

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

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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/>.

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/nshp/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%20Streets%20Daniels.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/heatisld/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/ceca/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.

Appendix I  
**Air Quality**

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## Localized Significance Threshold Dispersion Modeling Methodology for Construction Emissions

In accordance with the SCAQMD criteria, peak daily emissions for CO, NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> were modeled to determine their concentration and contribution to the ambient concentrations within the project vicinity. The analysis makes use of methodology included in the SCAQMD "Final Localized Significance Threshold Methodology" (Methodology) (SCAQMD, June 2003).

Modeling was performed using the USEPA SCREEN3 dispersion model and includes those emissions sources that operate continually at the site (i.e., heavy equipment). Mobile source emissions (i.e., worker and haul trips) are not to be included in the analysis as these emissions are spread over a large area and do not represent a localized source. The maximum daily emissions for CO, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> were determined based on emissions projections included in the analysis. For construction, the values are 18.16, 35.65, 18.43, and 5.22 pounds per day, respectively.

An average hourly emission rate was determined and the average hourly emission rate in grams per second was calculated.

$$CO = 18.16 \text{ lb/day} \times 454 \text{ gm/lb} / 8 \text{ hr/day} / 60 \text{ min/hr} / 60 \text{ sec/min} = 0.29 \text{ gm/sec}$$

$$NO_x = 35.65 \text{ lb/day} \times 454 \text{ gm/lb} / 8 \text{ hr/day} / 60 \text{ min/hr} / 60 \text{ sec/min} = 0.56 \text{ gm/sec}$$

$$PM_{10} = 18.43 \text{ lb/day} \times 454 \text{ gm/lb} / 8 \text{ hr/day} / 60 \text{ min/hr} / 60 \text{ sec/min} = 0.29 \text{ gm/sec}$$

$$PM_{2.5} = 5.22 \text{ lb/day} \times 454 \text{ gm/lb} / 8 \text{ hr/day} / 60 \text{ min/hr} / 60 \text{ sec/min} = 0.08 \text{ gm/sec}$$

These values were then divided by the project area and a 1-hour concentration was derived.

$$29.69 \text{ acres} \times 43,560 \text{ ft}^2/\text{acre} \times 0.0929 \text{ ft}^2/\text{m}^2 = 120,147 \text{ m}^2$$

$$CO = 0.29 \text{ gm/sec} / 120,147 \text{ m}^2 = 0.00000238 \text{ gm/sec/m}^2$$

$$NO_x = 0.56 \text{ gm/sec} / 120,147 \text{ m}^2 = 0.00000468 \text{ gm/sec/m}^2$$

$$PM_{10} = 0.29 \text{ gm/sec} / 120,147 \text{ m}^2 = 0.00000242 \text{ gm/sec/m}^2$$

$$PM_{2.5} = 0.08 \text{ gm/sec} / 120,147 \text{ m}^2 = 0.00000068 \text{ gm/sec/m}^2$$

These values were then modeled as an area source using the USEPA SCREEN3 dispersion model. Model parameters were selected in accordance with the Methodology. Accordingly, the emissions plume was set at an elevation of 5 meters while the receptors were set at an elevation of 2 meters. As a reasonable worst-case, the highest atmospheric stability class was used in the modeling effort. In accordance with the discussion of local meteorology, daily wind speed was set at 5 mph (2.24 m/sec), the minimum average daily wind speed through the project area.

According to the Methodology, receptors are assumed to be located at distances of 25, 50, 100, 200, and 500 meters. In cases where proximate receptors may be closer than 25 meters, as

per the Methodology, a value of 25 meters is to be used in the analysis as a worst-case scenario.

In the case of the 1-hour CO standard, the modeled concentration was added directly to an assumed ambient concentration. This ambient concentration is source-area dependant and is based on the peak 1-hour value observed over the last 3 years of accumulated data. In the case of CO, SCREEN3 reports results in terms of  $\mu\text{g}/\text{m}^3$ . However, the standard is in ppm and the value obtained from the SCREEN3 model must be converted.

For CO, the conversion factor is:

$$\text{Conc. (ppm)} / \text{Conc. } (\mu\text{g}/\text{m}^3) = \text{pressure (mb)} / \text{Temp (k)} \times \text{molecular wt} / 8.314\text{E-}2$$

$$\text{Conc. (ppm)} / \text{Conc. } (\mu\text{g}/\text{m}^3) = 1,013.25 \text{ mb} / 293.15 \text{ k} \times 28 / 8.314\text{E-}2 = 1,164.1$$

As an example, in the case of CO, the SCREEN3 Model projects a CO concentration of 24.87  $\mu\text{g}/\text{m}^3$  at 25 meters.

$$24.87 \mu\text{g}/\text{m}^3 / 1,164.1 = 0.02 \text{ ppm}$$

This value is then added to the ambient concentration (i.e., 4 ppm).

For the 8-hour CO standard, the 1-hour concentration is multiplied by a persistence factor of 0.7 as recommended by the California Air Pollution Control Officers Association (Air Toxics Assessment Manual, October 1, 1987). The resultant value was added to the peak 8-hour value observed over the last 3 years of accumulated data, (i.e., 3.1 ppm).

In the case of  $\text{NO}_2$  the calculation is slightly more complex. The ambient air quality standards are written in terms of  $\text{NO}_2$ . However, heavy equipment primarily emits NO that then goes on to form  $\text{NO}_2$ . As such, the Methodology includes factors than can be used to determine  $\text{NO}_2$  concentrations at varying distances. These factors are included in the following table.

**$\text{NO}_2$ -TO-NOX RATIO AS A FUNCTION OF DOWNWIND DISTANCE**

Downwind Distance (m)	$\text{NO}_2/\text{NO}_x$ Ratio
20	0.053
25 <sup>1</sup>	0.054
50	0.059
100	0.074
200	0.114
500	0.258

Notes:  
1. Value is not included in the SCAQMD methodology and is extrapolated.

The  $\text{NO}_x$  concentration modeled using the SCREEN3 model was then multiplied by the  $\text{NO}_2/\text{NO}_x$  ratio. Like CO, SCREEN3 reports  $\text{NO}_x$  concentrations in ( $\mu\text{g}/\text{m}^3$ ) while the standard is in ppm. In this case, the conversion is:

$$\text{Conc. (ppm)} / \text{Conc. } (\mu\text{g}/\text{m}^3) = 1,013.25 \text{ mb} / 293.15\text{k} \times 46 / 8.314\text{E-}2 = 1,912.4$$

As an example, in the case of NO<sub>x</sub>, the SCREEN3 Model projects a concentration of 48.90 µg/m<sup>3</sup> at 25 meters.

$$48.90 \mu\text{g}/\text{m}^3 \times 0.054 / 1,912.4 = 0.0014 \text{ ppm}$$

The resultant value is added to the peak 1-hour value observed over the last 3 years of accumulated data, (i.e., 0.11 ppm).

In the cases of PM<sub>10</sub> and PM<sub>2.5</sub>, no ambient concentration is added. However, in both cases, construction is subject to a 24-hour concentration standard of 10.4 µg/m<sup>3</sup>. For the 24-hour standard, the 1-hour concentration is multiplied by a persistence factor of 0.4 as recommended by the California Air Pollution Control Officers Association (Air Toxics Assessment Manual, October 1, 1987). Results of the analysis are included below.

### LOCALIZED CONSTRUCTION EMISSIONS CONCENTRATIONS<sup>1</sup>

Distance	CO (1-Hr Conc.) <sup>2</sup>	CO (8-Hr Conc.) <sup>3</sup>	NO <sub>2</sub> (1-Hr Conc.) <sup>4</sup>	PM <sub>10</sub> (24-Hr Conc.)	PM <sub>2.5</sub> (24-Hr Conc.)
Peak Daily On-site Emissions (lb/day)	18.16	18.16	35.65	18.43	5.22
Concentration at 25 meters	4.02	3.11	0.11	10.11	2.84
Concentration at 50 meters	4.02	3.11	0.11	9.32	2.62
Concentration at 100 meters	4.02	3.11	0.11	7.69	2.16
Concentration at 200 meters	4.01	3.11	0.11	5.67	1.59
Concentration at 500 meters	4.01	3.10	0.11	3.24	0.91
Ambient Air Quality Standard	20 ppm	9.0 ppm	0.18 ppm	10.4 µg/m <sup>3</sup>	10.4 µg/m <sup>3</sup>
Exceeds Standard?	No	No	No	No	No
Notes: 1. CO and NO <sub>2</sub> are in ppm, PM <sub>10</sub> and PM <sub>2.5</sub> are in µg/m <sup>3</sup> . 2. Includes a background concentration of 4 ppm. 3. Includes a background concentration of 3.1 ppm. 4. Includes a background concentration of 0.11 ppm.					

## CALINE4 Modeling Methodology

The carbon monoxide micro-scale analysis was prepared in accordance with the Caltrans' "Transportation Project-Level Carbon Monoxide Protocol" (Revised December 1997). As noted in the Protocol, the EMFAC and CALINE models are sensitive to the volumes of trucks on the roadway as they contribute disproportionately to the pollutant loading. The composite CO emissions for all classes of vehicles (e.g., automobiles, trucks, busses, motorcycles) in the project area were derived from year 2010 and 2030 model runs of the EMFAC2007 (BURDEN2007 Module) computer model. BURDEN2007 also projects CO emissions both for starts and idling vehicles. Modeling was performed for both the a.m. and p.m. peak-hour for the Los Angeles County area in those cases where an intersection would meet or exceed a level of service (LOS) "D."

The projected composite start and idle emissions for all vehicle classes were divided by the total number of miles traveled so that average start and idle emissions per mile factors could be derived. These emissions were then added to the emissions produced in the “run mode” as projected by the EMFAC2007 model and using an Excel spreadsheet, composite emissions were produced for any vehicle speed between 3 and 35 mph, extrapolated into 1 mph increments.

Per the Protocol, the intersection mode of the CALINE4 model is not to be used and intersections are modeled by using a reduced speed (and its attendant increase in emissions) to represent intersection speeds and waits. As per the Protocol, vehicles emissions were projected within 750 meters (2,460 feet) of the intersection. The first 600 meters (1,968 feet) are assumed in cruise mode. The speed during cruise mode is dictated by the Protocol and is dependant on the speed limit of the road. Slower speeds result in higher emissions and as a worst-case scenario, all roads in were assumed to have a posted speed limit of 25 mph, the slowest speed addressed in the Protocol. The slowing period then lasts for 150 meters (492 feet). Vehicles leaving the intersection are assumed accelerate for a period of 150 meters (492 feet). Emissions for these departing vehicles are then considered to be in cruise mode out to a distance of 750 meters (2,460 feet).

The speeds while in slowing and accelerating modes (and their attendant emissions) are determined by the Protocol and consider the number of vehicles per lane and percent of time that the traffic signal is red. As a worst-case scenario, all modeling assumes that any intersection improvements discussed in the traffic analysis are not implemented. As per the Protocol, a minimum of 200 vehicles is attributable to each lane per hour in determining approach and departure speeds. For the purposes of this analysis, the percentage of “red time” was modeled as being inversely proportional to the projected volume of vehicles. Thus, if the east/west-bound traffic constituted 70 percent of the total volume, it was allotted 30 percent of the “red time.” In all cases, the “red time” was rounded to the nearest 10 percent and never set to exceed 70 percent of the total cycle period.

Also as noted in the CO Protocol, vehicle emissions are sensitive to the ambient temperature. Per the Protocol, ambient temperature is to be set at 5°F above the typical winter temperature. As the project area seldom gets below freezing, winter conditions with an ambient temperature of 40°F, were used in the EMFAC2007 model. A temperature of 4°C (39.2°F) was used in CALINE4 model runs. Other atmospheric conditions used in the CALINE4 model include the minimum allowable wind speed (0.5 meters per second) with a standard deviation of 10 percent, a stability class of G, a mixing height of 1,000 meters, and a ground surface roughness of 108 cm (43 in.); all indicative of a worst-case scenario in an urban setting.

Projected composite vehicle emissions were then used as data in the CALINE4 model to project CO emissions at a distance of 3 meters (10 feet) from each of the four corners of the intersection. To the projected CO values, an ambient concentration of CO is added. According to the Protocol, this value is to be based on the higher of the second highest recorded value for the last two years of data. The SCAQMD no longer publishes the second highest recorded value and for the purposes of this analysis, the highest values for the last three years of recorded data (i.e., 4 and 3.1 ppm for the 1- and 8-hour concentrations, respectively), were used consistent with the SCAQMD’s “Localized Significance Threshold” methodology. Most days would realize lesser background concentrations and this analysis then represents a worst-case scenario.

Appendix J  
**Noise**

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## Calculation of Existing Noise Levels and Distances to Contours

The following calculations use the daytime, evening, and night Leq values to calculate the CNEL:  $CNEL = 10 * LOG(((12 * 10^{(Day/10)}) + (3 * 10^{((Evening+5)/10)}) + (9 * 10^{((Night+10)/10)})) / 24)$

Surface Routes	Daytime Leq	Evening Leq	Night Leq	CNEL		
40 mph	78.7	75.7	74.2	81.8		
45 mph	79.8	76.9	75.1	82.8		
Location	Speed (mph)	Existing ADT	Existing CNEL (dBA @ 50 feet)	Distance to 70 CNEL (feet)	Distance to 65 CNEL (feet)	Distance to 60 CNEL (feet)
Brea Canyon Road						
N/O Diamond Bar	45	4,896	66.3	28	61	130
S/O Diamond Bar	45	12,696	70.4	53	114	246
Diamond Bar Boulevard						
N/O Cherrydale	45	20,512	72.5	73	157	339
Brea Canyon Cutoff						
W/O Fallow Field	40	11,003	68.8	41	89	193

## Calculation and Comparison of Existing and Existing with Project Noise Levels

The following calculations use the daytime, evening, and night Leq values to calculate the CNEL:  $CNEL = 10 * LOG(((12 * 10^{(Day/10)}) + (3 * 10^{((Evening+5)/10)}) + (9 * 10^{((Night+10)/10)})) / 24)$

Surface Routes	Daytime Leq	Evening Leq	Night Leq	CNEL		
40 mph	78.7	75.7	74.2	81.8		
45 mph	79.8	76.9	75.1	82.8		
Location	Speed (mph)	Existing ADT	Existing CNEL (dBA @ 50 feet)	With Project ADT	With Project CNEL (dBA @ 50 feet)	Difference (dBA CNEL)
Brea Canyon Road						
N/O Diamond Bar	45	4,896	66.2	5,764	67.0	0.7
S/O Diamond Bar	45	12,696	70.4	13,971	70.8	0.4
Diamond Bar Boulevard						
N/O Cherrydale	45	20,512	72.5	23,581	73.1	0.6
Brea Canyon Cutoff						
W/O Fallow Field	40	11,003	68.8	12,738	69.4	0.6

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Appendix K  
**Cultural Resource Assessment**

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# PHASE I CULTURAL AND PALEONTOLOGICAL RESOURCE ASSESSMENT OF THE PROPOSED SITE D DEVELOPMENT LOS ANGELES COUNTY, CALIFORNIA

YORBA LINDA, CA 1964 (PHOTO-REVISED 1981) USGS 7.5' QUADRANGLE  
TOWNSHIP 2 SOUTH, RANGE 9 WEST, SECTION 29

30.4 ACRES

SURVEY CONDUCTED: NOVEMBER 15, 2007

REPORT COMPLETED: JANUARY 10, 2008

RESOURCES IDENTIFIED: SD-CULTURAL-1, SD-PALEO-1, SD-PALEO-2, SD-PALEO-3, AND SD-PALEO-4



PCR

**PHASE I  
CULTURAL AND PALEONTOLOGICAL  
RESOURCE ASSESSMENT OF THE  
PROPOSED SITE D DEVELOPMENT  
LOS ANGELES COUNTY, CALIFORNIA**

Prepared for:

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Marcy Rockman, PH.D., Acting Director/Principal Archaeologist

**PHASE I CULTURAL AND PALEONTOLOGICAL RESOURCE ASSESSMENT OF  
THE PROPOSED SITE D DEVELOPMENT,  
LOS ANGELES COUNTY, CALIFORNIA**

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*Authors:*

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And  
Marcy Rockman, Ph.D., RPA, *Acting Director/Principal Archaeologist*

Yorba Linda, CA 1964 (photo-revised 1981) USGS 7.5' Quadrangle  
Township 2 South, Range 9 West, Section 29

30.4 Acres

Survey Conducted: November 15, 2007  
Draft Report Completed: January 24, 2008

Resources Identified: SD-Cultural-1, SD-Paleo-1, SD-Paleo-2, SD-Paleo-3, and SD-Paleo-4

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## EXECUTIVE SUMMARY

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### PROJECT UNDERTAKING AND LOCATION

The City of Diamond Bar and the Walnut Valley Unified School District (Applicants) plan to develop the Site D property (the “study area”), an approximately 30.4-acre parcel located in the City of Diamond Bar in Los Angeles County, California. The proposed mixed use development includes the construction of approximately 202 dwelling units on 10.1 acres of the study area, including bike and pedestrian trails, walks, and recreational facilities, and a commercial component that will include 153,985 square feet of commercial development on 10.1 acres. The remaining 10.2 acres consists of manufactured slopes and other infrastructure.

### SCOPE AND METHODOLOGY

**PCR Services Corporation (PCR)** conducted a Phase I cultural and paleontological resources assessment of the study area from October through December of 2007. This assessment was conducted by PCR to determine the potential impacts to cultural resources associated with the proposed project for the purpose of complying with the California Environmental Quality Act (CEQA). The scope of work for this assessment included a review of historic aerial photographs and topographic maps, a review of relevant online historical literature, a cultural resources records search through the California Historical Resources Information System-South Central Coastal Information Center (CHRIS-SCCIC), a Sacred Lands File search through the California Native American Heritage Commission and follow-up Native American consultation, a paleontological records search through the Natural History Museum of Los Angeles County, and a pedestrian survey of the study area for cultural and paleontological resources.

### RESULTS AND MITIGATION

#### Cultural Resources

Results of the historic aerial photograph and topographic map review revealed that a structure (HS-1) was once located within the boundaries of the study area that was associated with the historic Diamond Bar Ranch Headquarters Compound (Compound). The Compound included the residence of Frederick E. Lewis, who owned and operated the Diamond Bar Ranch (Ranch) which was located 0.75 miles northeast of the study area. It is unclear if HS-1 was the residence of Mr. Lewis or another individual. Mr. Lewis operated the Ranch from 1918 until 1946 when he sold it to the Bartholome family. At the time, the Ranch was one of the largest

working cattle ranches in the western U.S. Mr. Lewis is considered a significant person in the history of the City of Diamond Bar because he registered the “diamond over a bar” branding iron with the California Department of Agriculture in 1918. This later became the symbol for which the City of Diamond Bar was named.

No prehistoric archaeological resources have been previously recorded within one mile of the study area and no prehistoric resources were identified in the study area during the pedestrian survey. Prehistoric sites identified in the study vicinity consist of relatively small collections of surface artifacts; the distribution of subsurface prehistoric deposits in the vicinity is unknown. Given the lack of prehistoric materials identified on the surface of the study area and surrounding radius, in light of multiple previous surrounding studies, the potential for subsurface prehistoric deposits in the study area appears to be low.

Results of the pedestrian survey revealed the identification of a historical archaeological site that will temporarily be designated as SD-Cultural-1 (see Figure 7, *Results Map*, on page 24). The site components include a landscape component consisting of more than 15 non-native eucalyptus trees as well as a concrete debris concentration and the former location of HS-1. These site components are associated with the former historic Compound.

The significance of SD-Cultural-1 with respect to CEQA is considered to be undetermined. The site has strong associations with Frederick E. Lewis and the early ranching history of southern California, which entail consideration under criteria b and a of the California Register, respectively. The integrity of the surface components of the site, however, is low. The stand of eucalyptus trees appears to be an intact landscape component, but the built component is now represented by only by a few piles of rubble and retains little historical character. Given these conditions, the site does not appear to qualify under criteria c. Given the length of time the Compound was occupied; it is anticipated that there is at least moderate potential for the site to retain buried domestic or ranch maintenance components such as trash pits, privy holes, and similar features, which in turn may be encountered during ground disturbing activities during development of the proposed project. As the site, SD-Cultural-1, is associated with a known historical figure and a known timeframe, intact subsurface deposits may qualify as significant archaeological resources under criteria d.

Development of the proposed project will entail grading over extensive portions of the study area. The grading will result in extensive disturbance within the boundaries of SD-Cultural-1. Given the potential for buried archaeological deposits that may qualify as significant resources, the following mitigation measures are recommended to reduce the impacts of the proposed project on cultural resources to a less than significant level:

1. A qualified archaeologist shall be retained by the Applicant and approved by the City of Diamond Bar prior to the development of the Site D property to monitor all

- vegetation removal and ground disturbance to a depth of three feet within the following portions of the study area: the boundary of SD-Cultural-1, the open valley floor adjacent to SD-Cultural-1, and the riparian areas that could not be surveyed due to dense vegetation cover, as shown in Figure 8 on page 28. The archaeologist will determine if additional monitoring below the depth of three feet is warranted, based on soil and bedrock conditions and presence/absence of archaeological materials. No archaeological monitoring is required for ground disturbing activities outside of monitor areas indicated in Figure 8.
2. If cultural resources are identified during monitoring of the ground disturbing activities, the archaeologist shall be allowed to temporarily divert or redirect grading or excavation activities in the vicinity in order to make an evaluation of the find and determine appropriate treatment. Treatment will include the goals of preservation where practicable and public interpretation of historic and archaeological resources. All cultural resources recovered will be documented on California Department of Parks and Recreation Site Forms to be filed with the CHRIS-SCCIC. The archaeologist shall prepare a final report about the monitoring to be filed with the Applicant, City of Diamond Bar, and the CHRIS-SCCIC, as required by the California Office of Historic Preservation. The report shall include documentation and interpretation of resources recovered, if any. Interpretation will include evaluation of eligibility of the resources with respect to the California Register of Historic Places and CEQA. The report shall also include all specialists' reports as appendices. The lead agency shall designate repositories in the event that resources are recovered.
  3. If cultural resources are identified during ground disturbing activities that fall outside of the Recommended Archaeological Monitoring Extent (see Figure 8); therefore, without the presence of an archaeologist, ground disturbing activities should temporarily be redirected from the vicinity of the find until the retained archaeologist is notified by the Applicant. The archaeologist should coordinate with the Applicant as to the immediate treatment of the find until a proper site visit and evaluation is made by the archaeologist. The treatment of the find will correspond with the aforementioned treatment in Mitigation Measure – 2.
  4. If human remains are encountered unexpectedly during construction excavation and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the California Native American Heritage Commission (NAHC). The NAHC will then identify the person(s) thought to be the Most Likely Descendent of the deceased

Native American, who will then help determine what course of action should be taken in dealing with the remains.

### **Paleontological Resources**

Results of the paleontological resources records search revealed that the study area is underlain by the Puente Formation (also known as the Monterey Formation in the study region), which is a formation known to contain diverse and well-preserved marine vertebrate fossils. The results of the pedestrian survey confirmed the exposure of the Puente Formation in the study area and the identification of four fossil localities (SD-Paleo-1, SD-Paleo-2, SD-Paleo-3, and SD-Paleo-4) in backdirt piles from geotechnical core sampling. The study area is therefore considered to be highly sensitive for paleontological resources. As a result, impacts to paleontological resources from the proposed project will be considered less than significant if the following mitigation measures are implemented to identify, evaluate, and recover paleontological resources, if they are uncovered during development of the proposed project:

1. A qualified paleontologist shall be retained by the Applicant and approved by the City of Diamond Bar prior to the development of the Site D property to develop and implement a paleontological monitoring plan. A qualified paleontologist is here defined as a paleontologist meeting the qualifications established by the Society of Vertebrate Paleontologists. Development of the monitoring plan shall include a site visit by the paleontologist prior to initiation of project development in order to determine or delineate sensitive areas. The paleontologist may also perform collections of fossils from the surface.
2. The paleontologist shall attend a pre-grade meeting and have access to available geotechnical information in order to become familiar with the proposed depths and patterns of grading of the study area.
3. The paleontologist shall establish a curation agreement with an accredited facility prior to the initiation of ground-disturbing activities.
4. A paleontological monitor, supervised by the paleontologist, shall monitor all excavations in the Puente Formation or excavations anticipated to extend into the Puente Formation. If fossils are found during ground-disturbing activities, the paleontological monitor shall be empowered to halt the ground-disturbing activities within 25 feet of the find in order to allow evaluation of the find and determination of appropriate treatment.
5. The paleontologist shall prepare a final report on the monitoring. If fossils were identified, the report shall contain an appropriate description of the fossils, treatment, and curation. A copy of the report shall be filed with the Applicant,

the City of Diamond Bar, and the Natural History Museum of Los Angeles County, and shall accompany any curated fossils.

### **Native American Consultation**

Contact with the Native American groups identified by the NAHC as having affiliation with the study area is on-going. As per NAHC suggested procedure, follow-up letters were sent via certified mail on November 21, 2007 to the eight individuals and organizations identified by the NAHC as being affiliated with the vicinity of the study area to request any additional information or concerns they may have about Native American cultural resources that may be affected by the proposed Site D development. As of February 22, 2008, PCR has not received a response from any of the Native American individuals or organizations. PCR will keep the Applicant apprised with the progress of this on-going Native American consultation.

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## 1.0 INTRODUCTION

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### 1.1 PROJECT UNDERTAKING AND LOCATION

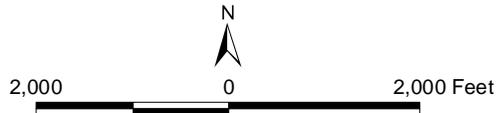
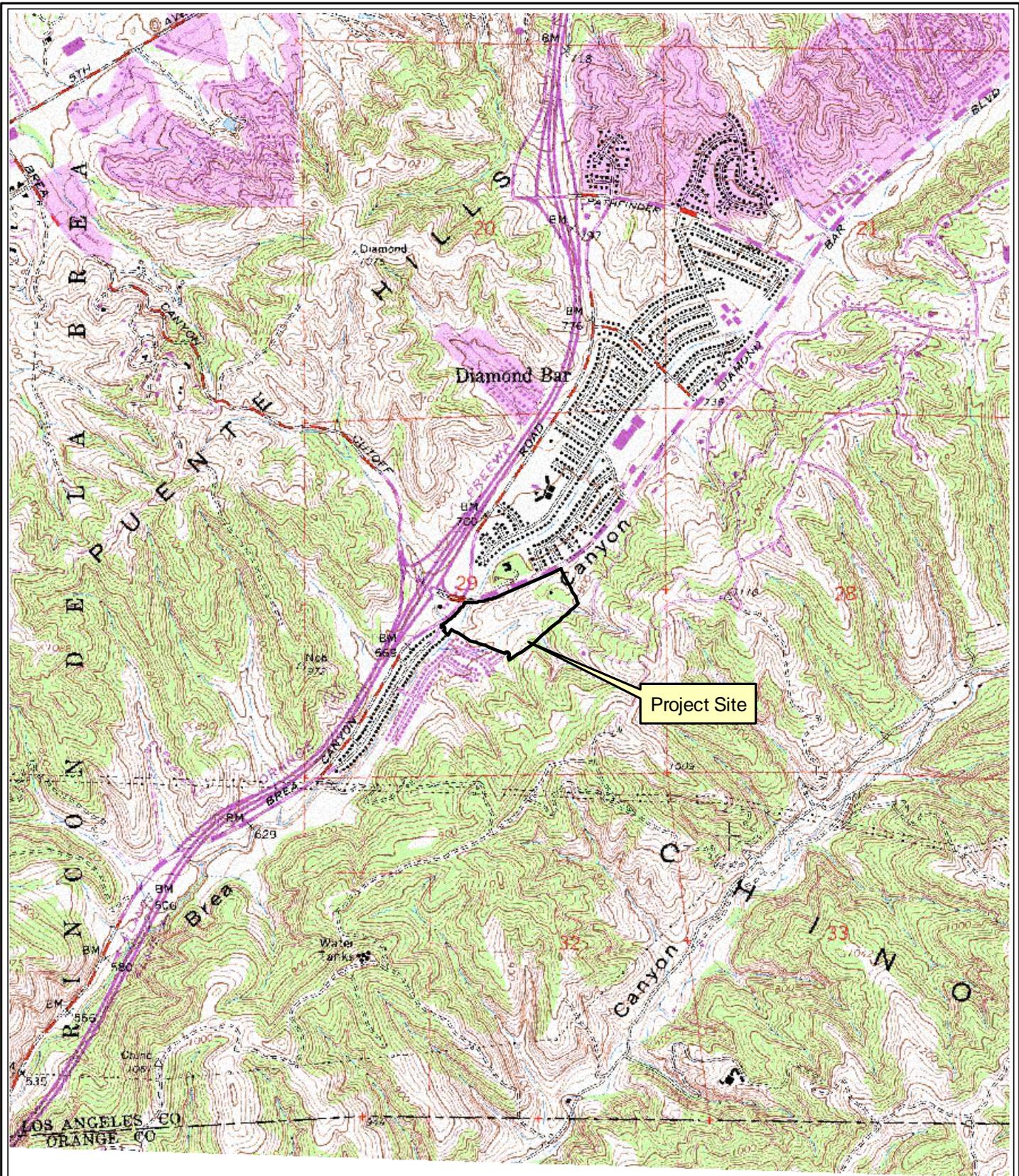
The City of Diamond Bar and the Walnut Valley Unified School District (Applicants) plan to develop the Site D property (the “study area”), an approximately 30.4-acre parcel located in the City of Diamond Bar in Los Angeles County, California (Figure 1, *Regional Map*, on page 2). The proposed mixed use development includes the construction of approximately 202 dwelling units on 10.1 acres of the study area, including bike and pedestrian trails, walks, and recreational facilities, and a commercial component that will include 153,985 square feet of commercial development on 10.1 acres. The remaining 10.2 acres consists of manufactured slopes and other infrastructure. The study area is located east of California State Route 57 (SR 57), at the intersection of South Diamond Bar Boulevard and South Brea Canyon Road. The study area is depicted U.S. Geological Survey (USGS) 1964 (photo-revised 1981) 7.5’ Yorba Linda, CA quadrangle topographic map, in Section 29, Township 2 South, Range 9 West (Figure 2, *Vicinity Map*, on page 3). The study area is bordered to the east and south by residential developments, South Diamond Bar Boulevard to the north, and South Brea Canyon Road to the west (Figure 3, *Aerial Photograph*, on page 4).

### 1.2 SCOPE OF STUDY AND PERSONNEL

PCR personnel conducted a Phase I cultural and paleontological resources assessment of the study area from October to December of 2007. This assessment was conducted by PCR to determine the potential impacts to cultural resources associated with the proposed project for the purpose of complying with the California Environmental Quality Act (CEQA). The scope of work for this assessment included a review of historic aerial photograph and topographic maps, a review of relevant online historical literature, a cultural resources records search through the California Historical Resources Information System-South Central Coastal Information Center (CHRIS-SCCIC), a Sacred Lands File search through the California Native American Heritage Commission and follow-up Native American consultation, a paleontological records search through the Natural History Museum of Los Angeles County, and a pedestrian survey of the study area for cultural and paleontological resources. This report presents the findings of this in-depth cultural and paleontological resources assessment and is intended to satisfy the cultural resource needs of CEQA. Personnel involved in this assessment included PCR archaeologists Kyle Garcia and Matt Gonzalez and paleontologist Joe D. Stewart, Ph.D. The Phase I report was compiled and edited by Mr. Garcia. Project management was overseen by Marcy Rockman, Ph.D. Personnel qualifications are provided in Appendix A.

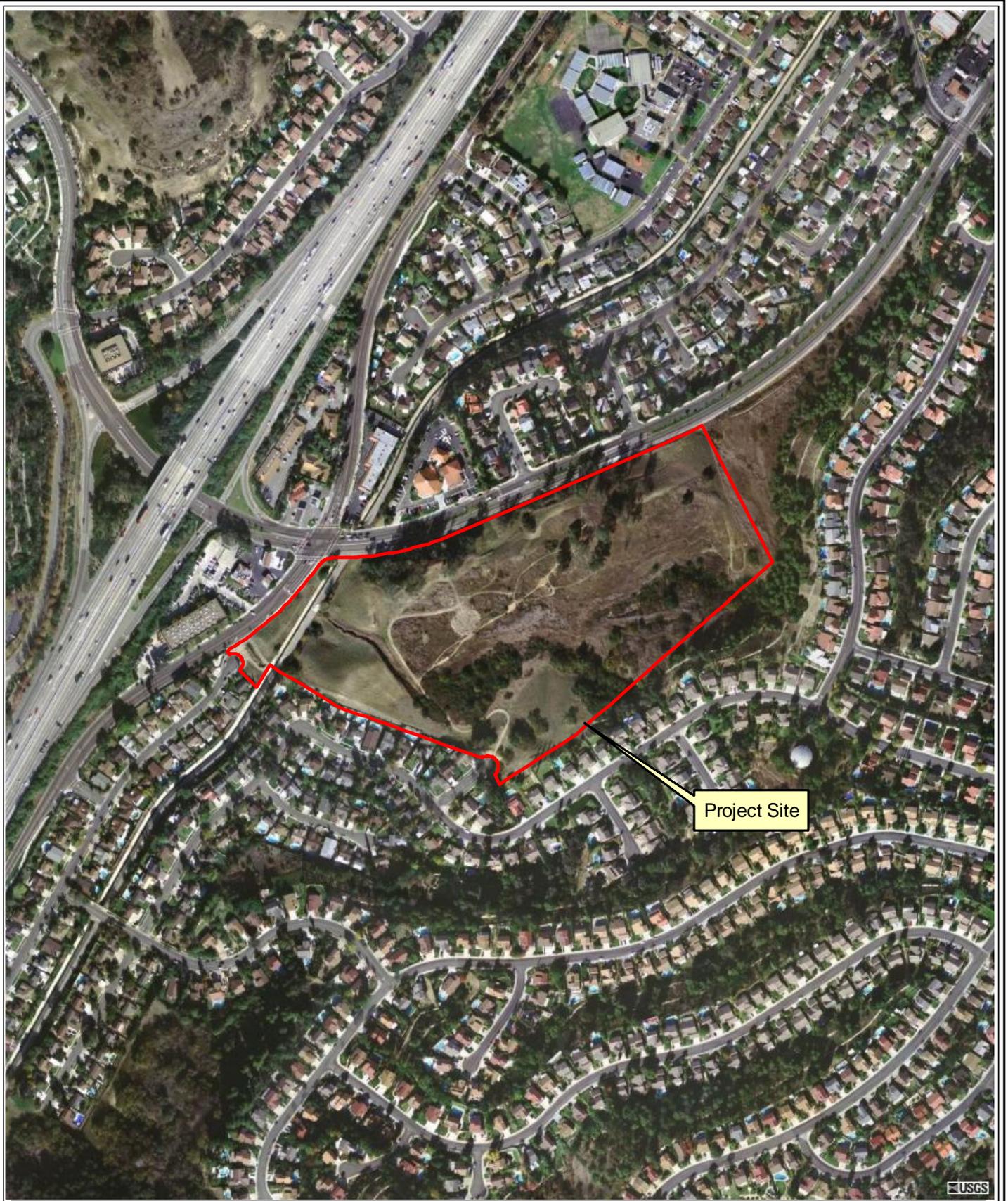


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Source: USGS Topographic Series (Yorba Linda, CA); PCR Services Corporation, 2007.

Figure 2  
Site D  
Vicinity Map



500 0 500 Feet

Source: USGS DOQQ, 2004; PCR Services Corporation, 2007.

Figure 3  
Site D  
Aerial Photograph

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## 2.0 REGULATORY SETTING

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Numerous laws and regulations require federal, state, and local agencies to consider the effects of a proposed project on cultural resources. These laws and regulations stipulate a process for compliance, define the responsibilities of the various agencies proposing the action, and prescribe the relationship among other involved agencies (e.g., State Historic Preservation Office and the Advisory Council on Historic Preservation). The primary federal and state laws governing and affecting preservation of cultural resources of national, state, regional, and local significance include the National Historic Preservation Act (NHPA) of 1966, as amended, CEQA, the California Register of Historical Resources, Public Resources Code (PRC) 5024, and other applicable local regulations. For purpose of this assessment, a brief description of the state and local laws and regulations is provided below.

### 2.1 STATE LEVEL

#### 2.1.1 California Register of Historical Resources

The California Office of Historic Preservation (OHP), as an office of the California Department of Parks and Recreation, implements the policies of the NHPA on a statewide level. The OHP also maintains the California Historic Resources Inventory. The State Historic Preservation Officer (SHPO) is an appointed official who implements historic preservation programs within the State's jurisdictions.

Created by Assembly Bill 2881 which was signed into law on September 27, 1992, the California Register of Historical Resources (California Register) is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change."<sup>1</sup> The criteria for eligibility for the California Register are based upon National Register criteria.<sup>2</sup> Certain resources are determined by the statute to be automatically included in the California Register, including

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<sup>1</sup> *California Public Resources Code § 5024.1(a).*

<sup>2</sup> *California Public Resources Code § 5024.1(b).*

California properties formally determined eligible for, or listed in, the National Register of Historic Places.<sup>3</sup>

To be eligible for the California Register, a prehistoric or historic property must be significant at the local, state, and/or federal level under one or more of the following criteria:

- a. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- b. Is associated with the lives of persons important in our past;
- c. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- d. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must meet one of the criteria of significance described above and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally Determined Eligible for the National Register.
- California Registered Historical Landmarks from No. 770 onward.
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

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<sup>3</sup> *California Public Resources Code § 5024.1(d).*

- Historical resources with a significance rating of Category 3 through 5.<sup>4</sup>
- Individual historical resources.
- Historical resources contributing to historic districts.
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

### 2.1.2 California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the State. CEQA requires lead agencies to determine if a proposed project would have a significant effect on archaeological resources (PRC Sections 21000 *et seq.*). As defined in Section 21083.2 of the PRC a “unique” archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

In addition, CEQA Section 15064.5 broadens the approach to CEQA by using the term “historical resource” instead of “unique archaeological resource.” The CEQA Guidelines recognize that certain historical resources may also have significance. The Guidelines recognize that a historical resource includes: (1) a resource in the California Register of Historical Resources; (2) a resource included in a local register of historical resources, as defined in PRC §5020.1 (k) or identified as significant in a historical resource survey meeting the requirements of PRC §5024.1 (g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency’s determination is supported by substantial evidence in light of the whole record.

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<sup>4</sup> Those properties identified as eligible for listing in the National Register of Historic Places, the California Register of Historical Resources, and/or a local jurisdiction register.

If a lead agency determines that an archaeological site is a historical resource, the provisions of §21084.1 of the PRC and §15064.5 of the Guidelines apply. If an archaeological site does not meet the criteria for a historical resource contained in the Guidelines, then the site is to be treated in accordance with the provisions of PRC §21083, which is a unique archaeological resource. The Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. (Guidelines §15064.5(c)(4)).

### **2.1.3 Paleontological Resources**

Paleontological resources are also afforded protection by environmental legislation under CEQA. Appendix G (part V) of the CEQA Guidelines provides guidance relative to significant impacts on paleontological resources, which states, “a project will normally result in a significant impact on the environment if it will ...disrupt or adversely affect a paleontological resource or site or unique geologic feature, except as part of a scientific study.” Section 5097.5 of the PRC specifies that any unauthorized removal of paleontological remains is a misdemeanor. Further, the California Penal Code Section 622.5 sets the penalties for damage or removal of paleontological resources.

## **2.2 LOCAL LEVEL**

### **City of Diamond Bar**

According to the City’s Municipal Code, after the acceptance of a complete application by the City, the project shall be reviewed in compliance with CEQA, to determine whether the proposed project is exempt from the requirements of CEQA or is not a project as defined by CEQA, whether a negative declaration may be issued, or whether an environmental impact report (EIR) shall be required. These determinations and, where required, the preparation of EIRs, shall be in compliance with the CEQA Guidelines<sup>5</sup> (City of Diamond Bar 2006).

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<sup>5</sup> *City of Diamond Bar Municipal Code Ordinance No. 02 (1998), § 2, 11-3-98*

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### 3.0 ENVIRONMENTAL SETTING

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The Site D study area is situated within Brea Canyon between the Puente Hills and Chino Hills. They are part of the northern extent of the Peninsular Ranges, mountains which trend north-south from the Los Angeles Basin to Baja California and make a natural boundary between the coastal environment to the west and the Colorado Desert to the east. The topography is characterized by relatively steep hills and ridges along the eastern portion of the study area. Westward-facing hills slope steeply down to where the study area abuts South Diamond Bar Boulevard. Elevations range from approximately 800 feet above mean sea level (MSL) in the northeastern portion of the study area to approximately 700 feet above MSL in the southwest.

A majority of the study area is disturbed from routine disking activities and other human disturbances such as off-road recreational activities and localized areas of trash dumping. The study area supports a U.S. Geological Survey (USGS) designated blue-line stream and associated tributaries which are vegetated with riparian plant species. Native vegetation within the study area is limited to California walnut woodland, southern willow scrub, mule fat scrub, and goldenbush scrub intermixed with ruderal vegetation. A portion of Brea Creek Flood Control Channel traverses the western portion of the study area. Surrounding land uses include residential and commercial development to the north and west and residential development to the east and south.

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## 4.0 CULTURAL SETTING

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### 4.1 PREHISTORIC BACKGROUND

Prehistory is most easily discussed chronologically, in terms of environmental change and recognized cultural developments. Several chronologies have been proposed for inland Southern California, the most widely accepted of which is Wallace's four-part Horizon format (1955), which was later updated and revised by Claude Warren (1968). The advantages and weaknesses of Southern California chronological sequences are reviewed by Warren (in Moratto 1984), Chartkoff and Chartkoff (1984), and Heizer (1978). The following discussion is based on Warren's (1968) sequence, but the time frames have been adjusted to reflect more recent archaeological findings, interpretations, and advances in radiocarbon dating.

#### 4.1.1 Paleoindian Period (ca. 13,000-11,000 years before present [YBP])

Little is known of Paleoindian peoples in inland southern California, and the cultural history of this period follows that of North America in general. Recent discoveries in the Americas have challenged the theory that the first Americans migrated from Siberia, following a route from the Bering Strait into Canada and the Northwest Coast some time after the Wisconsin Ice Sheet receded (ca. 14,000 YBP), and before the Bering Land Bridge was submerged (ca. 12,000 YBP). A coastal migration route somewhat before that time is also possible. The timing, manner, and location of this crossing are a matter of debate among archaeologists, but the initial migration probably occurred as the Laurentide Ice Sheet melted along the Alaskan Coast and interior Yukon. The earliest radiocarbon dates from the Paleoindian Period in North America come from the Arlington Springs Woman site on Santa Rosa Island. These human remains date to approximately 13,000 YBP (Johnson et al. 2002). Other early Paleoindian sites include the Monte Verde Creek site in Chile (Meltzer et al. 1997) and the controversial Meadowcroft Rockshelter in Pennsylvania. Both sites have early levels dated roughly at 12,000 YBP. Lifeways during the Paleoindian Period were characterized by highly mobile hunting and gathering. Prey included megafauna such as mammoth and technology included a distinctive flaked stone toolkit that has been identified across much of North America and into Central America. They likely used some plant foods, but the Paleoindian toolkit recovered archaeologically does not include many tools that can be identified as designed specifically for plant processing.

The megafauna that appear to have been the focus of Paleoindian lifeways went extinct during a warming trend that began approximately 10,000 years ago, and both the extinction and climatic change (which included warmer temperatures in desert valleys and reduced precipitation

in mountain areas) were factors in widespread cultural change. Subsistence and social practices continued to be organized around hunting and gathering, but the resource base was expanded to include a wider range of plant and game resources. Technological traditions also became more localized and included tools specifically for the processing of plants and other materials. This constellation of characteristics has been given the name “Archaic” and it was the most enduring of cultural adaptations to the North American environment.

#### **4.1.2 Archaic Period (ca. 11,000-3,500 YBP)**

The earliest Archaic Period lifeways in inland southern California have been given the name San Dieguito tradition, after the San Diego area where it was first identified and studied (Warren 1968). Characteristic artifacts include stemmed projectile points, crescents and leaf-shaped knives, which suggest a continued subsistence focus on large game, although not megafauna of the earlier Paleoindian period. Milling equipment appears in the archaeological record at approximately 7,500 years ago (Moratto 1984:158). Artifact assemblages with this equipment include basin millingstones and unshaped manos, projectile points, flexed burials under cairns, and cogged stones, and have been given the name La Jolla Complex (7,500–3,000 YBP). The transition from San Dieguito lifeways to La Jolla lifeways appears to have been an adaptation to drying of the climate after 8,000 YBP, which may have stimulated movements of desert peoples to the coastal regions, bringing millingstone technology with them. Groups in the coastal regions focused on mollusks, while inland groups relied on wild-seed gathering and acorn collecting.

#### **4.1.3 Late Prehistoric Period (ca. 3,500 YBP-A.D. 1769)**

Environmental changes around 4,000–3,000 YBP initiated a shift to more land-based gathering practices. This period was characterized by the increasing importance of acorn processing, which supplemented the resources from hunting and gathering. Meighan (1954) identified the period after A.D. 1400 as the San Luis Rey complex. San Luis Rey I (A.D. 1400–1750) is associated with bedrock mortars and millingstones, cremations, small triangular projectile points with concave bases and Olivella beads. The San Luis Rey II (A.D. 1750–1850) period is marked by the addition of pottery, red and black pictographs, cremation urns, steatite arrow straighteners and non-aboriginal materials (Meighan 1954:223, Keller and McCarthy 1989:6). Work at Cole Canyon and other sites in Southern California suggests that this complex, and the ethnographically described life ways of the native people of the region, were well established by at least 1,000 YBP (Keller and McCarthy 1989:80).

#### 4.1.4 Ethnographic Context

Ethnographically, the study area has been utilized by the Gabrielino Native American groups. According to Bean and Smith (1978:538), with the exception of the Chumash to the north, the Gabrielino, “were the wealthiest, most populous, and most powerful ethnic nationality in aboriginal Southern California”. Named after the San Gabriel Mission, the Gabrielino occupied sections of Los Angeles, Orange, and San Bernardino Counties (Bean and Smith 1978). In general, Gabrielino territory included the Los Angeles Basin, the watersheds of the Los Angeles, San Gabriel, and Santa Ana Rivers, intermittent streams in the Santa Monica and Santa Ana Mountains, the coast from Aliso Creek in the south to Topanga Creek in the north, and the islands of San Nicolas, Santa Catalina, and San Clemente. Gabrielino is a Cupan language of the Takic family. The Takic family is part of the Uto-Aztecan linguistic stock.

The Gabrielino subsisted on a variety of resources in several ecological zones. Acorns, sage, and yucca were gathered throughout the inland areas whereas shellfish, fish, as well as a variety of plants and animals were exploited within the marshes and along the coast. Deer and various kinds of small mammals were hunted on an opportunistic basis. Their material culture reflected the subsistence technology. Lithic tools such as arrow points and modified flakes were used to hunt and process animals. A variety of ground stone grinding implements, such as the mortar, pestle, mano, and metate, were used to process both plant and animal remains for food (Bean and Smith 1978).

The settlement patterns of the Gabrielino, and other nearby groups such as the Juaneño and Luiseño, were similar and they often interacted through marriage, trade and warfare. The seasonal availability of water and floral and faunal resources dictated seasonal migration rounds with more permanent villages and base camps being occupied primarily during winter and spring months. In the summer months, the village populations divided into smaller units that occupied seasonal food procurement areas. The more permanent settlements tended to be near major waterways and food sources and various secular and sacred activities, such as food production and storage and tool manufacturing, were conducted at these areas. It is likely, therefore, that the study area and vicinity may contain remains of use and occupation by prehistoric Gabrielino Native American groups.

## 4.2 HISTORIC BACKGROUND

European contact with the Gabrielino that inhabited the study area and surrounding region began in 1542 when Spanish explorer, Juan Rodriguez Cabrillo, arrived by sea during his navigation of the California coast. Sebastian Vizcaino arrived in 1602 during his expedition to explore and map the western coast that Cabrillo visited 60 years earlier. In 1769, another Spanish explorer, Gaspar de Portola, passed through Gabrielino territory and interacted with the

local indigenous groups. In 1771, Mission San Gabriel was established and it slowly integrated Gabrielinos from the surrounding region and, quite possibly, the study area. By 1833, the California missions had been secularized and most Gabrielinos became laborers for the gentry class (Bean and Smith 1978).

In 1840, the governor Juan Alvarado deeded 4,340 acres, which included the study area, to Jose de la Luz Linares. Linares established Rancho Los Nogales, or “Ranch of the Walnut Tree”, with this Mexican land grant. He died in 1847 and his widow sold a choice portion of the ranch to Ricardo Vejar for \$100 in merchandise, 100 calves, and the assumption of her late husband’s debt. Vejar already owned the nearby Rancho San Jose (now the City of Pomona) so this acquisition made him the fifth wealthiest landowner in Los Angeles County, with 10,000 acres. The land that encompassed the original Rancho Los Nogales would change ownership throughout the next several decades until 1918 when Frederick E. Lewis purchased most of most of the original ranch. Soon thereafter, Lewis formed the Diamond Bar Ranch and registered the “diamond over a bar” branding iron with the California Department of Agriculture (City of Diamond Bar 2007). This would later become the symbol for which the City of Diamond Bar was named.