Arnold Schwarzenegger
Governor

THE LAND ENTITLEMENT PROCESS AND INCENTIVES FOR SUSTAINABLE COMMUNITIES

PIER INTERIM REPORT

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Preface

The California Energy Commission's Public Interest Energy Research (PIER) Program supports public interest energy research and development that will help improve the quality of life in California by bringing environmentally safe, affordable, and reliable energy services and products to the marketplace.

The PIER Program annually awards up to $62 million to conduct the most promising public interest energy research by partnering with Research, Development, and Demonstration (RD&D) organizations including individuals, businesses, utilities, and public or private research institutions.

PIER funding efforts are focused on the following RD&D program areas:

- Buildings End-Use Energy Efficiency
- Energy-Related Environmental Research
- Energy Systems Integration
- Environmentally Preferred Advanced Generation
- Industrial/Agricultural/Water End-Use Energy Efficiency
- Renewable Energy Technologies

The Land Entitlement Process and Incentives for Sustainable Communities is the interim report for the project (contract number 500-04-024) conducted by Architectural Energy Corporation. The information from this project contributes to PIER's Buildings End-Use Energy Efficiency Program.

For more information about PIER Program, please visit the Energy Commission's website at www.energy.ca.gov/pier or contact the Energy Commission at 916-654-4878.

Table of Contents

Acknowledgements i

Executive Summary 1

1.0 Introduction 5

1.1. The "Greening" of the Residential Sector 5

1.2. California Advances Greenhouse Gas Emissions Reduction Strategies 6

1.3. Economic Incentives for New Residential Development 10

2.0 California Land Use Planning and Entitlement Basics 13

2.1. The Seven Mandatory Elements of General Plans 13

2.2. Optional Elements of General Plans 14

2.3. The Specific Plan 14

2.4. Development Agreements 16

2.5. Zoning 16

2.6. Subdivisions 17

2.7. The California Environmental Quality Act and the General Plan 18

2.8. Permitting and Entitling Land 22

3.0 Land Entitlement – A Possible Avenue for the Development of Sustainable Homes and Communities 25

3.1. Current Barriers 25

3.2. Current Land Entitlement Incentives 29

3.3. Potential Land Entitlement Incentives 33

4.0 Conclusions and Recommendations 37

Glossary 39

Appendix A: Survey for Land Entitlement Process and Incentives for Sustainable Communities

Appendix B: Recommended Stakeholders for Advisory Group

List of Figures

Figure 1. Lead agency decision to prepare an EIR. Reprinted with permission. 19

Figure 2. CEQA process flow chart. Reprinted with permission. 21

Figure 3. Example flow chart depicting a complex land entitlement process (courtesy Riverside County Planning Department) 23

Abstract

In 2004 the Energy Commission's Public Interest Energy Research (PIER) program initiated a Zero Energy New Homes (ZENH) research solicitation. One of the awarded projects was Architectural Energy Corporation's (AEC) Utility-Focused Market Model for Zero Energy New Homes. This report is a product of that project.

The goals of AEC's project were to evaluate sustainable market models for building new zero energy, single-family homes, to better understand the role of energy utilities in these endeavors, and to determine the effects of neighborhoods that need very little grid electricity on the local electric grid infrastructure. Because of a severe crisis in housing and mortgages, many of the project tasks were abandoned by mutual agreement. However, AEC was able to complete the tasks leading to this report, as the required research was independent of the housing crisis.

This report describes the land entitlement process, identifies existing incentives during land entitlement that further the development of sustainable homes and communities, and recommends additional incentives and strategies to encourage sustainability in real estate development. Existing incentives include density/floor area ratio bonuses (additional floors of buildings or housing units per acre), grants, other financial assistance, and free technical assistance. AEC identified possible new incentives including expedited permitting of projects seeking entitlement, reduced development impact fees, deferral of fees related to implementing solar energy in subdivisions, lower property tax assessments for solar energy systems, incentives to encourage integrated community designs, reductions in the number of required parking spaces, assistance with and/or expedited review of environmental impact reports, incentives for electric vehicle and energy-storage infrastructure, predictable carbon credits, incentives for developers to make energy improvements to existing homes in the same jurisdiction as a proposed development, and establishing a link between anticipated carbon "cap and trade" programs and land use planning. This report concludes with the recommendation that the state, through collaboration among the Energy Commission, Air Resources Board, other agencies, and other stakeholders, form a formal advisory committee or task force to address related questions and issues.

Keywords: Land entitlement, sustainable development, general plan, specific plan, sustainable development incentives, sustainable land use planning

Executive Summary

Introduction

To help address California's critical issue of growing energy use and demand, the California Energy Commission's Public Interest Energy Research (PIER) Program released a request for proposals in 2004 called Zero Energy New Homes (ZENH). One of the resulting projects under this solicitation was Architectural Energy Corporation's (AEC) Utility-Focused Market Model for Zero Energy New Homes. This report is a part of that project.

AEC planned to study the effects of new houses comprising an entire neighborhood in which the houses used significantly less grid-supplied electricity than standard houses. In addition, AEC figuratively stepped back to look at the process of land entitlement, a complex part of a larger land planning and development process that most often takes place well before physical construction of roads, utility infrastructure, or buildings.

Purpose

This report will provide a better understanding of the following:

- The land entitlement process, defined as the series of predevelopment activities involving the submittal of plans to city, county, state, and federal governments to secure approvals and permits to develop a property for a desired use.
- The potential for this process to strongly encourage the design and construction of sustainable homes and communities.

The process of entitling land is a long and often complex part of a larger land planning and developing process that must be successfully completed before construction of buildings (also referred to as vertical construction[1]) can begin. At the time of this writing, most incentive programs reward aspects of vertical construction that are related to energy efficiency and renewable energy systems and do not address other aspects of sustainability, such as ease of access to public transit. Current incentives are typically given to the builder or homeowner.

Conclusions

Few incentives and/or economic signals exist during the process of entitling land that create rewards for investors and developers. That is not to say that vertical construction incentives do not have the potential to induce investors and developers to design and build green. There is, however, no guarantee that the vertical construction incentives in place at the time of early planning and development will continue to be in place when the project comes to fruition and actual construction begins. Among the few existing land entitlement incentives are the following:

1 This term distinguishes the construction of buildings from horizontal construction, which refers to roads, airfields, bridges, underground utility infrastructure, and so forth.

- Density/floor area ratio (FAR) bonuses, which allow more housing units per acre or more stories and floors than normally allowed; this creates a financial incentive as more rental units or condominiums result in higher financial gain for investors/developers
- Grants
- Technical assistance
- Preferred financing
- Tax policies and economic development incentives for "smart" growth

The reality is that the investor and developer communities have the ability to influence the design and construction of sustainable homes and communities on a vast scale. As a result, there may be strong strategic value in fully understanding how the land entitlement process can direct investors and developers to help the State of California reach sustainability goals.

Recommendations

The research team concluded that it will be important to adequately address current barriers to sustainable development, gauge the effectiveness of incentives already in place, and assess the potential value of incentives not yet formally addressed for new development. This report also recommends that the Energy Commission form a formal advisory committee with other agencies and representatives from key stakeholder groups within this market sector. This advisory committee should provide the Commission with strategic input and feedback on the following:

- What kind of data (technical, financial, or other) are needed by investors and developers to help determine or approximate the net investment benefit of sustainable homes and communities?
- What financing strategies might help reduce the perceived risks associated with investing in sustainable homes and communities?
- What does a stable financial environment look like that would support the design and construction of sustainable homes and communities?
- What are the most opportune stages of the land entitlement process to best address the design and construction of sustainable homes and communities? Why?
- At which critical stages of the land entitlement process might local communities, in conjunction with the developer community, best incentivize the design and construction of sustainable homes and communities? What does this incentive look like? Why?
- What can be done to address current barriers?
- What kind of policy frameworks would support these efforts?
- What are the perceived and real impacts of the Governor's Office of Planning and Research (OPR)'s recent Technical Advisory addressing greenhouse gas emissions and climate change for plans and projects undergoing review and approval during the

California Environmental Quality Act (CEQA) review process? How can these impacts be best addressed? How can this process be used to create value?

- What kind of local jurisdictional practices would best support these efforts?

As part of this report, the researchers administered a survey to members of the development and builder communities. The survey responses, contained in Appendix A, offer resources to start to addressing these issues.

1.0 Introduction

In 2004, the California Energy Commission under the Public Interest Energy Research (PIER) program initiated a Zero Energy New Home (ZENH) research solicitation. One of the projects awarded under this solicitation is Architectural Energy Corporation's Utility-Focused Market Model for Zero Energy New Homes. The overarching goal of this project is to evaluate sustainable market models for building new zero energy (single-family) homes and a greater role for utilities. The homes that were to be built as part of this project would integrate innovative electricity-saving technologies paired with on-site electricity generation from photovoltaic (PV) panels.

Project team members included Architectural Energy Corporation (AEC), ConSol, Southern California Edison (SCE), Geltz Communications, and Consumer Powerline. The builder-partner was K Street East LLC,[2] and the solar-partner was SunPower Corporation.

Unfortunately, the housing and mortgage markets tumbled as individual adjustable rate home mortgages reached critical increases in interest rates, forcing large-scale mortgage defaults and many home foreclosures. Much of the AEC project was not able to be completed. However, one of the tasks was not related to the state of home mortgages, and that task resulted in this report. The main objectives of this task are to understand the land entitlement process, identify incentives during land entitlement to further the development of sustainable homes[3] and communities,[4] and provide additional recommendations for consideration.

1.1. The "Greening" of the Residential Sector

According to Andrew J. Nelson, Vice President, RREEF Research,[5]

> The dialogue on climate change has changed markedly during the past year. Responding to public pressures, government mandates, and new business opportunities, leading firms across a wide range of industries virtually compete to be

2 K Street East, LLC is owned by Jennie Stabile.

3 For the purposes of this report, the term "sustainable home" is meant to describe a high-performance "green" home that uses less energy, water and natural resources; creates less waste; and is healthier and more comfortable for the occupants. See www.usgbc.org for more information on the LEED for Homes Rating System.

4 In 1996, the U.S. Environmental Protection Agency joined with several non-profit and government organizations to form the Smart Growth Network (SGN). The network was formed in response to increasing community concerns about the need for new ways to grow that boost the economy, protect the environment, and enhance community vitality. Based on the experience of communities around the nation that have used smart growth approaches to create and maintain great neighborhoods, the Smart Growth Network developed a set of ten basic smart growth principles. See http://www.epa.gov/smartgrowth/about_sg.htm for further definition of these principles.

5 See "The Greening of U.S. Investment Real estate – Market Fundamentals, Prospects and Opportunities," at https://www.rreef.com/cps/rde/xchg/ai_en/hs.xsl/2727.html, page IV.

the most "green." This "greening" of business is part of a movement toward greater corporate accountability, forcing major companies to disclose their social and economic impacts. A related trend is the increasing demand for socially-conscious investment vehicles, which has grown ten-fold in the past decade to almost $1.6 trillion.[6] Firms in many industries are recognizing the potential for outsized financial returns arising from entering new business lines afforded by the environmental movement. Other key motivations include fear of government regulation and the belief that sustainability initiatives can provide important competitive advantages through market differentiation.

In the residential new home sector, there is mounting evidence that these key motivations are also compelling many industry stakeholders to "green" this sector and move beyond regulatory requirements. As an example, since its inception in 1992, the U.S. Environmental Protection Agency's ENERGY STAR® Homes program, a labeling program for better-than-code energy-efficient new homes, has enrolled over 5,000 builders nationwide. Despite a downturn in the new housing market in 2007, over 120,000 new homes were constructed to meet ENERGY STAR guidelines, contributing to an average national market presence in the new home sector of 12 percent.[7] Scores of regional green building programs exist across the country, and both the National Association of Home Builders (NAHB)[8] and the United States Green Building Council (USGBC)[9] have each launched its own national labeling programs.

1.2. California Advances Greenhouse Gas Emissions Reduction Strategies

At the public sector level, California continues to play a strong leadership role vis-à-vis climate change adaptation and greenhouse gas (GHG) emissions reduction strategies. Indeed, in the absence of climate change legislation at the federal level, California's state government has moved ahead with aggressive initiatives to address and encourage green building, energy

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6 Venture capital funding for environmental technologies nearly doubled to $1.28 billion in 2006 alone. See "Clean technology venture funding nearly doubled in 2006," Reuters, February 27, 2007. In addition, The Cleantech Venture Network, a membership group that catalyzes investment, business opportunities, and relationships driving the growth of cleantech globally, reports that cleantech surged ahead of the two previously dominant venture investment categories of Telecommunications and Medical. It now ranks third behind only Biotech and Software. See http://www.businesswire.com/portal/site/google/?ndmViewId=news_view&newsId=20060810005309&newsLang=en

7 See http://www.energystar.gov/index.cfm?fuseaction=qhmi.showHomesMarketIndex

8 See NAHB's Model Green Home Building Guidelines at http://www.nahb.org/publication_details.aspx?publicationID=1994.

9 For information on the USGBC's Leadership in Energy and Environmental Design (LEED) for Homes labeling program, see www.usgbc.org/leed.

efficiency, renewable energy, and the reduction of greenhouse gas emissions in the residential sector:[10]

- At the direction of Governor Arnold Schwarzenegger, the California Solar Initiative (CSI) was approved by the California Public Utilities Commission (CPUC) on January 12, 2006. One significant outcome of the CSI has been the development of the New Solar Homes Partnership (NSHP), administered by the Commission. The NSHP is a 10-year, $400 million program designed to encourage the installation of photovoltaic (PV) systems on energy-efficient new homes, both single- and multi-family, including affordable housing.[11]
- Governor Schwarzenegger also signed Assembly Bill 32 (Núñez, Chapter 488, Statues of 2006), the Global Warming Solutions Act of 2006, requiring a reduction in GHG emissions to 1990 levels by 2020. In June 2008, the California Air Resources Board (ARB), the lead agency for implementing AB 32, released the initial draft of the *AB 32 Scoping Plan* that outlines the main strategies California will use to reduce GHG emissions.[12] At the time of this writing, these strategies do not target land development per se, but focus primarily on maximizing energy-efficient building and appliance standards together with additional efficiency efforts (solar water heating, combined heat, and power use).
- Assembly Bill 118 (Núñez, Chapter 750, Statues of 2007), the Alternative Fuels and Vehicle Technologies Assembly Bill, was signed by Governor Schwarzenegger on October 14, 2007. The bill provides a significant amount of new funding for clean and energy-efficient transportations technology, research development and deployment.
- The Commission adopted the *2007 Integrated Energy Policy Report (IEPR)* on December 5, 2007. Recognizing the enormous impact of land-use decisions on energy consumption, production, and distribution, the *IEPR* acknowledges the need for a new land-use dynamic in California planning efforts.[13] In making its case for "smart growth" as a state priority, the Commission recommends that California adopt, among other initiatives, a statewide growth management plan, based on local and regional plans, aligning state planning, financing, infrastructure, and regulatory land-use policies and programs. The Commission also recommends that the state examine the impact of state and local tax

10 While this section describes activities at the state level, California's local municipalities and investor- and publicly owned utilities have also developed their own initiatives in this arena. For a list of California incentives for renewables and efficiency available in these sectors, see the Database for State Incentives for Renewable Energy at www.dsireusa.org.

11 See http://gosolarcalifornia.org/

12 See http://www.arb.ca.gov/cc/scopingplan/document/draftscopingplan.htm and http://www.climatechange.ca.gov/ab32/index.html

13 See http://www.energy.ca.gov/2007_energypolicy/index.html.

policies on land-use practices and revise policies that encourage growth that is inconsistent with the state's growth management plan.[14]

- In June 2008, the Governor's Office of Planning and Research (OPR) issued a Technical Advisory addressing GHG emissions and climate change for development plans and projects undergoing review and approval during the California Environmental Quality Act (CEQA) review process.[15] OPR plans to work in tandem with the California Resources Agency to develop and implement amendments to the CEQA Guidelines on or before January 1, 2010. The new CEQA Guidelines will provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents related to land development. In the interim, OPR is providing lead agencies with informal guidance on steps they should take to address climate change in their CEQA documents.[16]
- California adopted the first statewide green building code on July 17, 2008.[17] The code encourages builders in the residential sector to reduce the energy use of their structures to 15 percent below the energy use that is achieved with California's Title 24 energy efficiency standards. These new standards will become mandatory for all low-rise residential (including renovations) in 2010 but are currently optional for all buildings, allowing time for the building industry and local building code officials to become educated in the new code.
- Assembly Bill 811 (Levine, Chapter 159, Statues of 2008) was approved by the Governor on July 21, 2008. The bill allows California cities to provide residents and businesses with low-interest loans for energy-efficient home improvements and solar energy

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14 The *2007 IEPR* addresses how local government finance structures influence land use patterns. More specifically, Proposition 13 significantly cut local tax revenue and altered the way local governments fund public service and infrastructure, encouraging cities and counties to impose heavier exactions – sometimes known as developer fees or impact fees – to pay for roads sewers parks, and schools. As a result of these tax policies, local land use planning and decision making may demonstrate a bias toward tax revenue-driven development. This may represent one of the largest impediments to local governments' embracing of energy-efficient and climate-friendly growth patterns. See *2007 IEPR*, page 210-211, at http://www.energy.ca.gov/2007publications/CEC-100-2007-008/CEC-100-2007-008-CMF.PDF.

15 The Massachusetts Greenhouse Gas Emissions Policy issued in April 2007 will also require developers of major real estate projects to quantify the GHG emissions associated with their projects and describe the measures they will take to "avoid, minimize, and mitigate" emissions. See http://www.bdlaw.com/assets/attachments/2007-04-23_Massachusetts_Greenhouse_Gas_Emissions_Policy.pdf.

16 See the Technical Advisory – "CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review," dated June 19, 2008, at http://opr.ca.gov/index.php?a=ceqa/index.html.

17 The California Building Standards Commission adopted the California Green Building Standards Code on July 17, 2008. See http://www.bsc.ca.gov/prpsd_stds/default.htm.

systems). Residents would pay back loans through their property taxes. If they move, the improvements and loan balance are transferred to the next owner.[18]

- To enhance California's ability to reach AB 32 goals, the Governor approved Senate Bill 375 (Steinberg, Chapter 728, Statues of 2008) on September 30, 2008. SB 375 authorizes the California Transportation Commission to maintain guidelines for travel demand models used in the development of regional transportation plans by metropolitan planning organizations (MPO). The bill also requires jurisdictions with MPOs to adopt a sustainable communities strategy, as part of regional transportation plans, designed to achieve certain goals for the reduction of GHG emissions from automobiles and light trucks within a region. ARB is required to develop regional GHG emission reduction targets for the automobile and light truck sectors for 2020 and 2035.

18 For information on California Assembly Bill 811, see http://info.sen.ca.gov/pub/07-08/bill/asm/ab_0801-0850/ab_811_bill_20080721_chaptered.pdf.

1.3. Economic Incentives for New Residential Development

The initiatives outlined above represent aggressive activity on the part of the state to address climate change and GHG emissions reduction strategies that affect the residential sector.[19] In addition to these efforts, the state has established a number of rebate programs and other incentives to reward the construction and purchase of "greener" homes; "greener" in this case usually means solar electric systems and energy efficiency beyond levels required by code. These incentives primarily reward features of vertical construction (the physical structure) and are typically awarded to either the builder or the homeowner. Examples include, but are not limited to, the following:[20]

- Building permit fee reductions
- Expedited building permitting/plan check
- Guaranteed building permitting timelines
- Rebates for photovoltaic (PV) systems
- Rebates for energy-efficiency measures beyond code
- Homeowner property tax exclusions
- Low-interest loans for energy efficiency improvements
- One hundred percent financing for the installation of solar systems
- Special district financing for solar system installation and energy efficiency
- Federal tax credits
- Energy efficiency mortgages

Vertical construction takes place at a later stage of a larger land planning and development process. It is preceded by a series of activities often referred to as the land entitlement process,

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19 Studies find that new homes are only a tiny piece of the carbon footprint solution and that the challenge in meeting these aggressive goals lies in elevating the performance of existing homes and buildings and making them compliant with current energy code. Several groundbreaking studies released earlier this month conclude that new homes have already met and in fact exceeded the state's ambitious 2020 greenhouse gas emission reductions, and that the state must also look at retrofitting existing housing in order to meet the strict emissions requirements. See Meeting AB 32 – Cost-Effective Green House Gas Reduction in the Residential Sector, ConSol, August 2008 (http://www.fypower.org/pdf/ConSol_MeetingAB32.pdf), Carbon Footprint of Single Family Residential New Construction, ConSol, May 27, 2008 (http://www.fypower.org/pdf/ConSol_Carbon%20Footprint.pdf), and County by County Breakdown of Housing Inventory, ConSol, August 12, 2008 (http://www.cbia.org/go/cbia/?LinkServID=0CA3B5D3-9F94-410D-B91645D6F9E0157F&showMeta=0).

20 Ibid., p. 9. See also Cities and Counties Addressing Climate Change, compiled by the Governor's Office of Planning and Research, revised 7/10/08 at http://www.opr.ca.gov/ceqa/pdfs/City_and_County_Plans_Addressing_Climate_Change.pdf.

where plans are submitted to the city, county, state, and/or federal governments to secure the necessary approvals and permits to develop a property for a desired use. This often risky pathway to securing development approvals can take anywhere from two to five years or more. The land entitlement process is considered a highly critical phase with tremendous potential to increase the value of acquired property. Yet the research for this report found that while numerous incentives exist to support energy-efficient vertical construction (see list above), few economic signals exist during the land entitlement stage that could potentially encourage and reward key stakeholders for developing sustainable homes and communities. This begs the question as to whether financial or flexible policies or strategies could or should be developed to provide such signals in an effort to help the state reach its sustainability and emissions reductions goals. It is the intent of this report to provide some preliminary research in this area, with a primary focus on the land entitlement process, and to encourage future discussion and action.

2.0 California Land Use Planning and Entitlement Basics

The process of entitling land and securing development approvals fits within a rather complex land use planning environment. The OPR has defined some basic building blocks for the planning and permitting of new developments, as follows:

2.1. The Seven Mandatory Elements[21] of General Plans

According to OPR, the general plan is a community's blueprint for future development. It describes a community's development goals and policies. It also is the foundation for land use decisions made by the planning commission, city council, or board of supervisors. General plans have seven required elements, which are listed below. The process of adopting or amending a general plan requires public participation, and the seven requirements can be amended only four times per calendar year.[22] They are as follows:

1. **Land use element.** The **land use element** functions as a guide to planners, the general public, and decision-makers as to the ultimate pattern of development for the city or county at build-out. The land use element has a pivotal role in zoning, subdivision, and public works decisions.
2. **Circulation element.** The **circulation element** refers to a transportation plan with an infrastructure plan addressing the circulation of people, goods, energy, water, sewage, storm drainage, and communications.
3. **Housing element.** According to OPR, unlike the other elements, the **housing element** is subject to detailed statutory requirements regarding its content and must be updated every five years. This reflects the statutory recognition that the availability of housing is critical to attainment of the state's housing goals.
4. **Conservation element.** The **conservation element** provides direction regarding the conservation, development, and utilization of natural resources.
5. **Open space element.** The **open space element** guides the comprehensive and long-range preservation of open space.
6. **Noise element.** The purpose of the **noise element** is to limit the exposure of the community to excessive noise levels.
7. **Safety element.** The aim of the **safety element** is to reduce the potential risk of death, injuries, property damage, and economic and social dislocation resulting from any potential hazards.

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21 See Governor's Office of Planning and Research General Plan Guidelines (2003) at http://www.opr.ca.gov/planning/publications/General_Plan_Guidelines_2003.pdf.

22 According to Paul Shigley, Editor of the *California Planning & Development Report California*, while the general plan may be amended only four times per year, the local jurisdiction may include as many amendments as it wants in each of those four instances. A city could, for example, lump 80 changes together and count them as only one of the four permissible amendments. Thus general plans are easily changed. (E-mail exchange with Paul Shigley dated 09/11/08.)

2.2. Optional Elements of General Plans

State law also provides flexibility to go beyond the mandatory elements of the general plan. Once adopted, an optional element carries the same legal weight as any of the mandatory elements and must be consistent with all other elements. Local municipalities have adopted many different kinds of additional elements, allowing them to uniquely address subjects of concern to the locality. According to OPR, some of the more common additional elements include, but are not limited to, those that address the following:

- Air quality
- Capital improvements/public facilities
- Community design
- Economic/fiscal development
- Energy
- Flood management
- Geothermal resources
- Historic preservation
- Parks and recreation
- Redevelopment
- Water

More unique subject elements have also been adopted, such as the following:[23]

- Tourism
- Urban forests
- Law enforcement
- Quality of life
- Arts
- Agriculture

2.3. The Specific Plan

Many California local governments have developed specific plans as well and have established oversight committees to enforce compliance with design standards, such as a design review committee (DRC) or a design advisory board (DAB). The specific plan is just a step below the general plan in the land use planning hierarchy and is used to systematically implement the general plan in particular geographic areas. Specific plans include the following:

23 See Pages 58-69 of Governor's Office of Planning and Research, California Planners' 2007 Book of Lists at http://www.opr.ca.gov/planning/publications/2007bol.pdf.

- From Government Code § 65450: zoning ordinances, subdivisions, public works projects, and development agreements must be consistent with applicable adopted specific plans.
- From Government Code § 65455, 65867.5: the specific plan must include an explanation on the relationship between the specific plan and general plan.[24]

The city of Riverside, for example, has developed the Downtown Specific Plan with development standards for the residential district.[25] These standards include, but are not limited to, the following design guidelines:

- Maximum floor area ratio
- Maximum height
- Minimum lot size
- Front yard setbacks
- Landscaping
- Architectural designs that allow for passive and active solar cooling strategies (where possible)

Indeed, standards such as these are becoming prominent features of specific plans as local jurisdictions look to support design-guided planning efforts in their communities. This merits the discussion as to whether the specific plan might be a suitable vehicle to encourage the development of sustainable homes and communities. There is evidence that this is already taking place. The city of Anaheim provides an example of a local jurisdiction that has also included environmental factors in its specific plans. Of note is the specific plan for The Highlands at Anaheim Hills that lists the following energy-related standards:[26]

- Providing building configuration and orientation that, to the extent feasible, maximizes opportunities for passive solar heating and natural cooling through sun and wind exposure.
- Selecting exterior building materials, finishes and colors with consideration to solar energy reflection and absorption capabilities.
- Providing for solar hot water heating either directly with system installation or indirectly with provisions for accommodating future retrofitting.
- Installing energy-efficient appliances including ranges (with electronic ignition), dishwashers, clothes washers, and dryers.

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24 Also see Governor's Office of Planning and Research, *The Planner's Guide to Specific Plans*, January 2001 at http://ceres.ca.gov/planning/specific_plans/sp_index.html.

25 See http://www.riversideca.gov/planning/pdf/SpecificPlans/downtown/Chapter13.pdf

26 See http://www.anaheim.net/citydepartments/planning/specific_plans/highland/

- Providing fluorescent lighting to the extent applicable and feasible for building interiors and energy-efficient outdoor lighting systems with timer controls for accenting buildings, walkways, parking areas, pool facilities, and tennis courts.

2.4. Development Agreements

Development agreements (DA) are often prepared in conjunction with specific plans, especially for projects that might take 10 to 20 years to build. DAs typically provide the developer with certainty that the project will not be subject to new rules and regulations over the course of time. In exchange, the lead agency typically has authority to decide certain project details and require additional actions from the developer.[27]

At this time, there is no requirement that any of the mandatory elements of the general plan or specific plans address climate change with policies for GHG mitigation. According to Paul Shigley, editor of the *California Planning & Development Report*, California's cities and counties have significant reasons to do so now, and there may be more in the future:

- State Attorney General Jerry Brown insists that cities, counties, and regional planning agencies consider climate change in long-term land use and transportation plans.
- The ARB appears headed toward adopting mandates for emission-reducing land use plans and development projects.
- The Legislature recently considered a bill (AB 2093) that would have required six of seven mandatory general plan elements to include policies aimed at reducing GHG emissions. While this bill failed in the legislative session, similar legislation is anticipated for 2009.[28]

2.5. Zoning[29]

While the general plan is a long-range policy document that looks at the future of a community, a zoning ordinance is the local law that spells out the immediate and allowable uses for each piece of property, whether residential, commercial, industrial, or other. Land may be put to only those uses allowed by its zoning designation. Zoning must comply with the general plan. Typical changes to an established zoning ordinance are described as follows:

- **Rezoning.** If a land developer proposes a use that is not allowed in a particular zone, then a change of zone is required for that use to occur.

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27 According to Paul Shigley, nearly all large-scale projects are the subject of a specific plan and a development agreement. Both sides like them. In the area of green building and renewable energy, DAs could be an effective tool (per e-mail exchange with Paul Shigley dated 09/11/08).

28 See "General Plans Address Climate Change," by Paul Shigley, *California Planning & Development Report*, Vol. 23, No. 6 June 2008.

29 The State Zoning Law (Gov't Code § 65800 et. seq.) does not apply to charter cities, but applies to general law cities and all counties.

- **Variances.** A variance is a limited waiver of development standards allowed by the zoning ordinance (e.g., adding a second story in a one-story residential zone).
- **Conditional Use Permits (CUPs).** A CUP allows a city or county, through a public hearing process, to consider special uses that may be essential or desirable to a particular community, but are not allowed as a matter of right within a zoning district (e.g., allowing churches or public or private schools within single-family residential districts). A CUP can provide flexibility within a zoning ordinance. Consideration of a CUP is discretionary.

2.6. Subdivisions

Dividing land for sale, lease, or financing is regulated by local ordinances based on the state Subdivision Map Act. The local general plan and the zoning, subdivision, and other ordinances govern the design of the subdivision, the size of its lots, and the types of improvements that will be required as conditions of approval. There are basically two kinds of subdivisions: (1) parcel maps, which are limited to divisions resulting in fewer than five lots (with certain exceptions), and (2) subdivisions (or tract maps), which create five or more lots. Both are typically approved in two stages:

- **Tentative Parcel/Tract Map.** Upon receipt of an application for a tentative subdivision map, the city or county staff will examine the design of the subdivision to ensure that it meets the requirements of the general plan and the subdivision ordinance. Either an environmental review or an environmental impact report (EIR) must be done and an advertised public hearing held before the tentative map is considered for approval. If approved, the map will be subject to conditions that the subdivider must meet within a specific time period. Until conditions are met, no lots are officially approved.
- **Vesting Tentative Tract Map.** A vesting map grants vested rights to proceed with a project in accordance with the ordinances, policies, and standards in effect at the time the application for approval of the vesting tentative map is completed.
- **Final Tract Map.** When all of the conditions set out in the approved tentative map have been satisfied, and compliance certified by city or county officials, the city council or county board of supervisors will approve a final map. The subdivider may then record the map at the County Recorder's office.

Subdivision approval is conditional upon the subdivider providing public improvements such as streets, drainage facilities, or water supply or sewer lines to serve the subdivision. The subdivider may also be required to dedicate parkland to the community. These improvements must be installed or secured by bond before the city or county will grant final map approval and allow the subdivision to be recorded in the County Recorder's office.[30]

30 Paul Shigley adds that subdivision approval is often conditioned on whatever the lead agency "dreams up." In desirable markets, cities impose all sorts of fees, mitigations, and conditions. In growth-hungry cities, the conditions may be minimal. (per e-mail exchange with Paul Shigley dated 09/11/08)

Lots within the subdivision cannot be sold and are not legal divisions of land until a final map has been recorded. The subdivider has at least two years in which to comply with the improvement requirements, gain final administrative approval, and record the final map.[31]

2.7. The California Environmental Quality Act and the General Plan

Adopting or amending a general plan element is subject to the California Environmental Quality Act (CEQA). If a lead agency determines that a project's impacts on the environment are potentially significant, the lead agency is required to prepare an environmental impact report (EIR). The EIR helps to ensure that the plan will identify potential environmental impacts and the means to avoid them. The EIR process is illustrated in **Figure 1**.

31 SB 1185: Map Extension Measure to Aid Homebuilders, Housing Recovery (Lowenthal). SB 1185 (Lowenthal) proposes to extend the life of expiring subdivision maps for a period of two years. As the state's housing markets have ebbed substantially, many of these maps are languishing and are set to expire before they're needed. If the maps are left to expire, the housing contained in those maps will be taken out of the marketplace, forcing homebuilders to start the time-consuming entitlement process all over again and delaying an awaited housing recovery. SB 1185 is proposed for quick action in the Legislature and, therefore, carries a 2/3 vote requirement. See California Building Industry Association at www.cbia.org/go/cbia/government-affairs/2008-bill-summaries/.

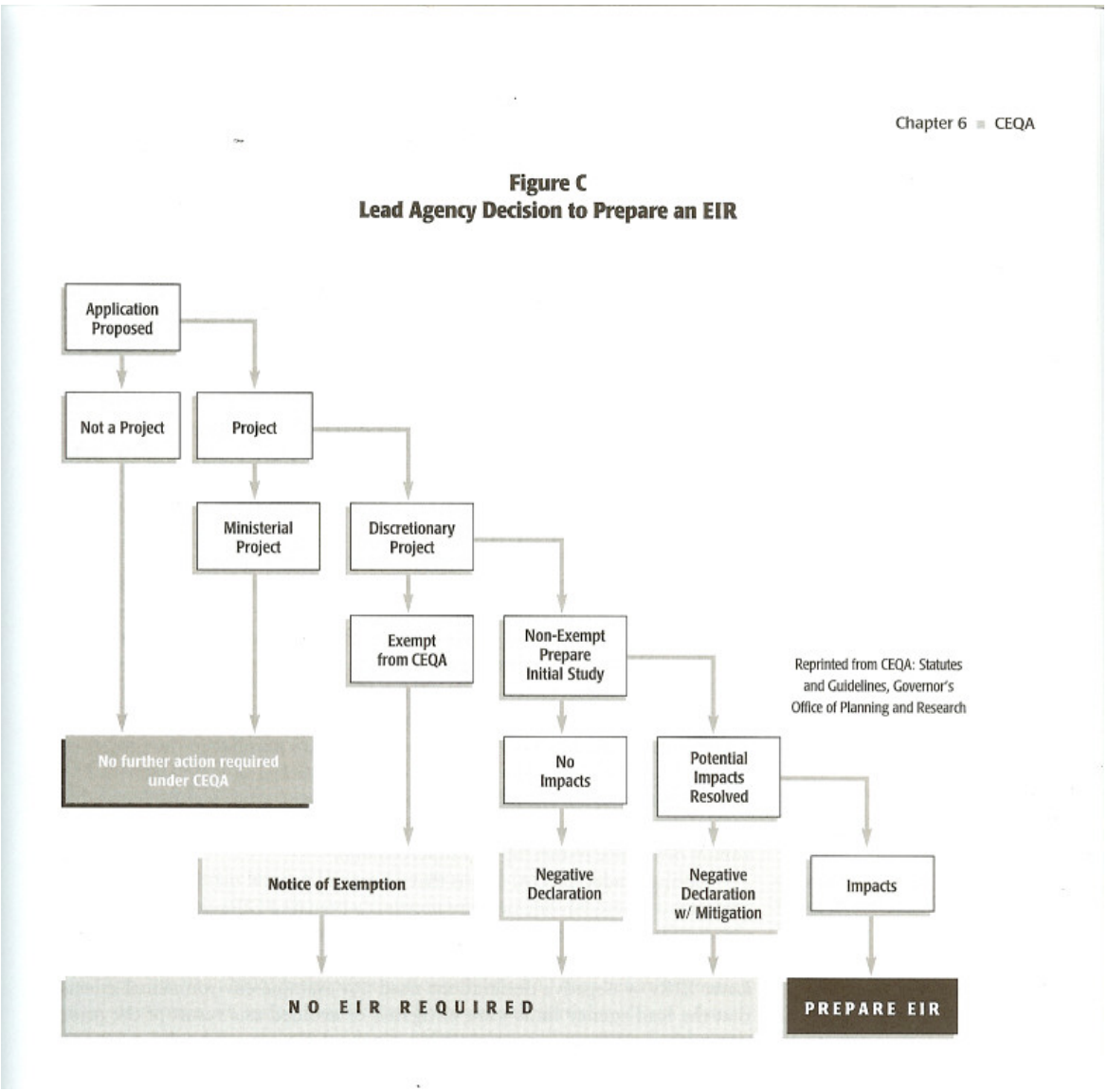

Figure 1. Lead agency decision to prepare an EIR. Reprinted with permission.[32]

As previously noted, the OPR recently issued a Technical Advisory addressing GHG emissions and climate change for plans and projects undergoing review and approval during the CEQA review process. [33] This Technical Advisory has been disseminated in response to Senate Bill 97 (Dutton, Chapter 185, Statues of 2007),[34] enacted in 2007, which amends CEQA to clearly establish that GHG emissions and their effects are appropriate subjects for environmental

32 Source: *Curtin's California Land Use and Planning Law*, page 157. Reprinted with permission from Solano Press Books.

33 Ibid., p. 15.

34 See http://www.opr.ca.gov/ceqa/pdfs/SB_97_bill_20070824_chaptered.pdf.

analysis. The OPR is in the process of researching uniform standards in the CEQA analysis of GHG emissions throughout the state. Until these standards are defined, the OPR is providing local governments with protocols for quantifying and mitigating the impact of development projects on GHG emissions, including traffic, energy consumption, and water usage and construction activities. The CEQA process is illustrated in **Figure 2**.

In an article in the July 2008 issue of the *California Planning & Development Report,* Paul Shigley writes that the "OPR's interim guidance raises serious questions about how agencies will determine what's significant as well as what the cumulative impact will be."[35] This concern is echoed by William R. Devine of the Orange County law office of Allen Matkins:

…[A]s a result of AB 97, the OPR will be developing CEQA Guidelines relating to the effects and mitigation of GHG emissions. So how does it affect development? In the short term, it will affect the level of analysis required in an EIR. Since there is no clear path to mitigation because there's no clear analytical approach, CEQA documents will be more vulnerable to legal challenge, which will increase development costs and add delays to ultimate development. CEQA has historically dealt with local impact and now we've got a global warming issue, which is worldwide. So how do you deal with that? Because there is no statewide program, local jurisdictions are going to take varying approaches to mitigation, and in the long term, it's going to affect economics and development. In the long term, there will be regulations and mitigation requirements that will add to the cost of development.[36]

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35 See "California Issues CEQA Guidance on Greenhouse Gases" by Paul Shigley, *California Planning & Development Report*, Vol. 23, No. 07, July 2008.

36 See http://callawyer.com/roundtable.cfm?eid=889505&evid=1. The website contains an interesting roundtable discussion on the merits of recent global warming laws. Timothy Tosta of Luce, Forward, Hamilton & Scripps laments, "What I find so disheartening about CEQA is that it promotes protection, not healing. Protection is no longer good enough. That's not the mindset that's going to get us through the forthcoming years. The problem is CEQA has become simple to administer. To do a CEQA document you almost don't have to think about the content. It's a plug-and-play system. It creates a huge mass of information, but little awareness. You can have all these words and long technical documents, unaccompanied by environmental insight."

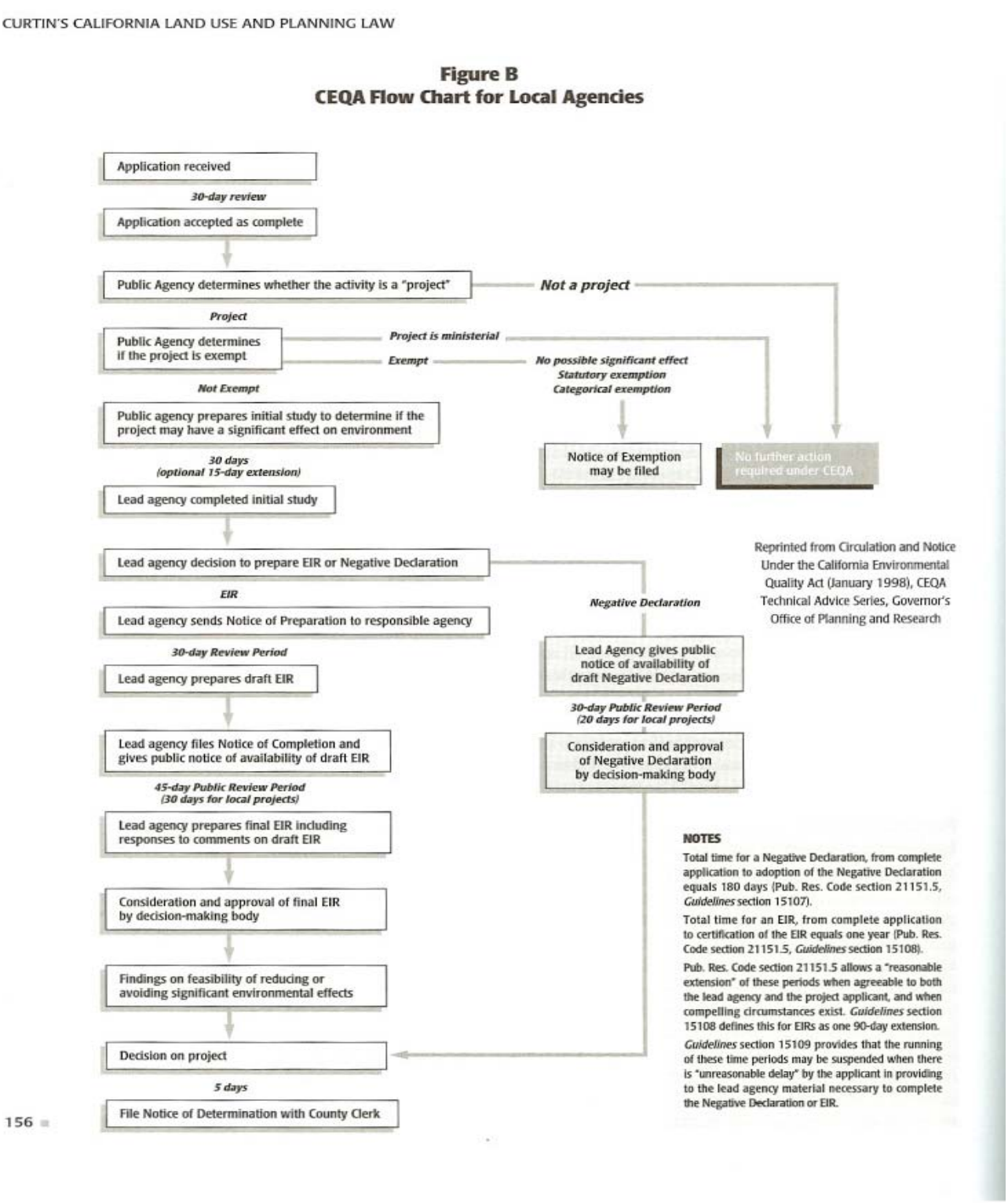

Figure 1. CEQA process flow chart. Reprinted with permission.[37]

37 Source: *Curtin's California Land Use and Planning Law*, Page 156. Reprinted with permission from Solano Press Books.

2.8. Permitting and Entitling Land

Numerous interested parties and agencies are involved in the entitlement process. Under California state law, every county and city has a planning agency and a legislative body. A county's legislative body is the board of supervisors, while cities have a city council. In addition, most cities and counties in California have a separate governing body called a planning commission with land use authority that is legally binding. Some jurisdictions may also have historical review boards, architectural review committees, and other advisory groups that can add to the complexity of the entitlement process.

During the land entitlement process, major entitlements include approvals of specific plans, tentative maps, or general plan amendments. Other common entitlements include conditional use permits, variances, and exceptions from jurisdictional land use policies.

Most land development projects require one or more permits, and these permits fall into one of two categories: discretionary and ministerial. A discretionary permit is subject to evaluation, judgment, and approval or denial by the local planning authority or other permitting agency. Ministerial projects receive automatic approval if specified conditions are met. Ministerial projects are not subject to CEQA.

Figure 3 shows the Riverside County Planning Department flow chart for the case intake and entitlement process. The figure is included for demonstration purposes only, to offer a glimpse of the complexity of this process and a clue to the reason key stakeholders in the home building community seek certainty or financial support before embarking on the process.

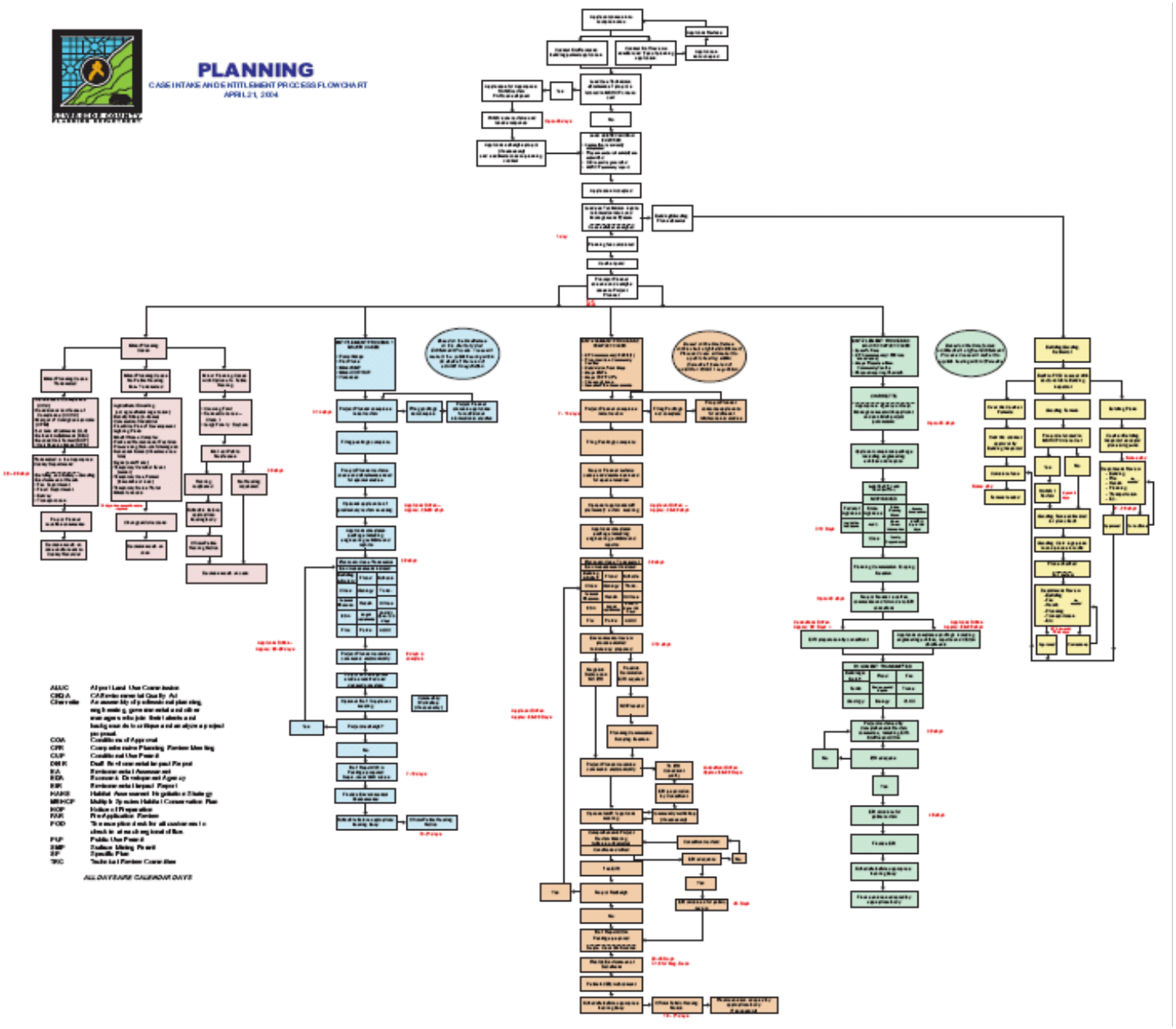

Figure 2. Example flow chart depicting a complex land entitlement process (courtesy Riverside County Planning Department)[38]

38 Source: http://www.rctlma.org/planning/content/devproc/flowcharts/dev_flowchar.html

3.0 Land Entitlement – A Possible Avenue for the Development of Sustainable Homes and Communities

Because the investor and developer communities have the ability to influence the design and construction of sustainable homes and communities on a vast scale, there may be strong strategic value in fully understanding how the land entitlement process can potentially direct these communities to help the state reach targeted environmental goals. To do so, it will be important to adequately address current barriers, gauge the effectiveness of incentives already in place, and assess the potential value of incentives not yet formally addressed in the new homes sector.

3.1. Current Barriers

The process of entitling land is a long and often complex journey to securing development approvals before actual vertical construction can begin. Most incentive programs that reward the construction of sustainable homes and communities are tied to vertical construction and are typically given to the builder or homeowner. That is not to say that these incentives don't have the potential to induce the investor and development community to design and build green. There is, however, no guarantee that the incentives in place at the time of early planning and development will continue to be in place when the project comes to fruition and actual construction begins.

Fortunately, California currently has significant drivers pointing the state and the development community in the direction of better land use planning that is meant to contribute to reduced GHG emissions.[39] These drivers, however, do not appear to be tied to any strong economic signals that will direct the development community to plan very early on to build more sustainable homes and communities. In the absence of such economic signals, significant barriers remain in place.

On behalf of this report, Schweitzer & Associates, Inc., of Lake Forest, California,[40] conducted a survey on land entitlement in fall 2008 to solicit feedback from key stakeholders in the planning, development, and home building communities with respect to the potential for more proactively directing these stakeholders to embrace sustainability.[41] Because the survey was sent to members of the investor/developer community as well as the builder community, the barriers identified by these respondents span both land entitlement and vertical construction phases (not in order of priority):

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39 See Introduction.

40 Schweitzer & Associates is a real estate development consulting firm specializing in optimizing value for their clients through "The Art of Sustainable Development." See http://www.makegreenpay.com/.

41 Informal study of approximately 19 individuals. See Appendix for a summary of the study and individual comments.

3.1.1. First Costs

Among the most commonly mentioned obstacles to sustainable building practices is the incremental upfront costs required for the integration of new building practices and/or products. Just the fact of having to do something differently incurs at least the costs of the extra time and effort for individuals to learn something new and make appropriate changes in behavior, procurement, etc. A number of comments on first costs from the survey respondents are listed below, and it is interesting to note the emphasis on energy issues (versus the many other aspects of sustainability).

- "Consumers want (energy efficiency and PV) but don't want to pay the full cost to get (it)."
- "Will I be able to recoup the cost in the sales price? Will the market bear the price?"
- "Our understanding is that few incentives exist for developers to specify a high level of energy efficiency features and PV in their community building requirements. Cost of these features is seen as prohibitive and potentially being rejected by their builder partners."
- "Being able to overcome first cost barriers and barriers of longer payback than buyers anticipate to holding the property are critical in cracking code to install more renewables/solar PV in the market place."
- "EE (energy efficiency) works, PV is currently a hard economic proposition."

3.1.2. Split Incentive Dilemma

The split incentive dilemma has long been identified as a strong barrier to the integration of energy-efficient building practices in the building sector, most significantly in the rental housing market. This barrier has also been referred to as the "Principle-Agent" problem that exists between investors (i.e., builders) and energy end-users (i.e., occupants). In the home building world, the builder provides the energy-efficient building components, but the savings go mostly to the occupant. In the words of one survey respondent:

- "The 'split incentive dilemma' causes disconnects between the investor and the beneficiary which is felt by the master developer, builder and homeowner (investing short term for future savings being by other stakeholders is problematic in getting renewables to market)."

3.1.3. Potential Impact on Land Values

Real estate appraisal or land valuation is the practice of developing an opinion of the value of real property, usually its market value. Appraisals of more complex properties (e.g., incoming-producing properties, raw land) can be a very involved process, and the more complex the challenges of developing a particular site the more complex the process of valuing it becomes. Given the current "greening" of the residential sector, there is significant research and analysis being conducted in an attempt to quantify the net investment benefit of sustainable building

practices. A new study by the CoStar Group[42] provides a broad positive relationship between LEED or ENERGY STAR labeled buildings and occupancy levels, rents, and value. According to the study, "These results are promising for the benefits of investment in sustainable real estate, energy savings and for the green movement now sweeping our society." Scott Muldavin, Executive Director of the Green Building Finance Consortium, supports the fundamental conclusions of the CoStar study, while at the same time providing a thoughtful critique of the reliability of the study's specific quantitative results.[43] He argues that the numerical results, based on small sample sizes and challenges in selecting truly comparable building peer types, are still too preliminary and uncertain to be relied upon. Accordingly, argues Muldavin, "the study results are applicable to strategic decisions, but are of limited use for tactical or property-specific decision." The debate on the net investment benefit of sustainable homes and communities is echoed in the following comments from survey respondents:

- "It makes no sense from a land developer's standpoint to include anything in the entitlement submittals without the ability to ascertain the value added to the land. The two common beliefs for adding these types of sustainable applications are based on increased absorption and land values and/or the ability to enhance the entitlement flexibility as compared to not providing these applications."
- "There is tremendous uncertainty about how to implement, particularly PV. Every time there is a mandate for some new level of improvement to the home that cost gets absorbed in the land value. It does not raise the value of the home in the consumers' eyes; rather is a hard cost that lowers the land residual."
- "For a builder in a master planned community, they are willing to install the solar if required, but they discount the price they are willing to pay for the land creating a disincentive to the master developer."

3.1.4. Impediments at the Local Jurisdictional Level

A number of respondents expressed frustration with local permitting agencies. The primary focus, as exemplified by the comments below, is on adequate staff training, permitting backlogs, long lead times, costs, and uncertainty, thus underscoring the need to improve internal agency permitting processes to help facilitate the delivery of sustainable homes and communities.

- "Lack of adequate staffing. Jurisdiction standards and personnel training need to be updated along with new technology and policies so that builders don't get delays

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42 See "Does Green Pay Off?" by Norm Miller, Jay Spivey, and Andy Florence, July 8, 2008, in *The Journal of Sustainable Real Estate* at www.costar.com/josre/.

43 "Quantifying "Green" Value: Assesssing the Applicability of the CoStar Studies," June 2008, by Scott Muldavin, Executive Director, Green Building Finance Consortium. The mission of the Green Building Finance Consortium is to enable the private real estate sector to appropriately recognize the value and risk of investment in Green Buildings. See http://www.greenbuildingfc.com/Home/Reports.aspx.

during the processing of plans and permitting. Standards need to be prepared by someone with a good understanding of new technologies."

- "Department and organizational 'silos' prohibit an integrated approach to sustainable community development. It is very inefficient to have to go to each of the individual "silos" in putting together an integrated program. This is not time, nor cost, nor human resource effective and must be corrected if we are going to develop energy efficiency as a resource for California."
- "Review staff who are not as familiar with such projects as they could be. Lack of coordination between Entitlement and Ministerial reviews. Lack of project management on the Ministerial end."
- "The process is cumbersome. It should be made very easy."
- "Many times the jurisdictions are behind the developer (at least the developers and builders that are market leaders); there is a lack of education and awareness at the municipality which has caused developers to reduce what they would like to do related to EE+PV. Additionally, the bureaucracy at the municipality and utility creates disincentives and delays, so many well-intended developers and builders may not have the resources to deal with these delays and so less is done rather than more."
- "Building department's original lack of familiarity with Photovoltaic."
- "Our experience finds that the biggest challenge to executing innovation projects is working through the bureaucracy (e.g. at the local jurisdictions and utilities). If the project drags on too long, partners become disinterested."

3.1.5. Energy Utilities

Utilities play a key role in the delivery of residential PV. The comments below may indicate the need to reassess current deployment models in order to garner greater stakeholder support for residential PV:

- "In our experience, utilities provide the greatest challenge to the entitlement of PV and EE at a community level since the majority does not allow formation of solar community electricity purchasing or selling entities. Developers and builders are forced to locate PV on each rooftop on the customer side of the meter. Several developers have asked us about the feasibility of locating large-scale PV systems or alternative energy resources within their solar community to serve the community at large, not just a specific homeowner. Often times their communities involve residential and commercial properties. Utility interconnection requirements prohibit these types of alternative schemes which will necessary for the wide scale deployment of PV within developments."
- "Every obstacle to electricity buy-back."
- "Lack of appropriate valuation by utilities as an embedded resource that reduces peak demand."
- "Lack of long-term incentives that span CPUC funding cycles."

- "I think it is a conflict of interest to have the utilities administer the NSHP (New Solar Homes Partnership). It isn't in their best interest for the people to have 'free' utilities. They are the barrier."

3.1.6. Uncertainty and Other Miscellaneous Factors

Lastly, the survey respondents identified uncertainty and other miscellaneous factors as key barriers to the development of sustainable homes and communities:

- "Lack of certainty in the regulations, the additional cost, environmental groups using the green banner to stop or slow project."
- "Lack of regulatory certainty, lack of appropriate modeling tools."

3.2. Current Land Entitlement Incentives

While the list of incentives available at the time of land entitlement is a fairly short one, both a white paper issued by the American Institute of Architects[44] and a subsequent report from the National Association of Industrial and Office Properties (NAIOP)[45] include some examples from around the country[46]:

3.2.1. Density/Floor Area Ratio (FAR) Bonuses

FAR is the ratio of the total floor area of buildings on a certain location to the size of the land of that location, or the limit imposed on such a ratio. As a formula, FAR is expressed as follows:

$$\frac{\text{Total covered area on all floors of all buildings on a certain plot}}{\text{Area of the plot}}$$

The FAR can be used in zoning to limit the amount of construction in a certain area. For example, if the relevant zoning ordinance permits construction on a parcel, and if construction must adhere to a 0.10 FAR, then the total area of all floors in all buildings constructed on the parcel must be no more than one-tenth the area of the parcel itself.[47] As the FAR increases, the density of living and workspace also increases. In the world of sustainability, higher density offers more opportunities for public transit, walkable communities, and other economies of

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44 See http://www.aia.org/SiteObjects/files/LLgreenincentives(5-19).pdf

45 See http://www.naiop.org/foundation/greenincentives.pdf

46 The California Building Industry Association website (www.cbia.org) contains information on CBIA legislative initiatives. According to CBIA, The single-biggest obstacle to more urban-centric, infill housing development is the abuse of the California Environmental Quality Act (CEQA) and if "smart growth" is ever to happen in California, the law must change. In 2008, California homebuilders will pursue legislation to allow for a streamlined environmental review when projects conform to regional blueprints. See www.cbia.org.

47 See http://en.wikipedia.org/wiki/Floor_area_ratio

scale. For developers, higher density offers the potential for greater financial yield on a per acre basis. This is a strong economic signal to potential investors and developers of mixed-use, compact and higher-density developments.

California Examples:

- The City of Glendale Downtown Specific Plan Height and Density Bonus Program. See www.ci.glendale.ca.us/planning/pdf_files/DowntownSpecificPlan/Nov7,2006CityCouncil/2006-11-07%20FINAL%20draft.pdf.
- The City of Sunnyvale Ordinance No. 2744-04 Section 19.32.075 of the Sunnyvale Municipal Code. This ordinance establishes a floor area ratio bonus in areas zoned for industrial use for LEED certified buildings. See http://qcode.us/codes/sunnyvale/. *[Editor's note: Section 19.32.075 was repealed in 2009.]*

Other:

- Arlington, Virginia Green Building Incentive Program. EnvironmentalServices/epo/EnvironmentalServicesEpoIncentiveProgram.aspx. The Arlington program allows the County Board to consider a modification of use regulations for additional density between .15 and .35 FAR and/or additional height up to three stories for special exception site plan requests. The site plan proposal must guarantee a U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) rating at the certified award level of above. See www.arlingtonva.us/Departments/
- City of Seattle Density Bonus Incentive. The city's Density Bonus Incentive provides greater heights and/or greater FAR for commercial and residential buildings within Seattle's central office core and adjoining areas. Projects must achieve a LEED Silver rating or greater, as well as contribute to affordable housing and other public amenities. See http://www.seattle.gov/dpd/GreenBuilding/MultifamilyResidential/Incentives Assistance/default.asp.

3.2.2. Grants

- Portland, Oregon, Green Investment Fund. The Green Investment Fund (GIF) is a competitive grant program that supports innovative green building projects in Portland. The primary intent of the GIF is to support early building and site-related project activities that examine the potential for and identify the means to realize an exemplary, comprehensive green building project. GIF grants are secondarily intended to help offset the incremental hard costs of the green building measures or strategies that most strongly contribute to the building's ability to meet the GIF goals and priorities. See www.portlandonline.com/OSD/index.cfm?c=42134.
- Pennsylvania Sustainable Energy Fund. Founded in 1999 by the Pennsylvania Utilities Commission (PUC), the mission of the Sustainable Energy Fund (SEF) is to develop and invest in economically viable, energy-related businesses, projects and educational initiatives to create innovative, market-based technologies and solutions for environmentally-sound and sustainable energy usage. SEF provides financing for

eligible sustainable energy projects. Their 2007 report highlights the $75,000 in grant funds given to the Pine Street Neighborhood project for the transformation of a former brownfield site to an innovative residential community. See www.thesef.org.

3.2.3. Technical and Other Financial Assistance

- Southern California Edison Sustainable Communities Program.

  Southern California Edison (SCE) initiated a Sustainable Communities Program (SCP) to work in partnership with all of the community shareholders including cities, developers, other utilities, and local jurisdictions when a new parcel of land is to be developed. In particular, the Orange County Great Park project (http://www.ocgp.org/thepark/sustainability.asp) is a collaborative effort illustrating this concept. The program promotes an integrated approach to promote high performance energy efficiency and demand reduction technologies, along with clean on-site generation, water conservation, transportation efficiencies and waste reduction strategies. Financial and technical assistance is provided by the utility and focused on new residential, multi-family, and mixed-use communities. Other utilities may have similar programs. See www.sce.com/RebatesandSavings/bb/sustainable-communities.htm.

3.2.4. Preferred Financing

While many stakeholders may debate the impact of sustainable building practices on land values, there is growing evidence that sustainable projects, and the potential for such projects to produce higher net investment benefits, are capturing the attention of the financial community. According to Lisa Galley, principal at Galley Eco Capital, LLC, based in San Francisco, "Green capital-debt and equity earmarked for the development of new sustainable buildings or the green retrofit of existing buildings, is definitely on the rise, albeit with an uneven distribution of capital types."[48] New Resource Bank of San Francisco, for example, which opened in November 2006, launched a program to offer more financial incentives for developers to go green. Incentives will include greater loans at lower costs, lower interest rates and higher loan-to-value to help developers and investors profit more from environmental friendly projects designed and built in accordance to the LEED standards of the U.S. Green Building Council. According to Peter Liu, founder and vice chairman, this preferred financing not only applies to construction loans, but to refinancing and acquisitions of green properties.[49]

Morris Barbera, Commerical Development Manager at Lend Lease Communities and former Project Manager at KB Home,[50] provides some additional insights on the potential ability of

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48 See "Oases of Capital" by Frank Hill, *Sustainable Land Development Today*, September 2008.

49 For more information on New Resource Bank, see http://newresourcebank.com. Also see "What Works. Green for Green: An innovative bank supports environmentally friendly business," by Carolyn Said, Stanford Social Innovation Review, Summer 2007 at http://www.newresourcebank.com/pdf/2007SU_whatworks_green.pdf.

50 See www.lendlease.com. Mr. Barbera's comments are insightful and reflect much of the thinking inherent in the work of the Green Building Finance Consortium (www.greenbuildingfc.com). The mission of BGFC is to enable the private real estate sector – corporations, investors, lenders, and developers – to

reduced financing costs to support sustainable development activities. According to Mr. Barbera, "If a land developer issues $100 million in bonds to finance the infrastructure of a net-zero energy community, and a government or private-sector-backed organization guaranteed those bonds at a reduced interest rate – 1 to 2 percent less than the market - this would save the developer significant capital on the front end of projects. Reducing risk through an alternative financing mechanism is a meaningful incentive. The same rationale applies to the developer's builder partners. If homebuilders could finance PV panels at a guaranteed reduced rate through their construction loan – or, for instance, through an alternative loan established to incent rooftop solar PV installations – they may be more likely to carry the cost on their balance sheets."[51]

3.2.5. Tax Policies and Economic Development Incentives for Smart Growth

A growing number of states have amended some aspect of their tax policies and economic development codes to promote smart growth communities.

- California's Infrastructure and Economic Development Bank (I-Bank) finances public infrastructure and private developments that promote economic growth, revitalize communities and enhance quality of life for the state's residents. The I-Bank has very broad statutory powers to issue revenue bonds, make loans, and provide credit enhancements for a wide variety of infrastructure and economic development projects and other government purposes. The I-Bank has established scoring criteria for prioritizing projects.[52] The scoring criteria include, but are not limited to, the following:
  - Quality of Life/Community Amenities (includes additional scoring criteria for proposed projects that contribute to a greater use of public transit systems)
  - Land Use, Environmental Protection and Approved Housing Element (includes additional scoring criteria for projects within urban and rural areas already served by existing infrastructure)
- Maryland's 1997 Smart Growth Initiative established urban growth areas and designated that state infrastructure funding would support only projects serving areas inside those growth areas. Development can still occur outside growth areas, but no state funds can be used to support those efforts, taking away a major financial incentive for continuing

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appropriately recognize the value and risk of investment in green buildings. To accomplish this mission, GBFC is in the process of developing the underwriting practices, tools and valuations methods required to assess, from a fiduciary perspective, investment or lending on Green buildings, and widely communicate the results of their work.

51 Per e-mail exchange with Shannon Cox-Baker of Lend Lease Communities and Kristin Shewfelt of Architectural Energy Corporation dated August 5, 2008.

52 From California Instrastructure and Economic Development Bank (I-Bank), "Criteria, Priorities and Guidelines for the Infrastructure State Revolving Fund (ISRF) Program." For more information, contact Stanton Hazelroth at the I-Bank at shazelroth@ibank.ca.gov.

existing sprawl patterns. See Maryland Department of Planning at http://www.mdp.state.md.us/smartintro.htm.

- Illinois Senate Bill 2885, the Business Location Efficiency Incentive Act, became effective January 1, 2007. The bill allows the Department of Commerce and Economic Opportunity (DCEO) to increase corporate income tax credits offered under the Economic Development for a Growing Economy (EDGE) program to companies that can prove a proposed project site is within easy reach of affordable workforce housing and/or public transit. See http://www.goodjobsfirst.org/news/article.cfm?id=126.
- The New Jersey Department of Transportation sponsors many municipal transit-oriented development projects, the largest of which is the New Jersey Transit Village Initiative. The initiative can designate certain areas as transit villages. Transit village status not only entitles urban areas to a new zoning ordinance that drives the community's redevelopment and transit-oriented design, but it also gives it access to state grant funds to develop mixed-use neighborhoods around transit stations.

3.3. Potential Land Entitlement Incentives[53]

The land entitlement incentives described above, while small in number, are strong indicators of growing efforts on the part of various stakeholders to encourage the investor and developer community to integrate sustainable building practices in new residential developments. There is, however, strong strategic value to consider additional incentive structures as investors and real estate developers have an enormous ability to influence the design and construction of sustainable homes and smart growth communities on a large scale.

Cherokee, [54] a leading private equity firm investing capital and expertise in brownfield redevelopment, provides an example of one firm dedicated to advancing strategies to implement sustainable developments that will reduce GHG emissions and provide strong returns on investment. According to Jeff Kingsbury, an advisor to Cherokee, while land entitlement is the "real holy grail" of the planning process (i.e., a long and arduous journey), it is also the stage with the most potential to create value and strong financial returns for investors and developers seeking to capitalize on new business opportunities afforded by the environmental movement.[55] Mr. Kingsbury's wish list of potential incentives to investors and developers during the land entitlement stage include the following;

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53 Paul Shigley notes that any direct financial contributions by government usually trigger prevailing wage requirements. See https://www.dir.ca.gov/dlsr/dprewagedetermination.htm. In the largest urban areas, this requirement is not necessarily a hinderance because builders are paying top-dollar for labor anyway. But away from these larger urban centers, this requirement is a major obstacle to direct public financial participation in development projects because prevailing wage can dramatically increase the cost of construction. (Per e-mail exchange with Paul Shigley dated 09.11.08)

54 See http://cherokeefund.com/

55 Per phone conversation with Jeff Kingsbury on 07/23/08.

- **Expedited permitting of projects seeking entitlement.** Expedited permitting of projects seeking entitlement frees up capital and reduces carrying costs incurred as a result of an investment position. Jerry Yudelson of Yudelson Associates, a green building consulting firm, echoes Mr. Kingbury's support of expedited permitting as a value-added incentive. He adds that given the complexity of the California regulatory environment, coupled with what can be the roller-coaster nature of the land entitlement process, of primary value to investors and developers is certainty of outcome such that time to market is expedited. This mitigates capital risk for developers as uncertainty of outcome leads to capital being tied up indefinitely.[56] Most incentives currently in place reward fast tracking of building permits but not entitlement permits.
- **Impact development fee credits.** Impact fees, or development fees, are expenditures that developers are required to make as a precondition to final map approval. Impact fees are generally used to finance roads, schools, affordable housing, transit systems, and other projects and services within jurisdictions. The fees are frequently passed on by developers to purchasers in the price of new buildings or property and, therefore, increase the cost of housing and decrease the profitability and potential competitive advantage of a particular project.[57] Reduction of these fees or credit back on these fees would be helpful.
- **Incentives for a solar subdivision.** This is a new and emerging concept that could possibly tie the entire neighborhood or subdivision to the installation of energy-efficiency measures and solar PV. Incentives, both financial (deferral of fees, fee credits, lower property tax assessments for homeowners, etc.) and non-financial (expedited project permitting) could be further supported with streamlining of paperwork and verification and monitoring.
- **Integrated sustainable community incentives.** Energy efficiency and renewable energy incentives could take a more holistic approach to embrace reductions in energy use from the transmission of water, electric vehicles and storages, and community energy needs (e.g., lighting infrastructure). This is related to the growing topic of "energy" master planning.

The list of current and potential incentives described above is also supported by Mr. Yudelson in the NAIOP report.[58] Yudelson posed the following question via an on-line survey to a group of commercial developers, architects and local government officials: "Besides direct monetary payments (grants, rebates, tax incentives, utility payments), which Green Building Incentives were/would be the most significant for you in your choice to develop green projects?"

He received 112 responses, as follows:

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56 Per phone conversation with Jerry Yudelson on 07/08/08. See also Yudelson Associates at http://greenbuildconsult.com/.

57 See National Association of Realtors, *Field Guide to Development Impact Fees* at http://www.realtor.org/library/library/fg805.

58 Ibid. Also see http://www.naiop.org/foundation/greenincentives.pdf.

a. Density bonuses (mentioned by 83% of respondents)
b. Expedited permit processing (mentioned by 75%)
c. Development fees partially or fully refunded (mentioned by 58%)
d. Marketing/good publicity awards (mentioned by 42%)
e. Access loans/loan funds (mentioned by 17%)

The responses from the participants in the Schweitzer & Associates survey often echoed the responses found in the Yudelson study. In addition, the Schweitzer respondents identified a number of additional potential incentives that would be of value during land entitlement:

- At the Specific Plan level (and/or at the Planned Community level in Orange County), the decision-making agency can pre-determine design standards for combining energy efficiency and PV (EE+PV), allowing for expedited plan checking at the building permit level, increasing the certainty of a builder choosing to pursue an EE+PV approach.
- Reductions in the required number of parking spaces.
- Assistance with and/or expedited review of EIR and CEQA processes.
- Incentives for incorporated neighborhood electric vehicles, plug-in hybrid vehicles, and energy-storage devices into a solar subdivision.
- Predictable carbon credits.
- Allowing the developer to make EE+PV improvements to existing homes in the same jurisdiction in exchange for the same types of incentives allowed within the proposed development. With the increased energy efficiency of homes built after 1990, decreasing the impact of older homes will increasingly have the largest impact on GHG emissions [This is interpreted to mean some kind of quid pro quo arrangement between the builder and the local jurisdiction where the builder makes energy-efficiency improvements in existing homes surrounding the new proposed development in exchange for new incentives for the new proposed development}.

Mr. Kingsbury also proposes that establishing a tie-in between anticipated carbon "cap-and-trade" programs and land use planning may have an even greater impact on land development patterns. To support his statement, Mr. Kingsbury cites a study titled "A Preview of Future Federal Climate Change Legislation."[59] U.S. Senate Bill S. 2191, the Lieberman-Warner Climate Security Act of 2007, [60] sought to establish a "cap-and-trade" program for GHG emissions. The study's authors conclude that while S. 2191 was introduced but not passed, it most likely provided a framework for future climate change legislation.

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59 See http://www.weil.com/ Lieberman-Warner Climate Security Act – a Preview of Future Federal Climate Change Legislation; David Berz, David Hird, Annemargaret Connolly, John O'Loughlin, Nick Flynn, Matthew Morton, Mary Lake, Thomas Goslin (Spring 2008, *Environmental Law Bulletin*)

60 See http://www.govtrack.us/congress/bill.xpd?bill=s110-2191

Gregory Kats, principal of Capital E,[61] a venture capital firm, elaborates further on the potential of "cap and trade" programs to influence land development patterns and building practices: "The key thing is that building owners must get the CO_2 credits/value resulting from their efficiency and renewable investments. CO_2 reduction is part of the value created by efficiency and renewables (along with lower energy bills), and ripping this away and giving this to utilities breaks the market mechanism. Without the financial value of their CO_2 reductions, building owners will invest in less efficiency and less building integrated renewables. This is the #1 issue."[62]

61 See www.cap-e.com.

62 E-mail exchange with Kristin Shewfelt of Architectural Energy Corporation dated 07/25/08.

4.0 Conclusions and Recommendations

The process of land entitlement is a very complex one. Its complexity is itself often a barrier to the standard development approval process and serves as an even greater barrier to sustainable development. It is clear that numerous public and private sector climate change and sustainability initiatives currently impact and will continue to impact land use planning and real estate development in California. SB 375, for example, is a major part of the evolving regulatory environment, and, according to Paul Shigley, "has the potential to change dramatically both California's land use planning system and growth patterns."[63] In addition, AB 32 goals, together with the mandatory green building guidelines scheduled for implementation in 2010, will most likely be strong drivers in increasing the sustainability of new housing in the time to come.

It is also clear that much more could be done to incentivize sustainable development. To support sustainability initiatives, and to help offset the costs of the "green premium," numerous economic signals exist in the marketplace to reward builders for the construction of "green" homes or homeowners for the purchase of these homes. Researchers have seen, however, that few signals exist during the land entitlement process that could potentially direct and reward key stakeholders for the development of sustainable homes and communities. In order to adequately address current barriers, gauge the effectiveness of incentives already in place, and assess the potential value of incentives not yet formally addressed in the new residential sector, this report concludes with the recommendation that the state, through collaboration among the Energy Commission, Air Resources Board, and other agencies, form a formal advisory committee or task force with representatives from key stakeholder groups. The goal of this committee/task force should be to provide strategic input and feedback to state government on the following:

- How are current climate change, land use planning, and green building initiatives and legislation being implemented, and how are they affecting new development?
- What kinds of data–technical, financial or other–are needed by the investor and developer communities to help determine or approximate the net investment benefit of sustainable homes and communities?
- What financing strategies might help reduce the perceived risks associated with investment in sustainable homes and communities?
- What does a stable financial environment look like that would support the design and construction of sustainable homes and communities?
- What are the most opportune stages of the land entitlement process to address the design of sustainable homes and communities? Why?

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63 See "SB 375 Continues to Dominate Planning Discussion" in *California Planning & Development Report*, January 26, 2009.

- At which critical stages of the land entitlement process might local communities, in conjunction with the developer community, best incentivize the design and construction of sustainable homes and communities? What does this incentive look like? Why?
- What can be done to address any barriers currently in place?
- What kind of further policy frameworks would support these efforts?
- What are the perceived impacts of the Governor's Office of Planning and Research (OPR)'s recent Technical Advisory addressing GHG emissions and climate change for plans and projects undergoing review and approval during the California Environmental Quality Act (CEQA) review process? How can these impacts be best addressed? How can this process be used to create value?
- What local jurisdictional practices would best support these efforts?
- Should California look beyond its own borders and collaborate with entities in surrounding states?

The survey administered to members of the development and builder communities as part of this report offers key insights into these issues and can serve as an initial resource. The survey responses, in the words of the participants, are contained in Appendix A.

A list of recommended stakeholders for this formal committee/task force can be found in Appendix B.

Glossary

AEC	Architectural Energy Corporation
ARB	California Air Resources Board
CEQA	California Environmental Quality Act
CPUC	California Public Utilities Commission
CSI	California Solar Initiative
DA	Development Agreement
DAB	Design Advisory Board
DRC	Design Review Committee
EE	Energy Efficiency
EIR	Environmental Impact Report
GHG	Greenhouse Gas
IEPR	*Integrated Energy Policy Report*
LEED	Leadership in Energy and Environmental Design
NAHB	National Association of Home Builders
NAIOP	National Association of Industrial and Office Properties
NSHP	New Solar Homes Partnership
OPR	Governor's Office of Planning and Research
PV	Solar Photovoltaics
SCE	Southern California Edison
USGBC	U.S. Green Building Council
ZENH	Zero Energy New Home Program

Appendix A: Survey for Land Entitlement Process and Incentives for Sustainable Communities

1.0 Introduction

On behalf of this report, Schweitzer & Associates, Inc., of Lake Forest, California,[64] conducted a survey on land entitlement and residential development in fall 2008. The purpose of the survey was to solicit feedback from key stakeholders to determine ways to encourage them to embrace sustainable development and building practices. A total of 19 members of the investor, developer, and builder communities responded to the survey. The results are included here in this Appendix.

Because of the variety of stakeholders included in the survey, the responses span both the land entitlement and vertical construction phases of the land planning and development process. The survey respondents were extremely helpful in identifying current barriers to the integration of sustainable development and building practices in their business areas, as well as identifying potential incentives that might remove these barriers. This feedback is more fully described in the main body of this report (*The Land Entitlement Process and Incentives for Sustainable Communities)*.

Here are some notes for the reader on survey compilation:

- A non-response by a survey respondent is noted with three dashes ---.
- Most respondents typed their responses on the survey form. In cases where the responder wrote by hand, every effort was made to ensure the accuracy of the transcription.

64 Schweitzer & Associates is a real estate development consulting firm specializing in optimizing value for their clients through "The Art of Sustainable Development." See http://www.makegreenpay.com/.

2.0 Survey Respondents

Question 1: Stakeholder Group(s) (please check all that apply)

Occupation/Area	Investor	Developer	Builder	Consultant/ Other	Supply Chain	Municipality	
Number of respondents	1	5	2	6	4	1	**TOTAL 19**

Respondent #	**Occupation/Area**
1	Developer
2	Consultant/Other
3	Developer
4	Supply Chain Partner
5	Consultant/Other
6	Supply Chain Partner
7	Investor + Developer
8	Builder
9	Builder
10	Consultant/Other
11	Supply Chain Partner
12	Supply Chain Partner
13	Developer
14	Consultant/Other
15	Municipality
16	Consultant/Other (Attorney)
17	Developer
18	Consultant/Other
19	Supply Chain Partner

3.0 Inclusion of Energy Efficiency and Renewables in Projects

Question 2: Do you include energy efficiency ("EE") and renewables (solar "PV") in your projects? (Numbers indicate total respondents)

Yes (Always Standard)	Yes (Always Option)	Sometimes (Standard)	Sometimes (Option)	Never	Would like to but have not	Hadn't thought about it
3	**1**	**9**	**6**			

COMMENTS:

1. EE yes, solar as an option
2. ---
3. ---
4. ---
5. ---
6. ---
7. ---
8. (1) In masterplanned community where mandatory; (2) in City as an entitlement carrot
9. A project we had in the City of Thousand Oaks required the subdivision to be plumbed for solar, however, since the requirements was so outdated (1980s) it was only enough for two solar panels which was not enough to be of any help. This is an example of a jurisdictional requirement that did not make sense and it was not beneficial to either the home or the environment.
10. We always advocate for EE, and advocate as appropriate for PV.
11. We encourage builder customers to include a high level of energy efficiency features in their home designs to strengthen the economic value proposition of the PV.
12. ---
13. As a developer, we do not deliver homes. We do deliver amenities such as recreation centers, golf course, etc. There is not a tremendous incentive to incur additional costs associated with EE and PV construction unless you are going to be a long-term owner, or you are able to sell the facility.
14. If we can make the economics work.
15. ---
16. ---
17. ---
18. ---
19. ---

4.0 Greatest Market Barriers

Question 3: What do you see as the greatest <u>barriers</u> to embracing EE+PV in the land use entitlement process? (Number check all that apply and rate them accordingly)

Cost	Financing	Uncertainty	Policy	Time/Schedule	Market Acceptance	Incentives
16	**4**	**6**	**4**	**5**	**5**	**9**

COMMENTS:

1. It makes no sense from a land developers stand point to include anything in the entitlement submittals without the ability to ascertain the value added to the land. The two common beliefs for adding these types of sustainable applications are based on increased absorption and land values and/or the ability to enhance the entitlement flexibility as compared to not providing these applications.
2. Cost is the barrier, which leads to financing issues when value to tenant/buyer is uncertain
3. ---
4. ---
5. ---
6. ---
7. ---
8. Consumers want but don't want to pay the full cost to get.
9. From a builder's perspective, "will I be able to recoup the cost in the sales price" or "will the market bear the price"
10. ---
11. Our understanding is that few incentives exist for developers to specify a high level of EE features and PV in their community building requirements. Cost of these features is seen as prohibitive and potentially being rejected by their builder partners.
12. ---
13. There is tremendous uncertainty about how to implement, particularly PV. Every time there is a mandate for some new level of improvement to the home that cost gets absorbed in the land value. It does not raise the value of the home in the consumers' eyes; rater is a hard cost that lowers the land residual.
14. The "split incentive dilemma" causes disconnects between the investor and the beneficiary which is felt by the master developer, builder, and homeowner (investing short term for future savings being by other stakeholders is problematic in getting the renewables to market). Policies have been focused on short-term end user(s) vs. the master developer and investor who can influence an entire market of multiple real estate sectors and categories of end users and tenants. Being able to overcome first cost barriers and barriers of longer pay back than buyers anticipate to holding the property are critical in cracking code to install more renewables / solar PV in the market place. For a builder in a master planned community, they are willing to install the solar of required, but they discount the price they are willing to pay for the land creating a disincentive to the master developer. The uncertainty that current incentives, those that are used in analyzing the economic feasibility of the investment are huge barriers. Saving time is equal to money so expediting permitting is attractive as well.
15. ---
16. ---
17. ---
18. ---
19. Need stronger incentives, such as fast track permitting.

5.0 Existing Market Incentives

Question 4: What are the most attractive existing <u>incentives</u> to encourage EE+PV in the land use entitlement process? (Please check all that apply and rate them accordingly)

Expedited Processing	Reduced Fees	Deferred Fees (to date of Certificate of Occupancy)	Policies (such as AB 811)	Certainty of Incentives	CEQA Compliance
9	**9**	**4**	**5**	**9**	**2**

COMMENTS:

1. N/A
2. REQUIREMENT OF ALL DEVELOPMENT SO AS TO EVEN PLAYING FIELD
3. ---
4. Rebates
5. ---
6. ---
7. ---
8. There needs to be more incentives to encourage more widespread usage.
9. ---
10. ---
11. ---
12. ---
13. Expedited processing and CEQA compliance in California is a joke! It never happens. Reduce costs!
14. All are attractive, anything which reduced the first costs and shorter-term burden of costs to fund future savings is essential to getting over the inherent cost barriers.
15. ---
16. ---
17. Tax credits, free rebates and incentives.
18. ---
19. ---

6.0 New Incentives

Question 5: If <u>new incentives</u> were offered at <u>different stages</u> of the land use entitlement process to encourage EE+PV at which stage would they be most attractive to you and why?

Specific Plan	Zoning	Subdivision	Final Map	Building Permit	CEQA	Other
4	6	5	1	7	3	

COMMENTS:

1. The best incentives allow the home builder to gain the incentives. The ability to make rebates seamless to the homeowner is one of the keys to mass acceptance and deeper penetration of these initiatives. If the builder gains the incentives, especially if they are tiered, they can deliver green homes to different shades of green consumers without relying solely on the proposition of avoided energy cost and the borrowing power of the consumer is easily maintained.
2. ---
3. ---
4. ---
5. Need to have builder invest from the start so they are wedded to enviro aspect of project despite obstacles later.
6. It is best to implement at early stages of planning and zoning.
7. Cherokee is the leading private equity firm investing capital and expertise in brownfield remediation and sustainability. We are a master developer and want to incorporate as many sustainability opportunities upfront in the land planning and entitlement process. In addition, we hope that commitments to these features will facilitate the approval process. The entitlement process should ensure that the sustainability commitment made during entitlement can be implemented during the vertical construction.
8. During the entitlement stage to reduce risk of securing approvals and the certainty of know what conditions you have to meet.
9. I would assume the ability to include EE=PV in a community, or for a custom lot, should be early enough in the process so that it can be incorporated into all the appropriate improvement plans and architectural plans necessary for installation.
10. Allows it to be valued into land costs and future transaction while ensuring implementation.
11. Cannot comment as we are not a developer or builder.
12. ---
13. Reduce fees that the land developer or home builder has to pay in order to deliver the home.
14. A solar subdivision would be a great concept.
15. Building permit. Our Development Services Department currently manages and expedites the Entitlement process, but there is limited project management or expedited processing on the Ministerial side.
16. ---
17. Overall project economics determined with discretionary approvals at TTM or zoning (if vested).
18. At the Specific Plan level (and/or at the Planned Community level in Orange County), the decision making agency can pre-determine design standards for EE+PV, allowing for expedited plan checking at the Building Permit level – increasing the certainty of a builder choosing to pursue an EE+PV approach.
19. ---

7.0 Examples or Ideas for Incentives

Question 6: What do you see as some of the <u>best examples and/or ideas</u> of ways to incentivize EE+PV? (Please rate all that apply)

- ☐ __4__ Technical Assistance and Training
- ☐ __6__ Alternative Design Standards
- ☐ __14__ Expedited Permitting/Processing
- ☐ __8___ Density Bonuses (e.g., floor area ratios/FAR)
- ☐ __6__ Density Transfers (e.g., within a Specific Plan)
- ☐ __7__ Development Impact Fees (credits/deferred to occupancy)
- ☐ __9__ Development Impact Fees (reduced)
- ☐ __12__ Building Permit Fees (reduced)
- ☐ __7__ Inspection Fees (waived)
- ☐ __10__ Financing Incentives (reduced interest rates)
- ☐ __4___ Financing Incentives (reduced bond rates)
- ☐ __9___ Tax Rebates or Deductions
- ☐ __2__ Grants (e.g. Portland's Green Investment Fund)
- ☐ __7_ Incentive Districts (e.g., Berkley FIRST (Financing Incentives for Renewable Solar Technology))
- ☐ __3__ Assessment Districts (e.g., such as those authorized by AB 811)
- ☐ __6__ Marketing/Good Publicity/Awards

__4__ Other

COMMENTS:

1. Incentivize the utilities to change their business approach. Allow the utility companies to make more money by selling less energy.
2. INCENTIVES ONLY MAKE SENSE WHEN YOU ARE READY TO GO.
3. ---
4. ---
5. ---
6. ---
7. ---
8. More incentives from the public agencies encouraging EE+PV to deflect the costs that the consumer is not willing to fully absorb yet.
9. Others in the list may apply, but I am not the financial guru.
10. ---
11. Best guesses based on comments from builders and developer partners.
12. Simplify building codes.
13. ---
14. The answer to the question depends on the stage of the project as well as whom the decision maker is – but earlier is better. Depending on the business plans of the owners/decision makers, different incentives may be more or less attractive. However, anything that eliminates costs, complexity or permitting requirements is good. Deferring costs to more align with future savings seems to be attractive to many market players.
15. Parking reductions.
16. ---
17. Assessment districts for new homes. "Green mortgages" for jumbo loans. Buyer gets credit for monthly energy costs savings → increases purchasing power.
18. ---
19. ---

8.0 Types of New Incentives

Question 7: Thinking "outside of the box," what types of <u>new incentives</u> would be motivating to incorporate EE+PV in land use entitlements (e.g., solar subdivision, CEQA process streamlining)?

COMMENTS:

1. Incentivize the utilities to change their business approach. Allow the utility companies to make more money by selling less energy.
2. Provide inducements to tenants in form of tax credits possibly on utility and prop taxes etc so that they would seek out EE buildings.
3. ---
4. ---
5. Need nati'l incentive that has fed gov't buy back extra energy produced at the rate of the local utilities – too convoluted and changeable to deal with local utility direct; if certain income stream from sell-back, easier for builders to secure financing b/c payback is quantifiable with government backing; would be able to finance the additional functions of the more "traditional" EE+PV; similar to German model.
6. Lower property tax assessment for communities that have solar subdivisions.
7. Assistance with or expedited review of EIR and CEQA process.
8. ---
9. Lower property tax assessment for solar subdivisions or existing homes that install solar.
10. ---
11. Incentives for incorporating neighborhood electric vehicles, plug in hybrid vehicles and energy storage devices into a solar subdivision.
12. Just like sprinkler systems became mandatory, solar should become mandatory.
13. ---
14. Solar subdivision could be a good way to tie current incentives to development in the future in a less cumbersome fashion than is currently the case.
15. Floor Area Ratio incentives, increasing the incentives as motivation for projects which are energy efficient AND provide for renewables, such as solar panels and fuel cells.
16. ---
17. Predictable carbon credits, AB811 for new homes.
18. Allowing the developer to make EE+PV improvements to existing homes in the same jurisdiction, in exchange for the same types of incentives allowed within the proposed development. With the increased energy efficiency of homes built after 1990, decreasing the impact of older homes will increasingly have the largest impact on greenhouse gas emissions.
19. Create two tiers of incentives based on commitment levels of EE+PV.

9.0 Level and Type of Incentives

Question 8: What <u>level and type of incentive(s)</u> would be required to make a commitment to incorporate EE+PV within a development?

COMMENTS:

1. N/A
2. At a pure financial level, incentives must meet at least two tests, they need to around 5% of hard cost or more and the credit should cover 50% or more of the cost of compliance.
3. ---
4. $4 to $5 per watt rebate
5. significant enough to make cost-comparable to non EE/PV with relatively quick payback
6. 15% deposit towards equipment installation
7. ---
8. ---
9. Don't know.
10. Early guaranteed incentives (more than 5 years) could be to master developer directly or guaranteed to builders in the plan. Incentives should focus on getting the net cost to $4,000 per kW installed.
11. Buydown incentives for neighborhood electric vehicles (10% minimum?) and for energy storage devices (25% minimum).
12. ---
13. ---
14. Rather than looking at incentive, if we were to look at additional costs, $2-5k seems to be the sweet spot in talking with builders and developers.
15. Expedited processing. From my discussions with the development community, this is the most valuable incentive offered.
16. Greater allowance of points on LEED or Build It Green.
17. Anything that results in no net cost to builder or home buyer.
18. All of the above mentioned activities. (Line 18 in response to question #7.)
19. ---

10.0 Existing Barriers

Question 9: Are there existing barriers or disincentives at local jurisdictions and/or utilities in attempting to entitle EE+PV+ today? If so, what are they?

YES	NO
12	2

COMMENTS:

1. The application of solar can do some bad things to the energy factor for the utility companies. Most utility companies recognize the possible destabilization of their infrastructure if their load factor decreases.
2. Many jurisdictions still require the lighting havoc insulation requirements that they would want irregardless of how EE and PV change needs
3. ---
4. ---
5. Every obstacle to electricity buy-back
6. The applications are complex and require extensive support and maintenance.
7. ---
8. What are they? Please elaborate: Many agencies don't do enough plan checks on a mass production level so they don't understand it. Therefore, plan checks tend to take even longer, are more costly.
9. Lack of adequate staffing. Jurisdiction standards and personnel training need to be updated along with new technology and policies so that builders don't get delays during the processing of plans and permitting. Standards need to be prepared by someone with a good understanding of new technologies.
10. Lack of appropriate valuation by utilities an embedded resource that reduces peak demand.
11. In our experience, utilities provide the greatest challenge to the entitlement of PV and EE at a community level since the majority does not allow formation of solar community electricity purchasing or selling entities. Developers and builders are forced to locate PV on each rooftop on the customer side of the meter. Several developers have asked us about the feasibility of locating large-scale PV systems or alternative energy resources within their solar community to serve the community at large, not just a specific homeowner. Often times their communities involve residential and commercial properties. Utility interconnection requirements prohibit these types of alternative schemes which will necessary for the wide scale deployment of PV within developments.
12. The process is cumbersome. It should be made very easy.
13. ---
14. Department and organizational "silos" prohibit an integrated approach to sustainable community development. It is very inefficient to have to go to each of the individual "silos" in putting together an integrated program. This is not time, nor cost, nor human resource effective and must be corrected if we are going to develop energy efficiency as a resource for California.
15. Review staff that are not as familiar with such projects as they could be. Lack of coordination between Entitlement and Ministerial reviews. Lack of project management on the Ministerial end.
16. None that I am aware of.
17. ---
18. ---
19. Delays in permitting, limiting parameters by fire marshall, permit fees, overall costs.

11.0 Problematic Departments

Question 10: If so, <u>which department(s)</u> have you found to be most problematic in processing EE+PV? Why?

Planning	Building	Both	Other
2	5	5	2

COMMENTS:

1. N/A
2. NOT ENOUGH EXPERIENCE TO ANSWER
3. ---
4. ---
5. ---
6. ---
7. ---
8. ---
9. Please see #9 above.
10. No interest in engaging the market to achieve high levels of PV penetration.
11. Cannot comment as we are not a developer or builder.
12. ---
13. ---
14. Many times the jurisdictions are behind the developer (at least the developers and builders that are market leaders); there is a lack of education and awareness at the municipality which has caused developers to reduce what they would like to do related to EE+PV. Additionally, the bureaucracy at the municipality and utility creates disincentives and delays, so many well-intended developers and builders may not have the resources to deal with these delays and so less is done rather than more.
15. Additional staff training is required. Funding for such training isn't readily available.
16. ---
17. ---
18. ---
19. Other = Fire. Also, varies by jurisdiction.

12.0 Challenges

Question 11: What have been the <u>biggest challenges,</u> obstacles or "fatal flaws" in processing EE+PV+ and other innovative projects/plans/elements and why? What should be avoided?

COMMENTS:

1. EE works, PV is currently a hard economic proposition
2. COST AND LACK OF MANIFEST PREMIUM PAID BY TENANT OR BUYER.
3. ---
4. ---
5. ---
6. Std. eng. Package should be developed among all utility companies.
7. ---
8. Plan check and permitting process by ignorant building departments who exacerbate the problem by their unwillingness to try and streamline the process.
9. Trying to process something new when the jurisdiction or utility does not have a standard for their staff to follow. Also, see #2 and #9 above.
10. Lack o f long-term incentives that span CPUC funding cycles.
11. Our experience finds that the biggest challenge to executing innovation projects is working through the bureaucracy (e.g. at the local jurisdictions and utilities). If the project drags on too long, partners become disinterested.
12. Standardized.
13. ---
14. The paperwork and bureaucracy is overwhelming at best. There is no way to create a solar community (vs. individual homes) in the existing system. Not being able to net meter on MFA projects is also a deterrent. Another example that is a challenge/obstacle is if you were to do live/work units, two building permits are required which also is a disincentive (not sure how this works with E+PV). The IOUs not being able to count RPS is another disincentive for the IOU. Not being able to aggregate RPS at the community level from the homeowners and transferring the credits to the utilities is a fatal flaw in being able to "account" for all the renewables installed. Additional bureaucracy for bureaucracy's sake should be avoided. Having to do paperwork and signatures for each lot is killing a lot of trees (and time) – there must be a better way.
15. Developers who aren't truly interested in developing Green, but are simply interested in gaming the system to be able to have their projects processed faster. This is why Energy Efficiency has to be on equal footing (if not higher footing) than PV.
16. ---
17. ---
18. Building department's original lack of familiarity with Photovoltaic.
19. Balancing needs of: 1) aesthetic concerns of planning department, 2) state fire marshal guidelines, 3) available roof space.

13.0 Suggested Changes

Question 12: What internal jurisdictional or organizational changes would be helpful? What opportunities do you see to address these challenges?

COMMENTS:

1. Arizona is not that difficult to work in.
2. NOT ENOUGH HANDS ON EXPERIENCE TO ANSWER
3. ---
4. ---
5. ---
6. Reduce the red tapes through CSI program/department.
7. ---
8. Plan checker training.
9. Staffing/education/flexibility/approved standards and/or guidelines that have been prepared by someone knowledgeable within the industry and are kept current with evolving technology.
10. ---
11. Small groups of people knowledgeable and properly incentivized to work with EE and PV in the local jurisdictions and utilities.
12. A more user-friendly process.
13. ---
14. A streamlined access and delivery system for the EE+PV incentives that were available on a "community scale" could help increase penetration significantly. Currently EE and PV are in two different "silos" and it is very inefficient to have to have the same meetings and conversations with different people and departments. A single department or individual with authority (operative term) is NEEDED because we are never going to be able to get there from here in the current fragmented organization(s) that exists.
15. Coordination between Entitlement and Ministerial processes. Additional funding for staff and training are necessary to make this happen.
16. ---
17. ---
18. Pre-approved alternative development standards in place prior to building permit request for EE+PV.
19. ---

14.0 Jurisdictions, Ease of Work

Question 13: Have you found certain jurisdictions to be <u>easy to work with?</u> What works well?

COMMENTS:

1. ---
2. ---
3. ---
4. ---
5. ---
6. PG&E may have the best paperwork in place.
7. ---
8. None have been easy. San Juan Capistrano was passable. The County of Orange was horrible.
9. ---
10. ---
11. Can only comment on electric utilities. The Sacramento Municipal Utility District (SMUD) as well as Roseville Electric have been easy to work with because of teams dedicated to the development of EE and PV.
12. ---
13. ---
14. Still looking … however, the municipal utilities appear to be much more effective in developing EE+PV thus far.
15. Having a staff person who can assist with any and all issues.
16. ---
17. ---
18. ---
19. Yes, Sacramento County, Rio Vista, Folsom.

15.0 Current Legislation Barriers

Question 14: What <u>current state legislation</u> is a deterrent or <u>barrier</u> to entitling an EE+PV community today, if any?

COMMENTS:

1. None that I am aware of.
2. ---
3. ---
4. Some city requirements (i.e., Chimneys rqmnt)
5. rigid rules that don't allow for alternatives
6. The 30% Incentive Tax Credit needs to be in place and be extended.
7. ---
8. Not aware of any but the California Building Industry Association would be an excellent source.
9. ---
10. ---
11. No comment.
12. ---
13. ---
14. The inability to provide enhanced EE+PV in the existing built environment is one of the single biggest challenges or barriers to CA meeting their AB32 goals. The current T-24 is already at, or in some opinions, beyond the 2020 goals already.
15. ---
16. ---
17. ---
18. ---
19. ---

16.0 Proposed Legislative Barriers

Question 15: Do you see additional <u>barriers</u> in <u>legislation currently being proposed</u> relating to EE+PV and/or sustainable communities?

COMMENTS:

1. In Arizona the only barrier is the reliance and uncertainty of incentives to overcome the economic burden placed on the land.
2. ---
3. ---
4. ---
5. Not legislation but what about condo associations putting limits for aesthetics
6. Prop 7
7. ---
8. Not aware of any but the CBIA would be an excellent source.
9. ---
10. Lack of extension of the federal tax credit for solar.
11. No comment.
12. Prop 7.
13. ---
14. There is significant misinformation regarding the "Growing Cooler" data and the role SUSTAINABLE COMMUNITIES can plan in meeting AB32 and other regulatory goals. There is a lack of understanding in land use law and property rights and some of the current legislation being proposed is ignoring property rights (e.g, "take" could be the result).
15. ---
16. Legislation at the state level may impede local ??? from doing what is most fitting for their communities.
17. ---
18. ---
19. ---

17.0 Legislative or Executive Order Options

Question 16: What <u>legislation or executive order</u> is <u>needed</u> to assist the local jurisdiction, utilities and developers in processing an EE+PV community?

COMMENTS:

1. ---
2. ---
3. ---
4. ---
5. lots
6. CEC needs to administrate and continue to govern the process and constantly police the process. The utilities each are developing their own processes and procedures which makes it difficult to operate from one territory to next.
7. ---
8. Defer to CBIA.
9. Consistency from one City/County to another, including guidelines and standards for builders to follow that have been prepared by someone knowledgeable within the industry and are kept current with evolving technology.
10. Direct utilities to examine and disclose the value of embedded peak demand and energy savings.
11. No comment.
12. I think it is a conflict of interest to have the utilities administer the NSHP. It isn't in their best interest for the people to have "free" utilities. They are the barrier.
13. ---
14. Longer-term securing of EE+PV incentives for COMMUNITIES; aggregation and transfer of RPS credits from homeowners to master developer to IOU; and a menu of VOLUNTARY alternative need to be developed for both the existing built environment and new construction will give the market the opportunity to participate and embrace EE+PV n a larger scale.
15. Make energy efficiency and renewable energy mandatory in our building codes.
16. ---
17. Extension of tax credits, rebates and incentives.
18. More programs like Berkeley's that incentivize improvements to existing homes.
19. ---

18.0 Incentives By Development Type

Question 17: Should there be <u>different</u> incentives for <u>infill/redevelopment</u> projects compared to <u>new communities</u>? If so, what are they?

YES	NO
6	6

COMMENTS:

1. If this in regards to EE and PV I would say no, incentives associated with brown field development is likely to be aimed at transportation issues
2. HAVE ALL NOT JUST SOME RDA'S REQUIRE LEEDS OR OTHER EE/PV FOR ASSISTANCE
3. ---
4. ---
5. ---
6. ---
7. New communities should have incentives that push them to incorporate more urban features found in denser communities.
8. Treat them the same when it comes to EE+PV.
9. Don't know.
10. Incentives should be based on the value of the commodities being offset.
11. Infill developments typically have less roof space for PV so it becomes more difficult for builders to offer PV on every housing unit, especially homeowners. However, if utilities allowed a large "common" PV array to be "virtually metered" to each housing unit, then each unit could participate through its "virtual share" of the array output. These solar programs have been deployed in Europe and SMUD is participating in a pilot program in Sacramento.
12. ---
13. ---
14. Yes and no – I'd like to see IOU and CPUC/CEC graduate to dealing with the "communities" on a more integrated fashion whether they are vertical mixed use communities or horizontal conservation developments/mater planned communities.
15. ---
16. Additional FAR, allowing infill to deviate from the regulations of the underlying zone.
17. ---
18. ---
19. ---

19.0 Entitlement Challenges in a Changing Environment

Question 18: What are the <u>biggest challenges</u> you see in <u>securing land entitlements</u> in the <u>climate changing environment</u>?

COMMENTS:

1. Holding developers accountable for long term total carbon emissions in the communities that they build.
2. BUREACRATIC CONFUSION AND UNCERTAINTY
3. ---
4. ---
5. financing
6. Water and Power plans needs to include long-term sustainable strategy.
7. Uncertainty of regulatory climate as a result of SB375.
8. Enactment by State of legislation for CEQA to address green house gases in EIRs.
9. Policy changes that include requirements that are too far out in front of the local jurisdiction/utilities, manufacturers or work force to fulfill, or that cause the pricing of the home to be more than the market will bear. If the market or industry can't absorb the financial burden of the policy, it will defeat the intent. Also, not every foot fits into the same shoe. There must be flexibility in new policy for each jurisdiction to adopt standards that will work for their particular communities. Also, keeping the jurisdiction's standards and staff current with changing technology will be very important. Educating the builders/developers of the complete process for EE+PV installation would also be very beneficial.
10. Lack of clear protocols, levels of significance and approach.
11. No comment.
12. ---
13. Lack of certainty in the regulations, the additional cost, environmental groups using the green banner to stop or slow projects.
14. Uncertainty is #1. Lack of knowledge and education o land use planning and land use law with the buildings folks who have recently realized the land use green building connection.
15. Lack of understanding by local jurisdictions in processing EE+PV, the time it take for local jurisdictions to change to incorporate new policies which address climate change.
16. ---
17. Lack of regulatory certainty, lack of appropriate modeling tools.
18. For new developments on the fringe to gain approvals, even if there are EE+PV strengths.
19. ---

20.0 Defining the Market

Question 19: How do you define "Green Building"? How do you define "Sustainable Communities"?

COMMENTS:

1. ---
2. Buildings that demonstrate significant reduction in energy/water consumption and to a lesser degree make significant gestures to recycling.
3. ---
4. ---
5. ---
6. Total Carbon Foot Print is the best way to measure the long-term impact of any community.
7. ---
8. Green building pertains to the use of green construction components whereas sustainable communities entails a lifestyle with green infrastructure, products and services.
9. Green Building – A building that is designed to use and/or re-use materials and standards that are environmentally sound, and that incorporates the benefits of nature into the building design so as to enhance the structure and its livability. Sustainable Communities – Designing a livable community that will work with all the natural resources to help ensure a balance between what is taken aware from nature and what is given back to nature.
10. ---
11. Green building – EE + renewable energy resources + high quality building practices and materials + scarce resource conservation + location appropriate landscaping. Sustainable communities include building with a high level of EE = renewable energy resources, responsible land use, planned social and commercial centers and a well-designed transportation infrastructure.
12. ---
13. ---
14. Green building deals with high performance vertical buildings. Sustainable communities or sustainable community development is development of communities without compromising the ability of future generations to meet their own needs.
15. Green Building – The practice of increasing the efficiency with which buildings use resources – energy, water, and materials – while reducing building impacts on human health and the environment during the building's lifecycle through better siting, design, construction, operation, maintenance, and removal. Sustainable Communities utilize practices of green buildings, and focus on long-term integrated systems approaches, healthy communities, and quality-of-life issues by addressing economic, environmental, and social issues.
16. Using a LEED or Build It Green to attain a certain certifiable level of points.
17. Green building pertains to vertical construction, while sustainable communities pertains to horizontal construction (land development).
18. ---
19. ---

21.0 Additional Comments

Question 20: What have we not addressed that may be helpful?

COMMENTS:

1. ---
2. THE KEYS ARE FIRST ESTABLISHING ACTUAL REQUIREMENTS FOR THE EVEN PLAYING FIELD AND SECOND CREATING INCENTIVES FOR THE BUYERS AND USERS TO WANT AND ASK FOR SUCH BUILDINGS.
3. ---
4. ---
5. ---
6. ---
7. ---
8. Nothing that I can think of now.
9. ---
10. ---
11. ---
12. There should be a feed in tariff to drive massive implementation of solar.---
13. ---
14. Lack of integration of the IOUS (and CPUC and CEC) "silos" to provide EE+PV (… + water conservation + construction waste recycling + natural resource conservation + clean transportation alternatives) is one of the biggest current obstacles in the current system.
15. We need stronger focus on energy efficient. The cost savings is greater, the cost output lower, and the results (return on investment) are experienced faster with energy efficiency measure.
16. ---
17. Difficulty in using PV with MF [multifamily] housing (metering issues).
18. ---
19. ---

Appendix B: Recommended Stakeholders for Advisory Group

1.0 Recommended Stakeholders for Advisory Group

Investment Community

- California Public Employees' Retirement System (CalPERS). CalPERS Board has set an energy reduction goal of 20 percent in its core real estate portfolio over the next several years. The pension fund owns approximately $5 billion of core real estate that includes investments in office, retail, industrial and apartment properties. See http://www.calpers.ca.gov/index.jsp?bc=/investments/home.xml.
- Cherokee Investment Partners. Cherokee Investment Partners is the largest private equity fund in the world ($1 billion) that specializes in the acquisition, remediation and sustainable re-development of contaminated real estate, or "brownfields". At this time, Cherokee Investment Partners is expanding beyond the redevelopment of polluted properties with its first major residential community focused on sustainable design.
- RREEF Real Estate. RREEF Real Estate acquires and manages investments in commercial and residential property, and real estate securities on behalf of its institutional and private clients worldwide. RREEF Real Estate has more than €48.3 billion in assets under management worldwide as of 30 June 2008.
- St. Paul Travelers. St. Paul Travelers is one of the nation's largest insurance companies. In addition to its property-casualty insurance business, St. Paul Travelers manages a multi-billion dollar portfolio, including several large-scale, master-planned and mixed-use developments.

Developer Community

- Forest City Enterprises, Inc. Forest City Enterprises is a $10.9 billion public-traded real estate company that is principally engaged in the ownership, development acquisition and management of commercial and residential real estate throughout the United States.
- Newland Communities. Newland Communities is a privately owned company involved in creating residential and urban mixed-use communities, land development and project management, all across the United States. Newland Communities currently holds entitled land for more than 80,000 single-family residences and 15,000 multi-family residences across the United States. See www.newlandcommunities.com.
- Actus Lend Lease. Actus Lend Lease, a subsidiary of the Lend Lease global family, is the nation's leader in public/private community development. See www.actuslendlease.com. Actus Lend Lease is currently working with the Department of Defense on the Army Hawaii Family Housing residential communities. It is a leading examples of public-private partnership where a federal agency is working with a developer to create incentive pathways for high-performance communities.

- Black Mountain Ranch, LLC. Fred Maas is president and CEO of Black Mountain Ranch, LLC, and the developer of the master-planned community of Del Sur in San Diego, CA (www.delsurliving.com). Mr. Maas is a strong supporter of the California Solar Initiative, mandating that 20 percent of the homes at Del Sur have rooftop photovoltaic systems.

Builder Community

- California Building Industry Association. See www.cbia.org. CBIA is a statewide trade association representing more than 6,700 companies, including homebuilders, trade contractors, architects, engineers, designers, suppliers and other industry professionals.
- The Grupe Company. www.grupeco.com. Since 1966, The Grupe Company has created 10 master-planned communities and more than 50,000 homes in 35 cities nationwide, with a strong sensitivity for environmental concerns.
- D.R. Horton, Inc. www.drhorton.com. D.R. Horton, Inc., is the largest homebuilder in the United States. Some of its single-family detached communities in Redding, California, were certified in the USGBC LEED for Homes program.

Planning Community

- California Chapter American Planning Association (and representative local chapters). See www.calapa.org. CBIA is organized to be the voice of housing in California and the principal advocate for public policies that increase the supply and affordability of housing.
- The Governor's Office of Planning & Research. See www.opr.ca.gov. OPR provides legislative and policy research support for the Governor's office and assists the Administration in land-use planning.
- Urban Land Institute. See www.uli.org.

Finance Community

- Green Building Finance Consortium (GBFC). GBFC is a group of leading corporations, real estate companies and trade groups who have joined together to address the need for independent research and analysis of investment in green or energy-efficient buildings. See www.greenbuildingfc.com.
- New Resource Bank. www.newresourcebank.com.

Utilities

- Southern California Edison
- Pacific Gas & Electric
- Sacramento Municipal Utility District

Academic Community

- Burnham Moores Center for Real Estate Development, University of San Diego (Professor Louis Galuppo). See http://www.sandiego.edu/business/centers/real_estate/.
- Local Government
- League of California Cities. www.cacities.org. The League of California Cities is an association of California city officials who work together to enhance their knowledge and skills, exchange information and combine resources so that they may influence policy decisions that affect cities.

Non-Profit Organizations

- International Council for Local Environmental Initiatives (ICLEI). ICLEI, founded in 1990, is an international association of local governments as well as national and regional local government organizations that have made a commitment to sustainable development. See www.iclei.org.
- National Energy Center for Sustainable Communities (NECSC). NECSC promotes healthier and more productive communities by integrating cleaner energy systems and energy-smart planning and design into new development and redevelopment projects. NECSC is currently collaborating with government agencies, companies and utilities to create a national demonstrate site for energy-smart community development in the City of Chula Vista, California. See www.necsc.us.

Land-Use Professionals

- The Hodgson Company. www.thehodgsoncompany.com. The Hodgson Company is a Sacramento-based real estate development, land use and government advocacy firm which specializes in the coordination and entitlement of land development projects throughout Northern California.
- Schweitzer & Associates. www.makegreenpay.com. Schweitzer & Associates is a real estate development consulting firm located in Southern California. They apply a creative and integrated systems approach to problem solving – utilizing green and sustainable technologies in the design and implementation of sustainable solutions tailored to each stage of the development process – from acquisition and predevelopment through to construction of the built environment.