

Climate Change Initiative



SAN DIEGO CLIMATE CHANGE PROGRESS: RESULTS FROM A CITY BENCHMARKING STUDY

PREPARED BY
NICOLA HEDGE,
THOMAS MURPHY FELLOW
THE SAN DIEGO FOUNDATION

2008

Abstract

The San Diego Foundation is committed to advancing more comprehensive solutions to climate change by local governments in the San Diego region. However, before acting, it is important to understand the foundations upon which we can build and the gaps to be filled. This study compares the progress on planning for climate change between the nine local cities which have officially declared commitment to climate action, and eleven other cities around California. Comparison cities were chosen based also on these declarations of commitment to the issue, and to represent a similar diversity in size, geography, economic focus, and coastal access as the cities in San Diego. The following report summarizes the current policy context facing local governments and compares the twenty participating cities based on specific steps on climate change planning from completing greenhouse gas inventories to implementing comprehensive plans of action. Many local governments in our region are in the initial phases of planning for climate change. With swift action, addressing the unique local challenges, and by leveraging the appropriate tools, these cities can, and should, keep abreast with their peers elsewhere in California.

TABLE OF CONTENTS

- Executive Summary..... 3**
- List of Tables and Figures.....4**
- Acknowledgements..... 4**
- I. Introduction..... 5**
 - Report Overview* 5
 - Methodology* 6
- II. Background..... 7**
 - State Legislative Context* 7
 - Regional Governance* 8
 - Landscape of City Actions in California* 9
- III. Reasons for Action 10**
 - Incentives for Cities to Act* 10
 - San Diego’s Carbon Footprint* 10
 - Impacts of Climate Change in San Diego* 11
- IV. City Benchmarking12**
 - Benchmarking City Action on Climate Change* 13
 - Primary Benchmarking Findings* 14
- V. Lessons from Outside the Region 16**
 - Principle Obstacles to Planning* 16
 - Funding* 16
 - Priority and Challenging Action Areas* 17
 - Utilities as Partners* 18
 - Planning Resources* 18
 - Successful Measures for Climate Change Planning* 18
 - GHG Reductions Achieved* 19
 - Municipal and Community Emissions* 20
 - Adaptation and Resiliency to Climate Change* 20
 - Lessons Shared* 21
- VI. Conclusions..... 22**
 - Looking ahead* 22
 - Future Support from The San Diego Foundation* 22
- Appendices 23**
 - A. Climate Change-Related Website of Cities Interviewed* 23
 - B. Website of City’s Climate Plans and Measures Implemented* 24
 - C. Most successful measures Implemented by Cities* 25
 - D. Public Agencies and their Jurisdiction in Addressing Climate Change in the San Diego Region* 26
 - E. Additional Information Benchmarking Cities on Climate Action* 27

EXECUTIVE SUMMARY

Climate change is the most profound environmental issue facing us today. Solutions to this global challenge will need to be on a scale and scope never before realized. Responses need to be developed in a comprehensive manner, with cooperation across sectors beyond that required for past environmental issues. As the world's 12th largest emitter of harmful greenhouse gases, the State of California has responded and is fast becoming a world leader in government policy to control emissions and prepare for the unavoidable impacts of climate change. Additionally, hundreds of cities around the country are working to implement climate change action plans to comprehensively address both mitigating climate change impacts, as well as prepare for the most serious and unavoidable impacts.

The San Diego region boasts a world-renowned scientific community focused on climate change, as well as two nationally leading cities on climate change action. A recent study commissioned by The San Diego Foundation, with contributions from over 40 scientists and technical experts found that if the current trends continue, the region will have to adjust to significantly rising temperatures, more frequent heat waves and wildfires, sea levels rising by as much as 18 inches by mid-century, as well increasing challenges to meet the energy and water demands of a rapidly growing population. While climate change cannot be solved by San Diego County alone, these impacts will be more serious and we will be not be prepared for them unless our local and regional governments plan accordingly and implement locally-relevant measures. Thus, as part of The San Diego Foundation's Climate Change Initiative, this analysis was completed to determine whether our cities are rising with the tide of their peers or falling behind the challenge.

Currently, the two climate action plans already implemented by cities in San Diego County have jurisdiction over approximately 50% of county's population, but only 9% of the geographic expanse, leaving many vulnerable communities and ecosystems. Half of our eighteen cities have made official declarations of commitment to climate change solutions, compared to one quarter of cities statewide. With the exception of Chula Vista and San Diego, local implementation of actual measures is just beginning. Barriers to action for cities most often include insufficient political will and community support to create change, inadequate staff and funding to plan comprehensively, as well as uncertainty about the many pieces of state legislation on the table. The state of expertise and knowledge available to cities on how to mitigate and plan for climate change at the local level is improving at a rapid pace and is ripe for cities to take advantage of.

While many local cities in our region have yet to develop formal climate action plans, they still have the opportunity with swift action to meet the overall progress of their peers. Of the eleven Californian cities used to compare San Diego's progress, with similar diversity in terms of size, economy, and geography to those in the San Diego region, none had published a climate action plan earlier than five years ago. Additionally, while many are taking measures to reduce their greenhouse gas emissions, few other cities have started planning to adapt to the ways climate change will affect their local community. This year, local policy makers in the San Diego region will have tools unlike any other region in California has yet. The Regional Focus 2050 Study, released in November 2008, will aid managers of our communities in understanding the biggest local vulnerabilities to climate change impacts, so they can plan accordingly.

Regardless of the progress of municipalities in the San Diego region, legislative changes are here. State implementation of the Global Warming Solutions Act (AB32), is a top down approach to require serious reductions in greenhouse gas emissions from all regions in California. Each city in the San Diego region will have its unique challenges to plan and implement adequate planning, and none can afford not to overcome them or work around them. While the magnitude of climate change is global, with forward-looking planning and integrated approaches, solutions at the local level are indeed manageable, and definitely needed.

LIST OF TABLES AND FIGURES

Table 1. Benchmarking Cities on their Climate Change Actions	11
Table 2. Most Successful Measures Cities Have Implemented	26
Table 3. Additional Information Benchmarking Cities on Climate Change Action	28
Figure 1. Overall Progress on Climate Planning Steps	12
Figure 2. Champions of Climate Change Identified by Participating Cities	12
Figure 3. Planning Areas for Local Climate Change Action: Priority versus Difficulty to Implement	15
Figure 4. Public Agencies and their Jurisdiction in Addressing Climate Change in the San Diego Region	27

ACKNOWLEDGEMENTS

This report was prepared by The San Diego Foundation under the direction of Emily Young, PhD, Director of Environment Analysis & Strategy. The surveys and interviews were designed and conducted by Nicola Hedge, a Thomas Murphy Fellow for the Environment Program’s Climate Change Initiative. Results were also compiled by Nicola Hedge, and the final report was reviewed by Bill Kuni, Chair of the Climate Change Initiative; Anahid Brakke, Research and Development; and John Kucharski, a Thomas Murphy Fellow for the Science & Technology Program, as well as Emily Young.

The San Diego Foundation would like to thank the staff from the participating cities, in San Diego and around California, for their gracious cooperation to contribute this assessment. Many of these dedicated city staff took time from their work in the spirit of helping peers advance and overcoming the common stumbling blocks that line the way forward. Additionally, input during the initial stages of this report from staff at ICLEI-Local Governments for Sustainability, the Institute for Local Government, the Public Policy Institute of California, as well as the Institute for Local Self-Reliance was invaluable to form the foundations of this study. Finally, this research is in large supported by Thomas Murphy and the multitude of generous donors and contributors to The San Diego Foundation’s work.



I. INTRODUCTION

Half a century after Scripps scientist Dr. Charles Keeling began monitoring the carbon content of the atmosphere, there is broad consensus that climate change is real and poses a serious threat to our future. The global nature of the crisis means that no locality will escape from either the impacts of climate change or a responsibility to curb their greenhouse gas (GHG) emissions which compound the problem. While action by the Federal Government on climate change has been lackluster, many state and local governments across the country have stepped up to the challenge, curbing their emissions and preparing for the local impacts of climate change.

With the landmark passing of The Global Warming Solutions Act (AB32) in 2006, California continued its tradition of national and international leadership in environmental standards by committing to reduce greenhouse gas emissions to 1990 levels by the year 2020, and 80% below this by 2050. Many localities in California, also unwilling to wait for action at higher levels of government, have been leading the charge by adopting innovative plans of action. In some cases they are committing to even more ambitious greenhouse gas reduction targets than the State. San Diego County boasts two of these leading localities. The cities of San Diego and Chula Vista have been working for several years to implement measures which make their communities resilient to climate change. Over the past few years, seven more of the eighteen San Diego cities have made declarations of commitment to action and so are in various stages of translating these to action.

The San Diego Foundation is committed to supporting more advanced solutions to climate change in the San Diego region. In order to take an informed role in supporting local government action in a context of rapidly-changing state and local policy on climate change, The Foundation surveyed cities around California to determine whether our local cities are rising with the tide of action of their peers, or falling behind the curve. The following report compares eleven diverse Californian cities to the nine cities in the San Diego region which have already made declarations of commitment to the issue of climate change, and summarizes some of the best practices and lessons learned from these city leaders outside our region.

Motivation for this study was also drawn from interviews conducted by The San Diego Foundation in late 2007 with the same nine local cities. An overall finding from these interviews was that while there is a great deal of interest in further action, city officials and staff do not have the funding, information, or technical capacity to guide their work forward, and various other obstacles remain. Cities were also interested in learning from the experience of others, and how localities fit into a California-wide context of municipal action on climate change.

Report Overview

To compare our cities against their peers, a total of twenty cities around California have been compared on the following five factors which are typically part of comprehensive local action on climate change:

- (1) Declaring official commitments to climate change
- (2) Developing a local climate action plan
- (3) Completing a greenhouse gas inventory and committing to local reduction targets
- (4) Dedicating city staff to work on climate change planning
- (5) Local leadership through “champions” of climate change action

Following these comparisons, conclusions are drawn from the experience of the cities outside of San Diego on planning resources, obstacles faced, funding innovations, and successful measures they have implemented in order to learn from leaders outside our region.

Getting a comprehensive understanding of where localities are on climate change planning is not easy given the rapidly changing nature of policy in this arena. The Governor's Office of Planning and Research is currently compiling a list of climate plans and ordinances at the city-level in California and is available online. While not exhaustive, it provides a good start.¹ Also, the Public Policy Institute of California is in the process of administering a statewide survey of local governments to determine the present state-of-affairs of all cities, which will give a comprehensive indicator of where cities are by the end of this summer. This benchmarking report offers an initial assessment of where San Diego cities are in the statewide context of cities in their climate-related planning.

Methodology

All findings are from self-reported results through internet surveys or follow-up phone calls conducted in the spring and summer of 2008, and complemented with internet research. Local cities approached during this study include *Carlsbad, Chula Vista, Coronado, Del Mar*², *Imperial Beach, La Mesa, San Diego, Solana Beach, and Vista*. These cities were chosen based on their commitments to one or more of the following: a city's signing of the US Mayors Climate Protection Agreement, membership of either ICLEI-Local Governments for Sustainability or the California Climate Action Registry. While the nine other cities in the County may be considering or have implemented actions on climate change, they are not included in this study due to their lack of formal commitments to the issue.

San Diego County includes a mosaic of cities; the metropolitan City of San Diego does not face the same challenges as small beach communities such as Del Mar, or an inland community like Escondido. For this reason, the eleven other comparison cities were chosen to reflect a similar level of diversity of San Diego cities and represent both coastal and inland communities, economies based on both industrial and agricultural industries, populations varying from small to large, and diversity in physical landscape. This design was intended to offer a rough method to benchmark San Diego against others statewide that are facing a similar diversity of constraints and opportunities that San Diego cities face as they approach this issue. From ten different counties, these comparison cities include *Arcata, Berkeley, Davis, Hayward, Irvine, Los Angeles, Petaluma, Riverside, Sacramento, San Francisco, and Santa Cruz*. Furthermore, all eleven of these cities were mentioned for having notable climate action plans or model singular measures by climate change authorities such as ICLEI-Local Government for Sustainability, the Institute for Local Government, California Attorney General Brown's office, or other organizations with related expertise.

¹ Available at the OPR website: http://opr.ca.gov/ceqa/pdfs/City_and_County_Plans_Addressing_Climate_Change.pdf

² Del Mar has been included in this study based on their commitments, but as attempts to phone staff to discuss and confirm information were unsuccessful, all information for Del Mar is based primarily on web resources.

II. BACKGROUND

State Legislative Context

California, as the 12th largest greenhouse gas emitter in the world³ and contributing 10% of national carbon dioxide emissions, has a unique responsibility to act, and has responded to this challenge with a variety of related state legislation. This legislation will have, and already has, significant impacts on the way local governments update their general and other plans, process CEQA documents, and consider greenhouse gas (GHG) emissions in their community development. A summary of some of the major pieces of legislation passed or under consideration that will or already affect local cities include the following:

- ***AB 32: Global Warming Solutions Act of 2006***

As the state's primary vehicle for climate change action, AB32 commits California to reducing greenhouse gas emissions to 1990 levels by 2020, and 80% below this by 2050. It tasks the California Air Resources Board to implement this law in cooperation with other state agencies and the Climate Action Team. On June 26th, CARB released a Draft Scoping Plan which serves as the roadmap for how the reductions will be achieved. Looking ahead, the draft will be subject to public comments and must be adopted by the Board by January 2009, with all details for implementation and enforcement in place by January 2012.

This Draft Scoping Plan directly calls on local governments to do the following for successful implementation of AB32:

“Local governments should build on existing strategies and adopt best practices, such as those developed by the Institute for Local Government’s “California Climate Action Network,” to achieve greenhouse gas reductions. ARB encourages local governments to develop climate action plans and to set 2020 targets to reduce greenhouse gas emissions. ARB also encourages local governments to incorporate greenhouse gas reduction measures and regional blueprint plans into their general plans.”⁴

- ***SB 97: California Environmental Quality Act (CEQA) and Greenhouse Gas Emissions***

Passed in August 2007, SB 97 requires regulations be developed by the Governor's Office of Planning and Research (OPR) to develop CEQA guidelines on how global warming is to be applied to land-use decisions in California. After the passage of AB 32, there was confusion as to legal challenges that could be made on new development projects on the basis of global warming impacts, including several suits that were filed in response. The OPR's regulations are to be adopted by January 2010, and in the duration SB97 has limited CEQA challenges to land-use decisions on the basis of GHGs.

- ***SB 375: Planning and Global Warming***

This bill, sitting in the State Senate Appropriations Committee as of July 2008, makes changes in California's transportation planning and land use policies in order to reach GHG targets set by AB 32. It requires regional transportation planning agencies to create models of “preferred growth scenarios” and provides local governments with incentives to incorporate these into their general land use plans to reach the GHG reduction targets. Such local incentives are targeted towards compact development, reduced driving, greater housing choices and conservation of farmland and habitat.

³ Office of the Governor. 2006. Press Release: Gov. Schwarzenegger Signs Landmark Legislation to Reduce Greenhouse Gas Emissions. Available at: <http://gov.ca.gov/press-release/4111/>

⁴ California Air Resources Board. 2008. *Climate Change Draft Scoping Plan: June 2008 Discussion Draft*. P31. Available at: <http://www.arb.ca.gov/cc/scopingplan/document/draftscopingplan.htm>

- **AB 2466: Local Government Energy Producers**

Renewable energy production, such as installing photovoltaic cells on buildings, can make up a significant part of city efforts to mitigate carbon emissions. The intent of this bill is to allow local governments to better maximize the renewable energy potential across city facilities through aggregating net metering and billing of energy from different city sources.⁵ It was scheduled to be heard in the Senate Appropriations Committee by July or August 2008.⁶

Reducing greenhouse gas emissions is not the only focus of the State's climate actions. The State is also trying to build capacity to adapt to climate impacts which research has shown will be unavoidable. Recognizing that these impacts statewide will vary as immensely as the California landscape does, Executive Order #S-3-05 signed by Governor Arnold Schwarzenegger on June 1, 2005 called for biennial science reports to be generated addressing the impact of climate change to different economic sectors and geographic regions. The 2008 Climate Impacts Report is due out in fall of 2008, and will include a regional assessment of impacts to San Diego.⁷ These assessments will be used to inform development of the State's first Climate Adaptation Strategy, scheduled for final release by April next year and led by the California Resource Agency.⁸ Thus far, according to the Pew Center on Global Climate Change, California is one of only six states that are developing such a plan for adaptation.⁹

State Attorney General Jerry Brown has also been vocal in pushing local jurisdictions to work towards GHG reduction goals, even though the rules and mechanisms generated by AB32 will not be fully in effect until 2012. The Attorney General's (AG's) office has issued a fact sheet on emissions mitigation measures that local agencies may consider as they contemplate planning and their upcoming responsibilities under CEQA.¹⁰ The 2008 settlement between the AG's office and the County of San Bernardino set an example for other jurisdictions as to the actions that will be required of them to mainstream climate change considerations into local planning such as their general plan updates. In 2007, the Attorney General also issued comments to the San Diego Association of Governments (SANDAG) on their update to the 2030 Regional Transportation Plan (RTP). The comments indicated that the RTP's Environmental Impact Report did not fully address the impacts of the project on climate change. Following additional objections from other environmental and community groups, SANDAG entered a settlement agreement calling for the planning body to incorporate greenhouse gas mitigation strategies in the next RTP¹¹.

Regional Governance

While city action is necessary, integrated approaches are essential to tackle climate change. Counties and regional authorities can act as catalysts, central collectors of information, and coordinators of planning for climate change. Here in San Diego, SANDAG is currently developing a Regional Climate Action Plan, and regional networks are forming to incorporate more regional stakeholders. SANDAG's plan will focus on the areas over which they have jurisdiction and expertise; transportation and its links to land use, as well as

⁵ Senate Energy, Utilities, and Communications Committee. 2008. *Bill Analysis AB 2466 – Laird*. Last accessed Sept. 1, 2008. Available at: http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_2451-2500/ab_2466_cfa_20080618_105210_sen_comm.html

⁶ Office of California Assembly Member Jared Huffman. 2008. 2008 Legislative Proposals: AB 2466 (Laird/Huffman): Aggregate Net Metering. Last Accessed September 1, 2008. Available at: <http://democrats.assembly.ca.gov/members/a06/leg.aspx#green>

⁷ For more information see the Team's website at http://www.climatechange.ca.gov/research/2008_assessment/index.html

⁸ For more information about California's adaptation strategy, see <http://www.climatechange.ca.gov/adaptation/index.html>

⁹ Pew Center on Global Climate Change. 2007 (updated 2008). *Adaptation Planning – What U.S. States and Localities are Doing*. Arlington, VA. P2. Available at: <http://www.pewclimate.org/working-papers/adaptation>

¹⁰ California State Attorney General, Edmund G. Brown Jr. (2008). *The California Environmental Quality Act Addressing Global Warming Impacts at the Local Agency Level*. Available at: http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf

¹¹ The San Diego Foundation. 2008. "Climate Change and Sea Level Scenarios for the San Diego Region," in The San Diego Foundation Regional Focus 2050 Study: Working Papers for the 2008 Climate Change Impacts Assessment, Second Biennial Science Report to the California Climate Action Team. San Diego, California.

energy. Because of limits to their jurisdiction, there will be gaps in San Diego in which other regional authorities and local cities will need to work together to fill the voids to plan for the region¹². These gaps especially need to be addressed in critical areas such as water, energy, as well as areas over which cities have jurisdiction such as waste management and recycling, energy use, building and community design, land use, and transportation.

Landscape of City Actions in California

According to a recent Brookings Institution study of the emissions profiles of the nation's largest 100 metropolitan areas, these urban cities contribute 56% of the total national carbon emissions from highway transportation and residential buildings. Cities are significant contributors and will have to play a considerable part in any major plans to reduce the nation's contribution to climate change. While action by state governments is happening, cities are where the "rubber hits the road," and much of the reductions and preparation will have to happen.

Formal commitments by cities all over the country have been expanding very rapidly, especially in the absence of comprehensive action at the federal level. Here in California as of June 2008, commitments include the following:

- More than 25% of the 478 cities in the state have signed onto the US Mayor's Climate Protection Agreement, a document that now has mayoral signatories representing about 80 million Americans.
- 117 cities in California have become members of the Climate Protection Program with ICLEI-Local Governments for Sustainability, a nonprofit with leading expertise on municipal climate action, making California the fastest growing membership area.
- 16 Californian cities are members of the California Climate Action Registry, voluntarily measuring, verifying and publicly reporting their greenhouse gas emissions.
- 4 cities are participating in an ICLEI pilot program called Climate Resilient Communities which focuses on aiding cities to adapt to climate change (in addition to other efforts to mitigate against climate change)

These commitments have differing implications on the ground. Signing the US Mayor's Climate Protection Agreement is in essence a declaration of concern, with voluntary commitments that have been rather spottily followed up on by signatories.¹³ ICLEI offers its member cities tools and technical assistance towards adopting climate action plans and helps members both measure and track results. This membership comes at a cost for cities varying in terms of price based on population, with a city such as Del Mar facing dues of approximately \$600 and San Diego about \$7000 in annual dues.¹⁴ A city with California Climate Action Registry membership will work with them to voluntarily measure, verify, and publicly report their GHG emissions, in a process designed to help support early actions on climate change.¹⁵

Currently in San Diego County, Chula Vista and San Diego are the only two cities with climate action plans. These plans have jurisdiction over almost 50% of San Diego's population, but cover only 9% of the geographic area of San Diego County. There is much more to be done for local planners to protect and prepare our whole region.

¹² See Appendix D for a chart on San Diego Public Agencies and their Jurisdiction in Addressing Climate Change

¹³ Bailey, John. 2007. *Lessons from the Pioneers: Tackling Global Warming at the Local Level*. Institute for Local Self-Reliance. Minneapolis, MN. Available at: <http://www.newrules.org/de/pioneers.html>

¹⁴ ICLEI. 2008. *How to become a member*. Last accessed September 1, 2008. Available at: <http://www.iclei-usa.org/join/process-of-joining/process-of-joining>.

¹⁵ California Climate Action Registry. *Overview*. Last accessed September 1, 2008. Available at: <http://www.climateregistry.org/about.html>.

III. REASONS FOR CITY ACTION

Incentives for Cities

Actions to combat global warming can sometimes be difficult or expensive to implement, and not all localities or even nations have signed on to the effort. The following are some of the reasons why cities in California *are* taking steps to counter this collective action problem:

- *Expected impacts from climate change are serious and will affect all localities.* This global problem requires global solutions at all levels of government.
- *Localities need to prepare for the unavoidable impacts of climate change.* Even if all emissions were stopped today, there would still be some increase in the earth's temperatures in future decades¹⁶ and cities can take steps to prepare for these.
- *By lowering emissions today, the seriousness of impacts from climate change can significantly be reduced.*
- *Some level of local action is unavoidable in California due to State implementation of AB32.* While many measures in AB32 affecting cities are likely to be voluntary, cities can likely expect some to become mandatory as the State's experience with climate policies develops over time.
- *Creating solutions to climate change helps to solve other local problems.* In essence, climate change is a meta-environmental issue, and tackling it will help cities solve other pressing concerns such as air and water pollution, water use and desertification, urban sprawl, and species extinction.¹⁷
- *Cities taking early action can leverage economic opportunities such as attracting clean-tech investments.*
- *Cities can realize significant cost savings through early action, especially through a focus on energy efficiency.* For instance, in 2005, more than 160 local governments in ICLEI's Cities for Climate Protection program reported collective savings of \$600 million in related energy and fuel costs.¹⁸
- *Policymakers need to be attuned to the importance citizens' place on their environment.* A recent study by the Public Policy Institute of California indicated that 81% of Californians believe "it is necessary to take immediate steps to counter the effects of global warming."¹⁹ Policy makers should be taking note of this.
- *Local action, in a small way, compensates for the lack of comprehensive action by the Federal Government.*

San Diego's Carbon Footprint

To understand where the San Diego region stands in terms of our contribution to the harmful greenhouse gases in the atmosphere, a regional greenhouse gas inventory was commissioned by The San Diego Foundation, and conducted by Scott Anders at the University of San Diego, Executive Director of the Energy Policy Initiatives Center and Dr. David DeHaan, a professor in the Department of Chemistry. Preliminary findings include the following²⁰:

¹⁶ ICLEI, The Climate Impacts Group, and King County, Washington. 2007. *Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments*. Washington. P25.

¹⁷ Heintzman, Andrew. 2006. *New Strategies to Confront Climate Change*. Canadian Environmental Grantmakers' Network. Toronto, Canada. Available at: www.cegn.org/TLS/1_TLS_EN.pdf

¹⁸ ICLEI, City of Seattle, and the US Conference of Mayors. 2006. *US Mayors' Climate Protection Agreement: Climate Protection Handbook*. P5.

¹⁹ Public Policy Institute of California. 2007. *Californians and their Environment*. San Francisco, CA. P9.

²⁰ The full study can be found at: www.sandiego.edu/epic/ghginventory

1. On-road transportation accounts for approximately 50% of total greenhouse gas emissions (GHG) in San Diego County.
2. Use of electricity and natural gas accounts for approximately 36% of total regional GHG emissions. However, the electricity sector likely can achieve a 20% reduction by 2020 through a combination of increased renewable energy use, enhanced energy efficiency, and replacement of an existing coal power contract.
3. About 60% of regional emissions are associated with activities by individual residents, including residential electricity use, natural gas use, passenger car use, and light duty truck use.
4. Industrial emissions are relatively low compared to other parts of California, representing only 5% of regional GHG emissions, most of which is due to the use of a refrigerant already being phased out.
5. Emissions from the Waste sector, while only accounting for about 2% of emissions, can be reduced in the short run by capturing more landfill gas and in the long run by reducing the amount of organic materials put into landfills.
6. Wildfires emit a significant amount of CO₂. The two firestorms of 2003 and 2007 together released nearly 12 MMT CO₂ equivalents, roughly equal to the total GHG emissions from the 2006 electricity and natural gas related emissions.

Impacts of Climate Change in San Diego

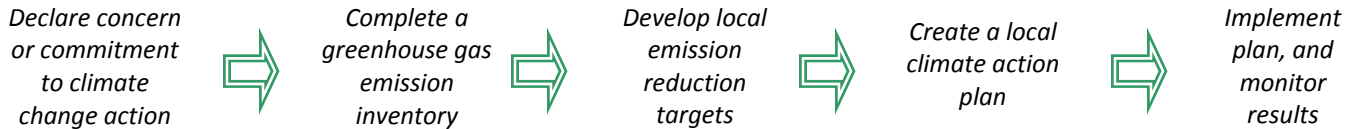
Science has also informed us of the necessity for action. Locally, San Diego faces some rather serious impacts from climate change if no action is taken. These impacts, however, can be minimized with early action, and forward-thinking leadership can help prepare the region to deal with our biggest vulnerabilities. Findings from The San Diego Foundation's Regional Focus 2050 Study,²¹ with over 40 contributing scientists and technical experts, indicate what impacts the San Diego region can expect by the year 2050 if current trends continue.

- ***Summers will be hotter***, particularly in the inland areas. On average, San Diego's daytime temperature will be like inland La Mesa today.
- ***Heat waves will be more intense, start earlier and last longer***. For instance, some models predict a three-fold increase in extreme events in Chula Vista.
- Despite plans for water conservation, desalination and recycling, ***demand for fresh water will outstrip supply***, with growing potential for conflicts among multiple users.
- ***Sea level is projected to rise by as much as 18 inches*** by 2050, which combined with tidal and storm surges, will inundate a number of our low-lying coastal communities, wetlands and some bay areas, and exacerbate existing bluff erosion.
- ***Wildfires will become more frequent and intense***. This is daunting considering the two wildfires of 2003 and 2007 together emitted roughly as much carbon into the atmosphere as the total of all electricity and natural gas related emissions during 2006.
- ***Heat, drought, and smoke from wildfires will take a toll on public health***, particularly for the elderly, which will comprise almost a quarter of the region's population by 2050.
- ***Plant and animal habitats in San Diego, a biodiversity hotspot, will be increasingly threatened***.

²¹ This study has been released in November 2008, and findings have been summarized for inclusion in the 2008 Climate Change Impacts Assessment, Second Biennial Science Report to the California Climate Action Team.

IV. CITY BENCHMARKING

This section acts to compare the progress of San Diego cities to others in the State. This assessment is based on the steps that make up a common progression in planning for climate action at the city-level, akin to those steps suggested by ICLEI - Local Governments for Sustainability.



In order to transparently compare cities on factors illustrating their overall progress on climate change planning and action, information was gathered from phone interviews and online surveys with appropriate staff from participating twenty cities between May and July 2008. The findings from these city interviews are incorporated into the table on the following page, and compares cities on the following metrics:

1. **Official commitments** related to climate change they have as reflected by:
 - a. Signing the US Mayors Conference on Climate Protection Agreement;
 - b. ICLEI-Local Governments for Sustainability membership;
 - c. California Climate Action Registry (CCAR) membership.

2. **Actions the city has taken** on climate change, specifically including:
 - a. Completing greenhouse gas inventories;
 - b. Developing local reduction targets;
 - c. Developing and implementing a climate action plan. Climate action plans typically include a combination of measures designed to reduce GHG emissions, and more frequently are also addressing adaptation to climate change impacts.

3. **Institutional resources** the city has dedicated to climate change planning. The five climate action planning steps outlined above obviously take commitment of both staff time and determined leadership, so the following table is also designed to reflect*:
 - a. Any dedicated city staff working specifically on climate change issues;
 - b. Identify the champions (the leadership) driving city action.

* City staff were asked to report who in their community they would identify as climate champions for this issue, whether it be mayors, city council members, city staff, or other individuals or groups from their community. Cities were also asked whether any of their staff are specifically working on climate change issues. If so, they estimated the number of full-time equivalent staff which is focused on these issues. Due to the difficulty cities had in estimating portions of staff time, these numbers are reported in Appendix E, but are not used as a basis for comparison.

It is also important to note that while some cities have already been implementing excellent piecemeal measures that are achieving great results related to climate change mitigation, these may not be represented completely in the following table if not part of a comprehensive climate action plan. A cohesive climate action plan enhances the ability of cities to coordinate actions amongst departments, streamline overall goals and can make evaluation of citywide GHG reductions more feasible. A single climate action plan can also aid in institutionalizing climate change into decisions and planning across all city departments, a crucial step if significant change is going to occur at the city level. It is for these reasons, that while many cities may have passed significant singular measures to plan for climate change, that these metrics working towards a comprehensive plan were chosen to benchmark city progress.

Table 1: Benchmarking Cities on their Climate Change Actions

Cities Outside San Diego	Official Commitments			Actions Taken			Institutional Resources	
	US Mayors Climate Protection Agreement	ICLEI Member	Climate Action Registry Member	Published Climate Action Plan, in which year	Completed a greenhouse gas (GHG) inventory	Committed to GHG reduction targets**	Any city staff dedicated to climate change planning**	Community leaders championing for action on climate change** (As reported by survey respondent)
Arcata	✓	✓	✓	2006	✓	✓	✓	City Council Committee
Berkeley	✓	✓		2008	✓	✓	✓	Mayor
Davis		✓		<i>in development</i>	✓	<i>in development</i>	✓	Too many to list. Many in the community and University
Hayward	✓	✓		<i>in development</i>	✓	--	✓	Mayor & a City Council Committee
Irvine	✓	✓		<i>Intend to</i>	<i>in development</i>		✓	City Council & Community
Los Angeles	✓	✓	✓	2007	✓	✓	✓	Mayor & Councilmembers
Petaluma	✓	✓		<i>Intend to</i>	✓	✓	✓	City Staff, Committees for General Plan Update, & a community group
Riverside	✓	✓		2007	<i>in development</i>	✓	✓	Mayor
Sacramento	✓	✓	✓	<i>in development</i>	✓	✓	✓	Mayor, Councilmembers, & Community members
San Francisco	✓	✓	✓	2004	✓	✓	✓	Mayor, City Staff, Community, & various nonprofits
Santa Cruz	✓	✓		<i>in development</i>	✓	✓	✓	City Staff & State Assembly member
<i>Cities within San Diego</i>								
Carlsbad			✓	<i>in development</i>	✓	✓	✓	City Council, City Staff
Chula Vista	✓	✓	✓	2000	✓	✓	✓	Councilmembers & City Staff
Coronado			✓					Councilmember
Del Mar	✓			--	--	--	--	--
Imperial Beach	✓						✓	City Staff
La Mesa	✓							Support is coming from both the public and private sectors
San Diego	✓	✓		2005	✓	✓	✓	City Staff & Councilmembers
Solana Beach	✓	✓		<i>Intend to</i>	<i>in development</i>	--	✓	City Council Committee, City Staff, & a related Community group
Vista	✓			<i>Intend to</i>			✓	City Staff primarily

**Further information collected on these 3 variables is in Appendix E

-- Response signifies results for this were not available

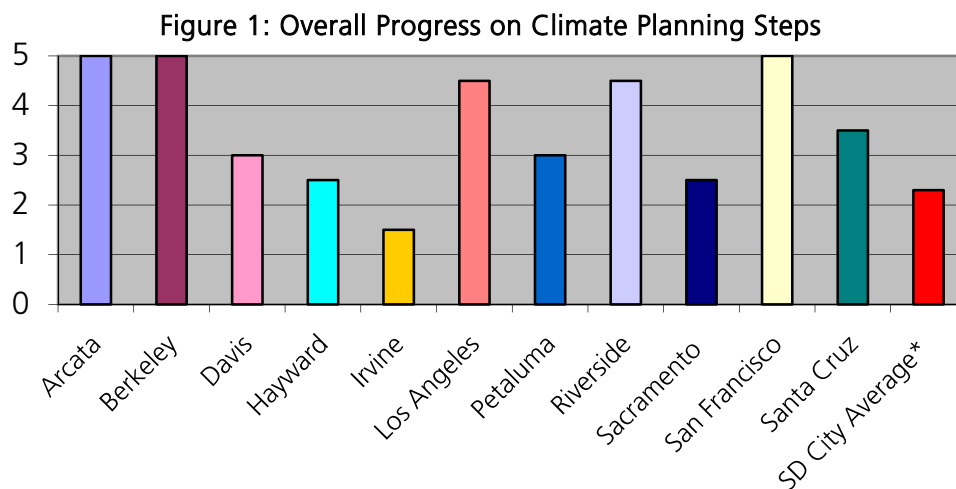
V. PRIMARY BENCHMARKING FINDINGS:

Overall it can be seen that the commitments of some San Diego communities have not fully translated into comprehensive action on climate change. While San Diego cities report devoting significant staff attention to climate planning issues, concrete actions such as developing inventories and targets or implementing comprehensive action plans still remain to be completed. It is important to note again that while other cities in San Diego may have engaged in works to advance local sustainability, they are not included in this comparison because of a lack of formal commitment to climate change.

In the chart below, the eleven cities interviewed from around California are compared to 9 San Diego cities²² on their progress in the five steps of comprehensive climate action planning previously described. Again, these include:

- (1) Making an official declaration of commitment to climate action;
- (2) Completing a GHG inventory;
- (3) Adopting local reduction targets;
- (4) Developing a local climate action plan;
- (5) Implementing the plan and monitoring results.

* The San Diego City Average was generated from the 9 cities who've formally committed to action.



If comprehensive climate planning begins now for local cities, they will be keeping pace with their peers.

Cities from other regions in California have published or begun development of plans largely in the last two years. While San Diego and Chula Vista have had climate action plans in place for several years, many other cities around California have begun this planning journey fairly recently. This recent wave of local planning is also reflected in the recent explosion of California membership of ICLEI-Local Governments for Sustainability which has also grown four-fold to almost 120 since only 2006.

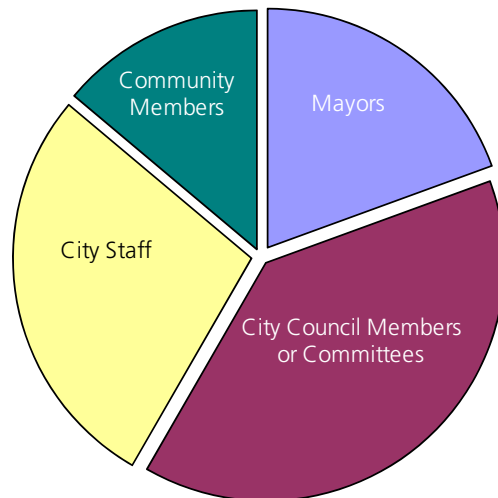
Champions behind climate planning are largely elected officials, but city staff is often the driver in their absence indicating who should lead the charge here in San Diego.²³ Based on responses, it is indeed specific city staff, council members or committees assembled from community residents which are leading planning in

²² A city was given a score of 1 if the step had been completed, and a 0.5 if they cited being in the process of completing it. This chart is a best estimate of progress of each city based on self-reported progress.

²³ As ICLEI identifies in their "Preparing for Climate Change" guidebook (page 47), of cities already taking actions, "all have a leader or leaders at the high level of government who are committed to learning about climate change impacts and to making the hard decisions that will prepare that region most effectively for those impacts."

San Diego. For many cities, the practice of rotating the mayor's chair will mean that for leadership to be sustainable it will have to come from the city council as a whole. Also, in California more broadly, in the absence of a single official driving change, committees or working groups have often been assembled from knowledgeable community members and key stakeholders.

Figure 2: Champions of climate action identified by participating cities



Local targets for GHG reductions are different for each city based on their preferred timeline, estimated realistic reductions, and varying jurisdiction over emission sources. While not straying behind AB32's long-term targets, cities have set different interim targets, perhaps the most aggressive of which are in San Francisco, which aims to reduce local GHG emissions to 20% below 1990 levels by 2012. This is far beyond the statewide target, and they reported that 2005 data indicates they are already below 1990 levels. Berkeley, using a baseline of 2000 due to incomplete data for 1990, also goes beyond state targets and aims at reducing by 33% from 2000 levels. The diversity in targets and in baselines represents both the differences in emissions profiles of different cities, but also the lack of a standardized method to complete inventories or collect data. For this, California Air Resources Board (CARB), California Climate Action Registry (CCAR), and ICLEI have released a draft *Local Government Operations Protocol*²⁴ in mid-June to attempt to standardize inventory procedures, making target reductions and results among cities both comparable and consistent over time. Local cities beginning inventories today can use this tool and hopefully will not face the same confusion or inconsistencies that others have faced in the past.

Cities with existing GHG reduction plans are increasingly going back to their local planning authorities to prepare for adaptation to unavoidable climate change impacts – thus, cities beginning their climate change planning have the opportunity to simultaneously plan for reducing emissions and adaptation to projected impacts. Local policy makers can leverage this as opportunity to be leaders in adaptation planning. For instance, the Focus 2050 study, released in November 2008, will be the first assessment of climate change impacts to our region, offering a unique tool for San Diego cities to lead other cities in California in climate planning related to adaptation.

²⁴ This protocol and instructions for comment can be found at CCAR's website, <http://www.climateregistry.org/tools/protocols/protocols-in-progress/local-government-operations.html>

VI. LESSONS FROM OUTSIDE THE REGION

Beyond simply comparing San Diego's progress to that among other cities across the State, this study also presented an opportunity to learn from cities' peers across California. The following section summarizes observations which were made from responses to the survey by the eleven cities outside the San Diego region.

Principle Obstacles to Planning

The three obstacles ranked by cities as the biggest to preventing further climate change planning and action include

- 1) Budgetary constraints or lack of resources
- 2) Political will or leadership not there to make climate change priority
- 3) Uncertainty of future state or federal legislation to address climate change

These echo the same challenges San Diego cities have previously expressed. Budgetary and resource constraints were by far the biggest hurdle faced by cities, which includes both financial and staffing inadequacies. Interestingly, technical expertise to move forward and tailor climate action to their specific communities did not seem to be a major challenge, perhaps because of internal staff expertise, or even support through ICLEI membership. Neither was the level of support from the general public or business community valued as a major obstacle in these cities.

Funding

Funding for climate actions at the municipal level can come from a variety of sources, most obviously from general fund budgets. Cities can also leverage grants from state or federal agencies, such as through the EPA's Clean Cities Financial Opportunities or the California Energy Commission's Energy Partnership Program.²⁵ Additionally, they can seek out philanthropic funds, partner with aligned businesses, or leverage other financial instruments such as bonds, feebates (combination of fees and rebates) or additional taxes.

Given the common challenge of budgetary constraints, we asked cities about any innovative funding mechanisms they have developed or implemented. Answers ranged from "praying" to examples of pioneering measures. Some responses worth highlighting include the following:

Sacramento: While not yet implemented, city staff have suggested that all departments use a fee-bate scheme to modify consumer behavior in a fee neutral way. This is a revenue neutral approach whereby rebates reward consumer behavior that reduces emissions, and additional fees are charged for consumer behavior that raises emissions. For example, parking garage fees are broadly raised, but reduced for drivers of hybrid vehicles. Likewise, increased fees could be charged for houses larger than a certain square footage with these additional funds going towards supporting affordable housing in higher-density areas.

Arcata: The City of Arcata is applying to participate in PG&E's ClimateSmart Program to generate funds through a carbon off-setting program. This would entail getting funds from PG&E who collects money from customers who want to invest in off-setting projects. Arcata has about 2000 acres of forest that could be used for carbon sequestration as a ClimateSmart offset project.

²⁵ For more information about these mentioned programs see the EPA's page at http://www1.eere.energy.gov/cleancities/government_sources.html or the CEC's webpage at <http://www.energy.ca.gov/efficiency/partnership/>

Cities mentioned several times the Bay Area Air Quality Management District as very proactive in funding through the District’s Climate Protection Grant Program. Amongst the 23 cities listed as recipients of climate protection grants in 2007, Berkeley has received funding for their FIRST program, as well as Hayward for development of their climate action plan. Here in San Diego, the Air Pollution Control District of the County of San Diego would be the equivalent of this in our region, but does not have a similar grant program.

Spotlight on Berkeley Funding Measures

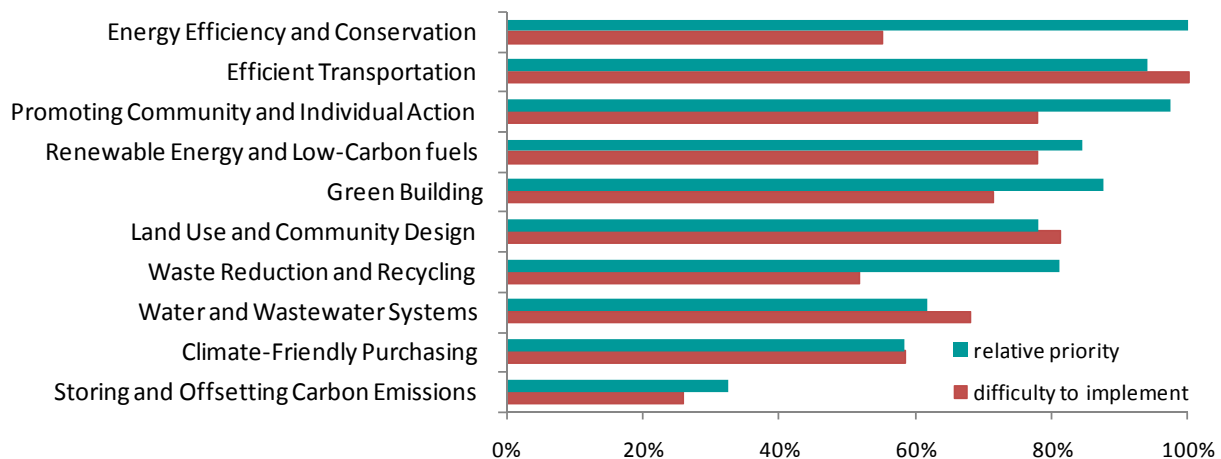
Berkeley has four methods either already implemented or suggested for the future to help and create more sustained funding for their climate operations, complementing other funds they get through grants.

- [“Berkeley FIRST”](#) (Financing Initiative for Renewable and Solar Technology) - This program will be launched in September to enable the City to provide up-front financing through bonds for private property owners to cover costs of solar panels and energy efficiency upgrades, paying the costs back through their property taxes.
- Carbon Tax - To be put on the ballot for introduction in 2010 for a carbon tax of 1% to create sustained revenue for operations of their city’s climate programs.
- Parking revenue – In 2009 they’ll be replacing parking meters with newer technology that will accept credit cards. Studies have shown that ultimately this should result in a boost in total revenue from parking meters due to convenience of payment, and a portion of increased revenue will go to funding city climate programs.
- Residential Preferential Parking – This idea is in the early stages but will hopefully be implemented by 2010. Already Berkeley has parking by permit-only in some neighborhoods, however they’ll looking at making such permits city-wide and taking the permit fees toward their climate program.

Priority and Challenging Action Areas

Cities were asked of the following ten policy areas identified by the Institute for Local Government to be part of the best practices framework on climate change planning, to classify both their highest priorities and the most challenging areas to address. The chart below helps to illustrate the fact that often for cities, the highest priority areas can be the most difficult to implement, such as with efficient transportation, land use and community design.

**Figure 3: Planning Areas for Local Climate Change Action
Priority versus Difficulty to Implement**



Utilities as Partners

An essential ingredient in climate change planning is the cooperation of public utilities and private electricity and water providers. In the city of San Diego for example, in 1990 the energy sector contributed 29% of total city-wide GHG emissions, illustrating the significance of having utilities as partners in action.²⁶ Of the cities involved in this survey those with internal electricity and water providers, such as Los Angeles and Riverside, have been generally very successful in leveraging the expertise of these internal units as well as significantly reducing their carbon footprints through a cleaner electricity mix. For example, Los Angeles has recently broke ground in building the largest city-owned wind farm in the US; the Pine Tree Wind Project which when completed next year will generate enough electricity to power 56,000 homes.²⁷

Most cities in this survey however have private electricity providers. PG&E was cited by several cities as being cooperative and very responsive to their requests. In Arcata for example, their city representative said PG&E has largely been “the reason” that they have been able to achieve what they have in terms of reductions, and that anything PG&E can do to clean their grid helps Arcata achieve results. While electric companies have incentives that often do not align with those of city governments, it seems that PG&E has scored quite highly as a partner of cities outside of San Diego. Other cities expressed difficulty in getting adequate data from electricity providers, and thus recommended governments start the process early and even coordinate their requests for information as a group of cities.

Notably, San Diego Gas and Electric Company (SDG&E) has proposed an Energy Efficiency Program in partnership with several local cities beginning in 2009, and in cooperation with various statewide nonprofits with relevant expertise. Integration of the utility in solutions to climate change planning such as this will be essential to moving progress forward locally. Energy efficiency will be an important piece of the puzzle in achieving GHG reduction targets, and governments and consumers need channels to make sure they’re taking advantage of conservation programs and incentives as they evolve.

Planning Resources

These eleven cities collectively described the most useful resources in the planning process to be:

1. Existing staff within their city
- 2a. ICLEI Membership
- 2b. Ad-Hoc committees for climate change in their city
- 2c. Unpaid local community individuals or organizations²⁸

Obviously existing staff in cities have a wealth of knowledge on the unique factors and challenges to their city. Armed with the right tools, partnerships, and training can be a powerful tool for action at the local level, as these results indicate.

Successful Measures for Climate Change Planning

While there are several comprehensive resources for best practice measures for cities²⁹, the cities interviewed offered the following examples of measures that were successful in terms of high GHG reductions, cost savings

²⁶ City of San Diego. 2005. *City of San Diego’s Climate Protection Action Plan*. pp19.

²⁷ LADWP. 2008, March 26. “LADWP Breaks Ground on Largest Wind Farm Owned by One City.” Last Accessed September 1, 2008. Available at: <http://www.ladwp.com/ladwp/cms/ladwp010419.jsp>

²⁸ Cities weighed responses 2a-c equally

²⁹ See the Attorney General’s “The California Environmental Quality Act Addressing Global Warming Impacts at the Local Agency Level,” ICLEI’s “Combating Climate Change: A Comprehensive Look at Local Climate Protection Programs,” US Conference of Mayors’ “Climate Protection Strategies and Best Practices Guide,” or Environment America’s “Global Warming Solutions That Work.”

for the city, or well-received by their communities. While a complete list of responses is in Appendix C, the following is a summary of best measures that cities have implemented.

Measures that resulted in highest GHG reductions:

- Landfill gas recovery
- Increasing proportion of renewables in electricity mix
- Energy efficiency for city and community businesses

Measures that resulted in highest cost savings:

- Municipal energy savings programs (LEDs, CFLs, HVAC controls)
- Paperless bidding system

Measures that were most positively received by community:

- Energy efficiency programs
- Solar panels/PV rebate system
- Green Building

Measures that were least positively received by community:

- Smart growth
- Green Building

GHG Reductions Achieved

Because of the lack of standardization in inventories and measured results, a straight comparison of reduction achievements of cities is difficult, but a summary of estimated GHG reductions reported by cities are as follows.

Arcata: The city has achieved a 7% reduction in community emissions, almost exclusively from cleaner electricity mix from the regional power company

Berkeley: According to an ICLEI inventory, community-wide emissions reductions between 2000 and 2005 totaled about 9%. Reductions from municipal operations total 5%.

Davis: Measures currently in place are roughly projected to reduce emissions by 80,000 tons carbon equivalent annually. To put this in perspective, total emissions for Davis in 1990 were estimated at 225,200 tons carbon equivalent, so these reductions are significant.³⁰

Los Angeles: Estimated reductions between 1990 and 2004 are 4% of total community emissions. The Green LA plan was introduced in 2007, so more current information would be a better reflection of measures in place now.

San Francisco: Data from 2005 shows that community emissions are already below 1990 levels. The target for California under AB32 is to *meet* 1990 levels by 2020, so San Francisco has already met the state mandates.

Santa Cruz: While municipal emissions actually rose 25% between 1995 and 2000, they have since managed reductions of an estimated 20-40% of municipal emissions from 2000 to 2005.

³⁰ City of Davis. 2008. City of Davis Greenhouse Gas Emissions Inventory. P13. Last Accessed September 1, 2008. Available at: <http://www.cityofdavis.org/cmo/Sustainability/pdfs/GHGinventory-CCupdated.pdf>

Municipal versus Community Emissions

In order to make meaningful GHG reductions, policymakers must consider emissions from both municipal and community-wide emissions. While municipal sources typically contribute only a small percentage to total emissions (about 2% in the city of San Diego), there are cities like Los Angeles where municipal operations contribute up to *one third* of total emissions. This difference is primarily because electricity generation is managed by the L.A. Department of Water and Power, not a private provider. Regardless of the proportion of GHG emissions that are from municipal operations, cities interviewed agreed that government needs to lead by example before the community at large will reduce their emissions.

- ❖ The city of Sacramento has developed a climate action plan, completed an inventory and established reduction targets directed only at their municipal operations. For the community emissions at large they are cooperating with other cities to complete a county-wide inventory which will include city-level results.
- ❖ The city of Davis has formed a Climate Action Team with a cross section of community groups, organizations and businesses to identify the best GHG reduction strategies for the community at large so as to garner support from key community stakeholders before any regulations are made.
- ❖ The city of Chula Vista in 2000 adopted a plan with 20 measures that were aimed at reducing the city's total GHG emissions. To more effectively reign in community emissions, as opposed to those from the municipal operations, seven additional measures were designed by a committee of community stakeholders and adopted by the city council this summer.

Adaptation and Resiliency to Climate Change

Increasingly, cities are recognizing that certain impacts from climate change are probable and so preparation for these is necessary through an adaptation strategy. For instance, even if GHG emissions had been globally stabilized at the levels in 2000, we would still see at 0.9°F increase over the course of this century due to the “lag-time” of the ocean and atmosphere to warm.³¹ ICLEI has recently published a guide to prepare cities for climate resiliency, offering more technical assistance to its member cities on the adaptation front.³² In practice, it can be difficult to separate measures aimed at emissions reduction (mitigation) from those focused on preparedness and reliance to climate change (adaptation) because the two often overlap. This is especially evident in areas such as water and energy where conservation efforts help both to curb GHG emissions and to reduce demand for resources that will be strained in the future.

Two-thirds of these eleven cities state having a mitigation focus, while the other third is focusing equally on mitigation *and* adaptation. Here in San Diego, four cities say their focus is really based on mitigation, while another four are focused on implementing measures that address both. Again, San Diego has the opportunity to lead as the first regional assessment of climate change impacts (the Focus 2050 study) has just been completed with involvement from over 40 local technical experts and scientists and led by The San Diego Foundation.

³¹ ICLEI, The Climate Impacts Group, and King County, Washington. 2007. *Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments*. Washington. P25.

³² This Guidebook is available at <http://www.iclei-usa.org/action-center/planning/guidebooks>

Lessons Shared

Finally, cities were asked looking retrospectively if they would do anything differently in their climate change planning if it were possible. They shared the following recommendations:

- *Begin collecting relevant data early.*
- *Support development of a standardized GHG Inventory process, especially for transportation.*
- *Use existing regional cooperation to create a county-wide plan, not city-specific.*
- *Create a strong network of employees from different cities working on climate change.*
- *Get community input early and engage underserved communities in the planning process.*
- *Solicit better cooperation from utilities.*

VI. CONCLUSIONS

Looking Ahead

The recent passing of AB32 and its imminent mandates for cities will carry all local governments in California towards a common goal of reducing greenhouse gas emissions by 80% below 1990 levels by the year 2050, regardless of their current status on the issue. This effort to mark San Diego's progress on climate change as compared with other cities around the state has illustrated that while there are many gaps to be filled, there still are opportunities for all cities to join the pack, and even emerge as leaders on planning on areas such as adaptation to climate changes.

Cities in the San Diego region exemplify the full spectrum of progress on climate change; from national leaders, to cities which have yet to formally address the issue. Overall, while these nine local cities have expressed concern to the issue of climate change, only two - Chula Vista and San Diego - have taken developed formal climate action plans. The rest are in the initial stages of their climate work. Additionally, the other nine cities (of the eighteen in our region) not included in this study have not yet made these same declarations of concern. Several obstacles remain for cities to move forward, including overcoming staff and budget constraints, as well as cities developing the knowledge on what steps need to be taken in their city to move forward.

Key factors for success for cities outside the region which emerge from this study include not only developing real local leadership driving change, but leveraging tools such as ICLEI membership and the related technical assistance and support network this provides. Action is not going to happen without technical knowhow, as well as local leadership to drive change and realistically plan in tandem with each locality's existing priorities. Also, cities need to start early, not wait for mandates from above. This means start collecting information for inventories early, develop and implement measures now to reduce the seriousness of projected impacts and spread out any costs over time. And lastly, planning for climate change needs be comprehensive. This means starting logically by determining the municipal carbon footprints, developing local reduction targets and locally-appropriate plans to achieve these, and as well as preparing communities to adapt to climate impacts.

The San Diego region offers its almost 3 million residents a magnificent Mediterranean climate, to which our way of life is finely tuned. Our high quality of life is largely based on enjoying the medley of landscapes from beaches, mountains, canyons and deserts, and with confidence in a healthy environment for us to work, live and play. As one of the nation's biodiversity hotspots due to the abundance of species, we also boast an enormous wealth of natural resources. Much responsibility rests on the ability of local governments in the San Diego region to actively and pragmatically plan to reduce our emissions, and prepare our communities for the impacts of climate change. Solutions will need to integrate all sectors of the economy, reign in air pollution and urban sprawl, increase energy and water efficiency, and heavily rely on development of transit-oriented communities. Thus while climate change is an enormous challenge to solve, by successfully managing climate change, a host of other critical issues will be simultaneously addressed. With forward-looking and sensible planning from our municipal leaders, and cooperation from communities, we can to rise to the challenge.

Future Support from The San Diego Foundation:

The San Diego Foundation is committed to supporting local cities' efforts to move forward. The Foundation echoes the suggestions of the California Air Resources Board's Draft Scoping Plan for AB32 in calling for local governments to develop climate action plans, to take the necessary measures to both reduce our emissions and prepare for climate change so as to minimize it's most harmful consequences. The Foundation will continue to advance more comprehensive action through our Climate Change Initiative and other programs, convening key leaders, supporting local research, donor engagement, and grant-making.

APPENDIX A: Climate Change-Related Websites for Cities Surveyed

Arcata	http://www.cityofarcata.org/index.php?option=com_content&task=view&id=234
Berkeley	http://www.berkeleyclimateaction.org/
Chula Vista	http://www.chulavistaca.gov/clean/conservation/Climate/Default.asp
Davis	http://www.cityofdavis.org/cmo/Sustainability/ClimateChng.cfm
Hayward	http://www.ci.hayward.ca.us/webware/Default.aspx?Message=3093&t=-1
Irvine	http://www.cityofirvine.us/green_build.html
Los Angeles	http://www.lacity.org/ead/environmentla/ead_climatechange.htm
Petaluma	http://cityofpetaluma.net/genplan/index.html
Riverside	http://www.riversideca.gov/utilities/comm-gp.asp
Sacramento	http://www.cityofsacramento.org/generalservices/sustain/index.html
San Diego	http://www.sandiego.gov/environmental-services/sustainable/respect.shtml
San Francisco	http://www.sfenvironment.org/our_programs/topics.html?ssi=6&ti=13
Santa Cruz	http://www.ci.santa-cruz.ca.us/pw/ep/climate1.html

APPENDIX B: Climate Plans and Measures Implemented by Cities Surveyed

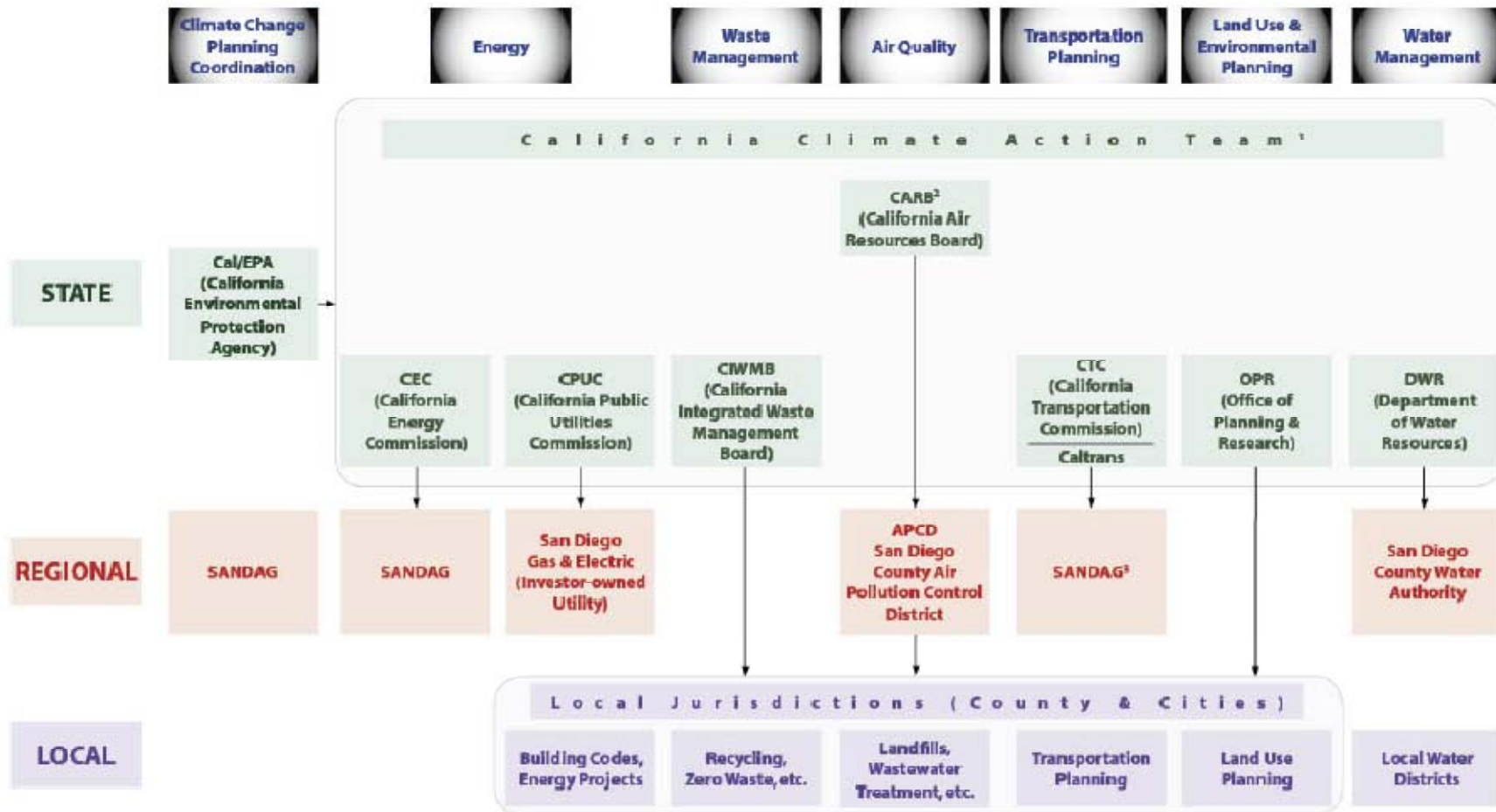
Arcata	<i>Community GHG Reduction Plan</i> http://www.cityofarcata.org/images/stories/community_greenhouse_gas_reduction_plan_copy.pdf
Berkeley	<i>Draft Climate Action Plan</i> http://www.berkeleyclimateaction.org/Content/10040/ClimateActionPlan.html
Chula Vista	<i>Chula Vista CO₂ Reduction Plan</i> http://www.chulavistaca.gov/City_Services/Development_Services/Community_Development/PDFs/ChulaVista-CO2ReductionPlan.pdf <i>Climate Change Working Group Measures' Implementation Plan</i> http://www.chulavistaca.gov/clean/conservation/Climate/ccwg1.asp
Davis	No comprehensive plan as of May 2008, but the city has a list of Climate Change Related Documents http://www.cityofdavis.org/cmo/Sustainability/docs.cfm
Hayward	Request for Proposals out to develop a climate action plan http://www.ci.hayward.ca.us/webware/Default.aspx?Message=3093&t=-1
Irvine	No comprehensive plan as of May 2008, but Irvine has a great Green Building Program http://www.cityofirvine.us/green_build.html
Los Angeles	<i>Green LA Plan</i> http://www.lacity.org/ead/EADWeb-AQD/GreenLA_CAP_2007.pdf
Petaluma	No comprehensive Plan as of May 2008, but General Plan EIR does consider GHG reductions http://cityofpetaluma.net/genplan/deir/revised-deir-ghg.pdf
Riverside	<i>Clean and Green Sustainable Riverside Action Plan</i> http://www.riversideca.gov/utilities/pdf/gp/GreenPlan.pdf
Sacramento	<i>Sustainability Implementation Plan</i> http://www.cityofsacramento.org/generalservices/sustain/documents/SustainabilityImplementation-Plan-2008.pdf
San Diego	<i>Climate Action Plan</i> http://www.sandiego.gov/environmental-services/sustainable/pdf/action_plan_07_05.pdf
San Francisco	<i>Climate Action Plan</i> http://www.sfenvironment.org/downloads/library/climateactionplan.pdf
Santa Cruz	<i>Climate Action Program</i> No plan yet, but a list of measures is found at: http://www.ci.santa-cruz.ca.us/pw/ep/measures.htm

APPENDIX C:

Table 2: Most successful measures cities have implemented that resulted in....

	...Highest greenhouse gas reductions	...Highest cost savings for the city	...Most positively received by local business or the broader public
Sacramento	Landfill gas recovery and resell as boiler fuel	Lighting retrofits, traffic signal LED's, HVAC controls modifications	None
Los Angeles	Our dept of Water & Power just broke ground on a wind-farm; resulting in significant reductions	Not enough information right now	Alternative fuel vehicle purchases, green buildings
Irvine	Energy Efficiency and Conservation	Energy Efficiency and Conservation	Energy Efficiency and Conservation
Berkeley	Municipal: Converting fleet to biodiesel Community: Smart Lights Program (http://www.smartlights.org/)	Municipal: building energy retrofits Community: Smart Lights Program	California Youth Energy Services (http://www.risingsunenergy.org/cyes.htm)
San Francisco	Energy efficiency program for 7000 small businesses.	Many large scale retrofit projects in municipal facilities.	The small business program.
Arcata	Cleanliness in the electric mix. Procurement decisions regarding electricity purchasing have a significant role to play in reducing emissions. It is easier than influencing consumer decisions!	Energy efficiency upgrades (skylight installations, switching to digital ballasts, switching to CFL's, etc).	Discount backyard composters are well received. I suspect the EV Charging Station will be a big hit.
Davis	Integrated land use planning and alternative transportation system.	Energy efficiency programs.	Davis Farmers Market - not specifically a GHG reducing measure but is a community cornerstone and connects residents to the food they eat (and brings thousands of people to the downtown every week). Energy conservation. Bicycle system - people love to ride given the chance and safe facilities.
Santa Cruz	Methane Capture and cogeneration from City Land fill and Wastewater Treatment Facility	HVAC retrofit and tuning projects	Solar Panels on City Hall
Petaluma	Based on energy use reductions, the replacement of all signal and pedestrian crossing lights with LED fixtures has yielded the highest greenhouse gas reductions.	The replacement of all signal and pedestrian crossing lights with LED fixtures has yielded the highest cost savings for the City.	Our Voluntary Green Building program has been received positively across the City.
Riverside	Currently working on calculations. However, energy efficiency programs have shown to save a large number of kWh's and GHG emissions.	The City has switched to a paperless bidding system. This has saved not only lbs of paper annually it has saved in staff time as well.	Energy efficiency and water conservation programs are positively received. The addition of a PV rebate has been the most positively received program in some time. The program is for residential and commercial PV installs.
Hayward	Reductions have yet to be measured, however, transit-oriented-development constructed over the past 10 years around our BART stations have resulted in significant reduction in VMT - especially for weekday commutes.	Installation of solar panels on a Public Works facility.	None.

APPENDIX D: Figure 4 - Public Agencies and their Jurisdiction in Addressing Climate Change in the San Diego Region



¹ The California Climate Action Team (CAT) led by the California Environmental Protection Agency, was established through Executive Order S-3-05 to advise on and implement greenhouse gas emission reduction programs. CAT provides recommendations to the California Air Resources Board for consideration in implementing AB 32. The diagram does not show all CAT members, only those relevant to the topic headings.

² The California Air Resources Board (CARB) is responsible for implementing AB 32, the Global Warming Solutions Act of 2005.

³ SANDAG also is responsible for land use forecasting and air quality conformity for transportation.

Source: SANDAG. Chart also appears in The San Diego Foundation’s “Climate Change and Sea Level Scenarios for the San Diego Region,” in The San Diego Foundation Regional Focus 2050 Study: Working Papers for the 2008 Climate Change Impacts Assessment, Second Biennial Science Report to the California Climate Action Team.

Appendix E: Additional Information Benchmarking City's on Climate Change Action

	Committed to GHG reduction targets**	What are these targets	Any city staff dedicated to climate change planning**	Estimated equivalent full-time employees working on climate change	Department Staff is in
<i>Cities Outside San Diego</i>					
Arcata	√	20% below 2000 levels by 2010.	√	0.5	Environmental Services - Reports to the department director. They also coordinate with the Public Works department.
Berkeley	√	Ultimate: 80% reduction below 2000 levels by 2050 Interim: 33% reduction below 2000 levels by 2020 Interim: 2% per year	√	2	Energy and Sustainability Department – part of the Planning and Development Department. The second person is a mixture of hours from people in Transport, Planning, Solid Waste, Finance Departments and the Mayor's Office.
Davis	<i>in development</i>		√	2	
Hayward	--		√	0.5	Public Works and the Planning Department
Irvine	--		√	2	Community Development Department - Environmental Programs.
Los Angeles	√	35% below 1990 levels by 2030	√	3 to 4	Air Quality Department of the Environmental Affairs Department.
Petaluma	√	20% below 2000 levels by 2010 for Municipal operations. 25% below 1990 levels by 2015 community-wide emissions**	√	--	Public Works, Water Dept, Planning and Building Dept: Staff are not assigned to, but working on climate change issues.
Riverside	√	7% below 1990 levels by 2012	√	2	Public Utilities Department employees used as needed.
Sacramento	√	Meet 2000 levels by 2012; meet 1990 levels by 2020 (per AB32), meet 1990 - 25% by 2030.	√	0.25	Department of General Services.
San Francisco	√	20% below 1990 levels by 2012	√	2.5	
Santa Cruz	√	30% below 1990 levels by 2020. 80% below 1990 levels by 2050. All new buildings to be carbon neutral by 2030	√	0.5	Planning Department (as they update the General Plan, maybe it will change in the future).
				Avg: 1.39*	
<i>Cities within San Diego</i>					
Carlsbad	√	--	√	3 to 6	
Chula Vista	√	20% below 1990 levels by 2010	√	3	Conservation and Environmental Services Department.
Coronado				0	None
Del Mar	--			--	
Imperial Beach			√	1.5	Redevelopment, City Manager, Public Works.
La Mesa		--		--	None
San Diego	√	15% below 1990 levels by 2010	√	3	Environmental Services Department
Solana Beach	--		√	1	City Manager's Office and Environmental Programs.
Vista			√		
** Emissions from Municipal operations are those from the local government's operations. Community-wide emissions					