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AB 32 and SB 375: Investigating Land Use and Transportation Policy on a Regional and Local Scale

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Investigating Land use and Transportation policy on a regional and local scale

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INTRODUCTION

In September 2013 the United Nations officially decreed in the summary of their 5th Intergovernmental Panel on Climate Change (IPCC) that they are 95% certain the leading cause of climate change is human activity. Although the world has known about anthropogenic effects on environmental quality for years, this latest declaration is challenging to refute even to the most adamant global warming skeptic. The movement to save the earth has been active and growing for years, but overall people have been slow to change their polluting ways.

In response to insufficient national action, the state of California took initiative. In 2006 California led the United States with the release of *The Global Warming Solutions Act*, also known as *Assembly Bill 32* (AB 32), which requires a statewide reduction of greenhouse gases (GHGs) to 1990 levels by 2020 (ARB 2008). In addition *Executive Order S-03-5* signed by Arnold Schwarzenegger took emission goals even further by demanding statewide GHG emissions reductions by 80 percent below 1990 levels by 2050. A *Scoping Plan* was developed in 2008 to describe emission distribution in depth and to evaluate and suggest economically efficient strategies to achieve such ambitious goals.

In the *Scoping Plan* transportation and land use are easily identified as the most significant contributors to GHGs. In response to these large pollutants from vehicle exhaust, a follow-up piece of legislation was passed to support AB 32. *The Sustainable Communities and Climate Protection Act* of 2008 (SB 375), addresses transportation emissions by requiring GHG emissions reductions from California's 18 metropolitan planning organizations (MPOs) that must be set by the *California Air Resources Board* (ARB) (Steinberg 2008). Each MPO must prepare a *Sustainable Communities Strategy* (SCS) that will demonstrate how GHG reductions will be met. Before SB 375 each region had a *Regional Transportation Plan* (RTP) in addition to a

Regional Housing Needs Allocation (RHNA). SB 375 integrates land use, housing, and transit planning to achieve sustainable compact development. By combining these interrelated factors, development can be aimed at transit-orientated areas where housing can be closer to the work place and commercial hubs.

In order to achieve significant emission cuts by 2020 and 2050, land use planning and transportation are vitally important. According to the *Scoping Plan*, "without improved land use and transportation policy, California will not be able to achieve the goals of AB 32" (Steinberg 2008, 85). These goals, however, require a partnership between local and regional agencies in order to develop a sustainable future.

Local governments have an important role to play if California wishes to achieve reductions in the transportation and land use sector. At the local level, cities have the authority to plan, zone, approve and permit where and how land is developed. In addition they have authority over "transportation, housing, industry, forestry, water, agriculture, electricity and natural gas sectors" (Steinberg 2008, 27). Through climate action plans and ordinances, cities can come up with a wide arrangement of solutions to cut back on transit emissions, including new vehicle technology, low carbon fuel, and public transportation expansion.

Since the passage of AB 32, over 30 cities in California have agreed to adopt a climate action plan in order to help the state achieve its 2020 goals. In order to investigate regional and local action in sustainable development, I will be examining San Diego, San Francisco, Fresno, and Berkeley. These cities are part of the MPOs the *San Diego Association of Governments* (SANDAG), the *Metropolitan Transportation Commission* (MTC), and the *Council of Fresno County Governments* (CFOCG). As I concentrate on these four cities and their respective countries and regions, I will develop individual case studies highlighting the impact of AB 32

and SB 375 on land use and transportation. By analyzing each city and its related MPO I will be able to determine the effect of these state orders on local situations. During this process I will focus on imminent questions: How exactly has SB 375 altered land use and transportation policy on a local scale? Will government intervention facilitate local action in reaching transportation and emission goals set by the state? What are the difficulties in meeting local emission goals? Do the government and state help or hinder this process providing guidelines or limitations? Moreover, these case studies will investigate the power dynamics at the state, regional and local level.

I will review the evidence through the four case studies of San Diego, San Francisco, Fresno and Berkeley. Three of the cities happen to be the most populous in California and one of them is one of the most polluted in the state. Although Berkeley is significantly less populated than the rest, it presents a good take on the abilities of smaller regions to comply with government action. In addition, Berkeley is an example of how GHG emissions are addressed on a small scale and of the capabilities of local action. Overall, these cities are among the most influential cities in the state. Using the *Scoping Plan* and SB 375, all four of them have created new regulations via climate plans. However, progress is slow despite stated strategies of compliance. Local governments must do their share in order for California to have a chance of reaching its state targets in a plausible future. No matter how hard citizens strive in their steps towards their shared goals, it is local government which holds the ultimate control over vehicular miles traveled and personal decisions to pollute.

The case studies presented will demonstrate how regional MPOs and local governments have responded to SB 375. Each city/county has its own complications with the new bills and there are some disputes over power. While each place would ideally like to develop sustainably,

existing laws and lack of funding deem changes unfeasible. Sometimes there is tension between local government and state regulation. Despite disputes, San Diego, San Francisco, and Berkeley have all engaged in the SCS process with Fresno soon to follow. The case studies will show complications of SB 375 and how local governments are adhering to the new bill.

LIST OF ABBREVIATIONS

AB 32	The Global Warming Solutions Act of 2006
ABAG	The Association of Bay Area Governments
APS	Alternative Planning Strategy
ARB	California Air Resources Board
BART	Bay Area Rapid Transit
CEQA	California Environmental Quality Act
CFOCG	Council of Fresno County Governments
COG	Council of Government
EIR	Environmental Impact Report
GHG	Greenhouse Gas
LCFS	Low Carbon Fuel Standard
MPO	Metropolitan Planning Organization
MTC	Metropolitan Transportation Commission
PDA	Priority Development Area
RHNA	Regional Housing Needs Allocation
RTP	Regional Transportation Plan
SANDAG	San Diego Association of Governments
SB 375	The Sustainable Communities and Climate Protection Act of 2008
SCS	Sustainable Communities Strategy
TPP	Transit Priority Project
VMT	Vehicular Miles Traveled

CHAPTER I

Assembly Bill 32 and Senate Bill 375

Assembly Bill 32

Ever since the green movement kicked off in the United States in the mid 20th century, California has strived to do its part for the environment. Policy and regulation have been slow on a state level but in 2006 California finally chose to step up and passed *The Global Warming Solutions Act*, also known as AB 32. This assembly bill, signed into action by governor Arnold Schwarzenegger, set a major goal for California: to reduce statewide GHG emissions to 1990 levels by 2020. The Executive Order S-03-5 later added reducing emissions 80 percent below 1990 levels by 2050. To reach such ambitious goals *The California Air Resources Board* (ARB), the group in charge of the effective implementation of AB 32, created a *Scoping Plan* in 2008. This plan outlines a detailed arrangement of strategies to not only reach California's goals but to do so in a cost-effective manner with the best technology available (ARB *et al. 2008).*

The *Scoping Plan* developed in 2008 contains as assortment of strategies combining market mechanisms, regulations, voluntary measures, and fees to address emissions in electricity generation, industry, waste, recycling, transportation, and more. These efforts, however, can only be accomplished through a joint collaboration across jurisdictions. Therefore, this plan in support of AB 32 stresses the importance of local governments acting as leaders in implementing the goals. The scoping plan strongly encourages localities to adopt climate action plans and reduce their emissions locally by at least 15 percent (Toolkit). Cities exercise a broad influence and often hold exclusive authority over the process through planning, granting of permits, local ordinances, and municipal operations. AB 32 stresses the vital role of local governments as partners but direct action from localities is not explicitly required by this piece of legislation.

Senate Bill 375

Since the mid 20th century with the increasing popularity of the automobile, California has been known for its suburban sprawl. Over the past 50 years suburbs have expanded more than urban areas (Kahn 2006). As a consequence of people moving away from the city, the reliance on highways and the automobile grew exponentially. Instead of encouraging smart development, laws promoted sprawl and encouraged driving. Many studies have shown that per-capita emissions of GHGs rise as one moves away from urban areas; "low-density development, particularly in the South, is associated with far more carbon dioxide emissions than higher density construction." (Glaeser and Kahn 2008, 2). People in the suburbs tend not only to drive more but also occupy larger homes that use more energy.

Over the years this problem has contributed significantly to the amount of GHGs (primarily CO_2) released into the atmosphere. Although there is no clear social cost of carbon emissions, it is high in impacting human health and the climate (Glaeser and Kahn 2008). The transportation sector of California alone creates around 40 percent of its total dirty emissions from cars, and light duty trucks emit another 30 percent in that sector (Transbay 2008).

Aware of this growing problem, California made its first attempt to combat sprawl in 2002 by passing AB 857. This bill was a weak attempt to encourage transit-oriented development across the state. The idea of reduction was there, but the bill lacked authority and was easily sidestepped by local governments (Transbay 2008).

To address this problem more efficiency SB 375 was passed on September 30th, 2008. The ARB uses this bill to directly support the goals of AB 32. SB 375's primary goal is to reduce GHG, and attempts to do so by providing a new vision for land use planning. In 2008 Schwarzenegger stated, "This legislation constitutes the most sweeping revision of land-use

policies since Governor Ronald Reagan signed the *California Environmental Act*" (Fulton 2008). Before SB 375, regional planning in California was fairly disjointed with separate legal frameworks for housing, transit and the environment (Transbay 2008). SB 375 combines these related elements and puts sustainable development more in sync.

SB 375 follows three major strategies to address emissions from automobiles. The first two promote the continued implementation of the "Pavley" standard and the *Low Carbon Fuel Standard* (LCFS). The "Pavley" regulation, also known as Assembly Bill 1493, was first passed in 2002 to reduce GHGs from passenger vehicles. The LCFS, issued in 2007, aims to reduce carbon content in transportation fuels (Fulton 2008). This directive calls for a 10 percent emission reduction by 2020. Tailpipe emissions are included in these reductions, as are emissions from the production and distribution of transport fuels within California. It is the state's hope that both AB 1493 and the LCFS will reduce emissions by at least 45 million metric tons of CO_2 equivalent ($MMTCO_2e$) in their adjusted emissions by 2020 (Transbay 2008).

SB 375 adds a third component to these already existing strategies. Instead of exclusively addressing the carbon emissions of the vehicles themselves, SB 375 aims to address human behavior. This new approach targets a reduction in driving. Through altering people's behaviors this component of AB 32 will reduce total VMT substantially state-wide. ARB aims for a reduction in sprawl development which could lead to a reduction of VMT, equivalent to at least 5 $MMTCO_2e$ by 2020 (Transbay 2008).

The state of California is divided into 18 transportation regional zones which are directly impacted by SB 375. Federal law requires all urbanized areas with 50,000 people or more to be part of a MPO region. There are 18 MPOs in California varying widely in size, with some comprising only one or two counties and others encompassing as many as nine. All MPOs have a

Regional Transportation Plan (RTP) and are responsible for funding the operation and maintenance of the transportation system in their jurisdiction (Barbour and Denkin 2012).

As part of the RTP and in accordance with SB 375, ARB requires each MPO to prepare a SCS to lower emissions. The intention behind an SCS is to promote more compact development and alternative transportation choices. VMT and GHGs would be reduced while accommodating regional growth. In 2010 ARB established emissions goals for each MPO to accomplish by 2020 and 2035, with reviews and updates as needed. The SCS covers land use and housing in addition to transportation since all three elements are crucial to meet set targets. SCS's have already been adopted for the regions covering San Diego and the Bay Area (including San Francisco and Berkeley) (Transbay 2008). The SCS covering Fresno, however, is still in progress. Should the ARB not approve of the region's proposal or find it unable to meet ARB's target then an *Alternative Planning Strategy* (APS) must be established. This regulation, however, will be a separate document from the RTP. Essentially it will be a guide to further investments, policies, and changes needed to meet the assigned emissions target (Cohen 2013).

One major part of the SB 375 is its aim to combine RHNA allocation already in place in California with each region's RTP. This alignment is crucial since it recognizes the relationship between transportation and housing development. This new partnership requires each MPO to accommodate all future populations, which will ideally address both the housing and job imbalance and discourage sprawl within the MPO. Under this new law the State will not tolerate cities limiting new housing units and will set higher allocations under the SCS. If cities do not comply, they risk losing essential state and federal grants. Another stipulation states that "housing allocations will be designed to implement the forecasted development pattern in the SCS, rather than according to the older 'fair share' standard" (Transbay 2008, 4). Under these

older laws ‘fair share’ allocation was determined by growth rates in households, socioeconomic status measures, and carrying capacity for new housing. There were no criteria emphasizing development in PDAs for sustainable development (Lewis 2003). Under SB 375, new housing allocations must be consistent with an MPO’s vision for VMT reduction or they will not be funded. Under RTP both housing and transportation planning are put on the same schedule to be updated. Failure to do so will result in a shorter deadline for future updates (Barbour and Denkin 2012).

Although state authority mandates that all MPOs must develop an SCS with the RHNA allocation as part of their RTP, local governments still hold significant power since they are not actually required to participate. During the authorship of SB 375, local government lobbyists made sure there was language inserted in SB 375 that would not supersede local authority. As a result of these efforts, SB 375 does not require local governments to adjust their general plans to be consistent with the SCS in their jurisdiction. The state, however, has authority over housing and can require further development of new housing units. Through RHNA local governments must adjust their Housing Element and rezone to accommodate for their housing assignment. The state will not tolerate limiting growth by cutting back on developing new housing units, especially units designed for lower-income families. If a local government fails to conduct its RHNA zoning within three years after adopting the Housing Element it will be subject to potential court sanctions. Additionally, a local government will not be able to disapprove of housing project proposals that adhere to its General Plan. Furthermore, if the deadline for adopting the Housing Element is passed by 120 days or more, the local government will be required to update its Housing Element every 4 years instead of 8 (Transbay 2008). These penalties exist to ensure local governments do not have the mentality that limiting housing units

is beneficial towards sustainable development. Each city has a responsibility to accommodate their set housing allocation and can still maintain neighborhood quality and character even with expansion.

While actual mandates may be rather limited, SB 375 provides strong incentives for local governments to cooperate with the new planning process. Under the SCS, the most power for transportation funding decisions is granted to the MPOs. There are very strong incentives for local governments to comply with SCS codes in order to be eligible for federal funding. Any city that does not comply with the SCS standards and threatens to increase sprawl or VMT will not be funded by the regional MPO (Transbay 2008). This issue will clearly be reflected in the case study of San Diego, which was sued for implementing an SCS that would actually increase sprawl and VMT over time.

The state goes a step further in incentivizing cities to work toward their regional SCS goal. In 1970 the *California Environmental Quality Act* (CEQA) was passed mandating environmental protection at the state level. Under this statute any new developments that could have a potentially significant impact on the environment, such as transportation and development projects, became subject to an *Environmental Impact Report* (EIR). However, adhering to CEQA's standards can be difficult and oftentimes costly (CERES 2007).

To motivate compact development, SB 375 created a new category for projects called *Transit Priority Projects* (TPP). If a TPP project adheres to a long list of criteria it can be exempt from CEQA requirements. Specifically, a project must not impact natural or historical resources, must exceed energy efficiency building standards, have open space, and be accessible to low-income residents. Since this exemption is designed to reduce sprawl, a project must be located within one-half mile of a transit stop. Additionally, in order to qualify, a project must contain at

least 50 percent residential use, be a minimum density of 20 units per acre and have a plot-area ratio of .75 for the commercial portion. A project cannot qualify for CEQA exemption if it is bigger than 8 acres or 200 units or can be served by existing utilities. Since qualifying for a complete CEQA exemption can prove very difficult, a TPP project can still be streamlined under a more moderate CEQA review using the *Sustainable Communities Environmental Assessment*. This analysis simply forgoes certain types of environmental analysis to make compact development easier (Fulton 2008).

CHAPTER II

A Case Study of San Diego

Introduction

SANDAG was the first MPO to adopt an SCS chapter into their RTP. This chapter investigates how such a quick creation of the plan after SB 375 goals were released proved problematic in achieving long term goals. Through analysis of SANDAG's strategies in achieving ARB's 2020 and 2035 emission reduction goals, it is clear why SANDAG was sued for not adhering to state demands. SANDAG's failures serve as a model for what other MPOs should not do in the development of their SCS.

San Diego

The MPO SANDAG includes 18 cities and areas in San Diego county. The current population of the San Diego area is just over 3 million residents. But more than half of the region's land is developed or otherwise in use. The majority of this land has been deemed unavailable for development because of protective measures or physical limitations (ARB 2013). Despite the limitations, high growth to over 4 million is projected by the year 2050 (climateplan).

On September 23, 2010 the ARB set targets for the SANDAG MPO region. They set GHG emission reduction targets of 7 percent per capita from 2005 levels by 2020 and 13 percent reduction from 2005 levels by 2035. However, before such goals were even set, SANDAG had already been making plans to reduce emissions. They had initiated a two year extensive input process from knowledgeable experts as well as the public. SANDAG'S proactivity led to a draft of the 2050 RTP/SCS just one year later. ARB reviewed and performed a technical evaluation of the draft and requested some slight modifications. After revision in some minor transportation

infrastructure the ARB staff approved the final RTP and SCS in October of 2011, thus making SANDAG the first MPO to adopt an SCS under SB 375 (Burstein *et al*. 2011).

State vs. Regional Complications

According to ARB models the SCS was projected to meet required reductions in 2020 and 2035 (Goldsten 2011). The SCS strategy addressed land use patterns, the transportation network, transportation demand management, system management, and pricing (ARB 2013). Within these categories support was aimed at smart growth areas, investment in rail services, biking, and walking. Furthermore the RTP 2050, projected to provide 40 years of sustainability, provided a means to sustain 273,000 new housing units and over 300,000 new jobs. Despite the good intentions of the numerous collaborators and two years of working closely with the SCS, it was discovered that the plan may have been adopted too quickly (ARB 2013).

In 2012 the Cleveland National Forest and the Center for Biological Diversity filed a lawsuit against the 2050 RTP/SCS. They challenged that SANDAG had conducted a flawed SCS that did not actually meet the laws projected by SB 375. They filed charges under CEQA claiming the EIR was not satisfactory. According to the plaintiffs the SCS would lead to increasing sprawl and pollution rather than a long-term decrease in emissions (Gies 2012).

The *Sierra Club* and the attorney general's office promptly joined the challenge against SANDAG'S SCS. In a letter to the MPO's office, written by California's attorney general Kamala D. Harris, Harris claimed VMT would increase by 10 percent in 2020, 32 percent by 2035 and 51 percent by 2050 if the SCS was kept as it was (Gies 2012). This is largely due to the fact that during the processing stages "transit" had taken a broader meaning. "We prefer not to divide what we're doing in transportation into transit versus highways," said Charles "Muggs" Stoll, the director of land use and transportation planning for SANDAG (Gies 2012). He claimed

that managing lanes and freeways counted as transit since rapid bus transit and high-occupancy vehicles (HOV) that have paid a fee will have access to these lanes. Plaintiffs argued that full investments should be made in transit infrastructure and that new highways have been proven to invite more traffic volume rather than ease congestion. Supporters of the plan retorted that principal funding comes from the federal government and there is separate funding for highways and transit. Having more than one fully funded grant project is highly unlikely—there is simply not enough funding for multiple transportation projects. Plaintiffs ultimately believed that SANDAG was resorting to 'business as usual' practices and was stuck in 20th-century policies, rather than looking forward to necessary land use and transit innovation in order to achieve SB 375 goals (Gies 2012).

The complication occurred because San Diego's MPO initiated the planning process without fully embracing new regulations from SB 375. The goal of SB 375 is to combine RTP, housing, and land use to compact development in order to omit sprawl and VMT. In SANDAG's SCS however, there is actually a rise in VMT between 2020 and 2035 that would, according to models initiate a continual upward trend (Cohen *et al.* 2011). SANDAG theorized that GHG emissions would decrease as long as highway lanes were managed and designed to accommodate public transportation (Cohen *et al.* 2011). Although this could still meet emissions targets under SB 375, it violates what the state of California is trying to do. By compacting living areas and putting residences closer to work places and transit stops, AB 32 and SB 375 are trying to decrease GHG emissions by attacking VMT directly.

The charges against SANDAG were upheld in 2012 when Timothy Taylor, the San Diego superior court judge ruled that SANDAG'S RTP SCS violated CEQA. It was ruled that the review did not sufficiently analyze the environmental impacts through 2050. According to

Executive Order S-03-5, signed by previous governor Arnold Schwarzenegger under AB 32, GHG emissions are supposed to be reduced by 80 percent from 1990 levels by 2050. After 2020 SANDAG'S plan backslides in emission reductions rather than achieving continual per capita reductions (ARB 2013). Plaintiffs hoped that this lawsuit would be a turning point for future transportation policy and urban planning and would serve as a model for other MPOs to comply properly with SB 375 to avoid complications.

Where SANDAG went wrong

Before ARB set out specific reduction goals, SANDAG was already in the process of developing its RTP and SCS. Starting early meant missing some new significant modeling methods that developed when the targets were released. Nevertheless, the ARB review of the SCS using its methodology (travel demand model, off-model tool, inputs, assumptions and sensitivity) determined that SANDAG would meet emission goals. It was not until further analysis that it was determined that emissions, while exceeding the 2020 target would only barely meet the 2035 target. According to this trend, land use patterns and transportation systems would not comply with SB 375's demand for smarter land use (ARB 2011). SANDAG argued that the Executive Order only set a *goal*, whereas *required* reductions were set by AB 32 and SB 375. SANDAG was therefore technically not in violation. The court ruled however that since EO S-03-05 is an official policy it cannot be ignored and SANDAG's RTP/SCS was still in violation in their EIR to address long-term emission reductions (Imwalle *et al.* 2012).

By initiating the process early, SANDAG was relying on old processes to plan out land use and transportation. Important land use and housing decisions had been made without receiving direction from the state. For instance, funding came from local improvement revenues. The principal source was from the region's TransNet program which was initiated in 1988. This

local sales tax initiative funds public transit, highway management, local streets, bikeways and walkways (ARB 2011). In 2004 funding expanded in this program, and was dedicated to financing transportation projects that mainly consisted of highway expansion. This decision was set to last through 2048 and was supported by two thirds of the voters. TransNet plays such significant role in shaping the RTP since it is a critical source of revenue generating approximately $243 million per year (Burnstein *et al*. 2011).

TransNet limitation of SANDAG's ability to use money to meet SB 375 goals contributed to funding difficulties. At the time of the formulation of the SCS only 3 percent of funds for the RTP were considered flexible with 50 percent of funds going towards TransNet projects. Nevertheless, on paper, SANDAG demonstrated that they were making progress in their RTP towards increasing funding geared towards active transit and transportation. On the other hand, there was a problem regarding when this money would be dedicated towards such projects (Burnstein *et al*. 2011).

The 2011 RTP shows that the shift from funding transportation more than highways occurs in the later years of the 40 year period from 2010 to 2050. Between 2010 and 2020 only 38 percent of RTP funds are dedicated to transit and active transportation while 55 percent of funds are dedicated to highways and local streets and roads. By delaying the funding of public transportation projects immediately in their plans, they run a much higher risk of not receiving funding. In long term planning, projects adopted earlier are much more likely to be funded than those adopted later (Burnstein *et al*. 2011).

Following this funding strategy, transit is not keeping pace with public transit needs. According to a SANDAG unconstrained needs analysis, investing in new transit facilities only covered 47 percent of total needs while highways covered 86 percent of needs. In addition to

being limited in flexible funding, SANDAG followed local general plans as they were and did not analyze how regional trends could influence growth beyond local plans. Under these outdated local plans, development could shift towards more remote areas after 2035 because the horizon year is 2050 (Burnstein *et al.* 2011).

Lessons for other MPOs

Although SANDAG's SCS did technically meet ARB requirements for 2020 and 2035, the MPO failed to achieve long term sustainable development goals that would omit sprawl. The 2011 RTP was too set in old ways and did not properly strive to meet the state's intention of compacting development in transit developed areas. SANDAG's failure to achieve SB 375 sets an example for other MPOs of what obstacles to avoid when developing their own SCS (Burnstein *et al*. 2011).

In regards to funding, SANDAG demonstrated the importance of flexible funding. To avoid a similar situation as TransNet MPOs should reconsider policies with "committed" funds. The committed projects with sustainability goals should be prioritized. To further avoid funding complications there should be a wide range of alternative funding scenarios including ones that modify key restraints such as tax expenditure plans. It may be necessary to develop new funding measures since expenditure plans like TransNet are politically hard to change and can really constrain the RTP (Burnstein *et al*. 2011).

Concerning land use the idea behind the SCS is to change regional land use plans to reduce GHG emissions steadily overtime. By compacting people in areas with good public transit access and nearby amenities, GHG emissions are expected to decrease overtime. To prevent such complications in the future MPOs should work with local governments to evaluate

existing plans. If older local plans do not comply with SB 375 goals they should be adjusted to go beyond general plans (Burnstein *et al.* 2011).

CHAPTER III

A Case Study of San Francisco

Introduction

Before the passing of SB 375 San Francisco was already taking measures to be a sustainable city. The city passed a climate action plan in 2004 and set their own emissions goals for 2012. With the passing of SB 375 the city took an active role in participating in the planning process of the regional SCS. As a transit oriented location supporting a large proportion of Bay Area jobs, SB 375 set a high housing allocation for San Francisco. Due to the cuts in state funding for housing, however, San Francisco has greatly struggled with providing affordable housing and cannot adhere to new SB 375 allocations without regional and state assistance. On a local level San Francisco has been able to achieve small changes such as reducing the carbon emissions of taxis but in order to keep people in the city and prevent a long commute the city needs additional funding.

San Francisco

The city of San Francisco is considered the cultural center of Northern California. Not only is this city a vibrant cultural hub in the San Francisco Bay Area, but it is also a tourist hotspot receiving millions of visitors annually. According to the 2012 census, the estimated population of San Francisco is around 826,000, making it the fourth most populous city in California. The area of approximately 46.87 square miles is already considered compact with 17,179 people per square mile (2010 census). ABAG, however, predicts the population to reach as high as 969,000 people by 2035 (Hawkes 2012).

As a county surrounded by water, San Francisco has serious concerns about global warming and sea-level rise. Before AB 32 and SB 375 were even written the city took

responsibility to be an environmental leader. In response to the city's annual release of millions of tons of carbon dioxide (CO_2), the San Francisco Board of Supervisors passed the *Greenhouse Gas Emissions Reduction Resolution* in 2002 (SCAP 2004), which set an emissions goal of 20 percent below 1990 levels by the year 2012. Furthermore, in 2004 San Francisco wrote the "Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Gas Emissions." At the beginning of this document was a note from mayor Gavin Newsom declaring that San Francisco held itself accountable for its contributions to climate change. Therefore, the city declared its 2012 goal to be its responsibility as a community of citizens of the world. This 140-page plan, which is easily accessible to the public, goes into depth about the causes of global warming and how, if not addressed, this could drastically affect San Francisco. In four chapters the report covers reduction targets and required action and strategies. These fall into four categories: transportation, energy efficiency, renewable energy, and solid waste (SCAP 2004).

Even though San Francisco is considered a fairly public transit intense city with several Bay Area Rapid Transport (BART) stations, Municipal Railway stations (Muni), and bus lines, there is a significant number of personal and commercial vehicles. As a result of a daily commute to and from the city, drivers must pay high price to enter the city, park, and to pump gas. More driving has led emissions from transportation to account for 51 percent of San Francisco's total emissions. The transportation category of the action plan outlines existing actions and suggests new ones to reduce impact. Six strategies have been proposed for this purpose. They include use of public transit, ridesharing, bicycling and walking, supporting trip reduction via employer-based programs, discouraging driving, increasing the number of Clean Air Vehicles and improving fleet efficiency. If addressed, the plan predicts a total annual reduction of 963,000 tons of CO_2 (SCAP 2004).

Regional goals for San Francisco

The MTC is one of the regional transportation planning agencies in California. Created in 1970 by state legislation, this agency (encompassing the Bay Area Toll Authority and Service Authority for Freeways and Expressways agencies) represents the nine-county San Francisco Bay Area (MTC 2013). These nine counties are home to over seven million people in 101 cities (ARB 2013). As of 2013 the board consists of 21 members. The city and county of San Francisco are represented by two members and an ABAG representative, who has to be a resident of San Francisco, thus giving the city an edge with a third voice. The agency plays a key role in requests for state and federal funding which is critical for transportation improvements. Most recently the MTC has initiated 33 million dollars in grant programs, from which San Francisco has benefited (MTC 2013).

In 2010 the ARB set emissions reduction goals for the MTC. The target for the Bay Area was set at seven percent per capita reduction by 2020, followed by a 15 percent reduction by 2035 (ARB 2013). It was agreed that the MTC in coordination with the ABAG would author the required SCS by the summer of 2013. San Francisco played a key role in this process. Local elected officials and city staff attended meetings and provided lots of advice to the MTC and ABAG toward the development of the SCS. Since 2010 San Francisco agencies have written a series of letters to the MTC and ABAG voicing their opinions during the process. Such agencies have included the Mayor's Office of Housing and the Planning Department, and the County Transportation Authority. All letters are available to the public online (SF Planning 2013). In addition to written communications, San Francisco city and county agencies have been actively involved in meetings and workshops. All meetings that have taken place since 2011 have posted agendas, presentations and meeting summaries to keep the public informed. The San Francisco

Planning Department believes “it provides the information needed to help City and County Agencies, citizens, and stakeholders become involved with SCS and SB 375, an important city, state and region issue” (SF Planning 2013).

Housing Development in San Francisco

San Francisco is already a rather dense city that holds a large portion of the Bay Area jobs. Its economy, jobs, and character make San Francisco a very desirable place to live. Oftentimes building projects in the city encounter bureaucratic red tape. Time Colen of the San Francisco Housing Action Coalition stated, “San Francisco is an extremely conservative city when it comes to land use. There’s a civic culture here that says change is to be avoided at all costs, and that makes it difficult to build housing because people will fight the construction tooth and claw” (Sankin 2012). Nevertheless, between 1999 and 2006, the average yearly need for housing was 2,716 which is large considering the city’s land area is only 231.9 square miles. Under new circumstances with SB 375, the demand for housing allocations has increased. Between 2014 and 2022 the city and county of San Francisco are expected to develop 26,869 new housing units, 6,243 of which are supposed to be allocated for very low income, 4,639 for low income, 5,460 for moderate income, and 12,536 for above moderate income residents (San Francisco Planning Department 2013).

In the Housing Element in San Francisco’s General Plan, the city expressed its dedication to prioritizing affordable housing as well as creating and integrating the right kind of dwellings. The plan also incorporated jobs, transportation, and overall infrastructure cultivating the city as a sustainable model. Regrettably with the current financial circumstances in San Francisco, the city cannot meet the increasing demand for affordable housing under SB 375 (SF General Plan 2009).

Affordable Housing Crisis

San Francisco has one of the highest-priced rental markets among major metropolitan areas in the United States. In 2011 alone, prices rose 15 percent, making it the sharpest increase in a given year for the rental market. Such high housing costs have steadily pushed the middle class out. In 2012 San Francisco had a population of 13.4 percent under the age of 18—this is the lowest percentage of children of any major US city. The high costs drive people to move out of the city and into the suburbs of the Peninsula and the East Bay since there is not enough affordable housing available (Sankin 2012). This dictates a farther commute which leads to higher VMT.

State and Federal Housing Development Policies and Funds

In the past few years affordable housing units have been decreasing since the city cannot finance them. According to San Francisco officials, the city is undergoing a crisis regarding affordable housing. Federal housing grants and tax credit programs have sadly decreased. In 2011 a major US housing development partnership program had its budget slashed, preventing it from contributing the necessary amount of funds to San Francisco affordable housing. As a result of these changes, San Francisco lost 50 million dollars worth of tax revenue from the state which had been its largest source for affordable housing (Sankin 2012).

This change has made it increasingly difficult for San Francisco to provide affordable housing. Demand outweighs supply and in order to achieve the RHNA's housing targets the city would need a full partnership with the region and the state. San Francisco must continue to exert pressure and pursue additional federal, state, and regional funding. In addition, the city needs to develop local programs to fund affordable housing (SF General Plan 2009).

One major complication that negatively impacts sustainable housing developments in San Francisco is the Ellis Act. This state law passed in 1985 allows landlords to evict tenants upon taking the property off the rental market. Many landlords in San Francisco abuse this law to evict renters to convert the residences to expensive condos. This is a clever way to evict long term residents that are paying rent below the market price because of rent control (Wilkey 2013). This law has provided a lot of tension between city and state power. San Francisco wants to set its own rules and believes that local jurisdictions should have more control over issues like these (Coté and Lagos 2013). With new regulations under AB 32 and SB 375 the Ellis Act should be rescinded.

Plan Bay Area

On July 18, 2013 *Plan Bay Area*, which combines the SCS and the 2040 *Regional Transportation Plan* for the Bay Area (as required by the state) was approved by the ABAG and the MTC. This long-range transportation and land use/housing strategy outlines plans through 2040 and represents, according to the President of the ABAG Executive Board "the product of more than three years of collaboration between cities and counties to do our part to create a more sustainable Bay Area for current and future generations" (OneBayArea 2013). The Plan sets a strategy to meet 80 percent of future housing in PDAs and funds mixed-income housing. Federal, state, and local funds are estimated at 292 billion dollars, which will be used to operate and maintain existing public transit and provide general maintenance of highways and roads. Also approved on this date were the final EIR, the RHNA for 2014–2022, and the Transportation Improvement Program updating the list of projects to receive federal funds.

Before *Plan Bay Area* was adopted, San Francisco was given the opportunity to provide feedback. In a letter to the planning directors of the MTC and ABAG, the representative of the

San Francisco County Transportation Authority, the San Francisco Planning Department, and the San Francisco Municipal Transportation Agency outlined their comments on the Draft Plan Bay Area. The representatives expressed appreciation for being involved in the planning process and the MTC/ABAG's approval of several San Francisco projects that qualify as critical to improving transportation and land use including: prioritizing the downtown extension of Caltrain and Van Ness Bus Rapid Transit and committing revenue to seven high-performing projects (BART Metro Program, Treasure Island Congestion Pricing, Downtown Congestion Pricing Pilot, Transit Effectiveness Project, Caltrain Service Frequency Improvements and Electrification, Van Ness Bus Rapid Transit, and Better Market Street). The Plan anticipates San Francisco housing units to increase by over 92,000 housing units and 190,000 jobs by 2040. The newly created OneBayArea Block Grant Program, tying together transportation and housing construction, is expected to support this (*Lombardo et al. 2013)*.

Besides conveying gratitude, the letter expresses the desire to partner with the region on certain programs. Since San Francisco is one of the top cities for housing and job growth, it wants to be involved in the Transit Performance Initiative which aims to improve transit infrastructure. In the past San Francisco has not been involved in the Freeway Performance Initiative and has therefore now requested inclusion to alleviate ongoing traffic congestion. On the other hand, on plans such as the Climate Investment Strategy, which would greatly benefit funding projects, the representatives request the MTC/ABAG to take more time to consider these programs in greater detail before further funding (Lambardo *et al.* 2013).

Local Emission Challenges

Before SB 375 and ARB's set goals, San Francisco had already set its own standard to reduce emissions to 20 percent below 1990 levels by 2012. Unfortunately, the city fell short by

16,558 tons of CO_2—the equivalent of pollution emitted by thousands of cars in a year. In their defense San Francisco claimed two major challenges thwarted its ambitious plans—replacing the general hospital, and the San Francisco Municipal Transportation Agency (SFMTA) itself. The hospital uses gas-powered steam boilers that must run 24/7, emitting a great deal of pollution. Additionally the SFMTA, the city's largest emitter of GHGs, uses copious amounts of diesel and biodiesel fuel (Sabatini 2013).

Although San Francisco did not achieve its own ambitious goals, its efforts have contributed to the reduction of GHG emissions. The municipal biodiesel fleet has reduced emissions by 30 percent since 2004. Furthermore Mayor Edwin M. Lee announced in 2012 that the goal to reduce GHG emissions for taxis had been exceeded. The average taxi in 2012 emitted 30 tons of GHGs as opposed to the 1990 standard of 59 tons, achieving a 49 percent reduction. 92 percent of taxis in San Francisco are now hybrid or compressed natural gas vehicles. This improvement was made possible by a Clean Air Taxi Grant incentive sponsored by the SFMTA. Mayor Lee stated, "The clean taxi program has shown that aggressive action is possible at the local level to make major reductions in carbon emissions, reduce our dependence on fossil fuels, and accelerate a new green economy. Now we are here recognizing San Francisco as the 'Greenest Taxi City in America,'" (Mayor Office 2012).

In Lombardo *et al.*'s letter to regional MTC/ABAG directors concerning Plan Bay Area, they acknowledge necessitating the help of state and federal funding in order to meet transit and housing development goals. San Francisco requested taking part in "authorizing a successor tax increment financial tool to replace the loss of redevelopment" in order to achieve housing goals detailed by Plan Bay Area (Lombardo *et al.* 2013). The city/county expressed a need for additional transportation revenue since "San Francisco, and the region as a whole, have

significant funding shortfalls remaining" (Lombardo *et al*. 2013). Even after Plan Bay Area investments they estimate the city will still be short by over $6 billion dollars.

At the end of this letter Lombardo, Rahaim, and Reiskin sign off by thanking the MTC and ABAG for the opportunity to comment on the plan. They exclaim that they "look forward to partnering on implementation." Many future projects for San Francisco cannot be achieved without essential partnerships with the region and state. Only through significant regional, state and federal funding can San Francisco hope to achieve both the goals set by the ARB and its own goals as well (Lombardo *et al.*).

CHAPTER IV

A Case Study of Fresno

Introduction

Fresno, located in the Central Valley, is one of the most polluted cities in California. The MPO representing Fresno has partnered with the other San Joaquin valley MPOs in the creation of their new RTP with an SCS. With CFOCG acting as their leader, the Central Valley MPOs are striving to use SB 375 as a way to reduce air pollution by improving land use and transportation policies. Although Fresno is not a PDA, the county and its neighbors hope to develop in a sustainable fashion. Collectively, the MPOs successfully obtained a major grant to greatly improve their model for future growth. CFOCG's SCS in still in the developing stages and is set to release in 2014.

Fresno

The county of Fresno is located in central California, in the San Joaquin Valley, approximately 184 miles southeast of San Francisco. It is a leading agribusiness hub cultivating over 250 crops. In addition to agriculture, Fresno is also a center for industry that manufactures plastic products, computer software, clothes, agricultural chemicals, farm equipment, and more. As a county, Fresno encompasses 119.9 square miles of available land and supports a population of 505,882 residents according to the 2012 census. Due to high costs of living on the coast Fresno has experienced massive population growth over the past decade. Between 2000 and 2012 Fresno's population grew approximately 16 percent making it the 5th largest city in California (ClovisIndependent). According to *Time* magazine Fresno is ranked as the third most polluted city in California. Pollution on average is not horrific but there are extreme days when pollution reaches dangerously high levels. Unfortunately nearly 25 percent of the population

suffers from some sort of cardiovascular disease, which is oftentimes correlated to air pollution (Time 2013).

In response to the passing of AB 32, the Mayor and Council President of Fresno asked to add a green component to the 2025 Fresno General Plan. As a result "Fresno Green: the City of Fresno's Strategy for Achieving Sustainability" was written, expressing the importance of treating the environment well and aspiring to a sustainable city (City of Fresno 2007). The plan admits that, "It is hardly a secret that the San Joaquin Valley's air is some of the dirtiest in the United States" (3). To address this, the plan outlines 25 strategies to make Fresno a sustainable city by 2025 and mentions the progress Fresno has already made. Many of the strategies include ideas related to cutting emissions from transport and better land use management. The entire plan however does not mention AB 32 or SB 375 once. Instead these are addressed at the regional level.

Fresno Council of Governments

The county of Fresno is represented by the MPO CFOCG which engages in regional planning with an emphasis on transportation. The San Joaquin Valley is composed of eight MPOs which have a history of working together in regional planning. In 2006 the *San Joaquin Valley council of governments* (COGs) collaborated on a *Blueprint* to improve environmental conditions and quality of life in the valley. This planning process encompasses visions for the Valley by 2050 and consists of smart growth principles and scenarios for the future. When SB 375 was passed in 2008 mandating the development of an SCS, the *Blueprint* became a foundation for the development of the new RTP plan and SCS (Boren 2012).

In September of 2010 the ARB set the GHG emission targets for the San Joaquin Valley. Fresno COG took a very active role in collaborating with the state to set emissions targets. Using

a bottom-up approach they engaged member agencies and stakeholders in the region throughout the process until a consensus could be reached—by 2020 ARB expects a five percent reduction in GHG emissions and by 2035 a 10 percent reduction is expected compared to 2005 emissions. The MPOs, led by the CFOCG, have taken a positive stance towards this state mandate. Outlined in their "Valley Visions," the name of their planning efforts, they declare this as an opportunity to improve quality of life. They state:

> There are laws that require these regional plans, but this is also an opportunity to think about how we want our region to grow and evolve over the next several years in a way that meets our needs and matches our values (Valley Visions 2013)

By improving transportation and land use, the region will be more attractive, and longer-term growth in housing, infrastructure, and transit will better support job growth. In addition, cutting down emissions will improve air quality—which in turn will hopefully combat the prominent cardiovascular cases in the Valley and maybe even challenge Fresno's position as one of the most polluted cities in California. Local governments collaborating with regional Valley Vision have an advantage in light of the fact that large issues such as traffic congestion and air quality, overlap across several districts. Working together will make it much more likely to lead to successful results on a large scale (Valley Visions 2013).

In order for the CGOs under Valley Vision to develop an effective SCS strategy, they needed to model future growth and emissions to conform to AB 32 and SB 375 goals. To develop the best model possible the eight MPOs sent a letter to the *Strategic Growth Council* (SGC) applying for Proposition 84 funds for development and data gathering. Such a grant would allow the MPOs to effectively translate the already existing *Blueprint* to regional planning efforts that would comply with SB 375 and AB 32. Furthermore, the executive directors applied for this $2.5 million dollar grant to implement a short term *Model Improvement Plan*, improve

interregional travel estimates, develop a long term *Model Improvement Plan*, develop a long term planning model and land use modeling tools, and to extend public outreach (Boren *et al.* 2009).

In 2010 the SGC granted the Proposition 84 funds to CFOCG to support the modeling capabilities of the MPOs. In Bryant's letter to Fresno, CFOCG's principal planner, she mentioned Caltrans would be made responsible for administering incentive funds for the models on a reimbursement basis. To receive funds, each MPO was required to amend their *Overall Work Program* (OWP). Any products and data created with these funds are required to be shared with the state. In addition the SGC stated that they would need to adhere to the public health criteria by sending staff for training to incorporate this into the plan (Bryant 2010).

With this funding CFOCG has been able to start developing models under the *San Joaquin Valley Model Improvement Plan*. The collaboration and intensive modeling across eight MPOs has delayed the release of the SCS until the end of 2013. There have been four model scenarios proposed for the projected growth of the county of Fresno by the public, member agencies, RTP round table, and the Coalition of Community Organizations. Each of these scenarios considers a different population and emissions growth rate in addition to variations in residential density, compact development, land consumption, VMT, and more. Which scenario will be encompassed in the SCS plan, also known as "Valley Visions," and how it will be chosen is still being negotiated. It is important to note that each of the eight MPOs, although they often collaborate, will ultimately develop its own plan. The projected release for the latest RTP for Fresno will be in 2014 (ARB 2013).

CHAPTER V

A Case Study of Berkeley

Introduction

Berkeley is a small city but has demonstrated that even a small local government can have influential power. Before SB 375, Berkeley was already on a sustainable development path by improving biking, walking, and car sharing programs. As an identified PDA, SB 375 has increased the housing allocation for this small city to over twice its normal housing allocations. Although Berkeley aims to be as sustainable as possible, the city has limited power when it comes to the new housing demands and new CEQA exemptions. In the past Berkeley has struggled with affordable housing but it is the hope that SB 375 will have the state supply more funds to meet these challenging allocations.

Berkeley

The city of Berkeley is politically liberal with famous institutions known internationally, such as the University of California at Berkeley and the Lawrence Berkeley National Lab. Berkeley belongs to Alameda County, which is a part of the 9-region MPO and the MTC encompassing the entire San Francisco Bay Area. Berkeley itself is located in the East Bay and has a population density of 115,000. Berkeley is considered a small city by the 2012 census but has a population density of 9,882 per square acre (Daniel 2013). The Bay Area as a whole is estimated to increase by 2 million people by 2040 (Cha and Goodwin 2013). Berkeley, as a desirable place to live, is expected to accommodate significant growth in the next few years.

Berkeley is fairly transit-intense with over 20 AC transit bus routes, three BART stations, and one Amtrak station. Compared to the entire Bay Area, the average Berkeley resident drives significantly fewer miles and emits lower amounts of greenhouse gases (BCAP 2009). Although

this may be true and public transit is widely available, the number of vehicles in Berkeley has increased tremendously compared to its population. While the population of Berkeley actually decreased between 1970 and 1990, the number of vehicles increased by 10,000 during that period (BCAP 2009). Unfortunately, Berkeley has done little to improve its main method of transportation since 1990 (BCAP 2009). An increased reliance on driving has been detrimental since transportation releases large amounts of GHGs into the air, affecting Berkeley and surrounding cities as well.

Local Environmental Efforts

Berkeley is often considered an environmental leader for its activities toward sustainability. Berkeley's updated general plan in the early 2000s strived to create a sustainable and socially equitable Berkeley (BCAP 2009). Two of the major goals of this plan included addressing local and regional environmental quality with transportation and land use development as key components (Department of Planning and Development 2003).

Staying true to its environmental reputation, Berkeley, in response to increasing climate change concerns locally and worldwide, chose to act by overwhelmingly endorsing city Measure G in 2006—a ballot written to reduce emissions. This ambitious mandate challenges Berkeley to reduce GHG emissions 33 percent below 2000 levels by 2020 and 80 percent below 2000 levels by 2050 (BCAP 2009). This mandate was passed in the same year as AB 32, and points to common goals between the city and state to combat climate change.

After years of planning the *Berkeley Climate Action Plan* was released in 2009, aiming to fulfill Berkeley's vision of sustainability. Among its challenging and ambitious goals, transportation is one of the most critical issues. As of 2012, the emissions from the transportation sector (from gas and diesel-powered vehicles) accounted for over 50 percent of Berkeley's total

emissions (Office of Energy and Sustainable Development 2013): “The problem of steadily increasing VMT makes it such that transportation related GHG emissions will likely stay far above the reduction targets established at the state level by California’s *Global Warming Solutions Act* (AB 32) and at the local level of Berkeley’s Measure G.” (BCAP 2009, 21). A move away from ‘business as usual’ practices is essential if Berkeley wishes to meet its own goals as well as the state’s.

Berkeley Climate Action Plan Goals

The *Berkeley Climate Action Plan* (BCAP) is an extensive document that outlines sectors that need to be addressed in order to achieve substantial greenhouse gas reductions. At the time of its authorship in 2005, the greatest contributor was transportation emissions at 265,000 metric tons of CO_2 emitted annually. Chapter three of the BCAP addresses sustainable transportation and effective land use policy with compacting development and reducing vehicle usage. Such reductions will not only help Berkeley achieve its goals and the aspirations of AB 32, but will also improve overall health by reducing air pollution (BCAP 2009).

Chapter 3 of the BCAP outlines land use and transportation aspirations of the city through 10 major goals surrounding density, open space, parking efficiency, demand management programs, bicycle and pedestrian plans, public transit, car and ride sharing, low-carbon vehicles and fuels, outreach, and education. As population grows in Berkeley, so does the need for housing and employment. It is estimated that there will be 22,000 new workers living in Berkeley by 2035. Studies have shown that building residences near public transit greatly reduces travel emissions on average by 2–3.4 metric tons compared to the emissions of people who do not live in transit-oriented development locations. With this in mind Berkeley is striving to increase density along transit corridors. On the other hand, maintaining some open space and

green areas is also important for environmental health as well as human health. By promoting tree planting, green roofs, buying locally and cultivating community gardens, Berkeley is creating a more vibrant and attractive community.

The third, fourth, and fifth goals sketched out in the BCAP involve parking management, transportation demand management and accelerating the city's bicycle and pedestrian plans. Strategies to address parking include expanding car sharing and improving bicycle infrastructure to get cars off the road. Some ways to raise revenue may include instituting a "Transportation Services Fee" for new development or a "climate mitigation fee" for gasoline or vehicle registration (BCAP 2009, 37). To reduce car usage, the plan suggests installing a bike-sharing program, building new bike racks, and enhancing the Berkeley Bicycle Plan and Pedestrian Master Plan.

The remaining goals six through ten focus on improving public transit, car sharing, low-carbon vehicle and fuels, education, and the action of city employees. In 1996 Berkeley adopted a Transit First Policy strongly advocating alternative transit rather than single occupancy vehicles. The BCAP suggests policies to partner with AC Transit and BART to expand and improve services. In addition to expanding routes, suggestions include extended hours and real-time signage that can make a big difference in usage. If one must travel in a vehicle, Berkeley is striving to make car sharing and ridesharing a more appealing idea by improving convenience, incentives, and even providing car share subsidies for people with lower income.

Besides car sharing, the BCAP encourages low-carbon vehicles as an alternative. Policy should create incentives for consumers to buy high-efficiency vehicles and encourage the responsible production of low carbon bio-fuels. In order for any of the above suggestions to be considered and implemented, outreach and education regarding alternative forms of transport are

essential. In addition, the city should set an example by increasing fuel efficiency in the government fleet and replace underused fleet vehicles with city car share hybrid-electric vehicles (BCAP 2009).

Reducing greenhouse gas emissions

Berkeley is setting an example on how local action can reduce significant amounts of GHG emissions. Every year since 2007, Berkeley has released annual progress reports to every resident, reporting the city's progress towards its 2020 reduction goals. In the latest annual report of 2013, Berkeley declared that emissions in 2000 were 743,700 metric tons, and since then total emissions have decreased 8 percent (Daniel 2013).

Berkeley has significant efforts to achieve its land use and transportation goals. Between 2000 and 2010 VMT have been reduced by 4 percent while bike mode share has increased over 30 percent (Office of Energy and Sustainable Development 2013). Currently Berkeley ranks 4th in the country for bicycle commute to work at 8 percent of adults participating. To accommodate and encourage more bikers, new bike parking spaces have been installed each year at an increased rate with more than 600 already installed since 2007 (Office of Energy and Sustainable Development 2013). Additionally, cars have been kept off the road with programs such as car sharing, the Tax Relief Action to Cut Commuter Carbon (TRACCC), and the Guaranteed Ride Home Program. The number of car share vehicles has doubled since 2005 and car sharing membership has grown 10 percent since 2010 (Office of Energy and Sustainable Development 2013). The TRACCC implemented in 2009 mandates that employers with ten or more employees must provide commute programs with subsidized benefits, commuter tax benefit as a payroll deduction, or a combination of the two. As of 2012, 40 organizations in Berkeley have joined the

Guaranteed Ride Home Program, which ensures an employee a ride home in the case of an unexpected circumstance or emergency (BCAP 2009).

Complying with SB 375

In order to achieve a 33 percent emission cut by 2020, Berkeley needs adequate funding to be able to tackle many of the ideas written out in the BCAP. The city itself is able to fund some development projects and maintenance, but is unable to afford the major shift in development needed to move away from 'business as usual' practices. There are large costs associated with assembling and building new houses in built-up communities rather than resorting to the traditional lower intensity development. Another option is infill housing but current barriers preventing infill housing would cost Berkeley millions of dollars to address (Kamlarz 2011)

As a city in Alameda County, Berkeley is part of the nine county region that constitutes the MTC. Although Berkeley and the county of Alameda are not obligated to adhere to the SCS created by the MTC in regards to SB 375, funding from the state transportation infrastructure will not be granted to those who fail to adopt it (Brenneman 2009). As a follower of SB 375, Berkeley is eligible for substantial funding.

To complete many of its ambitious ideas, Berkeley relies on partnerships and grants. The *Berkeley Transportation Action Plan* (B-TAP) is a partnership between the City of Berkeley and transportation companies including BART, AC Transit and City CarShare. The projects are aimed at improving transit station infrastructure and reducing VMT. The projects are only possible thanks to a series of grants given by the US Department of Transportation, MTC, Cal Trans and the Bay Area Air Quality Management District (BAAQMD). Before 2012 Berkeley

received over 6 million dollars in grants towards improving transportation and development (Clough 2012).

A meter change program was recently installed in October 2013. This pilot project funded by the *Metropolitan Transportation Commission's Climate Initiatives Program*, the BAAQMD and the Federal Highways Administrations Value Pricing Pilot Program, is a change of the metering system in three main commercial areas in Berkeley (Raguso 2013). Based on a "demand-responsive" pricing, the program allows longer time slots and lower prices in "value" parking zones while increasing the cost significantly in premium zones. According to a statement from the city: "The goal is to free up 1 to 2 spaces on every block and make it easier to find parking – reducing frustration and traffic as well as pollution from circling drivers. People already come to these Berkeley districts by bike, bus, BART, foot, and car. Now, each of these modes should be even easier – creating a balance that allows all to move more freely" (Raguso 2013). The city will conduct evaluations and reviews of the program in 2014 to determine its efficiency.

Another major project set to kick off is an electric-bicycle-sharing program. Funded by the *San Francisco Municipal Transportation Agency* (SFMTA), this program will have 25 locations in the Bay Area, including eight in Berkeley. There are high hopes that these electric bikes will appeal to users for their ability to travel 20 miles per hour and make it up hills. According to Ben Jose, spokesperson for the SFMTA: "Bicycle sharing has the potential to benefit the environment by reducing the need for people to own one or more personal vehicles" (Tuan 2013). Not only does biking reduce emissions compared to driving but the cost is 40–60 percent cheaper than sharing a car. One does not even have to pay a mileage fee (Tuan 2013)!

Housing Development under SB 375

Before SB 375 was adopted, Berkeley only built housing units to accommodate its 'fair share' of population growth in California. Projected growth was determined by the regional COG through the RHNA process. Berkeley has been successful in meeting its share of growth in the past. To its credit, the majority of housing allocated by the ABAG between 1999-2006 was met. In fact, between 2000 and 2007 Berkeley had what it considered to be a housing boom relative to past housing development (Kamlarz 2011). During this time Berkeley added approximately 160 housing units per year and built a total of 1234 units out of the required allocation of 1269 (Berkeley 2009). This small allocation suited Berkeley's tastes to maintain its small city feel and difficulty in fulfilling affordable housing.

With the passing of SB 375, housing planning changed in accordance with the new SCS chapter. Fortunately, Berkeley's regional MPO gave the city the opportunity to comment on the early stages of developing the SCS. In the *Initial Vision Scenario* Berkeley identified PDAs that are designed for compacting housing near transit. Parts of Berkeley are being rezoned to most efficiently achieve this sustainable housing strategy. As a result of complying with regional investments, Berkeley has obtained grants for housing (Kamlarz 2011).

Despite granted funds, Berkeley had received some criticism for the new housing processes under SB 375. In their letter to the directors of MTC and ABAG, Berkeley asked for more transparency of ABAG/MTC methodologies. Berkeley is interested in knowing more about how decisions are made at for residential growth and housing allocations rather than just dictated regional decisions. Additional Berkeley comments say "…it is the interrelationship of jobs, housing, and transportation that we should be planning for, not just 'allocations' in isolation from integrating strategies such as 'complete communities.' The SCS outcome should provide specific

guidance" (Kamlarz 2011, 5). It is the lack of clarity and transparency which makes it difficult for Berkeley to fully understand what the MTC wants. Nevertheless, Berkeley urges the regional transportation agency to put more emphasis on multi-county corridors and major regional transit corridors to consider the best coordination and management strategies. Infill development opportunities should not be undermined in the SCS. The state should give Berkeley the tools and funding to fight current barriers to infill housing and not add further costly requirements. By placing more focus on infill development the region can compact jobs and housing even more to target complete communities and minimize sprawl (Kamlarz 2011).

Berkeley is a target for larger housing allocations under SB 375. Since Berkeley is home to a major university, has three BART stations, multiple bus lines and major transit corridors, it is a very good match to accommodate growth. In the past Berkeley has only accommodated for its 'fair share' of housing by developing 160 housing units annually. Berkeley has often held an antigrowth attitude because it prides itself on maintaining its large college town feel rather than giving the impression of a populated, busy city. The SCS however, is forcing a major shift in housing developments and initially requested Berkeley to build 629 units per year under the *Initial Vision Scenario* (Kamlarz 2011). While this scenario assumes regional growth should be concentrated in public transit areas it "does not take into account many factors that constrain the region's supply of new housing units, such as limitations in supporting infrastructure, affordable housing subsidies, and market factors" (Finacon 2011, 2). Berkeley planners complained this was unrealistic and felt Berkeley was being asked to accommodate a lot more growth than other cities. With some negotiations the RHNA allocation for Berkeley was dropped to 347 units between 2007 and 2014 but this this is still double what housing allocations were between 2000 and 2007. Berkeley has stepped up to accommodate as much sustainable growth as financially

feasible and has demonstrated it could house even more than originally anticipated. Therefore the RHNA for Berkeley was raised to 2,959 housing unit for the years 2014-2022 (Berkeley 2009).

Affordable Housing

Providing sufficient affordable housing for lower income groups is an essential component of SB 375. The city of Berkeley has placed high priority on affordable housing for a while, pouring thousands of dollars into community enhancement programs. In its annual action plan for housing and community development Berkeley said it strived to put federal grants, plus state and local funds towards maximizing assistance for lower income and moderate income residents (Berkeley 2013). But past housing development numbers suggest some neglect. In the housing period 2001 to 2006, Berkeley was required to designate 354 housing units to very low income residents; 150 to moderate income and 455 to above moderate income. Instead of fulfilling the entire 354 unit quota, Berkeley only accomplished 235. The city was successful in meeting low income allocation but neglected more than half the housing units in the moderate income category. Instead Berkeley seemed to have placed an emphasis on building larger homes, since 757 housing units were built for those with above moderate income when the allocations were only 455. This demonstrates that in the past Berkeley has not been as focused on condensing its downtown area but has put more emphasis on richer homes away from the city center. SB 375 will ensure that more focus is put on reaching the lower income and moderate income allocations (Berkeley 2009). In order to fulfill the MTC's tall orders, millions of dollars will have to be dedicated to allow housing projects to proceed faster and more smoothly. Significant rezoning will have to take place but Berkeley has demonstrated its capabilities to accommodate more growth to support state land use development goals (Kamlarz 2011).

Complications of SB 375

Berkeley has benefited greatly from funding provided by the MTC from the state, but the focus on SB 375 concentrating on new development among urban transportation corridors has proven problematic. Under SB 375 regulation, projects which meet certain criteria would be exempt by the regulations of the CEQA. This measure has been used since the 1970s to combat development projects that were not environmentally friendly or caused health problems for neighbors (Brenneman 2009). With this regulation any Berkeley project built within a half mile of a major transit corridor could potentially qualify for an exemption, assuming it meets SB 375 criteria (Brenneman 2009).

In order to qualify for an exemption, some of the specifications a project has to pass include: being 200 or fewer units, 15 percent more energy efficient than required by building codes, and occupying a location smaller than 8 acres. Should a project meet SB 375 specifications Berkeley will strongly oppose the development but "the law [SB 375] allows the developer or any interested person to sue 'to enforce the builder's remedy'" (Brenneman 2009, 2). Instead of being able to use CEQA to protest, Berkeley is limited to protest on the grounds of "historic resources." An argument on these grounds can be quite unfavorable in court since the project supports state guidelines of sustainable development (Brenneman 2009). While some developing projects may not be the most convenient for Berkeley residents, it is a necessary tradeoff to support development projects adhering to SB 375.

Berkeley was given some legal say on SB 375 developments when presented with the chance to comment on the latest formulations on SB 375's mandatory SCS. Eric Angstadt, Director of the Planning and Development department of Berkeley, drafted a letter commenting on the Plan Bay Area *Draft Environmental Impact Report* (DEIR). This plan consists of projects

and plans for the Bay Area Region through 2035/40 surrounding housing, transportation, open space, heath, climate protection, and equity (Angstadt 2013).

Angstadt presented his concerns with the plan stating there was a lack of clarity in the wording. SB 375 takes initiative in focusing growth in PDAs. In Berkeley's case, this applies to a particular 5 percent of the city but there is worry concerning whether local government will have some shared responsibility of mitigating potential environmental impacts of development. In the past the city has always had mitigation standards under CEQA so there is confusion surrounding whether Berkeley would be required to adopt new measures. SB 375 requires "CEQA Streamlining," but does not specify how to incorporate such measures into planning approvals of local jurisdiction. Angstadt's overall response to ABAG and MTC is as follows:

> The City of Berkeley would appreciate additional clarity regarding the mitigation measures in the DEIR. The breadth and specificity of the mitigation measures, as currently devised; the lack of clarity about the adoption process and the ability of the local governments to modify the measures within the legal framework of the Plan and SB 375 streamlining; all while still following the intent of the Plan and related laws, may leave too much open to possible challenge (Angstadt 2013, 3)

It is Berkeley's hope that clarity will be added to solidify the position of local government power.

Future Endeavors

As it stands, the 2013 Plan Bay Area's target for the Bay Area is to achieve a 7 pecent per capita reduction by 2020 and a 15 percent per capita reduction of 2005 emissions by 2035. The 2013 RTP, set to be released shortly, will be the Bay Area's first plan subjected to SB 375 (OneBayArea 2013). With this new plan comes a four year 320 million OneBayArea Grant Program of which 63 million will be granted to Alameda County. The regional goals are not as ambitious as Berkeley's city goals to cut total emissions by 33 percent (below 2000 levels) by 2020 (Goldblatt 2013). Due to its partnerships, aspirations, and grant funding, there is a high possibility Berkeley will be able to meet the 7 percent per capita reduction by the deadline.

Although SB 375 has created higher housing demands it has provided more funding overall—many endeavors however still require more money.

According to the Berkeley Climate Action Plan, the city is not steering away fast enough from 'business as usual' practices. Total emissions in Berkeley have only dropped 8 percent between 2000 and 2010, leaving more than 200,000 metric tons to reduce in a short time (Raguso 2012). In this period of time bicycle mode share increased by 34 percent but VMT only decreased by 4 percent. Additionally there was failure to reach the target reduction of city fleet fuel consumption (Office of Energy and Sustainable Development 2013). The steadily increasing population has made it very difficult to reduce VMT.

Luckily the city is now working in partnership with the state even if there are some disputes over limiting government power. Although "municipal governments have limited opportunity to affect the technological improvement necessary to increase vehicle fuel efficiency and to lower the content of fuels," the people of Berkeley hold a lot of power in their personal choices regarding driving (BCAP 2009). Moreover, the city will continue to aspire to the goals of SB 375 and its own goals.

CONCLUSION

When SB 375 was passed, it was the first time specific mandated targets were assigned to regional transportation agencies to reduce GHG emissions in the United States. This innovative action combined land use, housing, and transportation, synchronizing major policy regulations that should have been coordinated earlier (Barbour and Denkin, 2012). This smart growth method aimed to reduce per capita emissions by addressing human behavior. Each MPO set a reduction target to hit by 2020 and 2035 in the hopes of reducing per capita VMT.

SB 375 is a largely voluntary bill that does not require land use changes or adaptations to city general plans. The only power the state reserves over local governments is housing allocations. According to California, each county has a responsibility to accommodate population growth, especially in those places that are determined as PDAs. SB 375 primarily aims to support growth in the most sustainable manner possible. In the state's mind the best way to do this is through compact transit areas so minimal driving occurs.

By observing the political process of San Diego, San Francisco, Fresno, and Berkeley adopting the required SCS, it is clear there are many complications that arise with SB 375. This bill requires tearing away from 'business as usual' practices, which caused SANDAG's struggles with compliance while under an old sales tax program. Politically changing such programs that already have committed funding can be difficult since they have been around for decades. Their adherence to traditional methods that did not synchronize transportation and land use demonstrated that per capita GHG emissions would go up overtime. Nevertheless SANDAG is working on fixing this issue for their upcoming updated RTP in 2014 (Cohen *et al*. 2011).

Luckily San Francisco and Berkeley did not follow in SANDAG's footsteps. These cities, both part of ABAG and MTC, have been dedicated to sustainability before the passage of AB 32.

By adopting climate action plans long before SB 375 was adopted the cities were already looking at ways to reduce emissions from land use and transportation at the local scale. SB 375, however, pursued this further by setting MPO target reductions targets. SB 375 housing allocations however have proven very challenging for both San Francisco and Berkeley. As PDAs, these cities are highly sought after for high housing allocation. Although usually the first to advocate for green policies, Berkeley and San Francisco simply do not have the funds to subsidize the allocated affordable housing quota. San Francisco especially is in an affordable housing crisis due to state funds being steadily slashed over the past decade. In order to make SB 375 a reasonable bill to follow, the state needs to dedicate more funds towards grants for affordable housing.

The MPO in charge of Fresno presents a different case than San Francisco and Berkeley. Due to its low density and non-PDA status, SB 375 does not seek after Fresno for priority housing. Regardless CFOCG has worked with the other San Joaquin MPOs to apply for a grant to thoroughly model new land use plans that would bring the Central Valley closer to their emission targets. CFOCG was successful in its grant pursuits and is still in the process of producing its SCS, which is set to release in 2014.

Adherence to SB 375 on a regional and local scale is an experiment to see whether significant per capita reductions can be achieved through improved land use and transportation regulation. If per capita emissions gradually reduce in a cost effective manner, other states may formulate a similar bill such as SB 375 or AB 32. As population grows, California views SB 375 in combination with AB 32, as the most effective way to cut emissions. 'Business as usual' practices are no longer an option in order to see the significant reduction of CO_2 needed to lessen the impacts of climate change. Land use and transportation regulation are slow so it may take

years until we see any significant results. Combining the powers of the state, region, and local governments is a great innovative step towards directly attacking VMT and reducing sprawl. If successful, SB 375 may be the answer to the shift the USA needs to achieve sustainable growth.

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