK=617530>.

In order to comply with CEQA, it is not sufficient for the DEIR to disclose only an assumed level of growth based on population projections, and an assumed distribution of that growth based on general policies and statements of preference. Rather, it must disclose the full potential for market-driven growth that is permitted under the Plan, and must evaluate the extent and impact of GHG emissions if a significant portion of that growth is accommodated in rural, undeveloped areas, as the Plan appears to allow.

**b. The DEIR Does Not Adequately Quantify the Emissions from the Assumed Growth**

In addition to failing to disclose the full amount of potential growth that may occur under the General Plan, the DEIR also fails to properly quantify the GHG emissions from the development it does disclose. The DEIR purports to quantify GHG emissions from the anticipated increase in vehicle miles traveled (“VMT”) in the assumed market-driven development, stating that CO<sub>2</sub> emissions will increase from 1,997,046 to 3,446,934 tons/year, (approximately a 73% increase). (DEIR at p. 4-50.)

There is no explanation or supporting analysis describing how the DEIR derives this number. It would seem impossible to determine VMT without knowing in general terms where the new development will occur in the County and the distance from workplaces and services. Development that occurs close to urban centers and mass transit will produce significantly less VMT (and GHG emissions) than development that occurs in the far foothills, away from the population centers. Since the General Plan relies on “market-driven” development and does not implement enforceable procedures to guide development, the assessment of GHG emissions from increased VMT is inaccurate and incomplete.

Second, the DEIR discusses only emissions related to VMT and dairy operations. While the DEIR notes that there will be increased emissions from the actual “buildout” of the Plan (including increased use of electricity, woodburning fireplaces, natural gas, and equipment), it states that it lacks information to quantify these emissions, and therefore makes no effort to do so. (DEIR at p. 4-50) These omitted emissions are almost certainly substantial. According to the California Energy Commission, residential, commercial, and industrial sources make up about 30% of the CO<sub>2</sub> emissions in the State,<sup>37</sup> and that does not include methane production from sources such as landfills and wastewater treatment.

There are a number of models available to assist the County in estimating future GHG emissions. One source of helpful information is the report issued by the California Air Pollution Control Officers Association (CAPCOA), “CEQA and Climate Change.”<sup>38</sup> The document discusses a variety of models that can be used to calculate GHG emissions. Similarly, the

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<sup>37</sup>California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*, December 2006, Table 6.

<sup>38</sup>The document is available at <http://www.capcoa.org/>.

Attorney General's Website provides a table of currently available models that are useful for calculating emissions.<sup>39</sup> Other models are available from a variety of sources,<sup>40</sup>

The DEIR must fully quantify and consider all of the emissions from the project, including those resulting from the build-out.

**c. The DEIR Does Not Include All Feasible Alternatives and Does Not Quantify GHG Emissions from Those Alternatives**

The DEIR considers five alternatives which it terms the (1) No-Project alternative, (2) City-Centered Alternative, (3) Rural Communities Alternative, (4) Transportation Corridors Alternative, and (5) Confined Growth Alternative. (DEIR at pp. ES-8 to 9, 7-3 to 7-34.) Based on Table 7-1, which outlines the assumed population growth in unincorporated areas for each of the alternatives, it appears that the range of alternatives is narrow, representing a difference of only approximately 4% in growth in unincorporated areas (from 26% to 30%). (DEIR at pp. 7-3 to 7-4.) The alternatives thus ignore a range of "smart growth" alternatives that would concentrate development in already existing urban areas near mass transit and preserve more agricultural land and open space. A more intense "smart growth" alternative would appear to be feasible given the evidence that existing cities can currently accommodate all of the growth anticipated by the County.<sup>41</sup> Thus, in order to be consistent with CEQA, the DEIR must consider a broader range of alternatives that would focus more of the development in existing urban areas, or explain and provide evidence supporting a conclusion as to why such alternatives would be infeasible.

Moreover, while the DEIR purports to compare the impacts of the various alternatives, the discussion of the alternatives is inadequate. There are no anticipated population numbers provided for two of the alternatives (No-Project and Confined Growth alternatives), making it impossible to compare them to the other three alternatives (DEIR at pp. 7-3 to 7-4), and the discussion of alternatives does not even mention GHG emissions. (DEIR at pp. 7-14 to 7-34.) In order to comply with CEQA, the DEIR must quantify and compare the GHG emissions from each of the alternatives. Again, as discussed above, there are modeling resources available to the County for performing this analysis.

**d. The DEIR Does Not Impose All Feasible Measures to Mitigate GHG Emissions**

CEQA provides that a public agency should not approve a project as proposed if there are

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<sup>39</sup> [http://ag.ca.gov/globalwarming/ceqa/modeling\\_tools.php](http://ag.ca.gov/globalwarming/ceqa/modeling_tools.php).

<sup>40</sup> See, e.g., UPlan at <http://ice.ucdavis.edu/doc/uplan>.

<sup>41</sup> Tulare County General Plan: Policy Alternatives, Board of Supervisors Edition (August 2005) at p. 9, available at <http://generalplan.co.tulare.ca.us/documents.html>.

additional feasible mitigation measures that would substantially lessen the significant environmental effects of the project.<sup>42</sup> Further, in order to ensure that mitigation measures are actually implemented, they must be “fully enforceable through permit conditions, agreements, or other measures.”<sup>43</sup>

The DEIR refers to a series of policies in the General Plan that purport to mitigate GHG emissions related to general development. They include, for example, requiring any development to minimize air impacts, requiring the County to “consider” any strategies identified by the California Air Resources Board, studying methods of transportation to reduce air pollution, encouraging departments to replace existing vehicles with low emission vehicles, and identifying opportunities for infill. (General Plan at pp. 9-4 to 9-5.) While these policies are a positive step, they are general and unenforceable, as are the accompanying implementation measures. Further, the DEIR makes no attempt to quantify the extent to which these mitigation measures will reduce GHG emissions, instead simply jumping to the conclusion that the climate change impacts from the project would be “significant and unavoidable.” (DEIR at pp. 4-65 to 4-68.)<sup>44</sup>

In fact, there are many mitigation measures that are readily available to the County to decrease GHG emissions from new development. We are not suggesting that the County must adopt any specific set of mitigation measures, since this is a decision within its discretion. The County is, however, required by law to determine which measures are reasonable and feasible and to implement and enforce those measures. In considering which mitigation measures to implement, the County has many resources available. It can consider, for example, the measures set out in the CAPCOA document referenced above (pp. 79-87 and Appendix B-1), and those set forth in the list on the Attorney General’s website<sup>45</sup> (copy attached), and in the comments in the

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<sup>42</sup> Pub. Res. Code, § 21002.

<sup>43</sup> Pub. Res. Code, § 21081.6, subd. (b); *Federation of Hillside & Canyon Ass’ns, supra*, 83 Cal.App.4th at p. 1261.

<sup>44</sup> The shortcomings of the mitigation discussion is further apparent in the DEIR’s discussion of mitigation measures for dairies, which addresses GHG reduction only incidentally in the context of reducing other air pollutants, and which fails to discuss many potentially significant mitigation measures that are available. (DEIR at pp. 4-66 to 4-67.) To take one example, methane digesters, which are increasingly being used on dairies in California, process animal waste under anaerobic conditions, yielding methane gas that is collected on site and can be sold directly to utilities or used to generate electricity, bringing in revenue to the dairy. See California Energy Commission, *Dairy Power Production Program, Dairy Methane Digester System 90-Day Evaluation Report, Eden-Vale Dairy*, December 2006 at p. 4; [http://cpuc.ca.gov/Final\\_resolution/68429.htm](http://cpuc.ca.gov/Final_resolution/68429.htm); <http://www.epa.gov/agstar/resources.html>; Fresno County Notices of Intention to Adopt a Mitigated Negative Declaration (Unclassified Conditional Use Permits 3215-3218).

<sup>45</sup> <http://ag.ca.gov/globalwarming/ceqa.php>.

letter of the San Joaquin Valley Unified Air Pollution Control District (“APCD”) dated May 26, 2006, included in Appendix A to the Notice of Preparation. All of these sources provide concrete and enforceable recommendations, and address all aspects of project development that have an impact on GHG emissions, including conservation, land use, circulation, housing, open space, safety, and energy. Other sources discussing mitigation measures are readily available.<sup>46</sup>

Finally, the DEIR states that the County will, at some unspecified future time, develop a GHG Emissions Reduction Plan that parallels requirements adopted by the California Air Resources Board. (DEIR at p. 4-67) While we commend the County for recognizing that such a plan is necessary, this reference to an as yet undeveloped and completely undefined plan cannot serve as mitigation for the project’s GHG emissions, since deferring environmental assessment to some future date is counter to CEQA’s mandate that environmental review be performed at the earliest stages in the planning project.<sup>47</sup>

We encourage the County to pursue adoption of a GHG Emissions Reduction Plan as part of its General Plan. To constitute effective mitigation, the County should consider including in the Plan a baseline inventory of the GHGs currently being emitted in the County from all sources, projected emissions for target years (e.g., 2020 and beyond), targets for the reduction of those sources of emissions that are consistent with AB 32 and Executive Order #S-03-05, and a suite of feasible emission reduction measures to meet the reduction target(s).<sup>48</sup> An effective plan would also likely include monitoring and reporting requirements so that the County will obtain information on the performance of its plan, and an adaptive management element to ensure that the Plan, once implemented, can be adjusted if necessary to meet the reduction targets.

In sum, given the wealth of resources available describing specific mitigation measures for GHG emissions, it is feasible for the County to develop and impose a set of mitigation measures that will be implemented and enforced as conditions of all future development projects. Since the County has not fully explored the extent to which there are feasible mitigation measures that

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<sup>46</sup> See, e.g., [www.gosolarcalifornia.ga.gov/nshp](http://www.gosolarcalifornia.ga.gov/nshp) [discussing the California Energy Commissions’ New Solar Homes Partnership which provides rebates to developers of six units or more who offer solar power on 50% of the new units]; [www.energy.ca.gov/efficiency/lighting/outdoor\\_reduction.html](http://www.energy.ca.gov/efficiency/lighting/outdoor_reduction.html) and [www.newbuildings.org/lighting.htm](http://www.newbuildings.org/lighting.htm) [energy efficient lighting]; [www.energy.ca.gov/title24/2005standards/](http://www.energy.ca.gov/title24/2005standards/) [feasible green building measures identified by the California Energy Commission’s Compliance Manuals]; [www.vtpi.org/park\\_man.pdf](http://www.vtpi.org/park_man.pdf) [discussion of parking management programs that provide environmental benefits].

<sup>47</sup> Pub.Resources Code, § 21003.1; *Sunstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 307 (and cases cited therein).

<sup>48</sup> See the Attorney General’s settlement with San Bernardino County, available at [http://ag.ca.gov/cms\\_pdfs/press/2007-08-21\\_San\\_Bernardino\\_settlement\\_agreement.pdf](http://ag.ca.gov/cms_pdfs/press/2007-08-21_San_Bernardino_settlement_agreement.pdf).

would substantially reduce the global warming impacts of this project, it has not complied with CEQA.

**e. The DEIR Cannot Conclude, Without Fuller Analysis, that GHG Effects are Significant and Unavoidable and Inconsistent with AB 32**

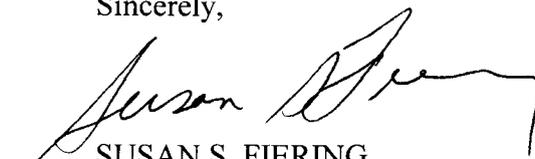
The DEIR concludes that the GHG emissions from the project will be significant and unavoidable. (DEIR at p. 4-68.) In light of the fact that the emissions are not fully quantified, enforceable mitigation measures are not imposed, and the efficacy of any mitigation are not analyzed qualitatively or quantitatively, this conclusion is unsupported and contravenes CEQA.<sup>49</sup>

**6. Conclusion**

This is a critical time for all of California. Scientists acknowledge that global warming is real. Unless we depart from the “business as usual” paradigm and embrace the new principles of “smart growth,” we risk pushing the environment past the “tipping point” into cataclysmic climate change. The stakes are too high for Tulare County to abdicate its responsibilities, allowing the market to control the future of the hundreds of thousands of people who currently live and work – and the hundred thousands more who will live and work – in Tulare County. The County, through its General Plan and the CEQA process, has the opportunity, and indeed the duty, to become one of the leaders in planning the future of California. The decisions the County makes today will determine what the County will look like in the coming years and 30 years from now, and they can help move California forward into a new era of development and sustainable growth, consistent with the State’s goals for a lower-carbon future.

Thank you for your consideration of these comments. We would appreciate the opportunity meet with County staff to discuss these comments further in an effort to work cooperatively on these issues.

Sincerely,



SUSAN S. FIERING  
Deputy Attorney General

For EDMUND G. BROWN JR.  
Attorney General

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<sup>49</sup> See *Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners* (2001) 91 Cal.App.4th 1344, 1371 [lead agency cannot simply conclude that there are overriding considerations that would justify a significant and unavoidable effect without fully analyzing the effect].



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**The California Environmental Quality Act**  
**Addressing Global Warming Impacts at the Local Agency Level**

Under the California Environmental Quality Act (CEQA), local agencies have a very important role to play in California's fight against global warming – one of the most serious environmental effects facing the State today. Where local agencies undertake projects directly, they can and should design sustainable projects from the start, incorporating global warming related considerations into their projects at the earliest feasible time. Further, local agencies can encourage well-designed, sustainable private projects by analyzing and disclosing to the public the environmental benefits of such projects in any required environmental documents. And where projects as proposed will have significant global warming related effects, local agencies can require feasible changes or alternatives, and impose enforceable, verifiable, feasible mitigation measures to substantially lessen those effects. By the sum of their decisions, local agencies will help to move the State away from “business as usual” and toward a low-carbon future.

This document provides information that may be helpful to local agencies in carrying out their duties under CEQA as they relate to global warming. Included in this document are various measures that may reduce the global warming related impacts of a project. As appropriate, the measures can be included as design features of a project, required as changes to the project, or imposed as mitigation (whether undertaken directly by the project proponent or funded by mitigation fees). The measures set forth in this package are examples; the list is not intended to be exhaustive. Moreover, the measures cited may not be appropriate for every project. The decision of whether to approve a project – as proposed or with required changes or mitigation – is for the local agency, exercising its informed judgment in compliance with the law and balancing a variety of public objectives.

The first section of this document lists examples of measures that could be applied to a diverse range of projects where the lead agency determines that the project under consideration will have significant global warming related effects. In general, a given measure should not be considered in isolation, but as part of a larger set of measures that, working together, will reduce greenhouse gas emissions and the effects of global warming.

The second section of this document lists examples of potential greenhouse gas reduction measures in the general plan context. This section is included both to suggest how the measures set forth in the first section could be incorporated into a general plan, as well as to identify measures that are general plan specific. The measures in the second section may also be appropriate for inclusion in larger scale plans, including regional plans (*e.g.*, blueprint plans) and in specific plans. Including these types of measures at the larger planning level, as appropriate, will help to ensure more sustainable project-specific development.

The third section provides links to sources of information on global warming impacts and emission reduction measures. The list is not complete, but may be a helpful start for local agencies seeking more information to carry out their CEQA obligations as they relate to global warming.

The endnotes set forth just some of the many examples of exemplary emission reduction measures already being implemented by local governments and agencies, utilities, private industry, and others. As these examples evidence, California at every level of government is taking up the challenge, devising new and innovative solutions, and leading the charge in the fight against global warming.

**(1) Generally Applicable Measures**

**Energy Efficiency<sup>1</sup>**

- Design buildings to be energy efficient. Site buildings to take advantage of shade, prevailing winds, landscaping and sun screens to reduce energy use.<sup>2</sup>
- Install efficient lighting and lighting control systems. Use daylight as an integral part of lighting systems in buildings.
- Install light colored “cool” roofs, cool pavements, and strategically placed shade trees.<sup>3</sup>
- Provide information on energy management services for large energy users.<sup>4</sup>
- Install energy efficient heating and cooling systems, appliances and equipment, and control systems.<sup>5</sup>
- Install light emitting diodes (LEDs) for traffic, street and other outdoor lighting.<sup>6</sup>
- Limit the hours of operation of outdoor lighting.
- Use solar heating, automatic covers, and efficient pumps and motors for pools and spas.<sup>7</sup>
- Provide education on energy efficiency.<sup>8</sup>

**Renewable Energy**

- Install solar and wind power systems, solar and tankless hot water heaters, and energy-efficient heating ventilation and air conditioning. Educate consumers about existing incentives.<sup>9</sup>
- Install solar panels on carports and over parking areas.<sup>10</sup>
- Use combined heat and power in appropriate applications.<sup>11</sup>

**Water Conservation and Efficiency<sup>12</sup>**

- Create water-efficient landscapes.<sup>13</sup>
- Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls.
- Use reclaimed water for landscape irrigation in new developments and on public property. Install the infrastructure to deliver and use reclaimed water.
- Design buildings to be water-efficient. Install water-efficient fixtures and appliances.
- Use graywater. (Graywater is untreated household waste water from bathtubs, showers, bathroom wash basins, and water from clothes washing machines.) For example, install dual plumbing in all new development allowing graywater to be used for landscape irrigation.<sup>14</sup>
- Restrict watering methods (*e.g.*, prohibit systems that apply water to non-vegetated surfaces) and control runoff.
- Restrict the use of water for cleaning outdoor surfaces and vehicles.
- Implement low-impact development practices that maintain the existing hydrologic character of the site to manage storm water and protect the environment. (Retaining storm water runoff on-

site can drastically reduce the need for energy-intensive imported water at the site.)<sup>15</sup>

- Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include many of the specific items listed above, plus other innovative measures that are appropriate to the specific project.
- Provide education about water conservation and available programs and incentives.<sup>16</sup>

#### **Solid Waste Measures**

- Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).
- Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas.
- Recover by-product methane to generate electricity.<sup>17</sup>
- Provide education and publicity about reducing waste and available recycling services.<sup>18</sup>

#### **Land Use Measures**

- Include mixed-use, infill, and higher density in development projects to support the reduction of vehicle trips, promote alternatives to individual vehicle travel, and promote efficient delivery of services and goods.<sup>19</sup>
- Educate the public about the benefits of well-designed, higher density development.<sup>20</sup>
- Incorporate public transit into project design.
- Preserve and create open space and parks. Preserve existing trees, and plant replacement trees at a set ratio.
- Develop “brownfields” and other underused or defunct properties near existing public transportation and jobs.
- Include pedestrian and bicycle-only streets and plazas within developments. Create travel routes that ensure that destinations may be reached conveniently by public transportation, bicycling or walking.<sup>21</sup>

#### **Transportation and Motor Vehicles**

- Limit idling time for commercial vehicles, including delivery and construction vehicles.
- Use low or zero-emission vehicles, including construction vehicles.
- Promote ride sharing programs *e.g.*, by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride sharing vehicles, and providing a web site or message board for coordinating rides.
- Create car sharing programs. Accommodations for such programs include providing parking spaces for the car share vehicles at convenient locations accessible by public transportation.<sup>22</sup>
- Create local “light vehicle” networks, such as neighborhood electric vehicle (NEV) systems.<sup>23</sup>
- Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles (*e.g.*, electric vehicle charging facilities and conveniently located alternative fueling

stations).

- Increase the cost of driving and parking private vehicles by, *e.g.*, imposing tolls and parking fees.
- Build or fund a transportation center where various public transportation modes intersect.
- Provide shuttle service to public transit.
- Provide public transit incentives such as free or low-cost monthly transit passes.
- Incorporate bicycle lanes and routes into street systems, new subdivisions, and large developments.
- Incorporate bicycle-friendly intersections into street design.
- For commercial projects, provide adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. For large employers, provide facilities that encourage bicycle commuting, including, *e.g.*, locked bicycle storage or covered or indoor bicycle parking.
- Create bicycle lanes and walking paths directed to the location of schools, parks and other destination points.<sup>24</sup>
- Work with the school district to restore or expand school bus services.
- Institute a telecommute work program. Provide information, training, and incentives to encourage participation. Provide incentives for equipment purchases to allow high-quality teleconferences.
- Provide information on all options for individuals and businesses to reduce transportation-related emissions. Provide education and information about public transportation.

### **Carbon Offsets**

If, after analyzing and requiring all reasonable and feasible on-site mitigation measures for avoiding or reducing greenhouse gas-related impacts, the lead agency determines that additional mitigation is required, the agency may consider additional off-site mitigation. The project proponent could, for example, fund off-site mitigation projects (*e.g.*, alternative energy projects, or energy or water audits for existing projects) that will reduce carbon emissions, conduct an audit of its other existing operations and agree to retrofit, or purchase carbon “credits” from another entity that will undertake mitigation.

The topic of offsets can be complicated, and a full discussion is outside the scope of this summary document. Issues that the lead agency should consider include:

- The location of the off-site mitigation. (If the off-site mitigation is far from the project, any additional, non-climate related benefits of the mitigation will be lost to the local community.)
- Whether the emissions reductions from off-site mitigation can be quantified and verified.
- Whether the mitigation ratio should be greater than 1:1 to reflect any uncertainty about the effectiveness of the offset.

## (2) General Plan Measures<sup>25</sup>

Global warming measures may be reflected in a general plan as goals, policies, or programs; in land use designations; or as additional mitigation measures identified during the CEQA review process. Many of the measures listed above may be appropriate for inclusion in a general plan. In addition, a non-exhaustive list of measures specific to the general plan context follows. The examples are listed under required general plan elements. A given example may, however, be appropriate for inclusion in more than one element, or in a different element than listed. Global warming measures may, alternatively, be included in an optional Climate Change or Energy element.

### **Conservation Element**<sup>26</sup>

- Climate Action Plan or Policy: Include a comprehensive climate change action plan that requires a baseline inventory of greenhouse gas emissions from all sources by a date certain; greenhouse gas emissions reduction targets and deadlines; and enforceable greenhouse gas emissions reduction measures.<sup>27</sup> (Note: If the Climate Action Plan complies with the requirements of Section 15064(h)(3) of the CEQA Guidelines, it may allow for the streamlining of individual projects that comply with the plan's requirements.)
- Climate Action Plan Implementation Program: Include mechanisms to ensure regular review of progress toward the emission reduction targets established by the Climate Action Plan, report progress to the public and responsible officials, and revise the plan as appropriate, using principles of adaptive management. Allocate funding to implement the plan. Fund staff to oversee implementation of the plan.
- Strengthen local building codes for new construction and renovation to require a higher level of energy efficiency.<sup>28</sup>
- Require that all new government buildings, and all major renovations and additions, meet identified green building standards.<sup>29</sup>
- Adopt a "Green Building Program" to require or encourage green building practices and materials.<sup>30</sup> The program could be implemented through, *e.g.*, a set of green building ordinances.
- Require orientation of buildings to maximize passive solar heating during cool seasons, avoid solar heat gain during hot periods, enhance natural ventilation, and promote effective use of daylight. Orientation should optimize opportunities for on-site solar generation.
- Provide permitting-related and other incentives for energy efficient building projects, *e.g.*, by giving green projects priority in plan review, processing and field inspection services.<sup>31</sup>
- Conduct energy efficiency audits of existing buildings by checking, repairing, and readjusting heating, ventilation, air conditioning, lighting, water heating equipment, insulation and weatherization.<sup>32</sup> Offer financial incentives for adoption of identified efficiency measures.<sup>33</sup>
- Partner with community services agencies to fund energy efficiency projects, including heating, ventilation, air conditioning, lighting, water heating equipment, insulation and weatherization, for low income residents.
- Target local funds, including redevelopment and Community Development Block Grant resources, to assist affordable housing developers in incorporating energy efficient designs and features.

- Provide innovative, low-interest financing for energy efficiency and alternative energy projects. For example, allow property owners to pay for energy efficiency improvements and solar system installation through long-term assessments on individual property tax bills.<sup>34</sup>
- Fund incentives to encourage the use of energy efficient vehicles, equipment and lighting.<sup>35</sup> Provide financial incentives for adoption of identified efficiency measures.
- Require environmentally responsible government purchasing.<sup>36</sup> Require or give preference to products that reduce or eliminate indirect greenhouse gas emissions, *e.g.*, by giving preference to recycled products over those made from virgin materials.<sup>37</sup>
- Require that government contractors take action to minimize greenhouse gas emissions, *e.g.*, by using low or zero-emission vehicles and equipment.
- Adopt a “heat island” mitigation plan that requires cool roofs, cool pavements, and strategically placed shade trees.<sup>38</sup> (Darker colored roofs, pavement, and lack of trees may cause temperatures in urban environments to increase by as much as 6-8 degrees Fahrenheit as compared to surrounding areas.<sup>39</sup>) Adopt a program of building permit enforcement for re-roofing to ensure compliance with existing state building requirements for cool roofs on non-residential buildings.
- Adopt a comprehensive water conservation strategy. The strategy may include, but not be limited to, imposing restrictions on the time of watering, requiring water-efficient irrigation equipment, and requiring new construction to offset demand so that there is no net increase in water use.<sup>40</sup>
- Adopt water conservation pricing, *e.g.*, tiered rate structures, to encourage efficient water use.<sup>41</sup>
- Adopt water-efficient landscape ordinances.<sup>42</sup>
- Strengthen local building codes for new construction and implement a program to renovate existing buildings to require a higher level of water efficiency.
- Adopt energy and water efficiency retrofit ordinances that require upgrades as a condition of issuing permits for renovations or additions, and on the sale of residences and buildings.<sup>43</sup>
- Provide individualized water audits to identify conservation opportunities.<sup>44</sup> Provide financial incentives for adopting identified efficiency measures.
- Provide water audits for large landscape accounts. Provide financial incentives for efficient irrigation controls and other efficiency measures.
- Require water efficiency training and certification for irrigation designers and installers, and property managers.<sup>45</sup>
- Implement or expand city or county-wide recycling and composting programs for residents and businesses. Require commercial and industrial recycling.
- Extend the types of recycling services offered (*e.g.*, to include food and green waste recycling).
- Establish methane recovery in local landfills and wastewater treatment plants to generate electricity.<sup>46</sup>
- Implement Community Choice Aggregation (CCA) for renewable electricity generation. (CCA allows cities and counties, or groups of them, to aggregate the electric loads of customers within

their jurisdictions for purposes of procuring electrical services. CCA allows the community to choose what resources will serve their loads and can significantly increase renewable energy.)<sup>47</sup>

- Preserve existing conservation areas (*e.g.*, forested areas, agricultural lands, wildlife habitat and corridors, wetlands, watersheds, and groundwater recharge areas) that provide carbon sequestration benefits.
- Establish a mitigation program for development of conservation areas. Impose mitigation fees on development of such lands and use funds generated to protect existing, or create replacement, conservation areas.
- Provide public education and information about options for reducing greenhouse gas emissions through responsible purchasing, conservation, and recycling.

#### **Land Use Element<sup>48</sup>**

- Adopt land use designations to carry out policies designed to reduce greenhouse gas emissions, *e.g.*, policies to minimize or reduce vehicle miles traveled, encourage development near existing public transportation corridors, encourage alternative modes of transportation, and promote infill, mixed use, and higher density development.
- Identify and facilitate the development of land uses not already present in local districts – such as supermarkets, parks and recreation fields, and schools in neighborhoods; or residential uses in business districts – to reduce vehicle miles traveled and allow bicycling and walking to these destinations.
- Create neighborhood commercial districts.
- Require bike lanes and bicycle/pedestrian paths.
- Prohibit projects that impede bicycle and walking access, *e.g.*, large parking areas that cannot be crossed by non-motorized vehicles, and new residential communities that block through access on existing or potential bicycle and pedestrian routes.
- Site schools to increase the potential for students to walk and bike to school.
- Enact policies to limit or discourage low density development that segregates employment, services, and residential areas.<sup>49</sup>
- Where there are growth boundaries, adopt policies providing certainty for infill development.<sup>50</sup>
- Require best management practices in agriculture and animal operations to reduce emissions, conserve energy and water, and utilize alternative energy sources, including biogas, wind and solar.

#### **Circulation Element<sup>51</sup>**

- In conjunction with measures that encourage public transit, ride sharing, bicycling and walking, implement circulation improvements that reduce vehicle idling. For example, coordinate controlled intersections so that traffic passes more efficiently through congested areas.<sup>52</sup>
- Create an interconnected transportation system that allows a shift in travel from private passenger vehicles to alternative modes, including public transit, ride sharing, car sharing, bicycling and walking. Before funding transportation improvements that increase vehicle miles

traveled, consider alternatives such as increasing public transit or improving bicycle or pedestrian travel routes.

- Give funding preference to investment in public transit over investment in infrastructure for private automobile traffic.<sup>53</sup>
- Include safe and convenient bicycle and pedestrian access in all transportation improvement projects. Ensure that non-motorized transportation systems are connected and not interrupted by impassable barriers, such as freeways<sup>54</sup> and include amenities such as secure bicycle parking.
- Provide adequate and affordable public transportation choices including expanded bus routes and service and other transit choices such as shuttles, light rail, and rail where feasible.
- Assess transportation impact fees on new development in order to maintain and increase public transit service.<sup>55</sup>
- Provide public transit incentives, including free and reduced fare areas.<sup>56</sup>
- Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation.<sup>57</sup> For example, reduce parking for private vehicles while increasing options for alternative transportation; eliminate minimum parking requirements for new buildings; “unbundle” parking (require that parking is paid for separately and is not included in rent for residential or commercial space); and set appropriate pricing for parking.
- Develop school transit plans to substantially reduce automobile trips to, and congestion surrounding, schools. (According to some estimates, parents driving their children to school account for 20-25% of the morning commute.) Plans may address, *e.g.*, necessary infrastructure improvements and potential funding sources; replacing older diesel buses with low or zero-emission vehicles; mitigation fees to expand school bus service; and Safe Routes to School programs<sup>58</sup> and other formal efforts to increase walking and biking by students.
- Create financing programs for the purchase or lease of vehicles used in employer ride sharing programs.
- Enter into partnerships to create and expand polluting vehicle buy-back programs to include vehicles with high greenhouse gas emissions.
- Provide public education and information about options for reducing motor vehicle-related greenhouse gas emissions. Include information on trip reduction; trip linking; public transit; biking and walking; vehicle performance and efficiency (*e.g.*, keeping tires inflated); low or zero-emission vehicles; and car and ride sharing.

#### **Housing Element<sup>59</sup>**

- Improve the jobs-housing balance and promote a range of affordable housing choices near jobs, services and transit.
- Concentrate mixed use, and medium to higher density residential development in areas near jobs, transit routes, schools, shopping areas and recreation.
- Increase density in single family residential areas located near transit routes or commercial areas. For example, promote duplexes in residential areas and increased height limits of multi-unit buildings on main arterial streets, under specified conditions.

- Encourage transit-oriented developments.<sup>60</sup>
- Impose minimum residential densities in areas designated for transit-oriented, mixed use development to ensure higher density in these areas.
- Designate mixed use areas where housing is one of the required uses.
- In areas designated for mixed use, adopt incentives for the concurrent development of different land uses (*e.g.*, retail with residential).
- Promote infill, mixed use, and higher density development by, for example, reducing developer fees;<sup>61</sup> providing fast-track permit processing; reducing processing fees; funding infrastructure loans; and giving preference for infrastructure improvements in these areas.

#### **Open Space Element<sup>62</sup>**

- Preserve forested areas, agricultural lands, wildlife habitat and corridors, wetlands, watersheds, groundwater recharge areas and other open space that provide carbon sequestration benefits.
- Establish a mitigation program for development of those types of open space that provide carbon sequestration benefits. Require like-kind replacement for, or impose mitigation fees on development of such lands. Use funds generated to protect existing, or create replacement, open space.
- Allow alternative energy projects in areas zoned for open space where consistent with other uses and values.
- Protect existing trees and encourage the planting of new trees. Adopt a tree protection and replacement ordinance, *e.g.*, requiring that trees larger than a specified diameter that are removed to accommodate development must be replaced at a set ratio.
- Connect parks and publicly accessible open space through shared pedestrian/bike paths and trails to encourage walking and bicycling.

#### **Safety Element<sup>63</sup>**

- Address expected effects of climate change that may impact public safety, including increased risk of wildfires, flooding and sea level rise, salt water intrusion; and health effects of increased heat and ozone, through appropriate policies and programs.
- Adopt programs for the purchase, transfer or extinguishment of development rights in high risk areas.
- Monitor the impacts of climate change. Use adaptive management to develop new strategies, and modify existing strategies, to respond to the impacts of climate change.

#### **Energy Element**

Many of the goals, policies, or programs set forth above may be contained in an optional energy element. The resources set forth below may be useful to local agencies in developing an energy element or an energy conservation plan.

- The Local Government Commission produced a detailed report in 2002 entitled *General Plan Policy Options for Energy Efficiency in New and Existing Development*. The document sets forth energy saving policies suitable for inclusion in general plans. Policies range from

exceeding State minimum building efficiency standards, to retrofit buildings to reduce energy consumption, to implementing energy conservation strategies for roofs, pavement and landscaping. The report also contains suggested general plan language. The report is available here: [http://www.redwoodenergy.org/uploads/Energy\\_Element\\_Report.pdf](http://www.redwoodenergy.org/uploads/Energy_Element_Report.pdf).

- The California Energy Commission summarizes the energy-related efforts of Humboldt County, City of Pleasanton, City of Pasadena, City and County of San Francisco, the Los Angeles area, City of Chula Vista, the San Diego region, City of San Diego, City and County of San Luis Obispo, and City of Santa Monica, in the 2006 Integrated Energy Policy Report at pp. 82-87, available here: <http://www.energy.ca.gov/2006publications/CEC-100-2006-001/CEC-100-2006-001-CMF.PDF>.
- In 2006, the Association of Monterey Bay Area Governments published a regional energy plan, available here: [http://www.ambag.org/EnergyWatch/regional\\_plan.html](http://www.ambag.org/EnergyWatch/regional_plan.html). Part 1 describes the plan's goals and course of action. Part 2 describes actions that local agencies already have taken and identifies the most cost-effective measures in each sector. The appendices list existing energy programs that may provide support and funding for energy efficiency projects, suggest language for energy-related provisions to be included in general plans, and list and give brief explanations of more than one hundred energy-saving measures.
- The California Local Energy Efficiency Program (CALeep) has available on its website, <http://www.caleep.com/default.htm>, various resources and documents, including an energy "Workbook." The Workbook lays out a process for instituting local energy efficiency programs based in part on information developed in six California pilot projects (Inland Empire Utilities Agency, City of Oakland, San Joaquin Valley, Sonoma County, South Bay Cities Council of Governments, and Ventura County Regional Energy Alliance). The Workbook is designed to be used by local officials to initiate, plan, organize, implement, and assess energy efficiency activities at the local and regional level.

### **(3) Resources About Global Warming and Local Action**

The following web sites and organizations provide general information about mitigating global warming impacts at the local level. These sites represent only a small fraction of the available resources. Local agencies are encouraged to conduct their own research in order to obtain the most current and relevant materials.

- The U.S. Conference of Mayors' Climate Protection Agreement contains valuable information for the many local agencies that are joining the fight against global warming. The Agreement is available here: [http://www.coolcities.us/resources/bestPracticeGuides/USM\\_ClimateActionHB.pdf](http://www.coolcities.us/resources/bestPracticeGuides/USM_ClimateActionHB.pdf). Over one hundred and twenty California cities have joined the "Cool Cities" campaign, which means they have signed the U.S. Mayor's Climate Protection Agreement and are taking concrete steps toward addressing global warming. These steps include preparing a city-wide greenhouse gas emissions inventory and creating and implementing a local Climate Action Plan. Additional resources, including various cities' Climate Action Plans, are located at the Cool Cities website: <http://www.coolcities.us/resources.php>.
- In July 2007, Alameda County became one of twelve charter members of the "Cool Counties" initiative. Participating counties sign a Climate Stabilization Declaration, which is available at the website for King County (Washington State): <http://www.metrokc.gov/exec/news/2007/0716dec.aspx>. Participating counties agree to work with local, state, and federal governments and other leaders to reduce county geographical greenhouse gas emissions to 80% below current levels by 2050 by developing a greenhouse gas emissions inventory and regional reduction plan. Current member counties

are recruiting new members and are committed to sharing information. Cool Counties contact information is available at: <http://www.kingcounty.gov/exec/coolcounties/Joinus.aspx>.

- Local Governments for Sustainability, a program of International Cities for Local Environmental Initiatives (ICLEI), has initiated a campaign called Cities for Climate Protection (CCP). The membership program is designed to empower local governments worldwide to take action on climate change. Many California cities have joined ICLEI. More information is available at the organization's website: <http://www.iclei.org/>.
- The Institute for Local Government (ILG), an affiliate of the California State Association of Counties and the League of California Cities, has instituted a program called the California Climate Action Network (CaliforniaCAN!). The program provides information about the latest climate action resources and case studies. More information is available at the CaliforniaCAN! website: <http://www.cacities.org/index.jsp?displaytype=&section=climate&zone=ilsg>.  
ILG's detailed list of climate change "best practices" for local agencies is available at [http://www.cacities.org/index.jsp?displaytype=&section=climate&zone=ilsg&sub\\_sec=climate\\_local](http://www.cacities.org/index.jsp?displaytype=&section=climate&zone=ilsg&sub_sec=climate_local).  
ILG maintains a list of local agencies that have Climate Action Plans. The list is available here: <http://www.cacities.org/index.jsp?zone=ilsg&previewStory=27035>. According to ILG, the list includes Marin County and the cities of Arcata, Berkeley, Los Angeles, Palo Alto, San Diego, and San Francisco. Many additional local governments are in the process of conducting greenhouse gas inventories.
- The non-profit group Natural Capitalism Solutions (NCS) has developed an on-line Climate Protection Manual for Cities. NCS states that its mission is "to educate senior decision-makers in business, government and civil society about the principles of sustainability." The manual is available at <http://www.climatemanual.org/Cities/index.htm>.
- The Local Government Commission provides many planning-related resources for local agencies at its website: <http://www.lgc.org/>.  
In cooperation with U.S. EPA, LGC has produced a booklet discussing the benefits of density and providing case studies of well-designed, higher density projects throughout the nation. *Creating Great Neighborhoods: Density in Your Community* (2003) is available here: [http://www.lgc.org/freepub/PDF/Land\\_Use/reports/density\\_manual.pdf](http://www.lgc.org/freepub/PDF/Land_Use/reports/density_manual.pdf).
- The Pew Center on Global Climate Change was established in 1998 as a non-profit, non-partisan and independent organization. The Center's mission is to provide credible information, straight answers, and innovative solutions in the effort to address global climate change. See <http://www.pewclimate.org>. The Pew Center has published a series of reports called Climate Change 101. These reports provide a reliable and understandable introduction to climate change. They cover climate science and impacts, technological solutions, business solutions, international action, recent action in the U.S. states, and action taken by local governments. The Climate Change 101 reports are available at [http://www.pewclimate.org/global-warming-basics/climate\\_change\\_101](http://www.pewclimate.org/global-warming-basics/climate_change_101).
- The Climate Group, [www.theclimategroup.org](http://www.theclimategroup.org), is a non-profit organization founded by a group of companies, governments and activists to "accelerate international action on global warming with a new, strong focus on practical solutions." Its website contains a searchable database of about fifty case studies of actions that private companies, local and state governments, and the United Kingdom, have taken to reduce GHG emissions. Case studies include examples from California. The database, which can be searched by topic, is available at

[http://theclimategroup.org/index.php/reducing\\_emissions/case\\_studies](http://theclimategroup.org/index.php/reducing_emissions/case_studies).

- U.S. EPA maintains a list of examples of codes that support “smart growth” development, available here: <http://www.epa.gov/piedpage/codeexamples.htm>. Examples include transit-oriented development in Pleasant Hill and Palo Alto, rowhouse design guidelines from Mountain View, and street design standards from San Diego.
- The Urban Land Institute (ULI) is a nonprofit research and education organization providing leadership in responsible land use and sustainability. In 2007, ULI produced a report entitled, “Growing Cooler: The Evidence on Urban Development and Climate Change,” which reviews existing research on the relationship between urban development, travel, and greenhouse gases emitted by motor vehicles. It further discusses the emissions reductions that can be expected from compact development and how to make compact development happen. “Growing Cooler” is available at <http://www.uli.org/growingcooler>.
- The California Department of Housing and Community Development, <http://www.hcd.ca.gov/>, has many useful resources on its website related to housing policy and housing elements and specific recommendations for creating higher density and affordable communities. See <http://www.hcd.ca.gov/hpd/hrc/plan/he/>.
- The California Transportation Commission (CTC) recently made recommendations for changes to regional transportation guidelines to address climate change issues. Among other things, the CTC recommends various policies, strategies and performance standards that a regional transportation agency should consider including in a greenhouse reduction plan. These or analogous measures could be included in other types of planning documents or local climate action plans. The recommendation document, and Attachment A, entitled Smart Growth/Land Use Regional Transportation Plan Guidelines Amendments, are located at [http://www.dot.ca.gov/hq/transprog/ctcbooks/2008/0108/12\\_4.4.pdf](http://www.dot.ca.gov/hq/transprog/ctcbooks/2008/0108/12_4.4.pdf).
- The California Energy Commission’s Public Interest Energy Research (PIER) Program supports energy research, development and demonstration projects designed to bring environmentally safe, affordable and reliable energy services and products to the marketplace. On its website, <http://www.energy.ca.gov/pier/>, PIER makes available a number of reports and papers related to energy efficiency, alternative energy, and climate change.
- The Governor’s Office of Planning and Research (OPR) provides valuable resources for lead agencies related to CEQA and global warming at <http://opr.ca.gov/index.php?a=ceqa/index.html>. Among the materials available are a list of environmental documents addressing climate change and greenhouse gas emissions and a list of local plans and policies addressing climate change. In addition, OPR’s The California Planners’ Book of Lists 2008, which includes the results of surveys of local agencies on matters related to global warming, is available at <http://www.opr.ca.gov/index.php?a=planning/publications.html#pubs-C>.
- The California Air Pollution Control Officers Association has prepared a white paper entitled “CEQA and Climate Change” (January 2008). The document includes a list of mitigation measures and information about their relative efficacy and cost. The document is available at <http://www.capcoa.org/ceqa/?docID=ceqa>.
- The Attorney General’s global warming website includes a section on CEQA. See <http://ag.ca.gov/globalwarming/ceqa.php>. The site includes all of the Attorney General’s public comment letters that address CEQA and global warming.

(4) **Endnotes**

1. Energy efficiency leads the mitigation list because it promises significant greenhouse gas reductions through measures that are cost-effective for the individual residential and commercial energy consumer.
2. Leadership in Energy and Environmental Design (LEED) administers a Green Building Ratings program that provides benchmarks for the design, construction, and operation of high-performance green buildings. More information about the LEED ratings system is available at <http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>. Build it Green is a non-profit, membership organization that promotes green building practices in California. The organization offers a point-based, green building rating system for various types of projects. See <http://www.builditgreen.org/guidelines-rating-systems>. Lawrence Berkeley National Laboratories' Building Technologies Department is working to develop coherent and innovative building construction and design techniques. Information and publications on energy efficient buildings are available at the Department's website at <http://btech.lbl.gov>. The California Department of Housing and Community Development has created an extensive Green Building & Sustainability Resources handbook with links to green building resources, available at [http://www.hcd.ca.gov/hpd/green\\_build.pdf](http://www.hcd.ca.gov/hpd/green_build.pdf).
3. For more information, see Lawrence Berkeley National Laboratories, Heat Island Group at <http://eetd.lbl.gov/HeatIsland/>.
4. See California Energy Commission, "How to Hire an Energy Services Company" (2000) at [http://www.energy.ca.gov/reports/efficiency\\_handbooks/400-00-001D.PDF](http://www.energy.ca.gov/reports/efficiency_handbooks/400-00-001D.PDF).
5. Energy Star is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy that certifies energy efficient products and provides guidelines for energy efficient practices for homes and businesses. More information about Energy Star-certified products is available at <http://www.energystar.gov/>. The Electronic Product Environmental Assessment Tool (EPEAT) is a system that ranks computer products based on their conformance to a set of environmental criteria, including energy efficiency. More information about EPEAT is available at <http://www.epeat.net/AboutEPEAT.aspx>.
6. LED lighting is substantially more energy efficient than conventional lighting and can save money. See [http://www.energy.ca.gov/efficiency/partnership/case\\_studies/TechAsstCity.pdf](http://www.energy.ca.gov/efficiency/partnership/case_studies/TechAsstCity.pdf) (noting that installing LED traffic signals saved the City of Westlake about \$34,000 per year). As of 2005, only about a quarter of California's cities and counties were using 100% LEDs in traffic signals. See California Energy Commission (CEC), Light Emitting Diode Traffic Signal Survey (2005) at p. 15, available at <http://www.energy.ca.gov/2005publications/CEC-400-2005-003/CEC-400-2005-003.PDF>. The CEC's Energy Partnership Program can help local governments take advantage of energy saving technology, including, but not limited to, LED traffic signals. See <http://www.energy.ca.gov/efficiency/partnership/>.
7. See Palm Desert Energy Partnership at <http://www.sce.com/rebatesandsavings/palmdesert>. The City, in partnership with Southern California Edison, provides incentives and rebates for efficient equipment. See Southern California Edison, Pool Pump and Motor Replacement Rebate Program at [http://www.sce.com/RebatesandSavings/Residential/\\_Pool/PoolPumpandMotor/](http://www.sce.com/RebatesandSavings/Residential/_Pool/PoolPumpandMotor/).

8. Many cities and counties provide energy efficiency education. See, for example, the City of Stockton's Energy Efficiency website at <http://www.stocktongov.com/energysaving/index.cfm>. See also "Green County San Bernardino," <http://www.greencountysb.com/> at pp. 4-6. Private projects may also provide education. For example, a homeowners' association could provide information and energy audits to its members on a regular basis.
9. See <http://www.gosolarcalifornia.ca.gov/documents/CEC-300-2007-008-CMF.PDF>. At the direction of Governor Schwarzenegger, the California Public Utilities Commission (CPUC) approved the California Solar Initiative on January 12, 2006. The initiative creates a \$3.3 billion, ten-year program to install solar panels on one million roofs in the State. See <http://www.gosolarcalifornia.ca.gov/nsnp/index.html>.
10. For example, Alameda County has installed two solar tracking carports, each generating 250 kilowatts. By 2005, the County had installed eight photovoltaic systems totaling over 2.3 megawatts. The County is able to meet 6 percent of its electricity needs through solar power. See <http://www.acgov.org/gsa/Alameda%20County%20-%20Solar%20Case%20Study.pdf>.
11. Many commercial, industrial, and campus-type facilities (such as hospitals, universities and prisons) use fuel to produce steam and heat for their own operations and processes. Unless captured, much of this heat is wasted. Combined heat and power (CHP) captures waste heat and re-uses it, *e.g.*, for residential or commercial space heating or to generate electricity. See U.S. EPA, Catalog of CHP Technologies at [http://www.epa.gov/chp/documents/catalog\\_of\\_%20chp\\_tech\\_entire.pdf](http://www.epa.gov/chp/documents/catalog_of_%20chp_tech_entire.pdf). The average efficiency of fossil-fueled power plants in the United States is 33 percent. By using waste heat recovery technology, CHP systems typically achieve total system efficiencies of 60 to 80 percent. CHP can also substantially reduce emissions of carbon dioxide. <http://www.epa.gov/chp/basic/efficiency.html>. Currently, CHP in California has a capacity of over 9 million kilowatts. See list of California CHP facilities at <http://www.eea-inc.com/chpdata/States/CA.html>.
12. The California Energy Commission has found that the State's water-related energy use – which includes the conveyance, storage, treatment, distribution, wastewater collection, treatment, and discharge – consumes about 19 percent of the State's electricity, 30 percent of its natural gas, and 88 billion gallons of diesel fuel every year. See <http://www.energy.ca.gov/2007publications/CEC-999-2007-008/CEC-999-2007-008.PDF>. Accordingly, reducing water use and improving water efficiency can help reduce energy use and associated greenhouse gas emissions.
13. The Water Conservation in Landscaping Act of 2006 (AB 1881) requires the Department of Water Resources (DWR), not later than January 1, 2009, to update the Model Water Efficient Landscape Ordinance. The draft of the entire updated Model Water Efficient Landscape Ordinance will be made available to the public. See <http://www.owue.water.ca.gov/landscape/ord/updatedOrd.cfm>.
14. See Graywater Guide, Department of Water Resources, Office of Water Use Efficiency and Transfers at [http://www.owue.water.ca.gov/docs/graywater\\_guide\\_book.pdf](http://www.owue.water.ca.gov/docs/graywater_guide_book.pdf). See also The Ahwahnee Water Principles, Principle 6, at [http://www.lgc.org/ahwahnee/h2o\\_principles.html](http://www.lgc.org/ahwahnee/h2o_principles.html). The Ahwahnee Water Principles have been adopted by City of Willits, Town of Windsor, Menlo Park, Morgan Hill, Palo Alto, Petaluma, Port Hueneme, Richmond, Rohnert Park, Rolling Hills Estates, San Luis Obispo, Santa Paula, Santa Rosa, City of Sunnyvale, City of Ukiah, Ventura, Marin County, Marin Municipal Water District, and Ventura County.

15. See Office of Environmental Health Hazard Assessment and the California Water and Land Use Partnership, Low Impact Development, at <http://www.coastal.ca.gov/nps/lid-factsheet.pdf>.
16. See, for example, the City of Santa Cruz, Water Conservation Office at <http://www.ci.santa-cruz.ca.us/wt/wtcon/index.html>; Santa Clara Valley Water District, Water Conservation at <http://www.valleywater.org/conservation/index.shtm>; and Metropolitan Water District and the Family of Southern California Water Agencies, Be Water Wise at <http://www.bewaterwise.com>. Private projects may provide or fund similar education.
17. See Public Interest Energy Research Program, Dairy Power Production Program, Dairy Methane Digester System, 90-Day Evaluation Report, Eden Vale Dairy (Dec. 2006) at <http://www.energy.ca.gov/2006publications/CEC-500-2006-083/CEC-500-2006-083.PDF>. See also discussion in the general plan section, below, relating to wastewater treatment plants and landfills.
18. Many cities and counties provide information on waste reduction and recycling. See, for example, the Butte County Guide to Recycling at <http://www.recyclebutte.net>. The California Integrated Waste Management Board's website contains numerous publications on recycling and waste reduction that may be helpful in devising an education project. See <http://www.ciwmb.ca.gov/Publications/default.asp?cat=13>. Private projects may also provide education directly, or fund education.
19. See U.S. EPA, Our Built and Natural Environments, A Technical Review of the Interactions between Land Use, Transportation, and Environmental Quality (Jan. 2001) at pp. 46-48 <http://www.epa.gov/dced/pdf/built.pdf>.
20. See California Department of Housing and Community Development, Myths and Facts About Affordable and High Density Housing (2002), available at <http://www.hcd.ca.gov/hpd/mythsnfacts.pdf>.
21. Palo Alto's Green Ribbon Task Force Report on Climate Protection recommends pedestrian and bicycle-only streets under its proposed actions. See <http://www.city.palo-alto.ca.us/civica/filebank/blobdload.asp?BlobID=7478>.
22. There are a number of car sharing programs operating in California, including City CarShare <http://www.citycarshare.org/>, Zip Car <http://www.zipcar.com/> and Flexcar <http://www.flexcar.com/>.
23. The City of Lincoln has a NEV program. See <http://www.lincolnev.com/index.html>.
24. See, for example, Marin County's Safe Routes to Schools program at <http://www.saferoutestoschools.org/>.
25. For information on the general plan process, see Governor's Office of Planning and Research, General Plan Guidelines (1998), available at <http://ceres.ca.gov/planning/genplan/gpg.pdf>.
26. The Conservation Element addresses the conservation, development, and use of natural resources including water, forests, soils, rivers, and mineral deposits. Measures proposed for the Conservation Element may alternatively be appropriate for other elements. In practice, there may be substantial overlap in the global warming mitigation measures appropriate for the Conservation and Open Space Elements.

27. See the Attorney General's settlement agreement with the County of San Bernardino, available at [http://ag.ca.gov/cms\\_pdfs/press/2007-08-21\\_San\\_Bernardino\\_settlement\\_agreement.pdf](http://ag.ca.gov/cms_pdfs/press/2007-08-21_San_Bernardino_settlement_agreement.pdf). See also Marin County Greenhouse Gas Reduction Plan (Oct. 2006) at [http://www.co.marin.ca.us/depts/CD/main/pdf/final\\_ghg\\_red\\_plan.pdf](http://www.co.marin.ca.us/depts/CD/main/pdf/final_ghg_red_plan.pdf); Marin Countywide Plan (Nov. 6, 2007) at [http://www.co.marin.ca.us/depts/CD/main/fm/cwpdocs/CWP\\_CD2.pdf](http://www.co.marin.ca.us/depts/CD/main/fm/cwpdocs/CWP_CD2.pdf); Draft Conservation Element, General Plan, City of San Diego at <http://www.sandiego.gov/planning/genplan/pdf/generalplan/ce070918.pdf>.
28. Public Resources Code Section 25402.1(h)2 and Section 10-106 of the Building Energy Efficiency Standards establish a process that allows local adoption of energy standards that are more stringent than the statewide Standards. More information is available at the California Energy Commission's website. See [http://www.energy.ca.gov/title24/2005standards/ordinances\\_exceeding\\_2005\\_building\\_standards.html](http://www.energy.ca.gov/title24/2005standards/ordinances_exceeding_2005_building_standards.html).
29. See, e.g., LEED at <http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>; see also Build it Green at <http://www.builditgreen.org/guidelines-rating-systems>.
30. The City of Santa Monica, for example, has instituted a Green Building Program. See <http://www.greenbuildings.santa-monica.org/>. The City of Pasadena also has a green building ordinance that applies to public and private buildings. See <http://www.ci.pasadena.ca.us/permitcenter/greencity/building/gbprogram.asp> and [http://ordlink.com/codes/pasadena/index.htm?Search\\_Code=Begin+Searching+Municipal+Code](http://ordlink.com/codes/pasadena/index.htm?Search_Code=Begin+Searching+Municipal+Code) at Title 14. The City of San Francisco is considering adopting green building performance requirements that would apply to public and private buildings. See <http://www.sfenvironment.org/downloads/library/gbtfrrreleasev1.3.pdf>.
31. See, e.g., "Green County San Bernardino," <http://www.greencountysb.com/>. As part of its program, the County is waiving permit fees for alternative energy systems and efficient heating and air conditioning systems. See <http://www.greencountysb.com/> at p. 3. For a representative list of incentives for green building offered in California and throughout the nation, see U.S. Green Building Council, Summary of Government LEED Incentives (updated quarterly) at <https://www.usgbc.org/ShowFile.aspx?DocumentID=2021>.
32. For example, Riverside Public Utilities offers free comprehensive energy audits to its business customers. See <http://www.riversideca.gov/utilities/busi-technicalassistance.asp>.
33. Under Southern California Gas Company's Energy Efficiency Program for Commercial/Industrial Large Business Customers, participants are eligible to receive an incentive based on 50% of the equipment cost, or \$0.50 per therm saved, whichever is lower, up to a maximum amount of \$1,000,000 per customer, per year. Eligible projects require an energy savings of at least 200,000 therms per year. See <http://www.socalgas.com/business/efficiency/grants/>.
34. The City of Berkeley is in the process of instituting a "Sustainable Energy Financing District." According to the City, "The financing mechanism is loosely based on existing 'underground utility districts' where the City serves as the financing agent for a neighborhood when they move utility poles and wires underground. In this case, individual property owners would contract directly with qualified private solar installers and contractors for energy efficiency and solar projects on their building. The

City provides the funding for the project from a bond or loan fund that it repays through assessments on participating property owners' tax bills for 20 years." See <http://www.cityofberkeley.info/Mayor/PR/pressrelease2007-1023.htm>.

The California Energy Commission's Public Interest Energy Research Program estimates that the technical potential for rooftop applications of photovoltaic systems in the State is about 40 gigawatts in 2006, rising to 68 gigawatts in 2016. See Public Interest Energy Research Program, California Rooftop Photovoltaic (PV) Resource Assessment and Growth Potential by County (2007), available at <http://www.energy.ca.gov/publications/displayOneReport.php?pubNum=CEC-500-2007-048>.

35. As described in its Climate Action Plan, the City of San Francisco uses a combination of incentives and technical assistance to reduce lighting energy use in small businesses such as grocery stores, small retail outlets, and restaurants. The program offers free energy audits and coordinated lighting retrofit installation. In addition, the City offers residents the opportunity to turn in their incandescent lamps for coupons to buy fluorescent units. See San Francisco's Climate Action Plan, available at <http://www.sfenvironment.org/downloads/library/climateactionplan.pdf>.
36. Among other strategies for reducing its greenhouse gas emissions, Yolo County has adopted purchasing policies for computers and electrical equipment. <http://www.yolocounty.org/docs/press/GreenhouseGas.htm>.
37. See, for example, Los Angeles County Green Purchasing Policy, June 2007 at <http://www.responsiblepurchasing.org/UserFiles/File/General/Los%20Angeles%20County,%20Green%20Purchasing%20Policy,%20June%202007.pdf>. The policy requires County agencies to purchase products that minimize environmental impacts, including greenhouse gas emissions.
38. Some local agencies have implemented a cool surfaces programs in conjunction with measures to address storm water runoff and water quality. See, for example, The City of Irvine's Sustainable Travelways/Green Streets program at [http://www.cityofirvine.org/depts/redevelopment/sustainable\\_travelways.asp](http://www.cityofirvine.org/depts/redevelopment/sustainable_travelways.asp); The City of Los Angeles's Green Streets LA program at [http://water.lgc.org/water-workshops/la-workshop/Green\\_Streets\\_Daniels.pdf/view](http://water.lgc.org/water-workshops/la-workshop/Green_Streets_Daniels.pdf/view); see also The Chicago Green Alley Handbook at [http://egov.cityofchicago.org/webportal/COCWebPortal/COC\\_EDITORIAL/GreenAlleyHandbook\\_Jan.pdf](http://egov.cityofchicago.org/webportal/COCWebPortal/COC_EDITORIAL/GreenAlleyHandbook_Jan.pdf).
39. See the website for Lawrence Berkeley National Laboratory's Urban Heat Island Group at <http://eetd.lbl.gov/HeatIsland/LEARN/> and U.S. EPA's Heat Island website at [www.epa.gov/heatisland/](http://www.epa.gov/heatisland/). To learn about the effectiveness of various heat island mitigation strategies, see the Mitigation Impact Screening Tool, available at <http://www.epa.gov/heatisd/resources/tools.html>.
40. For example, the City of Lompoc has a policy to "require new development to offset new water demand with savings from existing water users, as long as savings are available." See <http://www.ci.lompoc.ca.us/departments/comdev/pdf07/RESRCMGMT.pdf>.
41. The Irvine Ranch Water District in Southern California, for example, uses a five-tiered rate structure that rewards conservation. The water district has a baseline charge for necessary water use. Water use

that exceeds the baseline amount costs incrementally more money. While “low volume” water use costs \$.082 per hundred cubic feet (ccf), “wasteful” water use costs \$7.84 per ccf. See [http://www.irwd.com/AboutIRWD/rates\\_residential.php](http://www.irwd.com/AboutIRWD/rates_residential.php). Marin County has included tiered billing rates as part of its general plan program to conserve water. See Marin County Countywide Plan, page 3-204, PFS-2.q, available at [http://www.co.marin.ca.us/depts/CD/main/fm/cwpdocs/CWP\\_CD2.pdf](http://www.co.marin.ca.us/depts/CD/main/fm/cwpdocs/CWP_CD2.pdf).

42. See the City of Fresno’s Watering Regulations and Ordinances at <http://www.fresno.gov/Government/DepartmentDirectory/PublicUtilities/Watermanagement/Conservation/WaterRegulation/WateringRegulationsandRestrictions.htm>.
43. See, e.g., the City of San Diego’s plumbing retrofit ordinance at <http://www.sandiego.gov/water/conservation/selling.shtml>.
44. The City of Roseville offers free water conservation audits through house calls and on-line surveys. See [http://www.roseville.ca.us/eu/water\\_utility/water\\_conservation/for\\_home/programs\\_n\\_rebates.asp](http://www.roseville.ca.us/eu/water_utility/water_conservation/for_home/programs_n_rebates.asp).
45. See Landscape Performance Certification Program, Municipal Water District of Orange County at [http://waterprograms.com/wb/30\\_Landscapers/LC\\_01.htm](http://waterprograms.com/wb/30_Landscapers/LC_01.htm).
46. For example, San Diego’s Metropolitan Wastewater Department (SDMWD) installed eight digesters at one of its wastewater treatment plants. Digesters use heat and bacteria to break down the organic solids removed from the wastewater to create methane, which can be captured and used for energy. The methane generated by SDMWD’s digesters runs two engines that supply enough energy for all of the plant’s needs, and the plant sells the extra energy to the local grid. See <http://www.sandiego.gov/mwwd/facilities/ptloma.shtml>. In addition, the California Air Resources Board approved the Landfill Methane Capture Strategy as an early action measure. <http://www.arb.ca.gov/cc/cea/landfills/landfills.htm>. Numerous landfills in California, such as the Puente Hills Landfill in Los Angeles County ([http://www.lacsd.org/about/solid\\_waste\\_facilities/puente\\_hills/clean\\_fuels\\_program.asp](http://www.lacsd.org/about/solid_waste_facilities/puente_hills/clean_fuels_program.asp)), the Scholl Canyon Landfill in the City of Glendale (<http://www.glendalewaterandpower.com/Renewable%20Energy%20Development.asp>), and the Yolo Landfill in Yolo County, are using captured methane to generate power and reduce the need for other more carbon-intensive energy sources.
47. On April 30, 2007, the Public Utilities Commission authorized a CCA application by the Kings River Conservation District on behalf of San Joaquin Valley Power Authority (SJVPA). SJVPA's Implementation Plan and general CCA program information are available at [www.communitychoice.info](http://www.communitychoice.info). See also <http://www.co.marin.ca.us/depts/CD/main/comdev/advance/Sustainability/Energy/cca/CCA.cfm>. (County of Marin); and [http://sfwater.org/mto\\_main.cfm/MC\\_ID/12/MSC\\_ID/138/MTO\\_ID/237](http://sfwater.org/mto_main.cfm/MC_ID/12/MSC_ID/138/MTO_ID/237) (San Francisco Public Utilities Commission). See also Public Interest Energy Research, Community Choice Aggregation (fact sheet) (2007), available at <http://www.energy.ca.gov/publications/displayOneReport.php?pubNum=CEC-500-2006-082>.
48. The Land Use Element designates the type, intensity, and general distribution of uses of land for housing, business, industry, open-space, education, public buildings and grounds, waste disposal facilities, and other categories of public and private uses.

49. Samples of local legislation to reduce sprawl are set forth in the U.S. Conference of Mayors' Climate Action Handbook. See [http://www.iclei.org/documents/USA/documents/CCP/Climate\\_Action\\_Handbook-0906.pdf](http://www.iclei.org/documents/USA/documents/CCP/Climate_Action_Handbook-0906.pdf).
50. For a list and maps related to urban growth boundaries in California, see Urban Growth Boundaries and Urban Line Limits, Association of Bay Area Governments (2006) at <http://www.abag.ca.gov/jointpolicy/Urban%20Growth%20Boundaries%20and%20Urban%20Limit%20Lines.pdf>.
51. The Circulation Element works with the Land Use element and identifies the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities.
52. See Orange County Transportation Authority, Signal Synchronization at <http://www.octa.net/signals.aspx>. Measures such as signal synchronization that improve traffic flow must be paired with other measures that encourage public transit, bicycling and walking so that improved flow does not merely encourage additional use of private vehicles.
53. San Francisco's "Transit First" Policy is listed in its Climate Action Plan, available at <http://www.sfenvironment.org/downloads/library/climateactionplan.pdf>. The City's policy gives priority to public transit investments and provides public transit street capacity and discourages increases in automobile traffic. This policy has resulted in increased transit service to meet the needs generated by new development.
54. The City of La Mesa has a Sidewalk Master Plan and an associated map that the City uses to prioritize funding. As the City states, "The most important concept for sidewalks is connectivity. For people to want to use a sidewalk, it must conveniently connect them to their intended destination." See <http://www.ci.la-mesa.ca.us/index.asp?NID=699>.
55. San Francisco assesses a Downtown Transportation Impact Fee on new office construction and commercial office space renovation within a designated district. The fee is discussed in the City's Climate Action plan, available at <http://www.sfenvironment.org/downloads/library/climateactionplan.pdf>.
56. For example, Seattle, Washington maintains a public transportation "ride free" zone in its downtown from 6:00 a.m. to 7:00 p.m. daily. See [http://transit.metrokc.gov/tops/accessible/paccessible\\_map.html#fare](http://transit.metrokc.gov/tops/accessible/paccessible_map.html#fare).
57. See, e.g., Reforming Parking Policies to Support Smart Growth, Metropolitan Transportation Commission (June 2007) at [http://www.mtc.ca.gov/planning/smart\\_growth/parking\\_seminar/Toolbox-Handbook.pdf](http://www.mtc.ca.gov/planning/smart_growth/parking_seminar/Toolbox-Handbook.pdf); see also the City of Ventura's Downtown Parking and Mobility Plan, available at [http://www.cityofventura.net/depts/comm\\_dev/resources/mobility\\_parking\\_plan.pdf](http://www.cityofventura.net/depts/comm_dev/resources/mobility_parking_plan.pdf), and its Downtown Parking Management Program, available at [http://www.cityofventura.net/depts/comm\\_dev/downtownplan/chapters/5\\_programs\\_implementation.pdf](http://www.cityofventura.net/depts/comm_dev/downtownplan/chapters/5_programs_implementation.pdf).

58. See Safe Routes to School Toolkit, National Highway Traffic Safety Administration (2002) at [www.nhtsa.dot.gov/people/injury/pedbimot/bike/Safe-Routes-2002](http://www.nhtsa.dot.gov/people/injury/pedbimot/bike/Safe-Routes-2002); see also [www.saferoutestoschools.org](http://www.saferoutestoschools.org) (Marin County).
59. The Housing Element assesses current and projected housing needs. In addition, it sets policies for providing adequate housing and includes action programs for that purpose.
60. The U.S. Conference of Mayors cites Sacramento's Transit Village Redevelopment as a model of transit-oriented development. More information about this project is available at <http://www.cityofsacramento.org/planning/projects/65th-street-village/>. The Metropolitan Transportation Commission (MTC) has developed policies and funding programs to foster transit-oriented development. More information is available at MTC's website: [http://www.mtc.ca.gov/planning/smart\\_growth/#tod](http://www.mtc.ca.gov/planning/smart_growth/#tod). The California Department of Transportation maintains a searchable database of 21 transit-oriented developments at <http://transitorienteddevelopment.dot.ca.gov/miscellaneous/NewHome.jsp>.
61. The City of Berkeley has endorsed the strategy of reducing developer fees or granting property tax credits for mixed-use developments in its Resource Conservation and Global Warming Abatement Plan. City of Berkeley's Resource Conservation and Global Warming Abatement Plan p. 25 at <http://www.baaqmd.gov/pln/GlobalWarming/BerkeleyClimateActionPlan.pdf>.
62. The Open Space Element details plans and measures for preserving open space for natural resources, the managed production of resources, outdoor recreation, public health and safety, and the identification of agricultural land. As discussed previously in these Endnotes, there may be substantial overlap in the measures appropriate for the Conservation and Open Space Elements.
63. The Safety Element establishes policies and programs to protect the community from risks associated with seismic, geologic, flood, and wildfire hazards.