ASK THE BUILDERS: FINDING CONSENSUS AMONG DEVELOPMENT INDUSTRY STAKEHOLDERS FOR GREENHOUSE GAS REDUCTION STRATEGIES

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Benjamin David Lichty

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Department of Public Policy and Administration

Abstract

of

ASK THE BUILDERS: FINDING CONSENSUS AMONG DEVELOPMENT INDUSTRY STAKEHOLDERS FOR GREENHOUSE GAS REDUCTION STRATEGIES

by

Benjamin David Lichty

One of the government's primary roles is to step in when a market failure exists and correct it. Externalities create market failure, and economists consider pollution the best real world example of a market failure. California's Assembly Bill (AB) 32 and Senate Bill (SB) 375 are both examples of public policy attempting to correct a market failure known as global warming or climate change, from greenhouse gas (GHG) emissions, a form of air pollution. AB 32 and SB 375 seek to reduce greenhouse gas (GHG) emissions. Creating new laws in California is difficult, and understanding what GHG reduction strategies are agreeable across party lines is valuable. The success of efforts to pass new legislation to reduce GHGs and slow global warming depends greatly on finding consensus among stakeholders. While existing legislation may have some impact on reducing GHG emissions, new strategies are imperative to meet current objectives of curbing climate change.

This thesis analyzed existing research from the UC Berkeley Center for a Sustainable California (CSC) that made recommendations regarding implementation tools to help achieve the goals of AB 32 and SB 375. I used a Criteria Alternative Matrix (CAM) to evaluate the 10 recommendations from *Make it Work* (CSC, 2009) and determine the best three options by measuring efficiency, equity, and political acceptability. I then took my results to building

industry professionals in one-on-one interviews. I asked them what GHG emission reduction strategies they favor using a standardized set of interview questions. My intention was to find consensus among the builders on a specific strategy that will help reduce GHG, and make a policy recommendation to lawmakers.

I found consensus among developers for two strategies that can help reduce GHG emissions. Both strategies involve reducing risk and lowering project costs associated with infill development. The first strategy is to make reforms to the California Environmental Quality Act (CEQA) Guidelines that change the legal grounds for litigation, while mandating a more efficient timeline for resolving legal action regarding CEQA lawsuits. The second strategy is to link projects that qualify for CEQA Streamlining for Infill Development under the proposed CEQA Guidelines Section 15183.3 to a source of government funding known as Infrastructure Financing Districts (IFD) which use tax increment financing to pay for infrastructure on infill sites. IFDs are currently legal; however, reform is necessary to use them effectively. CEQA and IFD reform is agreeable to developers, and can make infill development feasible and profitable, helping correct a market failure. These two strategies can reduce GHG emissions by increasing population density and promoting an environment where people drive less. I recommend lawmakers pursue CEQA and IFD reform to encourage infill development to reduce GHG emissions.

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Chapter 1

INTRODUCTION

Topic Introduction

This thesis seeks to understand how new environmental laws in California can be implemented effectively and how private developers will react to the new requirements. There is significant scientific evidence that greenhouse gases (GHGs) are a threat to public health (EPA, 2009) because they are the primary cause of climate change. Climate change is a serious problem facing our society and according to Sovacool, B. & Barkenbus, J. (2007) existing legislation is insufficient to thwart this growing issue and all the ramifications that accompany it, including global warming, sea level rise, changing weather patterns, and ocean acidification. Sovacool (2007) said State policies provide many carrots but without any sticks, implying that good behavior is rewarded but bad behavior is not punished. California recognized GHGs and climate change as a local and global concern in the early 2000s and legislators debated and passed new laws in an effort to reduce the amount of GHGs emitted in the state. I will discuss such laws in detail later in the paper, but my focus will be on Assembly Bill (AB) 32 and Senate Bill (SB) 375, specifically implementation methods.

California lawmakers set out to quantify GHGs and reduce emissions to specific levels in a fixed timeline in AB 32, the Global Warming Solutions Act of 2006. AB 32s focus is significantly geared toward the transportation sector because it is the largest single contributor, representing 37% of the state's GHG emissions (CARB 2008). Many experts agree that there is a great opportunity to reduce GHGs by changing driving behavior. Nelson (2006) stated that two-thirds of total development in the United States will be built between now and 2050 and planning for compact, mixed-use development has the potential to generate as much as 35% less driving and emissions than business as usual. (Ewing, Pendall, & Chen, 2002; Ewing et al., 2008).

Lawmakers understood the principle of behavior change and its complex reality of difficult implementation, and pursued other initiatives to further support the reduction of GHGs. The next significant legislation, SB 375 passed in 2008 to complement the goals of AB 32 by seeking to reduce the amount of driving in passenger vehicles by Californians (referred to as vehicle miles traveled (VMT)). By reducing VMT, GHGs would also decrease and help the efforts to thwart global warming.

Although the reduction of GHGs is controversial, especially when a change in behavior is necessary, California is on this course until something changes. The question now becomes what is the best way to get to the desired VMT reductions without making a significant impact on quality of life in California.

Purpose

The purpose of this thesis is to first, identify specific application tools suggested to reduce VMT, which have been put forth by experts at the UC Berkeley Institute of Urban and Regional Development, Center for a Sustainable California (CSC) and then analyze such tools using Criteria Alternatives Matrix (CAM) Analysis. Put simply, CAM Analysis is a process of weighing pros and cons for different options and ranking them from best to worst using specific criteria. Second, this thesis will seek to understand the perspective of the private development industry because it is my perception that the development industry has yet to embrace these solutions to reducing GHGs, or even acknowledge the problem of climate change and all its negative consequences. I am interested in discovering how development will change, and what kind of resistance is expected from developers regarding the new laws and their implementation.

The Specifics

AB 32 was the initial landmark legislation in California to battle climate change mainly through technology incentives, and a cap and trade system. Next, Tom Adams, the President of the

California League of Conservation Voters sponsored SB 375 to help address global climate change and complement AB 32. SB 375 was authored by Senator Darrell Steinberg, approved by California legislators by majority vote and signed by Governor Arnold Schwarzenegger in 2008. The intention of SB 375 was to address driving behaviors in an effort to reduce VMT. SB 375 changes California planning and transportation law in four basic ways. First, it adds a Sustainable Communities Strategy (SCS) to the regional transportation plan, linking climate policy with transportation and land use planning. Second, it aligns the program for the regional distribution of housing to be consistent with the SCS. Third, it adds new provisions to the California Environmental Quality Act (CEQA) to assist land use decisions that implement the SCS. And fourth, it adds new modeling provisions to accurately account for the transportation impacts of land use decisions. SB 375 encourages Californians to drive less (reduce VMT) through planning transportation and land use differently, thus, GHG reduction goals of AB 32 are more likely to be met.

Three-legged Stool of GHG Reduction

The three types of GHG reduction efforts: reducing carbon content in fuels, increasing vehicle fuel efficiency, and reducing VMT are referred to as the "three-legged stool". All of them are needed to significantly reduce carbon dioxide (GHG) emissions from automobiles. Experts believe that all three of these components must drastically improve in order to reach GHG reduction goals (Ewing et al., 2008). The focus of this thesis is to find consensus among developers to implement legislation to reduce VMT, the third leg of the stool.

AB 32

Because GHGs and climate change have been popular topics in California, AB 32 was created to set benchmarks for GHG reduction in California, and gave the California Air Resources Board (CARB) the responsibility of setting policy to insure that these benchmarks are met. The main

benchmark objectives of AB 32 are first, to reduce GHGs in California to 1990 levels by the year 2020 and second, 80% 1990 levels by 2050. CARB has quantified the 1990 approved benchmark as 427 million metric tons of carbon dioxide equivalent (MMTCO2e). Thus, the appropriate reductions would be first, 427 MMTCO2e by the year 2020 and second, 342 MMTCO2e by the year 2050. CARB projected the 2020 business-as-usual emission level without regulation to be 600 MMTCO2e. So clearly, California has a lot of work to do to reduce GHGs to the intended levels.

Recent trends in California illustrate GHGs are rising at an increasing rate due to population and economic growth. GHG emissions grew 13% from 1990 to 2001 and are projected to grow 32% from 1990 to 2020 in a business as usual scenario (CEC, 2005). However, California is yet to set consequences if the GHG target levels are not met by 2020, or 2050. So, additional implementation measures are going to be needed to ensure the success of AB 32. If GHG reduction objectives are not met or if AB 32 is unsuccessful in any way, such as being economically over-burdensome, other states and countries are not likely to implement similar laws and California cannot independently effect climate change enough to make a significant global difference. California only produces about seven percent of U.S. GHGs and less than two percent of global GHGs. (CEC, 2005).

SB 375

SB 375 (Steinberg, 2008), The Sustainable Communities and Climate Protection Act links transportation, housing and greenhouse gases, and complements AB 32 by connecting transportation funding decisions to land use planning at a local level. The law directs CARB to determine GHG emission targets to specific regions. It then gives regional planning agencies known as Metropolitan Planning Organizations (MPOs) the responsibility to establish Sustainable Community Strategies (SCSs) to identify how to meet such GHG emission targets. MPOs then

request local jurisdictions and the public to get together with their neighboring jurisdictions, facilitated by their MPO, and plan how their region will reduce GHGs. CARB assigned GHG reduction target levels to all MPOs in 2010 using 2020 and 2035 as the designated years of measurement.

An example of an MPO is the Sacramento Area Council of Governments (SACOG), the six-county region surrounding the city of Sacramento (El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba counties). CARB set GHG emission targets for SACOG to be a seven percent reduction by the year 2020, and a 16% reduction by the year 2035, using 2005 GHG emissions as the baseline year of measurement. SACOG officials will determine a specific plan or strategy based on those targets, called the SCS or Alternative Planning Strategy (APS) if an SCS is determined to be infeasible. Reaching the target levels set by CARB will be difficult in a region known for suburban sprawl, so SACOG will need to build consensus among its cities and counties. To reach those targets, SACOG wants to promote smart growth patterns that emphasize compact, mixed use, and efficient land uses. Among the techniques that SACOG intends to use are group meetings and charettes to best implement CARBs targets for GHG emission reduction. SB 375 is in part, the help AB 32 needs to encourage a long-term change in behavior. It remains unclear how the MPOs will each meet the objectives of SB 375, and what the consequences are if they do not.

Obstacles with Climate Change Legislation

The largest obstacles to implementing climate change laws are likely to be changing the way our country has built cities for the last 60 plus years, and doing it in a down economy. Changing the way we live and grow as a society is a remarkable goal and will not come easy. I think the "American Dream" is perceived by many Americans to own a big home on a piece of property

with a big yard, big garage and have the right to drive anywhere at any time with a relatively insignificant cost. That dream will have to be broken for change to be successful.

Driving trends must change, and for that to happen, development density must change. The California Energy Commission (CEC) (2007) reported that the trend of VMT from 1975 to 2004 to be over three percent per year of steady increases in vehicle miles traveled, while population growth has been close to two percent per year. Increasing VMT erodes the GHG emissions reductions that can be achieved through technology. In addition, many large metropolitan areas have land development codes and regulations that favor automobile use more than any other alternatives. Public spending continues to support building and maintaining roads rather than alternatives like bus and rail systems, or even biking and walking. Regulations like CEQA, local codes and regulations, and NIMBYs (Not In My Back Yard - locals against growth) also encourage investors to develop on the fringe of metropolitan areas rather than infilling unused land. Ewing et al. (2008) explained the key to substantial GHG reductions is to get all policies, funding, incentives, practices, rules, codes, and regulations pointing in the same direction to create the right conditions for smart growth. New policies often contradict existing policies, particularly related to automobile dependence. California lawmakers must make changes to existing California policy to discourage climate change so that all laws are in alignment.

As if making such a big behavioral change was not enough, California's unemployment rate remains high, reported to be 12.3% in December 2010, and 10.7% in June 2012 (U.S. Bureau of Labor Statistics, July 31, 2012). Unemployment is a major hurdle in passing legislation because a down economy is not conducive to policy change. Though economic improvement is starting, it is yet to be seen how the U.S. will recover from the serious recession. I believe the recession is a significant impediment to changing the way we live and grow.

In California, the next major obstacle in climate change policy is likely to be Proposition 26 (2010). Proposition 26 defines all local charges as taxes that require voter approval, unless a charge falls into one of seven narrow exceptions. Similarly, Proposition 26 redefined many state regulatory fees as state taxes that require two-thirds votes in the Legislature (League of California Cities, 2011). Proposition 26 is likely to be an obstacle to the full implementation of environmental legislation like AB 32 and SB 375 due to the two-thirds vote requirement. If environmental laws require new taxes for implementation, voters will potentially have to approve them with a two-thirds vote.

Skepticism

Skeptics always exist in every issue, and in this case, skeptics may argue climate change and global warming to be "no big deal," not caused by humans, or potentially a hoax. But the scientific community has made it overwhelmingly clear that climate change is real and must be addressed for the livelihood of future existence. Lomborg (2001 and 2007), a Danish academic and author down played global warming in his books The Skeptical Environmentalist and Cool It. His literature has fueled anti-environmental movements with seemingly credible scientific evidence supporting ideas that climate change is a much less important issue than it is made out to be. However, Goodstein (2007) reports that Lomborg cherry-picks evidence to manufacture scientific and economic consensus that does not exist. Begley (2010) claimed Lomborg's books have been hugely influential in providing cover to politicians, climate-change deniers, and corporations that do not want any part of controls on greenhouse emissions. Credible sources advocating skepticism on the importance of climate change could create major political obstacles in implementing California's new legislation. When combining anti-environmental propaganda with Proposition 26, climate change legislation implementation may prove improbable in the near future. Climate change legislation may be akin to legislation the tobacco industry avoided for

years as it peddled misinformation to the public in efforts to disprove the scientific evidence that tobacco products are unhealthy. The intent of this thesis is to help overcome misinformation by discussing the scientific evidence of climate change and analyzing legitimate policy alternatives to California's land developers.

Legitimate Policy Implementation Tools

UC Berkeley's CSC (2009) researched SB 375 and its relationship with AB 32, and it provided 10 recommendations on how to improve the existing climate change laws so that they might be better implemented and meet the objective of influencing individuals to travel fewer miles in automobiles. The Make it Work (CSC, 2009) report came about because laws like AB 32 and SB 375 have never existed before, and many experts, government agencies and developers questioned how these new laws would work. The purpose of its report is to identify existing state and regional policies that can help support the objectives of AB 32 and SB 375 and recommend new implementation policies that can contribute to accomplishing climate policy goals. Here is a list of the CSC 10 recommendations.

CSC (2009) 10 Recommendations

1) State and Regional Transportation Funding must be funneled to Transit Oriented Developments.

2) Implement a Gas Tax (Carbon Tax) to discourage driving and fund mass transit (internalize the externality).

3) Eliminate Parking Minimum Requirements in Urban Areas, and encourage denser development.

4) Provide more funding to infill development and infill related infrastructure using Tax Increment Financing (TIF) like in Redevelopment Areas.

5) Enforce Regional Housing Needs Assessment (RHNA) requirements and provide incentives to create more urban infill housing.

6) Move Local Sales Tax Revenues to the State Level and Promote Regional Revenue Sharing.

7) CEQA streamlining by using exemptions for Sustainable Infill Projects.

8) Use (ISR) Indirect Source Review programs (Set Emission Limits for Large Development Projects considered Sprawl) to reduce GHGs.

9) Use Transfer of Development Rights (TDR) programs within regions.

10) Provide funding for regional open space preservation creating geographic urban growth boundaries.

The next section explains what is contained in the remainder of this thesis.

Layout of Remainder of Thesis

The remainder of this thesis is comprised of five additional chapters. Chapter 2 provides background on climate change, existing laws in California, and economic theory. Chapter 3 is the methodology portion of the report and discusses CAM analysis and the process I used to interview developers (human subjects) as a means of data collection. I will describe the modified CAM analysis I intend to use in detail and explain the interview purpose and methods, including who and what the interviews will address. In Chapter 4, I present a modified CAM analysis describing the CSC proposed policy alternatives relating to the implementation of SB 375. Each alternative will be weighed against the following criterion: efficiency, equity and political acceptability. The CAM analysis section will describe each policy alternative, and then 1) analyze recommended actions that are intended to reduce GHGs as they relate to the use of automobiles and other transportation options, 2) discuss policies that relate to locating housing inside areas with established infrastructure and potentially redeveloping or repurposing parcels of land, and 3) describe ways environmental policies can reduce VMT. These three themes provide the background to the 10 recommendations from CSC Make it Work for new legislation on how to reduce GHGs in California. I will further describe my work and findings by first assessing and ranking the 10 CSC recommendations concerning cost effectiveness, equity, and political acceptability. These are the results of my modified CAM analysis. I will then come up with my

own top three recommendations from the 10 to present to developers in individual interviews. I will report my discoveries and judgments made from research and experience, and report the results. This information will explain what environmental industry experts already know regarding policies, political history, reports, and offer a basis for analysis of the recommended actions. Chapter 5 is the interview results chapter of the report. I will record developer and stakeholder feedback from the interviews in this chapter. Specific areas of interest are where there is consensus and disagreement of opinion, and the implications of such findings. I intend to better understand what laws should be considered agreeable among the developers and stakeholders. Last, in Chapter 6, I will describe conclusions drawn from my analysis of the data, and I will suggest what lawmakers can do with this information. This chapter will bring everything together and summarize my recommendations. I will explain where developers and stakeholders are in agreement regarding policy recommendations. Specifically I will recommend at least one implementation tool for future consideration based on the CAM analysis and interview results and anticipated feasibility. I will also discuss the results of the interviews and suggest a strategy that an organization like the California Building Industry Association (CBIA) could use to get the recommendations implemented.

Chapter 2

BACKGROUND

Background of Global Climate Change

Climate change has been a recognized issue for decades now, and new legislation seems to be suspended in a time warp. In 1979, The US Department of Energy stated, it is the sense of the scientific community that carbon dioxide from burning fossil fuels is the most important environmental issue facing humankind (US Department of Energy Report, 1979). Climate change because of human activity has been a popular policy issue since the 1960s along with other environmental policies. The Air Pollution Act of 1955 was the first federal air pollution legislation, which later evolved into the Clean Air Act of 1963 with amendments made in 1967, 1970, 1977, and finally what is recognized today in a robust 1990 revision. In addition, Congress set other monumental environmental policies in the 1970s including, the National Environmental Policy Act (NEPA) of 1970, the Clean Water Act of 1972, and the Endangered Species Act of 1973. And now after decades of research and discussion, the issue of climate change continues to be one of the highest priorities for government policy reform. The Stern (2006) Review on the Economics of Climate Change said that climate change is the greatest and widest-ranging example of market failure ever seen. Henry Waxman (Democrat, California) tried to amend the Energy Tax Prevention Act of 2011, by attempting to put the House of Representatives on record recognizing that climate change is occurring, is caused in large part by humans and presents serious public health risks (Boykoff, 2011).

What is Climate Change?

Climate change and global warming are interchangeable and global warming is a product of the greenhouse effect. The greenhouse effect is the result of solar radiation from the sun getting trapped in Earth's atmosphere and warming up. As quantities of GHGs increase in the

atmosphere, the average global temperature goes up. Carbon dioxide is the most abundant GHG in Earth's atmosphere and thus has the greatest impact on global warming. Without the greenhouse effect, earth would be uninhabitable because of cold temperatures, but as GHGs increase, Earth's climate will continue to warm up, change weather patterns, increase ocean acidity and ocean levels will rise. These problems will cause significant public health and safety issues and are good reason to implement environmental policies to combat the potentially catastrophic scenarios caused by climate change.

Al Gore and the Intergovernmental Panel on Climate Change (IPCC) were awarded the Nobel Peace Prize in 2007 for their efforts to inform the public about climate change through the 2006 documentary "An Inconvenient Truth". Their report said warming of the climate system is unequivocal, the probability that climate change is caused by natural climatic processes alone is less than five percent, world temperatures could rise between 2.0 degrees and 11.5 degrees Fahrenheit during the 21st century, and that sea levels will probably rise 7 to 23 inches in that same period (2007).

Who is the IPCC?

The IPCC is the authoritative scientific body assigned to evaluate climate change caused by human activity and its harmful effects on the world. In 1988, two notable United Nations (UN) Organizations (World Meteorological Organization and the United Nations Environmental Programme) joined forces through an official UN resolution. Through the union of the World Meteorological Organization and the United Nations Environmental Programme, the IPCC was established. The IPCC does not perform independent research, but rather summarize academic literature on climate change and publish special reports relevant to the carrying out of the UN Framework Convention on Climate Change (UNFCCC), an international treaty.

The UNFCCC led to a series of diplomatic gatherings to discuss a new treaty directed at fighting climate change. The gatherings include Rio de Janeiro in 1992, the Kyoto Protocol in 1997, Bali in 2007, Copenhagen in 2009, and Cancún in 2010. The Rio de Janeiro gathering resulted in a treaty including 192 countries (counting the United States) where participants agreed to share information on emissions and launch national strategies to address the emissions. The Kyoto Protocol was the next step where certain participating countries committed to stabilize emissions; however, the United States never ratified this agreement. The next three meetings in Bali, Copenhagen, and Cancún had good intentions of implementing global environmental regulations, but some of the major polluters (US, China, and India) did not commit to reducing GHG emissions (2011). Now with a global economic recession, efforts to reduce GHGs seem to have been put on the back burner by many countries.

Slow Progress in Climate Change Legislation

On April 2, 2007, the Supreme Court released its ruling in the case of the state of Massachusetts vs. the Environmental Protection Agency (EPA). Under the terms of the Clean Air Act, greenhouse gases are qualified as pollutants. The Court not only found that the EPA had the authority to regulate greenhouse gas emissions, but would be required to do so if the Agency determined that there was scientific evidence that greenhouse gases posed a threat to public health. In November 2009, the EPA determined that greenhouse gases did pose such a threat to public health, and the national greenhouse gas regulation became not only legal but also mandatory. Now the EPA must formulate a feasible policy structure and enforcement mechanism. It is difficult to speculate what that mechanism will be, but it is clear that this is an issue both Congress and President Obama prefer to defer considering the long-standing economic recession. Cowen (2010) reported that there is significant sentiment in the Senate for challenging EPA's authority on climate change initiatives. Senator Rockefeller, an influential Democratic senator

introduced legislation to delay EPA regulations for climate change, stating it would safeguard jobs, and provide Congress the time it needs to write new climate change legislation.

California and Climate Change

California is a major economic power and an influential leader in the United States. California's public universities have often been forums for protests and the birthplace for environmental movements. As climate change became a major policy issue, the California State Legislature stepped in to create groundbreaking legislation seeking to curb global warming by reducing GHGs. These laws set an example to the rest of the nation, and even the world. The success of climate change policies will encourage the implementation of such laws in other states and countries. If other states or countries perceive these policies to be unsuccessful, implementation in other locations is not likely. California's climate change policies were in part passed into law because the policies were advertised to California's legislators as a method of economic development. The next section will explain California's climate change laws and how experts say they can be improved.

Existing Legislation in California to Decrease GHGs

California Environmental Law Success Stories & New Law Opposition

California is the first state to pass climate change laws and has been a leader in implementing significant, effective environmental law since passing laws and regulations like the California Environmental Quality Act (CEQA) in 1970, and Title 24 of the Energy Code in 1978. These groundbreaking laws met opposition as well, but I believe have made an important impact on preserving the environment, though at a cost. Skeptics scrutinize climate change laws and their feasibility, cost and effectiveness in the Skeptic's Guide to Debunking Global Warming Alarmism (Inhofe, 2006). AB 32 and SB 375 both have long timelines and their true impact on climate change may not be known for many years or even decades. In addition, these laws met

major opposition from large businesses who emit high quantities of GHGs. Proposition 23 in 2010 sought to suspend AB 32 indefinitely, claiming catastrophic economic impacts. The proposition failed at the ballot, but these new laws continue to meet opposition from stakeholders who foresee a loss in their bottom line from such legislation. The next section explains the economic framework behind government policy.

Economic Theory

Economic Theory on Market Failure and Government Intervention

Economic theory describes social behavior as it relates to the production, distribution, and consumption of goods and services in a marketplace. It explains that a finite amount of goods and services exist and prices rely on supply and demand of such goods to allocate them according to consumer preferences. A potential role of government is to possibly intervene when a particular market failure exists. A market failure is when a market is not performing efficiently leading to inefficient outcomes for society. Market failure results from any of the following scenarios: information asymmetry, market structure, externalities, market impediments, and missing market process infrastructure. In the case of GHG emissions related to VMT, the market failure reflects externalities and market impediments. Pollution is the most commonly referenced example of an externality used in economic theory today. The Coase Theorem of economic theory is an important basis for government regulation of market failure, specifically externalities. It tells us that government intervention is only required to assign property rights and to minimize transaction costs. Other mechanisms used include taxation, government grants, and restrictions or laws restricting the behavior that causes an externality.

Externalities and Market Impediments

Externalities (also referred to as spillovers) are costs or benefits that are not transmitted through the price mechanism for a good or service, and are borne by a third party, or society as a whole.

Externalities create market failure, and depending on the nature, cause over or under production and consumption of the good or service in the marketplace (market failure). Goods and services with positive externalities like safety and education, make society better off and are thus are under produced. Negative externalities like pollution, make society as a whole worse off and pollution causing goods and services are over produced and over consumed. The emission of GHGs as a cause of global climate change is very likely the greatest example of a market failure the world has ever experienced.

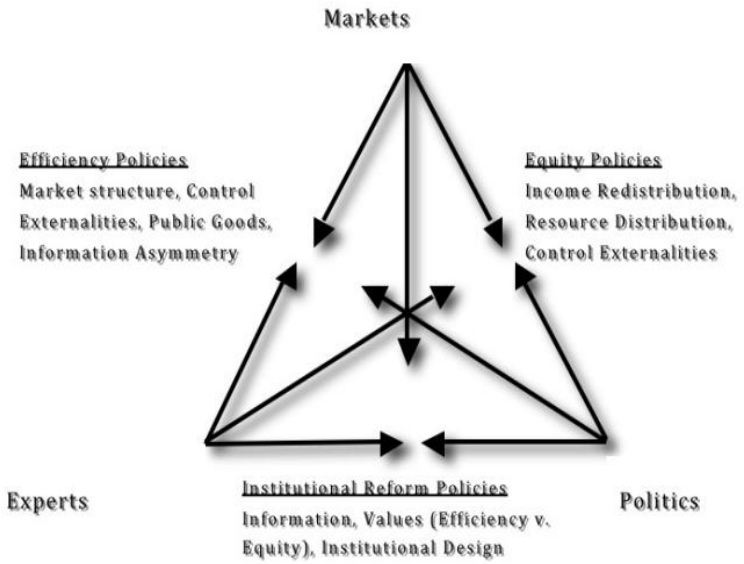
Market impediments are restrictions or regulations that impede the free market. Examples of impediments are zoning restrictions and CEQA/NEPA environmental regulations. I believe that zoning regulations that encourage suburban sprawl are causing VMT to increase as people travel longer distances from home to the workplace, school, and for other services. In addition, I think existing environmental regulations intended to protect the environment, namely CEQA, have been used as a tool by NIMBYs and other development protestors to hinder growth in many urban infill areas. This hindrance has contributed to suburban sprawl, by encouraging greenfield development and causing an increase in VMT. I propose that government intervention is necessary to correct these failures in the marketplace. Public policy reform is the mechanism to correct for excessive GHGs and help correct externalities that can help reduce VMT.

What is Public Policy?

Public policy is the course of action government entities take to correct society's problems through laws, taxes, and subsidies. The Munger Triangle (Munger, 2000) offers a visual representation of how public policies are examined from an economic perspective, with Markets, Experts, and Politics at each corner of the triangle and Efficiency, Equity, and Institutional Reform along the arms respectively, see figure below. Shaping public policy in the US is complex and includes interaction from many individuals (Experts) and interest groups (Markets)

competing to influence policymakers (Politics). Tools and tactics used to advance their goals include education, lobbying, or public pressure. In this process, policymakers can understand experts and markets perspectives, and have options to choose from when seeking to correct a market failure.

Figure 2.1 Munger's Triangle



Source: Munger, 2000

In the case of an externality, public intervention may be necessary to correct inefficiency. GHG pollution or emission is the externality. Internalization of the externality is the desired outcome. In other words, holding individuals financially or socially responsible for the externalities they cause. The necessary intervention is to reduce VMT in the market, because individuals are not currently paying the entire cost of driving. Society will benefit (equity) in several aspects including, reduced congestion and collisions, but especially in the reduction of GHG pollution in the atmosphere with VMT policy changes. By intervening in this market failure, public policy can improve the environment and society as a whole.

Some examples of how public agencies might overcome automobile dependence and reduce VMT are as follows. First, public agencies can create new transportation options that enable people to leave their cars at home. Second, they can build compact developments inside our cities (urban infill) and mix different uses rather than compartmentalizing housing, jobs and shopping. And third, they can avoid outer edge development through providing ways to streamline development in desired locations and limit development in undesired location. These examples of public policy options to fix market failures are implemented using laws, taxes and subsidies.

Laws, Taxes and Subsidies

Laws, taxes and subsidies are important to understand because they are the tools that will be used to reach the desired changes from public policies. To comply with AB 32, the 2006 public policy to reduce GHGs, CARB established a cap-and-trade system for major polluters and assigned property rights to them with specific quantities identified as maximum emissions. This cap-and-trade system is an example of a law serving as an economic tool in reaching a desired outcome. And, it is an application of the Coase Theorem where property rights are able to correct a negative externality.

To tax is to impose a financial charge or other levy upon an individual or legal entity by a state or government entity. Failure to pay a tax is punishable by law. Certain excise taxes, like the cigarette tax aim to change behavior by imposing a fee on the undesired behavior. These excise taxes force individuals to pay for the externalities they create, such as increased health care costs in the US. An example of an excise tax that could possibly have the greatest impact on GHGs by changing driving behavior is a gas tax or carbon tax that would charge individuals for the externalities they impose on society.

Subsidies provide incentives for specific behavior that will lead to a desired outcome. They may include funding for infill infrastructure or grants for sustainable building. A modern

example of government subsidy as it relates to GHG emissions is the federal income tax credit for purchasing a hybrid automobile.

Subsidies, taxes, and laws are the forms of public policy that I will analyze in the methodology chapter to make recommendations for new legislation. Each method has its own benefits and challenges associated with implementation and sustainability. This thesis assumes that by implementing new legislation to reduce VMT, the externalities relating to GHG emissions will be improved, and additionally will produce other positive externalities. Such positive externalities include increased property values of adjacent properties, reduced crime in neighborhoods, economic growth, urban beautification, and improved circulation with higher public transit ridership. By promoting reduced VMT legislation, new options to live and work in the city will be available, potentially reducing the number of cars on the roads, and increasing public transit ridership, as well as encouraging walking and cycling as a means of transportation. All of which have positive effects on the environment and society.

Chapter Summary: Climate Change Policy Implementation

Government Policy in response to Climate Change is one of the highest priorities among many Californian politicians because experts agree that the implications of climate change will adversely affect society. Reducing VMT as a California policy (SB 375) is significant because it is likely to affect almost all Californian's lives economically. Existing California Climate Change policies face opposition as the ongoing (2008-2012) economic recession creates obstacles for its implementation. According to economic theory, if California's VMT policy is successful, it has potential to reduce GHGs, helping correct the negative externalities. In turn, the VMT reduction policy could have a significant influence on future GHG legislation worldwide. Gaining a better understanding of how to implement the VMT reducing policy in California will be valuable as local California jurisdictions seek to implement the recent legislation (SB 375). The following

chapter will explain the research methodology I will employ in the remainder of the thesis to determine the most desirable implementation tools for reducing VMT.

Chapter 3

METHODOLOGY

Introduction to a Modified CAM Analysis and Interview Process

The Problem – Excessive Automobile Use, High VMT

Helping Californians drive less is important in the efforts to decrease GHGs. The purpose of this thesis is to try to help decision makers overcome misinformation surrounding climate change and to also better understand private perspectives concerning new California legislation that is an attempt to encourage individuals to travel fewer miles. The methods I will use include, first, assembling evidence from literature to rank alternatives (project outcomes, confront trade-offs, and decide) in a modified Criteria Alternatives Matrix (CAM) and second, interviewing private land developers (tell my story) and recording their opinions. I offer specifics on these methods below.

CAM Introduction & Background

Criteria Alternatives Matrix (CAM) analysis examines the desirability of different alternative solutions to achieve a desired public policy outcome by using specific criteria as measuring tools. The CAM analysis tool allows decision makers to offer suggestions on how "best" to solve public policy problems by evaluating and rating different alternatives or solutions to the stated problem. Munger (2000) proposed a five-step process of policy analysis that incorporates CAM analysis in a decision making process. Step one is problem formulation, step two is selecting criteria to evaluate, step three is creating a criteria alternatives matrix, step four identifies and studies political and organizational constraints, and step five provides implementation and evaluation counsel. Bardach (2000) used a similar approach that involves, implementing an eightfold path of different steps: 1) define the problem, 2) assemble some evidence, 3) construct the alternatives, 4) select the criteria, 5) project the outcomes, 6) confront the trade-offs, 7) decide, and 8) tell your

story. There are two procedural methods commonly used in CAM analysis, qualitative and quantitative. A quantitative CAM analysis applies numerical rankings to score each alternative. A qualitative CAM analysis does not use any form of numerical evaluation of alternatives, but instead describes the relative desirability of one alternative over another in words.

Alternatives

The suggestion of policy alternatives and measurable criteria to analyze the alternatives is the basis of this study and enables decision makers to make educated judgments of the most efficient, fair and politically acceptable form of reducing VMT. The analysis will not discuss the alternative of no action because the California Legislature removed this option when it passed AB 32. The policy objective for this study is to decrease VMT to correct negative externalities and produce positive externalities. Many urban environments in California, including Sacramento, have valuable infrastructure in place, including light rail and bus transportation, as well as walkable and bikeable trails linking communities and employment centers. Such infrastructure is currently underutilized in many cities in California. Taking advantage of the existing infrastructure by promoting alternative means of transportation and requiring better land use will provide synergistic efforts to decrease VMTs and improve the environment. By infilling urban downtowns, greenhouse gases would decrease, and society welfare would increase. In addition, infill projects would meet growing housing, retail, and office needs. The qualitative assessment of each alternative uses the three criteria and suggests a summary of findings in the following chapter. Status quo or no action concerning the VMT problem will not change the current circumstances, this is the baseline scenario. By doing nothing, VMT will continue to increase and leave urban downtown infrastructure underutilized and have no effect on the growing problem of global warming. AB 32 and SB 375 will likely not reach their goals if VMT does not decrease in the coming decades. Scientific experts identify auto usage as the largest single source of

greenhouse gas emissions in California. If automobile drivers are unable to reduce aggregate VMT substantially, the catastrophic implications of global warming will undoubtedly occur.

Criteria

Constructing alternatives for addressing excessive VMT is the step following the evidence of the problem in CAM analysis, and selecting the criteria is the step that follows constructing alternatives. I will use the steps that Bardach (2000) and Munger (2000) recommended to analyze the problem. I will base my criteria selection on factors that will result in decreased VMT, considering the lowest costs to society, the fairest distribution of these costs among different groups, and the degree of political acceptability of the solution. I identify those criteria using the following titles: efficiency/effectiveness, equity/fairness, and political acceptability. I will weigh each criterion equally: efficiency = 0.333, equity = 0.333, political acceptability = 0.333. The weights are in decimal form and add up to one. While this technique is subjective, readers of my study could substitute different weights if they disagree, and come to a different conclusion. My intended outcome of the study is choosing an alternative that achieves policy objectives and best satisfies all three criteria. The most desirable outcome perhaps is referred to using the economic term "Pareto efficient," meaning all parties are made better off, or at least not worse off, by the outcome. In many cases, this outcome is impossible or highly unlikely, so experts use the term "Kaldor-Hicks efficiency" as a way of measuring benefactors and non-benefactors or losers. In such a model, not everyone needs to be made better off. The assumption is that the benefactors can compensate the losers to make up for the inequality of the outcome, and society as a whole is better off.

Efficiency, Equity, and Political Acceptability

The first criterion, efficiency, incorporates financial effectiveness of the proposed policy. The most efficient outcome delivers a fixed desired policy outcome for the least cost. Cost must

include both “direct” and “indirect” costs. Perhaps taxpayers pay no additional fee, but receive the added benefits of a cleaner environment. Alternatives that rate higher on the scale are more cost effective. The second criterion, equity, focuses on the fairness of the proposed alternative. Equity considers fairness among the key economic participants, such as citizens, transportation providers, landowners, and developers. A policy earns higher equity or fairness scores as the policy treats different participants equally. This measurement requires a value judgment regarding how each party will benefit from the policy implementation. For example, if landowners inside an urban growth boundary benefit from land appreciation, how will the policy affect landowners outside the growth boundary? The goal is to promote reducing VMT because society as a whole is better off by reducing VMT. Therefore, the equity portion of this study will determine if different groups in society are affected fairly. For example, if income constraints force low-income groups to live outside the central business district where most jobs are located because of high housing costs like in San Francisco, they must commute longer distances to work and perhaps they may benefit more from reducing VMT. Subsidizing one group may be necessary to promote equity, but will likely upset the other. However, if society as a whole is better off because of the reduced VMT, then the policy is equitable. Political acceptability implies voters are likely to accept the proposed policy alternative and thus desirable by politicians who depend on their votes, even considering lobbying by special interest groups and other influences on their decision making process. Politicians are likely to favor or accept the ramifications that will follow implementation of the policy. Political acceptability is a concern in evaluating alternatives, because regardless of proven benefits of a policy, if it is politically or legally infeasible, efforts towards implementation are pointless.

CAM Implementation

I will create a modified CAM analyzing CSCs Make it Work (2009) recommendations as the alternatives and measure their comparative desirability using efficiency, equity, and political acceptability as the criteria. My modified version of the CAM first involves an explanation of each recommendation, followed by a criteria consideration, which discusses tradeoffs and a letter grade for each criterion for the best three alternatives. I will specifically address the criteria as they relate to the following regulatory issues: controversy as it relates to creating new regulations for automobile travel, economic impacts of regulation, and why California should take the lead in regulating VMTs. I will discuss the pros and cons to different issues, as well as the costs and benefits associated to each alternative as they relate to the specific criteria and what the tradeoffs are (efficiency, equity and political acceptability). Once I have decided a ranking of the three most beneficial legislative alternatives to support driving fewer miles, I will be prepared to tell my story by presenting my results to stakeholders in individual interview sessions and look for specific feedback.

The Interviews

The second component of my methods section is performing interviews with stakeholders. I will ask specific questions that will help the interviewees understand the background of the topic and how I ranked each alternative. Key stakeholders will include individuals who have a financial interest in future development in California. I am interested in knowing how stakeholders will react to proposed new regulation for future California development and how they feel about environmental issues like global warming. I will present a fact sheet to the interviewees, and ask them to reply to the following questions.

Figure 3.1 Fact Sheet: Climate Change Policy

The Problem: The Scientific Community reached consensus that climate change is occurring, is caused in large part by humans and presents serious public health risks (IPCC & EPA). Excessive use of the automobile is one of the largest greenhouse gas (GHG) contributors in the US, causing climate change, and is thought to be an area of great potential for improvement. California passed laws to address climate change but the actual implementation tools are yet to be determined.

The Proposed Solution: Influence a lasting behavioral change in Americans to drive less and travel by more sustainable means such as: walking, biking, public transit, and carpooling. The goal is to reduce vehicle miles traveled (VMT) in automobiles per capita. The implementation of the proposed solution is still up for debate and is the focus of this thesis.

Assembly Bill (AB) 32: The Global Warming Solutions Act of 2006 – Seeks to reduce GHGs in California to specific measurable "benchmark" quantities across a timeline.

- 1990 is the baseline = 427 Million Metric Tons of Carbon Dioxide equivalent (MMTCO2e)
- 2020 Business as usual projection = 600 MMTCO2e
- 2020 Benchmark = 427 MMTCO2e
- 2050 Benchmark = 342 MMTCO2e

The AB 32 implementation scoping plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 program implementation regulation to fund the program.

Three different approaches are identified as critical relating to automobile use: (1) Reducing carbon content in fuels, (2) Increasing vehicle fuel efficiency, and (3) reducing VMT.

Senate Bill (SB) 375: The Sustainable Communities and Climate Protection Act of 2008 – Links transportation, housing and greenhouse gases, and connects transportation funding decision to land use planning at a local level. The law directs the California Air Resources Board (CARB) to determine GHG emission targets to specific regions.

- Sacramento Area Council of Governments (SACOG) Reduction Targets
  - 2020 = 7 percent reduction
  - 2035 = 16 percent reduction

The Implementation Tools: UC Berkeley's Institute of Urban and Regional Development, Center for a Sustainable California (CSC) recommended 10 implementation tools in their research publication titled Make it Work, Implementing Senate Bill 375 in 2009. I have analyzed CSCs recommendations and suggest the three most favorable options to be:

- CEQA Reform - Exempt Sustainable Infill Projects from CEQA.
- State and Regional Transportation Funding be funneled to Transit Oriented Developments.
- Eliminate Minimum Parking Requirements for Urban Infill Projects.

Interview Questions:

1) Q. As a professional planner/developer/builder (and not necessarily the official position of the business or entity that you work for), do you support laws that regulate GHG (greenhouse gas) emissions in California (reference my fact sheet for AB 32 and SB 375 details)? Why or why not?

2) Q. Does your organization have any policies relating to reducing the emission of GHGs and/or trying to reduce automobile use in the projects you design/build/administer?

Three "Best" Implementation Tools

3) Q. Do you think existing transportation funding should be spent differently than it currently is?

- 2006-2011 Caltrans State Transportation Improvement Program = $6 Billion
  (65% highways / 29% transit / 6% trails & visual enhancement)
- 2006-2011 Caltrans Proposition 1B Transportation Funding = $20 Billion
  (80% highways/20% transit)
- 1999-2000 Total California Transportation Expenditures = $15.5 Billion
  (80% highways / 9% transit / 6% admin / 5% other)

Would you support spending state transportation funds in a 50/50 (50% highways / 50% transit) type of ratio to support transit related infrastructure (No new taxes, simply a re-allocation of existing funds based on criteria that promotes urban infill, not suburban sprawl)? Why or why not?

4) Q. Do you support government regulation that would exempt urban infill projects from CEQA and strengthen the ability of localities to implement projects that are consistent with a specific or area-wide plan without additional CEQA review? Why or why not?

CEQA Guidelines Section 15332 – Infill Development Project (Categorical Exemption) contains the following conditions that make it nearly impossible to use:

(d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.
(e) The site can be adequately served by all required utilities and public services.

5) Q. Would you favor parking policies in urban areas that encourage multimodal (walking, biking, and transit) transportation? Why or why not?

Examples: Eliminating minimum parking requirements in urban areas, implementing maximum parking requirements in transit areas (within 1/8 mile of a transit stop), and implementing pay for parking in free parking areas in urban environments.

6) Q. Would any of the remaining seven UC Berkeley CSC options be preferable to what was discussed? If so, why?

- Carbon Taxation (gas tax, or other mileage-linked usage tax)

- Tax Increment Financing (TIF) for infill development (similar to obsolete redevelopment areas)
- Enforcement of Regional Housing Needs Assessment requirements
- Eliminate fiscalization of land use by regionalizing tax structure
- Implement Indirect Source Review for Air Quality Management (Require mitigation for potential effects of building new development on the fringes based on modeling future traffic to the area)
- Transfer of development rights (density bonus for setting aside open space)
- Urban Growth Boundary or open space conservation surrounding city limits

7) Q. Do you think there is a single "best" policy to pursue that you consider the most valuable to an investor or private developer?

My intent is to get an understanding concerning land developer's (investor's) knowledge of existing climate change laws that relate to land development, how these laws will change their business, and what they agree on:

1) AB 32 (2006) Global Warming Solutions Act
2) SB 375 (2008) Sustainable Communities and Climate Protection Act and
3) SB 226 (2011) - CEQA Streamlining for Infill Projects

Chapter Summary

This chapter described the CAM analysis process I use to address the problem of excessive automobile use. I explained how I will use specific criterion (efficiency, equity, and political acceptability) to compare and rank several VMT reduction measures. Once I determine the three most favorable options to reduce VMT, I will interview stakeholders and find out their perspectives on changing California's driving behaviors. I will have them identify which option they perceive to be the best alternative from the three options I provide. The specific final product I will produce from my CAM and interviews is a recommendation to lawmakers to pursue new legislation that will enhance existing greenhouse gas reducing laws in California that developers and stakeholders can support. The next chapter will describe the 10 recommendations from CSC and present my thought process in determining the three most favorable implementation tools using the results of my CAM analysis. I will then layout the options for stakeholder discussions in interviews. Their responses will be included in Chapter 5.

Chapter 4

CAM ANALYSIS – PRIORITIZING RECOMMENDATIONS

Choosing the Three Best Policy Alternatives

The Objective – Analyze the Recommendations from Make it Work and determine the three most efficient, fair, and politically feasible ("best") ways to improve VMT.

Earlier I gave an overview of the problem of excessive automobile use and its implications to global warming and ultimately public health. I also provided descriptions of current laws to address the problem with their accompanying shortfalls and finally how CSC recommends potential policy solutions to better implement the existing laws. This chapter examines each of the 10 CSC recommendations (alternatives) and identifies the three best recommendations using specific criteria to compare them. I will not numerically identify the alternatives as one through 10, but rather group them based on my own judgment into two groups. The first group is the best three alternatives according to my findings that demonstrate the greatest efficiency, equity, and feasibility in reducing VMT. The second group of alternatives is the remaining seven alternatives that are relatively less efficient, equitable, and politically feasible in terms of reducing VMT. The specific focus of this paper is to analyze the best policy tool to implement VMT reduction laws and document how private stakeholders react to the new proposed implementation tools and existing laws to change Californians driving behavior. I will use the best three alternatives when interviewing stakeholders. Ten alternatives are simply too many to discuss in an interview setting with stakeholders and I determined the three best alternatives were more appropriate for a 30 to 60 minute interview. The intent of discussing the three best alternatives with stakeholders is to find a single best alternative to recommend to lawmakers and stakeholders for future legislation.

CAM Introduction and Analysis of Policy Alternatives

Table 1 provides a summary of the CSC policy implementation recommendations that address the shortfalls of SB 375 in an effort to reduce VMT. Following the table is a description of each recommended alternative and how each measure up using the criteria identified. Table 2 shows the criteria grading scale. Table 3 displays the report cards for the best three alternatives measured using efficiency, equity and political acceptability as described in each alternative's criteria consideration. I describe the three best alternatives first and I provide a more thorough description for them compared to the remaining seven less attractive alternatives. The third section in this chapter is a brief summary of my findings of the best three alternatives and questions I use in my interviews. Chapter 5 which follows contains the interviews, and will be the most interesting part of this research paper because it tells a story of what stakeholders think of SB 375 and its implications on future policy for development. That chapter will be critical in understanding what developers and investors think about VMT reducing laws, and will help me understand what the future holds for VMT as it relates to future development in California.

Table 4.1: Policy Alternatives from CSC (2009) 10 Recommendations

	Alternative	Brief Description
I	Government Funding for Smart Growth	Direct state and regional transportation funds to regions priority development areas and localities that achieve "smart mobility" performance targets and provide transit-supportive land uses.
II	Carbon Taxation	Provide greater state and regional revenue-raising authority for transportation, contingent on those funds being used for SB 375 objectives.
III	Revise Parking Management Requirements	Encourage parking strategies that promote efficient use of land and transportation.
IV	Subsidize Infill Development Using Creative Financing Tools like Tax Increment Financing (TIF)	Provide more funding options to support infrastructure and infill development.

V	Enforce Regional Housing Needs Assessment (RHNA) requirements and redesign RHNA into a performance based approach	The RHNA is an assessment process performed as part of the Housing Element and General Plan at the local level. The RHNA quantifies the need for housing by income group within each jurisdiction during specific planning periods. Housing needs for lower income households are often not fulfilled without consequence.
VI	Eliminate Fiscalization of Land Use	Modify state property tax laws that encourage localities to base land use decisions on potential revenues that can be generated.
VII	CEQA Reform	Provide additional California Environmental Quality Act (CEQA) streamlining for projects within priority development areas designated in SCSs, and also provide funding mechanisms to assist local governments in conducting plan-level CEQA review.
VIII	Limit Large Development on the Fringes Using Indirect Source Review (ISR) for Air Quality Management	Implement an Indirect Source Review program limiting large development on the fringes and requiring air quality mitigation within regional air quality management districts to in turn, reduce vehicle miles traveled.
IX	Transfer of Development Rights (TDR) – Density Bonus	Strengthen priority regional development areas and priority conservation areas with a regional transfer of development rights program.
X	Open Space or Urban Growth Boundary	Develop and fund state and regional open space and conservation plans and programs.

The Best Three Policy Alternatives- Removing Barriers to Infill

I. Government Transportation Funding Directed to Smart Growth Areas

The first proposed new policy alternative is directing existing transportation funds towards smart growth, meaning developments that incorporate mixed uses with higher population densities, located in multi-modal transportation corridors. This option involves funneling a greater portion of transportation funding by Caltrans and local agencies to areas that meet specific criteria that identifies smart growth projects and less government money going to build, improve, and maintain roads. Three potential ways of directing government funds to smart growth are: 1) prioritization of transportation projects based on specific smart growth criteria, 2) empower

regional Metropolitan Planning Organizations (MPOs) to implement smart growth policies, and 3) reward supportive land use by local governments.

Transportation funding is a critical element to the success of SB 375 by reducing VMT. Currently state transportation funding does not support SB 375 objectives. Most of California's state transportation revenue is spent on highways (LAO, 2007). The 2006 State Transportation Improvement Program covering 2006-2011 allocated nearly $6 billion for new capital improvements, 65% for highways and 29% for transit. In addition, in 2006, Proposition 1B provided nearly $20 billion in bond funding to the transportation sector in California, with 20% going to transit. SB 375's successful implementation depends on transit investment. The current balance of state funds being prioritized with roads over transit must change to achieve AB 32 and SB 375 goals.

Caltrans released six principles of smart growth criteria in 2010, 1) Location Efficiency, 2) Reliable Mobility, 3) Health and Safety, 4) Environmental Stewardship, 5) Social Equity, and 6) Robust Economy, for a smart performance measurement system called the "Smart Mobility Framework" (SMF). Caltrans prepared the SMF in partnership with the US Environmental Protection Agency, the Governor's Office of Planning and Research, and the California Department of Housing and Community Development to implement multi-modal and sustainable transportation strategies. The planning framework will help local agencies partner with Caltrans in reducing VMT by making multi-modal transportation decisions for the future and enable funding prioritization for smart growth areas (such as density, design, configuration, connectivity, safety, parking strategies, mixtures of land uses, availability of transit, bicycle and pedestrian infrastructure, and open space) when MPOs, cities, counties, and Caltrans distribute state transportation funds.

Currently, Metropolitan Planning Organizations (MPOs) (usually coinciding with Councils of Government (COGs)) have no way to implement forceful policies to local agencies without support from state government. Typically, their policies are advisory to local agencies. Caltrans and the California Transportation Commission (CTC) allocate transportation funding to cities and counties using a formula based on population and highway lane-miles. The state could allocate the funds to the MPO/COGs directly rather than using a distribution formula to each local agency, thus enabling enforcement of smart growth policies by allowing the MPOs to distribute the funds according to their policies. MPOs could reward local agencies for their sustainability by distributing funding according to the cities and counties based on how well they meet smart growth criteria.

Criteria Consideration, Analysis of Tradeoffs:

The effect of the three ideas mentioned above to fund smart growth areas would be effective or efficient in the following ways:

1) Improving and better using existing transit infrastructure would lower development costs associated with transportation infrastructure to developers who pursue smart growth projects without creating new taxes, and without increasing existing taxes. Developers would be more likely to build new transit facilities, reducing VMT.

2) Directing a larger portion of transportation funds to smart growth areas would increase development costs (create disincentives) to developers, cities, and counties who pursue sprawling development which require new road capacity projects by reducing public transportation funding for such. In turn, VMT would not get any worse.

This policy earns an A for efficiency, if the added investment results in ridership that would reduce VMT and GHG.

Table 4.2: Interpreting Criteria Ratings

Criteria	A = Very Strong	F = Very Weak
Efficiency	Expected to achieve full policy objective in a short time period.	Not likely to reduce GHG emissions or improve existing conditions.
Equity	The benefits of the policy are distributed equally; economic stakeholders and society are not adversely impacted relative to their situation prior to implementation.	Stakeholders are differentially impacted by the policy with extreme differences across key players and society; several stakeholders are worse off relative to their situation prior to implementation.
Political Acceptability	Political support is highly likely, and lawmakers are able to implement policy components in a short time period.	Not likely to be supported by politicians, stakeholders, and lawmakers.

Directing public funds to smart growth areas does not mean roads and highways will not receive government funding (equity/fairness), it simply means they will receive a smaller portion of the government funding for projects that are lower priority according to smart growth criteria. This type of redistribution of public funds would be much more equitable than the current transportation allocation, if the additional investment in transit can reduce GHG through reducing VMT. The benefits of this policy would be distributed evenly among stakeholders and protected classes are likely to be made better off. The potential losers in this scenario would be property owners or developers who own land on the outskirts of cities, who would be less likely to develop without government investment in new and improved highway and road systems. Increased proportionate transit funding earns a B for fairness.

The alternative of re-allocating government transportation funds based on a prioritization scale aimed at smart growth is politically challenging, like most of the recommendations from

CSC. However, because no new taxes or funding sources are necessary, the transportation funding re-allocation option is more realistic than the seven options I did not choose to include in my top three. I give this option a B for above average political acceptability compared with the field of CSC recommendations. So when considering the criteria of efficiency, equity, and political acceptability, I rank this recommendation more attractive than the seven others.

III. Parking Policy Reform

The third CSC recommendation is requiring parking management strategies that promote smarter land use. Currently, most cities and counties in California have minimum parking requirements for new construction projects, both commercial and residential. Minimum parking requirements means every dwelling unit (house or apartment), or 1,000 square feet of new commercial/retail construction, must provide a set number of parking as part of their construction project. UCLA Professor Donald Shoup is the known parking expert in the academic planning community. He describes how parking influences sprawl and greenhouse gas emissions in The High Cost of Free Parking (2005). Free parking represents an astonishing devaluation of prime real estate in city cores, which in turn promotes higher VMT. Free parking is an incentive that perpetuates driving instead of exploring other transportation options. Demand for driving decreases when parking costs increase, especially in an urban environment where other transportation options exist, for example, light rail, bus, biking, and walking. Cities can develop and people can get around much more efficiently if parking costs are separate from development. Parking policies in California distort transportation options by disguising the true cost of driving, increasing VMT, and thus degrading the environment. Shoup argues that parking reform can reduce traffic congestion, air pollution, energy waste and greenhouse gas emissions while increasing the supply of housing and public services. There are a few ways to change parking requirements. 1) Deregulating local parking requirements that call for existing housing complexes, businesses, and new development

to provide a minimum amount of parking spaces. Allow the market to decide how much parking to provide in multi-modal locations. Allowing the market to determine parking would help place the actual property value of parking on the actual commodity being consumed. 2) Cities could charge parking fees in free areas (usually on street parking) and increase fees in low cost areas, which would not only decrease demand for driving, but would also raise revenue that cities could use to further incentivize using alternative means of transportation. Several cities are currently using this strategy to provide free bus passes to qualifying individuals. 3) Encourage local governments to creatively find solutions to their individual parking needs and reward them financially when they do. Sacramento is currently exploring options to improve the world of parking management. City planners in Sacramento introduced the Residential Parking Pilot Program in Midtown, Parking Zone Update, City management of private parking, Midtown/downtown parking map and iPhone application, and East End Garage Marketing. The purpose of this effort is to thwart excess parking in Sacramento. The Sacramento General Plan (2009) reports 46,000 parking spaces being vacant at peak use in Sacramento's central business district.

There has been a recent attempt by AB 710 (Skinner) 2011 to change minimum parking requirements in all California cities to allow fewer parking spaces for infill and transit-oriented developments. AB 710 did not pass. Nancy Skinner introduced a new bill, AB 904 (Skinner) 2012 that was dropped in July 2012 due to unexpected opposition from the American Planning Association's (APA) California Chapter. The California League of Cities also opposes the state mandate to eliminate minimum parking requirements. The California League of Cities represents cities who hope to keep their minimum parking requirements under local control. While AB 904 is dead, Skinner and her supporters are likely to release a 2013 bill to address parking reform.

Criteria Consideration, Analysis of Tradeoffs:

The policy of changing parking requirements statewide is efficient because it removes existing barriers to infill development, which will promote new development in smart growth areas, which will reduce VMT. This policy earns an A in the efficiency category.

The environmental benefits of this policy are distributed equally, and key stakeholders are not hurt relative to their existing situation. Urban infill will help our environment as well as our economy. Politicians must remove barriers to infill development, like minimum parking requirements to encourage multimodal transportation if California is ever going to meet the goals of AB 32 and SB 375. Requiring minimum amounts of parking is unfair to society, because it increases VMT by promoting sprawl and making infill too costly.

Though the argument exists that people will not come downtown for shopping if there is no free parking, Shoup (2005) explains how parking reform can actually spark economic activity. I agree with Shoup, and I do not believe the downtown K Street Mall in Sacramento is suffering because of a lack of free parking. The mall is hurting because downtown Sacramento has few housing options, and public perception of safety is poor. I think people do not shop downtown because it is an undesirable shopping destination, not because of a lack of free parking. I recently visited the City Creek Mall in downtown Salt Lake City. There is no free parking, but the area is thriving. People shop there because it is a desirable destination, the public perceives the surrounding environment as safe, and there are multiple transportation options with the light rail, and buses stopping right outside the mall. In addition, downtown Salt Lake City has increased their downtown housing significantly in the last decade, so more people live, work, and shop downtown. Salt Lake City also offers free light rail trips within the downtown core to promote ridership and economic activity in the urban core. If a desirable destination for shopping exists downtown, shoppers will come, and they will pay for parking. If more housing is available

downtown, the residents will shop downtown. Changing parking policy in California can help spark economic development by lowering construction costs, and at the same time help improve the environment by reducing VMT. The policy recommendation to change existing parking requirements scores an A for equity.

Political acceptability is the primary challenge for this policy. Endorsement is only unlikely because some groups believe their existing parking policies enhance their cities. I believe legislation with the right wording and campaigning will receive the political support it needs to pass, so I believe this alternative is above average and earns a B. This recommendation is smart and is one of the top three.

VII. CEQA Reform

The California Environmental Quality Act (CEQA) is a law built to provide full public disclosure on the environmental impacts of development projects. The intent is to provide a statewide policy that protects the environment by requiring feasible mitigation to development impacts. The CEQA is often misunderstood, and misused as a tool to stop or slow down development in locations with opposition to development. The purpose of CEQA is not to remove property rights from landowners, or to regulate land uses, but simply to disclose environmental changes, and how the impacts can be feasibly mitigated. However, CEQA's requirements have created an incentive to develop on the fringes on greenfield locations because public resistance does not exist and development can occur quickly with few risks. In the land development industry, time is a critical element to a projects financial success. In a sense, time is money, and the faster a project can be completed, the lower the financial risk. Because CEQA emphasizes public disclosure, it is relatively easy for adjacent residents and property owners to object to new development, encouraging builders to find politically less risky locations, often on a region's edge.

The entire process required for the CEQA is costly, time consuming, and makes some infill projects infeasible. The CSC recommends providing additional streamlining, and allowing tiering off existing environmental reports that have been previously completed and adopted for specific priority development areas. In addition to what the CSC suggests, I believe an effective approach would be to also expand the existing categorical exemption Section 15332 In-Fill Development Projects (Class 32) to include a wider range of infill projects. I believe this kind of policy reform is what can really make a difference in reducing VMT because it will be the most effective at removing obstacles to infill development.

On June 25, 2012, the Governor's Office of Planning and Research transmitted its final draft of proposed additions to the Guidelines for Implementation of the CEQA. The proposal reflects the direction in SB 226 (Simitian, 2011) to streamline reviews for infill projects. Though this change in the CEQA Guidelines is a step in the right direction, it will not likely entice a significant amount of new development. The process remains costly, time-consuming, and cumbersome. What the new streamlining will do is help developers who would have likely built an infill project regardless of the change. The California Building Industry Association's General Counsel Nick Cammarota (2012) commented, "…we view SB 226 largely as a missed opportunity to obtain some meaningful CEQA reform". The significant health benefits of producing infill developments should be sufficient. Requiring additional studies and mitigation is not likely to promote new infill development.

Criteria Consideration, Analysis of Tradeoffs:

I think CEQA reform has the greatest potential to achieve lower VMT because it could spark a lasting change in how the future environment is built, and thus, earns an A for excellent efficiency. CEQA reform is probably the fairest option available. Through categorical exemptions for infill projects, the environment is better off and tremendous amounts of time and resources

could be saved from performing costly, long drawn out environmental studies. Nearly all stakeholders are made better off by this option. The losers with this scenario would be community members known as NIMBYs who want to stop or delay development, and the consultants who would miss out on performing inefficient environmental studies that only prove it is good to build infill projects in urban environments. Political acceptability is always the greatest challenge. Though CEQA reform is politically charged and complicated, I am hopeful that lawmakers can achieve additional reform to CEQA and make a progress towards enabling more urban infill development. Political acceptability earns a B, as an above average alternative. CEQA reform is the last recommendation in my top three.

The Remaining Seven Less Attractive Policy Alternatives

II. Carbon Taxation

The second approach to implementing SB 375 is carbon taxation. A higher gas tax and implementation of congestion pricing would charge drivers according to how much they drive, when they drive, and where they drive. The state could then use higher gas tax or toll road revenues to accomplish SB 375 objectives. This two-part strategy (gas tax and tolling) is likely the most efficient form of meeting SB 375 goals. By charging drivers more money to drive it would create disincentive to driving and reduce VMT. Simultaneously, the state could use revenues to subsidize and improve other forms of transportation, like transit, bus, biking or walking. VMT could be dramatically reduced by implementing pricing policy.

Criteria Consideration, Analysis of Tradeoffs:

Though carbon taxation is extremely efficient, it is not equitable across income levels. The cost effects of a gas tax would fall disproportionately on low-income drivers. Additionally, the political environment surrounding gas prices and tax increases in the middle of the current economic recession is politically unrealistic, and therefore I consider this recommendation

infeasible. Californians are willing to fight politically to keep the cost of gas for automobile transportation down. For this reason, the carbon tax recommendation is not considered one of the top three options according to my criteria.

IV. Subsidize Infill Development

This policy alternative would provide public funding for specific infill projects or infrastructure in infill areas. The recommendation states that costs for infill development are experienced locally, while the entire region and state enjoy benefits of lower average costs for highways, transit systems, and have smaller environmental impacts to society for air pollution, GHGs, and open space. Because of the disproportionate burden of cost on infill development, considering the benefits, the state government should subsidize it to correct the negative externalities. There are three proposed ways to do so. 1) Provide permanent state and regional funding to qualifying infill development, similar to funds provided by Proposition 1C of 2006. 2) Empower regions and localities to levy taxes on themselves for infill infrastructure, and require only a 55% majority similar to Proposition 39 passed in 2002 for school bonds. 3) Allow Tax Increment Financing (TIF) for infill development near transportation hubs, similar to what once available for redevelopment agencies.

Criteria Consideration, Analysis of Tradeoffs:

This option is not the most efficient. The existing legal structure does not allow TIF, and a two-thirds vote to pass special taxes to fund infill infrastructure is neither quick nor easy. Construction projects take time, so expecting an immediate and efficient outcome by pursuing new infill subsidies to encourage infill development is not ideal. This option would certainly make for better urban cities in the long term and reduce VMT, but when analyzing return on investment, this option is not the best. I do believe subsidizing infill development is strong when considering fairness or equity. Property values would not be devalued in suburban areas simply because the

government subsidizes new infrastructure in the city core. The benefits of this policy are distributed much more fairly than the current system of development, which tends to promote greenfield development and sprawl. Regions will benefit from cost savings associated with infrastructure and environmental externalities in a much more equitable manner than the existing structure allows. However, politically the option of subsidizing infill development is unlikely. On February 1, 2012, ABx1 26 dissolved redevelopment agencies, and eliminated the power to use TIF. The state budget is in a deficit, and government officials constantly have to make hard decisions to cut state services in efforts to decrease costs of operating the government. Implementing new funding mechanisms (taxes) to subsidize infill development is politically feasible considering the economic environment of California in 2012-2013. Therefore, this recommendation is not considered one of the top three.

V. Enforce the Regional Housing Needs Assessment (RHNA) Requirements

Policy recommendation V seeks to have the Attorney General enforce existing housing laws and requirements for local governments and proposes the Attorney General sue cities and counties who do not comply. California Government Code Section 65583 requires every city and county to adopt a Housing Element in its General Plan that contains the following: 1) Assessment of housing needs, 2) Inventory of resources and constraints relevant to meeting those needs, 3) Local housing goals quantified numerically, 4) Policies for maintenance, preservation, improvement, and development of housing, 5) Inventory of developable sites capable of accommodating housing for a range of income levels, 6) Five year schedule of actions to achieve the housing goals. The corresponding Council of Governments (COG) for each city and county assigns shares of income-based housing to every city and county in a document named the Housing Element. The State Department of Housing and Community Development (HCD) will determine what each region's fair share of housing is for each income level. The Housing Element does not require

local governments to provide the housing, but rather set up a policy frameworks that will enable the housing market to develop.

The CSC suggests three strategies are to implement this recommendation. First, Strengthen RHNA compliance so that it is based on performance, not simply a policy process of setting irrelevant goals that local stakeholders may not intend to meet. If localities do not comply, they are punished with financial sanctions and other consequences that would be enforced by the Attorney General. Second, link RHNA to Sustainable Community Strategies (SCS). Local COGs could require housing elements are not only RHNA compliant, but also compliant with SB 375 SCS. And third, reward production of needed affordable housing. The localities meeting their regional goals would be eligible for regional loans, grants, and subventions from the government. If the COGs were given the authority, they could fund the reward programs through regional impact fees on commercial development in job-heavy, housing-poor areas.

Criteria Consideration, Analysis of Tradeoffs:

This recommendation is in the middle in regarding efficiency. Though there is an existing policy framework that can promote this recommendation, it really will not have a huge impact to VMT in the short term. Enforcing RHNA Requirements is a long-term planning tool that can make an overall difference if implemented over a long period of time.

This policy recommendation is strong concerning fairness. The costs and benefits of reduced VMT and GHG are distributed equally, and housing needs would be met more thoroughly for a wide variation of income groups. Some stakeholders would be hurt, such as commercial developers who would have to pay impact fees to help reward building denser and more affordable housing near transit centers. But, most stakeholders would not be hurt any more than their current situation.

The major weakness to this recommendation is political feasibility. Implementation of these changes would meet huge opposition and even hostility in many local jurisdictions that do not want to increase densities more than current densities, and do not want to promote low-income housing in their new developments. Promoting low-income housing and denser development has historically been unpopular with the middle class and is not likely to breeze through legislative processes, so I have not included this policy option in my top three recommendations.

VI. Eliminate Fiscalization of Land Use

Fiscalization of Land Use became popular in California following the passage of Proposition 13 in 1978. City and county property tax revenues were capped by Proposition 13 at one percent of a property's appraised value at the time of sale or its value in 1975, allowing only incremental increases for inflation. Local governments needed additional revenue to operate their public services, and property taxes were not legally allowed to increase to fund budget shortfalls. Local governments focused their efforts on maximizing sales tax revenues through promoting new retail growth in local jurisdictions to fund operating expenses, and this practice coined the phrase "fiscalization of land use." California's tax structure encourages local governments to make land use decisions based primarily on the amount of sales tax revenue they can generate for their locality. This state tax structure is detrimental to development patterns. Big box retail like Wal-Mart, Costco, and even new car dealerships generate much more tax revenue through sales tax than one percent property taxes ever could, especially when considering affordable housing and the decline in property values across California between 2008 and 2012. In addition, cities and counties prefer to finance new infrastructure by imposing development impact fees rather than seeking voter approval. This approach encourages more sprawling suburbs. As city and county revenues decline, local governments look for ways to fund their needs. If fiscalization, or building

retail centers isn't the right answer to fund local needs, and development impact fees are not the answer, a new state policy tool is needed to neutralize inefficient fiscalization of land use.

Next, I explain the two actions recommended by CSC. First, institute a policy where localities receive a greater share of property taxes, in exchange for relinquishing a greater portion of sales tax revenue to the state. Then, require regional revenue sharing among localities in an identified MPO or COG.

Criteria Consideration, Analysis of Tradeoffs:

In terms of efficiency, changing fiscalization of land use is not an overnight fix to changing the driving behavior of our society. VMT would not see an instant drop because the way cities and counties collect tax revenues is suddenly different. However, over time, a new tax structure that eliminates fiscalization of land use would change the way California grows and would have an impact on reducing VMT. This option is not entirely inefficient, but rather, somewhere in the middle of the efficiency spectrum.

Is spreading sales tax across a region fair when considering the implications of VMT? I suppose it depends on whom you ask. I believe it is equitable to take sales tax revenues collected from sprawling retail growth to support infill development in an effort to reduce VMT, though I imagine sprawling suburbs would argue it is unfair to redistribute tax revenues collected in their jurisdictions in an effort to alleviate the issue of excessive VMT among Californians. Finally, this policy recommendation is politically very challenging, and legally it is nearly impossible. The California Constitution Article XII, Section 24 states that the Legislature may not impose taxes for local purposes but may authorize local governments to impose them. The Legislature may not reallocate, transfer, borrow, appropriate, restrict the use of, or otherwise use the proceeds of any tax imposed or levied by a local government solely for the local government's purposes. Political feasibility of eliminating fiscalization of land use in California through a state policy is highly

unlikely. Local control is what we know as a society in California, and old habits die hard. Though I do not think this recommendation of changing tax structure in California is likely, I do not think it is impossible. Other states have accomplished similar legislation and could serve as an example of how California could follow their lead. This recommendation simply has too many obstacles for me to include in my top three and it will remain excluded from my interview questions.

VIII. Limit Sprawling Development Using Indirect Source Review (ISR)

According to the California Air Resource Board Glossary of Air Pollution Terms (2012), the term Indirect Source refers to air quality and is defined as any facility, building, structure, or installation, or combination thereof, which generates or attracts mobile source activity that results in emissions of any pollutant (or precursor) for which there is a state ambient air quality standard. Examples of indirect sources include employment sites, shopping centers, sports facilities, housing developments, airports, commercial and industrial development, and parking lots and garages. Direct sources of air pollution are cars, trucks, and factories. Indirect Source Review (ISR) implementation responsibility falls on regional air pollution control districts, and requires developers to consider location and other characteristics of a project that will affect air pollution, by mandating mitigation for their impacts. This policy will help reduce VMT by reducing sprawl and promoting infill. The exaction fees taken from sprawling developments can help create a funding source to invest in more efficient land use and transportation. An example of Indirect Source Review is Rule 9510 adopted by the San Joaquin Valley Air Pollution Control District under the jurisdiction of the California Air Resources Board in December 2005. Rule 9510 requires new developments with more than 50 dwelling units or 2,000 square feet of commercial space to use air quality modeling software to quantify the developments impact and then mitigate for air pollutants created by the new project. The CSC recommends first expanding the ISRs to

cover GHGs, and second to implement a consistent policy statewide to avoid leapfrogging to areas that have less stringent requirements.

Criteria Consideration, Analysis of Tradeoffs:

ISR will not have any significant short-term affects, but the long-term effects can be great. I give this option an above average ranking for efficiency because I think it is a good way to reduce VMT. This kind of review has the potential of making a significant difference in where future development is located. This kind of review makes a lot of sense to me. If you build a subdivision or employment center miles from any existing development, people are going to drive to get there. This is something that should be considered. This option is a relatively fair way to reduce VMT because these sources of pollution are indirectly affecting the environment and should be considered when trying to make a change in the way we travel and build. The stakeholders should be accountable for the indirect pollution they cause, and so, the equity grade is above average. The political acceptability for this policy is extremely sensitive. In the current economic climate, any spark of economic growth is well regarded, and I doubt politicians would consider sponsoring a bill that would potentially harm economic growth by thwarting where business can locate and making it more difficult to build and operate a business. This option is below average for political acceptability, and therefore, is not among my top three alternatives.

IX. Transfer Development Rights – Density Bonus

Transfer Development Rights means allowing property owners to buy and sell development rights within a specified region or jurisdiction. This option is a form of density bonus, which allows additional units or square feet in one area in trade for permanent open space preservation in another area. For example, if a developer purchased a piece of property in the downtown city core for infill development and the specific parcel was zoned as multi-family residential (allowing a building with 20 dwelling units), the developer would have the opportunity to purchase

development rights for 20 additional units from a land owner in the region (in an area designated for open space preservation), who would then forfeit his right to ever develop on his land. The developer could then build a 40 unit building on his infill site. This policy alternative seems simple in principle; however, there is no existing marketplace or structured system in California for infill development TDR, and parcels available for trading are not currently inventoried or identified. CSC recommends that the state could assist MPOs/COGs in setting up a market for trading development rights, and the MPOs/COGs would manage and broker the TDR system. The cities and counties within the MPOs/COGs jurisdiction would identify specific parcels as priority development areas (PDAs) and priority conservation areas (PCAs) and submit their parcel numbers to the MPOs/COGs for them to inventory in order to broker trading.

Criteria Consideration, Analysis of Tradeoffs:

The efficiency of TDR is average for reducing VMT. State, regional and local staff time would be required to set up the TDR program and administer it. MPOs/COGs would have to hire more staff to manage the new marketplace. Once the TDR system is in place, it would take an advertising effort for developers to be aware of the new program. In the long run, this policy recommendation could help increase density and development in infill priority development areas, which would in turn reduce VMT, but this option is complicated and it would take a long time to carry out.

In the fairness category, I perceive this tool to be equitable among stakeholders and the public, because VMT can be reduced at a low cost to the public, and developers are able to regain their costs incurred for purchasing a density bonus by having additional units or square footage to rent or sell. In addition, landowners in priority conservation areas could be compensated by developers purchasing TDR's for preserving their land as open space.

I rate this alternative as average in the criteria category of political acceptability. It is my perception that the public will generally accept increasing density in an urban environment if in

turn protecting a resource or amenity is the trade-off. A strategy similar to TDR has been effective in Boulder, Colorado, where the citizens voted to preserve a strip of open space around the perimeter of the city, in trade for higher density in the urban core. The challenge with this recommendation is implementing it across the state when some regions have no desire to increase population density. Politicians and their constituents will have to understand that this policy has the potential to help California reduce VMT and be in compliance with SB 375. Without that background and acceptance, I think it will be difficult to convince many communities that increased density is a good thing, and so, I do not think this is the ideal policy to pursue.

X. Implement Open Space Requirements or Urban Growth Boundary

The last policy recommendation is to implement an urban growth boundary through open space preservation, and implement a funding mechanism for open space and conservation programs. In the 1970s, Portland, Oregon, adopted an urban growth boundary that severely restricted development outside the identified boundary line. The purpose of a growth boundary is to protect agriculture, forest, and other open space, while promoting use of existing infrastructure and services in the urban core, thus limiting sprawl. The CSC encourages the state government to facilitate statewide land conservation by first, mandating conservation and watershed plans within MPOs/COGs jurisdictions, and second, establishing funding mechanisms to fund the conservation efforts, such as using sales tax.

Criteria Consideration, Analysis of Tradeoffs:

Open Space Requirements and Urban Growth Boundaries promote efficient development by pushing development into areas where there is existing infrastructure and promotes higher density within core areas. When development is more efficient and higher densities are achieved, in the long run, the VMT for the area will improve because proximity to goods and services will be more compact allowing for more walking and biking. However, the efficiency of this kind of

policy in the short run for VMT is much less. I rate this policy as average in the efficiency category.

In the equity category, I rate this policy option as below average. This tool is less equitable for two groups, 1) the renters, and 2) the property owners outside the growth area or in an open space area. But if the policy allows a way to fairly compensate all landowners it would be more equitable for owners, but less equitable for renters. The public is made better off when considering health and safety, because VMT can be reduced at a low cost that could be shared among everyone who lives in the area. There are other criticisms with implementing this policy considering fairness. How and where does a municipality establish the boundary or open space areas? Will the new boundary or open space create a leapfrog effect, which spurs development in another area, and actually cause VMT to increase? Will residents who do not own property be unfairly hurt by this policy through higher rents and fewer opportunities to purchase property in the future? These questions are difficult to answer and made me conclude the fairness of the policy is below average when compared to the other options.

I rate this alternative as below average in the criteria category of political acceptability. Implementing an Urban Growth Boundary would require legislation for metropolitan wide jurisdictions working together as a single regional government for enforcement. New legislation taking power from local cities and counties for metropolitan wide government jurisdictions is not politically feasible. Local governments would not allow this type of government. The political opposition would be insurmountable. Forgetting the idea of an Urban Growth Boundary, and implementing statewide open space requirements is more plausible, however, this policy is unlikely as well, because local governments like to determine how much open space they will provide, and where they will provide it. Politically, I do not see local politicians supporting this kind of a statewide policy.

Table 4.3: Qualitative Alternative Criterion Matrix

	Criterion 1: Efficiency	Criterion 2: Equity/Fairness	Criterion 3: Political Acceptability
Alternative I: Government Funding for Smart Growth	Somewhat effective at reducing GHG emissions in a short time period	Somewhat fair to most parties involved and society overall.	Somewhat likely to be supported by politicians, lawmakers, and stakeholders
Alternative II: Carbon Taxation	Highly effective at reducing GHG emissions in a short time period	Somewhat fair to most parties involved and society overall.	Not likely to be supported by politicians, lawmakers, and stakeholders
Alternative III: Revise Parking Management Requirements	Highly effective at reducing GHG emissions in a short time period	Equally fair to most parties involved and society overall.	Somewhat likely to be supported by politicians, lawmakers, and stakeholders
Alternative IV: Subsidize Infill Development Using Creative Financing Tools like Tax Increment Financing (TIF)	Highly effective at reducing GHG emissions in a short time period	Somewhat fair to most parties involved and society overall.	Not likely to be supported by politicians, lawmakers, and stakeholders
Alternative V: Enforce Regional Housing Needs Assessment (RHNA) requirements	Not effective at reducing GHG emissions.	Somewhat fair to most parties involved and society overall.	Not likely to be supported by politicians, lawmakers, and stakeholders
Alternative VI: Eliminate Fiscalization of Land Use	Somewhat effective at reducing GHG emissions.	Somewhat fair to most parties involved and society overall.	Not likely to be supported by politicians, lawmakers, and stakeholders
Alternative VII: CEQA Reform	Somewhat effective at reducing GHG emissions.	Equally fair to most parties involved and society overall.	Somewhat likely to be supported by politicians, lawmakers, and stakeholders
Alternative VIII: Limit Large Development on the Fringes Using Indirect Source Review (ISR) for Air Quality Management	Somewhat effective at reducing GHG emissions.	Somewhat fair to most parties involved and society overall.	Not likely to be supported by politicians, lawmakers, and stakeholders

Alternative IX: Transfer of Development Rights (TDR) – Density Bonus	Somewhat effective at reducing GHG emissions.	Somewhat fair to most parties involved and society overall.	Somewhat likely to be supported by politicians, lawmakers, and stakeholders
Alternative X: Open Space or Urban Growth Boundary	Highly effective at reducing GHG emissions in a short time period	Somewhat fair to most parties involved and society overall.	Not likely to be supported by politicians, lawmakers, and stakeholders

Chapter Summary: The Best Three Policy Alternatives

The best three alternatives to reduce VMT are CEQA Reform, Revisions to Parking Requirements, and Government Transportation Funding funneled toward smart growth. These policy recommendations have the greatest potential to reduce the driving habits of Californians by removing barriers to infill development and identifying existing public funds that could be used to promote the GHG emission reduction. I will discuss these policy alternatives with private developers and find out what their reactions are to my analysis and what they think is the overall best policy alternative.

Chapter 5

INTERVIEWS

Introduction to One-on-One Interviews

In this chapter, I will summarize the interview responses for each question, and discuss the reactions of the interviewees (land development stakeholders). The individuals I interviewed are from three groups: 1) land development professionals, 2) lawyers, and 3) legislative lobbying representatives from the land development industry. Some of the developers I interviewed had years of experience and knowledge of land development, but little experience with legislation. They indicated that they rely on organizations like the California Building Industry Association (CBIA) to represent them on policy matters, and rely on outside land development attorneys to advise them on existing laws that affect their business. For that reason, I interviewed CBIA representatives and land use attorneys in addition to land developers. I will summarize their responses in the following paragraphs in the same format I conducted the interview, question by question. I will then identify which policy options have favorable reactions and consensus from stakeholders. I will also identify uncertainties and disagreement among interviewees. I plan to identify a specific opportunity for policy change to reduce vehicle miles traveled (VMT) and greenhouse gases (GHG) in California. The concluding chapter consists of my thoughts concerning the interviews and my CAM analysis, and ultimately makes policy recommendations.

The Interview Questions and Summarized Responses

Question 1: AB 32 and SB 375 Background

1) As a professional planner/developer/builder (and not necessarily the official position of the business or entity that you work for), do you support laws that regulate GHG (greenhouse gas) emissions in California (reference my fact sheet for AB 32 and SB 375 details)? Why or why not?

I started my interviews with this question because I wanted to understand the level of knowledge or background the interviewees had on environmental policies in California. First, I sought

understand where they stood regarding existing policies in California, specifically AB 32 and SB 375. Next, I discussed market failures, externalities, sprawl, and government interference. Then, I presented my research and CAM analysis regarding new potential policy options that address GHG emissions related to transportation systems in California. Discussing this first question with my interviewees set the tone for the rest of my interview by helping me understand how development industry professionals react to government regulation in their industry and better understand their point of view.

Support & Opposition – AB 32 & SB 375

Prior to the interviews, I had assumptions of how I thought the interviews would go, and I imagined that most of the subject opinions would be relatively similar. However, the opinions were not similar. Three of the eight interviewees supported AB 32, with the remaining five individuals opposing it. Two of the supporters work for developers, and one is a land use attorney. The opposition to AB 32 came from two developers and three attorneys who represent the building industry. Three of the interviewees opposing AB 32 thought that scientists do not yet understand the issue of GHG emissions. The two others opposed AB 32 because they did not believe California alone could make any significant effect on reducing GHG worldwide and thus should not attempt to. Those opposed to AB 32 agreed that it unfairly burdens Californians with a global issue, and meeting the goals set by AB 32 would greatly affect business and lifestyle for Californians with no significant global reduction of GHG. Two different interviewees (attorneys) said they thought if GHG emissions cause a serious risk to human health, the federal government should be addressing it instead of the state government. From the eight interviews, the one of the supporters of AB 32 explained that California could make a significant impact on reducing GHG emissions, and help other states and even other countries by way of example on environmental policy. Each individual I interviewed knew about AB 32 and its potential impact on business and

lifestyle in California, but the spectrum of opinions was without a uniform reasoning for support or opposition.

After finding the majority of my interviewees opposing AB 32, I found the opposite to be true for SB 375. Six of the interviewees were supportive of SB 375. All four attorneys supported SB 375, along with two developers. The two interviewees opposing SB 375 were developers. One interviewee stated that his organization supported the legislation as a compromise on the means by which AB 32 would be implemented. He liked the legislation because the creation of a Sustainable Community Strategy (SCS) would allow a streamlined CEQA process for development projects in the SCS. Another interviewee told me SB 375 could help California plan for a better future. Some of the individuals whom I interviewed participated in the crafting of SB 375 and were happy with the final product. Each of the six supporters viewed SB 375 as an incentive-based plan to guide future development patterns in California with the goal of reducing GHG emissions. These interviewees perceive SB 375 to change how developers do business in the next century, with less of a focus on the present. Developers do not expect such forward planning to affect development in the near future. One interviewee said, "Considering the economic downturn, the policy won't do much of anything, since not much of anything is being developed. SB 375 is a planning tool for cities, counties, and regions where developers will work within the local plan for development, in an effort to achieve a sustainable future."

The two opposing opinions on SB 375 had different reasons for their opposition. One developer felt that the state government overstepped its bounds with SB 375. The other developer thought SB 375 singled out the development industry from all other industries and placed a major portion of the burden on development. This interviewee identified other major GHG source polluters such as landfills, ports, highway systems, and other large industries as getting off relatively easy in comparison with GHG reduction laws. This interviewee also disagreed with the

philosophy of transferring power from a local jurisdiction to a regional jurisdiction through the creation of the SCS. He explained that if a city decides it wants to grow in a particular area that is not documented in the SCS, the process of changing the SCS could take years. This interviewee thought that the decision making body for a city or county should be kept locally and not decided on by a regional government which may not be familiar with the individual wants and needs of each municipality in its region. These two opinions of opposition to SB 375 made it clear to me that even within the development industry, opinions differ, and reaching consensus may be impossible concerning GHG reducing public policy.

After interviewing the eight participants, this first question proved to be valuable in understanding the interviewees' background and point of reference. While I expected to find more of a consensus, I found that almost everyone had a different perspective on the subject matter, and many different reasons accompanying their opinions. Not everyone agreed on GHG being a problem. Not everyone agreed on the government's role in regulating business and externalities. Not everyone agreed on the same solutions. I had to frequently remind the interviewees that the people of California believe GHG emissions are a problem, and thus have passed AB 32 and SB 375. Bardach's (2000) first step in policy analysis is defining a problem. The problem I define in my research is excessive driving which causes GHG emissions that are detrimental to public health. I explained that my research is to find a desirable way to reduce VMT to achieve the goals set in those laws. I began to learn that it would be difficult to find consensus for a new public policy regarding VMT reduction. From here, I will try to find some common ground among the interviewees.

Question 2: Organizational Environmental Policies

2) Does your organization have any policies relating to reducing the emission of GHGs and/or trying to reduce automobile use in the projects you design/build/administer?

I included this question in my interview because I wanted to understand which, if any, organizations take environmental policies seriously, relating to GHG emissions. I think some organizations use green policies as a marketing tool to help brand their company as environmentally friendly or progressive. Green publicity has become popular, and I am curious if any developers have this kind of company policy, and if so, what they are.

Organizations with Environmental Policies

Of the eight interviews, only one organization had a company policy related to reducing GHG emissions. The organization provided vehicle-charging stations to residents and employees free of charge to encourage using electric vehicles. The organization is a development company in the Bay Area, and they believed in promoting GHG reducing policies. Not only did they believe it would be good for the environment, but also thought it would be profitable to provide this specific amenity that would attract environmentally minded individuals to live in their community. The company believed this policy to be valuable and successful.

Organizations without Environmental Policies

All other respondents agreed that they would implement green policies and products if the market demand were apparent. One homebuilder I interviewed said his organization had offered a choice to his buyers to have one of two options in their new home: solar panels, or upgraded stainless steel appliances. Each new homebuyer in the new development chose upgraded appliances in lieu of the solar panels. The interviewee explained that the market demand just was not there for the green products. The perspective of most of the individuals whom I interviewed was that environmental policies just were not profitable, and thus, they were not used. Many of the interviewees explained that they are interested in implementing environmental policies if they could be proven profitable. The lack of support from the development industry for environmental policies is an important finding, because it backs up the reasoning behind AB 32 and SB 375.

Without government intervention, the private real estate market would never address the externalities caused by GHG emissions. There is a market failure that exists with automobiles, where individual self-interest leads to results that are not efficient because they cause negative externalities (primarily GHG emissions). Society as a whole is worse off with market failures when individuals act in their own self-interest. I explained that the market failure is the justification government uses to step in and regulate a particular market.

I was glad that I included this question in my interview. It helped me to remember that businesses pursue profits, and those who benefit from a market failure will usually oppose any idea or policy that does not contribute in some way to profitability or self-interest. I was pleased to find at least one developer that is promoting an environmentally friendly culture within his business.

Question 3: CAM Analysis Three "Best" Implementation Tools, Option 1

3) Do you think existing transportation funding should be spent differently than it currently is? For example:

- *2006-2011 Caltrans State Transportation Improvement Program = $6 Billion (65% highways / 29% transit / 6% trails & visual enhancement)*
- *2006-2011 Caltrans Proposition 1B Transportation Funding = $20 Billion (80% highways/20% transit)*
- *1999-2000 Total California Transportation Expenditures = $15.5 Billion (80% highways / 9% transit / 6% admin / 5% other)*

Would you support spending state transportation funds in a 50/50 (50% highways / 50% transit) type of ratio to support transit related infrastructure? (No new taxes, simply a re-allocation of existing funds based on criteria that promotes urban infill, not suburban sprawl) Why or why not?

I asked this question because funneling state transportation funds was one of the recommendations that I identified in my CAM analysis as one of the top three recommendations from UC Berkeley Center for a Sustainable California's (CSC) report, and I wanted to find out if the development industry supports allocating state funds to public transit in larger proportion, compared to highways and roads. There is currently a large amount of state money being spent on

transportation, however, a large percentage goes to highways, and a small percentage goes to transit. Between 2006 and 2011, approximately 22% of state transportation funds were spent on public transit. After explaining the problem of GHG emissions caused by excessive automobile use, and now I want to explore potential solutions that encourage driving less and see what reactions I get. I want to find out if my interviewees support spending more state money on public transit.

I found that one response kept surfacing throughout the interviews, with six of the eight respondents agreeing. The consensus was a response of uncertainty and skepticism. Many of the respondents were uncertain what the right proportion of government transportation spending should be for highways versus transit. The six interviewees in consensus initially thought that the state should spend more money on highways. They believe that the California highway system is in disrepair and needs expansion and maintenance. However, at the same time, the same respondents thought that if greater investment actually led to increased ridership on transit, or more importantly, greater fare box recovery, then more transit investment would be favorable (fare box recovery = transit revenue – transit operating costs). Many developers view public transit as a cost burden on taxpayers, because the fares charged are not enough to support the construction and operation of transit systems. The respondents said that they would support spending more money on transit if the return on investment was there, with added emphasis on the word "if". If a cost-benefit analysis could prove the investment profitable, or equitable, it would make sense to invest in transit. The interviewees told me that the problem is that there is no evidence of transit investment leading to profitability or rather, full fare box recovery. The key principle that the respondents forgot is the market failure, which is the root of the problem in GHG emissions. While excessive driving creates a negative externality in the market, public transit riders create a positive externality for society. I cannot quantify the precise value of the

positive externality, but the interviewees should realize that a subsidy for public transit is justified according to the positive externality that riders help produce in the market for transportation and cleaner air. Public transit should never be expected to operate as a profitable entity or even at a breakeven point because the positive externality that it produces justifies a monetary subsidy. Government funding currently heavily subsidizes highways, and they help produce negative externalities. So why not consider this shift in government spending?

The interviewees generally agreed that if investment in transit did not result in a reduction in cars on the road (or VMT) it would be a waste of public funds. Without substantial evidence that there is a measurable benefit correlated to investment in transit (increased ridership), there is little support from the development industry to shift investing state transportation funds from highways to transit. An important lesson I found with the responses to this question is that developers do not believe in the idea of "if you build it they will come." They were skeptical that increased investment in public transit would lead to increased ridership, at least in Sacramento.

Two of the eight interviewees support spending more public funds on public transit. One respondent views transit as the single biggest area of improvement that will yield the greatest results to help curb GHG emission problems in the long term. The other respondent supporting a greater percentage of public transportation funds going to transit thought continuing the way we currently spend public transportation funds will only extend our reliance on cars as the primary mode of transportation. He explained that we must make a change in our current transportation system if we ever hope to reduce GHG emissions.

While two of the interviewees supported more public funding for transit, I learned that most developers do not currently support spending a greater portion of state transportation funds on transit. Convenience, safety, privacy, and the cost comparison of driving versus transit just

make transit an unlikely substitute to driving. Though transit may be better for the environment, developers are skeptical that people will give up their cars for transit and, therefore, increasing transit funding is perceived to be wasteful and not a feasible option.

Question 4: CAM Analysis Three "Best" Implementation Tools, Option 2

4) Do you support government regulation that would exempt urban infill projects from CEQA and strengthen the ability of localities to implement projects that are consistent with a specific or area-wide plan without additional CEQA review? Why or why not?

CEQA Guidelines Section 15332 – Infill Development Project (Categorical Exemption) contains the following conditions that make it nearly impossible to use:

(d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.
(e) The site can be adequately served by all required utilities and public services.

This question also comes from my CAM analysis, as another top recommendation from the CSC report. My intent is to find out specific CEQA streamlining policies that developers support that will promote driving less. Surprisingly, half of the respondents oppose a CEQA exemption for infill development. The interviewees opposing CEQA exemptions for infill do not specialize in infill development, but I expected them to be more open to the deregulating nature of this concept. Several respondents perceived CEQA exemptions as unfair and thought that if one project must perform a complete environmental analysis, then all should. Perhaps they see CEQA exemptions for infill as a disadvantage in their specific business of producing sprawl development. They are not considering the market failure and negative externalities associated with excessive driving. In addition, I think the principle of public goods is critical to fully appreciate this policy option. A public good is something that everyone in society benefits from. Infill development creates overall VMT reduction, which results in cleaner air and reduced congestion (public goods). The problem relating to public goods is that people not paying for the good can continue to access it. The specific good, infill development, creates cleaner air and reduced congestion. Infill development is under-produced because typically, people do not pay

for cleaner air and less congestion. Air and roads in California are generally accessible for free to all who choose to use them. Because of this economic principle of public goods, AB 32 and SB 375 have sought to make some changes to fix the problem. So, how can we make it happen? The challenge is finding consensus not only regarding the problem itself, but also on a remedy for it. I am struggling to find consensus on a remedy.

I expected developers to favor any possible CEQA streamlining, but I was wrong. While half of the interviewees supported any kind of CEQA reform, the other half was wary about pursuing an exemption for infill as well as other kinds of exemptions or streamlining. The respondents indicated that their wariness comes from the litigious society that we live in. CEQA has a reputation of aiding development opposition groups referred to as NIMBYs (Not In My Back Yard) in slowing or stopping development projects regardless of the actual impacts on the environment. A CEQA exemption would not stop such groups from filing lawsuits and harming projects that would reduce GHG and are good for the environment. The consensus that I found in the interviews is that CEQA needs reform, but not through exemptions. Developers rarely use CEQA exemptions because they are viewed as risky for investors. If development opposition groups challenge a project legally on its accuracy or completeness under CEQA, it adds an element of risk and uncertainty. So, developers look for projects with the least amount of risk and uncertainty, and publish environmental (CEQA) documents that fully substantiate their proposed project through detailed findings and studies that cost a lot of money. The kind of reform that developers desire is a legal framework that prescribes specific actions for specific criteria. The kind of legal framework that would be difficult to challenge legally, and when challenged, it could be quickly resolved in the courts. The system that operates now allows too much room for interpretation, and when an environmental document or impact is challenged, it could take years to resolve. The amount of uncertainty that follows development projects with environmental risks

is so great, financing is often difficult to secure. CEQA exemptions carry such a great risk of being challenged that they are not favorable. I learned in this question that developers desire CEQA reform, but not in the form of new or better exemptions. What developers want is certainty if opponents challenge their projects. Developers want a process with specific timelines to resolve legal opposition regarding completeness or accuracy of CEQA document. This finding will be an important part of my ultimate recommendations.

Question 5: CAM Analysis Three "Best" Implementation Tools, Option 3

5) Would you favor parking policies in urban areas that encourage multimodal (walking, biking, and transit) transportation? Why or why not?

Examples: Eliminating minimum parking requirements in urban areas, implementing maximum parking requirements in transit areas (within 1/8 mile of a transit stop), and implementing pay for parking in free parking areas in urban environments.

This question is the third top recommendation that I analyzed in my CAM analysis from the CSC report. My intent is to find out if developers support changing parking policies statewide to encourage modes of transportation other than driving, especially public transit. Currently, cities and counties in California require excessive amounts of free parking for all forms new development. AB 904 (Skinner, 2012) sought to prohibit minimum parking requirements in transit-intensive areas, and failed. I want to find out if developers support or oppose parking policy reform.

There was no consensus among my interviewees regarding parking policy reform. Four respondents favor parking policy reform that eliminates minimum parking requirements in transit areas, two respondents were uncertain, and two opposed any statewide reform that took power away from cities and counties. The four supportive interviewees viewed this policy as a valuable opportunity for reform to encourage infill development and felt it could provide a valuable spark to developers on the cusp of project feasibility. These same four respondents thought that the developer and the market should determine the amount of parking, and not the government. One

interviewee called parking reform an obvious solution, stating that eliminating regulations that artificially promote car dependency is an important step that can help reduce GHG emissions.

The two respondents who opposed parking policy reform were concerned that implementing the same policy on every transit area in California could produce a shortage in parking and would be detrimental to quality of life in those areas. Both these interviewees believed that cities and counties should consider parking policies on a case-by-case basis, and not be directed by state law. This way of thinking goes against the goals of AB 32 and SB 375. If we cannot agree on a solution for the problem, we will never achieve the goals of AB 32 and SB 375. The goals are going to require some major changes in the way California operates, and one of the changes is to get people out of cars. If some changes are not made, AB 32 and SB 375 goals will not likely be met.

The two respondents who were uncertain about parking reform said that parking reform is needed; however, how to do it is unclear. These interviewees were concerned about parking shortages, but also supportive of deregulation. These interviewees said they would consider parking policy reform depending on what specific changes were being made. Self-interested parties do not consider the economic principles of market failure, externalities, and public goods. Consensus is impossible if individuals are unwilling to open their minds to these economic principles and not merely consider self-interest.

The lesson I learned from this question was that many developers support deregulation in general, but still want cities and counties to set the rules for their individual communities. I found that those who opposed parking policy reform or were uncertain about it were passionate about their reasoning, but consumed by their own interests and not open to ideological economic theory. They were genuinely concerned that good, vibrant communities could be damaged by having a lack of parking. Cars are so deeply rooted in our social fabric that the idea of not having enough

parking is terrifying. In addition, an interviewee suggested that Americans who do not drive are typically low-income, or in other words, there is a direct relationship to higher income leading to higher car ownership and usage. Therefore, setting up transit areas without sufficient parking could promote poverty and businesses in the area could be jeopardized. Developers think forcing the affluent to carpool or use transit is undesirable and unlikely. With higher income comes higher desire for mobility, which mobility is only available in California to those who drive cars. Therefore, in order to accommodate the cars, we must provide parking. While I understand this philosophy, the entire basis of my research is to find a way to promote a behavioral change in Californians to drive less, and the philosophy of resisting change and driving everywhere will not allow that change to occur. Consensus to change parking policy does not exist, but I believe, as more examples of successful transit oriented developments exist, developers will be more willing to support parking policy reform. Parking policy reform could become a legitimate opportunity to change driving habits to reduce GHG emissions, but the getting overall support will be a challenge.

Question 6: CSCs Other Policy Recommendations to Reduce VMT and GHG

6) Would any of the seven CSC recommendations not identified as "best" options in My CAM analysis be preferable to what was discussed? If so, why?

- *Carbon Taxation (gas tax, or other mileage-linked usage tax)*
- *Tax Increment Financing (TIF) for infill development (similar to obsolete redevelopment areas)*
- *Enforcement of Regional Housing Needs Assessment requirements*
- *Eliminate fiscalization of land use by regionalizing tax structure*
- *Implement Indirect Source Review for Air Quality Management (Require mitigation for potential effects of building new development on the fringes based on modeling future traffic to the area)*
- *Transfer of development rights (density bonus for setting aside open space)*
- *Urban Growth Boundary or open space conservation surrounding city limits*

I asked this question because I wanted to allow the interviewees to consider the other CSC policy recommendations, even though I did not find them to be the best in my CAM analysis. I wanted

to find out if there was consensus among developers for any of these remaining options to help reduce VMT and GHG emissions.

There was consensus among the majority of the interviewees that the following policies are not worth pursuing: 1) Enforcement of Regional Housing Needs Assessment requirements, 2) Eliminate fiscalization of land use by regionalizing tax structure, 3) Implement indirect source review for air quality management, 4) Transfer of development rights, and 5) Urban growth boundary or open space conservation surrounding city limits. The respondents agreed that these policy options are not desirable and should not be considered. Apart from the consensus of what not to do, I also found that there was significant support for carbon taxation, and tax increment financing (TIF). I determined each of these options to be politically impractical in my CAM analysis, so I did not consider them among the best alternatives. In spite of my CAM analysis findings, three respondents thought that carbon taxation was the best policy alternative to reduce VMT and GHG emissions. While I explained to the interviewees why I found this options to be less attractive than the three best in my CAM analysis (political unacceptability), I found an interesting response that if society is serious about making a change, political challenges are worth approaching. This is an important finding and could justify revisiting my CAM analysis. There was additional complexity to this response. One respondent explained that he supported carbon taxation, but at the national level, and not the state level. So, actually, he did not support carbon taxation as a state policy, but rather a federal policy and perhaps his sentiment could be projected onto the other supporters of a carbon taxation that I interviewed. Even though there was philosophical support for carbon taxation from three respondents, I did not find a consensus among the group, and thus I cannot justify it as a best option for new public policy to pursue in California.

In addition to carbon tax support, I found three respondents who said TIF for infill infrastructure is the best policy alternative for reducing VMT and GHG emissions. Again, I explained that political feasibility is the crux of the matter, and the reason I did not include this option as a top three in my CAM analysis. At Governor Jerry Brown's insistence, the legislature ended community redevelopment agencies' use of TIF with a bill that took effect in February 2012, ABx1 26 (Blumenfield, 2011). Although I found TIF challenging politically and not among my top three CAM analysis options, developers support this kind of public policy and think it could make a difference in VMT and GHG emissions. Three respondents thought TIF was the best option for public policy that promotes infill development. But perhaps most telling of all the CSC recommendations, TIF for infill infrastructure drew opposition from none of my interviewees. While only three of eight thought it was the best option, the remaining five did not think it was a bad option and were conceptually supportive. TIF for infill has the only solid consensus among my interviewees for a policy they would support. While carbon taxation had some support from developers, it was more as a federal policy than state. TIF for infill infrastructure may be the best state policy to pursue according to my interviewees. This finding is not surprising, considering developers have more to gain and nothing to lose with this option. They could subsidize costs with tax dollars for something that is not otherwise profitable. While this option is attractive to developers, it is still unlikely considering political acceptability. Taxpayers pay the subsidy that then delivers profits to developers. Even so, this question proved to be productive at finding what the developers were willing to support.

Question 7: Any policy we did not discuss or mention in the previous questions

7) Do you think there is a single "best" policy to pursue that you consider the most valuable to an investor or private developer when considering reducing VMT and GHG emissions?

I asked this question as my final interview question because I wanted to see if there is any other policy out there that CSC did not think of in its report. I wanted to find out if developers would support another kind of creative policy to help reduce VMT and GHG emissions. I was looking for a policy that is not being considered by politicians. The last question is the opportunity the developers had to inform me on what they perceive to be real opportunities to improve development policy. I did not expect to find consensus with this question, but rather, I hoped to find creative responses that could help make behavioral changes in Californians to drive less.

Two of the interviewees thought that significant CEQA reform would be the key to making a lasting change in development as it relates to increasing density and shifting development patterns towards other modes of transportation (walking, biking, public transit).

Two different respondents believed TIF for infill infrastructure was the single best policy that would help decrease VMT and GHG emissions.

Another two respondents deemed carbon taxation to be the best policy for reducing VMT and GHG emissions, however, these individuals said the tax would have to be substantial to actually make a noticeable difference.

In one interview with a developer, I learned that the existence of unions and development agreements often burden developers to pay prevailing wages to certain specialty trades (prevailing wage is a term used for wages that are often five to 10 times the federal minimum wage). This interviewee explained how paying these high wages increase cost of construction as much as 40% on some projects. He said that for small infill projects, prevailing wages can make the difference in feasibility analysis and the project will not happen. His idea for reform is to abolish prevailing wage requirements, which would in turn result in more infill development that could help reduce VMT and GHG emissions.

In another interview, the respondent thought that no single reform alone could make a significant difference in reducing VMT or GHG emissions. He believed it would take an approach of combating as many angles of the problem as possible, including most of the policies that CSC recommended. I agree with this approach, however, I do not believe it is realistic to pass all of CSC's recommendations at once. Because of the political challenges of passing multiple laws all at one time, I focus my study on making a few recommendations to center the efforts of lawmakers on the most efficient, equitable and politically acceptable policies available.

One respondent thought that cleaner cars, perhaps 10% solar powered electric cars could be the answer. He suggested retooling the entire automobile industry could be the answer to reducing GHG emissions, without even worrying about VMT and making a behavioral change. He said this topic is worth exploring more. While solar cars sounds like a wonderful idea, there is currently no evidence of this kind of technology being feasible. The interviewee did not have any evidence to support this option to meet the goals of AB 32 and SB 375. This option is a technological fantasy that accommodates the development industry and is not realistic in 2012.

Considering this response, it reminded me of the strong resistance or apprehension I found from several respondents to even discuss making a behavioral change in Americans to drive less. Several of the interviews started with the interviewees adamantly claiming the huge opportunities we have to improve are miles per gallon, and that the existing infrastructure in the United States is set up for cars and that is how we should keep it. While I agreed with them regarding the opportunity to make more efficient cars, I frequently had to redirect the discussion to my focus of reducing how much we drive, in addition to improved fuel efficiency. I thought that many developers were evading the land use component of reducing GHG emissions, preferring instead that a technological solution work out the problem without requiring a behavioral change. For a few interviews, the respondents simply did not think a behavioral

change requiring less driving would or should happen, ever. One interviewee said excessive driving is not the problem with GHG emissions, but instead the problem is with the resistance automobile companies have to retooling automobiles to be cleaner and more efficient. Again, this response reinforced in my mind how difficult it is to create public policy, and even more difficult to change human behavior.

Chapter Summary

This chapter is the result of many hours of interviews with land development stakeholders. The personal interviews of the eight participants helped me understand why passing legislation is so complicated. I will discuss my lessons learned in the following paragraph. Though each of the interviewees was from the same industry, each had a different approach to the problem of VMT and GHG reduction. Consensus is difficult to find, even among colleagues of the same industry. Many developers did not support using state transportation funds to build or enhance public transit systems to meet GHG reduction goals. Nor did they agree on implementing statewide parking policies to encourage driving less. Developers opposed two of my three best CSC recommendations. Developers did passionately agree on one aspect of CEQA reform though, that is certainty. Developers support a government policy that provides certainty for the CEQA environmental process, because it would make development much less risky. This observation is not new; but it does contribute to existing research that CEQA reform can help support AB 32 and SB 375 to reduce VMT and GHG. If developers had some kind of guarantee that a project would not end up in the court system for years, they would be more likely to develop in urban infill areas. Apart from my three best CSC policy options, developers support TIF for infill infrastructure. If cities and counties can borrow money through TIF for infill infrastructure, densification is much more likely to occur, supporting alternative modes of transportation and promoting VMT reduction. The most likely new state policies I discovered development industry

stakeholders to support are these, 1) CEQA reform that promotes certainty, and 2) TIF that sparks infill development. The next chapter will be the final chapter and include my final thoughts and conclusions of my findings, and propose policy recommendations and suggestions for future research.

Table 5.1: Interviewees, Questions, and Responses

Questions	Interview A	Interview B	Interview C	Interview D	Interview E	Interview F	Interview G	Interview H
1A) AB 32	Support	Oppose	Oppose	Oppose	Support	Oppose	Support	Oppose
1B) SB 375	Oppose	Support	Support	Support	Support	Oppose	Support	Support
2) Company Policy	No	No	No	No	Yes	No	No	No
3) Funnel Transportation Funds	No	No	No	No	Yes	No	Yes	No
4) CEQA Reform	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5) Parking Policies	Yes	No	Maybe	Maybe	Yes	Yes	Yes	No
6) Other 7 CSC Policy Options	CEQA Reform	Carbon Tax	TIF	TIF	Carbon Tax	CEQA Reform	Carbon Tax	TIF
7) Single Best Policy	CEQA Reform	Carbon Tax	TIF	TIF	Carbon Tax	CEQA Reform	No single best, ALL	Cleaner cars

Chapter 6

RECOMMENDATION AND CONCLUSIONS

Introduction

Throughout the last decade, the people of California have made significant progress to reduce GHG emissions by passing AB 32 and SB 375. The California Air Resources Board (CARB) has set benchmark goals for GHG emission reduction by 2020 and 2050 to comply with AB 32, and GHG emission reduction targets for specific regions by 2020 and 2035 to comply with SB 375. Even with these laws in place, experts remain skeptical that California will meet the goals set in these laws (Sovacool, 2007), so California lawmakers should consider additional laws to support reducing GHG emissions. This thesis sought to find support from development industry professionals for new statewide policies that would help reduce GHG emissions. The UC Berkeley Center for a Sustainable California (CSC) report Make it Work (2009) was the basis for the recommendations in my research. In Chapter 1, I discussed climate change or global warming (used interchangeably) and existing environmental laws that seek to thwart it. I introduced CSC's GHG reducing policy recommendations that supplement AB 32 and SB 375. In Chapter 2, I provided a background on climate change and historical environmental policies. I also discuss economic theory behind government intervention justifying public policies. In Chapter 3, I present the methods I will use for my research, which were first, a CAM analysis reviewing the 10 CSC recommended policies, and second, personal interviews with development industry professionals seeking their feedback regarding GHG reducing policies. In Chapter 4, I took the 10 recommendations from the CSC report and performed a CAM analysis to determine the best three options according to the following criteria: efficiency, equity, and political acceptability. I then presented my CAM analysis results. In Chapter 5, I presented the three best options from my CAM analysis and I discussed those potential policies with development industry stakeholders in

an effort to find consensus on new state policy to reduce GHG emissions. I originally expected one of my three best options to become my policy recommendation by finding consensus among the developers. I discovered that developers support CEQA reform unanimously, which was one of my three best options, but I also found several developers oppose the other two best options I proposed (funneling state transportation funds towards public transit and implementing statewide parking policies). These interviews suggest that my CAM analysis was not fully supported by political reality.

In the remainder of this chapter, I will discuss the findings of my interviews and bring them together with my recommendations and conclusions. Based on the interviews, I discovered three important findings:

- AB 32 has a lack of support from several development industry stakeholders,
- CEQA reform that promotes greater investment certainty is unanimously supported, and
- Tax increment financing (TIF) that sparks infill development is favorable to development industry stakeholders, and deserves consideration in spite of political challenges.

From my findings, I recommend that California lawmakers pursue two different policies to support reducing GHG emissions. First, CEQA reform that lays out new prescribed rules and timelines for any CEQA related lawsuits, and second, additional efforts to allow TIF for qualifying infill development projects, similar to SB 214, Infrastructure Financing Districts (Wolk, 2012) that Governor Jerry Brown vetoed in 2012. This chapter explains how I came to this conclusion.

Findings and Recommendations

AB 32 lacks support from developers (and Republicans):

AB 32 passed in 2006, but was challenged in 2010 by Proposition 23, which sought to suspend the law until unemployment remained at or below 5.5% for four consecutive quarters. Proposition

23 failed at the election, with 61.6% of Californians voting no. But even now, global warming skeptics remain. George Mason University (2011) reported the following polling information concerning global warming:

- Majorities of Democrats 78%, Independents 71% and Republicans 53% believe that global warming is happening. By contrast, only 34% of Tea Party members believe global warming is happening, while 53% say it is not happening.

- While 62% of Democrats say that global warming is caused mostly by human activities, most Tea Party members say it is either naturally caused 50% or isn't happening at all 21%.

- A majority of Democrats 55% say that most scientists think global warming is happening, while majorities of Republicans 56% and Tea Party members 69% say that there is a lot of disagreement among scientists about whether or not global warming is happening.

- A large majority of Democrats 72% worry about global warming, compared to 53% of Independents, 38% of Republicans, and 24% of Tea Party members. Over half, 51%, of Tea Party members say they are not at all worried about global warming.

- Nearly half of Democrats 45% say that global warming is already harming people in the United States, while 33% of Republicans and 51% of Tea Party members say it will never harm people in the United States.

- Tea Party members are much more likely to say that they are "very well informed" about global warming than the other groups. Likewise, they are also much more likely to say they "do not need any more information" about global warming to make up their mind.

Cara Horowitz (2011) analyzed the George Mason University polls and said, "…one of the most interesting findings is that people trying to educate voters about climate change science are doing a terrible job, even among those who agree that climate change is happening. While 78% and 71% of Dems and Independents, respectively, believe that global warming is happening, only 55% of Dems and some lesser number of Independents say that most scientists say global warming is happening. Others instead endorse the statement that "there is a lot of disagreement among scientists about whether or not global warming is happening." In other words, there is a disturbing disconnect between the degree to which Dems and Independents themselves think climate change is happening, and their own characterization of most scientists' views on the

matter. It's an important science literacy gap, one that suggests the need to prioritize supporting and reaffirming the foundation for the climate change understandings of even our strongest supporters."

Even though scientific evidence supports the idea that GHG emissions are detrimental to human health, many still do not believe it, or do not believe it is an issue worth correcting. Five of the eight interviewees I talked to did not support AB 32 when it passed, and do not support it now. Though I did not ask for political party affiliation during my interviews, I am reminded that they were all development industry professionals, and developers are predominantly Republican. Lack of support for AB 32 is an important finding because, in order to gain support for future legislation to combat GHG emissions, the group needs a common foundation. If stakeholders do not believe GHG emissions are a problem, or that anything California does to thwart GHG emissions will have a significant impact on global warming, then it will be difficult to get support for such a law. I found it difficult to keep my interviews focused on discussing potential new laws that address GHG emissions and global warming, because some of the individuals I was interviewing did not support AB 32 to begin with. Even though many of the interviewees oppose AB 32, I found overall support for a few potential policies that would support the goals of AB 32 by promoting infill development. Support for promoting infill development was the common ground I needed to find consensus for policy recommendations.

CEQA reform:

First, and most popular among the policy options discussed was CEQA reform. The respondents unanimously agreed that CEQA needs reform. The single uniform modification desired by developers is a foundation of certainty within the CEQA Guidelines. If a development company seeks an investment, a level of certainty is required to obtain financing. The CEQA Guidelines present the "fair argument" standard that the Court created in the 1970s in *No Oil v. City of Los*

Angeles. The existing structure of the CEQA Guidelines allows any opponent the opportunity to challenge environmental findings legally, simply by making a fair argument. Regardless of the scientific accuracy of an environmental document prepared for a project, and regardless of the document meeting all the correct criteria, an opponent can delay or even stop a project by sending it to the courts by using the fair argument standard. Projects classified as sprawl offer greater certainty because on the outskirts of cities in undeveloped greenfields, projects are less likely to be challenged in the courts. Developers have joked that cows never sue. I propose CEQA reform that provides a legal framework that prescribes specific actions for specific criteria, with no room for opposing interpretation based on the fair argument standard. The existing CEQA process offers significant power to neighbors, citizens, or groups who simply do not want the project in their back yard, creating an uncertain regulatory process. If a CEQA document is legally challenged, the resolution process must be more efficient. If a project does not comply with the prescribed CEQA framework, it should be challenged. However, if it does comply with the prescribed CEQA framework, it should not be challenged. CEQA experts would say that replacing the fair argument standard with substantial evidence standard is more appropriate. Furthermore, if a project is challenged within the reformed framework, and sent to the courts, specific timeframes must be established to resolve the lawsuit efficiently and quickly, not allowing projects to be tied up in the courts for years.

Implementing CEQA reform could enable many infill projects to become more attractive than their sprawling counterparts. The California Infill Builders Association published a report in February 2012 titled *The Top Roadblocks to Infill Development in California*. The report said, "California needs to favor development within existing urban areas to achieve its environmental goals and to help improve the economies of its cities and towns. But land configuration, contextual conditions, and construction costs at higher densities make infill development more

difficult, risky, and expensive than building on farmland and sprawl areas today." CEQA reform can help infill projects by thwarting individual neighbors (NIMBYs) from stopping or delaying projects, creating a more certain regulatory process, thus reducing infill project risks and costs.

Lawmakers have an opportunity to make significant progress to fill empty parcels in urban environments, and promote a more sustainable future, where Californians drive less, and GHG emissions go down. CEQA reform is one of the ways more infill is made possible. In a recent report by the Public Policy Institute of California titled *Views from the Street* (Bedsworth, Hanak, Stryjewski, 2011), experts conclude that SB 375 has the potential to significantly shape the interplay between land use and transportation policy in the years to come. They discuss three main types of tools to reduce GHG emissions—land use that encourages higher densities and closer proximity to transit, expanded transit and other alternatives to driving, and pricing policies that affect the cost of driving. The report states, "Our survey of these local governments finds some grounds for optimism regarding the implementation of this new state policy to curb GHG emissions. We also find significant local government adoption of tools that can support SB 375 goals, including smart-growth land use tools and improved pedestrian and bicycle infrastructure. More populous localities—which have a higher carbon footprint—are the most active when it comes to general climate policy and the most likely to adopt these specific actions." Promoting infill development will support the goals of AB 32 and SB 375 in reducing GHG emissions. CEQA reform can help accomplish more infill development. Along with this recommendation, I suggest using SB 226 (Simitian, 2011) as a bridge to additional CEQA reform. The proposed amendments to the CEQA Guidelines would implement the Simitian bill, which substitutes the substantial evidence standard in place of the fair argument test for qualifying infill projects. SB 226 made valuable reforms to CEQA, but more are needed. In addition to CEQA reform, TIF can be an invaluable tool used to drive infill development and help reduce GHG emissions.

TIF for infill development:

The next significant finding that sparked a recommendation in my research is developer support for TIF for infill development. Developer support, combined with the political momentum gained by SB 226 (Simitian, 2011) CEQA Streamlining for Infill Development and recent legislative support for SB 214 Infrastructure Financing Districts (Wolk, 2012) makes me reconsider my CAM analysis findings. I initially determined TIF to be politically unacceptable after AB 26 abolished Redevelopment Agencies (RDAs) in 2011. In the bill, Governor Brown essentially made TIF a thing of the past, at least the way RDAs used it. I thought that with such a landmark change in California law, TIF would be difficult to reestablish in another form. With unanimous support from developers I interviewed, and considering SB 214 made it through the legislative process, only to be vetoed because of the recession and other political motives, I recommend reconsidering TIF in the future as a viable and valuable option to reduce VMT, and GHG emissions.

In addition to the interviews I conducted, there is evidence-supporting TIF as a politically acceptable way to reduce GHG. Even though Governor Brown recently vetoed SB 214, the League of California Cities (October 5, 2012) is optimistic that a similar bill will surface in the near future and have a good chance at becoming law. Governor Brown wanted to keep voters focused on his Proposition 30 (tax increase) and thought that expanding TIF would help Proposition 30 opponents, and also he wanted to ensure that RDAs did not re-emerge. Governor Brown's (2012) veto memo calls the bill premature, and states SB 214 would prevent the state from achieving the General Fund savings assumed in this year's budget League of California Cities indicated that rumors around the Capitol interpret the memo to be a politically charged message requesting patience. TIF, under the right circumstances is acceptable; just wait for the

right time. Experts believe that time is coming soon. The buzz around the Capitol is that IFDs will be back next year (P. Detwiler, personal communication, November 8, 2012).

Governor Brown abolished RDAs because they became too widespread, with over 400 RDAs in California in 2011. They were the tool of choice to finance many city and county improvements in California over the last several decades. Approximately 80% of cities in California had an associated RDA. Not only were they used excessively, but also critics accused them of being misused and not actually addressing blight, which was the initial justification for their existence. Here are the key differences necessary to make TIF for infill development a reality in the future in contrast to RDAs of the past: tax increment from schools, voluntary involvement (cities, counties, and special districts), and focus on infrastructure, not blight. The most harmful attribute of RDA was its redistribution of property tax increment dollars from schools to RDAs. The state General Fund would have to backfill the property tax revenues shifted away from schools, thus making redevelopment burdensome to state budgets. Leaving schools' portion of tax increment with schools is a critical piece of the viability and political acceptability of new iterations of TIF. For TIF to be politically acceptable, it must not take tax increment from schools. In addition, if cities and counties participation is voluntary for an Infrastructure Financing District (IFD) or Community Investment Projects, political acceptance is more likely. RDAs ran rampant for years because they were too easy to initiate. If cities and counties must work together to use TIF, the resulting projects are likely to be regionally beneficial and serve society better than RDA did. Another important difference is how to identify the primary justification for using TIF. Blight was RDAs' justification for using TIF. In the future, local officials should use TIF for infrastructure improvement projects that promote infill development and has regional significance, regardless of blight. If a future bill addresses these differences, TIF

can help promote infill development projects, reduce GHG emissions, and become politically acceptable.

Making the key changes mentioned above will make an improvement on political acceptability, but I also recommend the following strategies to attract additional support for TIF for infill development in future legislation: cross party lines by attracting Republican groups like the California Building Industry Association (CBIA) to cosponsor or publicly support the TIF infrastructure for infill development bill. This strategy will help draw essential Republican support. The CBIA made formal comments on SB 226 supporting the notion that infill development is both viable and valuable. The comment letter included the following, "there are significant health benefits just in producing infill." The CBIA supports this statement with the following research, by the American Lung Association, "Sustainable, mixed-use communities designed around mass transit, walking and cycling have been shown to reduce GHG, air pollution, and a range of adverse health outcomes…" (American Lung Association in California, Spring 2010.) CBIA supports efforts to promote infill development, as well as efforts to reform CEQA. A partnership between lawmakers and the CBIA for a new bill promoting TIF for infill development would be helpful.

Democrats already support the principle of TIF for infrastructure, so attracting both parties with this approach will be beneficial. In addition, another key to successfully passing new laws allowing TIF is connecting the dots for politicians who supported and helped pass SB 226 (Simitian, 2011). Linking IFDs for infill development to SB 226: CEQA Streamlining for Infill Development can help both political parties see how SB 226 logically links together with TIF used for infrastructure improvements for infill development projects. Both policies help reduce GHG emissions. SB 226 passed in 2011, so it is not that big of a stretch for their supporters to realize the link and support a new bill supplementing SB 226 by allowing greater flexibility for

TIF. With the strategies and changes I discussed for TIF, I believe it has a realistic chance to pass legislation and help reduce GHG emissions.

Although there are several barriers to infill development, one of the greatest is the high cost of updating out-dated or insufficient infrastructure. Allowing a mechanism that initiates government investment and public-private partnerships for infill development has the potential to ignite sustainable development in areas that promote walking, biking, and using public transportation. This technique will help reduce GHG emissions by reducing VMT for Californians, and set an example to other areas throughout to world.

I described earlier how to modify TIF to make it politically acceptable, now, I will discuss how to make it more effective. A new TIF bill should first, eliminate the two-thirds vote requirement to create an IFD under existing law. Though TIF is currently legal for IFD, only two projects have used it since its inception in 1990. Lowering the vote requirement to 55% instead of two-thirds will open more opportunities to use TIF. Then the bill should extend the 30-year tax increment limit to 40 years. Because of the lower increment obtained by excluding the approximately 50% school share compared to RDAs, longer timeframes will be necessary to bond for adequate amounts of money to cover infrastructure costs. Next, authorize the legislative body to not only create the IFD, but also to adopt a plan, and issue bonds without additional voting requirements. The law should authorize the IFD to finance specific actions that meet the SB 226 criteria to ensure it meets the goals of AB 32 and SB 375. SB 226 already established a grading system with defined criteria and performance standards that can be used for a new TIF law. If lawmakers link the new TIF law to SB 226, identifying qualifying projects will be simple. The proposed CEQA Guideline Section 15183.3 identifies the criteria for measuring a qualified infill project. I expect the new final proposed language to be implemented in the 2013 CEQA Guidelines by the Natural Resources Agency finalizing SB 226 changes. The new section states

the purpose of SB 226 as streamlining the environmental review process, along with specific eligibility requirements for infill projects. I included the proposed section in the appendix for reference.

Implementing the above mentioned strategies and using the new CEQA Guidelines to qualify an IFD will help ensure an efficient way to use TIF to help reduce GHG emissions as well as establish political support across party lines.

Implications of Recommendations

Several things would change if CEQA reform were able to create greater certainty for developers. The most significant change would be the total project cost for infill development decreasing with a shorter duration from time of land acquisition to sale or lease of finished units. In addition to decreasing costs, risk would also decrease and make investment more attractive. If NIMBYs had less power to manipulate the CEQA process, more infill projects would become feasible, thus reducing VMT and GHG emissions. This recommendation would have upfront costs related to pursuing and implementing a change in existing CEQA law, but once implemented no additional funding would be necessary to police or govern the enforcement.

TIF has the potential to initiate public-private partnerships that could lead to infill development in the most desirable locations within a city or county's General Plan. With a mechanism to finance major infrastructure projects, without burdening the specific project with the costs, the price of building infill projects could be reduced significantly, creating walkable, sustainable neighborhoods and contributing to the goals of AB 32 and SB 375. While this kind of subsidy would use public tax dollars to fund development, the benefits of supporting AB 32 goals would justify the reallocated funds. This option can change the way our cities grow in the future, lead to denser housing developments, and bring life back into struggling city centers, supporting

the goals of reducing GHG emissions. In the short term, this kind of policy will not have big impacts, but over the long run, our cities can change to be more sustainable.

Sample Size Limitations

Because I only interviewed a small sample of eight individuals, and because they are each from Northern California, there is bias in my sample. Using a small sample does not mean the information gathered is incorrect, it simply means it is incomplete, and there could be additional perspectives and ideas that I did not capture during my research. My sample does not include developers from every niche in the industry, nor does it include participants from every region in California. It would be useful to extend the size and scope of the sample to developers all over California from all kinds of development types. The valuable lesson learned was that even in a small group of industry professionals, opinions differ greatly, thus further complicating the challenging task of finding agreement on public policy. I would be interested to find if a larger sample leads to more agreement, or more disagreement regarding GHG reducing policies.

Future Research

Future research regarding GHG emissions and changing the way California develops in the years to come is undoubtedly present. I discovered three research projects during my study that I suggest for ambitious scholars. First is to better understand why so many people do not believe in global warming, and how to address it. Next, I recommend a study that analyzes the specific process involved in challenging a CEQA document in the court system, and propose a prescribed timeline to take the lawsuit to resolution (hopefully under a year). Third, I propose that others revisit my CAM analysis after the recession is over to see how the political environment changes.

Final Thoughts

Global warming and reducing GHG emissions must become a bigger priority for any significant change to occur. There is no single policy that can solve such a complex dilemma. In addition,

California cannot make any significant global impact to reduce GHG emissions without the help and support from other states and countries. The kind of change required is huge, perhaps the Holy Grail of the social sciences. Changing behavior through public policy without compromising quality of life, that is a daunting task. The behavior of excessive driving is so ingrained in American culture that many Americans cannot imagine life any other way. Part of the American Dream seems to be driving; everywhere we go, whenever we want, as much as we want, even if driving without a destination. Invoking such a behavioral change without compromising quality of life seems unthinkable. When Pucher and LeFevre (1996) studied transportation, they found that with increased income comes increased mobility and motorization. The only common thread that has led to less mobility in the last fifty years is poverty and decreased quality of life. So what do we do? We make tradeoffs, if we want a sustainable future, we change our behavior, we sacrifice VMT for higher density housing and mixed use development, or otherwise, we continue business as usual, exploit the environment, and continue down the path of climate change.

Fortunately, changing demographics and changing preferences may lead to a cleaner environment before a catastrophic event occurs. A recent report published by the Urban Land Institute concludes that Californians' housing preferences are changing rapidly. By directing new growth into neighborhoods that are close to jobs, shopping, and transit, we can help the housing market rebound and stimulate local economies, while preserving the environment (The New California Dream, Arthur C. Nelson 2011).

Baby boomers are beginning to move to city centers where they can find all the amenities they need without driving, because some of them cannot drive due to health issues. Additionally, younger generations prefer city environments more than previous generations, and prefer driving

less. Governments are investing in public transportation more now than in decades past. There is progress towards building a sustainable future.

I am optimistic that California can help thwart global warming, but I am also realistic. The change will take time. Short run changes are not likely to make huge impacts on global warming. But, changing development patterns and focusing on infill projects that encourage walking, biking, and public transit will help support the change required. And additionally, quality of life may not be compromised if everyone works together for a better future. I believe that with changing preferences and demographics, high density, mixed use, sustainable developments will become more attractive. I believe using public transportation can be for the masses, and not just the poor and disabled. And not just in New York City or San Francisco, but also in Sacramento, or Salt Lake City, where suburbs have thrived over the last several decades. I believe with a diversified effort of policy and planning, California can grow cleaner and more sustainable, while maintaining the American Dream.

Appendix A

Final Proposed New CEQA Guidelines - Section 15183.3 (Streamlining for Infill Projects)

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

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Proposed State CEQA Guideline Section 15183.3. Streamlining for Infill Projects

(a) Purpose. The purpose of this section is to streamline the environmental review process for eligible infill projects by limiting the topics subject to review at the project level where the effects of infill development have been addressed in a planning level decision or by uniformly applicable development policies.

(b) Eligibility. To be eligible for the streamlining procedures prescribed in this section, an infill project must:

(1) Be located in an urban area on a site that either has been previously developed or that adjoins existing qualified urban uses on at least seventy-five percent of the site's perimeter. For the purpose of this subdivision "adjoin" means the infill project is immediately adjacent to qualified urban uses, or is only separated from such uses by an improved public right-of-way;

(2) Satisfy the performance standards provided in Appendix M; and

(3) Be consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, except as provided in subdivisions (b)(3)(A) or (b)(3)(B) below.

(A) Only where an infill project is proposed within the boundaries of a metropolitan planning organization for which a sustainable communities strategy or an alternative planning strategy will be, but is not yet in effect, a residential infill project must have a density of at least 20 units per acre, and a retail or commercial infill project must have a floor area ratio of at least 0.75.

(B) Where an infill project is proposed outside of the boundaries of a metropolitan planning organization, the infill project must meet the definition of a small walkable community project in subdivision (e)(6), below.

(c) Streamlined Review. CEQA does not apply to the effects of an eligible infill project under two circumstances. First, if an effect was addressed as a significant effect in a prior EIR for a planning level decision, then, with some exceptions, that effect need not be analyzed again for an individual infill project even when that effect could not be reduced to a less than significant level. Second, an effect need not be analyzed, even if it was not analyzed in a prior EIR or is more significant than previously analyzed, if uniformly applicable development policies or standards, adopted by the lead agency or a city or county, apply to the infill project and would substantially mitigate that effect. Depending on the effects addressed in the prior EIR and the availability of uniformly applicable development policies or standards that apply to the eligible infill project, streamlining under this section will range from a complete exemption to an obligation to prepare a narrowed, project-specific environmental document. A prior EIR will be most helpful in dealing with later infill projects if it deals with the effects of infill development as

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specifically and comprehensively as possible. With a good and detailed analysis of such development, the effects of many infill projects could be found to have been addressed in the prior EIR, and no further environmental documents would be required.

(d) Procedure. Following preliminary review of an infill project pursuant to Section 15060, the lead agency must examine an eligible infill project in light of the prior EIR to determine whether the infill project will cause any effects that require additional review under CEQA. Determinations pursuant to this section are questions of fact to be resolved by the lead agency. Such determinations must be supported with enough relevant information and reasonable inferences from this information to support a conclusion, even though other conclusions might also be reached. (See Section 15384.)

(1) Evaluation of the Infill Project. A lead agency should prepare a written checklist or similar device to document the infill project's eligibility for streamlining and to assist in making the determinations required by this section. The sample written checklist provided in Appendix N may be used for this purpose. A written checklist prepared pursuant to this section should do all of the following:

(A) Document whether the infill project satisfies the applicable performance standards in Appendix M.

(B) Explain whether the effects of the infill project were analyzed in a prior EIR. The written checklist should cite the specific portions of the prior EIR, including page and section references, containing the analysis of the infill project's significant effects. The written checklist should also indicate whether the infill project incorporates all applicable mitigation measures from the prior EIR.

(C) Explain whether the infill project will cause new specific effects. For the purposes of this section, a new specific effect is an effect that was not addressed in the prior EIR and that is specific to the infill project or the infill project site. A new specific effect may result if, for example, the prior EIR acknowledged that sufficient site-specific information was not available to analyze that effect. Substantial changes in circumstances following certification of a prior EIR may also result in a new specific effect.

(D) Explain whether substantial new information shows that the adverse environmental effects of the infill project are more significant than described in the prior EIR. For the purpose of this section, "more significant" means an effect will be substantially more severe than described in the prior EIR. More significant effects include those that result from changes in circumstances or changes in the development assumptions underlying the prior EIR's analysis. An effect is also more significant if substantial new information shows that: (1) mitigation measures that were previously rejected as infeasible are in fact feasible, and such measures are not included in the project; (2) feasible mitigation measures considerably different than those previously analyzed could substantially reduce a significant effect described in the prior EIR, but such measures are not included in the project; or (3) an applicable mitigation measure was adopted in connection with a planning level decision, but the lead agency determines that it is not feasible for the infill project to implement that measure.

(E) If the infill project will cause new specific effects or more significant effects, the written checklist should indicate whether uniformly applicable development policies or standards will substantially mitigate those effects. For the purpose of this section, "substantially mitigate" means that the policy or standard will substantially lessen the effect, but not necessarily below the level of significance. The written checklist should specifically identify the uniformly applicable development policy or standard and explain how it will substantially mitigate the effects of the infill project. The explanation in the written checklist may be used to support the finding required in subdivision (d)(2)(D) below.

(2) Environmental Document. After examining the effects of the infill project in light of the analysis in any prior EIR and uniformly applicable development policies or standards, the lead agency shall determine what type of environmental document shall be prepared for the infill project.

(A) No Further Review. No additional environmental review is required if the infill project would not cause any new specific effects or more significant effects, or if uniformly applicable development policies or standards would substantially mitigate such effects. Where the lead agency determines that no additional environmental review of the effects of the infill project is required, the lead agency shall file a Notice of Determination as provided in Section 15094. Where the lead agency finds that uniformly applicable development policies substantially mitigate a significant effect of an infill project, the lead agency shall make the finding described in subdivision (d)(2)(D).

(B) Negative Declaration, Mitigated Negative Declaration or Sustainable Communities Environmental Assessment. If the infill project would result in new specific effects or more significant effects, and uniformly applicable development policies or standards would not substantially mitigate such effects, those effects shall be subject to CEQA. If a new specific effect is less than significant, the lead agency may prepare a negative declaration. If new specific effects or more significant effects can be mitigated to a less than significant level through project changes agreed to prior to circulation of the written checklist, the lead agency may prepare a mitigated negative declaration. In these circumstances, the lead agency shall follow the procedure set forth in Sections 15072 to 15075. Alternatively, if the infill project is a transit priority project, the lead agency may follow the procedures in Section 21155.2 of the Public Resources Code. In either instance, the written checklist should clearly state which effects are new or more significant, and are subject to CEQA, and which effects have been previously analyzed and are not subject to further environmental review. Where the lead agency finds that uniformly applicable development policies or standards substantially mitigate a significant effect of an infill project, the lead agency shall make the finding described in subdivision (d)(2)(D).

(C) Infill EIR. If the infill project would result in new specific effects or more significant effects, and uniformly applicable development policies or standards would not substantially mitigate such effects, those effects are subject to CEQA. With respect to those effects that are subject to CEQA, the lead agency shall prepare an infill EIR if the written checklist shows that the effects of the infill project would be potentially significant. In this circumstance, the lead agency

shall prepare an infill EIR as provided in subdivision (e) and, except as otherwise provided in this section, shall follow the procedures in Article 7. Where the lead agency finds that uniformly applicable development policies or standards substantially mitigate a significant effect of an infill project, the lead agency shall make the finding described in subdivision (d)(2)(D).

(D) Findings. Any findings or statement of overriding considerations required by Sections 15091 or 15093 shall be limited to those effects analyzed in an infill EIR. Findings for such effects should incorporate by reference any such findings made in connection with a planning level decision. Where uniformly applicable development policies or standards substantially mitigate the significant effects of an infill project, the lead agency shall also make a written finding, supported with substantial evidence, providing a brief explanation of the rationale for the finding.

(e) Infill EIR Contents. An infill EIR shall analyze only those significant effects that uniformly applicable development policies or standards do not substantially mitigate, and that are either new specific effects or are more significant than a prior EIR analyzed. All other effects of the infill project should be described in the written checklist as provided in subdivision (d)(1), and that written checklist should be circulated for public review along with the infill EIR. The written checklist should clearly set forth those effects that are new specific effects, and are subject to CEQA, and those effects which have been previously analyzed and are not subject to further environmental review. The analysis of alternatives in an infill EIR need not address alternative locations, densities, or building intensities. An infill EIR need not analyze growth inducing impacts. Except as provided in this subdivision, an infill EIR shall contain all elements described in Article 9.

(f) Terminology. The following definitions apply to this section:

(1) "Infill project" includes the whole of an action consisting of residential, commercial, retail, transit station, school, or public office building uses, or any combination of such uses that meet the eligibility requirements set forth in subdivision (b). For retail and commercial projects, no more than one half of the project area may be used for parking. "Transit station" means a rail or light-rail station, ferry terminal, bus hub, bus transfer station, or bus stop, and includes all streetscape improvements constructed in the public right-of-way within one-quarter mile of such facility to improve multi-modal access to the facility, such as pedestrian and bicycle safety improvements and traffic-calming design changes that support pedestrian and bicycle access.

(2) "Planning level decision" means the enactment or amendment of a general plan or any general plan element, community plan, specific plan, or zoning code.

(3) "Previously developed" means that a substantial portion of the site has been mechanically altered for purposes authorized in a local zoning code. Developed open space and parcels that are, or have been, in agricultural production shall not be considered to be previously developed for the purposes of this section.

(4) "Prior EIR" means the environmental impact report certified for a planning level decision, as supplemented by any subsequent or supplemental environmental impact reports, negative declarations, or addenda to those documents.

(5) "Qualified urban use" is defined in Public Resources Code Section 21072.

(6) "Small walkable community project" means a project that is all of the following:

(A) In an incorporated city that is not within the boundary of a metropolitan planning organization;

(B) Within an area of approximately one-quarter mile diameter of contiguous land that includes a residential area adjacent to a retail downtown area and that is designated by the city for infill development consisting of residential and commercial uses. A city may designate such an area within its general plan, zoning code, or by any legislative act creating such a designation, and may make such designation concurrently with project approval; and

(C) Either a residential project that has a density of at least eight units to the acre or a commercial project with a floor area ratio of at least 0.5, or both.

(7) The terms "sustainable communities strategy" and "alternative planning strategy" refer to a strategy for which the State Air Resources Board, pursuant to subparagraph (H) of paragraph (2) of subdivision (b) of Section 65080 of the Government Code, has accepted a metropolitan planning organization's determination that the sustainable communities strategy or the alternative planning strategy would, if implemented, achieve its greenhouse gas emission reduction targets.

(8) "Uniformly applicable development policies or standards" are policies or standards adopted or enacted by a city or county, or by a lead agency, that reduce one or more adverse environmental effects. Examples of uniformly applicable development policies or standards include, but are not limited to:

(A) Regulations governing construction activities, including noise regulations, dust control, provisions for discovery of archeological and paleontological resources, stormwater runoff treatment and containment, protection against the release of hazardous materials, recycling of construction and demolition waste, temporary street closure and traffic rerouting, and similar regulations.

(B) Requirements in locally adopted building, grading and stormwater codes.

(C) Design guidelines.

(D) Requirements for protecting residents from sources of air pollution including high volume roadways and stationary sources.

(E) Impact fee programs to provide public improvements, police, fire, parks and other open space, libraries and other public services and infrastructure, including transit, bicycle and pedestrian infrastructure and traffic calming devices.

(F) Traffic impact fees.

(G) Requirements for reducing greenhouse gas emissions, as set forth in adopted land use plans, policies, or regulations.

(H) Ordinances addressing protection of urban trees and historic resources.

(9) "Urban area" is defined in Public Resources Code Section 21094.5(e)(5).

Source: California Office of Planning and Research

Appendix B

Final Proposed New CEQA Guidelines – Appendix M (Performance Standards)

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

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***Proposed* Appendix M: Performance Standards for Infill Projects Eligible for Streamlined Review**

I. Introduction

Section 15183.3 provides a streamlined review process for infill projects that satisfy specified performance standards. This appendix contains those performance standards. The lead agency's determination that the project satisfies the performance standards shall be supported with substantial evidence, which should be documented on the Infill Checklist in Appendix N. Section II defines terms used in this Appendix. Performance standards that apply to all project types are set forth in Section III. Section IV contains performance standards that apply to particular project types (i.e., residential, commercial/retail, office building, transit stations, and schools).

II. Definitions

The following definitions apply to the terms used in this Appendix.

"High-quality transit corridor" means an existing corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. For the purposes of this Appendix, an "existing stop along a high-quality transit corridor" may include a planned and funded stop that is included in an adopted regional transportation improvement program.

Unless more specifically defined by an air district, city or county, "high-volume roadway" means freeways, highways, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.

"Low vehicle travel area" means a traffic analysis zone that exhibits a below average existing level of travel as determined using a regional travel demand model. For residential projects, travel refers to either home-based or household vehicle miles traveled. For commercial and retail projects, travel refers to average non-work attraction trip length; however, where such data are not available, commercial projects reference either home-based or household vehicle miles traveled. For office projects, travel refers to commute attraction vehicle miles traveled per employee; however, where such data are not available, office projects reference either home-based or household vehicle miles traveled.

"Major Transit Stop" means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with frequencies of service intervals of 15 minutes or less during the morning and afternoon peak commute periods. For the purposes of this Appendix, an "existing major transit stop" may

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include a planned and funded stop that is included in an adopted regional transportation improvement program.

"Office building" generally refers to centers for governmental or professional services; however, the lead agency shall have discretion in determining whether a project is "commercial" or "office building" for the purposes of this Appendix based on local zoning codes.

"Significant sources of air pollution" include airports, marine ports, rail yards and distribution centers that receive more than 100 heavy-duty truck visits per day, as well as stationary sources that are designated major by the Clean Air Act.

A "Traffic Analysis Zone" is an analytical unit used by a travel demand model to estimate vehicle travel within a region.

III. Performance Standards Related to Project Design

To be eligible for streamlining pursuant to Section 15183.3, a project must implement all of the following:

Renewable Energy. All non-residential projects shall include on-site renewable power generation, such as solar photovoltaic, solar thermal and wind power generation, or clean back-up power supplies, where feasible. Residential projects are also encouraged to include such on-site renewable power generation.

Soil and Water Remediation. If the project site is included on any list compiled pursuant to Section 65962.5 of the Government Code, the project shall document how it has remediated the site, if remediation is completed. Alternatively, the project shall implement the recommendations provided in a preliminary endangerment assessment or comparable document that identifies remediation appropriate for the site.

Residential Units Near High-Volume Roadways and Stationary Sources. If a project includes residential units located within 500 feet, or other distance determined to be appropriate by the local agency or air district based on local conditions, of a high volume roadway or other significant sources of air pollution, the project shall comply with any policies and standards identified in the local general plan, specific plan, zoning code or community risk reduction plan for the protection of public health from such sources of air pollution. If the local government has not adopted such plans or policies, the project shall include measures, such as enhanced air filtration and project design, that the lead agency finds, based on substantial evidence, will promote the protection of public health from sources of air pollution. Those measures may include, among others, the recommendations of the California Air Resources Board, air districts, and the California Air Pollution Control Officers Association.

IV. Additional Performance Standards by Project Type

In addition to the project features described above in Section III, specific eligibility requirements are provided below by project type.

Several of the performance standards below refer to "low vehicle travel areas". Such areas can be illustrated on maps based on data developed by the regional Metropolitan Planning Organization (MPO) using its regional travel demand model.

Several of the performance standards below refer to distance to transit. Distance should be calculated so that at least 75 percent of the surface area of the project site is within the specified distance.

A. Residential

To be eligible for streamlining pursuant to Section 15183.3, a project must satisfy one of the following:

Projects achieving below average regional per capita vehicle miles traveled (VMT). A residential project is eligible if it is located in a "low vehicle travel area" within the region.

Projects located within ½ mile of an Existing Major Transit Stop or High Quality Transit Corridor. A residential project is eligible if it is located within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor.

Low-Income Housing. A residential project consisting of 100 or fewer units all of which are affordable to low income households is eligible if the developer of the development project provides sufficient legal commitments to the lead agency to ensure the continued availability and use of the housing units for lower income households, as defined in Section 50079.5 of the Health and Safety Code, for a period of at least 30 years, at monthly housing costs, as determined pursuant to Section 50053 of the Health and Safety Code.

B. Commercial/Retail

To be eligible for streamlining pursuant to Section 15183.3, a project must satisfy one of the following:

Regional Location. A commercial project with no single-building floor-plate greater than 50,000 square feet is eligible if it locates in a "low vehicle travel area."

Proximity to Households. A project with no single-building floor-plate greater than 50,000 square feet located within one-half mile of 1800 households is eligible.

C. Office Building

To be eligible for streamlining pursuant to Section 15183.3, a project must satisfy one of the following:

Regional Location. Office buildings, both commercial and public, are eligible if they locate in a low vehicle travel area.

Proximity to a Major Transit Stop. Office buildings, both commercial and public, within ¼ mile of an existing major transit stop are eligible.

D. Transit

Transit stations, as defined in Section 15183.3(e)(1), are eligible.

E. Schools

Elementary schools within one mile of fifty percent of the projected student population are eligible. Middle schools and high schools within two miles of fifty percent of the projected student population are eligible. Alternatively, any school within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor is eligible.

Additionally, in order to be eligible, all schools shall provide parking and storage for bicycles and scooters and shall comply with the requirements in Sections 17213, 17213.1 and 17213.2 of the California Education Code.

F. Small Walkable Community Projects

Small walkable community projects, as defined in Section 15183.3, subdivision (e)(6), that implement the project features described in Section III above are eligible.

G. Mixed-Use Projects

Where a project includes some combination of residential, commercial and retail, office building, transit station, and/or schools, the performance standards in this Section that apply to the predominant use shall govern the entire project.

Source: California Office of Planning and Research

References

Altmaier, M., E. Barbour, C. Eggleton, J. Gage, J. Hayter, and A. Zahner (2009). *Make it Work: Implementing Senate Bill 375.* Center For a Sustainable California, Institute of Urban and Regional Development, University of California, Berkeley.

At: http://sustainablecalifornia.berkeley.edu/pubs/SB375-FULLREPORT.pdf

American Lung Association in California. (Spring 2010) *Improving public health and combating climate change through sustainable land use and transportation planning*. Land Use, Climate Change & Public Health Issue Brief.

At: http://www.lungusa.org/associations/states/california/assets/pdfs/sb-375_issue-brief_final.pdf

American Planning Association. (2011 April 11) *Policy Guide on Planning and Climate Change.*

At: http://www.planning.org/policy/guides/pdf/climatechange.pdf

Arrington, G. B., and Cervero R. (2008) Effects of TOD on Housing, Parking, and Travel. Transit Cooperative Research Program Report 128. *Washington, DC: Transportation Research Board*.

Assembly Billx1 26 (Blumenfield, 2011)

At: http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab_0001-0050/abx1_26_bill_20110629_chaptered.html

Assembly Bill 32 (Pavley, 2006)

At: http://www.arb.ca.gov/cc/ab32/ab32.htm

Assembly Bill 710 (Skinner, 2011)

At: http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab_0701-0750/ab_710_cfa_20110426_104706_asm_comm.html

Assembly Bill 904 (Skinner, 2012)

At: http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab_0901-0950/ab_904_bill_20120111_amended_asm_v95.html

Baldassare, M., Bonner, D., Petek, S., and Willcoxon, N. (2010) Californians and the Environment. PPIC Statewide Survey. *San Francisco: Public Policy Institute of California.* At: www.ppic.org/content/pubs/survey/S_710MBS.pdf.

Bardach, E. (2000). *A Practical Guide for Policy Analysis.* New York: Chantham House Publishers of Seven Bridges Press, LLC.

Bartholomy, P., Bemis, G., Barkalow, G., McKeever, N., Phinney, S., Silvas J., and Vinton, J. (2007) The Role of Land Use in Meeting California's Energy and Climate Change Goals. *California Energy Commission*. CEC-600-2007-008-SR.

Barkalow, G. Bemis, G. McKeever N. Phinney, S. D.Env.Vinton, J. (2007 June 26) The role of land use in meeting California's energy and Climate Change Goals. *Special Projects Office;Fuels and Transportation Division California Energy Commission.* Presented at: Sacramento, California

Bedsworth, L., Hanak, E. and Stryjewski, E. (2011) *Views from the Street: Linking Transportation and Land Use.* At: www.ppic.org/main/publication.asp?i=946.

Bedsworth, L., Hanak, E. and Kolko, J. (2011) *Driving Change: Reducing Vehicle Miles Traveled in California.* At: www.ppic.org/main/publication.asp?i=948.

Begley, S. (2010 Feb. 22). Debunking Lomborg, the Climate-Change Skeptic. *Newsweek*. Retrieved on 2010-02-24. "Friel's conclusion, as per his book's title, is that Lomborg is "a performance artist disguised as an academic.""

Bell, J., Lederer, J., Leu, B., Lin, H., Ross, M., Sun, Y., Thakur, S., Travis, D. (2009, January) Emerging Trends in Sacramento's Economy. *Sacramento Business Review,* vol. 1, 52 p.

Boarnet, Marlon G. 2010. Planning, Climate Change, and Transportation: Thoughts on Policy Analysis. *Transportation Research Part A: Policy and Practice* 44 (8): 587–95.

Boykoff, (2011) Climate Change Skepticism. Guardian. http://www.guardian.co.uk/commentisfree/cifamerica/2011/may/20/climate-change-climate-change-scepticism

Brown, E. (2012, September 29) Veto Memorandum. Office of the Governor. At: http://gov.ca.gov/docs/SB_214_Veto_Message.pdf

Bureau of Labor Statistics (2012) State Unemployment Rates. *United States Department of Labor*. At: http://www.bls.gov/lau/

California Air Pollution Control Officers Association (2009 July) *Health Risk Assessments for Proposed Land Use Project*. At: http://www.capcoa.org/wpcontent/uploads/downloads/2010/05/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf

California Air Resources Board (2005) *Air Quality and Land Use Handbook: A Community Health Perspective.* Sacramento: California Environmental Protection Agency. At: www.arb.ca.gov/ch/handbook.pdf.

California Air Resources Board. (2008) *Climate Change Scoping Plan: A Framework for Change, Pursuant to AB 32 the California*. Global Warming Solutions Act of 2006 Sacramento: California Environmental Protection Agency.

California Air Resources Board. (2010, October 28). Proposed Regulation to Implement the California Cap-and-Trade Program. *Staff Report: Initial Statement of Reasons*. Appendix F, Compliance Pathways Analysis. At: http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_by_ipcc

California Air Resources Board. 2010. Staff Report: Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375. Sacramento: California Environmental Protection Agency.

California Department of Transportation. (2002) Statewide Transit-Oriented Development Study: Factors for Success in California. Final report. At: www.dot.ca.gov/hq/MassTrans/Docs-Pdfs/TOD-Study-Final-Rpt.pdf.

California Energy Commission. (2005) *Global Climate Change: Trends and Policy Issues* 3-3-05.

California Infill Builders Association. (2012) The Top Roadblocks to Infill Development in California. *The California Infill Bulders Association.* At: http://www.infill-builders.org/pdfs/Roadblocks-226-Letter.pdf

California Governor's Office of Planning and Research. (2012) *CEQA Streamlining for Infill Projects (SB 226).* OPR Resources. At: http://opr.ca.gov/s_sb226.php

Cammarota, N. (2012) *Comment Letter, Re: SB 226 Revised Proposed Guidelines*. California Building Industry Association. At: http://opr.ca.gov/docs/226_CBIA_2.pdf

Cervero, R., et al. (2004) Transit-Oriented Development in the United States: Experiences, Challenges, Prospects. Trans it Cooperative Research Program Report 102. *Washington, DC: Transportation Research Board.*

Cervero, R. (2008) *Vehicle Trip Reduction Impacts of Transit-Oriented Housing.* At: http://www.nctr.usf.edu/jpt/pdf/JPT11-3Cervero.pdf

Cowen, R. (2010) *Senator Rockefeller seeks EPA carbon rule delay*. Reuters. At: http://www.reuters.com/article/2010/03/04/us-climate-usa-congress-idUSTRE62142T20100304

Chandrasekhar, C.P., (2008, October 18) "The Problem as Solution", *Economic & Political Weekly,*p. 29-31.

Dahlgren, J. (1998) High Occupancy Vehicle Lanes: Not Always More Effective Than General Purpose Lanes. *Transportation Research Part A: Policy and Practice* 36 (3): 239–55.

Dahlgren, J. (2002) High-Occupancy/Toll Lanes: Where Should They Be Implemented? *Transportation Research Part A: Policy and Practice* 32 (2): 99–114.

Deakin, E., Harvey, Pozdena, and Yarmena. (1996) Transportation Pricing Strategies for California: An Assessment of Congestion, Emissions, Energy, and Equity Impacts. *Sacramento: California Air Resources Board.*

Downs, A. (2005). *Smart Growth, Why We Discuss It More than We Do It.* Journal of the American Planning Association. vol. 71 (No. 4), p. 367-380.

Duany, A. (2009). *Beyond Counting Carbon; Making Money, Food, and Neighborhoods, Sustainable Community Strategies for Leveraging California's SB375.* Sacramento. http://sacramento.granicus.com/MediaPlayer.php?publish_id=50

Elkind, E. & Stone, Michael S. (2006) Falling Flat: Why the CEQA Affordable Housing Exemptions Have Not Been Effective, *UCLA/Frankel Working Paper #2*. Spring 2006. At:http://cdn.law.ucla.edu/SiteCollectionDocuments/environmental%20law/falling%20flat%20%28frankel%20working%20paper%202%29.pdf

Elkind, E. (2010 July) *Plan for the Future: How Local Governments Can Help Implement California's New Land Use and Climate Change Legislation*. At: http://www.law.ucdavis.edu/centers/environmental/files/Planning.pdf

Elkind, E. (2009 Aug.) *Removing the Roadblocks: How to Make Sustainable Development Happen Now.* At:http://www.law.berkeley.edu/files/Removing_the_Roadblocks_August_2009.pdf

Ewing, R. (1999) *Pedestrian and Transit Friendly Design: A Primer for Smart Growth.* At: http://www.epa.gov/smartgrowth/pdf/ptfd_primer.pdf

Ewing, R., Bartholomew, K., Winkelman, S., Walters, J., Chen, D. (2008) *Growing Cooler: The Evidence on Urban Development and Climate Change,* Urban Land Institute. At: http://www.smartgrowth.umd.edu/pdf/GrowingCooler-Ch1Overview.pdf

Ewing, R., and Cervero. (2001) Travel and the Built Environment: A Synthesis. *Transportation Research Record* 1780. 87–114.

Ewing, R., Pendall, R., & Chen, D. (2002) Measuring Sprawl and Its Impact. *Smart Growth America.*

Ewing, R., and Cervero. (2010) Travel and the Built Environment. *Journal of the American Planning Association*76 (3): 265–94.

Ewing, R., and Nelson, A. (2008) *CO2 Reductions Attributable to Smart Growth in California.* College Park: University of Maryland. At: www.climateplanca.org /ewing_analysis.pdf.

Ewing, R., Schmidt, Killingsworth, Zlot, and Raudenbush. (2003) Relationship Between Urban Sprawl and Physical Activity, Obesity, and Morbidity. *American Journal of Health Promotion* 18 (1): 47–57.

Goodstein, E. (2007) Hot Air, Global Warming Is Not As Bad As It's Made Out To Be. *Salon.* At: http://www.salon.com/2007/08/29/cool_it/

Hanak, E., and Barbour. (2005) Sizing Up the Challenge: California's Infrastructure Needs and Tradeoffs. *Occasional Paper*. San Francisco: Public Policy Institute of California.

Hanak, E., and Rueben. (2006) Funding Innovations for California Infrastructure: Promises and Pitfalls. *USC Keston Institute for Infrastructure Research Paper Series*, Paper 06-01. Los Angeles: University of Southern California.

Hanak, E., Bedsworth, Malaczynski, and Swanbeck. (2008) *Climate Policy at the Local Level: A Survey of California's Cities and Counties.* At: www.ppic.org/content/pubs/report/R_1108EHR.pdf.

Harder, A. (2011) *What Should Congress Do With EPA's Carbon Rules?*. National Journal. At: http://energy.nationaljournal.com/2011/02/what-should-congress-do-with-e.php

Heminger, Steve, Hasan Ikhrata, Gary Gallegos, and Mike McKeever. (2010) *Memorandum to Lynn Terry, Deputy Executive Officer, California Air Resources Board, Re: Preliminary Report on Metropolitan Planning Organization (MPO)/Air Resources Board (ARB) Senate Bill 375 (SB 375) Target Setting Analysis*. At: www.arb.ca.gov/cc/sb375/mpo/prelimreport.mtc.sacog.sandag.scag.pdf.

Horowitz, C. (2011) Latest polling data on climate change and political parties. *Legal Planet.* At: http://legalplanet.wordpress.com/2011/09/07/latest-polling-data-on-climate-change-and-political-parties/

Hu, Patricia, and Timothy Reuscher. (2004) *Summary of Travel Trends: 2001 National Household Travel Survey.* Washington, DC: U.S. Department of Transportation. At: http://nhts.ornl.gov/2001/pub/STT.pdf.

Hughes, Jonathan E., Christopher R. Knittel, and Daniel E. Sperling. (2008) Evidence of a Shift in the Short-Run Price Elasticity of Gasoline Demand. *The Energy Journal* 29 (1): 93–114.

ICF International. (2011, January 21) *CEQA and Climate Change: An In Depth Update*. UC Davis Extension, Sacramento, CA (00028.11).

Inhofe, J., (2006) *A Skeptics Guide to Debunking Global Warming*. Senate Floor Speech Delivered Monday September 25, 2006. At:http://epw.senate.gov/repwhitepapers/6345050%20Hot%20&%20Cold%20Media.pdf

Jenson, R. (2011, May 26) *California TIFs May Be the New RDAs*. The Bond Buyer. At: http://www.bondbuyer.co/issues/120_102/-1027142-1.html

Kantor, S. Ph.D. (2010 Aug.) *The Financial and Institutional Challenges to Smart Growth Implementation: A Focus on California's Central Valley*. U.C. Merced. At:http://www.fresnocog.org/files/Blueprint/The%20Financial%20and%20Institutional%20Challenges%20to%20Smart%20Growth%20Implementation%20A%20Focus%20on%20Californias%20Central%20Valley.pdf

Kenworthy, J., Newman, P. (1999). *Sustainability and Cities: Overcoming Automobile Dependence: Overcoming Automobile Dependence*. Washington: Island Press.

Kolko, Jed. (2011) *Making the Most of Transit: Density, Employment Growth, and Ridership Around New Stations.* At: www.ppic.org/main/publication.asp?i=947.

Kuzmyak, J. Richard. (2012 March) *Land Use and Traffic Congestion*. At: http://www.azdot.gov/TPD/ATRC/publications/project_reports/PDF/AZ618.pdf

Landis, J. (2005 Sept.) *The Future of Infill Housing in California: Opportunities, Potential, Feasibility and Demand*, Volumes 1 and 2. At: http://communityinnovation.berkeley.edu/reports/Future_of_Infill_Vol_1.pdf; http://communityinnovation.berkeley.edu/reports/Future_of_Infill_Vol_2.pdf

League of California Cities. (2011) Proposition 26 Implementation Guide. *League of California Cities.* At: http://www.cacities.org/UploadedFiles/LeagueInternet/76/76adbe58-ba68-4aac-95a8-94ebcba43425.pdf

League of California Cities. (2012) SB 214 (Wolk) Is Most Useful Tool on Governor's Desk for Infrastructure Development. *League of California Cities.* At: http://www.cacities.org/Top/News/News-Articles/2012/September/SB-214-(Wolk)-Is-Most-Useful-Tool-on-Governor%E2%80%99s-De

League of California Cities. (2012) SB 214 (Wolk) Veto Message on Infrastructure-Related Bills Point to Revisiting Issue in 2013. *League of California Cities.* At: http://www.cacities.org/Top/News/News-Articles/2012/October/Veto-Messages-on-Infrastructure-Related-Bills-Poin

Legislative Analyst's Office. (2002) *A Commuter's Dilemma: Extra Cash or Free Parking?* At: www.lao.ca.gov/2002/parking/031802_cash_or_parking.pdf.

Legislative Analyst's Office. (2007) *"California Travels: Financing Our Transportation."* At: www.lao.ca.gov/2000/051100_cal_travels/051100_cal_travels.pdf.

Legislative Analyst's Office. (2011) *The 2011–12 Budget: Achieving General Fund Relief from Transportation Funds.* At: http://lao.ca.gov/analysis/2011/transportation /tax_swap_012511.pdf.

Leinberger, C. B. (2009). *The Option of Urbanism: Investing in a New American Dream.* Washington, DC: Island Press.

Local Government Commission, et al. (2003 Sept.) *Creating Great Neighborhoods: Density in Your Community.* At: http://www.epa.gov/smartgrowth/pdf/density.pdf

Lomborg (2001) *The Skeptical Environmentalist*. Cambridge University Press.

Lomborg (2007) *Cool It: The Skeptical Environmentalist's Guide to Global Warming*. Cyan and Marshall Cavendish.

Lund, H., Cervero, R. (2004 Jan.) *Travel Characteristics of Transit-Oriented Development in California*. At: http://www.bart.gov/docs/planning/Travel_of_TOD.pdf

McDonnell, S., Madar, J., &Vicki Been. (2009). Minimum Parking Requirements, Transit Proximity and Development in New York City (Working Paper). New York: Furman Center for Real Estate and Urban Policy, New York University. At: http://furmancenter.org/files/publications/Parking_Requirements_Submitted_TRB_resubmit_withrefF1.pdf

Miller, Jonathan D. (2011 Oct.) *Emerging Trends in Real Estate 2012*. Urban Land Institute and Price Waterhouse Coopers. At:http://www.uli.org/~/media/Documents/ResearchAndPublications/EmergingTrends/Americas/2012/ET_US2012.ashx

Moore, Adrian T., Samuel R. Staley, and Robert W. Poole Jr. (2010) The Role of VMT Reduction in Meeting Climate Change Policy Goals. *Transportation Research Part A: Policy and Practice* 44 (8): 565–74.

Munger, M. (2000). *Analyzing Policy*. New York: W.W. Norton & Company, Inc.

National Complete Streets Coalition. (2010) *Complete Streets FAQ.* At: www.completestreets.org/complete-streets-fundamentals/complete-streets-faq/.

National Surface Transportation Infrastructure Financing Commission. (2009) Paying Our Way: A New Framework for Transportation Finance. *Washington, DC: U.S. Department of Transportation.*

Nelson, A. (2004) *Toward a New Metropolis: the Opportunity to Rebuild America*, Brookings Institution. At: http://www.brookings.edu/metro/pubs/20041213_RebuildAmerica.pdf

Nelson, A. (2006). *Leadership in a New Era*, Journal of the American Planning Association. vol. 72 (No. 4), p. 393-409.

Nelson, Arthur C. (2011) *The New California Dream: How Demographic and Economic Trends May Shape the Housing Market.* Washington, D.C.: Urban Land Institute, At:http://www.uli.org/ResearchAndPublications/~/media/ResearchAndPublications/Report/ULI%20Voices%20Nelson%20The%20New%20California%20Dream.ashx

Nelson\Nygaard Consulting Associates, Inc. (2007) *Metropolitan Transportation Commission Resolution 3434*. Transit-Oriented Development Policy, 2007 Evaluation.

Newurbanism.org. (n.d.) Principles of urbanism. *NewUrbanism.org.* At: http://www.newurbanism.org/newurbanism/principles.html

O'Sullivan, A. (2009) *Urban Economics.* Seventh Edition. McGraw-Hill Irwin.

Proposition 23 (2010) At: http://www.lao.ca.gov/ballot/2010/23_11_2010.aspx

Proposition 26 (2010) At: http://www.lao.ca.gov/ballot/2010/26_11_2010.aspx

Proposition 30 (2012) At: http://www.lao.ca.gov/ballot/2012/30_11_2012.aspx

Rodier, Caroline. (2009) Review of the International Modeling Literature: Transit, Land Use, and Auto Pricing Strategies to Reduce Vehicle Miles Traveled and Greenhouse Gas Emissions. *Transportation Research Record* 2132: 1–12.

Pucher, J., and Lefevre, C. (1996) *The Urban Transport Crisis in Europe and North America.* London: MacMillan Press Ltd.

Rose, Eliot. (2010) Working Harder to Grow Smarter: Overcoming Barriers to Senate Bill 375 Implementation. Professional Report, Department of City and Regional Planning, *University of California, Berkeley*

Rufolo, A. M., and T. J. Kimpel. (2009) Transit's Effect on Mileage Responses to Oregon's Experiment in Road Pricing. *Transportation Research Record* 2115: 60–65.

Salzman, R. (2010) *Pasadena, California:* Unlikely Home to an Innovative Parking Scheme. *Thinking Highways, North American Edition 5* (3). September/October.

Senate Bill 214 (Wolk, 2011)

At: http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0201-0250/sb_214_bill_20110208_introduced.pdf

Senate Bill 226 (Simitian, 2011)

At: http://leginfo.ca.gov/pub/11-12/bill/sen/sb_0201-0250/sb_226_bill_20111004_chaptered.pdf

Senate Bill 375 (Steinberg, 2008)

At: http://leginfo.ca.gov/pub/07-08/bill/sen/sb_0351-0400/sb_375_bill_20080930_chaptered.pdf

Shoup, D. (1999) The Trouble with Minimum Parking Requirements. *Transportation Research Part A: Policy and Practice* 33 (7–8): 549–74.

Shoup, D. (2004) The Ideal Source of Local Public Revenue. *Regional Science and Urban Economics* 34: 753–84.

Shoup, D. (2005) The High Cost of Free Parking. *Chicago: Planner's Press*.

Sovacool, B. K. and Barkenbus, J. N. (2007). Necessary but Insufficient State Renewable Portfolio Standards and Climate Change Policies. *Environment Magazine*, volume 49, number 6, pgs. 21-30.

State CEQA Guidelines (2012) California Code of Regulations, Title 14, Division 6, Chapter3, Sections 15000-15387. At: http://ceres.ca.gov/ceqa/docs/CEQA_Handbook_2012_wo_covers.pdf

Stern, H. (2008). A Necessary Collision: Climate Change, Land Use, and the Limits of AB 32. The Regents of the *University of California Ecology Law Quarterly*. 35. 611.

Sullivan, E. (1998) Evaluating the Impacts of the SR-91 *Variable-Toll Express Lane Facility.* Final report, submitted to California Department of Transportation. Available at http://ceenve3.civeng.calpoly.edu/sullivan/SR91/final_rpt/finalrep_full.pdf.

U.S. Environmental Protection Agency (2001 Jan.) *Our Built and Natural Environments: A Technical Review of the Interactions between Land Use, Transportation, and Environmental Quality Environments.* At: http://www.epa.gov/smartgrowth/pdf/built.pdf

U.S. Environmental Protection Agency (2007 Nov.) *Measuring the Air Quality and Transportation Impacts of Infill Development.* At: http://www.epa.gov/smartgrowth/pdf/transp_impacts_infill.pdf

U.S. Environmental Protection Agency. (2009). *EPA:* Greenhouse Gases Threaten Public Health and the Environment / Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity. *Washington, DC: Government Printing Office.*

U.S. Environmental Protection Agency. (2009, December 7). *Climate Change Facts: Answers to Common Questions*. US Environmental Protection Agency. At: http:www.epa.gov/climatechange/facts.html

U.S. Environmental Protection Agency (2010 Jan.) Residential Construction Trends in America's Metropolitan Regions. January 2010. At: http://www.epa.gov/smartgrowth/pdf/metro_res_const_trends_10.pdf

U.S. Department of Energy (1979, April 2) Annual Report.

Wassmer, R. (2002). *An Analysis of Subsidies and Other Options to Expand the Productive End Use of Scrap Tires in California.* California Integrated Waste Management Board. At: http://www.calrecycle.ca.gov/Publications/Documents/Tires%5C62002006.pdf