Advancing Health Equity and Climate Change Solutions in California Through Integration of Public Health in Regional Planning

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Advancing Health Equity and Climate Change Solutions in California
Through Integration of Public Health in Regional Planning

By

Solange M. Gould

A dissertation submitted in partial satisfaction of the
requirements for the degree of
Doctor of Public Health
in the
Graduate Division
of the
University of California, Berkeley

Committee in charge:
Professor Rachel A. Morello-Frosch, Chair
Professor Sherman L. Syme
Professor Carolina K. Reid

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Abstract

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Professor Rachel A. Morello-Frosch, Chair

Climate change is a significant public health danger, with a disproportionate impact on low-income and communities of color that threatens to increase health inequities. Many important social determinants of health are at stake in California climate change policy-making and planning, and the distribution of these will further impact health inequities. Not only are these communities the most vulnerable to future health impacts due to the cumulative impacts of unequal environmental exposures and social stressors, they are also least likely to be represented in climate change decision-making processes. Therefore, it is imperative that public health and social equity advocates participate in climate change policy-making that protects and enhances the health and well-being of vulnerable communities. Regions have emerged as important policy-making arenas for both climate change and public health in California, because many drivers of climate change are also social determinants of health (e.g. land use, housing, and transportation planning); these play out regionally and are under regional governmental authority. However, the public health sector is not engaged adequately with climate change planning given the magnitude of risks and opportunities inherent for health. Examination of where public health and equity partners have engaged in regional climate change planning and policy-making may offer lessons for how to change the drivers of health inequities and climate change through this work.

This dissertation examines why the public health sector in California is not more engaged with climate change work and regional scale planning given current threats to and opportunities for health, and whether and how public health and social equity stakeholders’ participation in climate change solutions and regional scale planning can improve health and inequities outcomes and decision-making processes. The overarching goal of this research was to inform efforts to increase public health work on climate change and regional-scale planning, strengthen partnerships between public health, social equity, and climate change stakeholders, and formulate strategies that address climate change and health equity.

The first chapter of this dissertation was conducted in conjunction with a study at the Center for Climate Change and Health at the Public Health Institute, where we conducted semi-structured in-depth interviews (n=113) with public health and climate change professionals and advocates. I performed structured coding and conducted inductive-deductive thematic analysis within and across respondent groups. I found that individual-level barriers to public health engagement with
climate change include perceptions that climate change is not urgent, immediate, or solvable, and insufficient understanding of public health impacts, connections, and roles. Institutional barriers include a lack of public health capacity, authority, and leadership due to risk aversion and politicization of climate change; a narrow framework for public health practice; and professional compartmentalization. Opportunities include integrating climate change into current public health practice; providing support for climate solutions with health co-benefits; and communicating, engaging and mobilizing impacted communities and public health professionals.

In the second chapter, I conducted two case studies of Sustainable Communities Strategies planning to achieve greenhouse gas reduction targets through integrated regional land use and transportation planning under California Senate Bill 375 (San Francisco Bay Area and Southern California). I used in-depth interviews (n=50) with SCS planning participants, public document review, and participant observation. I analyzed interviews using thematic analysis in an iterative inductive-deductive process. In both regions, climate change planning was a major lever for increasing the language, consideration, funding, and measurement of health impacts into the SCS plans. Public health’s analytic skills and social determinants of health conceptual framework were valuable for both regional planning agencies and equity groups. Political context influenced the priority concerns, framing, and outcomes. Desire to improve public health was influential in both of these environments. In the Bay Area, a health equity frame promoted regional solutions that can improve health, equity, and climate change. In SCAG, a public health frame increased awareness, language, and future funding for active transportation. Public health was a less contested and commonly held value across diverse political jurisdictions that may be an entry point for future discussions of equity and climate change. In both regions, reform of regional governance processes was pursued to sustain institutionalization of health and equity concerns and improve regional democracy. I discuss implications and recommendations for engaging in multi-system integrated regional planning that can simultaneously improve climate change, health, and equity.

In the third chapter, I analyze the same data as a case for understanding regional-scale public health, social equity, and regional planning staff efforts to slow climate change and improve social determinants of health and social equity. In both regions multi-year SCS planning processes, public health and equity stakeholder engagement was instrumental in getting health goals, targets, and indicators into plans. In the Bay Area, advocacy efforts yielded health and equity language in policies and implementation funding guidelines and changes to the basic governance structure. In SCAG, advocacy efforts yielded significant future funding for active transportation and more metrics to monitor the health and equity impacts of planning. Participants in the SCS planning process described their motivations for engaging at the regional level, the barriers to effective regional planning, the achievements of their engagement, and recommendations for improving future efforts. In the interviews, three main themes emerged related to the opportunities and challenges of working at the regional scale: (1) Building regional identity as a foundation for advancing health and equity; (2) The importance of governance structures for health and equity, and the need for regional governance reform; (3) The prospects and barriers of building regional coalitions both within public health networks and with regional equity partners. I discuss implications and recommendations for public health’s engagement with regional planning agencies, creation of coalitions, and reforming of regional governance structures to sustain better consideration of climate change, health, and equity.
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Many people offered me the opportunity to stay grounded in real-world work on climate, health, and equity while pursuing my doctoral degree, which also pushed my theoretical understanding much further. My conceptual framework for the policies and processes I write about here was shaped by the work Linda Rudolph and I did from 2012 to 2014 at the Center for Climate Change and Health. For chapter one, Linda Rudolph and the research team at the Center for Climate Change and Health contributed to the research design, data collection, and analysis. Funding support for the first chapter of this dissertation came from the Kresge Foundation. I am grateful to Rajiv Bhatia for his guidance and mentorship, for ongoing debates about equity, and his questioning of my research assumptions and analysis. Mike Jerrett provided me with early feedback, encouragement, and quiet offices to do my research and write.

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Dissertation Introduction

Climate change, public health, and health equity
Climate change already threatens human health and well-being in numerous ways.\(^1,2\) Climate change threatens to disrupt the life support systems on which humans depend (food, air, water, shelter, security), and therefore, in concert with other global environmental changes, literally threatens our survival. Climate change also disproportionately impacts those who are vulnerable and disadvantaged,\(^3,4\) increasing health inequities. Climate change policies and strategies could have significant beneficial effects on public health and health equity through improving social determinants of health across many sectors.\(^5,6,7\) Conversely, some climate change strategies can increase the environmental, economic, and health burdens on communities already bearing the burden of cumulative environmental impacts, discrimination, poor health, and poverty.\(^8\)

California’s Senate Bill 375
Currently, the State of California has the most aggressive climate change mitigation policies in the United States, including protections for vulnerable populations. Through legislation and governors’ executive orders,\(^1\) California is mobilized to reduce greenhouse gas emissions (GHGs) and promote climate-resilient communities. With transportation emissions accounting for 38% of California’s GHGs, and its fastest growing source, the California Sustainable Communities and Climate Protection Act, Senate Bill (SB) 375 was passed in 2008 to help each region of the state reach its GHG reduction targets. SB 375 has been touted as “the nation’s first law to combat greenhouse gas emissions by reducing sprawl”\(^9\), and thereby reducing vehicle miles traveled. SB 375 requires the creation of integrated regional transportation, housing, and land-use plans, called a “Sustainable Communities Strategy” (SCS)\(^10\) that encourages compact development near transportation, services, and jobs.\(^11\)

Because land use, transportation, and housing are all social determinants of health—and their distribution across a region a determinant of health equity—these SCS plans have great potential to impact population health and health inequities between populations in regions. The SCS plans can impact many determinants such as public transportation, active transportation, affordable housing, air pollution, residential displacement, and access to jobs. Public health work on social inequities requires a systems change approach that takes action on the multiple, interrelated systems and living conditions that drive both climate change and health inequities.

Several regions in California have completed their first round of SCS plans, with diverse participation by health and equity stakeholders amongst the regions. The first round of SB 375’s SCS planning is a useful case study for examining whether and how health and equity stakeholders can shape climate change and regional planning policy language,

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\(^1\) Assembly Bill 32 requires California to reduce greenhouse gas emissions (GHG) emissions to 1990 levels by 2020. California Executive Order S-03-05 mandates a further reduction of GHG emissions to 80% below 1990 levels by 2050. The SCS must be consistent with state-mandated plans for ensuring that all localities provide adequate housing for all income levels, prepared by MPOs under the Regional Housing Needs Assessment (RHNA) process.
process, and governance structures to address health and equity concerns. There has been no evaluation of these questions to date. The adopted plans have a lifespan of 25 years, and as soon as the SCS is adopted, a new round of planning begins that builds upon the prior one. Lessons from the first round of planning and policy-making can inform future planning, funding, implementation, and advocacy, as well as similar planning efforts.

**Regional planning for climate, health, and equity**
Within planning, researchers and advocates have increasingly promoted the idea of “regional equity”, which argues that working for equity is most effective at the regional level. Metropolitan patterns of development are regional (e.g. housing, transportation, business patterns) and cause uneven development and concentrated affluence and poverty that are often best analyzed and addressed at this scale. Community economic development, organizing, coalition building, and policy making at the regional level have been effective strategies over the last two decades. Yet, public health voices and perspectives about regional planning and coalition building to advance social and economic equity are notably lacking. Conversely, regional equity advocates seek to address the social determinants of health, even though they may not use those terms. Therefore, SB 375’s first round of SCS planning offers an important case study to examine the nuances of regional planning, organizing, and coalition building to address multiple root causes of public health and inequities outcomes.

**Conceptual Frameworks**
The complex interconnections between climate change mitigation policies, planning and public participation, and human health requires drawing on a wide range of disciplines. As a result, this research brings together the core concepts from eco-social theory and social determinants of health with literature on governance, regional equity, targeted universalism, and systems theory.

Ecosocial theory suggests that individual and community health is affected by myriad socio-environmental factors. More specifically, the ecosocial theory of disease distribution seeks to integrate social and biologic reasoning along with a dynamic, historical, and ecologic perspective to develop new insights into determinants of population distributions of disease and social inequalities in health. Ecosocial theory engages with the concepts of accountability and agency, referring to who and what are responsible both for social inequalities in health and the ways in which they are—and are not—addressed. In addition to this, Hofrichter’s framework for how social injustice becomes embodied in differential disease and mortality rates builds on this model by explicating the why and how—those who benefit from the system use power to maintain the system, which influences the distribution of the social factors, and supports exploration of the ways in which actors can work to change that power structure.

Within ecosocial theory, the literature on the social determinants of health explores how the economic and social conditions -- and their distribution among the population -- influence individual and group differences in health status. Social determinants of health include the historic and political context for the current inequitable distribution of health determinants, including poverty, racial residential segregation, socio-political
marginalization, environmental burdens, and the distribution of resources, assets, and risks. Ecosocial theory and the social determinants of health literature are important starting points for my dissertation because they a) recognize race- and class-based factors in producing health inequities, b) illuminate how resources shape access to broad contexts, and c) force us to move away from a treatment model and instead look at upstream forces that produce unfair and avoidable differences in health status, or “health inequities” and d) ask who, what, why, and how larger power structures are responsible for maintaining health inequities.

While the social determinants of health literature provides an important frame for thinking beyond a bio-medical theory of disease, it has paid insufficient attention to how low-income communities and various health and equity stakeholders participate in the processes that can shape opportunity and access to those protective resources. This research aims to further integrate social determinants of health and ecosocial theory with emerging literatures on regional equity and governance, to show how governmental decision-making and planning processes are fundamental to how resources are distributed at the regional scale, with attendant impacts on health equity. This latter literature is informed by models of healthy and collaborative governance and participatory planning in which institutions actively seek community and multi-stakeholder engagement and partnership to form research methods, tools, scientific evidence, and resultant policies, and as a way to increase the democratic potential, responsiveness, and relevance of institutional decision-making, planning and governance structures.

Governance includes the decision-making processes (governmental and non-governmental) that determine who has power, who makes decisions, how those decisions are made, the systems of accountability, and how stakeholders make their voices heard. It includes both the formal governmental institutions that are charged with serving societal goals, as well as the people who are charged with keeping the institutions accountable to public service. Good governance should be transparent, responsive, collaborative, inclusive, fair, and accountable to the public.

The governance literature shows how planning processes are fundamental to how resources are distributed, with attendant impacts on health. Governance is a means towards health and equity, in that planning processes themselves might positively or negatively influence health and social equity. Healthy governance engages with both the substantive content of what impact the plans and decisions will have on the health of residents (or the distributions of who gets what and when), as well as the processes that make decisions about whether or how to consider these substantive issues. It theorizes on how multiple stakeholders influence public decision-making and action around resource and opportunity distribution, while institutions actively seek community and multi-stakeholder engagement and partnership to form research methods, tools, and resultant policies, as a way to increase the democratic potential and accountability of institutional decision-making.

Governance analysis evaluates the processes, content, and outcomes of planning and decision-making, and the contexts, power dynamics and resources that shape them. It includes community participation and engagement, collaborations among different
disciplines, professions, governmental and community organizations, and the private sector. However, the participatory aspect of governance cannot be an end unto itself; there need to be concrete achievements in terms of substantive outcomes that accompany institutional governance reform, or stakeholders will not return to participate in those processes and forums. Policies and strategies need to simultaneously redress the uneven distribution of resources and risks that have resulted from past planning efforts, and increase the participation of communities in deciding how improved distribution happens.

In addition, my research seeks to integrate the concepts, ideas, and methods of place-based urban health, regional equity, and environmental justice researchers, who contribute to the environmental justice movement’s efforts to bring attention to the role that public policies may play in creating or exacerbating the unequal distribution of environmental benefits and burdens based on race, and the resultant health inequities.

"Targeted universalism" is a policy-making approach that seeks broad social benefits using targeted means in implementation. It speaks to the universal goal that will help everyone (e.g. slowing greenhouse gas emissions will improve everyone’s health), and then describes the targeted strategies that are needed by specific populations to achieve that goal (e.g. targeting California cap and trade revenues to populations or places with inequities). In ideal practice, public resources and investments are directed to address the needs of under-resourced communities. By reducing inequities for the most marginalized, overall wellbeing measured by many metrics improves for everyone.

In approaching the particularly “wicked” problems of climate change and health inequities, public health practitioners are increasingly thinking in terms of “systems change”. “Systems theory” refers to the idea that diverse systems (i.e. social, economic, ecological, organizational) work together in an interdependent and mutually reinforcing way to maintain existing conditions. It speaks to the capacity of systems to adapt to change and thereby resist single-solution reforms. Effective systems change requires that interventions shift multiple institutions and structures. Systems analysis includes identification of “leverage points”--places within a complex system (an economy, a living body, a city, an ecosystem) where a small shift in one thing can produce large changes across the system.

Using the combination of these literatures, this framework defines health equity-oriented climate change solutions as holistic strategies that complement population health objectives. These policies should target climate change investments in communities that face the poorest health outcomes, have the highest current and projected climate change exposures, and the least access to protective resources. Health equity-oriented climate change solutions target the distribution of health determinants, such as low-income and affordable housing, public transportation, economic development, or living conditions (e.g. air quality, urban greening, health-supportive resources).

**Overview of Dissertation**

This dissertation examines why the public health sector in California is not more engaged with climate change work and regional scale planning; indeed, given current threats to
and opportunities for health, I examine whether and how public health and social equity stakeholders’ participation in climate change solutions and regional scale planning can improve health and inequities outcomes and decision-making processes. The overarching goal of this research is to inform efforts to increase public health work on climate change and regional-scale planning, strengthen partnerships between public health, social equity, and climate change stakeholders, and formulate strategies that address climate change and health equity.

The first chapter of this dissertation called “Challenges and Opportunities for Advancing Work on Climate Change and Health” was conducted in conjunction with a study at the Center for Climate Change and Health at the Public Health Institute. We conducted semi-structured in-depth interviews (n=113) with public health and climate change professionals and advocates, performed structured coding, and conducted inductive-deductive thematic analysis within and across respondent groups. I found that individual-level barriers to public health engagement with climate change include perceptions that climate change is not urgent, immediate, or solvable, and insufficient understanding of public health impacts, connections, and roles. Institutional barriers include a lack of public health capacity, authority, and leadership due to risk aversion and politicization of climate change; a narrow framework for public health practice; and professional compartmentalization. Opportunities include integrating climate change into current public health practice; providing support for climate solutions with health co-benefits; and communicating, engaging and mobilizing impacted communities and public health professionals.

In the second chapter, “Integrating Health, Equity, and Climate Change Mitigation in California’s Sustainable Communities Strategies Under SB 375”, I conducted two case studies of Sustainable Communities Strategies planning to achieve greenhouse gas reduction targets through integrated regional land use and transportation planning under California Senate Bill 375 (San Francisco Bay Area and Southern California). I used in-depth interviews (n=50) with SCS planning participants, public document review, and participant observation. I analyzed interviews using thematic analysis in an iterative inductive-deductive process. In both regions, climate change planning was a major lever for improving health and enhanced the consideration and measurement of impacts, language, and funding for health into the SCS plans. Differing regional contexts and governance structures influenced the concerns, framing, and outcomes.

In the third chapter, “Improving Public Health and Equity through Regional Climate Change Planning in California”, I analyze the same data as cases for understanding regional-scale public health, social equity, and regional planning staff efforts to slow climate change and improve social determinants of health and social equity. Participants in the SCS planning process described their motivations for engaging at the regional level, the barriers to effective regional planning, the achievements of their engagement, and recommendations for improving future efforts. Three main themes emerged: (1) the importance of building regional identity as a foundation for advancing health and equity, as well as the challenges of doing so; (2) the challenges that regional governance posed to working for health and equity, and the opportunities for reform; (3) the importance of building regional coalitions within public health and with regional equity partners, and the challenges of doing so.
Together, these studies highlight the importance of understanding the ways that coalitions and participation by health and equity stakeholders in climate change planning and decision-making and regional-scale planning can improve the social determinants of health, institutional power and democratic processes, health and social inequities, and climate change. They also highlight the barriers and difficulties in doing so, including “downstream” public health institutional practices; bureaucratic compartmentalization amongst the many interrelated systems that produce poor health, inequities, and climate change; the disinvestment from governmental public health and regional agency authority and infrastructure; and the difficulty to translating policy jargon and planning processes into real and concrete impacts on communities facing inequities in order to mobilize for the community participation arm of healthy governance. By investigating the nuances of public health involvement in climate change work, as well as cases where public health engaged vigorously in climate change planning in California, this dissertation seeks to elucidate opportunities for how to most effectively engage with regional scale planning, through coalitions and a systems change approach to address the complex and interrelated challenges of climate change, public health, and equity.
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Chapter 1:
Challenges and Opportunities for Advancing Work on Climate Change and Health

Abstract:

Background: Climate change poses a great threat to public health and health inequities. Strategies that address climate change have considerable potential to yield benefits for health and health inequities. Yet public health engagement on work at the intersection of public health, equity, and climate change has been limited. This research seeks to understand the barriers to and opportunities for advancing work at this nexus.

Methods: We conducted semi-structured in-depth interviews (n=113) with public health and climate change professionals and advocates, performed structured coding, and conducted inductive-deductive thematic analysis within and across respondent groups.

Results: We present barriers to effective public health engagement and opportunities for advancing work on climate and health. Individual-level constraints include perceptions that climate change is not urgent, immediate, or solvable, and insufficient understanding of impacts, connections, and roles. Institutional and structural barriers include a lack of capacity in public health infrastructure, funding, and workforce; lack of formal and informal authority; lack of leadership due to risk aversion and politicization of climate change; a narrow framework for public health practice that limits work on the root causes of climate and health; and compartmentalization within and across sectors. Opportunities for stronger engagement on climate change include integrating climate change into current public health practice; providing inter-sectoral support for climate solutions with health co-benefits; and using a health frame to engage and mobilize public health professionals and impacted communities.

Discussion: Efforts to build public health sector engagement with climate change work should focus on education and communications for the public health sector, and opportunities to shift the public health institution, build leadership, increase work on the root causes of climate change and poor health, and coordinate and shift funding.
INTRODUCTION
This research examines why the public health sector in California is not more engaged with climate change work given current and impending threats to health, and the potential for climate change solutions to improve health and inequities outcomes. The purpose of this research is to inform efforts to increase public health work on climate change, strengthen partnerships between public health and climate change efforts, and formulate strategies that address the health impacts and opportunities of climate change.

We first provide background information about the issue, and describe our research methods and approach. We present our findings on the barriers and opportunities for expanding public health engagement with climate change, ranging from perceptions that may limit individual action to larger organizational and structural barriers. We present opportunities to integrate climate change into current public health practice and engage in climate change planning in and across other sectors. We conclude with a discussion of the implications for public health practice.

Background
Climate change threatens human health and well-being in numerous ways; many are already in evidence.\(^1\),\(^2\) Climate change threatens to disrupt the life support systems on which humans depend (food, air, water, shelter, security), and therefore, in concert with other global environmental changes, literally threatens our survival. Climate change also disproportionately impacts those who are vulnerable and disadvantaged,\(^3\),\(^4\) increasing health inequities. Social inequities are a driver and outcome of climate change, inhibit effective governmental action on climate change\(^5\), and drive adverse health outcomes\(^6\) and health inequities. Despite these threats, climate change policies and strategies could have significant and immediately beneficial effects on public health and health equity, or “co-benefits”. Addressing climate change provides opportunities to improve social and environmental determinants of health across many sectors such as transportation, land use, agriculture, energy, and housing.\(^7\),\(^8\),\(^9\) Health co-benefits can include a decrease in obesity, some chronic diseases, respiratory illnesses, injury, improved community cohesion, and mental health.\(^10\),\(^11\) Equity co-benefits can include increased availability of low-income housing, improved public transportation, economic development, or improved neighborhood conditions, such as air quality, traffic density, urban greening, and availability of health-supportive resources and services such as groceries and healthcare.

While most climate change policies could improve overall population health, the distributional impacts of these policies on health inequities is uncertain. Some climate change strategies can increase the environmental, economic, and health burdens on communities already bearing the burden of cumulative environmental impacts, discrimination, poor health, and poverty.\(^12\) The distribution of resources and opportunities, and risks and exposures from climate change solutions often mirror political, economic, and social power differentials and gradients. For example, California’s cap and trade system could increase co-pollutants in low-income neighborhoods if industries located there trade for more emissions allowances.

Public health engagement with climate change is crucial. Public health actions can do much to protect people from some of the impacts of climate change, with early action providing the largest health benefits.\(^13\),\(^14\) The health sector can play a vital role in helping the public and policy makers understand the magnitude of climate change impacts on human health, and opportunities for health and health equity promotion in climate actions.
Many major public health organizations and leaders recognize climate change as an urgent public health issue, and have argued that there is an immediate need to develop a national public health workforce that can research and address the effects of climate change on human health. Some state and local public health departments are conducting projects on climate adaptation, through funding from the Centers for Disease Control and Prevention. Although few local health departments (LHDs) are working explicitly on climate change mitigation efforts, a substantial number of LHDs have programs that can achieve GHG reductions, (e.g. increasing physical activity through walking and biking).

Yet public health engagement on climate change has been very limited in light of the severity of the risks of climate change, and the magnitude of the opportunities climate change solutions present for health. One assessment of local agencies found that the gap between demand for health and climate interventions and the resources available to health departments was greater than in any other sector. Prior surveys exploring U.S. public health officials’ perceptions and capacity for action on climate change indicate that public health practitioners are aware of climate change and its effect on their jurisdiction, but report inadequate knowledge, information, planning, funding resources, and workforce capacity to address this issue. These surveys also conclude that increased inter-sectoral collaboration with other governmental agencies will be necessary. In order to understand why these barriers persist and strategies tailored to varying levels of engagement, we sought to conduct a more nuanced analysis that takes into account interviewees’ engagement level. We sought to understand the differences between public health practitioners currently working on climate change and public health and those who do not report being engaged in this work. We also sought to understand the perspective of those working on climate change in other sectors on the potential for strengthening inter-sectoral collaboration.

RESEARCH DESIGN AND METHODS

Semi-structured in-depth interviews and focus groups were conducted with three categories of participants from governmental and non-governmental organizations, described in Table 1:

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<thead>
<tr>
<th>Interviewee Type</th>
<th>Definition</th>
<th>N</th>
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<tbody>
<tr>
<td>PH-engaged</td>
<td>Public health professionals who report working on climate change and health, and articulate explicit relationships</td>
<td>40</td>
</tr>
</tbody>
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Inter-sectoral collaboration refers to the coordinated efforts of two or more sectors of government to improve outcomes, including horizontal and vertical linkages across and between levels of government and stakeholder engagement. (Adapted from Kreisel W, von Schirnding Y. Intersectoral action for health: a cornerstone for health for all in the 21st century. World Health Statistics Q. 1998; 51: 75–78.)

We also conducted two focus groups with 22 total participants from Public Health Institute staff. Analysis revealed consistency with interview findings. This paper only reports on the interviews.

Structures refer to the inter-institutional arrangements and interactions (such as laws, policies, and standard operating procedures) whose joint operation produce health and equity outcomes. (Adapted

We also conducted two focus groups with 22 total participants from Public Health Institute staff. Analysis revealed consistency with interview findings. This paper only reports on the interviews.
between their work and climate change without prompting.

<table>
<thead>
<tr>
<th>Participant Group</th>
<th>Definition</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH non-engaged</td>
<td>Public health professionals who do not report working on climate change, and do not articulate connections between their work and climate change without prompting.</td>
<td>31</td>
</tr>
<tr>
<td>Non-PH</td>
<td>Staff who report working on climate change, and who do not self-identify as public health professionals.</td>
<td>42</td>
</tr>
</tbody>
</table>

We began with a purposive sample of “PH engaged” in climate change and “Non-PH” professionals we knew through practice or published literature who were working on climate change as a primary focus of their work. Through snowball sampling, these individuals helped us identify “PH non-engaged” in climate change colleagues working on areas with a potential public health relationship to climate change (e.g. increasing physical activity through active transportation, improving food security and nutrition, preventing asthma), as well as enlarge our sample for all categories. Individuals were invited to participate with a detailed email, and follow-up emails and phone calls; the participation rate was 84%.

Semi-structured interview guides were developed, piloted, and revised for the three categories of participants. (See Appendix I for interview guides.) We conducted 113 interviews of one to one and a half hours in-person or via telephone when necessary from May through September 2013. Participants were mainly from California (89%), with a smaller sample of national public health leaders engaged in climate change (11%). Interviewees were asked about their knowledge, attitudes, and activities regarding the health impacts of climate change and climate change strategies, and challenges to and opportunities for greater engagement in work at that nexus. For the public health interviewees, final determination of participant category was based on whether they articulated their work as connected to climate change without prompting during the interview. Table 2 further describes participants.

**Table 2: Description of participants**

<table>
<thead>
<tr>
<th>Participant Group (N=113)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH engaged</td>
<td>35</td>
</tr>
<tr>
<td>PH non-engaged</td>
<td>27</td>
</tr>
<tr>
<td>Non-PH</td>
<td>37</td>
</tr>
<tr>
<td>Location</td>
<td></td>
</tr>
<tr>
<td>California (N=102)</td>
<td>90</td>
</tr>
<tr>
<td>San Francisco Bay Area and Northern California</td>
<td>44</td>
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<tr>
<td>Sacramento area</td>
<td>18</td>
</tr>
<tr>
<td>San Joaquin Valley</td>
<td>11</td>
</tr>
<tr>
<td>Los Angeles and Southern California</td>
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</tr>
<tr>
<td>Other States (N=11)</td>
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<tr>
<td>Organization Type</td>
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<td>Governmental</td>
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<td>Non-governmental Organization</td>
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<tr>
<td>Position in organization</td>
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<tr>
<td>Executive or Director</td>
<td>52.2</td>
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<tr>
<td>Gender</td>
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<td>--------</td>
<td>---</td>
</tr>
<tr>
<td>Female</td>
<td>57.5</td>
</tr>
<tr>
<td>Male</td>
<td>42.5</td>
</tr>
</tbody>
</table>

* California regional percents based on California totals.

Transcribed interviews and notes were imported into Dedoose\textsuperscript{42}, a qualitative data management and analysis software for coding and analysis. Initial coding identified broad topics, with subsequent iterative sub-coding, in-depth inductive and deductive thematic analysis, and analysis of patterns within and across participants groups and organization types. Three coders independently applied codes and compared applications across several transcripts to ensure a high level of agreement with the coding scheme, code definitions, and parameters.

**RESULTS**

We present results of two main areas of analysis: barriers to effective public health engagement, and opportunities for advancing work at the nexus of climate change and public health. Some barriers seemed to operate at a conceptual individual-level; others seemed intrinsic to the institution of public health; while others seemed structural--based in the ways that multiple institutions function across institutions and agencies. In this paper, “institutions” refer to the formal organizations or rules, as well as the set of informal norms, practices, and behaviors that evolve over time and shape public decisions.\textsuperscript{43} These are not clear-cut categories, and there is much influence and overlap amongst them. The conceptions that inhibit respondents’ work at a more individual level include a belief that climate change is not urgent, immediate, tangible, or solvable; and insufficient information or understanding on impacts, connections, and roles. Institutional and structural (inter-institutional) barriers include a lack of capacity in public health infrastructure, funding, and workforce; lack of regulatory power, use of informal authority, or leadership; politicization of climate change; narrow framework for public health practice; and compartmentalization within and across sectors.

Opportunities to shift public health practice towards stronger engagement on climate change issues include integrating climate change into current public health practice; providing support for climate solutions with health co-benefits; communicating potential health and health equity impacts of climate change and climate actions; and engaging and mobilizing impacted communities and public health professionals.

I. **BARRIERS TO ENGAGEMENT**

A. **Conceptual Constraints**

A.1. *Belief that climate change is not urgent, immediate, or solvable*

The “PH engaged” respondents were, not surprisingly, highly aware of the health risks of climate change and the urgency of response. While there was interest and concern about climate change among “PH non-engaged” professionals, this group expressed less interest, urgency, or recognition of the breadth and scope of climate impacts on health, that those impacts are already occurring in the U.S., or that interventions are required now to prevent more severe climate change health impacts in the future. One respondent noted that the health impacts of climate change “seem like a reach.” Many of these respondents see the impacts as too distant in time and place to be of concern, “a pervasive perception that climate change will happen in the
future”, although several acknowledged the need for public health response to extreme weather events. Almost all respondents—including those engaged with climate change—believe there is a lack of tangibility or immediacy to the issue; that it is too abstract for people to engage with. For those “PH non-engaged” respondents that did perceive climate change as an immediate and urgent threat, it was not a priority for their organization or agency. Significantly, even executive public health respondents from public health organizations recognized as leaders in climate change work didn’t feel it was a priority of their organization.

“PH non-engaged” interviewees expressed skepticism that climate change was as pressing as other issues for the communities they serve, such as gun violence, unemployment, or housing issues. One respondent pointed out: “We can’t expect people to think about the future if they don’t have their immediate needs met.” Similarly, many “PH engaged” respondents’ primary motivation for engagement in explicit climate change policy or planning is that those activities serve as a platform to address community health needs. The exception to this was “PH non-engaged” respondents working in environmental justice organizations, who highlighted the importance of environmental protection—including climate change—for the communities they represent:

“In our community, there is a deep tie to the environment that is so dismissed: Latinos care about the environment because of the environment, not just for self-interest….people feel a strong tie with the land….We came from agrarian societies, and voters would support policies that protect water, trees, and land, even with costs associated, and they also understand the psychological benefits of preserving the earth, as well as the health benefits….that view is really not well understood in the larger equity movement.”

A.2. Insufficient understanding of impacts, connections, and roles

The “PH non-engaged” respondents felt they lacked adequate information or expertise to engage in work related to climate change; this knowledge deficit encompassed the health impacts of climate change, the health impacts of climate change actions, and the connections between current public health work and climate change. One respondent described, “There is a lack of knowledge that climate change has impact across sectors….In public health, people work on one narrow issue and folks might have a hard time making the links between their public health work and climate change.”

The following three passages from three different “PH non-engaged” participants demonstrates the confusion about the connections between climate change and their current public health work: “We do air quality projects, outreach to increase awareness about poor air quality, and an anti-idling campaign at schools. I’m very familiar with the concept of co-benefits but have never thought about it with regard to climate change.” A governmental worker said: “It’s uncanny how connected our work is to climate change. It’s almost coincidental. But I wouldn’t necessarily link Safe Routes to School or physical activity to climate change.” Another governmental worker reflected: “WIC would be active in obesity, nutrition, social and environmental determinants of nutrition, but I don’t think of it as a climate change issue. The climate change issue is what happens when the food supply gets disrupted. That is emergency preparedness.”

Other “PH non-engaged” respondents were aware of the connections between their work and climate change, but expressed distinct unease at making these links explicit with their peers, community stakeholders, or decision-makers without having specific suggestions as to what can
be done about it; something they do not feel equipped with. Significantly, many “PH engaged” respondents also did not feel they were experts, understood only one area such as emergency preparedness, and did not think systemically or about multiple impacts.

Many public health respondents (engaged and non-engaged) expressed uncertainty regarding the local impacts of climate change, or how it would affect the communities they work with. One public health respondent said, “I know it’s a big issue, but I lack data to talk to community and decision-makers at the appropriate scale.” “PH engaged” respondents cited a need for better down-scaling of local climate change impacts, research on community impacts, and methods to forecast local health impacts based on down-scaled climate data.

“PH non-engaged” respondents expressed uncertainty about what public health agencies can actually do about climate change and its health impacts. Respondents across all groups expressed frustration at the difficulty of identifying specific meaningful solutions that match the scale and complexity of problem. Even respondents who understand that their own work may help to address climate change expressed skepticism about the effectiveness of their role: “The work of climate change gives me an overwhelmed feeling. I have a cynical feeling, like how much could it help, promoting Safe Routes to Schools?”

In contrast, the majority of “Non-PH” respondents identified numerous immediate roles for public health. They expressed eagerness to incorporate health impacts and co-benefits into their climate change work, and desire for public health professionals to provide that information and talk about health and climate change to communities and policy-makers.

**B. Institutional and Structural Barriers**

In addition to conceptual constraints, respondents identified myriad institutional or structural constraints within public health and across sectors that make efforts to engage in climate work challenging. The institutional constraints operate within public health agencies and the public health sector, which together operate as the public health institution, while structural barriers operate across multiple interconnected systems and sectors outside of public health. They include: 1) lack of capacity in public health infrastructure, funding, and workforce 2) lack of regulatory power, use of informal authority, or leadership, 3) politicization of climate change, 4) narrow framework limiting a broader vision of the shared root causes; and 5) compartmentalization and silos within and across sectors.

**B.1. Lack of capacity in public health infrastructure, funding, and workforce**

Respondents from both public health groups noted that adding climate change to existing public health priorities is overwhelming without the public health infrastructure, resources, and workforce capacity to support it. Respondents across all groups mentioned the significant challenge of public health infrastructure loss after budget cuts, and resultant loss of staff and capacity to engage with climate change. One “PH engaged” respondent noted:

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iiiStructures refer to the inter-institutional arrangements and interactions (such as laws, policies, and standard operating procedures) whose joint operation produce health and equity outcomes. (Adapted from John Powell. Structural Racism: Building upon the Insights of John Calmore, 86 N.C. L. Rev. 791 (2007), available at: http://scholarship.law.berkeley.edu/facpubs/1637)
“Public health has taken such a huge hit in staffing with most public health departments at 40 – 60% of their staffing levels prior to ten years ago, but have more on their plates. The field of public health keeps growing, and we need to really prioritize what governmental public health agencies should be doing. Protecting from climate change is one of those things….”

A “PH engaged” respondent working in an NGO emphasized that because of budget cuts, the public health infrastructure will be severely challenged to provide the organization and training for staff to develop the skills, knowledge, and confidence to work on climate change:

“The public health workforce is being eroded rapidly... we will be down staggering numbers. They will need to be paid a living wage and have the tools to work on public health and climate change and be well equipped. It takes more than a guidebook, it takes training, monitoring systems, doing outreach and trainings, and that all takes dollars.”

Another “Climate Engaged PH” governmental worker linked all of these issues to an overwhelm with current workload and a lack of morale: “We’re compartmentalized, and have mandates, missions, and activities that we do every day... feeling stressed in getting them accomplished. If we tell people they need to add climate change, there is a lot of resistance.“

Public health respondents across groups expressed frustration at the difficulty of making time for climate change work when so much of public health funding is tied to categorical programs and scopes of work. A “PH engaged” governmental worker said, “You’re trying to do climate change work on top of everything else you’re doing. There is no funding stream, no time set aside. I try to carve time out to focus on it. But you have all these other things... that you’re getting paid to do.”

Climate change cuts across many programmatic areas, yet respondents in both public health groups bemoaned the perception of program administrators that unless climate change is specifically mentioned in a program’s scope of work, funding cannot be used to address it, even if the grant or contract language might allow it.

Amongst “PH engaged”, there was a strong sense that funding to support public health and climate change work has not been increasing, because funders do not prioritize it. They believed this was because the gains will not be seen or felt for a long time, or ever in the case of preventing further climate changes; climate change work is not “low hanging fruit”. These respondents spoke to the difficulty of fundraising for work at the intersection of climate change and public health (described as a fundraising gap between environmental funders and health funders), and how this limited effective interdisciplinary collaboration:

“The (X) Foundation, which gives incredible amounts of money to public health, specifically doesn’t fund environmental problems. That decision holds implications on the ability to be involved in issues like climate change. That really reinforces silos between public health and other disciplines, and within public health.”

And:

“We are trying to move health forward, integrate in the work they do, and collaborate in interdisciplinary groups to lift up the question of public health. There is a lot to contribute around planning, preparation, adaptation, and vulnerable groups, but without the infusion of resources, there is not much further you can go.”
Conversely, some respondents across climate-engaged groups warned that categorical funding for climate change can reduce the impact of the work, as expressed by this “Non-PH” respondent: “One of the most disheartening times in the movement was when people started to just fund climate, thinking it was its own thing, but it’s connected to every issue we work on. If you’re working on clean air, on food, you’re working on climate.”

B.2. Lack of formal and informal authority

Numerous respondents in both public health groups spoke about the importance of legally enforceable laws, official orders, or rules as a way to force engagement in climate change and public health issues. California’s multiple state laws such as AB 32, SB 375, the California Environmental Quality Act (CEQA)\textsuperscript{iv} and associated local government mandates, were cited as ways to force local government agencies and various sectors to address climate change, even in jurisdictions with elected officials who deny human-caused climate change. Jurisdiction for implementation of climate change mitigation and adaptation policies varies amongst states that have policies in place, but are generally under the purview of environmental organizations such as the EPA, air boards, fire, water, and conservation agencies.

Public health agencies are usually mandated to respond to emergent public health threats such as those caused by climate-related natural disasters and disease outbreaks, as well as limited occupational regulation (e.g. for heat risk). Few public health agencies have any explicit climate change-related mandates. A “PH Engaged” gave this example: “The overall direction and mandate in public health is missing the climate change component. How do you make heat-related illness a reportable disease to elevate it to other public health priorities like sexually transmitted infections?” A governmental “PH engaged” described:

“Cal-EPA has enforcement powers. The state and local Health Departments don’t have much in the way of enforcement powers except to close restaurants that aren’t clean. The Health Department is more advisory. Cal-EPA and the local districts, which are under the supervision of the California Air Resources Board, are in a separate world from the Health Department. I had someone who crosses between both worlds. It was frustrating, and I tried to get my colleagues to be open to working with the Health Department.”

An academic “PH engaged” said:

“Public health is struggling to see how it fits in. From an agency perspective, people think it’s relevant, but are constrained by the fact that they don’t have jurisdictional authority to do something about it. Addressing climate change would be mitigating greenhouse gases, but there is no jurisdictional authority related to that at all. They may feel that their hands are tied.”

\textsuperscript{iv} The California Environmental Quality Act is a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. This includes analysis and mitigation of greenhouse gas emissions, placing projects in locations affected by climate change, and energy use of project (including transportation-related energy). Most proposals for physical development in California are subject to the provisions of CEQA, as are many governmental decisions that do not immediately result in physical development. (See CEQA and Climate Change, The Governor’s Office of Planning and Research, last accessed 12-9-14, available at: http://www.opr.ca.gov/s_ceqaandclimatechange.php)
Agencies are traditionally reluctant to venture into areas where they don’t have the regulatory power, and public health is no exception. While public health respondents said that they lack formal authority over the health impacts or drivers of climate change, many non-public health respondents stated that the public health sector has the informal authority bestowed on them by the community and decision-makers. These respondents believed that public health could use this informal authority to provide greater leadership and possibly even move towards formal mandates for public health to address climate change.

B.3. Lack of leadership: Risk aversion and politicization of climate change

However, across all groups there was a high level of consensus and frustration that public health leadership on climate change is sorely lacking. While public health respondents from both groups stated that capacity to address climate change should be built amongst staff at all levels of public health organizations, strengthening leadership amongst executive leadership was believed to be most crucial, because they define priorities and the allocation of resources for long-term initiatives. “Non-PH” and “PH engaged” participants voiced frustration with the absence of public health agency leadership and action on climate change: “Public health should be speaking out more on the importance of addressing climate change, of mitigating climate change, just raising their voices more in the public.” When asked why this was not happening, numerous participants linked this to politicization, lack of higher-level institutional support, overt pressure to not act, and fear of repercussions in a risk-averse culture.

Those “PH non-engaged” who saw connections in their work to climate change expressed reluctance to make the links explicit based on perceived political constraints, “and whether public health departments have the leadership, vision, or leeway to get into what their sister agencies are putting in place and get into things elected officials are going to slap them down for.” In jurisdictions where decision-makers or organizational leaders dispute that climate change is real or human-caused, there is fear about even mentioning the words “climate change”, as expressed by a “Non-engaged PH”: “In a public health department like this, the legislation controls your budget, and if there are legislators who feel in any way threatened by interventions, you could find yourself not getting funding for different things.”

“Non-PH” and “PH engaged” participants voiced frustration with governmental public health’s inability or unwillingness to weigh in on the health impacts of various climate change policies. For example, one “Not-PH” interviewee said, “Public health should be speaking out more on the importance of addressing climate change, of mitigating climate change, just raising their voices more in the public.” When asked why this was not happening, numerous participants described the risk-averse culture and fear of repercussions that permeates many governmental public health agencies, the lack of higher-level institutional support for employees who do want to speak out, or overt pressure to not act. One “PH engaged” governmental employee noted: “Some other parts of the government are less risk averse, but ours is more so.... Their whole thing is that ‘we don’t want any surprises and everything goes through us’. Anything that causes anyone to be upset, they shy away from it.” Another respondent said, “They need to know the Board of Supervisors (BOS) won’t fire them if they speak out on climate change.... Not until people are at the end of their careers will they say what needs to be said.” Another participant complained about the lack of public health participation in contentious climate change policy-making:

“Different public agencies have competing interests and fight with each other.... So I don’t know why public health feels that they are not allowed to do that. [A few public
health leaders] are willing to stick their necks out, take political risks, and state what will happen to health with various policies.”

Significantly, public health respondents across both groups indicated that the politicization of climate change impacts their ability to fulfill basic public health roles, including roles that could support climate change action. For example, monitoring and identifying health hazards, educating and mobilizing community partners around health problems, or response to community partners seeking information or advocacy for climate policies was difficult when supervisors were pressuring them to limit their speech or support for climate change efforts.

**B.4. Narrow framework limits work on root causes of climate and health**

Public health respondents from both groups felt that it would be necessary to advance work on primary prevention and social determinants of health (SDH) in order to effectively address climate change, since much work on climate change is focused on SDH such as transportation, land use, and community design. These participants expressed that while there is a strong conceptualization and growing work on SDH, the field’s training, funding, resource allocation, organizational structure, and practice still rests largely on an individual-level or biomedical model centered around service provision. One respondent who works at a local health department explained, “Most of what we do as a public health department is service delivery. Prevention—which is what climate change work is—is a very tiny part of what we do.” Another participant described how this limits engagement with climate change:

> “So many public health departments are still entrenched in how funding is coming, silos, disease conditions, and individual behavior change. Those local health departments that are at least looking at neighborhood conditions will be better off. Climate change is still pretty far out.”

Recognition that climate change is complex and requires a sustained commitment led respondents to express frustration at a “reactive” public health practice dominated by the “tyranny of the urgent”. One “PH engaged” respondent noted that in order to work on climate change, public health will have to shift its resources and attention from service provision to systems changes: “Other things will have to go and be shifted to someone else’s responsibility so that public health can do its work at the broad population level… and focus on the macro-level changes that are needed.” Another stated: “We can have the research and understanding, but we fail to shift our resources and our public health practice. It’s about creating those structural changes and reallocating our existing infrastructure so we can align with the research and innovative practices.” A “PH engaged” respondent stressed that the root causes of climate change beyond should be the focus, even beyond mid-stream environmental exposures:

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\(^v^\) The social determinants of health are the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels. The social determinants of health are mostly responsible for health inequities - the unfair and avoidable differences in health status seen between populations. (See World Health Organization Commission on the Social Determinants of Health. *Closing the Gap in a Generation: Health Equity Through Action on the Social Determinants of Health. Final Report of the Commission on Social Determinants of Health*. Geneva: World Health Organization; 2008.)
“The focus on the air pollution benefits is myopic. That’s another challenge for public health: even within the EPA, everything is organized according to a disease outcome or a health issue. Climate is a large problem that requires systems thinking, which is pushing people against their comfort zone. If we limit the conversation only to that, that’s short sighted without thinking about underlying issues.”

B.4. Compartmentalization within and across sectors

Many of the barriers cited by participants stem from compartmentalization within the public health sector. Participants described that even within or between public health agencies that are simultaneously addressing the same public health problems, there is a lack of coordination or alignment of approaches and funding streams that prevents work on cross-cutting issues like climate change and health. “Non-PH” participants were concerned that this also limits big-picture thinking and analysis: “The siloed mentality also means we don’t get the big picture….this is all inter-related, but many Environmental Health folks still don’t see or can’t come to grips with the inter-relatedness.” Another “Non-PH” participant from an environmental NGO stated:

“Part of the issue is a lack of integration and a lack of systems thinking. We look one piece at a time, but this affects us in a multitude of ways and we need to bring people together to solve these problems. We always solve one thing and create another problem, like with biofuels. There are water issues, rising food prices, even the immigration problems that arise from making decisions in isolation.”

Even if the public health sector can address the myriad internal challenges described, participants described the challenge of working on climate change across numerous fragmented and “siloed” governmental agencies. Respondents from all groups were frustrated by the bureaucratic organization of governmental agencies, and differing approaches and values between disciplines when they did work together on climate change issues. For example:

“We don’t understand each other at all. We’re in different disciplines; don’t have knowledge of their expertise, different language, and different emphasis on what’s important. It takes twice as much work; you have to get a rudimentary understanding of what they’re doing. Some ways to get over that is willingness to spend a little more time making sure people understand each other.”

One local government worker referred to territorial conflicts over climate change work: “Whose job is this anyway—the green team or Department of the Environment? So why is health talking about this, given everything else health has to do?” Another governmental worker stated:

“There’s still a sense that public health shouldn’t be in the room because things are not a health initiative. But all public agencies should be responsible to the public and part of that is keeping them safe and healthy. There are some turf issues, especially with the infrastructure agencies, transit authority, or pollution-planning.”

Another governmental public health employee described that public health staff often are not invited to participate when climate change decisions are being made:

“Air pollution control district and planning are strong partners, but we still tend to get siloed, and they still think climate change is theirs. They all talk “health”, but don’t invite health to the table. [University] organized a state-wide conference, and health was
a major topic on the agenda, but they never invited [local health department] to the conference.”

II. OPPORTUNITIES FOR ENGAGEMENT

“PH engaged” and “Non-PH” uniformly identified opportunities for public health sector engagement in ongoing local, regional, and state climate action planning and policy processes around the U.S. They spoke of the importance of integrating climate change into current public health practice, where feasible; providing active inter-sectoral support for climate solutions with health co-benefits; communicating the potential health and health equity impacts of climate change and of proposed climate actions; and engaging and mobilizing impacted communities and other public health professionals. Public health respondents from both groups agreed that a shift in public health practice is necessary, ranging from minor shifts to a major overhaul.

Across opportunities, “PH engaged” practitioners strongly urged the public health sector to increase work on climate change mitigation policies and strategies (slowing and averting further climate change by reducing greenhouse gas emissions), in addition to adaptation. “[Climate change mitigation is] where we’re going to have an impact on health outcomes…. How do we go from FEMA preparedness to the need to reduce greenhouse gases?”, and “We need to think about how to integrate the need for emissions reduction into preparedness work more explicitly.” Climate mitigation was seen as an opportunity to shift to primary prevention and address social determinants of health.

A. Integrate climate change into current public health practice

Both public health participant groups expressed doubt that there would be significant new funding for public health agencies to work on climate change, suggesting a strategy to integrate climate change into existing programs where feasible. To promote greater engagement respondents advised “...first help people see that they already are influencing issues around climate change with what they do every day. Just tweaking and finessing it rather than completely changing their workload.”

Examples provided included integration of climate projections into accreditation-required community health assessments and public health emergency preparedness, home visitation program referrals for energy efficiency improvements, articulation of climate co-benefits in chronic disease prevention programs (e.g. active transportation), and inclusion of climate-related health outcomes in existing disease surveillance programs. Respondents cited the need for greater funding flexibility and workforce capacity building to implement these suggestions.

“PH non-engaged” and “Non-PH” respondents asked for more information on the range of health and equity impacts of climate change and climate solutions--including downscaled local health impacts--and how these connect to current work. Three of these respondents observed:

“We are involved with work on air quality, safe neighborhoods, reduction of traffic, water quality, biking paths, walkable communities, and obesity prevention (through community gardens, farmers markets, and city planning). I do not make the links explicit currently, but would be interesting in doing so with guidance on ‘how to’”.

“There’s a lot of research supporting that active transit and affordable housing will have a climate change impact. It’s a multi-step connection, but people don’t often make the
connection in lectures to elected officials or presentations at Commission. They sometimes connect the dots, but they may just be listed as a bullet on why active transportation is good.”

“With health and adaptation, it’s still complicated for a planner to understand. We understand extreme heat events, but I don’t have a background in terms of thresholds and what numbers matter. It’s still hard for me to understand what the community impact will be. I couldn’t go the next step and say the risk for my community in terms of health is this. Public health can make that data more accessible to planners like me.”

Some “PH engaged” respondents noted that adequate evidence for action already exists, and that the real need is for greater dissemination of existing knowledge:

“The public health sector needs to get their research out there. Good work has been done, but it has not effectively been shared with the public...both at community and institution level. This would provide opportunities for advocacy and help put pressure on legislators to introduce stronger legislation with more information on public health.”

**B. Provide active inter-sectoral support for climate solutions with health co-benefits**

All climate change policies will have health impacts, and public health’s presence could result in more aggressive climate change policies and plans. “PH engaged” respondents explained that most climate change strategies and solutions are working on social determinants of health, and that public health’s presence in this work would improve health inequities and resilience across many outcomes. Climate change work could also be a vehicle for getting out of the silos and limited framework that public health is perceived as being constrained by, thereby improving public health practice broadly.

Respondents from all categories suggested this could happen immediately through active participation in opportunities such as transportation, land use, and climate action planning at the local, regional, and state levels, in sectors like land use, transportation, agriculture, natural resources (air, water, soil, forestry and conservation), and fire protection. Participants wanted public health staff to assess and weigh in on the likely health and equity impacts of climate change policies and plans (using Health Impact Assessment and health lens analysis), and to build off the Health in All Policies approaches already being instituted in multiple jurisdictions. Interviewees reported that presentations they had given using existing materials about health co-benefits had been powerful for decision-makers, especially in conservative areas of California.

Participants believed that having strong inter-sectoral partnerships would be critical to inter-sectoral collaboration that brings social determinants of health and climate change work together. “Non-PH” respondents--especially non-governmental organization staff--emphasized that they were ready, eager, and willing to partner with public health to bring public health implications of nexus work into public debate and decision-making spheres. Respondents felt public health should use its special authority and “show up” for climate change decision-making.

**C. Engage and mobilize health professionals and impacted communities with a health frame**

Respondents engaged with climate change from within public health and non-public health said that there was a need for a larger movement on climate change. Across all groups, but particularly in the “Non-PH” group, respondents felt that “The public health sector has a lead role to play” in facilitating this magnitude of change. As a first step, several respondents suggested that public health needed mobilization from within the field. They suggested a
coordinated, funded strategy that convenes public health workers, aligns their various work to address climate change, and facilitates a larger health movement for climate change.

Foundations were seen as having a significant role in facilitating this movement by coordinating funding streams and creating a collective impact approach for work at the intersection of climate and health. Some respondents referenced the incredible sense of urgency, strategy, and unity of purpose created when foundations set priorities and aligned funding streams around place-based health and obesity prevention; seemingly unrelated public health activities across a range of issues now appeared to be integral parts of a strategic movement with a purpose and vision. The foundations provided the leadership, and public health leadership followed suit. Foundations are setting the agenda for powerful movements around health, and these respondents are hungry for the engineering of such a movement in public health for climate change.

Next, “Non-PH” respondents held that: “There is a vacuum in the government in communicating with the public, and public health should claim that as its area.” They would like to see health-framed communications about climate change and its health impacts, and strongly believed that the public health sector has the credibility and connection to communities that could be used to mobilize public support for health-protective action on climate change. One respondent who had experience framing climate change as a public health issue in political campaigns noted that public health: “was the motherhood & apple pie of that [political campaign]. Our opponents couldn’t criticize or devalue them as a messenger. They were a messenger beyond reproach, with a message beyond reproach”. “Non-PH” participants believed public health arguments can sway people “on the fence” about supporting policy and that the public health sector should use this “heft” more to change public discourse around climate change:

“There is a lot of messaging that the public health community could do, to create an environment where policy can thrive. We have pushback from conservative movements, and the public health movement can be outside the polls, people who are wavering and on the fence, and are bombarded by Tea Party messages, don’t take time to read science, they can hear a public health voice more than a planner or politician....”

However, some “PH engaged” respondents believed there was a notable lack of coherence in messages around public health and climate change, which suggests that public health professionals need to invest in a communications strategy on climate change that is linked with a larger, long-term political strategy. Respondents suggested looking to successful public education campaigns in the past “that have moved a whole population, be it Mothers Against Drunk Driving or Anti-Tobacco, and that really changed the social fabric and the way people think about things and what they’re willing to do.”

“Non-PH” respondents felt strongly that public health could be a unifying frame for multiple goals, such as addressing health inequities and environmental justice through climate change, and that messages should explain the inextricable linkages among climate change, health, and equity, and the need for an integrated approach. One respondent advocated for a frame that is “...pointing to climate change strategies addressing disparities as a way to make conditions better for everyone.” Another respondent described that public health can unify disparate environmental justice and public health missions:

“...there is also a role for disseminating models related to where the EJ/pollution fight can intersect more effectively with public health/social justice. More collaboration is
needed. There is good work happening in silos, but the community needs a more cohesive vision to move forward and health might provide that cohesion.”

Some “Non-PH and “PH non-engaged participants pointed out that the environmental framing of climate change was effective for a small group, but that the majority of people are motivated by threats or co-benefits to their health, “which in and of themselves are adequate,” and are “worth fighting for now”. A “PH non-engaged” respondent said, “The co-benefits story is really fascinating; that these things we are working on can also benefit climate change.” One climate change community organizer said, “Human rights and health have narrative power and policy power that we can articulate in a platform. It’s a great litmus test for most policy proposals.” A number of respondents felt that public health messaging could ground the more abstract “climate change” framing: “Public health makes climate change real for these communities.”

A smaller group of respondents engaged from within and outside of public health who saw climate change as both a major threat and a major opportunity to change multiple systems and advance multiple progressive agendas. Several “PH non-engaged” respondents suggested that a coordinated, funded strategy that convenes public health workers, aligns their various work to address climate change, and facilitates a “larger health movement for climate change” is crucial.

Respondents from both groups engaged with climate change stressed the need to mobilize a base that is reflective of who will be most negatively impacted by the harmful effects of climate change, including low-income communities, communities of color, and other climate-vulnerable populations. Public health could engage with, partner with, and mobilize the communities they work with to identify, define, and solve climate and health problems, so that climate solutions do not have disproportionate adverse impacts on disadvantaged communities. Those outside of public health pointed out that public health agencies often provide services and in some cases work on community-identified issues with low-income communities of color and could bring a focus on climate change into this work. Participants believe that this will be more successful if it connects climate change to issues the community is most concerned about, rather than vice versa.

Public health departments have varied approaches and success organizing their clients and service recipients to advocate for policy, systems, and environmental change, and many respondents suggested it would be useful to partner strategically with climate change organizers, one of whom expressed: “Every municipality in the city is working on climate action planning. We can be at every one of those…. and health can get us there, connect grassroots groups to each other so there is something to mobilize for. We haven’t had that meta-frame.”

**DISCUSSION AND CONCLUSIONS**

Our research adds a more nuanced examination of the barriers and opportunities for increasing public health sector work addressing climate change. Strengths include an in-depth qualitative assessment and the inclusion of groups with different perspectives on the issue, particularly those who are not engaged with climate change. The research is limited by the fact that the sample was not representative of public health professionals, either in level of engagement on climate change or geographically. The predominance of California respondents could skew results to reflect the state’s broad support for aggressive action on climate change.

This research suggests that there are many opportunities for the public health sector to become more engaged in work that addresses climate change, but that broader engagement will progress
slowly without more explicit strategies to improve public health sector understanding of the issue, address institutional barriers, build leadership, and shift public health practice and funding towards root causes of climate change and poor health.

**Education and communications for the public health sector**

In prior surveys of public health professionals, the majority of participants recognized that climate change impacts health. Many of the public health professionals we interviewed do not know or understand much about climate change and health nor believe they have adequate information to engage on the issue. Participants also did not appear to appreciate the interconnections between health, inequities, and climate change impacts and opportunities. Although our research preceded the last National Climate Assessment and the release of the IPCC Fifth Assessment Report, there has been a growing body of evidence that climate change will affect health since the late 1980s, and more recent literature on the health co-benefits of climate action. A concerted effort is clearly needed to reach public health practitioners with this information in a way that fosters greater engagement and self-efficacy. More specific forecasting of the local health impacts of climate change may reduce the perception that climate change is so distant in time and place as not to pose any urgent challenge to public health.

Respondents from outside of the public health sector strongly articulated the potential value of the public health voice in communications to help catalyze public opinion to support more robust climate action. Because health education and communications are a routine component of virtually all public health programs, support for integration of climate change into public health messages could serve as a relatively easy first step to increased engagement.

**Target public health institutional barriers**

Our research indicates the persistence of deficits in funding, leadership, knowledge, and workforce capacity found in previous surveys. Some of these persistent deficits in public health institutional capacity may be attributable to barriers from within the field of public health (e.g. insular practice, conflict aversion, or siloed training), while others are likely shaped by institutional constraints from outside of public health.

For example, the political controversy about the science of climate change appears to profoundly impact the willingness of public health professionals to speak publicly about climate change as a significant public health issue. Even among respondents who clearly understood the issue, felt the urgency, and saw relationships between their work and climate change, few felt comfortable making the links explicit and were reluctant to take public leadership on the issue. Given the extent of local and state focus on climate change in California, however, the fact that so many of our respondents still expressed fear about talking about climate change is notable.

Public health staff’s mission is to protect and promote the public’s health. Yet they are aware of and fearful about the potential consequences of being vocal about climate change when those with power over budgets and jobs disavow it. It is unknown whether increased awareness of the general public’s level of concern and desire for government action on climate change and the view of those in other sectors that health professionals can play a critical role on this issue could counter the impacts of politicization. Public health has a history of action on other politicized health issues, such as HIV/AIDS, needle exchange, and reproductive health, largely in the context of social movements around those issues. This data indicates that when governmental public health staff are constrained due to politicization, strong partnerships with non-
governmental organizations and “inside-outside” strategies are needed to advance climate change and public health nexus work.

**Build leadership**

Effective leadership will be required to significantly shift public health practice to fully address climate change. Strong leadership could leverage formal and informal authority to educate the public and inform policy even in the absence of statutory mandates or significant new funding. Not every local health department or health organization will have charismatic leaders; training and support are needed to cultivate and develop the leadership necessary to face a challenge of this magnitude.

California and Federal climate change policies cite the health benefits of such policies, but often do not provide the formal authority, leadership, requirements to work with public health, or funding to public health agencies in creation or implementation of those policies. Future research should investigate effective use of informal authority, creative use of legal authority avenues that now exist, such as NEPA/CEQA vi, and partnering with public agencies that do have authority to support and improve health.

**Work on root causes of climate change and poor health**

The way that agencies and programs are organized (and funded) within public health presents a significant barrier because addressing climate change requires work on multiple systems that both cause climate change and public health problems. Unfortunately due to norms of practice within the field and bureaucratic and political constraints from larger systems, work on climate change within health tends towards a narrow framework for practice, limited capacity due to a decimated public health infrastructure, funding, and workforce expertise, lack of formal power and informal leadership, and compartmentalization within public health and in most other governmental agencies necessary for effective partnership in forming systemic solutions.

Work that addresses the determinants of both health inequities and climate change provides perhaps the best opportunity to improve those systems that cause climate change, poor health, and inequities through myriad pathways. Failure to make explicit the links between community health promotion, health equity, and climate change mitigation and adaptation represents missed opportunities to inform and activate citizens to demand more action on climate change, and to inform decision-makers about opportunities to optimize health and equity or minimize harms. For example, while hundreds of municipalities around the nation are developing climate action plans, few are explicitly engaging or integrating health and equity, thus missing opportunities to prevent harms and optimize health and equity co-benefits. The lessons we learn from work at

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the nexus of climate change and health are useful to understanding how to advance other work on SDH. Respondents indicated that public health practice that is stuck in a biomedical model would miss those opportunities.

**Coordinate and shift funding**

Resource limitations have forced public health agencies into a reactive mode, responsive to one immediate health crisis after the next. Disinvestment in the public health infrastructure has thus weakened the ability of public health agencies to respond proactively to a slow-moving public health emergency such as climate change or address the determinants of climate change and health. Significant reinvestments in the public health infrastructure will be necessary in order to absorb the increasing impacts on health of climate change, and to enable conceptualization, organization, and practice that proactively optimize health and equity benefits from climate change work.

Respondents identified a number of strategic and creative ways to use existing funding. Inter-sectoral collaborations--for example the Health in All Policies approach--might incorporate more explicit linkages with climate change mitigation and resilience. Health and equity considerations could be integrated more explicitly into climate change program planning and policy development. Governmental and private funders could more explicitly permit or encourage integration of climate change, wherever relevant, in currently funded programs. Finally, foundations are setting the agenda for powerful movements around health, and these respondents are hungry for such a movement in public health for climate change.

Despite the challenges, our respondents identified an array of promising initiatives that give us hope that, as the magnitude of the climate change threat to health becomes ever more apparent, the public health sector will find ways to engage on the issue.

Climate change is a threat to human health and survival, and climate solutions represent one of the biggest opportunities for advancing health and equity. Our research identifies both significant barriers to and opportunities for public health and partners to simultaneously address climate change, health, and health inequities. We hope this information will motivate and facilitate the public health sector’s participation in the fight against climate change, and strengthen relationships with other sectors engaged in climate change planning and policy-making.
Appendix I: Interview guides

“Public Health Engaged” Interview Tool

Introduction:

1. Thank you for agreeing to meet with me/us. We are working with the Public Health Institute Center for Public Health and Climate Change on a project funded by the Kresge Foundation. We see climate change as one of the greatest health and equity challenges of the 21st century, and we also see that many climate action strategies could have very positive impacts on health. The goal of this project is to find out how to make it easier for the public health community to work on climate change and strengthen partnerships between public health workers and others who are working on climate change. We also want to know how public health could help others working on climate change to bring a stronger health frame to their work. We are starting by speaking to people in public health, climate change, equity, planning, environmental justice, and other fields, to learn more about their work and get their ideas on what would be helpful.

2. Everything you tell me will be kept strictly confidential, unless we specifically ask for your permission to quote you. I’ll be taking notes, but only me and my co-investigator will have access to them. You should feel free at any time to ask me questions concerning the interview or the project, or to decline to answer a question. Do you have any questions? OK, let’s get started.

3. It will help to define what we mean by public health and climate change up front.
   a. We’re defining “public health” broadly to include the “upstream” or social, environmental and physical determinants of health, such as asthma from air pollution, housing conditions, education, income, access to healthy foods and transportation, etc. When we talk about “public health workers” or “public health organizations”, we are talking about people both inside and outside of government that are working on any aspect of trying to improve population and community health.

   b. When we talk about the impacts of climate change on health, we’re talking about both direct impacts like extreme heat, indirect impacts like rising food prices from drought, and the health effects of various strategies to reduce greenhouse gas emissions such as decreased air pollution from higher fuel efficiency. Also, this project is focused more on the US than on international issues, even though we understand that the global impacts are very significant.

(Note: * indicates questions you can skip if pressed for time.)

1) Public Health involvement and role:

   a. First, can you tell me a little about the work you do, especially work which you think relates directly or indirectly to climate change or co-benefits?

   b. *You’ve talked about climate change and its links to (public health topic areas they mentioned). Are there other areas where you see key connections between climate change
and public health, for example like emergency preparedness, vector-borne diseases, chronic diseases, and how do you see those links?

- What about areas like maternal and child health, infectious diseases, or reproductive health?

c. What are your thoughts about the role of public health and public health workers in climate change – what should the public health community - inside and outside of government public health agencies - be doing about climate change?
If you had lots of resources, in an ideal world, what would public health be doing around climate change?

d. Do you think that we should be striving to get everyone in public health engaged in climate change, or do you think we should focus on building expertise in a smaller more focused group of public health workers, or both? Do you have any thoughts about reaching out to workers engaged in direct service – like public health nurses, or restaurant inspectors or WIC workers about climate change, and whether they could or should have a role in climate change work?

2) *Framing:*

a. Do you think there is a way we could use a health frame or health focus to help the public become more aware of and engaged with climate change?

*Probes:*

- Are there any health messages frames that been particularly effective in your experience, or ideas you have as to what you think could be most compelling for your co-workers?

- What about for the clients and population that you work with?

b. Some people – with some support from polling data – think that it’s important to talk about the health co-benefits of climate action – for example, the air pollution benefits of (AB32), but to refrain from saying the words “climate change” or “global warming”; others think it’s very important to actually say the words “climate change”. What are your thoughts about that?

3) *Barriers:*

a. *What are the barriers to public health participation and input into work that’s happening locally and regionally around climate change? I’d like you to think about both “upstream” or structural barriers, and more immediate barriers. Probe:*

- Are there specific issues, organizational, time, resources, leadership, etc, that make it hard for you to engage in climate-related work?

b. Do you have thoughts about why public health workers overall are not more engaged in climate change?
• What do you think it would take to get public health workers more engaged?
• What would be effective ways to motivate and activate public health workers on the issue of climate change?

4) **Opportunities:**

a. *What are some of the things that might help and support others in the public health sector become more interested or engaged with work related to climate change and health?* Prompts:
   - more information and understanding,
   - time,
   - resources,
   - funding,
   - leadership,
   - peer support

b. *Who should we be targeting with that support?*

c. Do you see any key opportunities for public health in terms of local, state, or national climate or health policy engagement?

d. What about key opportunities for community education and engagement??

e. What about opportunities for partnerships with other sectors, other organizations, or other initiatives related to climate change that public health hasn’t yet been involved in?

5) **Multi-sector planning and decision-making for climate change and health**

a. Have you been involved in any climate change mitigation or adaptation planning, or other climate action work locally, regionally, or at the state or national level?
   - What do you see as any unique contribution or possible contribution of public health in that work?
   - Did others see PH as having a unique contribution, and what was that?

b. Who are the other stakeholders or organizations that you think public health should be working with on climate-related issues?

6) **Narratives about public health and climate change:**

a. What made you first get engaged in climate change work? Can you tell me what, when, or who made you start caring about it or thinking it was an important public health issue?

b. What do you find most rewarding about it?
c. Can you tell me a story about an accomplishment or something you feel really good about in the work you are doing?
   • Why does that story stick in your mind?
   • How does that story make you feel?

d. What is the most disheartening aspect of your work on climate change and public health? How do you deal with that?

e. Are there other areas where you would like to expand your work related to climate change, climate-related impacts, or co-benefits?

7) Networking:

a. Would you mind sharing the names of others who you think would be useful to interview on this subject? We are looking for other public health workers with some awareness or interest, and who may be able to increase their agency’s engagement. *(Get contact information)*

b. Would you be interested in receiving information from the PHI Center for Climate Change and Health by email?

c. Do you have any questions for me/us? Is there anything else you’d like to share?

You’ve been so helpful; I really appreciate the time you’ve taken to talk with me today. I just want to confirm that we can list you in the acknowledgements section of our final whitepaper. Do you mind if we contact you in the future with any follow-up questions that may emerge? Thank you very much.

✓ *(Leave card and get their card for future reference.)*
✓ *(Send a thank you note by email within 1-2 days.)*
“Public Health Non-Engaged” Interview Tool

Introduction:

4. Thank you for agreeing to meet with me/us. We are working with the Public Health Institute Center for Public Health and Climate Change on a project funded by the Kresge Foundation. We believe that climate change will pose a challenge to health and equity in the 21st century, and we also see that many climate action strategies could have very positive impacts on health. The goal of this project is to find out how to make it easier for the public health community to work on climate change, and strengthen partnerships between public health workers and others who are working on climate change. We also want to know how public health could help others working on climate change to bring a stronger health frame to their work. We are starting by speaking to people in public health, climate change, equity, planning, environmental justice, and other fields, to learn more about their work and get their ideas on what would be helpful.

We are going to ask you questions about climate change, but we know that it is not an issue that many people in public health know all that much about. So please don’t worry about whether or not your answers are “right”- for many of the questions there are no “right” answers. We are asking them so that we have a better understanding about where we should start when, later in our project, we develop some materials about climate change specifically for public health workers.

5. Everything you tell me will be kept strictly confidential, unless we specifically ask for your permission to quote you. I’ll be taking notes, but only my co-investigators and I will have access to them. We will not quote you without asking specific permission; but we would like to acknowledge your contribution when we write the final “whitepaper” on Climate Change and Public Health, if that’s OK with you.

You should feel free at any time to ask me questions concerning the interview or the project or to decline to answer a question. Do you have any questions? OK, let’s get started.

6. It will help to define what we mean by public health and climate change up front.
   a. We’re defining “public health” broadly to include the “upstream” or social, environmental and physical determinants of health, such as asthma from air pollution, housing conditions, education, income, access to healthy foods and transportation, etc. When we talk about “public health workers” or “public health organizations”, we are talking about people both inside and outside of government that are working on any aspect of trying to improve population and community health.

   b. When we talk about the impacts of climate change on health, we’re talking about both direct impacts like extreme heat, indirect impacts like rising food prices from drought, and the health effects of various strategies to reduce greenhouse gas emissions such as decreased air pollution from higher fuel efficiency. Also, this project is focused more on the US than on international issues, even though we understand that the global impacts are very significant.

(Note: * indicates questions you can skip if pressed for time.)
8) **General level of awareness/concern about climate change and health:**

i. First, can you tell me a little about your organization, and the type of work that you do with your organization.

ii. Let’s start talking a bit about climate change. When you hear that term, what comes to mind? Probes:
   - Are there any stories or things you’ve read or heard that particularly resonate for you?
   - What does this story or information make you feel?
   - Why do you think it resonates for you? What is important about this?

Have you read or heard anything about the relationship between climate change and health or how climate change affects health? What have you heard?

c. *Are there particular things you’ve heard about climate change and health that are especially important to you? Probe: Are you concerned about a particular health endpoint, or something that impacts people’s health indirectly?*

d. *How big of an issue do you think climate change is as a public health issue? Do you think it will be a bigger issue for public health in the future? Why/why not?*

e. Do you ever talk about climate change with your co-workers, your staff, or your managers? Do you think they are aware of or concerned about climate change as a public health issue? Can you share any stories or examples that show their level of awareness or concern?

f. *We’re wondering what your clients or external stakeholders might think about the impacts of climate change on health. Can you give me some examples or stories that show their level of awareness or concern?*

2) **Current work related to climate change and health**

a. Have you read or heard anything about climate change and health that you think may be related to the work you do every day and/or the mission of your program or organization?

b. Have you heard of the concept of co-benefits? Co-benefits are strategies to prevent further climatic changes that also have a beneficial effect on health and quality of life. Would you say you are you currently involved in work related to climate change, health, or co-benefits, even in a very broad sense? *(Now follow one of two arrows below:)*

   ➢ If yes: Please describe them. Do you make those connections explicit? If not, can you imagine making those connections more explicit? Would you be interested in further exploring some of these potential links between the work you are already doing and climate change?
   - If not, why not?
   - If yes, what links are you thinking about exploring more in your work?
If no, prompt with: Some of the ways we think climate change could be related to the work of your program include xxxxx… Is that something you would be interested in learning more about and exploring more in your work?
  • If yes, explore how the connections could be made in their work.
  • If no, explore why not.

3) Opportunities and barriers

a. *How comfortable would you be making the link to climate change when talking to your co-workers, community, or clients, and what would you need to support that? Explore comfort level and reasons.

b. What are some of the things that might help and support you and/or your organization become more interested or engaged with work related to climate change and health? Prompts:
  • more information and understanding,
  • time,
  • resources,
  • funding,
  • leadership,
  • peer support
  • other supports?

c. Do you see other public health workers and public health organizations as having a role or responsibility in addressing climate change?
  • If so, what is that role?
  • What are some of the things you think public health workers might do to address climate change?

d. Are there things that would make it challenging for you to become more involved in work related to climate change and health?
  • Are there any larger “upstream” barriers that would prevent your organization or agency from becoming more involved in work related to climate change and health?

4) Narratives about public health and climate change:

i. How did you first get interested in public health? Probes:
  • What do you find most rewarding about it?
  • Can you tell me a story about an accomplishment or something you feel really good about in the work you are doing?
  • Why does that story stick in your mind?
  • How does that story make you feel?

  ii. What is the most disheartening aspect of your work? How do you deal with that?
iii. Let’s start talking a bit about climate change. When you hear that term, what comes to mind? Probes:
   • Are there any stories or things you’ve read or heard that particularly resonate for you?
   • What does this story or information make you feel?
   • Why do you think it resonates for you? What is important about this?

5) Networking and closing

a. Are there people, publications, or organizations that you especially trust to give you good information that is relevant to your work?

b. Do you think you or your colleagues might be interested in attending trainings or discussions about climate change and health? If yes – webinar? Teleconference? In-person?

d. Would you be interested in receiving information from the PHI Center for Climate Change and Health by email?

e. Would you mind sharing the names of others who you think would be useful to interview on this subject? We are especially looking for other public health workers with some awareness or interest, and who may be able to increase their agency’s engagement. *(Get contact information)*

f. Do you have any questions for me/us? Is there anything else you’d like to share?

You’ve been so helpful; I really appreciate the time you’ve taken to talk with me today. I just want to confirm that we can list you in the acknowledgements section of our final whitepaper. Do you mind if we contact you in the future with any follow-up questions that may emerge? Thank you very much.

✓ *(Leave card and “public health” fact sheet and get their card for future reference.)*
✓ *(Send a thank you note by email within 1-2 days.)*
“Non-Public Health” Interview Tool

**Audience**: those who are not PH-identified, but who are doing climate change work (as self-defined), and who can facilitate bridging public health involvement.

**Goals**:
- To discover how PH can more successfully engage with the non-PH sector working on CC to increase effectiveness of action.
- To explore the extent to which people working on CC already see the health connections.

**Introduction**:

7. Thank you for agreeing to meet with me/us. We are working with the Public Health Institute Center for Public Health and Climate Change on a project funded by the Kresge Foundation. We see climate change as one of the greatest health and equity challenges of the 21st century, and we also see that many climate action strategies could have very positive impacts on health. The goal of this project is to find out how to make it easier for the public health community to work on climate change and strengthen partnerships between public health workers and others who are working on climate change. We also want to know how public health could help others working on climate change to bring a stronger health frame to their work. We are starting by speaking to people in public health, climate change, equity, planning, environmental justice, and other fields, to learn more about their work and get their ideas on what would be helpful.

8. Everything you tell me will be kept strictly confidential, unless we specifically ask for your permission to quote you. I'll be taking notes, but only my co-investigator and I will have access to them. You should feel free at any time to ask me questions concerning the interview or the project, or to decline to answer a question. Do you have any questions? OK, let’s get started.

9. It will help to define what we mean by public health and climate change up front.

a. We’re defining “public health” broadly to include the “upstream” or social, environmental and physical determinants of health, such as asthma from air pollution, housing conditions, education, income, access to healthy foods and transportation, etc. When we talk about “public health workers” or “public health organizations”, we are talking about people both inside and outside of government that are working on any aspect of trying to improve population and community health.

b. When we talk about the impacts of climate change on health, we’re talking about both direct impacts like extreme heat, indirect impacts like rising food prices from drought, and the health effects of various strategies to reduce greenhouse gas emissions such as decreased air pollution from higher fuel efficiency. Also, this project is focused more on the US than on international issues, even though we understand that the global impacts are very significant.

1) Relationship between their work and public health:
f. First, can you tell me a little about the work you do and your organization does, especially that relates to climate change?
   - What issues does your organization work on?
   - Where does climate change fit in terms of your organization’s priorities?

b. Can you talk about how you see the links between climate and health and equity, either in terms of the impacts of climate change itself, or how climate mitigation and adaptation strategies might affect health or equity?
   Are you familiar with the concept of co-benefits? Co-benefits are strategies to prevent further climatic changes that also have a beneficial effect on health and quality of life.

c. If necessary, prompt with: Some of the ways we think health could be related to the work of your program include xxxxx… Is that something you would be interested in learning more about and exploring more in your work?
   - If yes, explore how the connections could be made in their work.
   - If no, explore why not.

2) Framing:

a. Do you have any thoughts about how the community or other stakeholders that you work with think about climate change? Do you have any stories or examples that show their awareness or concern?

b. How about how they view health? Do you have any stories or examples that show their awareness or concern?

c. Do you have any stories or examples of whether they are aware or concerned about the impacts of climate change on health?

d. In your experience, what are some of the challenges in talking to people in your community about climate change? Do you talk explicitly about climate change, or do you start from some different framing? If so, what/how? Do you ever/often talk about the links between climate change and health? Explore.

e. Why do you think the general public is not more concerned about climate change?

f. Do you see opportunities for getting people more engaged in climate change action and strategies through the use of a health frame? Are there any ways that using a health frame might either help or hinder your own efforts around climate change, or things we should be careful about as we try to engage more people in climate change using a health frame?

3) Partnering with Public Health

a. Do you currently work with PH organizations – either government agencies like a local health department, or other organizations that work on issues like asthma or obesity? 
   (Now follow one of two arrows below.)
If yes:  Who have you worked with?
- Has that work with PH helped forward your agenda?
- What was successful about that partnership and what was challenging?
- How did working with that agency get started?
- Has that partnership changed anything in your or their work?
- What do you think you and others got out of having public health at the table?

If no:  Would you like to be working with local public health groups more?
- What could support building that relationship?
- What are some of the barriers to you creating those partnerships?

b. Are there other (additional) things you'd like to see people in the PH community do that would help you in your work on climate change?  
Probe:
- What would you like to see your local PH groups or departments do?

c. Do you have any thoughts about what might help or support greater partnerships or collaboration on climate change between you and public health organizations?

c. Are there things that would make it challenging for you to bring health into your work more? Or that would be helpful for you in making the connections between the climate change work you do and health more explicit?

4)  **Narratives about public health and climate change:**

g. What made you first get engaged in climate change work?  Can you tell me what, when, or who made you start caring about it or thinking it was an important issue?

h. What do you find most rewarding about it?

i. Can you tell me a story about an accomplishment or something you feel really good about in the work you are doing?
   - Why does that story stick in your mind?
   - How does that story make you feel?

j. What is the most disheartening aspect of your work on climate change?  How do you deal with that?

5)  **Networking:**

d. Would you mind sharing the names of others who you think would be useful to interview on this subject? We are looking for people with some awareness or interest, and who may be able to increase the consideration of health in their climate change work.  
* (Get contact information)
e. Are there people or publications that you especially trust to give you good information that is relevant to your work?

f. Would you be interested in receiving information from the PHI Center for Climate Change and Health by email?

g. Do you have any questions for me/us? Is there anything else you’d like to share?

You’ve been so helpful; I really appreciate the time you’ve taken to talk with me today. Do you mind if we contact you in the future with any follow-up questions that may emerge? I just want to confirm that we can list you in the acknowledgements section of our final whitepaper. Thank you very much.

✓ (Leave card and “non-public health” fact sheet and get their card for future reference.)
✓ (Send a thank you note by email within 1-2 days.)
References:


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Chapter 2:

**Integrating Health, Equity, and Climate Change Mitigation in California’s Sustainable Communities Strategies Under SB 375**

**Abstract:**

**Background:** To achieve climate change mitigation goals, in 2008 California passed Senate Bill (SB) 375, which seeks to reduce greenhouse gas emissions from driving by promoting compact regional development. Regions are required to create Sustainable Communities Strategies (SCS) that integrate land use, housing, and transportation planning. These plans have critical implications for public health and equity, as land use, housing, and transportation are social determinants of health. This paper analyzes the concerns, challenges, and achievements of equity and public health stakeholders engaged in this planning process, and draws lessons about effective engagement with integrated regional planning to improve health, equity, and climate change outcomes.

**Methods:** Two case studies (San Francisco Bay Area and Southern California) were conducted using in-depth interviews (n=50) with SCS planning participants and public document review. Interviews were analyzed using thematic analysis in an iterative inductive-deductive process.

**Results:** In both regions, climate change planning was a major lever for increasing the language, consideration, funding, and measurement of health impacts into the SCS plans. Public health’s analytic skills and social determinants of health conceptual framework were valuable for both regional planning agencies and equity groups. Political context influenced the priority concerns, framing, and outcomes. Desire to improve public health was influential in both of these environments. In the Bay Area, a health equity frame promoted regional solutions that can improve health, equity, and climate change. In SCAG, a public health frame increased awareness, language, and future funding for active transportation. Public health was a less contested and commonly held value across diverse political jurisdictions that may be an entry point for future discussions of equity and climate change. In both regions, reform of regional governance processes was pursued to sustain institutionalization of health and equity concerns and improve regional democracy.

**Conclusions:** Participation in regional climate change planning is critical, and participants should work for concrete changes in living conditions and institutional governance reform to sustain advocacy. Future research is needed to determine whether participation of health and equity stakeholders can improve both the substantive outcomes and the governance structures necessary to address climate change, health, and equity over the long term. Research and attention should be paid to local SCS implementation, and whether local conditions that lead to health inequities improve or worsen. Negotiating the interconnectedness between multiple complex systems is in the early stages of development, and for those committed to systems change for public health and health equity, the SCS process under California’s SB 375 offers many lessons.
Introduction

Currently, the State of California has the most aggressive climate change mitigation policies in the United States, including protections for vulnerable populations. Through legislation and governors’ executive orders, California is mobilized to reduce greenhouse gas emissions (GHGs) and promote climate-resilient communities. With transportation emissions accounting for 38% of California’s GHGs, and its fastest growing source, the California Sustainable Communities and Climate Protection Act, Senate Bill (SB) 375 was passed in 2008 to help each region of the state reach its GHG reduction targets. SB 375 has been touted as “the nation’s first law to combat greenhouse gas emissions by reducing sprawl”¹, and thereby reducing vehicle miles traveled. SB 375 requires the creation of integrated regional transportation, housing, and land-use plans, called a “Sustainable Communities Strategy” (SCS)² that encourages compact development near transportation, services, and jobs.³

Because land use, transportation, and housing are all social determinants of health—and their distribution across a region a determinant of health equity--these SCS plans have great potential to impact population health and health inequities between populations in regions. The SCS plans can impact many determinants such as public transportation, active transportation, affordable housing, air pollution, residential displacement, and access to jobs.

Several regions in California have completed their first round of SCS plans, with diverse participation by health and equity stakeholders amongst the regions. The first round of SB 375’s SCS planning is a useful case study for examining whether and how health and equity stakeholders can shape climate change and regional planning policy language, process, and governance structures to address health and equity concerns. There has been no evaluation of these questions to date. The adopted plans have a lifespan of 25 years, and as soon as the SCS is adopted, a new round of planning begins that builds upon the prior one. Lessons from the first round of planning and policy-making can inform future planning, funding, implementation, advocacy, and similar planning efforts.

Background

Climate change, health, and equity

Climate change is a significant public health threat that is already negatively affecting population health.⁴,⁵ Climate change disproportionately impacts the health of vulnerable populations and disadvantaged communities, including low-income communities and communities of color,⁶,⁷,⁸ thus amplifying existing social and health inequities. Not only are these communities the most susceptible to the cumulative health impacts of unequal environmental exposures and social stressors, they are historically the least likely to be represented in climate change decision-making and planning processes.

There are many pathways connecting climate change, poor population health, and social and

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¹ Assembly Bill 32 requires California to reduce greenhouse gas emissions (GHG) emissions to 1990 levels by 2020. California Executive Order S-03-05 mandates a further reduction of GHG emissions to 80% below 1990 levels by
health inequities, and they share many of the same root causes. For example, transportation systems, land use and development patterns, energy, food, and economic systems drive health outcomes, inequities, and greenhouse gas emissions. Since World War II, land use in the United States has been characterized by suburban sprawl, urban disinvestment, and residential segregation, largely fueled by public policies. Similarly, social inequities are a driver and outcome of climate change, inhibit effective governmental action on climate change, and drive adverse health outcomes and health inequities. Strategies to prevent further climate change (i.e. “climate change mitigation”) are focused on reducing greenhouse gases in the atmosphere amongst sectors that are also social determinants of health and health equity (e.g. land use, transportation, energy, housing). Similarly, public health work on SDH strives to improve many of the same systems and living conditions that drive climate change.

While climate change mitigation policies and strategies are projected to improve overall population health, the impact of these policies on health inequities is uncertain. Some climate mitigation policies and strategies can have significant beneficial effects on public health and equity, known as “co-benefits”. These co-benefits could make climate change mitigation planning a “win-win-win”, improving overall population health, increasing resources and opportunities and reducing risks in under-resourced and highly impacted communities, and slowing climate change. For example, investments in walking and biking infrastructure and public transportation (“active transportation”) to reduce greenhouse gases from driving could result in a decrease in obesity, some chronic diseases, respiratory illnesses, injury, and improved community cohesion, and mental health.

But climate change mitigation strategies can also increase the environmental, economic, and health burdens on communities already bearing the burden of cumulative environmental impacts, discrimination, poor health, and poverty. For example, California’s cap and trade system could increase co-pollutants in low-income neighborhoods if industries located there purchase more emissions allowances. Transit-oriented development to reduce vehicle miles traveled could drive up the value of real estate, increase rents and cause displacement of low-income residents. Those creating and implementing mitigation strategies will need to pay attention to who benefits from the strategies, and if risks increase in marginalized communities or vulnerable populations. Finally, some solutions could improve social equity but increase health inequities. For example, development of low-income housing along freeways and transit corridors (to reduce driving and improve low-income housing stock and access to jobs) could disproportionately expose residents to pollution and further widen associated health inequities.

**SB 375, MPO governance, and stakeholder participation**

Under SB 375, the Sustainable Communities Strategies are intended to: (1) Identify where all of the region’s future population — at all income levels — will work and live over the next 25 years; (2) Set forth a forecasted development pattern, known as the “preferred scenario”; (3) Accommodate the future growth in a way that reduces per capita greenhouse gas emissions; and (4) Describe a transportation investment strategy and transportation network that supports the regional land use pattern and reduces per capita greenhouse gas emissions. These SCS plans

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ii For this paper, “inequities” refers to the unfair and avoidable differences in outcomes seen between populations that are a reflection of social gradients such as race and class.
formally combine two existing regional planning processes, the Regional Transportation Plan and the Regional Housing Needs Assessment. The Regional Housing Needs Assessment (RHNA) identifies the number of market rate and affordable housing units that each jurisdiction in the region is required to plan for over seven years.

A Metropolitan Planning Organization (MPO) is an agency designated by the U.S. Department of Transportation to carry out several functions specifically required under federal transportation law, including preparing the Regional Transportation Plan. Under SB 375, California’s 18 MPOs and Councils of Government are charged with integrating their regional transportation plan with developing their regions’ SCS, in partnership with local governments and stakeholders. The first round of SCS planning required an unprecedented level of inter-governmental collaboration between regional agencies, the cities, towns, and counties and that have land-use authority in their respective jurisdictions, and local transportation agencies that help to plan and manage the regional transportation network. MPOs are governed by regional planning commissions made up of local government elected officials that are appointed by their peers; they vote on and approve final SCS plans. See Appendix I for a framework for the regional planning process under SB 375, and its potential impacts on health inequities.

Much is at stake for low-income communities and communities of color in SB 375’s SCS plans, and effective health and equity stakeholder participation could improve the consideration of health and equity impacts and the targeting of policies to address existing conditions. Policymakers created few mandates and regulations to guide the ambitious goals of SB 375; rather, the law relies on incentives\(^{iii}\), market forces, political leadership, local governmental and stakeholder buy-in, and public education to be the driving forces for change.\(^{28}\) There is wide leeway in how the law’s goals can be interpreted by each region. SB 375 does not address how the state, regions, and localities should weigh, balance, and integrate sometimes-competing objectives for achieving the “three E’s” of sustainable development--environmental quality, economic growth, and social equity. SB 375 has equity-focused language,\(^{29}\) and Federal requirements mandate some equity-oriented processes and analyses,\(^{30}\) but there have been few external evaluations to date of the degree to which the process or plans take health\(^{30}\) and social


\(^{30}\) A report by Human Impact Partners examines whether each of these SCS plans incorporated 14 health and equity metrics and relevant actions recommended to the MPOs in 2011 by a broad coalition of advocates. The SF Bay Area plan incorporated 6 out of 14, and the Southern California plan incorporated 9 out of 14 metrics. (See Human Impact Partners. Elevating Health & Equity into the Sustainable Communities: SCS Health &
equity into consideration. Historically, those most likely to be impacted by these plans are under-represented in the planning process, while powerful constituencies vested in current land use, housing development, and transportation patterns are more likely to be actively engaged and well-resourced in lobbying regional officials.

**Theoretical frameworks for equitable climate change policy**

The social determinants of health literature explores how the economic, structural, and social conditions -- and their distribution among the population -- influence individual and group differences in health status. Social determinants of health include the historic and political context for the current inequitable distribution of health determinants, including poverty, racial residential segregation, socio-political marginalization, environmental burdens, and the distribution of opportunities and risks. Many public health practitioners advocate that public health must move “upstream” to address these fundamental causes of health inequities, especially within living conditions and place, and the institutions that create or perpetuate privilege and inequality in health. Additionally, place-based urban health and environmental justice literature brings attention to the role that public policies may play in creating or exacerbating the unequal distribution of environmental benefits and burdens based on race, and the resultant health inequities.

The governance literature shows how planning processes are fundamental to how resources are distributed, with attendant impacts on health equity. The formal rules, discretionary decisions, value judgments, implicit ideologies, and participatory processes in planning comprise a set of institutional governance practices. In collaborative governance, institutions actively seek the engagement and partnership of multiple stakeholders to influence public decision-making and policies around resource and opportunity distribution, and research methods and tools, thereby increasing the democratic potential and accountability of institutional decision-making. Governance analysis evaluates the processes, content, and outcomes of planning and decision-making, and the contexts, power dynamics and resources that shape them. Taking these theories of governance together, health equity governance is a transformative practice that involves critically investigating whether the ways of doing regional planning (in this case) can promote health equity outcomes by engaging with both the substantive content of what contributes to health inequities, the decision-making processes around how and whether to consider these issues, and the powerful forces and interests that influence the distribution of health determinants.

"Targeted universalism" is a policy-making approach that seeks broad social benefits using targeted means in implementation. It speaks to the universal goal that will help everyone (e.g. slowing greenhouse gas emissions will improve everyone’s health), and then describes the targeted strategies that are needed by specific populations to achieve that goal (e.g. targeting California cap and trade revenues to populations or places with inequities). In ideal practice, public resources and investments are directed to address the needs of under-resourced populations.


*vi* In this paper, “institutions” refer to the formal organizations, as well as the set of informal norms, practices, and behaviors that evolve over time and shape public decisions.
communities. By reducing inequities for the most marginalized, overall wellbeing measured by many metrics improves for everyone.

Using this framework, health equity-oriented climate change solutions are holistic strategies that complement population health objectives; they target climate change investments in communities that face the poorest health outcomes, have the highest current and projected climate change exposures, and the least access to protective resources. Health equity-oriented climate change solutions target the distribution of health determinants, such as low-income and affordable housing, public transportation, economic development, or neighborhood conditions (e.g. air quality, urban greening, health-supportive resources and services).

In approaching the particularly “wicked” problems of climate change and health inequities, public health practitioners are increasingly thinking in terms of “systems change”. “Systems theory” refers to the idea that diverse systems (i.e. social, economic, ecological, organizational) work together in an interdependent and mutually reinforcing way to maintain existing conditions. It speaks to the capacity of systems to adapt to change and thereby resist single-solution reforms. Effective systems change requires that interventions shift multiple institutions and structures. Systems analysis includes identification of “leverage points”--places within a complex system (an economy, a living body, a city, an ecosystem) where a small shift in one thing can produce large changes across the system.59

Health and equity stakeholder participation in SCS planning has the potential to encourage a targeted universalist approach that builds broad support for action while directing resources to communities most in need. Their participation also has the potential to actualize a systems theory approach where plans can account for the complexity of multiple interrelated systems that produce and maintain health inequities and climate change, and intervene in multiple places. For example, if housing, land use, and advocates work in concert with each other, they could develop plans that prioritize investments in affordable housing closer to education, jobs, and other health-supportive opportunities, thus positively impacting the health of low-income communities, the economy, and slowing climate change.

The immediate goal of this research is to analyze health and equity stakeholder participation in the first SCS planning process and the degree to which they were able to elevate their concerns in the SCS plans. This paper analyzes: 1) the substantive health and equity concerns of various stakeholder groups participating in the SCS planning process; 2) the challenges and achievements of health and equity participants in each region; and 3) whether the governance structures could integrate health and equity considerations.

Methods

This paper analyzes case studies of the participation of public health and equity stakeholders in two MPO regions of California--the San Francisco Bay Area and Southern California--during their first rounds of SCS planning. I present qualitative analysis of 1) semi-structured in-depth interviews with MPO, public health, and social equity participants in SCS planning, 2) public document review, and 3) participant observation for three years in the S.F. Bay Area at MPO workgroup meetings, health and equity coalition meetings, public workshops, and public comment. The San Francisco Bay Area (MTC/ABAG) and Southern California (SCAG) regions are defined by their MPO jurisdictions and indicated with red circles on the California MPO map.
These regions were chosen because they are each large, urban, coastal “mega-regions” with diverse populations that had robust public health engagement in SCS planning. An unprecedented number and diversity of stakeholders convened on the first round of SCS planning in each region, forming coalitions to address multiple agendas. Each of the two MPO agencies made a concerted effort to engage in planning and decision-making in a more collaborative way than they had done previously, and to integrate health and social equity considerations.

Participants were recruited initially by leveraging existing contacts from the San Francisco Bay Area’s MTC/ABAG Regional Equity Workgroup, the Bay Area Regional Health Inequities Initiative (BARHII) Built Environment Subcommittee, non-governmental health and equity organizations in each region, and the California Department of Public Health. Additional participants from each site were selected using snowball-sampling techniques; when informants were contacted or interviewed, they named others actively involved in SCS planning. Public health stakeholders included representatives from local and state government, non-governmental health advocacy organizations, regional public health alliances, and organizations providing research and strategic support. Equity stakeholders included representatives from local, regional, and statewide non-governmental equity advocacy organizations, and academic institutions providing research support. Appendix II has tables showing the major health and equity participants in each region. Fifty SCS participants were interviewed from 2012 to 2014, as shown in Table 1:

<table>
<thead>
<tr>
<th>Interviewee Type</th>
<th>Definition</th>
<th>N=50 (24 SF, 26 SCAG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public health</td>
<td>Public health professionals from governmental and non-governmental agencies who are addressing health</td>
<td>17 (6,11)</td>
</tr>
</tbody>
</table>

The MTC/ABAG Regional Equity Workgroup is an appointed body of health and equity advocates tasked with ensuring that the plan and policy attends to the needs of impacted and marginalized communities.

Since the research focus is effective professional stakeholder participation and institutional integration of health and equity, I focus on institutional actors, versus citizen participants. While understanding effective engagement of residents likely to be impacted by SCS planning is also critical, it is outside of the scope of this research.
and health equity risks and opportunities in the plans.

<table>
<thead>
<tr>
<th>Equity</th>
<th>Professional advocates from non-governmental organizations who are addressing a variety of social equity risks and opportunities in the plans, and but who do not primarily identify as public health professionals.</th>
<th>23 (11, 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPO</td>
<td>Metropolitan Planning Organization and Associations of Governments staff with formal responsibility over creation of the plans and policies.</td>
<td>10 (7, 3)</td>
</tr>
</tbody>
</table>

I used the same semi-structured interview guide for SCS participants in each of the two regions. This structured guide allows for comparison, and for later additional cases to be compared, for example as more regions across the state develop their SCS plans or to evaluate progress in subsequent plans. Public health, equity, and MPO participants were asked about what opportunities and risks they were motivated by in the SCS, and the challenges, and accomplishments of stakeholder participation on the planning process. See Appendix III for interview guide.

Interviews lasting approximately one hour were audio recorded, transcribed, and loaded into qualitative data analysis software (dedoose) for coding and thematic analysis. A codebook was developed iteratively, with categories corresponding to each major domain of interest in the interview guide. The author and a research assistant coded interviews after gaining a high degree of agreement on code application. The author performed thematic analysis using an inductive-deductive approach within and between the participant groups and two cases.

I first present brief descriptions of the San Francisco Bay Area and the Southern California regions’ SCS planning governance structures, relevant contexts, and participants. Next, I provide cross-case analysis of the substantive and procedural concerns, accomplishments, and challenges of health, equity, and MPO participants within and between the two regions. Finally, I discuss the implications and recommendations for strengthening the participation of health and equity stakeholders and regional governance structures to improve health and equity.

Case Descriptions

San Francisco Bay Area MPO Region (MTC/ABAG)

The San Francisco Bay Area ("Bay Area") MPO region covers nine counties, 101 cities, and 7.4 million residents (Figure 2). By statute the Metropolitan Transportation Commission (MTC) serves as the metropolitan planning organization, and the Association of Bay Area Governments (ABAG) serves as the council of governments for the Bay Area. Tasked by the California Air Resources Board with reducing per capita emissions by 7 percent in 2020 and 15 percent in 2035, these two historically

Figure 2: MTC/ABAG Regional Planning Area
(Source: Association of Bay Area Governments)
Compartimentalized agencies worked together to produce their SCS, called “Plan Bay Area”. Adopted in July 2013, this plan provides strategies for land use, housing and transportation development across the region through 2040.

The governance structure of MTC/ABAG facilitated very broad and sustained stakeholder engagement. MTC is an “implementing” MPO, which means they administer federal and state transportation money to county transportation agencies, with some distributed as discretionary funds and competitive grant funding. Plan Bay Area identifies $289 billion of likely funding over the life of the plan. In theory, MTC has decision-making authority over these local expenditures, which should align with the SCS. Though this gave the SCS few “teeth”, it still gave MTC/ABAG enough power to bring many stakeholders to the table.

**Context**

In the Bay Area, persistent health inequities reflect the historic legacy of socioeconomic and racial divisions between poor neighborhoods with high numbers of people of color and affluent neighborhoods that are disproportionately white. Health inequities are seen across many demographic variables, but place, race, and income are especially relevant and notable. For example, a San Francisco Bay Area report showed that residents in poor neighborhoods could expect to live at least ten years less on average than those living in wealthier neighborhoods.

The Bay Area’s economy has experienced a strong recovery since the 2007 housing bubble crash and the recession that followed; economic output is above average and growing, job growth is steady, and unemployment is relatively low (4.5 as of December 2014). Over the past decade, urban core cities and inner-suburbs have become centers of job growth, especially in the tech industry. However, not all residents are reaping the same benefits of this economic growth. During this time, the Bay Area has experienced rapid change fueled by a renewed interest by young professionals who want to live near their jobs or public transportation, development, increase in market value of houses, increasing income inequality, gentrification of low-income neighborhoods, residential displacement, and the suburbanization of low-income communities and communities of color. The region’s increasing racial gaps in income, wages, poverty, and education are major drivers of racial health inequities.

Since 2010, the Bay Area population has grown at a faster rate than in the U.S. or California as a whole. Between 2010 and 2040, the Bay Area is projected to add 2.1 million people and add 1.1 million jobs and 660,000 housing units. While this projected rate of growth is actually slower than other metropolitan regions in California, this growth means the Bay Area will continue to be California’s second-largest population and economic center. Since becoming a majority people of color region in 2000, the diversity of the population has continued to increase; in 2014 the population was 58 percent non-white. The region’s racial and ethnic diversity is expected to increase between 2010 and 2040, with Latinos and Asians currently as the fastest growing ethnic groups, and non-Hispanic white and African American populations dropping sharply. The region has among the largest shares of foreign-born immigrants in its population nationwide (30.2 percent of the 2013 population was foreign born). The Bay Area has an older average

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ix Additional partners playing a lesser role were the Bay Area’s other two regional government agencies, the Bay Area Air Quality Management District and the Bay Conservation and Development Commission.
population age (median age 38) than California as a whole, and an aging baby boom population will put unique mobility and housing demands on the region during this period.

**Bay Area participants**
Public health stakeholders included staff from the California Department of Public Health, public health non-governmental organizations working on issues such as access to safe walking spaces and air quality, local health departments, and members of the Bay Area Regional Health Inequities Initiative (BARHII, a coalition of eleven Bay Area local health departments). Equity stakeholders included non-governmental environmental justice, social justice, and transportation advocacy groups, as well as community organizing groups. The major public health and equity stakeholder organizations that participated in the first SCS in the Bay Area and their missions are listed in Appendix II.

**Southern California Region (SCAG)**

The Southern California Association of Governments (SCAG) is the nation’s largest MPO jurisdiction, covering six counties, 191 cities and more than 18 million residents, or 49 percent of California’s population (Figure 3). The MPO region, if it were its own state, would be the fifth most populous in the nation. Los Angeles County alone has 88 cities home to one-fourth of the state’s population. The California Air Resources Board assigned the SCAG region an eight percent per capita greenhouse gas reduction target by 2020 and a conditional target of 13 percent by 2035. In April 2012, SCAG adopted the 2012-2035 Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS): “Towards a Sustainable Future”.

Unlike MTC/ABAG, the Southern California regional planning agency is not an “implementing” MPO, meaning that they do not have power to create the regional transportation plans and do not have federal and state funds to administer to the county transportation agencies. Of the $305.3 billion in projected state and federal funding connected to the SCS, most goes directly to the county transportation commissions. SCAG has no authority over these local expenditures, and although the local plans should align with the SCS to meet the region’s greenhouse gas targets in theory, SCAG has no regulatory or funding levers to mandate this. This gave significantly less power to SCAG in the SCS process, and more to the county transportation commissions, most significantly the Los Angeles County Metropolitan Transportation Authority.

![Figure 3: SCAG Planning Region](Source: Southern California Association of Governments)
The SCAG region is geographically spread out and famous for its suburban sprawl development patterns. Due to this and lack of connecting transportation systems, a current regional issue of major importance is overloaded freeways and congestion, resultant poor air quality, injury, and inactivity, and associated respiratory, chronic disease, and mortality outcomes. In 2013, the American Lung Association once again gave Los Angeles the title of being the smoggiest place in the nation, with the high ozone and particulate matter pollution contributing to 14% of Los Angeles’ children having asthma. Los Angeles residents spend 93 hours on average per year in traffic, and the region collectively spends over three million hours each year sitting in traffic. There are great health and wealth inequities across the region, accompanied by a variety of social and environmental justice issues. For example, the Port of Long Beach is both a significant economic engine for the region and a source of air pollution for local communities who are predominantly low-income. East Los Angeles is crisscrossed by freeways, and South Central Los Angeles with its history of industrial zoning was found to be “the dirtiest zip code in California” in the federal EPA toxic release inventory data; both are predominantly low-income communities of color. Like most of the U.S., it has a history of urban core disinvestment and residential segregation spurred by public policies. For example, non-whites were not allowed to live on the West Side of L.A. until the 1950’s.

The SCAG region is very diverse racially, economically, culturally, and politically. Currently Latinos make up the largest ethnic population group (41%), and people of color comprise 61 percent of the region’s population. Around 2025, the Latino population is projected to obtain a population majority in SCAG region. The percentage of foreign-born immigrants in the region is 31 percent, and the population over age 65 is 10 percent. There has been a decrease between 200 and 2009 in the percentage of people living below the poverty line (14%) and those without a high school diploma (22%).

Participants expressed pride in their history of local organizing around the poor air quality that eventually led to the formation of the South Coast Air Quality Management District in 1975 and improvements in air quality. Recently Los Angeles voters overwhelmingly approved Measure R, which will provide $40 billion in funding to build out and connect the region’s vast rail networks; the largest voter-approved investment in regional transit expansion in the nation. SCAG participants

**SCAG participants**

A broad base of governmental and non-governmental health and equity interests participated in SCS planning. The main public health and equity stakeholder organizations that participated in the first SCAG SCS and their missions are listed in Appendix II. In contrast to the Bay Area, many of the participants in the SCAG SCS were funded to provide sustained health advocacy. Much of the funding came from the SF Bay Area, with the hope that advocates could transfer much of the strategy used in the Bay Area SCS to SCAG. SCAG participants emphasized that strategies and solutions from the Bay Area cannot simply be transferred to Southern California.

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x Funding to various health and equity organizations to participate in the SCAG SCS came from a number of organizations, including TransForm, ClimatePlan, The California Endowment, and Kaiser, as well as alignment of various other funding sources such as CDC’s Communities Putting Prevention to Work and Community Transformation Grants for chronic disease prevention.
because of the numerous contextual differences, and finally convinced funders that the MPOs are too different and to focus on the County-level going forward.

Results

Stakeholders’ strategies and accomplishments

This was the first time most health stakeholders had been involved in regional planning, and the task of creating an SCS was a larger, longer, and more complex planning processes than most had ever participated in. Participants had to learn the entirely new language, scale, relationships, and politics of regional planning processes. Public health stakeholders formed strong working relationships with both equity coalitions and MPO staff, and became more adept at “inside-outside” strategies; positioning themselves both as “outside” advocates pushing the MPO to go further in meeting the health and equity needs of the region and as “inside” peer public agency staff providing technical support.

Examples of “inside” strategies include advocating for health and equity workgroups in the MPO, sitting on policy advisory committees and workgroups (e.g. the Regional Equity Work Group in MTC/ABAG, and the Public Health Subcommittee in SCAG). Working closely with the MPO staff, public health stakeholders helped select and evaluate policies, and provided data, metrics, and analytic methods to evaluate the performance of the plan. For example, Bay Area public health participants worked with MTC/ABAG modeling staff to include health metrics for evaluating the SCS plan’s projects. Participants in both regions also wanted to influence the MPO staff, institutional culture, planning processes, and governance structures to have a stronger health and equity lens for this and future work.

“Outside” strategies included attending regular coalition strategy meetings, working with the media to shape coverage and writing op-eds, giving public comment, and mobilizing their constituents to do the same. Public health stakeholders worked to build the capacity of other LHDs and health NGOs to understand the impacts and opportunities of SCS planning, such as providing trainings on integrating health measures into regional transportation modeling. The NGO public health coalitions in each region could advocate for policies when the more politically constrained local health departments could not. Stakeholders traveled to other parts of the State to share agendas and strategies, mobilize stakeholders to work for similar outcomes, and attempted to reform state laws around regional governance.

In both regions, public health and equity stakeholder engagement was instrumental in getting health and equity goals, targets, and indicators into plans. (See Appendix IV for lists of performance targets and other health and equity relevant indicators/metrics for each region.) Equity and MPO interviewees in both regions believed that health indicators and analyses likely would not have been there without public health being at the table. Theoretically, these goals, targets, and indicators will guide selection of projects within this plan, and serve as a baseline for future plans. In both regions, public health participants organized their work around the social determinants of health. The differing regional contexts shaped which social determinants of health would be prioritized, how they would be framed, and the challenges and achievements of their work. Finally, participants in each region struggled with the governance structures of the
MPOs, particularly SCAG, and tried to institutionalize changes to the MPOs and their own institutions to sustain consideration of health and equity going forward. In the end, all participants believe that it will be hard to know immediately whether their work improved living conditions and health inequities, but that conceptual shifts had occurred that could be foundational to those long-term changes.

I. Organizing around the social determinants of health

There are many social determinants of health at stake in the SCS. The integrated transportation, land use, and housing planning in the SCS will potentially impact physical activity, community development, racial segregation and social exclusion, affordable housing and displacement, access to economic and educational opportunity, and inequitable living conditions, exposures, and resources. The priority social determinants of health in the SCS process in these two regions were living conditions and active transportation. These are both health and equity issues, but in the Bay Area they focused much more on equitable living conditions, and in SCAG they focused on the overall health opportunities of active transportation.

Community development and living conditions

In the Bay Area, most public health participants were driven by the opportunities to improve community development and living conditions through improving the multitude of determinants of health and opportunity that are inherent in the SCS, especially around housing.

In addition, Bay Area public health and equity stakeholders perceived that while local policies are important, there needs to be an expansion in the geographic range of public health practice. Causes of health inequities such as displacement, access to employment, quality schools and health supportive resources are planned, decided, and manifested at a regional scale, crossing city and county boundaries and outside of the jurisdictional realm of local public health or organizing efforts. One public health participant explained:

“There needs to be a big shift because it’s a significant amount of dollars and it shapes people’s everyday activity. It dwarfs any investment that public health could make directly. We have a really big opportunity to shape public health, so we’ve got to make the dollars work for us.”

The Bay Area Regional Health Inequities Initiative (BARHII—a coalition of eleven local health departments in the region whose mission is to achieve health equity) had built capacity with its member local health departments around addressing the distribution of the social determinants of health and health equity for over a decade. One Bay Area public health stakeholder said, “We don’t really generally separate public health and health equity from the social equity conversation.” Another explained, “These kinds of plans can perpetuate the community conditions that caused health inequities, or make them much worse.”

Many of the Bay Area health and equity participants believed that SCS planning provided a platform to redress inequities through “systems change”, and a scale at which the politics of equity coalitions could be organized and sustained. Several policy advocacy organizations
received funding from The California Endowment to engage in this effort, and a diversity of organizations fighting for social, racial, economic, health, and environmental justice coalesced under the name “Six Wins for Social Equity Network”. Their broad platform included affordable housing in all communities, placement of low-income housing in all communities, quality and affordable public transportation, investment without displacement, economic opportunity, community power, and healthy and safe communities.

The Bay Area has a highly rent-burdened (share of income spent on housing) population, and issues around housing emerged as priority concerns in the Bay Area, including inadequate affordable housing, gentrification, and displacement pressures. Bay Area equity groups pressured the MPO to both increase affordable housing and public transportation in low-income communities and incentivize high-opportunity communities to develop more affordable housing through grant criteria that would reward this. Bay Area health and equity participants were also concerned about locating housing (especially affordable and low-income) near rail lines and freeways, the air quality for these residents, and the need to avoid displacement of working class and low-income people as new housing and transit-oriented development increased the market value of these neighborhoods. Transportation affordability and adequate improvements to the public transportation system were also concerns in the Bay Area.

Bay Area health and equity participants worked with the MPO to broaden the measurement of vulnerable communities, called “Communities of Concern”, beyond the federally mandated Title VI analysis under Civil Rights law. They advocated for more health and equity criteria in the One Bay Area Grant program. This grant program rewards jurisdictions that focus housing growth in infill development areas near transit, and provides funding for bicycle, pedestrian, and Safe Routes to Schools projects, and green space conservation. Health and equity stakeholders successfully advocated for specific language in the grant criteria to award municipalities that had higher production of low-income housing units. Finally, working with academic partners, the Six Wins Network developed an alternative “Equity, Environment, and Jobs” scenario for consideration in the Environmental Impact Assessment of the final SCS plan. This alternative scenario performed better in MTC’s models in reaching the performance targets than the MPO’s preferred scenario. It was not adopted, but led to several tangible amendments to the plan.\textsuperscript{x}

Because SCAG is not an implementing agency, it could not use grant-funding guidelines to incentivize more affordable housing development; it is up to each city whether to enact policies that could address this. Therefore, although “there are strong advocates for affordable housing

\textsuperscript{x} While MTC and ABAG did not adopt the EEJ scenario, they did pass three important amendments that are rooted in the EEJ. These amendments:

\begin{itemize}
  \item Commit MTC to adopt a comprehensive strategy to develop a regional funding program to increase local transit operations.
  \item Commit the region to an inclusive public process to set priorities for $3.1 billion in Cap and Trade revenue, with an explicit focus on benefits to disadvantaged communities.
  \item Tie One Bay Area Grant regional funding and grants for transit-oriented development to the adoption of local anti-displacement measures and affordable housing production.
\end{itemize}

(See Urban Habitat, Equity, Environment and Jobs in Regional Planning, Available at: http://www.urbanhabitat.org/campaigns/equity-environment-and-jobs-regional-planning)
in LA County, they did not see that the SCS was a valid use of their time’’; rather affordable housing and gentrification were seen as issues better addressed at a local scale. Yet even within SCAG, one equity participant believed that the SCS focus on multiple interrelated systems increased regional thinking: “That is one of the positive outcomes from SB 375, because it focuses on the regional and on the interrelationships between growth, development, transportation, air quality, health, and economic competitiveness.”

Within the Bay Area SCS planning, “equity” was the main framing for both public health and equity participants. Equity advocates framed messages as benefitting everyone, while needing to target resources. They visited decision-makers from wealthier cities in the region to discuss the mutual gains and advantages of voting for a SCS that advances a number of equity agendas (e.g. building more public transportation and affordable housing in their city could improve local road congestion and air quality).

Active transportation

There were a variety of health concerns amongst the SCAG health and equity coalition—such as air quality and displacement-- but the coalition agreed to focus on active transportation. This focus aligned with the conditions of highway congestion, long commutes, and existing efforts and funding to address chronic disease, respiratory illness, and injury through place-based approaches. For example, the SCS was a natural link with the L.A. Department of Public Health’s focus on preventing chronic disease through improvements to the active transportation infrastructure, and they were able to provide sustained support and funding to transportation advocates to participate in the SCS process.

A 2009 study estimated the health effects of replacing driving with active travel in London and predicted significant reductions in heart disease, stroke, dementia, depression, and breast cancer. In 2011, the California Department of Public Health and MTC collaborated to replicate this study and developed the Integrated Transport and Health Impacts Model (I-THIM) that estimates the health co-benefits and potential harms from active transportation in urban populations. The California Department of Public Health provided technical assistance to both MTC and SCAG staff and local health departments across the state on using this model.

The Los Angeles County Department of Public Health provided a quantitative analysis of the funding that would be needed to build pedestrian and bicycle transportation infrastructure for the current needs of the region over the course of the SCS. Using a variety of data sources, and integrating feedback from SCAG and Metro (the LA County Transportation Commission), their analysis estimated a range of necessary investments from $37 billion to $59 billion over the 25-year period. They proposed that SCAG allocate the equivalent amount for active transportation for the whole region as Measure R’s $40 million budget for a new rail network for the County of

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**xii** In the Bay Area, the research predicted that increasing the amount people walked or biked to about 22 minutes per day can reduce the burden of heart disease, stroke, and diabetes by 15 percent, and dementia, depression, and breast and colon cancer by 5 percent, while avoiding up to 2,200 premature deaths.
Los Angeles. SCAG changed their budget and added $700,000 dedicated to active transportation, totaling $6.7 billion; that is 200% more than the previous RTP budget.\textsuperscript{xiii}

Some participants are angry that the active transportation budget doesn’t reflect the cost analysis the region’s needs.\textsuperscript{xiv} Additionally, the active transportation budget is all programmed for the future 2030-2035 SCS, with assumed revenues from a possible future vehicle miles traveled fee; participants call it “funny money” and express doubt that it will come into fruition. Nevertheless, many felt that this cost analysis fueled the advocacy process, and focused the policy conversation very prominently on the health benefits of active transportation. Participants agreed that public health participants delivered a unified message to elected officials that raised awareness about active transportation. One equity participant from SCAG said:

“The health partners were like the fairies that save the day when Cinderella is going to the ball. They are starting to do transportation work more than our transportation agencies, buying bike and pedestrian counters so we can measure our efforts. And we had to teach SCAG about why this matters.”

Another SCAG equity participant said that the long-term support and 5-year grant funding public health provided to participate in the SCS process afforded a sense of expertise and continuity that enabled them to participate as equals alongside well-funded groups who have a financial stake in blocking active transportation and affordable housing:

“They brought professionalization, accountability, and the counter point to the American Automobile Association and the Building Industry Association. We hire--we no longer solely rely on volunteers. We are now in it for the long-term. We’re trying to wear the suits and get to the table and not be marginalized.”

Participants agreed that the SCS process began an “important conversation that has had now far-reaching ripple effects”. One participant said: “Elected officials in cities throughout the region said you guys have really, really made an impact. Even though we didn’t change the amount that we’re investing in active transportation much, it was a wakeup call for electeds that residents care about this.” One such “ripple effect” is a procedural change: SCAG wrote a number of legally-binding Memorandums of Understanding with County Transportation Commissions that outlined how they would work together to implement the SCS. A participant said:

“That cracked the door for us, and we are now pursuing a strong active transportation agenda with LA Metro. San Bernardino just did the same thing with SCAG. It outlines a work plan on increasing funding for active transportation and doing a Safe Routes to School strategic plan for the county. SCAG didn’t give us the real money, but they did set the stage for things to get better. They legitimized moving away from cars. This whole

\textsuperscript{xiii} SCAG’s draft SCS initially allocated less than 1% of the budget for active transportation; the LACDPH study estimated between 7% and 11% of the SCS budget was needed to meet the needs of the region.

\textsuperscript{xiv} Travel survey data from 2009 shows that over 13% of all trips in the SCAG region are done on foot or bike, while only 1% of funding is going towards these modes.
concept of reducing vehicle miles traveled gives a lot of people like me a good platform to start from. It was culture shift. Culture change is hard.”

“Health” was the unifying frame for progressive planning in the SCAG region with more partisan politics. Decision-makers from wealthy cities and less resourced cities alike took to the health message in active transportation. Everyone could agree that biking and walking their kids to school is a desired outcome, and a commonly valued win to bring back to their local jurisdictions. One transportation advocate said, “We’ll use the health line because that will get us in the door. I’ll use whatever I can.” Participants decided to focus on the health outcomes benefits of active transportation versus a more holistic view of the multiple “upstream” social determinants of health in the SCS. One public health participant described:

“Public health is so big and so much touches it, and we were trying to be strategic about what to include in this first cut as this was the first time they were even approaching it. We recognize that there is so much more that should be included, but I don’t think SCAG is ready. We still have a few more years.”

SCAG participants described the region as divided by geography, class, race, and politics (with differing valence, conceptions, and readiness to explicitly address health, equity, or climate change). They also said the region lacks a unified regional identity that they believe is prerequisite to adequately address regional inequities or climate change. Although climate change was described as an important concern by most of the SCAG participants, they made a conscious decision to not lead with these concerns because many of the decision-makers do not believe in human-caused climate change: “We talked about reducing GHG emissions and vehicle miles traveled and exposures, but never actually said the words climate change.” However, during the SCAG SCS, including the chronic disease co-benefits of increased active transportation expanded support for more aggressive GHG targets, which were included in the final SCS. Framing decisions around the more “neutral” and acceptable value of health meant that these conservative jurisdictions participated in climate change planning when they were reluctant to.

Many of the local decision-makers who engaged in this regional process don't talk about equity or differential impacts by race. One public health stakeholder described, “It’s a touchy issue. It’s not totally embraced yet. Equity is considered a dirty word with a lot of people.” SCAG region participants felt that they had a “less holistic” view than the Bay Area SCS, and less of a focus on equity than on health because “We’re just not there yet in our analysis.” Another said:

“Our Regional Council does not have a basic understanding of why public health and equity are important. Public health was already a difficult subject to grasp. People don’t grasp that socioeconomic status is your biggest predictor of health, and they certainly didn’t understand how the transportation system affects health. We focused on health outcomes from the things in the plan: emissions exposure and safety. That was the direction we got from SCAG about their readiness for this conversation. We needed to get buy-in on the basics before we could talk about disparities and race, even though we have huge disparities across our region.”
II. Governance

Governance is the decision-making processes (governmental and non-governmental) that determine who has power, who makes decisions, how those decisions are made, the systems of accountability, and how stakeholders make their voices heard. It includes both the formal governmental institutions that are charged with serving societal goals, as well as the people who are charged with keeping the institutions accountable to public service. Good governance should be transparent, responsive, collaborative, inclusive, fair, and accountable to the public. When this happens, and robust stakeholder participation occurs, a “virtuous cycle” of more meaningful community participation will ensue, thereby further strengthening the institutions’ role in provision of social goods.

Governance is a means towards health and equity, in that planning processes themselves might positively or negatively influence health and social equity. Healthy governance engages with both the substantive content of what impacts the plans and decisions will have on the health of residents, as well as the processes that make decisions about whether or how to consider these substantive issues. Health and equity participants in each region struggled with the existing governance structures and processes, as well as making attempts to reform them. This section will examine the degree to which the decision-making and planning process itself is capable of addressing the substantive health and equity concerns, and whether the decision-making structure, culture, or process changed to sustain ongoing consideration of health and equity.

MPO governance challenges:

According to most public health and equity participants in both regions, the regional decision-making and planning processes of the MPO were major barriers to successfully integrating their concerns into the SCS. First, public health and equity stakeholders in each region believed that SCS process was too complicated for most non-MPO stakeholders to understand, and would be prohibitive for non-professional advocates or those who couldn’t consistently sustain multi-year engagement through the steep learning curve. You were either “in” or you were “out”, and even missing one meeting made participation in subsequent meetings difficult. Because of this, for example, Bay Area health participants said that other local health department leadership could not be asked to step in from time to time and participate in the planning. Participation was extremely time-consuming, and there was a lack of public health capacity in staff expertise, dedicated funding, and time to monitor the process and take advantage of opportunities, especially in the Bay Area, where public health was not funded for this work. In both regions, public health participants feel they engaged with the process too late and felt they were continually weighing in on processes that had already been decided. One SCAG public health participant noted: “By the time the draft is released, it’s done.”

Because the SCS planning process has its own policy language, analytic techniques, and decision-making structures, translation of the risks and opportunities to other public health, equity, and community groups who might be impacted proved very difficult in both regions. Although a few public health and equity stakeholders had strong analytic skills and worked closely with the MPO providing technical support, few health and equity participants could grasp the “black box” mathematical models, how they might predict health and equity impacts, or how to improve them. One public health participant described the difficulty in translating MPO
analysis to their constituents: “There is a major disconnect between what the public is responding to and giving feedback on and actually getting the needs of the community into that process. ‘Here is this really complicated thing--what do you think?’” Even with their opaque analytic techniques, health and equity participants in each region were skeptical that the MPOs had the technical expertise to plan for healthy and equitable land use and transportation. As SCAG’s Executive Director stated during a public meeting, “We just always plan freeways. We don’t know how to do this.”

SCAG formed Public Health and Active Transportation subcommittees to guide staff in making policy recommendations. The Public Health subcommittee was temporary, and met for six months. SCAG public health participants were disappointed that many of the Public Health subcommittee meetings were spent bringing in speakers on “public health 101” aimed at convincing committee members about the importance of health impacts. They had serious doubts that the process advanced public health concerns, believing the subcommittee isolated the health concerns from other subcommittees that have health implications (e.g. goods movement). Within subcommittees, the formal processes blocked meaningful public health participation, and health participants did not believe they had an impact on decision-makers:

“Folks on the Regional Council had no concept of public health and didn’t think public health should be at the table. There is so much process--like stakeholders could only give comments at the beginning of the meeting, not at the end. People who actually know and care about public health were not able to participate. Even at the end of six months, people on the Public Health Subcommittee had varying opinions about whether this was important or not and varying levels of knowledge about the issue.”

Feeling the Public Health subcommittee wasn’t making progress, public health stakeholders drafted their own recommendations, based on what had been done in the Bay Area and San Diego, and presented them to SCAG staff. Participants said that the recommendations SCAG staff then presented to decision-makers were watered-down and seemed: “pretty weak: ‘Seek opportunities for active transportation. Support opportunities to improve public safety’”. Participants felt they were engaged in a long process so that SCAG could “check a box”. SCAG staff said they couldn’t implement stronger recommendations without more staff time or data. One health participant would like to see SCAG “Put resources towards measuring, tracking, and funding projects we know have a positive impact on public health, and acknowledge that a lot of the projects we fund now have a negative impact for public health. I want them to state that this is a priority for our region.”

Most participants believed the SCAG region is way too large and fractured for successful regional planning under SB 375, and that without more power and control over funding, SCAG would not be able to address health and equity in SCS planning. Although many participants had a positive opinion about SCAG staff, SCAG itself was described as a “weak government agency” whose “wings are clipped”. The agencies with real implementing authority, money, and influence are the local transportation and land use agencies-- LA Metro in particular. For example, the Transportation Investment Projects are five-year lists of planned local transportation investments from each county that feed into the SCS. These lists represent what the local jurisdictions will actually spend their money on, and have little relationship to the goals of the SCS, including protections for health, equity, or even greenhouse gas reduction targets.
SCAG participants want to figure out how to link the health and equity policy goals of the SCS with the project lists. One public health participant said:

“That’s a key lever for us and that’s why we’re focusing on Metro. SCAG doesn’t push back and say we don’t approve of this project list; it’s all freeway expansion and no bike-ped infrastructure. Even some of the conservative members of the SCAG regional council said, ‘Wow, this is a lesson for us that we need to develop criteria for our own CTC project list if we’re really going to value active transportation.’”

Participants emphasized that it was hard to focus on a process with so little power. A SCAG health participant said, “Everyone’s overstretched. You’re going to come out week after week, month after month when SCAG is setting a vision, but has no teeth?” Many participants would like more transparency from SCAG with all stakeholders and decision-makers about what the opportunities are for health and equity in the SCS, such as this public health participant:

“I wish there was a little bit more honesty that the goal at SCAG is to create regional conversations and consensus, collecting data, providing recommendations. But we need more honesty that many of the decisions are already made at the County Transportation Commissions. Regional Council members do a ton of work at SCAG on the SCS--they spend 3 years doing it--and very few of them are aware of what they are actually doing and the kind of power they can or can’t exercise.”

Finally, equity and health participants would like to see the committees that are overseeing the development of policies have representation from active transportation, equity, and public health experts who have a voting seat and are able to speak with authority. They would like to see voting representation amongst those who use the public transportation and active transportation systems, reflecting the large active transportation mode share in the region. They cited the fact that representatives of private corporations like American Automobile Association are voting members on many SCAG policy committees. In addition, due to SCAG’s lack of influence, regional board members from LA Metro don’t tend to attend SCAG meetings; meetings tend to be dominated by decision-makers from more auto-dominant and conservative parts of the region.

Because of these structural barriers, the majority of the SCAG participants are planning next time to pursue a local agenda instead of a regional agenda, especially focusing on the funding authority and influence of County Transportation Commissions. These participants showed ambivalence about what they won, and a low level of commitment to engage in future rounds of SCS planning. One public health participant said:

“We spent so much time, and truthfully one of our key lessons learned in public health was: we need to focus more at the county level and less at the regional. SCAG’s power is so diluted that we felt we should focus on Metro in pushing for active transportation. We don’t know what the RTP is going to accomplish.”

Institutionalization

There is a substantial literature on the institutionalization of change in multi-sectoral governmental and public policy work, particularly relevant in the Health in All Policies field. It
is an important investment of health and equity stakeholders in this round of SCS planning to find ways to sustain the changes they advocated for in the way planning happens at the MPOs going forward. Whether their accomplishments in the first SCS are in fact sustained in the institutional culture, operation, policies, practices, and structure of the MPO remains to be seen as the next round of SCS planning begins. However, there is initial evidence in this research that this first round of planning with its high levels of health and equity stakeholder participation may have created some lasting changes to the MPOs that could guide and sustain the integration of health and equity in future planning. There was also evidence of sustained changes to the participating health and equity organizations.

Some tangible changes to the structure and organization of the SCAG MPO occurred during and after the SCS process. SCAG created a new Active Transportation Department, with funding and staff dedicated to health and active transportation, and agreed to develop an Active Transportation Plan. SCAG has reconvened its Public Health Subcommittee for the next round of planning. In the Bay Area, the regional decision-making governance structure was permanently changed when stakeholders advocated for and won another seat on the Regional Council for the highly populated and highly impacted cities of Oakland and San Jose. These cities will now have one more vote in future regional decisions, which is more representative of their population size and needs.

Even with all of its governance problems, SCAG was seen as being good at convening stakeholders and decision-makers across the region to discuss regional issues. The high levels of participation by fragmented local governments and stakeholders alike in SCAG was considered an achievement: “Just to see 30 people come to a SCAG regional council meeting where in previous years no one came when the Regional Transportation Plan was being discussed. The Regional Council decision makers said candidly: ‘Wow, we never had anybody.’” According to most SCAG participants, the fact that regional decision-makers unanimously adopted the SCS was a huge accomplishment in a region with so much political difference around climate change and low participation in regional decision-making.

However, “institutionalization” can be tenuous, and even changes that seem to become a part of an institution can be lost if advocates stop their efforts. There is no dedicated funding or staff to consider health outcomes in MTC/ABAG, and if the health advocates don’t continue to participate in the SCS planning, it is not clear to what degree the MPO will continue to consider health. For example, Bay Area health and equity stakeholders advocated for the formation of, and then participated in an Equity Workgroup in the MPO for the duration of the first SCS planning process. As the second round of SCS planning began in early 2015, MTC/ABAG staff said they did not plan on continuing the Equity Workgroup and it did not appear in their public participation plan. Public health stakeholders provided public comment, and worked with MPO staff to ensure that such a workgroup would continue to exist; it is once again meeting in the second round with active participation from a variety of health and equity stakeholders.

Finally, health, equity, and MPO interviewees believed their institutions had an increased capacity to consider and integrate equity and health due to more intangible outcomes. Participants from all three participant groups believed they have increased mutual understanding, learning, shared language, formed long-term working relationships, and increased trust amongst...
each other. They believe this will sustain future work; some of which is already in evidence as the next phase of planning begins.

How much did the MPOs change their ability to consider health and equity during the SCS process? Participants in all interviewee groups believed that the public health participation increased MPO staff and regional decision-makers’ understanding of the health and equity costs and benefits of plans and policies, increased the analytic rigor for assessing the impacts, and created a more nuanced discussion of health protections and mitigations. SCAG participants believed they had increased MPO staff understanding, although there was disagreement about how much this filtered up to decision-makers. One SCAG equity participant was hopeful:

“SCAG has been more responsive. They got stakeholders involved, asked for many presentations by health groups, and wanted to make sure we were at the table to talk about it. I have a stronger relationship with SCAG staff for moving forward. Working with other partners and advocates, we have a more recognizable voice. They now know what we are calling for.”

Yet another public health stakeholder did not feel opportunities for public comment had equated to meaningful participation: “We would send long letters, and they would put it all in a matrix and say ‘comment noted’”. Bay Area equity and health stakeholders described that the SCS planning process and methods had become incrementally more inclusive and collaborative with health and equity stakeholders. One Bay Area equity participant described how the sustained high levels of participation by equity coalitions had made regional decision-making more accountable and responsive:

“High-level MPO staff really understood that something had changed. Instead of being the ones who reached the consensus in the back room and then brought it for rubber stamping, they were now scrambling to contain a democratic process that could just blow apart and become completely unmanageable.”

The field of collaborative governance describes the “virtuous cycle” of collaboration that ensues when higher levels of stakeholder participation improve planning outcomes, which then improve both planning and stakeholder institutions, as described by a Bay Area MPO staff: “Our plans have gotten much more complex, partly because we’re doing better at involving more stakeholders and then our stakeholders are becoming more sophisticated and more educated about the process. Because of that, it takes longer to put the plans together.” Both of the previous two quotes also highlight how this increased accountability makes the planning process much harder for MPO staff charged with creating it.

Some MPO staff in both regions believed that public health stakeholder participation permanently changed their consciousness around transportation and land use planning’s effect on health and described small changes to the values or culture of their institutions. Public health participants in each region believed that after the SCS process, there is a little more trust between stakeholders and the MPO that might sustain ongoing efforts. After the SCS, public health stakeholders in each region have continued to work with staff at each MPO. For example, California Department of Public Health staff has worked with the MPOs to share data and
improve health impact modeling. MPO staff has attended public health coalition meetings to advise them on effectively working with the MPO going into the next round of SCS planning.

Health and equity participants believed that they also had a greater understanding and conceptualization of the systemic interconnections between health, inequities, and climate change (i.e. expanded systems thinking). Equity participants believed the SCS process had increased their understanding of multiple social determinants of health and the potential health equity impacts of their own work. Public health participants believed their understanding of their own work in public health was more complex and nuanced. One SCAG public health stakeholder said that since the SCS process, “We are looking at the entire community and how it all works together which is much more holistic.” Public health stakeholders in both regions believed they have vastly increased understanding of and access to MPO planning processes, analytic methods and tools, and decision-making processes, and an increased capacity to influence MPO decision-making processes. They believed that what they learned in the SCS process increased their capacity to participate in other inter-sectoral work. These health and equity SCS participants acknowledged that understanding how decisions, planning, and models work does not always translate to impact, and that perhaps the actual impact in the first SCS on health and equity outcomes was “very little” and “incremental”. However, amongst all interviewees in both regions, there is agreement that the work in this round was foundational, and could amount to large impacts if stakeholders and institutions can begin to conceive of, consider, and integrate the health and equity impacts and opportunities within multiple systems.

Discussion and Conclusion:

What do these case studies imply for similar and future integrated regional planning efforts? There are some limitations to what these cases can imply for other regions and what we can extrapolate for other contexts. First, the participation of health and equity stakeholders in the SCS process did not by itself cause the better consideration of health and equity in the MPOs. There is a larger national and international movement within the field of city and regional planning that has called for the integration of public health and equity. This shifting discourse has helped shape SCS plans in these two case studies. However, what is new is public health’s involvement with regional climate change planning processes. Close examination of how public health stakeholders are leveraging climate change policy (or other planning with social determinants of health at stake) to achieve public health goals in two regions in California may provide lessons, impetus, and traction for other contexts.

In both regions, public health stakeholders viewed regional climate change planning as a major lever for improving the social determinants of health. MPO and equity participants believed that having public health stakeholders engaged in this planning improved the consideration and measurement of health impacts and language into the plans. High levels of health and equity participation may have also improved the design of regional planning processes and structures to sustain greater consideration of health and equity. Each MPO made a concerted effort to integrate health concerns more than they had ever previously done, and formalized this through committees and workgroups that will continue into the next round of planning. In both regions, public health interviewees believe they have more inside access to the planning agency, a clearer understanding of the regional planning process and decision-making levers, and greater ability to impact future planning, data, and decision-making. New collaborative analytical techniques
emerged from the first SCS. Public health, equity, and MPO interviewees have more shared language and tools, understanding, skills, and commitment to navigating the tensions amongst competing agendas, and to ongoing collaboration.

There were also some important differences between the two regions, which shape the MPO’s and stakeholders’ capacity to include health and equity in the SCS planning, and define the accomplishments and challenges. For example, in politically heterogeneous or conservative regions like SCAG, regional engagement may yield unsatisfactory or less immediate results for equity groups. However, approaching climate change policy-making with a health lens showing human impacts and opportunities for everyone created wider buy-in for climate change planning. In these contexts, the more neutral “health” frame may be an entry point for future discussions about regional equity and more aggressive climate protection. A modified Targeted Universalist frame might be a successful strategy, in which advocates identify commonly held values such as “health”, emphasize how everyone benefits from climate change policies and plans, and in turn advocate for targeting health-supportive resources in other less contested scales and policy arenas (e.g. county transportation agencies). In these contexts, Targeted Universalist frames will have to better communicate the ways in which all residents suffer from regional inequities.

In more politically homogeneous or progressive environments such as the Bay Area, these case studies validate arguments that regional engagement can advance multiple systems changes that support climate goals, health, and equity. In these contexts, integrated regional planning may provide effective platforms for regional equity coalition building that can achieve reforms of governance processes. In these contexts, a Targeted Universalist approach can be more explicit and point to the ways in which everyone benefits from the combination of policies that reduce greenhouse gases, while improving health and social equity.

Regional planning offers enormous opportunities for public health to impact multiple major systems that drive health inequities and climate change. Every metro region in the US has an MPO, air district, or water agency that is already working on both drivers of climate change and social determinants of health, even if they do not use this language (e.g. “active transportation” and “smart growth” versus “chronic disease” and “climate change”). Public health stakeholders should invest in learning the language, skills, and approaches of other sectors and organize our public health practice so that work within regional agencies across sectors is a priority. This research suggests that simply engaging in this work can cause paradigm shifts amongst all participants and may break down the silos that constrain effective systems change work across social determinants of health.

Finally, this research validates the healthy governance literature, which asserts that substantive changes in the conditions that shape health and equity can only be achieved to the degree that the decision-making and planning process itself is capable of addressing it, and whether the decision-making structure, culture, or process changed to sustain ongoing consideration of health and equity. The strong and meaningful engagement of impacted communities is an essential part of healthy governance. When the formal governance structures are inclusive, collaborative, and transparent, a “virtuous cycle” of more meaningful community participation will ensue, thereby further strengthening the institutions’ role in provision of social goods. Public health advocates should engage with the substantive issues being considered at regional planning agencies, and
work to improve the decision-making processes and governance structures. In this way, public health and equity stakeholders can increase the capacity of regional agencies to sustain ongoing consideration of health and equity.

However, the participatory aspect of governance is not end unto itself; there need to be concrete achievements in terms of substantive outcomes that accompany changes in governance structures or institutional reform, or stakeholders will not return to participate in those forums. Future SCS policies need to simultaneously redress the uneven distribution of resources and risks that have resulted from past planning efforts, and sustain the participation of health and equity advocates in deciding how improved distribution happens. Further research should continue to track whether participation by health and equity stakeholders improves both the outcomes and the governance structures that are necessary to address the increasingly complex issues of climate change and health inequities. Furthermore, research should document the implementation of SCS plans at the local level, and especially the distribution of social determinants of health and health outcomes implicated by SCS plans, such as housing affordability, active transportation infrastructure, exposure to pollution (air and noise), economic development and inclusion, and the availability, quality, and access to health-supportive public goods such as parks, green space, grocery stores, and schools. This study validates that understanding and negotiating the interconnectedness between complex systems of regional transportation systems, housing, economic performance, social equity, and public health remain in the early stages of development. For those who are committed to multiple systems change, these cases provide insight about the triumphs and pitfalls of such work.
Appendix I: Framework for Senate Bill 375 process and potential impacts on health equity

Health and Equity Stakeholder Engagement

Governance Structures and Planning Process:
- Regional Planning Organizations (MPOs and COGs) create plans
- Regional Commissions adopt plans
- State (CARB) approves plans
- Local government (Congestion Management Agencies) implement plans

Stakeholder engagement influences plan:
- Business and development
- Environmentalists
- Social Equity
- Public Health
- Coalitions, Community organizing
- Citizens

Contextual Factors: Existing conditions, histories, funding, leadership, social movements

SB 375 Implementation:
- Sustainable Communities Strategy
  - Distribution of:
    - Land Use
      - Development patterns/infill, mixed use, mixed income, desegregation, physical activity, health-supportive resources
    - Transportation
      - Access to opportunities/resources
    - Housing
      - Increased affordable housing, jobs/housing match, risk of displacement
    - Environmental exposures
      - Air quality, traffic density, noise

California Climate change laws
AB 32
SB 375
- Related Federal and State Laws:
  - Federal Title VI, ISTEA, EJ, State CEQA and RHNA

Health inequities:
- Respiratory, cardiovascular, chronic diseases, injuries, heat-related illness and mortality, BMI, mental health, life expectancy, mortality, etc.
### Partial list of health and equity organizations participating in first Bay Area SCS

<table>
<thead>
<tr>
<th>Public health organizations</th>
<th>Mission</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Lung Association</td>
<td>To save lives by improving lung health and preventing lung disease.</td>
</tr>
<tr>
<td>Bay Area Regional Health Inequities Initiative</td>
<td>To transform public health practice for the purpose of eliminating health inequities using a broad spectrum of approaches that improve community health.</td>
</tr>
<tr>
<td>California Department of Public Health</td>
<td>To optimize the health and well-being of the people in California.</td>
</tr>
<tr>
<td>California Walks</td>
<td>To provide a statewide voice for pedestrian safety and walkable communities through policy advocacy, community empowerment, and a statewide network of local community organizations and affiliates—with particular focus on healthy equity.</td>
</tr>
<tr>
<td>Local health departments</td>
<td>Varies across health departments.</td>
</tr>
<tr>
<td>Regional Asthma Management Prevention Program</td>
<td>To reduce the burden of asthma through a comprehensive approach, ranging from clinical management to environmental protection.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equity organizations</th>
<th>Mission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian Pacific Environmental Network</td>
<td>To bring fundamental changes to economic and social institutions that will prioritize public good over profits and promote the right of every person to a decent, safe, affordable quality of life, and the right to participate in decisions affecting our lives.</td>
</tr>
<tr>
<td>Breakthrough Communities</td>
<td>To build multiracial leadership.</td>
</tr>
<tr>
<td>Center for Sustainable Neighborhoods</td>
<td>To support projects and policies that help build more sustainable neighborhoods.</td>
</tr>
<tr>
<td>Communities for a Better Environment</td>
<td>To build peoples’ power in California’s communities of color and low income communities to achieve environmental health and justice by preventing and reducing pollution and building green, healthy, and sustainable communities and environments.</td>
</tr>
<tr>
<td>Genesis (an affiliate of Gamaliel)</td>
<td>To empower ordinary people to effectively participate in the political, environmental, social and economic decisions affecting their lives.</td>
</tr>
<tr>
<td>Green Action for Health and Environmental Justice</td>
<td>To mobilize community power to win victories that change government and corporate policies and practices to protect health and promote environmental, economic and social justice.</td>
</tr>
<tr>
<td>Greenbelt Alliance</td>
<td>To shape the rules that govern growth to protect the region’s open spaces and ensure neighborhoods within Bay Area cities and towns are amazing places for everyone.</td>
</tr>
<tr>
<td>Public Advocates, Inc.</td>
<td>To challenge the systemic causes of poverty and racial discrimination by strengthening community voices in public policy and achieving tangible legal victories advancing education, housing and transit equity.</td>
</tr>
<tr>
<td><strong>Rose Foundation for Communities and the Environment</strong></td>
<td>To support grassroots initiatives to inspire community action to protect the environment, consumers and public health.</td>
</tr>
<tr>
<td><strong>Six Wins Network</strong></td>
<td>To ensure that the Bay Area’s transit, housing, jobs, and sustainability policies break the patterns of segregation, sprawl, and pollution that have disadvantaged low-income communities and communities of color for generations.</td>
</tr>
<tr>
<td><strong>Transform</strong></td>
<td>To promote walkable communities with excellent transportation choices to connect people of all incomes to opportunity, keep California affordable and help solve our climate crisis.</td>
</tr>
<tr>
<td><strong>Urban Habitat</strong></td>
<td>To build power in low-income communities and communities of color by combining education, advocacy, research, and coalition building to advance environmental, economic, and social justice in the Bay Area.</td>
</tr>
</tbody>
</table>

**Partial list of health and equity organizations participating in first SCAG SCS**

| **Public health organizations** | **Mission** |
| American Lung Association | To save lives by improving lung health and preventing lung disease. |
| California Department of Public Health | To optimize the health and well-being of the people in California. |
| Coalition for Clean Air | To restore clean, healthy air to California by advocating for effective public policy and practical business solutions. |
| Community Health Councils | To promote social justice and equity in community and environmental resources to improve the health of underserved populations. |
| Los Angeles County Department of Public Health | To protect and improve the health of Los Angeles County residents through improving the quality of services provided by the DPH. |
| Physicians for Social Responsibility | Guided by the values and expertise of medicine and public health, to protect human life from the gravest threats to health and survival. |
| Prevention Institute | To achieve health and safety for all, to improve community environments equitably, and to serve as a focal point for primary prevention practice, the Institute asks what can be done in the first place, before people get sick or injured. |
| Safe Routes to Schools National Partnership | To advance safe walking and bicycling to and from schools, and in daily life, to improve the health and well-being of America's children and to foster the creation of livable, sustainable communities. |

<p>| <strong>Equity organizations</strong> | <strong>Mission</strong> |
| ClimatePlan | To advance policies and programs to address the relationship between land use policy and climate change, and leverage the resources and partnerships necessary to realize more sustainable and equitable development throughout California. |</p>
<table>
<thead>
<tr>
<th>Los Angeles County Department of Regional Planning</th>
<th>To perform all land use planning functions for the unincorporated areas of Los Angeles County.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOVE LA</td>
<td>To build a broad constituency that will advocate for the development of a comprehensive, diverse, robust, clean, and financially sound public transportation system for Los Angeles County and champion strategies to accelerate its implementation.</td>
</tr>
<tr>
<td>TransForm</td>
<td>To promote walkable communities with excellent transportation choices to connect people of all incomes to opportunity, keep California affordable and help solve our climate crisis.</td>
</tr>
</tbody>
</table>
Appendix III: Interview Guide

Assessing Health, Equity, and Collaborative Governance in SB 375’s Sustainable Communities Strategy

Semi-structured interview guide

Introduction:

Thank you for agreeing to meet with me. I’m a doctoral student at UC Berkeley, doing research on the consideration of health and equity in Sustainable Communities Strategy planning. I would like to ask you some questions about your perceptions of the health and equity concerns of this Plan for communities in your region, and what effect your participation had both on the process, the analysis, and the outcome of this planning effort. I would like to hear your story of being actively involved in this process.

My committee on the Protection of Human Subjects at the University asks me to read you a list of things about the interview, and your rights, just to make sure you really have consented to the interview. I would like to hear your views about community health, social equity, and participation in the SCS and make personal judgments about the process, the analysis, the outcomes, and the participation and work of your own organization and others. Your participation in this study is strictly confidential. I promise not to use your name, position, organization, or city name. I may say you are an advocate or a government staff. If I write about you, I’ll say “an advocate said”, “a governmental staff said”.

With your permission, I would like to record the interview. It’s only for me to listen to, to accurately keep track of what you say. I’ll transcribe it, and the transcription will be in a password-protected computer file. No one will read this but me and perhaps my co-investigator and your name won’t be associated with the transcript.

Your participation in this study is important. However, should you at any time wish to stop, you may do so without any bad feelings towards you, and at any time you should feel free to ask me questions concerning the interview or the study. If this sounds okay to you, we can get started with the interview. May we begin?

1. Location in the world of regional planning, constituency, and agenda

1. First, can you tell me a little about your organization, who your constituency is, and the type of work that you do with your organization. Can you tell me how your work is funded?

2. As you understand it, what would you say is the overall goal of SB 375?
   o How long have you been involved in SB 375 planning?
   o How does SB 375 fit into your organization’s work? **Probes:**
     o What is the mission(s) / agenda of your organization as it relates to SB 375?
     o What is your (or your organization’s) motivation for being involved in SB 375 planning? How does it advance / or challenge your organization’s agenda?
What was your role in the process thus far? What sort of activities were you engaged in?

II. Generalized Definitions, Framing of Equity and Health
I’m interested in the varying definitions of health and equity amongst the people and organizations involved in this work, to see if they overlap or differ.

3. How does your organization define, or mean by equity?
4. How does your organization define, or mean by health?

5. How do you think the SCS could affect equity in this region and/or California? Probes:
   - What are your main concerns about whether this plan will be fair and equitable in its social impacts on (various levels of impact (individual/family, neighborhood, city, region) this region? What are your equity goals in this regional plan?
   - Advocates who were working on this represented many different communities. Who are you most concerned about? Are there any communities that you are concerned may experience the biggest impacts? (i.e. low-income, communities of color, “Communities of Concern”, those by freeways, suburban communities, seniors, etc.).
   - If they are health equity advocates: What are your biggest concerns about the impacts of The SCS on the health of (various levels of impact (individual, neighborhood, city, or region) in this region? What are your biggest hopes for health equity being addressed in The SCS? Are you concerned about a particular health endpoint, or something that impacts people’s health indirectly?

III. Conceptions of structures of inequality related to regional planning
6. When you think about the very different resources, opportunities, and risks between groups of people in this region, what do you think are some of the main causes?

7. When you think about the very different health outcomes between groups of people, what do you think are some of the main causes?

8. Do you think that regional plans such as the SCS can reduce these differences in resources, opportunities, or health between groups of people? If so, how?

9. Are there ways in which Regional Plans could make these inequities worse? Can you describe them?

10. Which parts of the Preferred Scenario of The SCS most successfully address health and equity concerns, in your opinion? Which parts could have gone further?

IV. Quality, Successes and Challenges of Process and Participation
Now I’m going to shift gears and ask some questions about the process of participating in this Regional Plan development.
11. Can you describe the quality of community and stakeholder engagement in the SCS process so far?

12. What do you think was most successful about the process of working together to address health and equity concerns in The SCS?

13. What were some challenges you experienced in the process of addressing health and equity in The SCS? How did you address these?

14. Do you believe there were larger forces at work that were influential with shaping this plan?

15. **For MPO staff:** Did you apply any lessons learned from the last process?

16. What capacities need to be added to the system to improve the process for next time?

17. Which of your concerns were considered in the plan? Which of your concerns made into the final plan? Which didn’t?

18. I’m looking for some historical context. Where does the SB375 planning process stand in terms of your or your organization’s experience with other planning processes, or previous RTPs you’ve been involved in? Is this status quo, or are we moving forward with better consideration of social and human health equity in this region? **Probes:**
   - Has any part of what you did together over the course of the past 2 years changed how planning by the MTC happens in general?
   - Has MTC become more responsive to community social equity or health concerns?

V. **Quality and Impact of Equity Analysis**

19. **For non-MPO staff:** Was the equity analysis generated by the MPO helpful in addressing your health and equity concerns about The SCS? What did you think of their numbers and analysis? **Probes:**
   - Were you involved in framing the research questions, design, methods of analysis, indicators, or targets of the equity analysis? If yes, how?
   - Was the MTC responsive to participants’ comments, critiques, or feedback on what sort of analysis was needed?
   - Was your issue or concern sufficiently analyzed? If not, do you have any ideas about why not? Do you have any ideas about how to get your issue analyzed?
   - Did the analysis itself help you engage more in the planning process? If yes, how? If no, why not?

20. **For MPO staff:** How do you feel about how well the equity analysis answered your and advocates concerns? How do you feel you could do better?

21. **For both:**
   - What capacities need to be added to the system to improve the equity analysis for next time?
Were findings from the analysis used in influencing the decision-making?

VI. **Collaborative Governance, Equity Coalitions, and Inter-disciplinary Planning**
There were a lot of different stakeholders at the table. I would like to hear about your interactions with the other stakeholders.

- How did you become a part of any coalition you are a part of?
- How did you work with others/in coalitions?

22. **For governmental stakeholders:**
- Was it useful to have PH institutions and others at the table?
- How was it for you to be a part of this effort of different agencies with different agendas and training working together on one plan?
- Do you think there were different definitions of equity amongst the various stakeholders involved in this? Can you give me some examples?
- Who or what organization did you consistently disagree with?
- Did you form unexpected alliances?

23. **For Community advocates:**
- Was it helpful, hurtful, or both to have many other equity interests at the table? How?
- How did your interests work with a lot of other demands?
- Do you think there were different definitions of equity amongst the various stakeholders involved in this? Can you give me some examples?
- Who or what organization did you consistently disagree with?
- Did you form unexpected alliances?

24. There is often a tension in addressing environmental concerns and equitably addressing highly impacted communities. How did the competing demands of land use and transportation planning, reducing greenhouse gasses and ensuring equity impact decision-making? Can you give some examples?

VII. **Impact of participation on the Plan**
25. What has been the impact of your and others’ participation on the Plan that emerged? (Probes)
- Characterizing differences in health status or resources in Bay Area communities?
- Elucidating inequities in resources, opportunities, or health status in Bay Area communities?
- Evaluating the effectiveness of land use and transportation planning or policies in addressing these? (please provide examples)
- Identifying emerging communities and issues of concern (please provide examples)?
- Informing advocacy groups dealing with land use, transportation, or housing equity?
- Informing planners and government staff responsible for creating The SCS?
- Informing policy-makers who are engaged in The SCS, or broader climate change policy-making or health policy?

VIII. **Institutionalization of Health and Social Equity Concerns in MPO:**
26. Will the MPO continue to consider health and equity concerns in future planning efforts? If so, can you give examples of ways they may do so? (Probes)

- Use of health and equity indicators in next SCS.
- Hiring staff to MPO from health and/or equity fields
- Allocating MPO staff time to analysis and surveillance of health and equity indicators.
- Ongoing collaborations with health and equity stakeholders in implementation of SCS.

27. Has considering health and social equity impacts of plans become a permanent part of the institutional culture of the MPO? Can you give me some examples?

28. In terms of the degree to which the RTP / SCS advances your equity agenda, does the policy make things better, worse or neutral? Why? Do you have any solutions for the gaps?

29. In your opinion, did the participation or analysis result in substantive policy change?

30. In your opinion, did your participation result in a permanent change in the MPO’s ability to consider health and equity amongst many competing demands?

31. What opportunities, if any, exist to make any improvements to this current plan? What is the current opportunity for action? What could you still do in this round?

32. Before we wrap up, I want to ask you if you have anything else you want to share?
   - Is there anything else I should have asked you?

33. Would you mind sharing the names of others who you think would be useful to interview on this subject?

You’ve been so helpful; I really appreciate the time you’ve taken to talk with me. Do you mind if I contact you in the future with any follow-up questions that may emerge? Thank you very much.

(Send a thank you note.)
Appendix IV: SCS Performance Targets and other health and equity indicators for MTC/ABAG and SCAG

A. Performance Targets Adopted by MTC/ABAG for SCS:

<table>
<thead>
<tr>
<th>Goal/Outcome</th>
<th>Performance Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required</strong></td>
<td></td>
</tr>
<tr>
<td>Climate Protection</td>
<td>Reduce per-capita CO\textsubscript{2} emissions from cars and light-duty trucks by 15 percent (Statutory requirement is for year 2035, per SB 375)</td>
</tr>
<tr>
<td>Adequate Housing</td>
<td>House 100 percent of the region’s projected growth (from a 2010 baseline year) by income level (very-low, low, moderate, above-moderate) without displacing current low-income residents (Statutory requirement, per SB 375)</td>
</tr>
<tr>
<td><strong>Voluntary</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Healthy and Safe Communities        | Reduce premature deaths from exposure to particulate emissions:  
                                      • Reduce premature deaths from exposure to fine particulates (PM\textsubscript{2.5}) by 10 percent  
                                      • Reduce coarse particulate emissions (PM\textsubscript{10}) by 30 percent  
                                      • Achieve greater reductions in highly impacted areas  
|                                     | Reduce by 50 percent the number of injuries and fatalities from all collisions (including bike and pedestrian)                                                                                                   |
|                                     | Increase the average daily time walking or biking per person for transportation by 70 percent (for an average of 15 minutes per person per day)                                                        |
| Open Space and Agricultural Preservation | Direct all non-agricultural development within the urban footprint (existing urban development and urban growth boundaries)  
                                         (Note: Baseline year is 2010.)                                                                                                                        |
| Equitable Access                    | Decrease by 10 percentage points (to 56 percent, from 66 percent) the share of low-income and lower-middle income residents’ household income consumed by transportation and housing                                                                 |
| Economic Vitality                   | Increase gross regional product (GRP) by 110 percent — an average annual growth rate of approximately 2 percent (in current dollars)                                                                                 |
| Transportation System Effectiveness | Increase non-auto mode share by 10 percentage points (to 26 percent of trips)  
                                         • Decrease automobile vehicle miles traveled per capita by 10 percent                                                                                   |
|                                     | Maintain the transportation system in a state of good repair:  
                                         • Increase local road pavement condition index (PCI) to 75 or better  
                                         • Decrease distressed lane-miles of state highways to less than 10 percent of total lane-miles  
                                         • Reduce share of transit assets past their useful life to 0 percent (Note: Baseline year is 2012.)                                                 |

*Unless noted, the Performance Target increases or reductions are for 2040 compared to a year 2005 baseline.

Further information on MTC/ABAG SCS performance targets and metrics:

I. Health and equity-relevant performance targets or indicators in Bay Area SCS plan:
   a. Reduce premature deaths from exposure to fine particulates (PM\textsubscript{2.5}) by 10%
   b. Incidence of asthma attributable to particulate emissions
   c. Reduce by 50% the number of injuries and fatalities from all collisions (including bike and pedestrian)
   d. Increase the average daily time walking or biking per person for transportation by 60% (for an
average of 15 minutes per person per day)
e. Decrease by 10% the share of low-income and lower-middle income residents’ household income consumed by transportation and housing
f. Decrease automobile vehicle miles traveled per capita by 10%

II. Metrics monitored outside of Bay Area SCS plan:
   a. Monitors total number and location of vehicle, bike, and pedestrian collisions

### B: Performance Targets Adopted by SCAG for SCS:

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Performance Measure/ Indicator</th>
<th>Definition</th>
<th>Performance Target</th>
<th>Data Sources Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location Efficiency</td>
<td>Share of growth in High Quality Transit Areas (HQA)</td>
<td>Share of the region's growth in households and employment in HQA</td>
<td>Improvement over No Project Baseline</td>
<td>Census including annual American Community Survey, INSEE</td>
</tr>
<tr>
<td></td>
<td>Land consumption</td>
<td>Additional land recorded for development that has not previously been developed or otherwise impaired, including agricultural land, forest land, desert land, and other natural areas</td>
<td>Improvement over No Project Baseline</td>
<td>Real Estate Data</td>
</tr>
<tr>
<td></td>
<td>Average distance for work or non-work trips</td>
<td>The average distance traveled for work or non-work trips separately</td>
<td>Improvement over No Project Baseline</td>
<td>Trip Demand Model</td>
</tr>
<tr>
<td></td>
<td>Percent of work trips less than 3 miles</td>
<td>The share of total work trips which are fewer than 3 miles</td>
<td>Improvement over No Project Baseline</td>
<td>Trip Demand Model</td>
</tr>
<tr>
<td></td>
<td>Work trip length distribution</td>
<td>The statistical distribution of work trip lengths in the region</td>
<td>Improvement over No Project Baseline</td>
<td>Trip Demand Model</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Performance Measure/ Indicator</th>
<th>Definition</th>
<th>Performance Target</th>
<th>Data Sources Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility and Accessibility</td>
<td>Person delay per capita</td>
<td>Delay per capita can be used as a supplemental measure to account for population growth impacts on delay</td>
<td>Improvement over No Project Baseline</td>
<td>Travel Demand Model</td>
</tr>
<tr>
<td></td>
<td>Person delay by facility type (highway, hazardous)</td>
<td>Delay – excess travel time resulting from the difference between a reference speed and actual speed</td>
<td>Improvement over No Project Baseline</td>
<td>Travel Demand Model</td>
</tr>
<tr>
<td></td>
<td>Truck delay by facility type (highway, Arterial)</td>
<td>Delay – excess travel time resulting from the difference between a reference speed and actual speed</td>
<td>Improvement over No Project Baseline</td>
<td>Travel Demand Model</td>
</tr>
<tr>
<td></td>
<td>Travel time distribution for transit, SDN, RDN and non-work trips</td>
<td>Travel time distribution for transit, SDN, RDN and non-work trips</td>
<td>Improvement over No Project Baseline</td>
<td>Travel Demand Model</td>
</tr>
<tr>
<td>Safety and Health</td>
<td>Collision/excident rates by severity by mode</td>
<td>Accident rates per million vehicle miles by mode (all, bicycle/pedestrian and total/MKD)</td>
<td>Improvement over Base Year</td>
<td>OHP Accident Data Base, Travel Demand Model Mode, Split Outputs</td>
</tr>
<tr>
<td></td>
<td>Criteria pollutant emissions</td>
<td>CO, NOx, PM2.5, PM10, and VOC Per capita greenhouse gas emissions (Kg/A)</td>
<td>Meet Transportation Conformity requirements</td>
<td>Travel Demand Model, MACEPS Model, EPAC Model</td>
</tr>
<tr>
<td>Environmental Quality</td>
<td>Criteria pollutant and greenhouse gas emissions</td>
<td>CO, NOx, PM2.5, PM10, and VOC Per capita greenhouse gas emissions (Kg/A)</td>
<td>Meet Transportation Conformity requirements and Sb 1.75 per capita (GHG reduction targets)</td>
<td>Travel Demand Model, MACEPS Model, EPAC Model</td>
</tr>
<tr>
<td>Economic Well-Being</td>
<td>Additional jobs supported by improving competitiveness</td>
<td>Number of jobs added to the economy as a result of improved transportation conditions which make the region more competitive</td>
<td>Improvement over No Project Baseline</td>
<td>Regional Economic Model, REM</td>
</tr>
<tr>
<td></td>
<td>Additional jobs supported by Transportation Investment</td>
<td>Total number of jobs supported in the economy as a result of transportation expenditures</td>
<td>Improvement over No Project Baseline</td>
<td>Regional Economic Model, REM</td>
</tr>
<tr>
<td></td>
<td>Net contribution to Gross Regional Product</td>
<td>Gross Regional Product due to transportation investments and increased competitiveness</td>
<td>Improvement over No Project Baseline</td>
<td>Regional Economic Model, REM</td>
</tr>
<tr>
<td>Investment Effectiveness</td>
<td>Benefit/Cost Ratio</td>
<td>Ratio of monetized user and societal benefits to the agency transportation costs</td>
<td>Greater than 1.0</td>
<td>California Benefit Cost Model</td>
</tr>
<tr>
<td>System Sustainability</td>
<td>Cost per capita to preserve multi-modal system in current and state of good repair conditions</td>
<td>Annual costs per capita required to preserve the multi-modal system in current conditions</td>
<td>Improvement over Baseline</td>
<td>Estimated using SHRP Plan and recent California Transportation Commission 16-Year Needs Assessment</td>
</tr>
</tbody>
</table>

HQA = high occupancy vehicle, DOT = single occupancy vehicle
Further information on SCAG SCS performance targets and metrics:

I. Health and equity-relevant policies in the SCAG SCS plan:
a. Substantial increase in population and housing growth in high quality transit areas
b. Substantial increase in housing growth accommodated by multi-family and small lot types

II. Metrics included in the plan or appendices:
a. Information on emissions impacts for areas within 1,000 feet of highways
b. Percent of jobs within 15 minute walk of transit and/or proportion of jobs and households within ¼ mile of local public transit, within ½ mile of regional public transit, and within ½ mile of high frequency transit stop
c. Change in the number of accidents involving active transportation
d. Percent of regional population within 0.27-mile radius of existing and proposed bikeways
e. Percent of regional population within 2 miles of transit station (bicycles) and ½ mile of transit station (pedestrians)
f. The Environmental Justice Appendix includes substantial analysis of many variables stratified by socio-economic indicators

III. Relevant actions for future SCSs include:
a. Continued monitoring of gentrification by comparing the Regional Housing Needs Assessment to updated Housing Elements
b. “Encourage” project sponsors to be cognizant of potential health risks of siting housing near busy roadways in project design and delivery
c. Assist in disseminating information and identifying effective strategies to reduce risk at the project level
d. Work to enhance a Sustainability Tool by developing parcel and Census tract based land use and built environment data that correlate to confidential health survey information obtained from LAC DPH. By integrating health impacts data into this simulation tool, users can assess health related outcomes associated with the built environment. This tool should be ready for the next RTP/SCS and could potentially be relevant to health outcomes such as physical activity, chronic disease, and respiratory disease
e. Will refine the jobs-housing fit analysis and share results and policy implications with academics, MPOs, and interested parties
f. Developing new scenario planning model with enhanced metrics related to physical activity and emissions exposure
g. Will clarify respiratory risk information contained in the Environmental Justice Appendix
h. Reported total numbers of collisions stratified by injury or death based on SWITRS, which does not yet differentiate severity of injuries. Caltrans is determining whether to establish state criteria or to wait for federal criteria.
i. Substantial new investment ($6.7 billion) for active transportation

IV. New metrics or analyses for future SCSs:
a. Percent of region’s population within a ½ mile of parks or open space
b. Deaths and injuries from vehicles colliding with pedestrians, bicyclists, and other vehicles
c. Premature mortality from exposure to mobile sources, specifically PM2.5
d. Environmental Justice Appendix will include health impacts on children 5 years old and below
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Chapter 3:

Improving Public Health and Equity through Regional Climate Change Planning in California

Abstract:

Background: Regions have emerged as important loci for planning and public health policy-making in California, primarily because many social determinants of health related to land use planning, housing, transportation, and economic development play out regionally. In 2008, California passed Senate Bill 375, which seeks to reduce greenhouse gas emissions from driving cars and light trucks by promoting compact regional development. Metropolitan Planning Organizations (MPOs) are required to create Sustainable Communities Strategies (SCS) that integrate regional land use, housing, and transportation planning. I analyze the engagement of public health, equity, and MPO SCS planning participants, and draw lessons about regional planning to improve climate, health, and equity.

Methods: I conducted in-depth, semi-structured interviews with 50 public health, equity, and MPO planning participants in SCS planning in two California MPO regions (San Francisco Bay Area and Southern California). In an iterative inductive-deductive process, I conducted thematic analysis of the interviews, and triangulated participant perceptions with participant observation and document review.

Results: Public health participants in the SCS process within both regions believed that regional scale planning provided an opportunity for improving public health and social equity. While neither climate change nor equity were prominent in discussions in the SCAG region, opportunities for increased active transportation that could decrease chronic disease incidence enticed politically conservative jurisdictions to participate in the planning process. Contextual constraints to addressing equity in the SCAG region included the over-sized scale of the region, lack of MPO authority, strong local jurisdictional authority, fragmented governance, and regional divisions from differing geography, politics, and race and class politics. In the Bay Area, health and equity participants united under a regional identity and comprehensive equity agenda, but struggled with making substantial changes to policies. In both regions, public health engagement was more effective with pre-existing regional public health coalitions, and through broader coalitions with equity, environmental, and other partners.

Conclusions: This analysis suggests that there are functional scales for integrated regional planning that may not match the state-defined MPO scale. It may be necessary for the state to define smaller functional sub-regions for successful regional planning. Furthermore, SB 375 and similar laws should be strengthened to give regional planning agencies more regulatory power or implementation funding, and governance processes should be improved to be more accountable to regional inequities. Local health and equity organizations should create regional coalitions, engage with regional processes, and coordinate amongst other regional health organizations to affect state-level changes for health equity and advance climate change mitigation activities.
Introduction

In 2008 California passed Senate Bill 375, which seeks to reduce greenhouse gas emissions from vehicle miles traveled by promoting compact regional development. Metropolitan Planning Organizations (MPOs) are required to create Sustainable Communities Strategies (SCS) that integrate regional land use, housing, and transportation planning. Public health stakeholders engaged in the first round of SCS planning, hoping to influence the regional distribution of underlying social determinants of health. Working at the regional scale presented both challenges and opportunities for the public health sector, which has traditionally worked at the local and state scales.

Within planning, researchers and advocates have increasingly promoted the idea of “regional equity”, which argues that working for equity is most effective at the regional level. Metropolitan patterns of development are regional (e.g. housing, transportation, economic patterns) and cause uneven development and concentrated affluence and poverty that are often best analyzed and addressed at this scale. Community economic development, organizing, coalition building, and policy making at the regional level have been effective strategies over the last two decades. Yet this discussion has not made its way into the public health literature. Not surprisingly then, public health voices and perspectives about regional planning and coalition building to advance social and economic equity have been notably lacking. Similarly, regional equity advocates seek to address the social determinants of health, even though they may not use those terms. Therefore, SB 375’s first round of SCS planning offers an important case study to examine the nuances of regional planning, organizing, and coalition building to address multiple root causes of public health and inequities outcomes.

In this chapter, I first define my use of regionalism and scale, and discuss three aspects of the regionalism literature that are important to public health and health equity practitioners: 1) the importance of “regional thinking” and regional identity, 2) regional governance and the need for reform, and 3) regional coalition-building within public health and amongst equity partners. I then examine how these three themes have played out in the experiences of public health and regional equity stakeholders in two regions of California under SB 375’s SCS planning.

Background

The region is an important scale of planning and policy-making for public health and health equity. Many social determinants of health equity are distributed at a regional scale through regional planning processes, causing health inequities. Indeed, regional decision-making affects a variety of systems (e.g. land use, transportation, housing, jobs, economic) that shape social stratification (e.g. racial residential segregation and concentrated poverty, economic inclusion, schools quality), the distribution of resources and risks (e.g. neighborhood disinvestment, proximity to pollution, neighborhood gentrification and involuntary displacement, access to jobs), and their attendant inequitable health outcomes. Nevertheless, there is scant literature
about public health regionalism\(^i\), regional health coalitions, or public health participation in regional planning to improve social determinants of health or health equity in the United States.

**Regionalism as a scale of contestation and collaboration**

The term “region” is variously defined as a unit of geographic scale that sits somewhere between the scale of the nation or state and the local. Regions may be defined or constituted politically (e.g. Metropolitan Planning Organizations, or MPOs), ecologically (e.g. air basins, watersheds), culturally, and economically (an area that functions together economically). This paper examines regions as politically constituted MPOs. An MPO is an agency and jurisdiction designated by the U.S. Department of Transportation to carry out several functions specifically required under federal transportation law, including preparing the Regional Transportation Plan.

Under SB 375, California’s 18 MPOs and Councils of Government are charged with creating Sustainable Communities Strategies plans, which are intended to: (1) Identify where all of the region’s future population — at all income levels — will work and live over the next 25 years; (2) Set forth a forecasted development pattern, known as the “preferred scenario”; (3) Accommodate the future growth in a way that reduces per capita greenhouse gas emissions; and (4) Describe a transportation investment strategy and transportation network that supports the regional land use pattern and reduces per capita greenhouse gas emissions. These SCS plans formally combine two existing regional planning processes, the Regional Transportation Plan and the Regional Housing Needs Assessment. \(^ii\) The Regional Housing Needs Assessment (RHNA) identifies the number of market rate and affordable housing units that each jurisdiction in the region is required to plan for over seven years. This paper examines SCS participation in the two MPO regions circled in red (the San Francisco Bay Area’s MTC/ABAG and Southern California’s SCAG). (Figure 1) Because land use, transportation, and housing are all social determinants of health—and their distribution across a region a determinant of health equity—the SCS plans have great potential to impact population health and health inequities between populations in regions.

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\(^i\) There is some literature on the benefits of regionalization of public health services, laboratories, and emergency preparedness efforts. (See for example, Koh, Howard K., Elqura, Loris J., Judge, Christine M., and Stoto, Michael A. Regionalization of Local Public Health Systems in the Era of Preparedness. Annual Review of Public Health, Vol. 29: 205 -218, April 2008.)

\(^ii\) Some regions call this integrated Regional Transportation Plan and Sustainable Communities Strategy an RTP/SCS, but this paper will refer to the plan as an SCS.
There is not always agreement amongst planners and community advocates about the best scale or geographic level at which to address social inequities. Discriminatory decision-making and the creation of uneven regional development and associated health inequities occur at various overlapping and interactive scales, such as racially restrictive deeds, the siting of toxic facilities, and exclusionary zoning. Local jurisdictions are influenced by other local policies and practices across the region, both in terms of the flow across local jurisdictional borders of health determinants from regional socio-economic interdependencies, and in terms of setting standards of practice for protecting vulnerable populations.\footnote{2} \footnote{3} \footnote{4} This “politics of scale” asks which is the right scale to best achieve goals and how to bridge between local and regional-level work.\footnote{5}

Some planners, geographers, environmentalists, and community organizers emphasize the importance of the local scale as having a distinct sense of place and community that increases resilience to risks,\footnote{6} and provides an intimate and specific knowledge of living conditions, assets, and needs, and a place-based claim to injustice and organizing, such as environmental justice concerns.\footnote{7} \footnote{8} However, local interests are not necessarily progressive, as some promote anti-immigration, racist, or not-in-my-backyard (NIMBY) agendas, such as the strengthening of local land use control in order to resist regional public transportation or affordable housing development in wealthy jurisdictions. These groups resist regional planning in order to distance themselves from other communities within a region with whom they do not want to share risks or resources. These localist calls are constructed in relation to their regional “other” and often use coded language that signals racial and class politics in which the value of (white) localism is couched in terms of resisting development to preserve ecological resources and decreasing the influx of people (of color) to reduce crime.\footnote{9} \footnote{10} \footnote{11} \footnote{12}

Despite these tensions, regional scale planning and organizing can address neighborhood determinants of health and well-being,\footnote{13} as well as racial and class exclusion that is achieved through many interlocking systems. Many social equity and environmental justice challenges—such as concentrated poverty, racial segregation, and community economic development—do not originate from or stay contained in neighborhoods, and require regional solutions. This perspective posits that many of our nation’s most persistent and challenging problems are created by the uneven spatial patterns, processes, risks, and opportunities of metropolitan regional development. The region is the appropriate scale for political organizing because a broader confluence of interests makes sustainable coalitions among divergent interests possible.\footnote{14} Regional planning and coalition building is necessary to counter the often discriminatory or NIMBY agendas informing regional decisions, and can bridge local needs with state policies.

Rather than arguing for local versus regional approaches, a regional equity framework links these two scales conceptually and practically. Regional equity is an approach in which “members of all racial, ethnic, and income groups have opportunities to live and work in all parts of the region, have access to living wage jobs, and are included in the mainstream of regional life. It is also one in which all neighborhoods are supported to be vibrant places with choices for affordable housing, good schools, access to open space, decent transit that connects people to jobs, and healthy and sustainable environments.”\footnote{15} Conceptually, a regional equity framework recognizes the region as a new way to understand problems of inequity. Practically, it sees the region as a new level at which to find solutions and policy levers for addressing inequity. Strategically, it considers the region as a larger scale at which to build power and fight for social justice.
PolicyLink’s “community-based regionalism”\textsuperscript{16} and powell’s, “federated regionalism” seek to balance and bridge the local and regional scales in advancing equity, in which “a regional authority controls access to the opportunities that have regional dimensions, but local authorities control other matters. This way identity, governmental responsiveness, and community are preserved….A racially just form of regionalism that not only facilitates access to fundamental life opportunities but protects against harm and nourishes political power and community strength.”\textsuperscript{17,18}

Adopting a regional perspective—or “thinking regionally”—is a conceptual shift from a more narrow consciousness of community, neighborhood, and family to a broader consciousness of society.\textsuperscript{19} Shifting people’s consciousness to the regional level is believed to promote broader acceptance of a common destiny across diverse communities. Thinking regionally is foundational to the creation of regional solutions that advance everyone together without leaving certain groups behind.\textsuperscript{20,21}

For example, regional equity advocates argue that “racially concentrated affluence” decreases interaction amongst people of different races and classes and only grants opportunity to other affluent community members. This self-segregation can erode empathy, the sense of shared fate and interdependency in a metropolitan region, and the pursuit of region-wide solutions.\textsuperscript{22} Regional policies facilitating greater public transportation, connectivity, mobility, and de-concentration of poverty and low-income housing can increase interactions between residents with different backgrounds within a region, and thereby increase social and economic inclusion, idea sharing, and policy innovation.\textsuperscript{23} This is a shift in perspective that acknowledges that urban and suburban fates are linked, especially now that inner-ring suburbs are facing similar socioeconomic problems as the urban core.\textsuperscript{24}

**Regional governance and coalition building for health and equity**

Public health practitioners have long known that health outcomes are distributed inequitably across a region, but addressing these inequities are often beyond the realm of local public health jurisdictions. Although regional policies and plans have a major impact on the social determinants of health and health inequities, there is limited participation by the public health sector in regional decision-making. One reason is that there are no governmental regional public health agencies.\textsuperscript{iii} Instead, regional health work is limited to a handful of non-governmental coalitions for health and equity, such as the Bay Area Regional Health Inequities Initiative and the Public Health Alliance of Southern California (described below). Regional agencies such as air boards, water boards, conservation agencies, and transportation and land use agencies rarely look holistically at social determinants of health and equity in their work, nor do they have

public health expertise in house.\textsuperscript{iv}

This disciplinary specialization and bureaucratic fragmentation are barriers to coordinating strategies that improve health and equity outcomes. Governmental fragmentation undermines efforts to address regional inequities when hundreds of local governments and sectors compete for tax revenues and federal and state resources.\textsuperscript{25, 26} In addition, regional governance has few regulatory mechanisms for improving health and equity. For example, Metropolitan Planning Organizations and Councils of Governments have little power, few resources, and a voting system that grants small, wealthy suburbs the same voice as large central cities or unincorporated areas facing inequities, all of which limits their ability to effectively address regional disparities.\textsuperscript{27} Because there are few actual mandates in SB 375, strong community and stakeholder engagement, regional coalition building, and building local cooperation are critical for good governance.\textsuperscript{28}

Many equity advocates across the country have sought spatial justice through regional coalition building and “regional equity movements”, with a focus on building regional identity, politics, solutions, practice, and regional governance reform and democracy.\textsuperscript{29} Over the past decade local health departments and non-governmental organizations in California have increasingly built regional public health alliances, as well as participating in broader-based regional coalitions working for health, equity, environmental, and environmental justice goals. These regional coalitions work together to provide a coordinated and unified voice in regional decisions, and share data, resources, tools, and strategies for advancing health and equity. In response to the passage of SB 375, these coalitions have engaged at varying levels with the first round of SCS planning.

In this chapter, I analyze the engagement of public health, social equity (hereafter called “equity”), and MPO staff participants in SCS planning in two California regions, to examine their motivations, challenges, and achievements, and draw lessons for strengthening public health’s participation in regional planning to improve health and equity. This research explores the concept of “thinking regionally” for health and equity, and how this played out in different contexts. Next, this research examines regional governance, and whether and how it can be reformed to better address health and equity. Finally, this research examines the work of regional public health and broader equity coalitions in building community and stakeholder power to advance health and equity agendas.

**Methods**

To understand the activities, challenges, and achievements of participants in each region, I conducted in-depth interviews with 50 public health, equity, and MPO planning staff who participated in the first round of SCS planning in two regions of California—the San Francisco Bay Area (MTC/ABAG), and Southern California (SCAG). I engaged in participant observation in meetings, public comment, and protests in the SF Bay Area from 2012 to 2015, and reviewed public documents in both regions. Although the two regions are sometimes presented in comparison to each other, my intent is to analyze the impact of contextual differences and

\textsuperscript{iv} For example, the regional air districts address air quality, which affects respiratory and cardiovascular health, but often do not address the non-air quality impacts on health.
commonalities in order to extract useful lessons to inform subsequent efforts, rather than to evaluate the regions in opposition to each other.

I developed the semi-structured interview guide on the basis of a literature review, participant observation, and pilot testing and input from public health stakeholders and academic researchers engaged in the process. (See Appendix I for interview guide.) Participants were recruited by leveraging existing contacts from the San Francisco Bay Area’s MTC/ABAG Regional Equity Workgroup, the Bay Area Regional Health Inequities Initiative (BARHII) Built Environment Subcommittee, Human Impact Partners, and the California Department of Public Health. Additional participants from each site were selected using snowball-sampling techniques; when informants were contacted or interviewed, they named others actively involved in SCS planning. Twenty-four participants from the S.F. Bay Area region were interviewed in 2012, and twenty-six participants from the Southern California region were interviewed from 2013 to 2014. Participants were asked to speak about their roles and motivations for engaging with SCS planning, the barriers and achievements of their efforts, and what is needed to further advance their efforts. Interviews lasted for 60 to 90 minutes. Participants from the following typology categories were interviewed, as shown in Table 1:

<table>
<thead>
<tr>
<th>Interviewee Category</th>
<th>Definition</th>
<th>N total (SF, SCAG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public health</td>
<td>Public health professionals from governmental and non-governmental agencies who are addressing health and health equity risks and opportunities in the plan.</td>
<td>17 (6, 11)</td>
</tr>
<tr>
<td>Equity</td>
<td>Professional advocates from non-governmental organizations who are addressing a variety of social equity issues, but who are not public health professionals.</td>
<td>23 (11, 12)</td>
</tr>
<tr>
<td>MPO</td>
<td>Metropolitan Planning Organization and Associations of Governments staff with formal responsibility over the SCS plans and policies.</td>
<td>10 (7, 3)</td>
</tr>
</tbody>
</table>

Interviews were audio recorded and transcribed verbatim. Using Dedoose qualitative data analysis software, an intern and I reviewed the transcripts to discuss initial coding themes. After several rounds of independent coding and meeting to compare codes, we reached a high level of inter-coder agreement. Iterative inductive-deductive content analyses continued until final refinement of major themes was achieved.

Results

The SCS plans can impact many social determinants of health, such as public transportation, active transportation, affordable housing, air pollution, residential displacement, and access to jobs. These are all health and equity issues, but Bay Area health and equity participants focused much more on equitable living conditions (especially affordable housing and displacement), and

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v The MTC/ABAG Regional Equity Workgroup is an appointed body of health and equity advocates tasked with ensuring that the plan and policy attends to the needs of impacted and marginalized communities.
SCAG participants focused on the overall health opportunities of active transportation.

In both regions multi-year SCS planning processes, public health and equity stakeholder engagement was instrumental in getting health goals, targets, and indicators into plans. In the Bay Area, advocacy efforts yielded health and equity language in policies and implementation funding guidelines (i.e. Complete Streets, and Safe Routes to Schools requirements, RHNA compliance and implementation plan for affordable housing development), and changes to the basic governance structure (i.e. more votes to highly impacted cities in regional decision-making). In SCAG, advocacy efforts yielded significant future funding for active transportation, many more metrics to measure and monitor the health and equity impacts of planning, and more specificity about how future planning would take equity and health impacts into account. (See Appendix II for lists of performance targets and health and equity relevant indicators for each region.) Public health SCS participants included representatives from local and state government, non-governmental health advocacy organizations, regional public health alliances, and organizations providing research and strategic support. Equity participants included representatives from local, regional, and statewide equity, environmental justice, housing, and transportation advocacy organizations, and academic institutions providing research support.

Participants in the SCS planning process described their motivations for engaging at the regional level, the barriers to effective regional planning, the achievements of their engagement, and recommendations for improving future efforts. In the interviews, three main themes emerged related to the opportunities and challenges of working at the regional scale: (1) Building regional identity as a foundation for advancing health and equity; (2) The importance of governance structures for health and equity, and the need for regional governance reform; (3) The prospects and barriers of building regional coalitions both within public health networks and with regional equity partners.

1. Building regional thinking and identity for health equity

One of the key themes that emerged was whether and how the SCS planning process compelled participants (who are used to working locally for health and equity) to conceive of their work, constituent base, and issues on a regional scale. The answers varied between the two regions: most SF Bay Area participants believed that they had expanded from local to regional thinking, while most SCAG participants said they struggled with pressing health equity claims at the regional scale because they could not find a common identity around which to organize claims due to size, geography, politics, and racial and class discrimination. Instead, SCAG participants planned to return to thinking and working for policy changes at the local scale, including for the next round of SCS planning.

Even so, public health and equity participants in both regions believed that one achievement of SCS planning was that it expanded participants’ consciousness to a larger scale regarding health and equity processes and outcomes. One SF Bay Area equity advocate said that engaging in regional planning helped create a narrative of interconnected fates, solutions, and a shared future across the region:

“[Religious] Congregations are often not of the neighborhood anymore…people commute from all over the place. What we found with framing the regional plans for
people, is that our pastor who works in Orinda understood that ‘My people in Orinda need to pay attention to the health of the children in Oakland, because it affects us all.’ It helps our narrative of being interconnected, of MLK’s idea that we are all in a single garment, that there is a thread that connects all of us. Our clergy deliver that message to their people in Orinda, Marin, and San Francisco who have more resources. The reason we should care about the education of all of our children—not just our children—is that we’re all aging, and at some point we’re all going to need caregivers, and often the caregivers are the under-educated people of color in our communities. Don’t you want them to be happy, safe, and healthy themselves, and in their jobs?”

A Bay Area MPO staff member said that the SCS process facilitated a comprehensive regional discussion of equity beyond a localized environmental justice agenda:

“The fact that we have the discussion of equity at the regional level is a plus. We had that with the environmental justice movement, but it was very localized and very focused on a particular task. With Plan Bay Area we gain a more comprehensive discussion of the types of places and the types of access that people deserve and should have the right to. We need to be aware that we’re connected to other communities in the region, that there are different people of different colors, of different incomes. That has been a huge opening.”

Participants believed that in a region like SCAG, governed by a Regional Council comprised of jurisdictions with very different levels of wealth, demographics, resources, and risks, the idea of regional equity could be very hard to sell to decision-makers from high-opportunity jurisdictions. Yet equity participants said that some Regional Council members from well-resourced counties came forward and declined some of the resources that can come with this plan so that lesser-resourced parts of the region could have more resources. One SCAG equity participant noted that amongst equity advocates: “to us that was brand new”.

Many SCAG public health participants who had been working at the local level believed that the SCS planning process expanded the scope of their work, because: “We’re aware of the racial and ethnic disparities being on a regional level. We want to readapt our work regionally.” Another SCAG public health participant explained: “This process made me realize that what we’re experiencing here, so is another community. I’m not a regionalist, but I appreciate that work more and think it’s important that we create a regional movement focused on social equity.” Another described how the SCS process helped to highlight that the local conditions driving inequities are similar across a region:

“We have identified South L.A. as a place, but also as a condition. There is an eight-year life expectancy difference between Watts and Bel Air. We are dealing with very pressing health disparities within a matter of miles. The same health disparities that we see in South L.A. we also see in East L.A., Pacoima, Wilmington, Korea Town, Central City, and we believe that the drivers of those inequities are similar: access to active transportation, food, park space, healthcare coverage. The SCAG SCS process just helped reinforce that.”
One SCAG public health participant described how communities impacted by inequities could use the SCS plan to “change the lens” of decision-makers to show where health inequities exist across the region, and where investments should occur:

“I hope this plan can be used by communities to make a case for why and what investment should happen in their communities. We want SCAG and county health departments to look at neighborhood level indexes of health. Then we vet them in the regional plan, and you can see the picture of whose benefitting, and who’s not. I hope this plan changes the way elected officials look at their communities. Once they see what they’re getting and not getting, and what they can get by changing their lens, it changes the way we think as a region as a whole.”

Participants indicated that in addition to thinking on a larger scale, practitioners should be able to work at multiple scales and better articulate the connections between the local, regional, and state level work, as well as how local jurisdictions impact each other across the region. Even SCAG region participants agreed that working for local change misses the interdependence and spillover effects of local and regional decision-making, such as community investments in downtown Los Angeles causing displacement of residents to the Inland Empire. A Bay Area equity participant described this interdependence:

“What happens in the region more broadly affects San Francisco specifically. We want to see policies that we’ve been working on locally for a long time happen at a regional level. Because even though at San Francisco we’ve been doing good land use planning for a while, if people in other parts of the region are not doing that as well, it has a transportation and equity impact for us.”

Some participants became more invested in regional planning when they realized how much regional policies shape and facilitate their local work on transportation and land use, such as this Bay Area public health participant:

“Our local work with the Congestion Management Agency and General Plans is really worthwhile. As I developed a better sense of the regional funding stream and how much the regional plans can impact how the money is spent at the local level, I made the case that it was a more efficient use of our time to dedicate ourselves to shaping those regional policies, and that it would make for a more streamlined implementation at the local level in the next one to three years. Then we can say at the local level: ‘Now you need to adopt your Complete Streets policies. Now you need to do your housing elements.’ We made the case with a lot of dotted lines showing the funding flows and the serious dollars that could be moved by this, and our leadership went for it.”

Another Bay Area public health participant agreed:

“It makes my work easier as a county public health staff. Now I go back to my locals and say, here is a great policy or sample resolution, let’s adopt this and add some even better language on top of it. It paves the way for health wins for the next year for me back at the local level.”
Even though many regional equity organizers argue that regional thinking is foundational to creating concrete improvements in regional inequities, the task of actualizing substantive changes can be challenging. An equity participant from the Bay Area expressed, “Saying ‘One Bay Area’—just the name—is a step forward. We need to realize that we are in one metropolitan community and it needs to be fair for everybody who’s here. Then the question is: how do we make it real? It’s gonna be a big shift.”

In fact, participants in both regions faced many challenges to engaging in a regional planning process and thinking like a region. Participants from the SCAG region said that an oversized region with large differences in geography and density, as well as racial and socio-economic divisions limited both regional thinking and substantive policy changes in the SCS plans. Participants from the Bay Area found that although they thought, worked, and organized as a region during the SCS process, the region’s large socio-economic and racial divisions still challenged substantive policy change.

One of the main challenges cited by SCAG participants was the size of their “mega-region”, which is the nation's largest MPO jurisdiction, covering six counties, 191 cities and more than 18 million residents. SCAG participants unanimously described their region as one lacking a regional identity, as defined by the politically imposed scale of their MPO. A SCAG equity advocate explained: “As it is, it’s ungovernable as a region. You can’t have regionalism when it takes two hours to get from Riverside to L.A., and three hours to get from Imperial County to L.A.” SCAG participants believed the MPO size doesn’t match the smaller scales at which residents identify or function in their daily lives. A SCAG equity participant said, “When we talk about regional equity, we are talking about the County of L.A., not the six counties—that is a governmental imposition.” Another said: “I wish we embraced regionalism more. Even in the City of L.A. with four million people, we have trouble embracing a city vision.”

Other SCAG participants said that it was hard to have regional thinking when planning needs and solutions vary widely across different geographies with diverse population densities, and most of the SCS planning focus and investment emphasized dense urban infill instead of the particular needs of low-income rural and suburban areas. One equity advocate described: “San Bernardino County and Imperial County are all desert, and Riverside County is vast swatches of undeveloped land. None of the things that happen in dense, urban L.A. County and Orange County will work there.” Another equity advocate said: “You don’t want growth, but how do rural communities get any investment from this? They don’t have the density, funding, or infrastructure to make it happen. You create a further divide between rural and urban.”

Finally, SCAG participants related the lack of regional thinking to the substantial socio-economic, racial, and political differences in the region. Participants in both regions suggest a lack of regional identity is driven by the desire to maintain the existing social order and associated inequities. For example, in both regions, equity and health participants described how wealthier jurisdictions frequently challenge their affordable housing allocation numbers that are assigned in the Regional Housing Needs Assessment. One SCAG equity participant describes the self-protective stance taken by wealthier jurisdictions in the SCS regional planning process:
“There is no sense that counties have to coordinate their plans. The SCS maybe forces them a little, but they are just looking out for their own county. It’s more NIMBY-- ‘We don’t want this, don’t give it to us.’ For example, most of Orange County’s workforce for lower-tiered jobs like retail and food comes from the Inland Empire, which contributes to traffic congestion and housing issues, but they prefer not to address it. In every Regional Housing Needs Assessment process, Orange County is challenging their affordable housing allocation numbers, so their numbers are significantly decreased.”

Another equity advocate said anti-immigration sentiment drove Orange County to do its own sub-regional SCS plan instead of participating in the region-wide SCAG SCS:

“There is ethnic diversity and ethnic mixing in L.A. You go down 100 miles from L.A. and there is ultimate hate of immigrants. The Minutemen were born in San Clemente. When you ask Orange County to do regional planning, you are asking them to plug into L.A, and they don’t want to. The reason people move to Orange County is to not live in or be culturally linked with L.A. ‘The money and resources stay in my community, instead of going to L.A.’”

Bay Area participants believed they had a shared progressive regional identity and were stretched by their work on the SCS to think like a region. Yet many participants noted the difficulty of connecting local to regional-level work: “It’s hard when you work at the neighborhood level to understand how the region and regional decision-making is impacting your life.” Indeed, the Bay Area’s progressive identity was challenged by its great wealth inequities when it came to actualizing progressive policy changes such as building affordable housing, anti-displacement policies, and public transportation in wealthy jurisdictions. One Bay Area equity participant described the class tensions that faith leaders experienced when organizing wealthy progressive church members within a regional equity coalition. The “love thy neighbor” framing was at odds with the concept of resource distribution or sharing opportunities under the SCS:

“Faith leaders have to explain to their church why this SCS is important. It isn’t ‘You got yours, so you shouldn’t care about your neighbor’. ‘Love thy neighbor’ is a big part of our faith frame. But a lot of our churches are made up of wealthy people, and our clergy said, ‘We’re not going to join your base when it’s about anti-wealthy frames.’ That causes tension, because our more liberal people signed on for wealth distribution.”

In the Bay Area’s Marin County, liberal environmentalists and Tea Party libertarians even joined forces in the SCS, with veiled racist claims that building more affordable housing would hurt the environment, increase crime, and ruin the schools.

Interviews among SCS participants in the San Francisco Bay Area and Southern California highlight that “regional thinking” can advance healthy and equitable planning and policies, but certain socioeconomic and political contexts can also pose barriers to such regional strategies. Large geographic, class, and race divisions can fracture regional identity thus hindering regional-scale organizing and planning that could address those distributional issues and health inequities. Even in regions with a strong regional identity, the desire to protect parochial interests can block
attempts to formulate equitable solutions. The diagram below provides a visual depiction of this theorized relationship between the lack of regional thinking and the perpetuation of health inequities.

2. Reform regional governance

Although SB 375 provides a framework for regional collaboration, in practice governments remain fragmented, regional processes opaque, and regional authority weak. Participants in both regions described numerous governance barriers that made it particularly difficult for public health and equity stakeholders to intervene effectively.

In theory, good regional governance is based on transparent, accountable decision-making processes and strong participation by impacted communities. MPOs are governed by regional planning commissions made up of local government elected officials that are appointed by their peers; they vote on and approve final SCS plans. However, SCS participants in both regions agreed that this structure of regional governance was a major barrier for equity. A Bay Area equity participant explained: “We have autonomous local, state, and federal governments. Regional governance is not that way. Regional governance is just cobbled together out of local governments. Board members are locally elected and appointed to their regional posts.” This means they may not hold themselves accountable to regional-level health and equity impacts, but see their role as one of bringing more economic investment and development opportunities back to their local jurisdiction. One Bay Area equity participant described:

“All the commissioners have their pet priorities, and I’m sure they are doing everything they can to work behind the scenes to make sure that the plan incorporates those things. In San Jose, its finishing BART to San Jose; in Napa it’s keeping the streets paved. At the [regional] decision-making table, they’re not gonna raise a stink about something, assuming that their [local] projects are protected. There’s very little incentive for them to rise above their local interests and see themselves as regional planners.”

Regional governance that could effectively address regional health and equity is further challenged by the way funding allocation mostly bypasses regional agencies and goes straight to the local planning agencies, solidifying local control over regional-level equity policies. For
example, a Bay Area equity advocate described how regional decision-makers feel accountable to local transportation agencies due to the way transportation funding is allocated.\textsuperscript{vi}

“As a matter of pragmatic politics, county transportation agencies sway the [regional] commissioners to vote their way. The MPOs have power theoretically over county sales tax money, but they would never exercise it. If MTC wants to do a regional grant program, they have to fight the county transportation agencies to get a few hundred million dollars off the top.”

Although a regional plan should, in theory, create a unified vision of development that equitably distributes the benefits and burdens, SCAG participants found that this did not become a reality in a heterogeneous mega-region with a weak MPO. They agreed that compared to MTC, the SCAG governance and funding structure created greater barriers to regional planning. Similar to the Bay Area, Regional Council members are locally elected officials who do not share a regional identity or agenda, and many believed they did not “embrace the spirit of working together and regionalism, but actually make sure SCAG doesn’t do anything, and undermine regionalism.” However, because all Federal and State funding by-passes SCAG and goes directly to the local transportation agencies, and because most wealthier local jurisdictions have “self-help” sales taxes to fund local transportation planning, SCAG has little power, and the regional plans have no authority over local planning.

Because of this, SCAG participants agreed that they will retreat from the regional work of the SCS to more local work with county transportation and planning agencies where they believe real changes for things like affordable housing, displacement, and active transportation can be made. SCAG equity and health participants agreed that after the first SCS process: “We decided to be more county-centric, precisely because the power is in the counties or in the County Transportation Commission for active transportation. Cities have the most power over affordable housing.” Another SCAG public health participant agreed: “There are more clear and present dangers to displacement and gentrification that can be impacted with local decisions, instead of taking time from that to get involved in this large regional process that’s very difficult to decipher and unpack.” And, as another SCAG public health participant pointed out: “We don’t really know what the SCS is going to accomplish.”

Lacking accountability and authority from formal regional governance structures, meaningful participation by impacted communities should theoretically improve regional planning’s accountability to health and equity needs. Unfortunately, participants from both regions said that it is a problem that most residents do not understand what regional planning is, what effect it has on their local conditions, or how regional decision-making works. An equity participant said of the Bay Area Regional Council: “Their voters don’t know anything about what’s going on [regionally]. The challenge of our work is trying to organize locally and connect it to what’s happening regionally.” Another Bay Area equity participant explained:

\textsuperscript{vi} Federal and some state transportation money goes to MPOs to put into Transportation Improvement Program, which is simply a compilation of county transportation plans from the region. Other funding goes directly to the county transportation agencies, who also manage local “self-help” sales taxes.
“The biggest challenge around an accountable regional planning process is one where local residents are aware of and understand how regional decision-making impacts what’s happening in their communities and are then able to hold decision-makers accountable for equitable and just outcomes. Historically, regional decision-making has happened under the public’s radar. It’s taken a lot of work by groups like Urban Habitat and others to show everyone: this is who’s behind the curtain and this is why a freeway was built through your neighborhood, or why your bus service was cut while this rail was being built. Thinking like a region and understanding that it’s at this regional level that a lot of dollars are getting thrown around.”

Participants in both regions believed that the MPOs and the SCS planning process created convenient and efficient venues where stakeholders built relationships with other stakeholders and agency staff, and facilitated coalition building amongst broad interests. Most SCAG participants agreed that although the agency was not seen as relevant enough to be a platform for regional equity organizing, the MPO still served an important role as a convener where local jurisdictions and interest groups could be in one room on a regular basis, learn what each other is doing, and have conversations about regional planning. A SCAG equity participant reflected that perhaps Bay Area regional equity coalitions formed out of regional governmental planning efforts: “They all got into it regionally because ABAG was doing regional planning and formed equity workgroups. Many groups said there are tables that we should be a part of, but we’re not organized.” This research indicates that the strength or weakness of governmental governance structures (i.e. the MPOs, the Regional Councils, and their decision-making processes) can hinder or enable the participatory aspect of regional governance.

Fortunately, participants from both regions spoke of the importance of working for regional governance reform, and described a range of approaches and opportunities. First, some participants wanted to work for changes to federal and state policies that would increase funding to MPOs to achieve SB 375’s goals. The MPOs could then incentivize local jurisdictions to implement healthy and equitable regional planning through implementation grant funding guidelines, as described by a SCAG public health participant:

“I would like SCAG to become more of an advocate on the federal and the state level. If they are going to have to comply with an output driven model of planning, then they should push for… federal planning attached to flexible dollars and programs that reward that. We are talking about national competitive grant programs and the creation of a state competitive grant program for regions that are excelling at their SB 375 goals.”

Both SCAG and SF Bay Area participants spoke about other ways to improve regional democracy and increase MPO accountability, such as changing the composition of regional decision-making bodies to include seats for diverse constituencies (e.g. people who ride public transportation, labor, single mothers). Others suggested reforming how regional decision-makers are selected, specifically moving from locally elected officials to regionally elected representatives. A Bay Area equity advocate described MPO reform in the Twin Cities, Minnesota as a model:
“In Minnesota they set aside seats for different sectors, not just locally elected folks, but also academics, labor, and transit operators. The method by which they are appointed is more transparent. In California, Senator De Saulnier introduced legislation to create an elected body that would sit above all the regional agencies. [An MPO] raised a stink and they set the legislation aside. But I’m hopeful there’s room to change the structure of decision-making to make it more transparent and accountable.”

Conversely, SCAG equity participants had reservations about the MPOs having more legal or fiscal authority. They reasoned that in a region where the progressive local jurisdictions (e.g. LA Metro and the City of Los Angeles) were largely also disproportionately facing inequities, it was more efficient to give these jurisdictions the authority and money to address inequities directly. Furthermore, it was not clear that SCAG could be an effective administrator given its size, even with more resources and authority. These participants said for SCAG, reform should be reconfiguring SCAG into sub-regions based on shared identities or functions. For example, one SCAG public health participant suggested: “L.A. County is one quarter of the state’s population. It blends; it’s a region.”

These data suggest that reform of governmental regional governance structures and processes are foundational to increased consideration of health and equity in formal processes and to increased participation by impacted communities. However, there is currently no legislation proposing any of the aforementioned regional governance reforms, nor immediate political will to organize for them. A Bay Area equity advocate said, “Politically it’s a very difficult lift. What is the opportunity, mechanism, or vehicle for that legislation? We will have to build a lot more regional power to make a dent.”

3. **Build regional coalitions for health and equity**

Given these regional governance barriers, as well as the minimal knowledge by residents of the regional decision-making process and implications, it is imperative that health and equity stakeholders build regional coalitions. Health participants in both regions worked in regional public health coalitions, whose collective action seemed to increase the effectiveness of public health work. In addition, public health participants in both regions joined broader coalitions with other equity groups. Participants variously believed that these regional coalitions should strengthen, challenge, and/or circumnavigate weak regional governmental structures.

Governmental regional agencies have jurisdiction over one or a few social determinants (e.g. air or water board, MPO), but do not have a conceptual understanding of how multiple interdependent social determinants of health produce health outcomes and health inequities. Because they do not represent the broad interests of public health stakeholders, public health groups must be well organized amongst themselves in non-governmental regional health coalitions. Public health participants from both regions felt that “local health departments need both a local and a regional approach”, and that regional coalitions convened by public health stakeholders should be built where lacking, and strengthened where they already exist.

Fortunately, public health regional coalitions were already in existence in each region. The models for public health coalition participation in the SCs planning and their relationships with
the MPOs were slightly different in the two regions, and each offers valuable lessons for effective participation within different contexts. The Bay Area Regional Health Inequities Initiative (BARHII) is a non-governmental collaborative of eleven local health departments working to eliminate health inequities. The Public Health Alliance of Southern California is a similar regional public health coalition that sprung from a shared vision of coordinating the “Communities Putting Prevention to Work” funding and strategies for reducing chronic disease. Both regional public health coalitions have taken on various issues of regional significance, including the SCAG SCS process. A number of other agencies and non-governmental public health groups joined these coalitions during the first SCS, including American Lung Association, Regional Asthma Management Prevention Program, California Department of Public Health, California Walks, Physicians for Social Responsibility, MOVE LA, and the Safe Routes to Schools National Partnership.

Working through regional public health coalitions seemed to strengthen public health’s participation in regional planning with the MPOs in both regions. A Bay Area Regional Health Inequities Initiative (BARHII) member who participated in the SCS process said it streamlined public health organizing across the region:

“In the beginning, we had active engagement from local health departments. I put together advocacy points to go and meet with electeds from their jurisdiction that sat on ABAG and MTC. The policy makers said that made an impact. It garnered respect from those decision-makers and staff at those agencies. We were able to organize that because we were a regional collaborative.”

Public health coalition members’ knowledge of MPO planning processes and the relationships built with MPO decision-makers and staff in the first round will be foundational to more effective work in the second round of SCS planning and in other regional planning processes. Health coalition members from both regions said their regional work on the SCS launched other regional and statewide work for health equity, like advocating that the funds from California’s cap and trade program be invested in California communities facing health inequities. BARHII members who participated in the first round of SCS planning believed that it increased their capacity to work on many social determinants of health that transferred to their local public health agendas such as active transportation and adequate affordable housing.

In addition, the non-governmental public health coalitions could speak to health or equity implications of the plans when the local health departments were politically constrained from doing so. They became adept at “inside-outside” strategies with agency and advocacy groups, and often found themselves providing a bridge between the political constraints and analytic needs of public agencies, and the organizing and advocacy needs of non-governmental coalitions. SCAG public health participants said that equity was not elevated in the Public Health Alliance of Southern California for political reasons, and that leadership intentionally framed planning discussions around the more palatable value of “health” to build trust amongst members. This provided entrée for the subsequent addition of equity in their charter:

“[Leadership] politically made the call that we would put the emphasis on chronic disease prevention because it was a comfortable place that conservative jurisdictions could come to the table about. When we began building our charter, we were able to add
equity in through the membership. We wanted to do it naturally and working with their comfort level.”

Inviting regional agencies and other sectors to participate in regional planning convened by public health coalitions created a venue for regular interaction, relationship-building, and sharing of local health conditions, policy opportunities, and priorities between agencies. For example, the Public Health Alliance of Southern California invited SCAG staff to regularly participate as members in their monthly Active Transportation workgroup meetings, which facilitated exchange of ideas and synthesis of work goals and processes, as described by one public health participant:

“For SCAG, the advantage is a one-stop shop to get the read on what public health thinks about everything. They have directed their staff to work with us. We built our core working groups around our issues and deal with these issues each month with the MPO. If we have questions, we push it right to them. We are always working on what the MPO is working on. We have co-evolved with the MPOs. There is cross-fertilization through the platform we provide between the MPO and the local health departments.”

Both regional public health coalition members described challenges to their work as well. The participation of member local health departments varied across the region and across the years of planning. The conservative politics of their local jurisdictions, and lack of capacity due to funding and loss of basic public health infrastructure stymied many local health departments. Coalition members found that they walked a fine line between maintaining their roles as peer public servants who could provide analytic objectivity and technical support to MPO staff and decisions-makers, and their role as advocates with an explicit focus on health equity and social justice. Participants in both regions agreed that broader and more unified participation by local health departments in regional public health coalitions is needed to strengthen regional health advocacy, as expressed by this SCAG health participant:

“Public health departments asserting more strongly that we need to be at the table in these conversations and it is our problem. We aren’t communicating regularly, and need a united front with other public health departments. It’s a new relationship for the health department to be interfacing with SCAG. It’s navigating and defining that and getting on the same page as a region. We had Riverside and San Bernardino, but there were no other local health departments. Having a regional public health relationship, so we are not the outliers.”

In addition to participating as regional public health coalitions, public health participants in both regions joined broader coalitions with other social equity, public transportation, housing, and environmental justice advocates. In the Bay Area, this coalition convened under the collective interest in “regional equity”, while in SCAG, this coalition united under the common goal of “health”. Either way, participants from both regions agreed that coalition building was its own achievement. Many SCS participants who had initially gotten involved to advance local or single-issue interests soon realized the SCS provided opportunities for increasing collective power through broader regional coalition building. A Bay Area equity participant said:
“The African-American community is not strong enough to win anything alone. We need to work in coalitions. The things we care about can make things better for everyone. We had to create this coalition regardless of what MTC/ABAG would do, whether there were resources, and regardless of where it could go. The SCS was a place for that. We have to weigh in on it from the point of view of our collective strength.”

Bay Area health and equity participants believe one of the great accomplishments of their work on the SCS was building a nine-county regional equity coalition “The Six Wins Network”. The policy goals of the “Six Wins Network” are affordable housing, affordable local transit service, investment without displacement, healthy and safe communities, economic opportunity, and community power. These participants believed that this regional equity coalition “married the capacities and expertise of grassroots organizations and policy advocates”, “connected the lines between local and regional campaigns”, and “cut across issue silos.” Some Bay Area participants believed that having a strong equity coalition improved the formal governance of SCS planning, both by getting more votes for impacted cities, but also because a broad constituency empowered decision-makers to make equity improvements to the SCS, as explained by this equity participant watching Regional Council members direct MPO staff to make equity amendments to the SCS in the final hearing when the plan was adopted:

“There was a rebellion of the decision makers. Some of them actually said: ‘I’m going to tell you how I want to see the plan improved. And these are not suggestions.’ Because they felt the power of the Six Wins behind them, and the broader stakeholders supporting the Equity, Environment, and Jobs Scenario, they were willing to step up and do something that in past Regional Transportation Plans would have been so radical as to be unthinkable.”

A Bay Area equity participant described the added value that public health participation brought to the coalition’s work:

“Public health brought credibility. Everyone agreed to a public health agenda. From MTC’s perspective, if you said ‘This will improve public health’, you got the vote. It’s scientifically credible, and you can ground these things in the vulnerability of people with respect to the operation of the human body. That’s pretty powerful. People’s perceptions were changed, which is foundational.”

The health and equity coalition in SCAG united behind a “health” frame with a strong focus on active transportation, which they believe unified and broadened the constituency of membership and commitment amongst diverse political contexts and agendas. SCAG SCS participants hope that “health” can be a gateway to greater consideration of equity in the next SCS round. While commitment to participation in the next round of SCS planning was low amongst SCAG health and equity participants, this public health participant believed that coalition members would return for the next round of SCS planning:

“The organizations…now feel like ‘We have a seat at this table, and we’re going to hold onto it, because we see it as a long term proposition. We took a few bites this round,
Moreover, many SCAG SCS participants believed that regional equity advocates could strategically build local power and achievements towards future equity movement-building, described by a public health participant:

“Within the City of L.A., folks are making that shift from ‘How do we get equity concessions from one transit station?’ and starting to think more system-wide about the overall public transit system in L.A. County. That’s the first step. It will take a while to build the strength of those equity voices in the other counties to build up to an equity movement, to ground this in communities most impacted by inequities…and explain to those with the greatest stake to push the SCS to have a stronger equity lens.”

Despite these achievements, coalition building had many challenges. Some Bay Area public health participants believed that the health aspect of the regional equity platform was weak, and that in uniting under an “equity” framework, the health or health equity analysis was sometimes compromised, diluted, or tabled until the next round of planning. Some felt that having a separate health and safety goal amongst many equity goals isolated them into working on “downstream” health exposures or outcomes (e.g. air quality or asthma) instead of the “upstream” social determinants of health discussed in the other equity coalition workgroups, such as affordable housing and jobs. In both regions, there were also tensions between the more parochial needs of local organizing and the health and equity needs of the whole region, and between competing equity agendas amongst diverse stakeholders (e.g. more affordable housing near freeways). Finally, as with any large-scale multiple-partner coalition, uneven funding amongst coalition members can cause lack of clarity and tensions.

Even with these challenges, participants in both regions believed that public health participation in coalitions was invaluable, especially when evaluating when social equity and health equity may have competing objectives. Indeed, they felt that these tensions and negotiations between health and equity contradictions were foundational learning opportunities for future coalition work. A Bay Area equity advocate said:

“The moments when we got into the creativity of how to protect health with affordable housing were the best moments. If we can create affordable housing in the suburbs, we can design better for health. If you identify all those pollutants, and the lung capacity of those kids playing in playgrounds under the freeway, and that their lung capacity is one-third someone else’s, that is important data. You don’t put playgrounds next to that, and you reduce pollution from freeways. I saw those contradictions as the marching orders of what you have to improve for the next round of SCS planning. I didn’t see it as a show-stopper, I saw it as a point of departure.”

Discussion and Conclusion

Participants in the SCS planning processes in both regions believed that regional scale planning was an important opportunity for advancing public health and equity goals, and expanded the
scale of their thinking and partnerships. Public health and equity advocates should continue to engage with planning, policy opportunities, and coalition building at the regional level. Yet these case studies demonstrate the importance of context in determining the viability and sustainability of regional strategies for climate change, health, and equity.

SCAG struggled much more to achieve regional thinking and advance an equity agenda because of its large geography, weak MPO, divergent local interests, and socioeconomic and racial inequities. SCAG is politically heterogeneous, and interviewees point out that their region spans Republican strongholds like San Bernardino (the birthplace of the KKK) and San Clemente (the birthplace of anti-immigrant Minutemen), as well as the radical racial justice organizing of the Bus Riders’ Union, which has advocated for transit justice for low-income communities of color. At the same time, there is a strong legacy of local base organizing and movement building in places like Los Angeles for concrete improvements on single-issues or local conditions. While health or social equity concerns were not addressed in the planning process, the focus on active transportation increased buy-in and built agreement amongst conservative and progressive jurisdictions. This enabled them to unanimously pass a greenhouse gas reduction plan and increased awareness and future funding for active transportation infrastructure, all of which could provide entrée for future consideration of regional equity issues.

While the Bay Area also has wealth inequities and racially concentrated poverty, it was able to embrace regional thinking, consider equity issues in the SCS, and stakeholders show a high commitment to continue in the next round. This is because compared to SCAG, the Bay Area is smaller, more compact, part of the same commute shed, and has a more integrated public transit system that many residents use to travel throughout the region. There is a better match between the politically defined MPO jurisdiction and the way the Bay Area functions as a region. The Bay Area is also more politically homogeneous (i.e. with a tendency to vote liberal, democratic and progressive), all of which translates into a region with similar views and ability to agree on broad concepts such as “equity” that align with their progressive identity. In contrast to SCAG, the SF Bay Area’s regional identity allowed it to form a broad regional equity coalition that won some policy, planning, funding, and governance changes that may ultimately improve living conditions. Public health participants would like to see a strengthening of the “health equity” lens of coalition work, but believed that the relationships and planning skills are foundational for advances in the next SCS round.

Despite differences in regional thinking between SCAG and the SF Bay Area, racial and economic inequity, segregation, and the power of local land use planning underlined the equity agendas in both cases. Pastor and Benner have shown that high levels of social inequity can drag down an entire region’s economy. This research suggests that reducing inequities will need to become both a prerequisite and central goal of the next round of regional SCS planning. In order to shift this dynamic, more progressive federal and local policies and organizing will be necessary to address distributional problems and reduce inequities, as well as reform regional governance to increase the authority of regional planning institutions and accountability of local implementation.

Moreover, these data suggest that there is an appropriate scale for integrated regional planning that SB 375 does not adequately address and which may hinder climate change and equity agendas. In politically and demographically diverse mega-regions, it may be necessary to
downsize the scale of regional functioning and identity in ways that are not arbitrarily dictated by planning agency jurisdictions.

Health and equity organizations and agencies need to work for policy, environmental, and systems changes through coalitions. All parts of the US have regional planning agencies and decision-making bodies that impact social and environmental determinants of health. In some contexts, regional planning venues such as MPOs may not be effective for achieving health and equity objectives, while strong local scale organizing might offer more immediate opportunities. However, regional engagement through coalitions is still important because it increases the probability of replicating and scaling up local successes, and it promotes evaluation of and strategizing around the positive and negative repercussions of local plans across the region. For example, advocates will work for progressive housing policy in the City of Los Angeles, where they believe they can be successful. However, being connected to a regional housing coalition facilitates regional replication of their local work and could help avoid displacement to other parts of the region from local housing successes.

In the end, all participants believed that it was hard to know whether their work in planning and policy changes improved living conditions and reduced health inequities. Bay Area participants believed that rhetorical changes and conceptual shifts could be foundational to those changes, but fell short of making them vital and important to impacted communities. SCAG participants are looking for concrete and more immediate changes in regional inequities, and will fight for them at the local level where they can have more influence and build power. Whether these different contexts and conclusions will enable regions to achieve SB 375’s goals is unclear. However, this research suggests that public health and equity advocates will need to be limber enough to think and work both regionally and locally; connecting cross-sector, cross-issue, and cross-jurisdictionally, translating between local conditions and impacted communities and regional policy-makers, and working for healthy and fair local implementation of the SCS regional plans.
Appendix I: Interview Guide

Assessing Health, Equity, and Collaborative Governance
In SB 375’s Sustainable Communities Strategy

Semi-structured interview guide

Introduction:
Thank you for agreeing to meet with me. I’m a doctoral student at UC Berkeley, doing research on the consideration of health and equity in Sustainable Communities Strategy planning. I would like to ask you some questions about your perceptions of the health and equity concerns of this Plan for communities in your region, and what effect your participation had both on the process, the analysis, and the outcome of this planning effort. I would like to hear your story of being actively involved in this process.
My committee on the Protection of Human Subjects at the University asks me to read you a list of things about the interview, and your rights, just to make sure you really have consented to the interview. I would like to hear your views about community health, social equity, and participation in the SCS and make personal judgments about the process, the analysis, the outcomes, and the participation and work of your own organization and others. Your participation in this study is strictly confidential. I promise not to use your name, position, organization, or city name. I may say you are an advocate or a government staff. If I write about you, I’ll say, “an advocate said”, “an MPO staff said”.

With your permission, I would like to record the interview. It’s only for me to listen to, to accurately keep track of what you say. I’ll transcribe it, and the transcription will be in a password-protected computer file. No one will read this but me and perhaps my co-investigator and your name won’t be associated with the transcript.

Your participation in this study is important. However, should you at any time wish to stop, you may do so without any bad feelings towards you, and at any time you should feel free to ask me questions concerning the interview or the study. If this sounds okay to you, we can get started with the interview. May we begin?

I. Location in the world of regional planning, constituency, and agenda

1. First, can you tell me a little about your organization, who your constituency is, and the type of work that you do with your organization. Can you tell me how your work is funded?

2. As you understand it, what would you say is the overall goal of SB 375?
   o How long have you been involved in SB 375 planning?
   o How does SB 375 fit into your organization’s work? Probes:
   o What is the mission(s) / agenda of your organization as it relates to SB 375?
   o What is your (or your organization’s) motivation for being involved in SB 375 planning? How does it advance / or challenge your organization’s agenda?
What was your role in the process thus far? What sort of activities were you engaged in?

II. Generalized Definitions, Framing of Equity and Health
I’m interested in the varying definitions of health and equity amongst the people and organizations involved in this work, to see if they overlap or differ.
3. How does your organization define, or mean by equity?
4. How does your organization define, or mean by health?

5. How do you think the SCS could affect equity in this region and/or California? Probes:
   o What are your main concerns about whether this plan will be fair and equitable in its social impacts on (various levels of impact (individual/family, neighborhood, city, region) this region? What are your equity goals in this regional plan?
   o Advocates who were working on this represented many different communities. Who are you most concerned about? Are there any communities that you are concerned may experience the biggest impacts? (i.e. low-income, communities of color, “Communities of Concern”, those by freeways, suburban communities, seniors, etc.).
   o If they are health advocates: What are your biggest concerns about the impacts of The SCS on the health of (various levels of impact (individual, neighborhood, city, or region) in this region? What are your biggest hopes for health equity being addressed in The SCS? Are you concerned about a particular health endpoint, or something that impacts people’s health indirectly?

III. Conceptions of structures of inequality related to regional planning
6. When you think about the very different resources, opportunities, and risks between groups of people in this region, what do you think are some of the main causes?
7. When you think about the very different health outcomes between groups of people, what do you think are some of the main causes?
8. Do you think that regional plans such as the SCS can reduce these differences in resources, opportunities, or health between groups of people? If so, how?
9. Are there ways in which Regional Plans could make these inequities worse? Can you describe them?
10. Which parts of the Preferred Scenario of The SCS most successfully address health and equity concerns, in your opinion? Which parts could have gone further?

IV. Quality, Successes and Challenges of Process and Participation
Now I’m going to shift gears and ask some questions about the process of participating in this Regional Plan development.

11. Can you describe the quality of community and stakeholder engagement in the SCS process so far?
12. What do you think was most successful about the process of working together to address health and equity concerns in The SCS?

13. What were some challenges you experienced in the process of addressing health and equity in The SCS? How did you address these?

14. Do you believe there were larger forces at work that were influential with shaping this plan?

15. **For MPO staff:** Did you apply any lessons learned from the last process?

16. What capacities need to be added to the system to improve the process for next time?

17. Which of your concerns were considered in the plan? Which of your concerns made into the final plan? Which didn’t?

18. I’m looking for some historical context. Where does the SB375 planning process stand in terms of your or/your organization’s experience with other planning processes, or previous RTPs you’ve been involved in? Is this status quo, or are we moving forward with better consideration of social and human health equity in this region? **Probes:**
   - Has any part of what you did together over the course of the past 2 years changed how planning by the MTC happens in general?
   - Has MTC become more responsive to community social equity or health concerns?

V. **Quality and Impact of Equity Analysis**

19. **For non-MPO staff:** Was the equity analysis generated by the MPO helpful in addressing your health and equity concerns about The SCS? What did you think of their numbers and analysis? **Probes:**
   - Were you involved in framing the research questions, design, methods of analysis, indicators, or targets of the equity analysis? If yes, how?
   - Was the MTC responsive to participants’ comments, critiques, or feedback on what sort of analysis was needed?
   - Was your issue or concern sufficiently analyzed? If not, do you have any ideas about why not? Do you have any ideas about how to get your issue analyzed?
   - Did the analysis itself help you engage more in the planning process? If yes, how? If no, why not?

20. **For MPO staff:** How do you feel about how well the equity analysis answered your and advocates concerns? How do you feel you could do better?

21. **For both:**
   - What capacities need to be added to the system to improve the equity analysis for next time?
   - Were findings from the analysis used in influencing the decision-making?
VI. **Collaborative Governance, Equity Coalitions, and Inter-disciplinary Planning**

There were a lot of different stakeholders at the table. I would like to hear about your interactions with the other stakeholders.

- How did you become a part of any coalition you are a part of?
- How did you work with others/in coalitions?

22. **For MPO stakeholders:**
- Was it useful to have PH institutions and others at the table?
- How was it for you to be a part of this effort of different agencies with different agendas and training working together on one plan?
- Do you think there were different definitions of equity amongst the various stakeholders involved in this? Can you give me some examples?
- Who or what organization did you consistently disagree with?
- Did you form unexpected alliances?

23. **For equity and health advocates:**
- Was it helpful, hurtful, or both to have many other equity interests at the table? How?
- How did your interests work with a lot of other demands?
- Do you think there were different definitions of equity amongst the various stakeholders involved in this? Can you give me some examples?
- Who or what organization did you consistently disagree with?
- Did you form unexpected alliances?

24. There is often a tension in addressing environmental concerns and equitably addressing highly impacted communities. How did the competing demands of land use and transportation planning, reducing greenhouse gasses and ensuring equity impact decision-making? Can you give some examples?

VII. **Impact of participation on the Plan**

25. What has been the impact of your and others’ participation on the Plan that emerged? (Probes)

- Characterizing differences in health status or resources in communities across the region?
- Elucidating inequities in resources, opportunities, or health status in communities across the region?
- Evaluating the effectiveness of land use and transportation planning or policies in addressing these? (Please provide examples)
- Identifying emerging communities and issues of concern (please provide examples)?
- Informing advocacy groups dealing with land use, transportation, or housing equity?
- Informing planners and government staff responsible for creating The SCS?
- Informing policy-makers who are engaged in The SCS, or broader climate change policy-making or health policy?

VIII. **Institutionalization of Health and Social Equity Concerns in MPO:**
26. Will the MPO continue to consider health and equity concerns in future planning efforts? If so, can you give examples of ways they may do so? (Probes)

- Use of health and equity indicators in next SCS.
- Hiring staff to MPO from health and/or equity fields
- Allocating MPO staff time to analysis and surveillance of health and equity indicators.
- Ongoing collaborations with health and equity stakeholders in implementation of SCS.

27. Has considering health and social equity impacts of plans become a permanent part of the institutional culture of the MPO? Can you give me some examples?

28. In terms of the degree to which the RTP / SCS advances your equity agenda, does the policy make things better, worse or neutral? Why? Do you have any solutions for the gaps?

29. In your opinion, did the participation or analysis result in substantive policy change?

30. In your opinion, did your participation result in a permanent change in the MPO’s ability to consider health and equity amongst many competing demands?

31. What opportunities, if any, exist to make any improvements to this current plan? What is the current opportunity for action? What could you still do in this round?

32. Before we wrap up, I want to ask you if you have anything else you want to share?
   – Is there anything else I should have asked you?

33. Would you mind sharing the names of others who you think would be useful to interview on this subject?

You’ve been so helpful; I really appreciate the time you’ve taken to talk with me. Do you mind if I contact you in the future with any follow-up questions that may emerge? Thank you very much.
(Send a thank you note.)
Appendix II: SCS Performance Targets and other health and equity indicators for the SF Bay Area and SCAG

A. Performance Targets Adopted by SF Bay Area (MTC/ABAG) for SCS:

<table>
<thead>
<tr>
<th>TABLE 4: Adopted Plan Bay Area Performance Targets*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal/Outcome</strong></td>
</tr>
<tr>
<td><strong>Required</strong></td>
</tr>
<tr>
<td>Climate Protection</td>
</tr>
<tr>
<td>Adequate Housing</td>
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<tr>
<td><strong>Voluntary</strong></td>
</tr>
<tr>
<td>Healthy and Safe Communities</td>
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<td></td>
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<tr>
<td></td>
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<tr>
<td>Open Space and Agricultural Preservation</td>
</tr>
<tr>
<td>Equitable Access</td>
</tr>
<tr>
<td>Economic Vitality</td>
</tr>
<tr>
<td>Transportation System Effectiveness</td>
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<td></td>
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</tbody>
</table>

*Unless noted, the Performance Target increases or reductions are for 2040 compared to a year 2005 baseline.

Further information on MTC/ABAG SCS performance targets and metrics:

I. Health and equity-relevant performance targets or indicators in Bay Area SCS plan:
   a. Reduce premature deaths from exposure to fine particulates (PM2.5) by 10%
   b. Incidence of asthma attributable to particulate emissions
   c. Reduce by 50% the number of injuries and fatalities from all collisions (including bike and pedestrian)
   d. Increase the average daily time walking or biking per person for transportation by 60% (for an average of 15 minutes per person per day)
   e. Decrease by 10% the share of low-income and lower-middle income residents’ household income consumed by transportation and housing
   f. Decrease automobile vehicle miles traveled per capita by 10%

II. Metrics monitored outside of Bay Area SCS plan:
   a. Monitors total number and location of vehicle, bike, and pedestrian collisions
B: Performance Targets Adopted by SCAG for SCS:

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Performance Measure/ Indicator</th>
<th>Definition</th>
<th>Performance Target</th>
<th>Data Sources Used</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mobility and Accessibility</strong></td>
<td>Person delay per capita</td>
<td>Delay per capita can be used as a supplemental measure to account for population growth impacts on delay</td>
<td>Improvement over No Project Baseline</td>
<td>Travel Demand Model</td>
</tr>
<tr>
<td></td>
<td>Person delay by facility type</td>
<td>Delay - excess travel time resulting from the difference between a reference speed and actual speed</td>
<td>Improvement over No Project Baseline</td>
<td>Travel Demand Model</td>
</tr>
<tr>
<td></td>
<td>Truck delay by facility type</td>
<td>Delay - excess travel time resulting from the difference between a reference speed and actual speed</td>
<td>Improvement over No Project Baseline</td>
<td>Travel Demand Model</td>
</tr>
<tr>
<td></td>
<td>Travel time distribution for</td>
<td>Travel time distribution for transit, SDN, HBF for work and non-work trips</td>
<td>Improvement over No Project Baseline</td>
<td>Travel Demand Model</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Performance Measure/ Indicator</th>
<th>Definition</th>
<th>Performance Target</th>
<th>Data Sources Used</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Safety and Health</strong></td>
<td>Collision/accident rates by</td>
<td>Accident rates per million vehicle miles by mode (all, bicyclists, pedestrians and total/vehicle)</td>
<td>Improvement over Baseline Year</td>
<td>OHP Accident Data Base, Travel Demand Model, MOVTE Split Outputs</td>
</tr>
<tr>
<td></td>
<td>facility by mode</td>
<td></td>
<td></td>
<td>Travel Demand Model (ABB EMPAC Model)</td>
</tr>
<tr>
<td><strong>Environmental Quality</strong></td>
<td>Criteria pollutants emissions</td>
<td>CO, NOx, PM2.5, PM10, and VOC</td>
<td>Meet Transportation Conformity requirements</td>
<td>Travel Demand Model (ABB EMPAC Model)</td>
</tr>
<tr>
<td></td>
<td>Criteria pollutants and</td>
<td>CO, NOx, PM2.5, PM10, and VOC</td>
<td>Meet Transportation Conformity requirements and 0.375 per</td>
<td></td>
</tr>
<tr>
<td></td>
<td>greenhouse gas emissions</td>
<td>Per capita greenhouse gas emissions (CO2)</td>
<td>capita (GHG) reduction targets</td>
<td>Travel Demand Model (ABB EMPAC Model)</td>
</tr>
<tr>
<td><strong>Economic Well-Being</strong></td>
<td>Additional jobs supported by</td>
<td>Number of jobs added to the economy as a result of improved transportation conditions which make the region more competitive</td>
<td>Improvement over No Project Baseline</td>
<td>Regional Economic Model REMI</td>
</tr>
<tr>
<td></td>
<td>improving competitiveness</td>
<td></td>
<td></td>
<td>Regional Economic Model REMI</td>
</tr>
<tr>
<td></td>
<td>Net contribution to Gross</td>
<td>Gross Regional Product due to transportation investments and increased</td>
<td>Improvement over No Project Baseline</td>
<td>Regional Economic Model REMI</td>
</tr>
<tr>
<td></td>
<td>Regional Product</td>
<td>competition</td>
<td></td>
<td>Regional Economic Model REMI</td>
</tr>
<tr>
<td><strong>Investment Effectiveness</strong></td>
<td>Benefit/Cost Ratio</td>
<td>Ratio of monetized user and societal benefits to the agency transportation</td>
<td>Greater than 1.0</td>
<td>California Benefit Cost Model</td>
</tr>
<tr>
<td><strong>System Sustainability</strong></td>
<td>Cost per capita to preserve</td>
<td>Annual cost per capita required to preserve the multi-modal system in current conditions</td>
<td>Improvement over Baseline Year</td>
<td>Estimated using SHRP Plan and recent California Transportation Commission 16-Year Needs Assessment</td>
</tr>
</tbody>
</table>

HV = high occupancy vehicle, SDV = single occupancy vehicle

Further information on SCAG SCS performance targets and metrics:

I. Health and equity-relevant policies in the SCAG SCS plan:
   a. Substantial increase in population and housing growth in high quality transit areas
   b. Substantial increase in housing growth accommodated by multi-family and small lot types

II. Metrics included in the plan or appendices:
   a. Information on emissions impacts for areas within 1,000 feet of highways
   b. Percent of jobs within 15 minute walk of transit and/or proportion of jobs and households within ¼ mile of local public transit, within ½ mile of regional public transit, and within ½ mile of high frequency transit stop

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c. Change in the number of accidents involving active transportation
d. Percent of regional population within 0.27-mile radius of existing and proposed bikeways
e. Percent of regional population within 2 miles of transit station (bicycles) and ½ mile of transit station (pedestrians)
f. The Environmental Justice Appendix includes substantial analysis of many variables stratified by socio-economic indicators

III. Relevant actions for future SCSs include:
a. Continued monitoring of gentrification by comparing the Regional Housing Needs Assessment to updated Housing Elements
b. “Encourage” project sponsors to be cognizant of potential health risks of siting housing near busy roadways in project design and delivery
c. Assist in disseminating information and identifying effective strategies to reduce risk at the project level
d. Work to enhance a Sustainability Tool by developing parcel and Census tract based land use and built environment data that correlate to confidential health survey information obtained from LAC DPH. By integrating health impacts data into this simulation tool, users can assess health related outcomes associated with the built environment. This tool should be ready for the next RTP/SCS and could potentially be relevant to health outcomes such as physical activity, chronic disease, and respiratory disease
e. Will refine the jobs-housing fit analysis and share results and policy implications with academics, MPOs, and interested parties
f. Developing new scenario planning model with enhanced metrics related to physical activity and emissions exposure
g. Will clarify respiratory risk information contained in the Environmental Justice Appendix
h. Reported total numbers of collisions stratified by injury or death based on SWITRS, which does not yet differentiate severity of injuries. Caltrans is determining whether to establish state criteria or to wait for federal criteria.
i. Substantial new investment ($6.7 billion) for active transportation

IV. New metrics or analyses for future SCSs:
a. Percent of region’s population within a ½ mile of parks or open space
b. Deaths and injuries from vehicles colliding with pedestrians, bicyclists, and other vehicles
c. Premature mortality from exposure to mobile sources, specifically PM2.5
d. Environmental Justice Appendix will include health impacts on children 5 years old and below
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**Dissertation Conclusion:**

The overarching goal of this research was 1) to investigate whether and how health and equity stakeholder involvement can lead to climate change mitigation policies and plans that protect and enhance the health and wellbeing of marginalized communities, and 2) to understand how health and equity stakeholders achieve greater consideration of their concerns in plans, planning processes, and governance structures, and 3) to evaluate whether a health and equity framework was institutionalized in the governance structures for future and similar planning processes. Overall, this research shows that health and equity stakeholder involvement, and good governance structures are critical for achieving climate change mitigation strategies that improve conditions for everyone, improve community conditions and do not cause further harm to communities facing inequities, and slow climate change. This research also shows that although public health sector engagement is critical and can increase buy-in amongst other stakeholders and impacted communities, in both conservative and progressive political settings, there are many substantial barriers blocking this involvement. To better understand these barriers, as well as the complexity of multi-systems change work across multiple sectors, it is helpful to look at cases where public health brought their analytic tools, social determinants of health framework, and intimate knowledge of community conditions to bear. Each chapter of my dissertation explores the conditions that are necessary to facilitate this robust engagement in climate change policy-making that can maximize environmental, social, and health co-benefits.

**Implications for public health practice**

Chapter one shows that the public health institution will need to make some major changes to its funding, workforce, framework for practice, and leadership in order to engage with complex multi-sectoral work that addresses climate change, health, and equity. This will require shifts in: the education of public health professionals in academic institutions, public health prevention funding at the federal and state levels, and mandates that encourage public health practitioners to engage with root causes of poor health. Creative exploration and alignment of existing funding such as in the Affordable Care Act and within other sectors such as California’s cap and trade revenues should be explored as sources of this funding. Public health advocates and its allies will need to make strong arguments for federal reinvestment in the public health infrastructure. Chapter two shows that in a variety of political contexts, and even without these public health institutional shifts, the participation of public health stakeholders can make climate change policies and planning more aggressive in meeting greenhouse gas targets, and can add credibility and analytic tools to social equity participation. Climate change planning was a major lever for improving health and enhanced the consideration and measurement of impacts, language, and funding for health into the SCS plans. Chapter three highlights that the regional scale offers a significant opportunity for the public health sector to engage in systems change work that addresses many social determinants of health.

However, implementing an equitable and inclusive process does not necessarily guarantee just outcomes. In addition, public health practitioners need to become more nimble at working across multiple scales; they are well positioned to bridge vertically between assessment and knowledge of local community conditions resulting from climate change mitigation policies, communicating the health impacts to regional and state decision-makers and local agencies responsible for implementation, and adequately translating the regional and state policy opportunities to mobilize local constituents. They will also need to become more agile at
creating partnerships laterally with other local groups to create sustainable coalitions for health and social justice that pressure regional agencies to create healthy and just climate change mitigation policies and plans. In this way, public health stakeholders are critical to making climate change policies work in the real world and adapting them to fit local contexts. Public health participants can identify relevant data, indicators and solutions that target those areas most in need of benefits and resources from mitigation strategies. More research is needed on the question of whether increased participation of health and equity stakeholders in climate change mitigation policies actually leads to equitable solutions.

Implications for SB 375

Metropolitan Planning Organizations (MPOs) and other regional agencies should work to strengthen participation – by helping communities develop the capacities needed to be effective in such processes and by changing agency practices to better incorporate such voices. Many regional planning staff in California already understand the need to integrate health and equity considerations into their planning, but have until recently lacked the public health participation to really give this vision substance, data, and analytic rigor. The tensions and negotiations that arose during SCS planning should be seen as part of the mutual learning processes that are critical steps in breaking down the silos and limited conceptual frames that limit systems change work.

Funders for health, environmental, and social justice should build bridges between compartmentalized disciplinary worlds in order to build the strength of movements and what they can accomplish for low-income communities and communities of color. SB 375 and similar laws should be strengthened with language that specifies working with public health partners in order to adequately assess and strengthen the public health impacts of such laws; although many of these laws currently name public health as a rhetorical impact of climate change and climate change mitigation as a communications frame, few actually take the necessary steps to mandate or ensure public health participation. Without this sharing of information, climate change mitigation strategies such as SB 375 will be fundamentally flawed and self-defeating; social inequalities can increase greenhouse gas emissions and reduce the viability of climate change policy-making.1,2,3

Implications for regionalism and regional governance

The problems of metropolitan regions and the civil unrest seen in US cities as manifested in such movements as the Occupy and Black Lives Matter movements are intimately connected to the regional climate change planning of SB 375. It is not coincidental that the same historic and current policies that drove racial residential and school segregation, urban disinvestment, food deserts, urban heat islands, lack of access to opportunities, are deeply connected to policies that drive climate change (e.g. suburban sprawl and attendant increases in vehicle miles traveled). It is therefore a historic moment that California finds itself in; policies that are being proposed to slow climate change can be pivotal tools for redressing these historic policies and resultant patterns. This promise can also go the other way, and untargeted climate change planning could entrench status quo social order across a region. In current context, race-neutral or untargeted policies and plans will not be able to compete with the well-organized and funded advocacy of constituencies vested in current land use, housing development, and transportation patterns (i.e. the Building Industry Association, the Automobile Association of America, the Tea Party, and
other industry and interest groups). Public health and equity stakeholders can help shift the balance amongst the “three E’s” of sustainability (environment, economy, and equity) towards the often-missing component of equity. From the MPO perspective, there is tension in balancing the dominance of the economic growth imperative with health and social justice concerns. Public health professionals can help MPOs achieve this balance by bringing their analytic tools and data, social determinants of health conceptual framework, connection with communities facing inequities, and credibility amongst decision-makers.

However, implementation challenges and disagreements, and lack of accountability may limit the extent to which these goals are realized even with strong public health and equity participation. SB 375 and similar laws should be strengthened to give regional planning agencies more regulatory power or implementation funding, and governance processes should be improved to be more accountable to regional inequities. If MPOs are given the authority to achieve SB 375’s mandates over transportation and land use planning through stronger regional scale funding and policies, they will be able to reward local jurisdictions that develop affordable housing, parks, schools, transportation, and economic development, shaping the face of communities. This could change causes of inequities in life-chances and well being, such as displacement, access to employment, quality schools and health supportive resources. Perhaps the most important finding of this research is that strong participation by health and equity stakeholders seemed to improve regional governance structures, and by increasing the transparency, accountability, collaboration, and responsiveness of those structures, they also increased regional democracy. These reforms have long-term implications for the ability of governance processes to better reflect the needs of marginalized communities. I contend that in many respects, regional climate change policy-making in California is unique in that it is ahead of the country in addressing climate change and mandating the integration of previously compartmentalized but interrelated planning amongst diverse sectors. Additionally, the state of public health in California with regards to many of these issues may be unique; California Department of Public Health has set national standards with its work on climate and health and Health in All Policies. However, with recent changes in federal law aimed at climate change mitigation that will require all states to begin reducing greenhouse gases, the lessons learned here could be immediately useful for other states that may share similar contexts as these two regions. The lessons learned from each chapter of this dissertation can inform other regions’ and states’ understanding of various--and at times competing--health and equity concerns, the approaches and impact of stakeholder participation, and changes that governmental agencies made to better integrate health and equity concerns and solutions in climate change planning and policies.
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