

Community Participation in Climate Protection Actions
A Case Study of Climate Change and Community Sustainability Planning
in the City of Davis, California

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Abstract

When facing the challenge of finding ways to reduce GHG emission to mitigate climate change, besides the actions by government at all levels, planners also need to consider how local communities, which are important actors in the implementation of climate protection plans, react and participate in the process. Through a case study of climate change and community sustainability initiatives in the City of Davis, California, this thesis explores the community participation process and evaluates its effectiveness. I conducted this research by observing the Davis Climate Action Team (CAT) meetings and related public forums, interviewing related participants, participating in the Low Carbon Diet Pilot Program (LCDPP) and its meetings, and surveying the participants of LCDPP.

From the analysis of two community programs, I have found that the City of Davis' planned community participation plays an important role in helping the City staff develop the local action plan and motivate participants to change their energy consumption behaviors. Through organization of the CAT and its operation, the community started a process of community engagement. These processes not only increased public awareness of climate action issues but also provided a platform for people to learn from each other and build consensus on future climate actions. The LCDPP further motivated people to change their energy consumption behaviors to reduce their carbon footprints by efficient tools and group support. The results of the two programs show that mixed planning methods are useful in facing the challenge of climate change. The planner used not only traditional comprehensive planning to develop its

cost-effectiveness analysis but also advocacy and communicative planning to further promote the importance of climate protection and understand what the community wants and therefore enhance the feasibility of future implementations. The results of LCDPP survey also show that changing people's behaviors is not a one-off event but a process. It requires not only giving tools to people but providing the enabling environment and incentives.

However, some challenges still exist. Inconstant involvement of some CAT members, limited communication among the CAT, the city departments, and the general public, the uncertain final decision of the plan, and insufficient human resources in developing and implementing the necessary work to keep adequate communication and meet the specific time frame in the CAT process all hinder the effectiveness of participation. For the LCDPP, many self-selected participants have already engaged in low carbon activities before. The fact that the housing energy-use focus in the workbook ignored other strategies and renters' situations also decreased people's willingness to participate. Moreover, the relatively small GHG reduction seems not to meet the City goal of GHG reduction. The lack of a follow up check mechanism also makes the real GHG savings uncertain.

In order to achieve broader and more substantial community participation, I propose an ideal community participation process in climate planning and provide specific recommendations for cities to achieve the process. Cities could (a) assign specific GHG reduction goals to varied programs to achieve the overall reduction requirement; (b) develop multiple outreach and participation methods to different social groups in their communities; (c) use alternative methods to keep the participation process

transparent and open to the public; (d) provide specific incentives and information to attract more participants; (e) work with existing social organizations to approach people more naturally and to keep the network more cohesive; (f) add sufficient resources for community participation to improve communication and accelerate the process; and (g) set up a monitoring and evaluation mechanism to monitor and verify the effectiveness. I also suggest that more research is needed in order to understand ways that community participation can be more effectively implemented and its effectiveness within varied social contexts. Comparison studies are also recommended to understand the overall effectiveness of community participation in climate protection planning.

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Chapter 1

Introduction

The intensifying impact of climate change has been acknowledged in recent years (Gore, 2006; IPCC, 2007). In the area of environmental planning, the need to plan for adapting to climate change and for reducing greenhouse gas (GHG) emissions has emerged as a challenge planners have to face. How to lead a city to become more sustainable is an extremely important question (Brandon, Lombardi, & Bentivegna, 1997; Smith, Whitelegg & Williams, 1998; Singh, 2001; Wheeler, 2004). In 1993, the International Council on Local Environmental Initiative (ICLEI) began a Cities for Climate Protection (CCP) campaign and since then has provided technical assistance to more than 800 cities worldwide (ICLEI, 2008). In the United States, state and local governments have played a more active role than the federal government in developing and implementing policies to reduce GHG emissions (Fogel, 2007). Besides being members in the CCP campaign, more than 500 mayors have signed the U.S. Mayor's Climate Protection agreement in 2005, which the Seattle mayor at the time initiated. The two initiatives both encouraged local governments to develop a local action plan to effectively reduce GHG emissions. In several analyses of these climate change plans, the results were limited (Bulkeley and Bestill, 2003; Bailey, 2007; Wheeler, 2008). Cities often had inadequate goals and had failed in important actions such as changing land use. Few devoted resources to these programs and the voluntary actions outlined in proposed plans decreased the effectiveness of the plans. Local officials often moved slowly

because they expected federal and state actions, which impeded the creative local solutions.

These initiatives and studies, which mainly focus on the policy level, rarely mention the ways the local communities, which are important actors in the implementation of GHG reduction related plans, participated in the climate change related activities or the roles they played. By analyzing a case study of the Davis Climate Change and Community Sustainability initiatives, this thesis aims to contribute to research on how a local city develops its climate change related plan through community participation., what the effectiveness of this process is, and whether people can change their behavior to reduce GHG emissions in this process.

This thesis is organized in the following way. First, I start by reviewing the planning theory to see how the role of communities/citizens in planning theory has changed over time. I also review the climate change related planning and behavior change literature to provide an overview of community participation in local climate protection actions. Next, I illustrate the research methods to show what I used to develop the case study research, including observation of the CAT meetings and related public forums, interviews of related participants, including the CAT members, the city staff members, and the mayor, participation in the LCDPP and its meetings, and surveys of the participants of LCDPP.

In the subsequent section, I provide the history of the Davis Climate Change and Community Sustainability initiatives to explain why the City of Davis started to develop its climate action plan. The reasons for the initiative are the urgency of building a climate protection framework and the intention of keeping Davis's environmentally progressive

city image. The structure of the initiative was learned from the CCP program of ICLEI. Next, I examine the two community participation programs of the initiatives, the CAT and the LCDPP, to answer the question of how the City of Davis adopted community participation into the planning process and the effects. Finally, I provide three sets of recommendations in terms of three different perspectives: the theoretical implications of planning theory, community participation in climate protection actions for the City of Davis and other cities, and future research application, based on my previous analysis. I also point out the limitations of this research and suggest that future research is needed.

Chapter 2

Literature Review

This literature review begins by situating community participation in planning theory. I look at how planning theories change over time and how local communities/citizens are viewed in these theories. I focus on the research about the evaluation of community participation to establish the evaluation framework for my analysis of the case study of the City of Davis. Finally, I turn to the climate change related planning and behavior change literature to understand what local city and community actions have been studied, which provides an overview of community participation in climate protection related actions at the local level.

The Role of Communities/Citizens in Planning Theory

Modern urban planning arose from several separate movements—the Garden City movement, the City Beautiful movement and public health reforms—when the rapid growth of Western cities led to considerable urban problems in the late nineteenth century. The multiplicity of technical, social, and aesthetic origins for planning explains the multiple roles of planning. Campbell and Fainstein (1996) noted that there are several major theories in planning history. The earliest theory is “rational/comprehensive planning,” which attempts to coordinate the multiple development and regulatory initiatives to find the best solution in a region or city. Hall (1988) noted that the comprehensive planning process was based on the direct approach: survey, analysis, and then design. However, it requires a high level of knowledge, analysis, and coordination,

which is impossibly complex. The idea that planners are objective experts also raises questions and elicits attacks as elitists. The failure of large-scale comprehensive planning led to the emergence of “incremental planning,” which viewed a planning process as “muddling through” or “disjointed incrementalism” (Hall, 1988). It suggests that planners should consider the political feasibility of implementation before they provide alternatives. It is more practical than comprehensive planning; nevertheless, it is not proactive enough when planners face unexpected problems. It also inhibits the pursuit of social equity because of the difficulties in challenging vested interests and in taking care of disadvantaged people.

In the mid 1960s, “advocacy planning” arose as a theory which argues that planning should promote equitable pluralism by advocating the interests of the disadvantaged to challenge traditional rational planning (Davidoff, 1996). Planners should be engaged social advocates instead of objective technocrats. Later, ‘Neo-Marxist planning” emerged as a theory stating that power dynamics within urban development should get more attention in the planning process. Theorists such as David Harvey and Manuel Castells pointed out that the major function of the state should be providing essential resources to serve the public interest as well as those of private capital (Hall, 1988). John Friedmann's “transactive planning” (1987) also emphasized that citizens and civic leaders, not planners, had to be at the core of the planning process if plans were to be implemented. Planners should bring stakeholders together, share information, and learn from their experiences. He argued that planning is social learning; the planning process should be an action-oriented, educational, group decision-making, organizing,

and cognitive growth process. People who have daily experiences, instead of professionals, should have the major power to address their environmental issues.

Another response to the shortcomings of comprehensive planning is the rise of “communicative planning” (Forester, 1989), which suggests that planners as communicators and facilitators should ensure the widespread availability of data and help the general public to understand public decision making processes, which would help to enfranchise disadvantaged people and encourage community-based planning actions. Who became involved and for what reasons and how they became involved in which phase all also should be considered by planners. Following Habermas’(1990) ideal speech situations, which proposed that participants should have equal power and access to express their feelings without constraints, Forester (1989) argued that who participates in the conversation and who makes the final decisions determine the results of participation. He believed that planning is a communicative action. Through a process of negotiation, conversation and deliberation, planners and communities are learning from each other and finally building a consensus for the common good (Forester, 1999).

Following this concept, researchers have developed a theoretical system to define and evaluate a consensus building process (Susskind et al., 1999). In the guidebook for consensus building, Susskind et al. (1999) provided a series of techniques and strategies for practitioners to structure a meaningful consensus building process, including methods to convene, clarify responsibilities, deliberate, decide and implement agreements. In the same book, Innes (1999) addressed some criteria for evaluation of the consensus building. In terms of process, practitioners should comply with several rules: consideration of all relevant representativeness; making participants self-organizing; building of practical and

shared goals; provision of high quality information; reaching full discussion; and keeping participants at the table feeling interested and learning. In terms of outcomes, practitioners should consider feasible and creative agreements which meet the public interest, creating new personal and working relationships and social/political capital among participants, and producing accurate information and analyses.

With community participation getting more attention in the planning process, many professionals have developed related methods for practitioners to adopt (Jones, 1990; Francis, 1999; Sanoff, 2000; Hester, 2006). In his book that provides a guide for neighborhood planning, Jones (1990) noted four principles of neighborhood participation: deprofessionalization, decentralization, demystification and democratization. He indicated that democratic participation is important because it creates plans and designs better reflecting people's needs, builds a sense of ownership which can enhance the feasibility of the implementation of plans, and builds strong political support, which make public officials or decision makers hard to ignore. Moreover, planners have to use multiple methods in order to achieve their goals of community participation.

If community participation is a model of citizen control, different levels of participation show varied levels of control. Arnstein (1969) proposed eight rungs on the ladder of citizen participation: manipulation, therapy, informing, consultation, placation, partnership, delegated power, and citizen control (from the lowest to highest level of participation). How to enable real citizen control instead of manipulation or just being a token also determines the effectiveness of community participation.

However, after receiving attention during the planning process, community participation becomes institutionalized. The time and resources required to involve

diverse participants is costly. It is also difficult to insure that participants have equal power during the process. Moreover, how to avoid “not in my backyard” (NIMBY) type participation is also a challenge (Sanoff, 2000). Practitioners such as Francis (1999) and Hester (2006) argued that instead of just being a token activity, community participation should be a proactive practice governed by local people to emphasize problem-solving and the understanding of natural processes and social relationships within the locality and the larger environmental context.

The evolution of how local communities are viewed in the planning process in different theories provides an overview of how communities change from passive receivers to active practitioners. Planning theory has indicated the significance of power distribution within a community and how the power distribution affects the effectiveness of public participation and program implementation. Clearly, community involvement as a responsive action to resolve the complex social problems which comprehensive planning and its proponents could not deal with indeed became a major theme in the planning process. The approaches to encourage and evaluate participation have also become diverse and in-depth. In addition, the roles a planner plays also have changed from technocratic to multiple, such as advocate, facilitator and communicator.

Therefore, when examining the case of the Davis CAT, I aim to show why the City of Davis developed its climate action plan by organizing CAT instead of just by relying on planners. In what ways is comprehensive planning insufficient in Davis? How is community participation used as a means of communicative planning to supplement the insufficiency of comprehensive planning? In terms of the power dynamics and participation methods, who participated and who did not? How did they operate to build

consensus and at which phase of the planning process? Who made the final decision and whose opinions were ignored? What was the outcome? What were the methods they used to encourage participation? Furthermore, in terms of the implications of advocacy planning, what roles did the city staff member (a planner) play? These questions will be answered in the following analysis.

Climate Protection and Related Behavior Change at the Local Level

Climate change impact as an important influence on urban planning has received considerable attention in recent years. Bulkeley and Bestill (2003) analyzed the CCP campaigns of different cities in the United Kingdom, the United States, and Australia. They found that institutional support, the availability of funding, the connection of local power with transport, energy and planning, the framework in relation to economic objectives, and the political will to act determined the effectiveness of the implementation of the CCP campaigns. They also noted that a nation-state was still a key actor in global environmental governance even though non-state actors took on the roles of defining problems, influencing negotiating positions, monitoring effectiveness and enforcing compliance. The findings are similar to those of the research which surveyed climate change activities in ten cities that signed the U.S. Mayor's Climate Protection Agreement (Bailey, 2007). The results showed that many cities will likely fail in reducing community-wide GHG emissions by 2012 to at least 7 percent below 1990 levels. Most cities did not invest enough money and expected actions from higher level governments, which inhibited them from creating innovative local solutions. Moreover, after examining the first generation of state and municipal climate change plans in the United States,

Wheeler (2008) also noted that reliance on voluntary actions decreased the effectiveness of plans.

However, how do local communities work with the GHG reduction policies? Do people really change their behavior to mitigate climate change in their daily lives? Moser and Dilling (2007) collected diverse research about social changes for climate protection, from how to communicate climate change issues to how to facilitate social change more effectively. They noted that although the scientific evidence conveys an increasing sense of urgency about climate change, high awareness but low personal concern did not effectively translate into immediate actions. The obstacles to action include cognitive barriers, psychological barriers, lack of peer support, organizational inaction and resource constraints, lack of political will and leadership, and technical barriers. They believed that people will not act until communicators understand their audience and bridge the gap in meaning. Pratt and Rabkin (2007) used an example of San Diego's sustainability survey to indicate the importance of listening to their audience. They noted that most successful climate protection actions depended on the involvement of local residents through the effective citizen outreach.

In the part about how to facilitate social change, Rabkin and Gershon (2007) analyzed the case study of Portland's 30-day program to lose 5,000 pounds of CO₂ per household to provide an example of how collective actions can happen to reduce the carbon footprint. They noted that the climate control program succeeded at organizing and mobilizing neighborhoods because of its individual and motivational focus. They encouraged participants to engage others. The program carefully minimized, selected, and packaged the information conveyed to participants. The Low Carbon Diet workbook

and web-based CO₂ emissions calculator helped individual household to easily practice their low carbon diets. However, they also noted that the program was not long enough and that the related financial support for the future program was also unknown.

The climate change related action research gave not only policy-level but also community-level perspectives and methods for addressing climate protection issues. Related behavior change studies show that how to communicate and facilitate to encourage behavior change is truly important to make a real difference. Therefore, when examining the case study of Davis Climate Change and Community Sustainability initiative, I will focus on how the local community is communicated to and how the City reach people and organize them to change their behavior to reduce their carbon footprint in the LCDPP.

Chapter 3

Research Methods

In order to understand the ways a local community participated in the climate protection planning process and its effectiveness, I conducted a case study of the climate change and community sustainability initiatives in the City of Davis, California. The case study as a research strategy has been used in many disciplines (Yin, 1994; Francis, 2001). A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident, and that comprises an all-encompassing method (Yin, 1994). Although some limitations, such as the inability to compare across cases, exist, a case study approach is a particularly useful research method in the planning profession because it is easier to practice it in real world contexts than the controlled empirical research method (Francis, 2001).

The Davis Climate Change and Community Sustainability initiative is an ideal case to study not only because of its high accessibility for me doing research but also because the two programs, the Davis Climate Action Team (CAT) and the Low Carbon Diet Pilot Program (LCDPP), provide different types of participation, which is helpful for an understanding of the reasons for the varied participation methods resulting in different outcomes.

I first collected and reviewed climate protection related references from journals, books, the internet, and local publications to build the context for the Davis Community Sustainability and Climate Change initiative, including collecting the CCP campaign

information from the ICLEI website and an email interview, and the Davis Climate Change and Community Sustainability Staff Report from the city website.

Then, in order to understand the process, I interviewed the city staff member who was responsible for these two programs and reviewed related documents from the city website to understand the reasons for and the goals of the programs. I also collected related reports from the local newspaper, *The Davis Enterprise*, to understand how the information was conveyed through the local media. Moreover, I participated in the two programs as a Davis resident to make first-hand observations.

For the CAT program, I joined the regular CAT meetings, its land use subgroup meetings, and two public forums starting in April 2008¹ and observed how the meetings were conducted to build consensus. In order to evaluate the effectiveness of CAT, I interviewed eight CAT members, who represent different social groups and CAT subgroups, and reviewed the Public forum related data from the City Staff Report. The interview questions addressed the roles played by the representative organizations, the related climate protection actions, the relationship with the city, and the experiences of being CAT members. I also interviewed the mayor to further understand the future implementation mechanisms of the plan. In order to keep the interviewees confidential, I used a code, such as interviewee A, to represent different interviewees.

For the Low Carbon Diet Pilot Program, I participated in the 30-day program and related meetings to observe how they operated. I analyzed the workbook (the Low Carbon Diet: A 30 Day Program to Lose 5000 Pounds) and the carbon calculator (the Cool California) to understand how the information was conveyed. I collected the city-

¹ The CAT started to meet in March 2008. They have met twice a month before August 2008. After September 2009, they meet once a month until April 2009.

administered survey of the program. The questions which the city-administered survey included address the geographic areas where participants live, household numbers and income, housing ownership, commute patterns, quantities of CO₂ emissions the household emits in different categories per year, whether the activities listed in the workbook they have already done, are starting to do, or will not do, and the experiences for the tools and overall program. However, it got less than half of the participants to report their results. In order to further understand why people did not report (or participate), I conducted another participants' motivation survey via email to ask why they participated in the program, what they have learned, why they did not report the City survey, what limited their participation, and whether they will participate in a similar program in the future. I have sent the email survey three times to encourage more participants to respond. Finally, I analyzed these data to evaluate the effectiveness of the program. The overall sources of data and their receiving time frames are outlined below.

The Types of Data	The Numbers of Data	Conducting Time Period
Staff reports and related resolution	7	April 2007 – December 2008
For the CAT		
Regular meetings	15	April 2008 - March 2009
Land use and community design subgroup meetings attended	2	June and August 2008
Public forums attended	2	June 2008 and January 2009
Interviews conducted	11 (two for the city staff member, eight for the Davis CAT members and one for the mayor)	March 2008 - February 2009
For LCDPP		
Participatory observation	2 group meetings and 1 City on-line survey	October 2008 - November 2008
LCDPP motivation survey	3 (the times of sending out)	January 2009

Table 1 The overall sources of data

Chapter 5

The Background of Davis Climate Change And Community Sustainability Initiatives

The Origins of Cities for Climate Protection (CCP) Campaign

Since climate change emerged as a significant global environmental issue in the late 1980s, related international conferences and scientific research projects initiated serious discussions of what climate change is, the evidence for it, and its causes and effects. According to the IPCC's Climate Change 2007 report, which is viewed as the major scientific assessment of climate change by most policy makers and researchers, the definition of climate change is "the statistics of changes in weather over time" (p.96). While other factors affect climate, human activities, which have resulted in the large amounts of GHG emissions, are the major cause of the climate change. Different social groups at multiple scales, therefore, have started to act to reduce GHG emissions from human activities. Besides the Kyoto Protocol (UNCED, 1998) which is the most famous international framework convention on reducing GHG emissions², many local governments also increasingly have articulated progressive climate protection discourse. In the United States, 29 states, cities, and counties had prepared climate change plans of varied types by 2008 (Wheeler, 2008).

² The effectiveness of Kyoto protocol is limited because the United States, the largest single emitter of carbon dioxide from the burning of fossil fuels, did not ratify and developing countries have no obligation beyond monitoring and reporting emissions (UNCED, 1998). The absence of the United States from Kyoto Portocol may be the reason that many American cities join the CCP program and initiate US mayors Climate Protection Program.

One of the far-reaching programs is the Cities for Climate Protection (CCP) Campaign which the International Council on Local Environmental Initiative (ICLEI; recently renamed ICLEI — Local governments for Sustainability), initiated in 1993. ICLEI is an international association of local governments and national and regional local government organizations founded in 1990. Until 2008, ICLEI has more than 800 local government members worldwide and more than 465 members in the United States. The campaign is based on an innovative performance framework structured around five milestones³ that local governments commit to undertake. ICLEI provides technical consulting, training, and information services to build capacity, share knowledge, and support local governments in the implementation of sustainable development at the local level (ICLEI, 1995). In her study of climate change norms in the US in the early 2000s, Fogel (2007) noted that the CCP Program is one of most important activities at the local city level. She also indicated the importance of the “US Mayor’s Climate Protection Agreement” led by the Seattle mayor at the time, which had been signed by 200 mayors from 38 US states. It called on federal and state governments to enact Kyoto Protocol-like reduction targets and committed local government signatories to meeting or exceeding the Kyoto protocol targets by acting locally.

Building the Evaluation Framework and Recapturing the Leadership: The History of Davis Climate Protection Related Actions

Davis, a university town located in Northern California, has been viewed as a leading sustainable city for a long time. The policies of adopting compact city growth,

³The five milestones in turn are conducting a baseline emissions inventory and forecast, adopting an emissions reduction target for the forecast year, developing a Local Action Plan, implementing policies and measures, and monitoring and verifying results. (<http://www.iclei.org/index.php?id=810>, retrieved March 2008)

preserving agricultural land, and promoting bicycle use and public transit all illustrate the efforts of being a sustainable city. However, past efforts were not clearly evaluated in terms of GHG reduction. Moreover, seeing other cities' projects, which included the latest in environmentally beneficial features, also encouraged Davis to take more aggressive actions to recapture their leadership as a sustainable city. Therefore, Davis passed the resolutions to participate in the Cities for Climate Protection Campaign in 1999 and to endorse the US Mayor's Climate Protection Agreement in 2006. In order to act effectively, the City first adopted the "Climate Protection/ Community Sustainability Framework Strategy" resolution in April 2007, which followed the five-step framework of GHG reduction provided by ICLEC. The strategy is based on existing projects to develop a framework to reduce GHG. Below are the five integrated elements in the framework strategy⁴ (City of Davis, 2007a):

- 1. Assess the City's current programs and projects that support resource conservation and community sustainability.*
- 2. Develop a short-term action plan to identify early action items to be implemented in less than 18 months.*
- 3. Develop a mid-term action plan to implement multi-year projects that build on existing City programs/projects to achieve the City's climate protection and sustainability goals.*
- 4. Initiate a visioning process to define a sustainable Davis that guides future decisions.*
- 5. Develop a community outreach program to provide and gather information.*

Following the strategy, the City continued and irregularly reviewed the related work, including reducing GHG emissions from city operation (City of Davis, 2007b, 2007c, and 2007d). The City completed its baseline inventory and forecast of GHG in early 2008. According to its GHG Emission Inventory presentation (City of Davis, 2008b), three percent GHG emissions resulted from governmental operations, and ninety-

⁴ According to the report, these elements will be implemented on parallel tracts when resources and sequencing permit.

seven percent from community in 1990. Among the emissions from the community sector, 57 percent came from transportation and 23 percent from residential sources. The commercial and industrial sectors contributed 20 percent of emissions. The City Council adopted GHG reduction goals in November 2008. The adopted targets set a reduction range that use the State adopted targets, such as reducing GHG emissions to the 1990 level by 2020) as a base and more aggressive targets, such as 28% below 1990 level by 2020, as the desired outcome (City of Davis, 2009).

The City also tried to work with the community to develop its long-term action plan. The Natural Resources Commission was assigned as the primary advisory body to the City Council. The City Council asked the City to organize community members and organizations to build a Climate Action Team (CAT) and a Science Advisory Team (SAT) to help in developing a local climate action plan in March 2008 (City of Davis, 2008a). When the action plan is completed, it will be sent to the Natural Resources Commission to discuss first and then to the City Council. In developing a community outreach program, the city started the month-long “Low Carbon Diet Pilot Program”(LCDPP) in October 2008 to recruit Davis 100 households to reduce their carbon footprints by changing their lifestyles

These specific actions and programs show that the City of Davis has indeed put considerable efforts into acting to reduce GHG emissions both from governmental operations and the local community. The City recognized the urgency of building an evaluation framework to direct their GHG reduction actions and trying to keep its reputation as a progressive sustainable city. They also acknowledged that the community, a major source of GHG emissions in Davis, is an important factor impacting the

effectiveness of GHG reduction efforts. The local community was viewed as a partner of the city and played an important role in developing and implementing the future climate action plan. In the next chapter, I will take the CAT and the LCDPP as examples to illustrate how the City of Davis adopted community participation into the planning process and their effects.

Chapter 5

Community Participation in the CAT and LCDPP

This chapter describes the participation process, analyzes and evaluates the community participation strategies taken by the City of Davis to answer the question of how community participation affects the climate protection planning process. With the Davis Climate Action Team (CAT) and the Low Carbon Diet Pilot Program (LCDPP) as examples, I found the CAT as a planned participation strategy to form the Davis Climate Action Plan is a learning and consensus building process. The LCDPP also made participants start to change their behaviors to reduce their energy consumption. However, the limited resources in supporting better communication in the CAT process constrain the effectiveness of the participation. Problems — most LCDPP participants were self-selected, relatively small GHG reduction, and lack of follow-up to check whether the low carbon diet was continually and truly practiced — also exist. In the final chapter of the thesis, I provide possible alternatives and recommendations that may be applicable in other cities in improving the participation.

The Davis Climate Action Team: A Planned Community Participation Process

The City recognizes that the development of an effective long range GHG reduction plan requires engagement across all sectors of the community; and the objective of forming the Climate Action Team (CAT) is to develop a deeper understanding of the issues associated with climate change and to take advantage of the extraordinary talent that is unique to Davis. (City of Davis, 2008a)

The above statement illustrates the City Council's motivation for organizing the CAT. Instead of developing the climate action plan just by relying on City planners and

using comprehensive planning methods, the City recognized the importance of incorporating local residents' opinions and knowledge to form a more effective action plan. Therefore, after the city staff member provided a draft CAT list which included organizational and individual representatives⁵, the City Council adopted the list to formally appoint the CAT members. Being a partner with the City working on the drafting of a local climate action list, the CAT has fairly diverse constituencies. There are 20 voluntary and all appointed members including local community leaders or professionals, related City commissioners, business groups, religious and environmental non-governmental organizations, high school representative, and university student and administrative representatives⁶. Their goals are helping the City to develop and implement a process to facilitate community input and comment, increasing overall awareness, and generating innovative approaches and strategies to reduce the GHG emissions in Davis⁷.

Instead of being passive consultants, the CAT members actively planned the content from the beginning. The first meeting was held in March 2008, and then regular meetings occurred (once or twice a month until the completion of the action plan). In order to efficiently discuss and develop specific action advice on their subject, in the third meeting the CAT was divided into four subgroups – energy use and production, transportation, land use and community design, and consumption and waste reduction subgroup – to start to develop recommended action lists. After each subgroup completed the draft list, the CAT held the first public forum at Davis Veterans Community Center to

⁵ For the organizational representatives, the staff member gave the specific organizations and city commissions list. But for the individual representatives, they let each council member select an representative who are local community leaders or climate change related professionals.

⁶ The detail CAT member list can be viewed in Table 2.

⁷ <http://www.cityofdavis.org/meetings/agenda.cfm?c=32>

share the information and get input from the general public. Each subgroup later incorporated public opinion and the categories of potential GHG reduction, cost, ease of implementation, visibility and social justice from the worksheet, with the old list to develop a new list ranking the five short-term, five midterm and five long term actions. After the public forum, the CAT also formed another subgroup – public outreach – to start related activities such as having a column in the local newspaper reporting related information to educate the public and holding a related public forum to provide information on financing mechanisms to increase household energy efficiency.

After each subgroup (except for public outreach one) finished its recommended list, the CAT worked with the city staff to create a template for the draft climate action list. In order to implement the recommended actions more quickly, the CAT proposed a “Stage One” action list which subgroups picked up from their second recommended lists, based on whether the actions could produce fast results and need less investment. In April 2009, they held another public meeting to report on the CAT working progress to provide a more detailed analysis base and let the public review the actions they have recommended. After the meeting, the City will start to implement the “Stage One” actions, which the CAT provided. The city staff member will prepare the draft plan and the plan will be given to the Natural Resource Commission and the City Council to adopt in summer 2009. The CAT overall process is outlined below.

Phase	When	What
I	February 2008	The CAT was formed as a subcommittee by the City Council.
II	March 2008 – June 2008	The CAT started to meet regularly and was divided into four subgroups to create action lists

	June 26, 2008	The CAT held the first public forum for sharing information and gathering public opinions.
III	July 2008 – March 2009	The CAT analyzed and incorporated the public forum results to create a list which includes short term, midterm and long term actions. The CAT also proposed another “Stage One’ action list in order to accelerate implementation of some climate protection actions.
	April 2009	The CAT held the second public meeting to present the draft action list and ensure the priorities they have recommended.
	May 2009	The CAT gives the final action list to the city staff member to develop a final climate action plan

Table 2. The overall process of the Climate Action Team

The approximately one-year-and-a-half long CAT process has shown that the City has indeed spent a lot of time on community outreach and participation to form the climate action plan. The City viewed the community members as partners in developing the action plan together by continuing communications and interactions. They worked collectively in producing the plan which will be accepted and practiced by the local community. Nevertheless, as Forester (1989) noted that planning is making sense together, when a plan is evaluated, not only the content but also the process of the plan should be considered. Who participated in the process and who did not? Who makes the final decisions on whose terms for whom? These questions need to be addressed as well. Below are several findings in the assessment of the process from my participatory observation in those meetings and the public forum and interviews with the city staff member, the mayor and the CAT members.

With respect to constituencies and organizing ways, compared to grassroots style community participation organized by local people, the organization of the Davis CAT can be seen as a planned way to organize local people, which is initiated by the

government. The city council appointed the CAT members and assigned clear tasks for the team. The relatively small size but fairly diverse representatives enhanced the efficiency of discussion and decision making. The characteristic of having appointed members by the city council also gives the CAT a certain political power and legitimacy to develop the future action plan. However, it raises a series of questions about representativeness: Do the CAT members adequately represent all the social groups of the Davis community? How do the CAT members represent their groups? Do they constantly attend the meetings and voice their concerns? How is the CAT discussion/information brought to other Davis residents, especially underrepresented groups?

The first question has a clear answer: the CAT members could not represent all social groups in Davis. The different levels of involvement by and motivations for the members also resulted in the ignorance of certain considerations, such as students' opinions, during the CAT meetings. The table below, which is the number of attendance for each CAT member, shows that not every member constantly attended the meetings. For example, students' experiences may not be discussed because of the less frequent attendance by the students' representative. The reasons why some representatives did not constantly attend the meetings included personal reasons and they did not feel learning something new. Although the City tried to resolve the representative and communicative problems by making the CAT process as inclusive as possible such as opening the meetings, sharing information via newspaper or website with the general public, and holding related workshops and a public forum, the lack of human and material resources limited the possible ways of reaching people who could not join the meetings or the

public forum. The problem of the absence of certain social groups, such as students or new residents, still exists. How to keep participants at the table feeling interested and learning (Innes, 1999), which is an important measure for evaluating the consensus building process, also needs to be considered.

	Representative organizations of CAT	March 2008-June 2008 (8 meetings, including the first public forum)	July 2008-September 2008 (5 meetings)	October 2008-April 2009 (7 meetings, including the second public meeting)	Total No. of meetings attended (20 meetings)
1	Bicycle Advisory Commission	8	5	7	20
2	Care for God's Creation	8	4	7	19
3	Citizen 1 (local environmental organization)	7	0	0	7
4	Citizen 2 (energy-efficient professional)	7	3	7	17
5	Citizen 3 (former mayor 1 and her successor)	8	3	5	16
6	Citizen 4 (former mayor 2)	6	5	2	13
7	Citizen 5 (local professional)	6	4	6	16
8	Davis Chambers of Commerce	5	5	3	13
9	Davis High School	2	1	3	6
10	Davis Joint Unified School District	3	1	2	6
11	Explorit Science Center	4	4	7	15
12	Natural Resources Commission	8	5	7	20
13	Open Space and Habitat Commission	8	5	6	19
14	Pacific Gas and Electric	7	5	7	19
15	Planning Commission	6	5	7	18
16	Sierra Club, Yolano Chapter	7	3	7	17

17	The Davis Energy Group	8	4	6	18
18	UC Davis associated Student	4	0	4	8
19	UCD Sustainable Committee	8	1	5	14
20	Yolo County	8	5	7	20

Table 3. The attendance of CAT member during the CAT meetings
(Note: Two student organizations, the school district and the Explorit Science Center joined the CAT after the first meeting)

The other question is “How much the political power does the CAT have?” Will the City Council, who has the power to make final decision, accept the plan without conflicts? The answer is unclear now because the final plan is not completed yet. Although from the interview with the mayor positive results are expected,

We will ask the cost. We will see if it is worthy to do it... But usually we have good recommendations because they (CAT) have time to discuss it. So most of the time, the council will approved some recommendation without amendments.”

the response from the city staff member shows there must be some conflicts during the process.

There will be any kinds of issue relates to the growth of community. How community grows will be controversial... Community grows at what rate. There will also be controversies in the Council on how to implement, fund these types of programs, subsidies for some of the actions

The CAT process can also be viewed as a communicative, learning, consensus building process in terms of the operation. As Forester (1999) noted in his book of addressing the means and philosophy of deliberative planning process from planners’ experiences, participatory planning can transform a public dispute. People who share a common future could learn about the issue and each other to create public value through the deliberating process. When facing the complex climate change issue, the CAT

members with different expertise shared their knowledge and experiences and learned from each other. The city staff member who was responsible for the program noted the advantage of having the CAT.

The CAT was formed to have broad reach to across the community...Having them (CAT) disseminating the information or let broad community having the opportunities to be beware of it, not only specialized people working on this technical issue. People are able to explain it and try to figure out how it works in their own organizations...from that perspective, it was very successful because there was broad interest in participating in CAT. I think the diversity of views have involved in. a lot of ideas that purely technical groups would not necessary come up with. They are also been able to provide more grounding, when it comes to what the potential actions can be implemented because there are associations with different organizations.

However, members with different social backgrounds had different opinions, which caused some disagreement. For example, during one of the CAT meetings, a local resident reported on a specific water infrastructure development project which was discussed in by the city council at that time. After the presentation, some members agreed to take a motion to the city council, but some members disagreed because they thought that evaluating the specific project was not a CAT task. After more discussion on the relation between the project and the CAT goals, the CAT agreed to take a motion to the city council. Through discussion, members shared their expectations and understandings of the CAT and understood others' thoughts. They also built a rule to deal with a possible similar situation in the future, which would be helpful for future operation.

It definitely has disagreement. But I don't see any problem that we can't weigh in general thought about how to deal with that...I think it's worthwhile. I talked to the member about the motion. It's not very controversial. It gives us a staring point to think about the balance. It's the first time for everybody to vote on something. Voting is not big deal in commission.(Interviewee E)

The city staff member, who was responsible for the CAT program, as a planner was an important actor playing multiple roles to help build this communicative and learning process. The city staff member first worked as an organizer/advocate to contact different social groups in Davis to organize the CAT. During the CAT meeting, he acted as an information provider and communicator to illustrate what the City was doing. He also worked with a facilitator to encourage members' discussion. While the city staff member presented the city strategies to the general public in the public forum, he became an advocate to promote the idea of reducing GHG emissions. Moreover, when he discussed the related climate actions with other city departments, he was also a negotiator and mediator to resolve possible conflicting ideas. These different roles that the city staff member played in the CAT process indicated that planners need to play multiple roles to enhance public participation and implementation of the plan. As Forester (1989) argued, planners not only serve as technical problem solvers or information processors but also as selective organizers of attention to real possibilities of action.

In terms of subgroup meetings, they are a learning and consensus building process as well. Taking the land use subgroup discussion as an example, members who have different types of expertise and represent different social groups discussed for a long time developing the recommended actions list and ways of setting up the priorities among these actions. For instance, when they discussed the location of the community commercial center to provide people's daily life needs within walking distance, members had different opinions about whether city should improve current downtown service or develop other new neighborhood commercial centers. Through discussion and consultation with city planners, members finally decided that both were important in

different ways. Although the discussion took considerable time, the process was necessary to build the constructive solutions.

The learning and communicative experiences also occurred between the CAT and the members of the general public. According to the City data, more than 200 local residents participated in the first public forum⁸. From the evaluation of participants' experiences from the city data, more than 85% of the respondents agreed that the forum provided them with more information about the CAT and their work and felt that the workshop addressed well the issues that were important to them. About 83% of respondents thought that the information presented and overall workshop content was good or excellent. More than 90 % of the respondents thought they were able to participate and give input well. Participants used red or green dots and post-it notes to express their opinions about the listed actions or adding new action suggestions. Some CAT members were excited about the public forum. They thought people's opinions were really useful for future action planning. They could understand people's experiences and therefore produce a truly feasible climate action plan.

I've been influenced by testimony myself. It's useful. (Interviewee A)

It turns out that public forum is really substantial... I think people show up spontaneously really meaningful. I'm quite optimistic about that. If we do things right, we do respond and do get their input and tell everybody the process, everybody will start to involve. (Interviewee B)

However, the purpose of communication should not be just accepting all the people's opinions. One member noted that the risk of public participation was following public opinions without questions.

⁸ There may be more participants because some residents participated after the beginning of the forum.

It is essential to have public participation but you have to be careful for public participation too. You don't want to promise public in making decisions. For example, as an individual, you sometimes ask friends advice. There is a danger there. Because if you don't follow the advice, they will be angry, right? It's the same thing to ask public for advice. We don't necessarily follow their advice because they might be wrong or they don't have full information. But Public might get angry. It's the problem. (Interviewee C)

He gave an example of the discussion of a roundabout in an intersection. According to the city staff, roundabouts, used consistently in place of stop signs and lights, can significantly help reduce GHG emissions and local air pollution. However, most people have the image that roundabouts cause more accidents, which is contrary to the scientific data

We saw that very clearly with transportation workgroup. One of the proposal got most red dots is about roundabout in the intersections. The city staffs have done extensive research about that. Roundabout are the best thing to do .They are safest, least dangerous, reduce traffic accidents, and cheaper. But they got the most red dots. Read the comments. People perceived roundabout is unsafe. They said bicyclists will be killed by cars. But actually city put some roundabouts into some intersections. The rate of bicycle accidents down to zero. It's not only safe in Davis but other cities. So public is just wrong..... They may indicate that the public needs education rather than we just follow the public what they want to do. (Interviewee C)

The member provided an important point, which shows the importance of the educational function during the participation process. According to “communicative planning” (Forester, 1989), through an inclusive and discussion-oriented communicative participation process, people can develop mutual understanding and resolve conflicts to build consensus. In order to achieve effective communicative participation, Forester (1989) identified the following conditions: that all people have an equal opportunity of access to the process, comprehensible language is used rather than jargon, the processes are open, legitimate and engendering trust, and power distortions are minimized by carefully listening, interpretation and facilitation. But what if the consensus is wrong and

the participation process allows people to enforce their incorrect opinions instead of helping them learn about the truth? Although the public forum was designed as a participatory setting and avoiding technical terms, however, because of the limited time during the public forum, not every CAT member could have enough interaction and discussion with local residents. Local residents might not understand the issues sufficiently to make correct recommendations. Although the public forum did involve level of sharing information and getting public input, the educational function did not develop very well.

The problem of limited communication also existed among different subgroups. The subgroup detailed discussion did not extend to the whole CAT meeting. Members might not entirely have known what the actions from other subgroups were. One member from land use subgroup mentioned the situation.

It's hard to do everything and ending up splitting subgroups. That's a little frustrating. I guess a lot of people wish to talk about every aspect. So far, my exposure is almost 100% to land use group. I don't know energy group their things. Some point you have to come back together and everybody has kind of sense understanding. (Interviewee B)

The communication between the CAT and the SAT, the CAT and the city showed similar problems. The connection among these groups was not organized very well because of the limited human resources and time. Interviewee A from the energy subgroup mentioned that *"It's logical that city has to be reporting to us, coordinating with us.... We need to know what the city's doing, they currently doing or wants to do. We will consider the overlap and change our proposal"*. However, although the city official did report related city works and the SAT operations, the CAT, the SAT and city departments still lacked cohesive connections.

In terms of the evaluation of the plan, another problem is that whether the plan itself is adequate to the challenge of climate change is still uncertain. Whether this one year and half long process was worth the City spending so much time in developing the plan when facing the urgent climate change challenges and how the climate action plan will be implemented are also unclear. Although, according to the staff's information reported in the CAT meeting, the plan will have quantifiable GHG savings and related implementation mechanisms for each action, the plan still had not been completed when I finished my research work. However, the "Stage One" action list which the CAT provided shows that some innovative/progressive actions are included. For example, the waste reduction and consumption subgroup suggested that the City should permit gray-water use and create and implement local purchasing polices. The energy use and production subgroup proposed that the City should provide renewable energy and energy efficiency financing mechanisms and strengthen mandatory Green Building ordinance. In the land use and community design subgroup, they suggested that the City should incorporate climate change related policies and actions into the General Plan and promote mixed use development and a low Vehicle Miles Traveled (VMT) community design. The transportation subgroup suggested that the City should implement "Complete Streets" plan to support all modes of transportation. The table below is the "Stage One" action list.

Subgroup	Stage One Actions
Energy Use and Production	Utilize home energy devices to reduce energy use through change in residents' behavior.(Pursue program with PG&E to install display monitors in homes and businesses)
	Carbon reduction education. (Work with CAT members and local organizations to sponsor community forums, programs, and "one-stop" climate action service center)
	Renewable energy/energy efficiency Financing

	Power purchase agreement (PPA) energy financing strategy
	Hire full time energy / climate specialist
	Strengthen mandatory green building ordinance
	Time of sale energy retrofit ordinance
	Street and park light retrofits and controls
Land Use and Community Design	Provide incentives for car and bike sharing programs.
	Locate new homes within walking/cycling distance of essential services, including schools, parks, and neighborhood commercial such as grocery stores and cafes.
	Promote mixed use development (residential/commercial) in and outside the downtown to provide essential services to all residents, including providing incentives for commercial development.
	Design street layout, building orientation, and landscaping to accommodate passive and active solar energy systems and to capture natural cooling and heating opportunities.
	Permit and encourage community forests for carbon sequestration.
	Incorporate climate change goals, policies, and actions for greenhouse gas reduction and energy efficiency into the General Plan. Consider including a “Climate Change Element” in the General Plan. (Policy level)
	Require that environmental documents specifically address climate change, energy efficiency, and greenhouse gas reduction. (Policy level)
	Create a “Greenhouse Gas Reduction Plan” for both municipal operations and community energy use. (Policy level)
	Establish specific reduction goals for municipal and community “vehicle miles traveled.” Specify policies and programs to achieve these goals, including concentrating citywide uses in the downtown. (Policy level)
	Determine an appropriate funding mechanism (or mechanisms) to support city programs to reduce greenhouse gas emissions, including a new city position to assist the current Sustainability Coordinator and increased funding for bicycle and pedestrian infrastructure. (Policy level)
	Require the implementation and construction of lowest possible carbon impact public works and infrastructure projects. This includes all areas of city public works and construction as well as local developer built infrastructure projects.
Transportation	City to develop a car pooling program.
	City to participate in the University car sharing program.
	City to implement traffic light synchronization.
	City to develop additional bicycle parking downtown and other commercial areas.
	City to determine and publish safe bicycle routes to schools. Hire ‘Safe Routes Coordinator’

	City to research opportunities to increase the number of traffic circles in place of traffic lights. Consider traffic circles in all new projects where intersections are required.
	Develop shuttle service from the campus and high school to the downtown.
	City to participate in regional planning to reduce commuting.
	Implement “Complete Streets” plan. Implement Complete Streets program for all modes of transportation for all new streets.
	City to provide increased parking for fuel efficient vehicles.
	City to research changes in traffic rules to favor bicycles.
	City Council establish a Transportation Advisory Commission (TAC)
	Initiation “Safe transportation Day”
	City to research feasibility of developing an all electric public tram system.
Waste Reduction and Consumption	Conduct a community education campaign on the carbon consequences of their food choices, with special focus on protein sources such as meat, fish, and vegetables.
	Implement City policies that favor contracting with companies which adopt energy efficient, low carbon practices, and use non-toxic chemicals. Encourage businesses to implement similar contracting policy via incentives and disincentives.
	Implement City policy that favors purchasing local, seasonal, sustainably grown and raised, organic, food products, and climate friendly, rapidly renewable, and recycled content products, create a purchasing system for business within the city to implement similar purchasing policies.
	Provide reusable utensils, dishes and water containers at City Facilities to enable zero waste events at those facilities.
	Permit grey-water use.
	Create a city salvage yard for the City to promote reuse of goods and reduce consumption, expanding on existing programs with extended hours of operation and increased seasonal availability based on the UC Davis schedule.
	Require subdivision level wastewater treatment and reuse for all new developments.
	Adopt Zero-waste goal for Davis and begin the planning process.
Promote water production and storage policies to reduce the energy requirements and GHG emissions associated with these activities: including options such as time-of-use water monitoring and construction of low embedded energy and low energy use projects including new waster towers instead of on-ground tanks.	

Table 4. The CAT “Stage One’ action list

Moreover, the fact that the City already had a sustainable work group and had passed the Green Building Ordinance showed that the City had already started

implementing related actions when the plan was being drafted. Although the plan might overlap the work that the existing work group has done or some actions might be hard to evaluate in terms of their effectiveness in reducing GHG emissions, the high priority of the policy ensures that the plan is likely to have enough support from the City.

When we created the sustainability project, all the council members were unanimous and wanted to do it. It means it had priority, it means that we have to put some money in there to succeed. The first thing is that we put 100,000 dollars to let Mitch [the city staff who are responsible for the program] get started the first year. The next year... it continually funded another 100,000 dollars. When we have the plan, depending what the plan is, and what we want to do, we will put more money there. Now it [the funding] is from our general funding. Depending on the plan, it probably will have some funding from federal and state government. We will apply for the money to implement. (Interviewee D)

The City produces it, then they have to meet the goal, It's a true statement. I don't think adopting the goal but not meet it. Maybe they change the goal, but I don't think they are toward that direction. (The City Staff Member)

From the overall analysis of the CAT process, I have found that, although CAT has certain problems such as representiveness and limited communication, it still achieved the goals at a certain level. The CAT did facilitate community input, increase overall awareness, and generate innovative approaches to reducing GHG emissions. From the evaluation data from the first public forum and the interviews of the CAT members, the city staff member and the mayor, almost all the people agreed that the CAT process has been effective and a good starting point for future community participation.

Somebody can sit down and write a plan for several days like we end up with. But you have to go through the process, involving people, talking, even though you spent a year to get something. It has to be done. It's no other way that you want to do community participation without going through those kinds of things. (Interviewee B)

Yes, it [the CAT] is very effective. When the team was going, they had some workshop and the forum. You can see participation there. It was well attended... We need to do more. I'm hoping all the community. The more we talk about it, the

more people will understand it, the more they will accept it and become a part of process. (Interviewee D)

My experience with CAT has been positive overall—I am optimistic that there are many bright and dedicated individuals on the CAT that are contributing their time and ideas for the recommendation the city council. I feel like the subcommittees' suggestions for the action items have been very good and many are quite feasible. I felt like the rating worksheets are fairly comprehensive with the feasibility, public support, cost and time for implement as well as an environmental justice component to it. (Interviewee H)

I was surprised about how efficient the {CAT} meeting has been, how respectful one members show to another. Davis is a small town and has attendance not to let personal override the group. We come from different areas, all political spectrums. We have people who oppose each other steadily. Every one has been very thoughtful, respectful and corporative with each other so far. (Interviewee I)

Without it you don't have any bases that community will buy in. My perspective is that you have to go through this type of process to make sure that some level of support in the community for taking the issue one on one and try to figure out how to do about it You have to have that kind of public input component to be able to come out with the plan will be supported.... without support, there is really no point doing a plan. You can't get the community to embrace it and say it's a reasonable way forward based on what we(planners) think needs to be done.(The City Staff Member)

However, the CAT as a form of community participation did not really change people's behaviors to reduce GHG emissions during the process, which requires more hands-on methods. Next, I use the LCDPP as an example to illustrate how community participation can also change people's behaviors in their daily lives.

The Low Carbon Diet Pilot Program: From Awareness to Actions

As Moser and Dilling (2007) noted, since the high awareness of climate change issues in the United States has not turned into real personal actions, how to really change people's behaviors becomes the next important challenge that advocates have to face. The City of Davis, therefore, started a pilot program, LCDPP, to recruit one hundred Davis households and helped them change their lifestyles to reduce carbon emissions by

related tools in October 2008. The goals of the program were to ask individual participant households to “lose” 5,000 pounds of carbon emissions in a month and eventually engage more Davis households to adopt into this low carbon diet lifestyle.

The process of the program could be divided into three phases. The first phase was the warm-up process. The city staff asked specific people who represented all types of organizations in the community and then announced in local media that the general public was invited to participate⁹. The final composition of the 100 households consists of City employees (the largest group), UC Davis employees, the CAT members, early adopters such as climate and energy scientists, and ordinary Davis residents. In the first kickoff meeting, the city official provided the program and the tools overview, the “Low Carbon Diet: A 30 Day to Lose 5000 Pounds” workbook (Gershon, 2006), and the web-based California specific carbon calculator, “CoolCalifornia”¹⁰(Cool California Org., 2008) to provide basic information. The approximately 70 attendants were split into ten support groups (eco-team) based on their geographical locations with one volunteer facilitator¹¹. The eco-team members came to know each other and shared their possible action plans. Some eco-teams had several small-group meetings after the large-group meeting while other eco-teams actually did not meet or communicate by email at all. A participant even created a Google Blog for participants to discuss and share information.

⁹ The City have asked the following organizations: City Council, City Department heads and staff, CAT members, Natural Resource Commission members, Science Advisory Team members, Unitrans, UCD administrators, UCD Faculty, UCD students (including ASUCD), News reporters, State Park affiliates, DJUSD Board members, environmental non-profits, members from state agencies, politicians, sports directors (i.e. AYSO and Davis Bike Club), Chamber of Commerce members and DDBA members along with downtown businesses, home owner associations, affordable housing members.

¹⁰ <http://www.coolcalifornia.org/calculator.html>

¹¹ The facilitators are from CAT members or local residents who are interested. They had an informal training meeting before the program started.

Moreover, the City also joined the UC Davis Centennial Celebration to spread information about the program in order to increase public awareness.

The second phase was the mid-point check-in process. The City held a large group meeting two weeks after the first meeting. Each eco-team first shared its practiced experiences, including effective ways and difficulties, and discussed possible solutions in their small groups, which they then shared with the large group. From the meeting, the City received the feedback about how the tools worked/ did not work and how the program could work better. The City also announced the future program survey and information about how to continue to be involved.

The last phase was the survey process after the program ended and the final results reporting process. The City created an on-line survey, which was held over nine days, to ask participants to report their experiences, including their basic demographic information, the actions they already taken, started to take or had not taken (based on the workbook), and feedback about the workbook, calculator and the overall program. According to its Staff Report (City of Davis, 2008c), which summarized the survey results, most participants were high income families and homeowners. The average carbon footprint per household was 33 tons of carbon dioxide emissions per year, which is lower than the California and national averages but is still four times higher than the world average, from 41 effective reports. Annual pounds of CO₂ emissions were reduced by 253,723 lbs (around 5,516 pounds per household), from the 46 effective reports received. Moreover, the results of the commute pattern questions showed that as many as 40 % of reporting participants commute by bicycle and 45% by driving an automobile. If

their round trip commute was 10 miles or less, participants were more willing to give up driving. Figure 1 shows the average carbon footprint broken down by category.

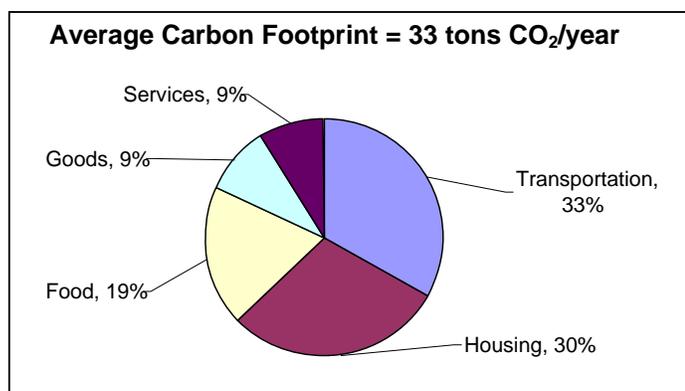


Figure 1. Average carbon footprint of households who reported results, broken down by category
Source: City of Davis Staff Report, http://cityofdavis.org/pgs/Sustainability/lcd/lcd_main.cfm.

With respect to actions taken or not taken, participants had already taken around half of the total actions listed in the survey prior to the program (City of Davis, 2008c). Although 23% of actions were not practiced in the program, 27% of actions were newly adopted as a result of the program. Among the twenty-nine actions listed in the survey, turning appliances all the way off, switching from meat to vegetarian meals one or more days a week, and reducing hot water used in showers were the three most popular actions taken. Installing storm or high-efficiency windows, insulating walls and attic, and purchasing an energy-efficient furnace were the three least popular actions. The results show that more changes happened in the actions requiring easier behavior changes, such as turning off appliances, than in the actions needing more capital investments, such as installing new high energy-efficiency windows. Figure 2 shows the proportion of actions already taken, started to take, and not taken because of the program.

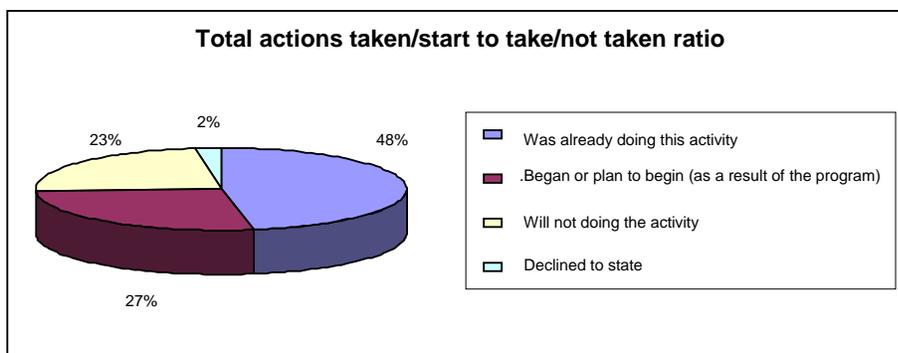


Figure 2 Percentage of actions that were already being practiced, were adopted through the program, or were not adopted despite the program.

Source: City of Davis Staff Report, http://cityofdavis.org/pgs/Sustainability/lcd/lcd_main.cfm.

With respect to overall feedback, most reporting participants indicated positive experiences with the program (City of Davis, 2008c). They were more aware of and committed to practicing the low carbon lifestyle. The workbook and the calculator basically worked as interesting and helpful tools, and the discussions among participating households were motivating. However, they also identified the disadvantages of the program, including insufficient collaboration and accountability among the eco-team members, inconvenient meeting times, the lack of information about existing commercial or governmental resources and related incentives, the limited types of actions provided by the workbook, and the limits of the monetary-based carbon calculator (no consideration of the transportation cost of goods). They suggested that the City should list additional actions, such as composting and habits of lower consumption, provide more specific incentives, and work with existing social groups such as schools in a future program.

The overall process of and the survey results from the LCDPP show that the program truly increased public awareness, changed people's behaviors and provided useful information and political supports for future implementation of similar carbon reduction programs or policies. The City spread related information via the local

newspaper and its official website in every phase of the program. The survey results show that the clear and easily following-up workbook and calculator and the group meetings both enhanced both people's awareness of the effectiveness of individual actions and their willingness to change their behaviors. Below are several survey responses regarding to the program, related tools, and the meetings.

I became more aware of eating habits, use of appliances. (For the overall program)

I was surprised at how much CO2 we produce, and how many little things we could do that add up to a lot. (For the overall program)

The calculator was easy to use and i liked the fact that it compares my household to the world's average, U.S. average and California's average. I also liked that it is short and not too tedious and has graphs so it is not a lot of text. (For the carbon calculator)

The workbook is simple and concise, allowing even busy folks to easily gain benefit. (For the workbook)

We liked knowing that there were other households doing the same thing we are doing during this period. (For the meetings)

Participating was certainly an inspiration. I much appreciated the discussions with other Davisites at the organized meetings. For example, one of my team members is an energy-audit professional who explained some things not in the book, and agreed with some of my concerns. During the 30-day period, I finally installed the fenders, rack, and baskets on a bicycle I bought last year to replace my old worn-out "town bike." It is now a breeze and a joy to zoom across town with a load of groceries. (For the overall program)

However, the results of this pilot program also indicate several challenges to overcome in the future. The first challenge is to understand why only 47 participants reported the City survey. Does it mean the survey is user unfriendly or people did not practice the low carbon diet? In order to find the reasons and further understand why people participated, I conducted another two-week long survey after the City survey ended. The results from 37 effective reports showed that most reporting participants were City or UC employees and homeowners. Most of them participated in the program

because of the understanding of the urgency of reducing individual carbon footprint. Only 5 of the 37 effective reports indicated that they did not complete the City survey. Two of them did not complete the City survey because they did not practice the low carbon diet, two missed the survey deadline, and the other one had difficulties using the carbon calculator. Limited time was the most popular reason why they did not practice the low carbon diet included. 29 of 37 effective reports indicated that they will continually participate in similar programs in the future.

Both the City survey and the motivation survey I conducted show the challenge of increasing the diversity of participants. As mentioned before, most reporting participants were high income families, homeowners, and City or UC employees (both of which comprise the majority of the 100 households). However, according to the U.S. Census Bureau data, half of the Davis population are renters, and most of them are UC Davis students. How to work with students or landlords and how to approach the middle or low-income families will need to be considered in a future program. Moreover, the survey results also show that most participants had already acted to reduce their carbon emissions and were self-selected participants. The reasons might be that some participants were chosen by the City or that only people who were already interested would join the program. Broader public outreach still needs to be worked.

Improving the eco-team working process is another challenge. Although most participants felt motivated by sharing and discussing with others, answers such as “*Support system was not utilized.*” or “*Feel no connection with others in the same group*” show that some eco-teams did not collaborate well with members. In order to solve the problem, the City could learn from Portland’s experience of organizing

participants from local neighborhoods (Rabkin and Gershon, 2007). Better facilitator training, creating more opportunities to interact with other participants in natural social settings, and working with existing organizations such as local businesses, religious groups or schools, which the reporting participants suggested, are also helpful.

Making the workbook work more suitable for the local context also needs more effort. Even though the “Low Carbon Diet” workbook could be used in every community, as Gershon suggested (Rabkin and Gershon, 2007), it could be better if the City of Davis can develop its own workbook that would more suitable for local lifestyle behaviors, such as bicycling, and for renters. The housing energy-use focus in the book ignores other opportunities to reduce carbon emissions, such as composting, and other users such as renters, who have fewer rights or less motivation to invest new energy-efficient appliances. Moreover, building a more cohesive connection between the workbook and the carbon calculator is important as well. As a participant noted, “*the workbook and the carbon calculator were not connected*”, with their different categories and measurements confusing some participants.

Increasing the overall participation rate and making a significant GHG reduction are the most difficult but most important challenges that the City has to face. The facts that only 47 households reported results for the City survey and only 37 households reported motivation survey I conducted mean that less than half of the participants may complete the program. The lack of follow-up to check whether the participants truly and continually practice the low carbon diet also makes the true GHG savings uncertain. Moreover, compared to the required GHG reduction to meet the City’s goal, the amount of GHG reduction through the program is still relatively small. In order to encourage

more people to participate, many participants suggested that the City should work with local business or change its policies to provide specific information and incentives for people to participate and to practice these green actions. For example, the City should provide related information, including “*a list of local vendors who can assist homeowners in implementing*”, “*the information about car-sharing program*” or “*the vegetarian recipe*”. The City also can change certain policies, such as changing the garbage collecting fee to make smaller containers cheaper, or provide specific funding programs to attract more people, especially people who can not afford to invest in green actions, to participate in the future program.

Chapter 6

Conclusions and Recommendations

This examination of the processes and results of the Davis CAT and the LCDPP reveals that Davis' planned community participation did help planners and decision makers to develop a local climate action plan and build political support for future implementation of the plan. Through organization of the CAT and its operation, the community started a process of community engagement. These processes not only increased public awareness of climate action issues but also provided a platform for people to learn from each other and build consensus on future climate actions. The LCDPP further motivated people to change their energy consumption behaviors in order to reduce their carbon footprints by the tools and group meetings. Nevertheless, some challenges still need to be overcome. For the CAT process, different levels of involvement of CAT members and limited communication among the CAT, the city departments, and the general public in the CAT process inhibit the effectiveness of participation. The human resources were insufficient to develop and implement the necessary work to maintain adequate communication and meet the specific participation time frame. For the LCDPP, self-selected participants have already engaged in a lot of low carbon activities in their daily lives. The fact that the housing energy-use focus in the workbook ignored other strategies and renters' situations also decreased people's willingness to participate. More importantly, the relatively small GHG reduction seems not to meet the City goal of GHG reduction. The lack of a follow up mechanism makes the real GHG savings uncertain.

In this final section, I provide three sets of recommendations in terms of three different perspectives: the theoretical implications of planning theory, community participation in climate protection actions for the City of Davis and other cities, and future research applications, based on my previous analysis. Finally, I point out the limitations of this research and suggest that future research is needed.

Theoretical Implications of Planning Theory:

1. Mixed Planning Methods Are Useful for Planners to Face the Challenges of Climate Change

As Hester (2006) noted, “innovative transformations, even radical ones, that are recognizable and that accommodate and champion valued ways of living are more likely to be successful implemented”(p.281). When facing the urgent call of mitigating climate change, besides top-down policy development, planners still need to develop actions from people’s daily experiences to effectively implement the plans. From the Davis experiences, I found that, although community participation could not fully change people’s behavior to significantly reduce GHG emissions, the mixed planning methods which the Davis planner adopted are still useful for planners when they are facing the challenge of climate change planning. Planners not only can use the comprehensive planning method to formulate a climate action plan; they also can play a more active role in promoting and communicating the climate protection actions to increase public support in implementing the plan. In the Davis example, besides traditional comprehensive planning methods such as cost-effectiveness analysis, the planner adopted advocacy planning and communicative planning methods to further enhance the feasibility of the

implementation of the plan. The planner acted not only as a technocrat but also an activist to promote the climate protection actions and a facilitator and communicator to encourage communication between participants.

2. Behavior Change in Climate Protection Is An Ongoing Development Process

Furthermore, the Davis LCDPP experiences also provide a good example for understanding why people change their behaviors to reduce GHG emissions. The fact that the most popular activities in the LCDPP are actions which require less capital investment and are easier to implement reveals that obstacles still exist, including a limited time and budget, according to my follow-up motivation survey. As change is a development process, which needs supporting frameworks to achieve it in environmental management (Allen et al., 2002), behavior change in climate protection is also an ongoing process and it needs not only to give tools to let people know what to do but also to provide an enabling environment and incentives. Hence, when planners use participatory methods to encourage people to change their lifestyles, it is also necessary to recognize the importance of providing an environment to assist and incentives to help people change.

3. An Ideal Participation Process in Climate Planning

The challenges existing in the Davis participation process also show that the community participation process may require more effort to increase its effectiveness in climate protection planning. How to increase the diversity of participants, achieve fully communication and significant GHG reduction goals in efficient ways (which require a relatively short time frame), and verify the real GHG reduction in the participation

process all need to be considered. Below are my suggestions for establishing an ideal participation process for climate planning.

- Participants should share a common, specific GHG reduction goal which fits the overall GHG reduction requirement.
- Participants should comprise diverse constituencies in a community.
- The process should be as inclusive and transparent as possible.
- All participants should have enough time and solid knowledge to fully communicate the climate change issues and have equal power to make decisions.
- The process should provide enough facilitation to encourage participants listen to each other, provide them with the knowledge to learn ways to reduce GHG emissions, and motivate them to permanently change their behaviors.
- The process should have a monitoring and evaluation mechanism, conducted by participants and decision makers, which has clear indicators of success and which promotes accountability in order to evaluate and verify the overall effectiveness.

Recommendations for Community Participation in Climate Protection Actions in the City of Davis and Other Cities:

In order to achieve the ideal participation process which I propose above, I recommend the ways described below that are applicable not only to the City of Davis but also to other similar cities.

- **Assign specific GHG reduction goals to varied participation programs to achieve the overall GHG reduction requirement.**

Similar to the idea of that government at all levels must adopt a backcasting approach to changing their climate protection policies (Wheeler, 2008), a city can design participation programs in compliance with its citywide GHG reduction goal. A city can offer a series of programs which have different levels of GHG reduction goals, for people to choose from. People who have more willingness and greater ability to significantly reduce GHG emissions can choose the program with a higher reduction goal, while people with less willingness and ability can choose the program with a lower reduction goal. After completing the first program they choose, they can move to advanced programs with higher GHG reduction requirements.

- **Develop multiple outreach and participation methods to reach different social groups in a community, especially for major or disadvantaged social groups in a city.**

Planners should develop multiple outreach and participation methods to encourage different social groups participating in the process, especially for people who have less access and least representative to the participation process or people who are the majority in a city. Taking the City of Davis as an example, planners should consider developing participation methods for UCD students, who were the least numerous of the social groups participating in the two programs but the majority of the Davis population. The City can work with the existing student organizations closely, spread the news through student websites, or set up a specific participation program just for students.

- **Use alternative methods to keep the participation process transparent and open to the general public.**

Besides using traditional media and having face-to-face meetings, a city could use alternative methods, such as websites or the internet, to keep the information and the process open and transparent. For example, a city can improve its website to create an interactive on-line public forum, through which people can understand the related plans/programs and join at any time. However, it needs to be careful because some social groups still need traditional outreach and participation method to get involved, such as people who do not have computers or internet access.

- **Provide specific incentives and information to attract more people.**

From the results of the Davis LCDPP survey, many participants suggested that the City should work with local business or change its policies to provide specific information and incentives to attract more people. For example, when reporting the overall experiences with the program, one participant mentioned that “*We felt there wasn’t much change we could implement...our household budget doesn’t allow for things that we would like to do – insulate attic, replace our single pane windows, etc.*” Hence, a city should create specific funding programs or change related policies to provide incentives for people, who cannot afford the up-front costs, to reduce their GHG emissions. A city also can work with local businesses or organizations to provide a list of related information for people who do not have GHG reduction related knowledge can learn how to do it by themselves.

- **Work with existing social organizations to approach people more naturally and to keep the network more cohesive.**

Instead of approaching and organizing people by new efforts, a city can use existing social networks to develop several different types of programs and more cohesive

neighborhood-based networking. For example, a city can work with schools or neighborhood associations to reach students or local residents naturally and organize them more easily. However, a city must note that not all existing organizations are willing to participate because it may mean additional work or expenses for them. Some factors need to be considered before a city tries to work with existing social organizations, such as how many resources and how much training are provided or how to make the participation process fit into the organization's ideology and schedule.

- **Add sufficient resources for community participation related programs to improve communication and accelerate the process.**

Although community participation has been recognized as an important element in implementation of climate change policies, related resources still seems to be insufficient. For example, only a part-time staff and a part time intern worked on the CAT and the LCDPP program. The human resources were insufficient to develop and implement the necessary participation methods to support efficient communication. Therefore, a city should provide enough human resources such as a full-time staff member who works on internal city communication and external community outreach and participation or recruits volunteers and provides them with related training to do community outreach or participation.

- **Set up a monitoring and evaluation mechanism to monitor and verify the effectiveness of participation.**

In order to clearly understand the effectiveness of the participation, a city should set up a monitoring and evaluation mechanism which has clear objectives and indicators of success to regularly check the results of participation. The mechanism should consist of

not only qualitative data such as people's experiences but also quantitative data such as how many tons of GHG emissions are reduced. For example, the City of Davis can develop a monitoring mechanism to check whether the participants in the LCDPP truly and regularly practice the carbon saving actions. The City could get the participants' agreements first and check their utility bills to see whether their energy consumption has decreased or not to get these quantitative results.

Recommendations for Future Research Applications:

1. More Case Studies Are Necessary to Understand Community Participation

Within Different Contexts

This thesis has been based on preliminary research for planners and decision makers to develop their local climate action plans by adopting community participation methods. The limitations, such as the action plan still being in the development process and the final decision not having been made yet, all affect the evaluation of the community participation process. In addition, community cultures are different, and participation methods, therefore, may be different and used in varied phases accordingly. Planners have to consider the local community's cultural, physical and social contexts to develop suitable and effective participation methods. For example, the meeting design for an urban community may be different from the one for a rural community. I suggest that more case studies are needed to understand how community participation can be effectively implemented within different socio-environmental contexts.

2. Comparative Studies are Suggested to Evaluate the Effectiveness of Community Participation methods in Climate Protection Planning

Instead of prescribing that community participation is the only way to effectively develop the climate protection related plan, the goal of this thesis is to define a starting point from which planners and decision makers can begin to develop their climate protection related plans by community participation methods. Therefore, in order to understand the overall effectiveness of community participation in climate protection planning, I believe that comparison studies with other planning methods are necessary. The effectiveness of community participation will be more comprehensible by comparing with other planning methods in climate protection planning.

Climate change may be the most severe challenge that planners in 21st century have to face. Besides actions taken at the governmental level, the Davis experiences provide planners and decision makers another perspective to see how a local community can play a significant role in climate protection planning. When a locality is facing the urgency of climate change, community participation may have limited short term effects; however, it lays the groundwork for future long term implementation. Planners and decision makers will need not only enforcement at the governmental level but also solid support from their communities to effectively implement the actions to achieve the GHG reduction goal in the long run.

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Appendix

- **The Interview Questions**

For Davis city staff

- The background for Community Sustainability and Climate Change Mission in Davis
- The creation and implementation of the plan in Davis
- How might the plan serve as an example for other communities?

For Davis CAT members (Community Organization)

- Basic introduction of yourself and your representative organization
- Why join the CAT team?
- The relationship with the City of Davis
- How does your organization promote climate protection strategies? Any challenge? How do you overcome them? Any successful story? The effectiveness?
- Your experience with CAT? What do you think about the final result of the CAT? Any suggestions for actions?

For Davis City Council members

Your understanding of Davis GHG reduction plan planning process

- Why does Davis have the plan?
- The funding? The human resources?
- Why is Davis organizing the Climate Action Team to work on the plan?

Future implementation

- How will the plan be implemented at the city level? Will the City Council adopt the plan? If facing any opposition, how will the City resolve it? Is there any specific funding or programs for implementation?

Effectiveness of community participation

- What do you think about the effectiveness of the Climate Action Team in the planning process? Is it helpful for future implementation? Why or why not?
- What do you think about the effectiveness of the Low Carbon Diet Pilot Program in the planning process? Is it helpful for future implementation? Why or why not?

- **The interviewees' Information**

Interviewee	Background Information
The City staff member	The Community Sustainability and Climate Change Mission program manager
Interviewee A	CAT member, Davis Planning Commissioner (energy subgroup)
Interviewee B	CAT member, Local county representative (land use and community design subgroup)
Interviewee C	CAT member, Religious organization representative (transportation Subgroup)
Interviewee D	The Mayor of Davis
Interviewee E	CAT member, Environmental organization representative (waste

	and consumption subgroup)
Interviewee F	CAT member, the UCD sustainability committee representative (land use and community design subgroup)
Interviewee G	CAT member, the Pacific Gas and Electricity representative (energy subgroup)
Interviewee H	CAT member, the UC Davis student representative (waste and consumption subgroup)
Interviewee I	CAT member, Davis open space and habitat commissioner (transportation subgroup)