

FACING THE CLIMATE GAP

How Environmental Justice Communities are Leading the Way to a More Sustainable and Equitable California



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ACKNOWLEDGMENTS

We forget who exactly suggested that we do a review of all the great work that California's community-based organizations are doing to address climate change in their own neighborhoods and regions – but we both thank them and wish we'd realized just how extensive this task would actually be. Truth be told, this project and the final report are much longer than originally intended. But its length is partly a testament to two things: first, the amazing array of efforts we have been able to chronicle, and second to the passion, commitment, and care of the graduate student team of Ellen Kersten and Marlene Ramos that translated our vague directions for research into an actual set of outstanding case studies.

We are indebted to many community organizations for their contributions to *Facing the Climate Gap*. Not only did the many interviewees take time out from their busy schedules to talk, they provided feedback on our drafts and updates on their campaigns after our initial interviews. In addition to the organizations and individuals profiled in this report, we are also grateful to the dozens of others we connected with through email and phone conversations; their impressive work shows up less prominently in what follows but greatly helped us find our footing in this analysis. We are especially grateful to Amy Vanderwarker and Strela Cervas at the California Environmental Justice Alliance (CEJA) for their thoughtful feedback on the report in its entirety. Our hope is that we have accurately translated the wisdom of all these actors into a document that makes the case for their work, and highlights its centrality in the future of addressing climate change.

We also want to thank the staff of the Program for Environmental and Regional Equity (PERE) at the University of Southern California: Vanessa Carter for her hard work on assembling the final pieces of this report, Rhonda Ortiz for helping make sure the pieces were both moving forward and actually funded, LeTania Kirkland for her editorial assistance with blog series that accompanies this report, and Michelle Saucedo for her work on heading up the many interview transcriptions and designing the report. For providing financial support for this research, we thank the William and Flora Hewlett Foundation as well as our institutions, USC and the University of California, Berkeley.

With federal inaction on climate change – and, really, almost utter silence for the past several years – climate change is increasingly being addressed by local governments and communities. This report offers up some best practices in terms of grassroots community responses, particularly to disparities in climate vulnerability, and argues that these efforts should be supported and scaled up. In doing so, we'll be one step closer to the more sustainable and equitable future we need and want for ourselves and the generations to come.

INTRODUCTION

California has traditionally led the nation in protecting and preserving the environment – and we have proudly continued the trend with the 2006 passage and ongoing implementation of the California Global Warming Solutions Act (AB 32). Aimed at reducing greenhouse gas emissions (GHGs) and slowing climate change, AB 32 came under political attack in 2010 when an initiative, funded largely by oil refiners, sought to delay application of the legislation’s rules. Fortunately, voters soundly rejected that effort, but many observers have worried that California’s concerns about climate could wane, particularly since the actual impacts of climate change can seem abstract and far-off.

Against this backdrop, a wide range of community-based organizations have been working to “make it real” by connecting the dots between global warming and human impacts, and by helping residents adapt now and not later. In what might be a surprise to some observers, many of these organizations are working with low-income communities of color – those often stereotyped as the least concerned about climate change. Yet those stereotypes defy the reality of polling data showing that people of color, in California and nationally, are actually more concerned than the state’s white residents about climate change, and constitute a strong base of public support for forward-looking environmental policies.^{1,2}

“PEOPLE START TALKING ABOUT CLIMATE CHANGE, BUT UNLESS IT IS MAKING YOU SICK AND YOU KNOW IT IS MAKING YOU SICK, [THEY THINK] WHAT THE HELL DOES IT HAVE TO DO WITH ME? AND WHAT CAN I DO ABOUT IT? MOST PEOPLE DON’T THINK THEY KNOW HOW TO CHANGE SUCH A HUGE THING.”

- CHARLES MASON, JR., FOUNDING LEADER OF UBUNTU GREEN

Engaging these emerging constituencies – and insuring benefits for all Californians – was certainly one goal of AB 32. Indeed, the Act mandates statewide goals to reduce greenhouse gas emissions while also requiring consideration of how the law’s implementation will impact communities that are already adversely affected by air pollution. Moreover, the law requires that measures to reduce greenhouse gas emissions must be designed to direct public and private investment toward the most disadvantaged communities in California. Unfortunately, some critical environmental justice provisions went unaddressed, including concerns expressed by advocates that a “cap-and-trade” system to regulate stationary emitters of greenhouse gases could create uneven reductions in co-pollutants and squander the potential associated health benefits at localized scales. The disagreement between environmental justice advocates and the California Air Resources Board (CARB) led to a lawsuit filed in 2009 and a ruling in 2011 that CARB had indeed not adequately considered alternatives to “cap-and-trade.”³

¹ In a 2010 *Los Angeles Times*/University of Southern California poll of Californians, Latino and Asian Americans were significantly more concerned about global warming, air pollution and water and soil contamination than non-Hispanic white respondents; the Black sample in that poll (which oversampled on Latinos and Asians) was too small to draw definitive conclusions. This is not a unique finding. The 2011 Statewide Survey by the Public Policy Institute of California (*Californians & the Environment*, Mark Baldassare, Dean Bonner, Sonja Petek, and Jui Shrestha, July 2011) found that Blacks (42%) and Latinos (41%) were more likely than Asian Americans (28%) and whites (19%) to consider regional air pollution a serious health threat and that Blacks and Latinos (69% each) were more likely than Asian Americans (53%) and whites (51%) to think the state should act now to curb Greenhouse Gas emissions even if it hurts the economy.

² Angela Park, *Everybody’s Movement: Environmental Justice and Climate Change*, Washington, D.C.: Environmental Support Center, 2009, pp. 1–49 <http://envsc.org/esc-publications/ESC%20everybody%20s%20movement.pdf>.

³ For more on the 2011 ruling, see here: <http://www.sfgate.com/bayarea/article/Cap-and-trade-wins-California-Supreme-Court-ruling-2298963.php>. While CARB addressed the trial court’s concerns, enabling the Agency to proceed, the advocates took the case to appeals court where the trial court’s determination that CARB came into compliance was upheld. For more on the 2012 ruling, see here: <http://gqucuel.org/appellate-court-upholds-cal-climate-change-plan>.

Even as environmental justice advocates have lobbied for an alternative regulatory approach, they remain supportive of the overall goal of tackling climate change and taking leadership for example, in the effort to prevent AB 32 from being overturned in the 2010 election. Perhaps as important, they and the communities they represent have worked to create new localized approaches to slow global warming and promote positive adaptation. And by doing so, they have modeled two things: first, how you can be in conflict about policy and still work toward the broader common good, and second, how grassroots solutions can provide a new way to resolve our climate challenges and build a new consensus on the environment.

Facing the Climate Gap chronicles these community-based efforts to address climate impacts. We note that many of the organizations profiled here did not come to their activities because of climate change *per se*; rather, they were motivated by hopes to reduce the risk of asthma and cancer, to improve the lives of immigrants by fighting for farmworker protections, or to support youth development by creating an opportunity to improve their neighborhoods. But along the way, they have taken a lead in mitigating greenhouse gas emissions by insisting on smarter land use, helping build the infrastructure needed to end dependency on fossil fuel energy, and dampening the effects of heat islands in urban centers. Most importantly they are addressing racial, economic, and environmental inequalities that hurt the rest of us and the environment.

We build here on an earlier body of work in which we have: (1) demonstrated that the climate gap is real – low-income communities and communities of color are indeed likely to be most vulnerable to the consequences of global warming; (2) argued that some of the market-based regulatory approaches could lead to unexpected and unequal consequences for these most impacted communities, and (3) proposed policy changes and modifications that could better maximize local health benefits. We write here not to rehash that work – we think it is now well-established, for example, that heat waves will be felt with more force in distressed communities where shade trees and air conditioners are scarce. And while we understand that there are nuances to the cap-and-trade debate, we think it undeniable that any system that relies on trading is sure to produce some inequality in the geographic distribution of co-pollutants: if it wasn't cheaper for one company to pay another company to clean up rather than reduce its own emissions, trades wouldn't occur.

What we do here instead is move past current debates and suggest that many communities and groups are doing exactly what is needed to offer new models to address climate change – and the state would do well to support the scaling up of those efforts. These organizations are sprinkled across California and running with small staffs on soft money in a hard economy. To dig deeper into this work – and to develop and implement a statewide agenda – will mean supporting them and looking to their models as ones that work for climate adaptation and mitigation. This report aims to broadcast their work and tell the story of climate justice advocacy in California.

The timing really couldn't be better. In October of 2012, Governor Brown signed the "Climate and Community Revitalization" bills – SB535 and AB1532. Together, they will funnel revenues from California's market-based system of auctioning allowances (i.e., emission permits) into the most environmentally burdened of communities. In particular, SB 535 requires a minimum of 25 percent of cap and trade revenue be invested in projects that provide benefits to disadvantaged communities and that 10 percent be directly invested in projects in those communities. As legislators, regulators, and local governments look for how to allocate these funds, these organizations already have the knowledge, tools, and relationship to get to work.

Each case study is unique in its focus, geographic landscape, and solution strategy. But our interviews with them tell a common story and lessons. Five key themes run through each of their stories:

1. **The need to promote community empowerment and civic engagement:** To outsiders, many of these neighborhoods may appear to be degraded and desolate areas. But in fact, these communities are resilient, and community members most impacted by the climate gap are most equipped to design solutions which actively diminish the climate challenge. Resilience is created by enabling the most affected populations (people of color and low-income communities) to have a voice in decision making by being in positions of leadership, such as elected positions or appointed to municipal boards, and involved through public hearings.
2. **The need to respect and build on community knowledge:** Impacted communities are knowledge rich; they have often been a part of action research projects that expose the weakness of compliance, rule-making, and record-keeping. Beyond environmental needs, they know what would work, on the ground, in their neighborhoods. Combining community wisdom – especially the traditional ecological knowledge of California’s indigenous communities – with academic and policy-making expertise has the potential for deep impact. Moreover, across the case studies, we also saw the willingness of communities to take action – creating perfect conditions for change.
3. **The need to pay attention to both mitigation and adaptation:** Climate change mitigation and adaptation – efforts to decrease climate change and to lessen the impacts of climate change, respectively – are sometimes falsely prioritized against each other. On the ground, the effects of climate change are already being felt *and* grassroots organizations across California are addressing *both* as government bodies squabble. Their efforts demonstrate that adaptation and disaster preparedness should not just be limited to urgent responses to emergencies but also encompass long-term planning and education.
4. **The need to have concrete equity thresholds for climate change policy:** Everyone says they are proponents of fairness and inclusion – but much as in the debate about “cap-and-trade,” these priorities sometimes fall by the wayside. Local, regional, and state policies that have specific equity thresholds, rather than loose principles or goals, are more likely to ensure real benefits for underserved communities (e.g. local hiring mandates). We highlight, for example, a “Green Zones” effort to identify overburdened and underserved communities for special consideration when either development or the distribution of fees or allowances is being considered. Similarly, broad goals with regard to distributed energy could be strengthened by having a threshold for energy that is produced in underserved communities.
5. **The need to collaborate across sectors and scale up:** Successes highlighted in each case study typically came as a result of diverse coalitions of community-based organizations, labor groups, researchers and consultants, and public agencies. For example, one of the keys to passing Oakland’s Energy and Climate Action Plan was a diverse coalition of over 50 local and regional labor, business, environmental, and social justice organizations that came together under the umbrella of the Oakland Climate Action Coalition to collaborate with the City’s agencies and elected representatives. There are similarly inspiring collaborations to help transform Richmond’s economy, generate green jobs in Los Angeles, and generate an alternative to reliance on the private automobile in Southern California; what is needed now are resources to scale up community efforts through ongoing government and philanthropic supports.

Such scaling up is all the more critical because of the relative lack of action at the federal level and the occasional resistance of business and industry to mitigation measures to protect the planet. California is lucky to have a government and at least some sectors of the business community that see a future in “going green” – but the grassroots organizations we profile are critical to supporting that effort. They not only raise awareness – helping residents to weigh alternatives, create a positive vision for what can be, and take local action – they are creating the kind of political force that can stretch across communities and constituencies and provide pressure for more rapid action by agencies and more compliance by industry.

From planting trees to cleaning up refineries to lobbying governments for coordinated action, California’s communities of color are not just fighting for but actually implementing effective climate change responses with equity at the center. It’s a big challenge in the face of a national politics that has often drifted away from concerns about either equity or the environment – but with the very future of the planet at risk, it may be time to support these efforts and forge a bottom-up approach to tackling both climate change and the climate gap.

How We Did This Report

As noted, this is the third in a trilogy which aims to contribute to local and national conversations on climate solutions and policy choices.

As detailed to the right, our first report, *The Climate Gap: Inequalities in How Climate Change Hurts Americans & How to Close the Gap* (2009), synthesized available data on the disproportionate and unequal health and economic consequences of climate change on people of color and the poor – as well as offering recommendations on closing that gap. Our second report, *Minding the Climate Gap: What's at Stake if California's Climate Law isn't Done Right and Right Away* (2010) went deeper, performing an analysis that suggested that the mechanisms we choose to reduce greenhouse gases can have important and differential health consequences for people of color and poor communities and the pattern of environmental injustice in the state.

OUR PREVIOUS CLIMATE GAP REPORTS

FACING THE CLIMATE GAP IS THE THIRD IN A SERIES OF REPORTS: THE CLIMATE GAP: INEQUALITIES IN HOW CLIMATE CHANGE HURTS AMERICANS & HOW TO CLOSE THE GAP, FOLLOWED BY, MINDING THE CLIMATE GAP: WHAT'S AT STAKE IF CALIFORNIA'S LAW ISN'T DONE RIGHT AND RIGHT AWAY WHICH SET THE STAGE FOR UNDERSTANDING THE UNEQUAL CONSEQUENCES OF CLIMATE CHANGE AND IMPLICATIONS FOR DISADVANTAGED COMMUNITIES.

THE CLIMATE GAP ANALYZES THE UNEQUAL STRUCTURES THAT SORT THE IMPACTS OF CLIMATE CHANGE HAZARDS. SURELY, CLIMATE CHANGE WILL IMPACT EVERYONE, BUT THE POOR, COMMUNITIES OF COLOR, AND THOSE WHO CONTRIBUTE LEAST TO GREENHOUSE EMISSIONS WILL BE THE FIRST TO CONFRONT IT. THIS IS THE "CLIMATE GAP."

THOSE WHO ARE LEAST ABLE TO ANTICIPATE, COPE WITH, RESIST AND RECOVER FROM THE WORST CONSEQUENCES WILL BE THE FIRST TO FACE THE BRUNT OF CLIMATE CHANGE HAZARDS. FOR INSTANCE, AFRICAN AMERICANS IN LOS ANGELES ARE NEARLY TWICE AS LIKELY TO DIE FROM A HEAT WAVE AS OTHER ANGELINOS, AND FAMILIES LIVING BELOW THE POVERTY LINE ARE UNLIKELY TO HAVE ACCESS TO AIR CONDITIONING OR CARS THAT ALLOW THEM TO ESCAPE THE HEAT. INDEED, THESE COMMUNITIES WILL HAVE THE GREATEST NEGATIVE HEALTH AND ECONOMIC CONSEQUENCES OF THE CLIMATE CRISIS.

MINDING THE CLIMATE GAP EXPLORES THE GEOGRAPHIC NATURE OF THE CLIMATE GAP, LOOKING AT WHERE COMPANIES THAT WILL BE SUBJECT TO CLIMATE CHANGE REGULATIONS AND THAT ALSO RELEASE LARGE AMOUNTS OF AIR POLLUTION ARE LOCATED. MATCHING CARBON AND POLLUTANT EMISSIONS DATA TO COMMUNITY DEMOGRAPHICS, IT BECAME CLEAR THAT THERE ARE ALREADY HOTSPOTS IN THE STATE, AND THEY ARE IN LOW-INCOME COMMUNITIES OF COLOR. OTHER EMISSIONS, INCLUDE PARTICULATE MATTER, SULFATES, AND VOLATILE ORGANIC COMPOUNDS THAT ARE VERY HAZARDOUS TO HUMAN HEALTH. CONSTRUCTING A "POLLUTION DISPARITY INDEX" ENABLED US TO CALL-OUT THE WORST POLLUTERS BY NAME AND ESTIMATE THEIR CONTRIBUTION TO ENVIRONMENTAL INJUSTICE IN THE STATE.

USING THIS QUANTITATIVE ANALYSIS, WE VOICED PARTICULAR CONCERNS ABOUT "CAP-AND-TRADE" AND ITS POSSIBLE EFFECT ON LOW-INCOME COMMUNITIES OF COLOR, ARGUING THAT GETTING CARBON REDUCTIONS RIGHT CAN ACTUALLY GO A LONG WAY IN CLEANING UP TOXIC HOTSPOTS, AND IS NOT AN OPPORTUNITY TO BE MISSED. MINDING THE CLIMATE GAP CONCLUDES WITH SEVERAL POLICY OPTIONS INCLUDING CREATING SPECIAL TRADE RESTRICTIONS ON THE WORST POLLUTERS, IMPLEMENTING TRADING ZONES, APPLYING SURCHARGES IN HIGHLY IMPACTED AREAS, AND CREATING COMMUNITY BENEFITS FUNDS.

This report chronicles what's being done by those who are actually "facing the climate gap." This is a qualitative companion to the previous more quantitative reports on disproportionate impact. Here, we show how those affected communities are implementing creative responses in terms of adaptation and policy innovation to the direct, indirect, and unjust effects of climate change. To be clear, there are many more

aspects of community response to climate issues – we were particularly interested here in which groups are doing this in relation to the rubric of “climate justice” and are thus mobilizing new constituencies to the climate change debate.

So Many Cases, So Little Time

To show who is facing the climate gap and what they are doing, we needed to develop a set of case studies. There was no easy road map to follow since such a cataloguing had not been done before. To dive in, we began with a broad review of environmental, social, and climate justice organizations and issues throughout the state and eventually ended with a selection of 12 case studies that illustrate the innovative, collaborative, and effective efforts underway to create a more inclusive and sustainable environment for all Californians.

We first reviewed academic and news articles, as well as various reports, from local, state, national, and international think tanks, advocacy organizations, and public agencies. We compiled a list of climate change impacts that are relevant to California. Our list included environmental concerns that are most commonly associated with climate change such as urban heat islands, local preparedness for extreme weather, the threat of wildfires, the challenge of water quality and quantity, the spread of infectious diseases, and issues associated with sea level rise. However, we also examined other concerns such as co-pollutants (emissions of pollutants that are released together with greenhouse gases), transportation, food security, and land use.

With the list of concerns mounting, we had to draw the line somewhere – the project was already sprawling in a way we hope California will not – and so we focused on those issue areas with the strongest evidence base regarding current or likely impacts on the health and livelihoods of low-socioeconomic status (SES) groups in California. Since we also wanted to stress hope for the future, we included in our profile cases of just transitions (economic and employment shifts to low-carbon industries), alternative energy development, and collaborations to address multiple dimensions of climate change. Despite the wide reach of our effort, it is important to note that the impacts we review and the efforts we profile are not exhaustive of the range of climate-related concerns affecting, or predicted to affect, low SES communities in California; particular regions, neighborhoods, or groups may have different and/or overlapping concerns depending on their local environmental, social, and political contexts.

For each of the topics of focus, we used key word web searches and the authors’ professional networks to compile a list of community-based organizations that are working on related projects or campaigns. We collected information, including overarching mission, project focus and approach, location, and key contact person, for over 60 distinct organizations. Many organizations were working on a variety of unique projects that were relevant to more than one focus area, and we included their information on the list for all appropriate topic areas. As noted, we also examined efforts with an integrated approach that were seeking to tackle multiple climate change issues simultaneously and comprehensively.

Many organizations did not have extensive descriptions of their work available online, so we contacted them through email and/or phone to learn more about their activities related to climate change and environmental health, the scales of their focus, and if/how they engage community members in their work. We also asked each organization we contacted if they knew of other groups or community leaders who are working on projects or campaigns related to climate change and environmental health. This snowball sampling method connected us to organizations and individuals that were not included on our initial list. We then prioritized organizations that met three criteria: a) they had a strong community- engagement component to their work (e.g. through rank-and-file membership, skills trainings, and/or outreach events), b) they had an explicit emphasis on working with communities of color and low-income populations (given our focus on the “climate

gap” and not just climate change), and c) they were available and willing to speak with us. This left us with a list of 24 organizations, with one to five organizations in each of our focus areas.

We shared our resulting compilation with leaders from two of California’s leading environmental health organizations, the California Environmental Justice Alliance (CEJA) and the Coalition for Clean Air (CCA), to receive input on any issues or organizations we were missing and their advice for finalizing our case study selections. They provided us with valuable information about organizational collaborations within issue areas, recommended key people to contact, and advised us on the strongest examples to focus on while also selecting a geographically diverse set of case studies. To cover our issue areas of focus, our final case study selection included 18 community-engaged organizations in 12 case studies (see Table 1); some cases included multiple organizations so that we could capture the important details of collaborative or complementary work.

Table 1: Case Study Overview

Climate Justice Issue(s)	Profiled Organization(s)	Response	Connection to social and environmental justice
Urban heat islands in Oakland	<i>Urban Releaf (Oakland, Bay Area)</i>	<i>Tree planting and urban forestry research</i>	<i>Job creation for hard to employ workers, civic engagement, environmental health</i>
Extreme heat and infectious diseases in rural Madera (Central Valley)	<i>Lideres Campesinas (Madera, Central Valley)</i>	<i>Worker education, policy advocacy, heat preparedness trainings</i>	<i>Civic engagement, immigrant integration, transit justice</i>
Drinking water, quantity and quality in Visalia (Central Valley)	<i>Community Water Center (Visalia, Central Valley)</i>	<i>Community-driven policy work at the local, regional, and state-levels; community organizing to elect diverse representatives</i>	<i>Access to clean water, environmental health, civic engagement</i>
Food security and agriculture-related GHG emissions in Sacramento	<i>Ubuntu Green, Liberation Permaculture, & Sacramento Yard Farmer (Sacramento)</i>	<i>Community and backyard gardens for locally-produced, organic, and affordable food</i>	<i>Improving access to healthy and affordable food, civic engagement</i>
Air quality and mixing industrial and residential land uses in San Diego	<i>Environmental Health Coalition (San Diego)</i>	<i>Amortization ordinance to move polluters away from residential areas, Health and Environmental Justice Element in general plan update, community-based participatory research, advocacy and policy development</i>	<i>Environmental health, improved access to health-promoting resources, civic engagement</i>
Cumulative impacts of toxic hotspots in Angeleno neighborhoods	<i>Clean Up, Green Up Coalition (Los Angeles)</i>	<i>Developing “Green Zones” as a land use planning tool in conjunction with sustainable economic development</i>	<i>Improving disinvested neighborhoods, environmental health, civic engagement</i>
GHGs and co-Pollutant emissions associated with individual car use and dirty buses	<i>Bus Riders Union (Los Angeles)</i>	<i>Improving bus service and access</i>	<i>Transit justice</i>

Climate Justice Issue(s)	Profiled Organization(s)	Response	Connection to social and environmental justice
GHG and co-pollutant emissions associated with the mass transportation of goods	<i>East Yard Communities for Environmental Justice & Center for Community Action and Environmental Justice (Southern CA)</i>	<i>Advocating for changes in regulatory standards</i>	<i>Pollution reduction, environmental health, civic engagement</i>
GHG and co-pollutant emissions from fossil fuel energy	<i>Communities for a Better Environment, Asian Pacific Environmental Network, & Solar Richmond (Bay Area)</i>	<i>Blocking industrial expansion by enforcing environmental impact review standards, promoting transitions to alternative energy generation</i>	<i>Workforce development, green job creation, civic engagement, pollution reduction</i>
High energy consumption from “dirty” buildings	<i>L.A. Conservation Corps & Strategic Concepts in Organizing and Policy Education (Los Angeles)</i>	<i>Solar installations and green conservation, and Los Angeles Green Retrofit and Workforce Program</i>	<i>Job creation for hard to employ workers, workforce development</i>
Mobilizing an integrated response to climate change causes and consequences	<i>Ella Baker Center & Oakland Climate Action Coalition (Bay Area)</i>	<i>Inclusive planning process and integrated policy goals incorporated into the City of Oakland’s Energy and Climate Action Plan</i>	<i>Alliance building to incorporate climate justice in the work of mainline social justice groups; improved communication between community-based organizations, City Council members, and City staff; civic engagement</i>
	<i>Karuk Tribe (Klamath Basin, Northern CA)</i>	<i>Adaptive management approach that brings together Traditional Ecological Knowledge (TEK) and Western science</i>	<i>Promote sovereignty of indigenous communities and respect for traditional ecological knowledge; restored environmental quality and cultural practices</i>

We contacted each organization to schedule an interview with the leader(s) of the particular campaign or project that we selected to cover in our case study. We also encouraged them to invite community organizers or members to join the interview to provide additional insights regarding the successes and challenges of their work. Each interview was semi-structured and followed a set of 16 open-ended questions that covered topics including organizational history and context, project details and impact, and broader goals and reflections. We conducted individual and group interviews with 30 community leaders from the 18 different community-

based organizations. Interviews were done in person or over the phone in July and August 2011, and each one was recorded and transcribed for analysis. Case studies were written from August 2011 to March 2012, with the exception of the Karuk Tribe case study, which was written in June 2012. We shared the separate case studies with each organization to confirm the accuracy of our write-up, and edited accordingly from those who provided feedback.

A Road Map to the Cases

To provide a bit more of a simplifying frame, we organize the cases into three groups: those cases where adaptations to heat, shifts in water availability and quality, and changes in food security have been key; those cases where organizations have tackled the connection of climate change with health issues, particularly due to related co-pollutants, land use, and transportation; and those cases where groups have begun to imagine and organize for an entirely different and more sustainable future. As we will see, all of this is a bit of an artificial distinction: in fact, a group that is working on heat effects on agricultural workers is also working on transit to make their way to work easier and healthier, and there is much more evidence through the cases of an emerging integrated approach but it helped to make the cases a bit more focused and tractable to fit them into this sort of categorization.

We start off with heat in urban centers, then examine the effects of extreme heat in rural California. Since we're already in the Central Valley we look at the region's water crisis and since this is connected to our state's agricultural economy, we consider food security in Sacramento. We then transition to the concentration of toxic land uses and disparities in development and land use, with considerations of transportation which is also connected to goods movement/logistics industry and co-pollutants. We wrap up with conversations on fossil fuel energy/economies (part of the transportation problem) and introduce efforts in Richmond to transition from reliance on fossil fuel production to a new and greener future. To finalize our story, we add two integrated approaches on comprehensive collaboration—one in Oakland and the other involving the co-production of knowledge and adaptation strategies using Western science and traditional ecological knowledge. These last pieces also lift up questions about power and community engagement, setting the stage for us to conclude on the importance of organizing and mobilization for successful policy implementation.

Each case study is primarily based on the interview(s) with the organizational leaders and members, but we also draw from academic, popular, and other literature and publicly available data sets to connect the narratives and facts from the place-based examples to broader contexts and implications. We begin each case study with a broad description of the select issue as it relates to climate change and vulnerability for low-SES groups. We then provide an overview of the organization(s), the communities they work with for the particular issue area, their program or campaigns goals, and successes and challenges of their work. These descriptions are supplemented by stories of individual or community-level transformations that have occurred as a result of the community-engaged actions. We conclude each case study by evaluating the health and equity implications of the work and the existing or recommended policies that could further support the successful examples.

Before jumping in, it is crucial to remember that the work of community-engaged organizations is constantly changing in response to community needs and resources, and these case studies are just snapshots of some of the approaches used by a small group of organizations in California to address the climate gap. There are of course many other admirable actions around climate justice and environmental health occurring throughout the state and beyond; we intend for the evidence and stories captured here to highlight the work of a few, support the work of many, and inspire the work of all to face, and eventually close, the climate gap.

ADAPTING TO CLIMATE CHANGE: HEAT, WATER, AND FOOD SECURITY

January through May 2012 was the warmest period on record for the contiguous United States since record-keeping began in 1895.⁴ Latest estimates predict 150,000 more deaths in the 40 largest U.S cities by the year 2100 due to rising temperatures.⁵ We have already had an early warning of what may come: 233 deaths due to heat related stresses were recorded between 2006-2007 in the state of California.⁶

While these statistics are worrisome for all Californians, communities in the Golden State's urban centers are prone to the "urban heat island effect," wherein the built environment (such as black asphalt and dark rooftops) and lack of tree canopy and vegetation create even higher temperatures than surrounding areas; extreme temperatures are especially dangerous for low-income populations without air conditioners, children and the elderly. In rural areas, employment opportunities and public transit options often require long hours outside, which can prove dangerous for the public's health when temperatures reach triple digits.

In this section, we profile efforts by Urban Releaf to cool Oakland's temperature and unemployment through tree-planting, youth workforce development, and urban forestry research projects. To look at concerns about heat in California's rural communities, especially in the Central Valley, we review the work of Lideres Campesinas a group that engages with female farmworkers, their family members, and neighbors to develop advocacy and readiness skills against heat-related illness. Conversations with *campesinas* and their family members also reveal early signs of their vulnerabilities to infectious diseases due to climate change.

Climate change can also mean changes in access to clean, safe, and affordable water, with scientists predicting that low precipitation, higher salinity levels, and waning snowmelt will reduce California's water supply sources. The Central Valley's rural communities are at particularly high risk for unsafe and unaffordable water, and we explore efforts in those areas. And because heat and water are also key to agriculture, many are worried about food security. However, many consider urban edible gardens as one vital strategy to offset higher risks and greenhouse gases generated in the transportation of food from farms to supermarkets. Because of this, we profile Ubuntu Green, noting how enthusiastic youth and the elderly have contributed to the rise of community gardens throughout Sacramento's communities.

⁴ National Oceanic and Atmospheric Administration State of the Climate National Overview, May 2012. <http://www.ncdc.noaa.gov/sotc/national/2012/5>

⁵ Altman, P., Lashof, D., Knowlton, K., Chen, E., et al. (2012). Killer Summer Heat: Projected Death Toll from Rising Temperatures in America Due to Climate Change. Natural Resources Defense Council: New York City. <http://www.nrdc.org/globalwarming/killer-heat/files/killer-summer-heat-report.pdf>

⁶ Centers for Disease Control and Prevention. National Environmental Public Health Tracking Network. Web. Accessed: 29 June 2012. www.cdc.gov/ephtracking.

Beating the Heat with Urban Releaf

Based on interviews with Kemba Shakur, Urban Releaf Executive Director, and Gregory Tarver, Jr., Urban Releaf Director of Urban Forest Education

It's nearly 100 degrees outside and there's no shade in sight. The intensity of the heat radiating from the streets and sidewalks is stifling. Known as the "heat island effect," this uncomfortable, and dangerous, situation has become all too common for residents in urban areas. Heat islands are created in urban neighborhoods that have few or no trees and an abundance of dark or cement surfaces that cause increases in temperatures above those of surrounding areas. In addition to compromising human health and comfort, heat islands contribute to increased air pollution and greenhouse gas emissions⁷ and are predicted to have more severe effects in the coming years as extreme heat events become even more frequent.⁸

Urban forests and residential tree-plantings can alleviate heat island effects while also contributing to climate change adaptation and mitigation strategies. For example, shade trees can reduce residential cooling costs by 30 percent, and 100 healthy large trees remove 300 pounds of particulate matter and ozone, and 15 tons of carbon dioxide from the air each year.⁹ Despite the economic, public health, and environmental benefits that trees provide to communities, many neighborhoods across the nation – particularly low-income neighborhoods of color – are bare expanses of cement and asphalt without protective tree canopies.

California exemplifies the situation: in the Golden State's urban regions, there is less tree coverage in neighborhoods with higher levels of poverty or greater proportions of people of color when compared to neighborhoods that are wealthier or have predominantly white residents.¹⁰ Low-income communities of color also have more heat-trapping impervious surfaces, such as roads, buildings, and parking lots. Furthermore, low-income communities are more severely affected by heat islands because they are less likely to have air conditioners or access to a place to cool off from extreme temperatures,¹¹ and they have higher rates of pre-existing medical conditions and lower levels of health insurance that put them at higher risk of heat-related health complications.

There are over 50 non-profit tree planting organizations across the state,¹² but very few of them focus on planting trees in neighborhoods where they are needed most. One notable exception is Urban Releaf, a community-based organization in Oakland that has been working for the past 12 years to plant trees in low and moderate-income neighborhoods that have little or no tree canopy. "Society and the prison system already know the specific areas where people are in most need. They know cities like Oakland, Richmond, and L.A. bring the most inmates. So, to me, those should be the areas with the most services around education and forestry," remarks Executive Director Kemba Shakur.

⁷ Environmental Protection Agency. 2009. Urban Heat Island Effect Basic Information. <http://www.epa.gov/heatisld/about/index.htm> Accessed 1 Aug 2011.

⁸ English, P., K. Fitzsimmons, S. Hoshiko, T. Kim, H. G. Margolis, T. E. McKone, M. Rotkin-Ellman, G. Solomon, R. Trent, and Z. Ross. 2007. *Public health impacts of climate change in California: Community vulnerability assessments and adaptation strategies*. Climate Change Public Health Impacts Assessment and Response Collaborative, California Department of Public Health Institute, Richmond, California.

⁹ Matsui, D. 2011. Energy Conservation Through Trees Act of 2011. http://matsui.house.gov/images/stories/TREES_Act.pdf Accessed 2 Aug 2011

¹⁰ Morello-Frosch, R., and B. Jesdale. 2008. Unpublished impervious surface and tree cover data. Data for this analysis was derived from: U.S. Geological Survey's National Land Cover Dataset 2001. www.mrlc.gov/nlcd.php, accessed on June 20, 2007; and ESRI's ArcMap census boundary files www.census.gov/geo/www/cob/bdy_files.html, accessed June 6, 2008.

¹¹ English, P., K. Fitzsimmons, S. Hoshiko, T. Kim, H. G. Margolis, T. E. McKone, M. Rotkin-Ellman, G. Solomon, R. Trent, and Z. Ross. 2007. *Public health impacts of climate change in California: Community vulnerability assessments and adaptation strategies*. Climate Change Public Health Impacts Assessment and Response Collaborative, California Department of Public Health Institute, Richmond, California.

¹² California Releaf. 2011. Find A Local Organization. <http://californiareleaf.org/find-a-local-organization>. Accessed 3 Aug 2011.

Shakur started Urban Releaf when she moved to a treeless street in North Oakland after working at Soledad Prison in the Salinas Valley. “I found that the grounds of Soledad Prison looked better than a lot of the streets of Oakland.” She noticed an opportunity to plant trees in her neighborhood while also creating education and employment opportunities for local youth. “The conditions that you see here on the Oakland streets are a lot of young people hanging out on corners, idle, with no jobs, underemployed and a terrible education...but then at the end of the day they are blamed. So, with that I wanted to do something to give people jobs as well as make them stewards of their own environment.”

“I WANTED TO DO SOMETHING TO GIVE PEOPLE JOBS AS WELL AS MAKE THEM STEWARDS OF THEIR OWN ENVIRONMENT.”

- KEMBA SHAKUR, URBAN RELEAF EXECUTIVE DIRECTOR

Urban Releaf has focused its tree-planting and education work in East and West Oakland, areas often referred to as the “flatlands” because of their geographic and socio-demographic distinction from the nearby hills that are predominantly higher-income neighborhoods. The organization has also worked in low-income communities of color in nearby Richmond. Since 1999, Urban Releaf has planted 15,600 trees and connected with over 4,000 youth through the Urban Forestry Education program.

The organization’s success in improving the physical and socio-economic environments in Oakland and Richmond can be attributed to its holistic approach to address the communities’ concerns. “The health issues don’t just involve air quality. The health issues also involve issues of poverty, issues of food, issues of education, and issues of unemployment. Being an organization of color, we are besieged with those social ills...a lot of the young people that we deal with, they have arrest records, they may have issues around housing, drugs, or jobs,” Shakur describes. When asked how she engages residents in her work, she answers, “I say, do you want clean air in your community? Do you want jobs? Do you want shade? Well, then sign on!”

All Bay Area residents are exposed to air that does not meet state and federal quality standards,¹³ but residents in the neighborhoods that Urban Releaf works in are especially impacted by poor air quality due to the confluence of freeways, industrial land uses, and ports. As a result, the rates of asthma hospitalizations are two to three times greater for children under five years of age who live in North, West, and East Oakland as compared to the rest of Alameda County.¹⁴

Unemployment is also a big concern in Oakland and Richmond, with unemployment rates of 16.3 and 17.6 percent, respectively, which are well above the Bay Area average of 10 percent.¹⁵ These rates are likely even higher in the predominantly Black and Latino neighborhoods where Urban Releaf works. High unemployment rates can diminish neighborhood social networks and impair a community’s ability to collectively organize and solve problems,¹⁶ which in turn inhibit local-level resilience to extreme events, such as heat waves¹⁷ and other weather changes that are expected to become even more frequent from the effects of climate change.

¹³ Bay Area Air Quality Management District. 2010. Executive Summary –Bay Area 2010 Clean Air Plan. <http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Plans/2010%20Clean%20Air%20Plan/Executive%20Summary%20of%20Bay%20Area%202010%20CAP.ashx> Accessed 3 Aug 2011

¹⁴ Alameda County Department of Public Health. 2008. Life and Death from Unnatural Causes. http://www.acphd.org/AXBYCZ/Admin/DataReports/00_2008_full_report.pdf. Accessed 2 Aug 2011.

¹⁵ California Employment and Development Department. Monthly Labor Force Data for Cities and Census Designated Places (CDP), June 2011— Preliminary, Labor Market Information Division. <http://www.calmis.ca.gov/file/lfmonth/allsubs.xls>. Accessed 3 Aug 2011.

¹⁶ Wilson, WJ. 1997. *When Work Disappears: The World of the New Urban Poor*. New York, NY: Random House.

¹⁷ Klinenberg, E. 2002. “Race, Place and Vulnerability.” Chapter 2 in, *Heat Wave: A Social Autopsy of a Disaster*. Chicago: University of Chicago Press. p. 79-128.

In addition to planting trees and creating job opportunities, Urban Releaf is cultivating a new generation of local environmental leaders by creating and distributing new information about urban forestry. “The main environmental health issues and climate justice issues facing our community really is information. I think that people of color and poor people are the last ones to get information. So, they don’t understand the benefits of trees and the benefits of greenery as much as they probably did generations ago... We’ve got to get the information out... Then, that way it’s not all on you. You have more advocates, you have more stewardship,” Shakur explains.

In collaboration with researchers from UC Davis, UC Berkeley, and the USDA Forest Service Center for Urban Forestry Research, Urban Releaf is part of the Oakland Watershed Restoration and Protection Study. The study area includes the 1.4 square mile Ettie Street Watershed, which is located in West Oakland among commercial, industrial, and residential land areas. Urban Releaf is planting and maintaining 1,800 trees in the study area and engaging local youth in the water sampling procedures.

Preliminary results from the project show that planting 1,800 trees in the watershed prevents nine million gallons of contaminated water from entering the nearby San Francisco Bay. Decreasing stormwater runoff also mitigates the risks of flooding from extreme storm events. Local residents are starting to appreciate the multiple benefits of urban forestry work. Shakur describes that, “The pluses that I see over time are people recognizing the work that we do and seeing it as important and not just running around hugging trees. They now see the benefits.”

“THE PLUSES THAT I SEE OVER TIME ARE PEOPLE RECOGNIZING THE WORK THAT WE DO AND SEEING IT AS IMPORTANT AND NOT JUST RUNNING AROUND HUGGING TREES. THEY NOW SEE THE BENEFITS.”

- KEMBA SHAKUR, URBAN RELEAF
EXECUTIVE DIRECTOR

Gregory Tarver, Jr., Urban Releaf’s Director of Urban Forest Education, adds that in addition to the documented environmental benefits of urban trees, he has noticed improvements in community psychological and social well-being, such as “people’s connection to nature, connection to a greater sense of ownership and sense of community due to working on the trees.”

Shakur describes one youth whose work with Urban Releaf helped her discover her passion for forestry. “We have a young lady, named Rukeya Harris. She came to work with us when she was 11. She’s from west Oakland.” Now, Harris attends college at Clark Atlanta University in Georgia while also working for the U.S. Forest Service and is applying to graduate school at the Yale School of Forestry and Environmental Studies. “Rukeya is someone we all invested in. She doesn’t have parents. Her parents died when she was 4. So, to me she is one of our greatest joys.”

Yet, working with youth in Oakland and Richmond has not been without challenges. “Last year’s death rate was six kids in our community,” says Shakur. “One of our co-workers, Eric, was killed in November. He loved working for us. He said that planting trees was the best job he ever had.” At the time of his death, Eric was not working for Urban Releaf. “We had to let him go for lack of funding,” laments Shakur. While they will never get Eric back, Urban Releaf’s work may help decrease crime in Oakland and Richmond: while we make no causal claims, research is suggesting that areas with more vegetation have lower rates of violent and property crimes.¹⁸

¹⁸ Kuo, F. E. and W. C. Sullivan (2001). “Environment and Crime in the Inner City: Does Vegetation Reduce Crime?.” *Environment and Behavior* 33(3): 343-367.

Another challenge for Urban Releaf and the community is gentrification. Many residents in West and East Oakland and Richmond are renters, and their current homes or apartments could become out of financial reach if increased property values are passed onto them through higher rents. For example, residential trees can increase property values by five percent,¹⁹ and a 2007 analysis by the Center for Urban Forestry Research found that tree coverage contributed to \$4.7 billion in increased property values in the San Francisco Bay Area.²⁰

However, Tarver and Shakur believe that gentrification risks can be avoided if both tenants and owners are involved in the urban greening process. “People talk about it [gentrification], but they are usually very active anyway. They want the trees; they want the community to be greener. I think the biggest pushback is that they



want the people that they live next to, to plant the trees. They want the community to do the work. They want to be involved in it and they want to get the jobs. They want the trees to be taken care of,” Tarver explains. Shakur emphasizes that the sustainability of the trees and the neighborhood as a whole relies on the involvement of local residents. “Too often, other people come into communities like Oakland and Richmond who don’t live there and provide services but do not engage the community. The problem with that is when those people leave, the community is still exempt of the very people who can make a difference in those communities,” she warns.

One way to better ensure that current and future urban greening projects include local residents is to have local hiring mandates for greening projects, similar to those for some new businesses. Tarver describes what such a policy could look like, “When a community group that is supposedly focused on West Oakland or East Oakland is planting trees, then there is a certain percentage of the people from that community that need to be hired to do that work. We have to think about it in that way. We have to think about it more economically, and more about economic sustainability for that community. You can’t just say, ‘oh, we’re going to plant trees.’ No, this is actually industry, green industry. So, if it’s a green industry we need to qualify it as we would any other industry.”

Local hiring mandates could be incorporated into the implementation of both state and federal policies that fund urban greening projects. In California, the California Air Resources Board includes urban forestry projects in its implementation plan for AB 32, the Global Warming Solutions Act. At the national level, Congresswoman Doris Matsui (D-CA) has introduced H.R. 2095, the Energy Conservation through Trees Act. The legislation

¹⁹ Anderson, L. and H. Cordell. “Influence of Trees on Residential Property Values in Athens, Georgia: A Survey based on Actual Sales Price.” *Landscape and Urban Planning* 15 (1988): 153-164

²⁰ USDA. Center for Urban Forest Research. November 2007. “Past, present and future: the urban forest of the San Francisco Bay area.” http://www.fs.fed.us/psw/programs/uesd/uep/products/psw_cufr725_SFCanopyCover.pdf Accessed 4 Aug 2011.

would fund partnerships between electric utilities and local non-profit tree planting organizations to implement shade tree programs.²¹

When asked how state and local climate policies related to climate change and urban greening could more positively impact neighborhoods like West and East Oakland and Richmond, Shakur has a simple answer: “That people of color are included in the process.” Indeed, including those most impacted by the effects of climate change will help to ensure that our solutions get to the thorniest issues of climate injustice, lifting from the bottom and—as in this case—will also beautify neighborhoods and get hard to employ residents back to work.

²¹ Matsui, D. 2011. Congresswoman Matsui Introduces Energy Conservation Through Trees Act. http://matsui.house.gov/index.php?option=com_content&task=view&id=3040&Itemid=120. Accessed 2 Aug 2011.

Campeñas Keepin' it Cool in Central California

Based on interviews with Lideres Campeñas members Juana Hernandez, Maria Trejo, Itxel De La Cruz, Guadalupe Martinez, and Sonia Gonzalez

Nausea, vomiting, fatigue, high blood pressure, difficulty breathing, headaches, muscle cramps, dizziness, hallucinations, and confusion: these are the tell-tale symptoms of heat exhaustion or heat stroke. Under normal weather conditions, our bodies regulate internal temperatures by radiating heat through the skin and sweating. But during extreme heat, one's body temperature can rise to dangerously high levels, potentially leading to death. The body's inability to dissipate heat is also known as hyperthermia. Hyperthermia or heat-related mortality and morbidity are a serious concern as temperatures continue to rise. Research indicates that heat waves in California are increasing in frequency and intensity, and that regional weather extremes will become more prevalent due to climate change.²²

For farmworkers who toil in California's Central Valley picking strawberries, tomatoes, almonds, and other crops, harsh working conditions and rising temperatures put them at higher risk of heat-related illnesses and death. In 2005, when heat conditions claimed the lives of 56 people in the state of California between July and August of that year,²³ it is believed that body temperatures of 12 agricultural workers fatally reached triple digit temperatures.²⁴ Heat-mortality rates among farmworkers are consistently higher, almost 20 times higher, than any other occupational worker.²⁵ These figures are especially alarming since prevention of hyperthermia is relatively simple and California's agricultural industry generates billions in wealth every year – over \$35 billion in 2010.²⁶

In 2005, the California Occupational Safety and Health Agency (Cal-OSHA) developed the first standard in the nation to protect workers from heat-related illnesses and death. Employers are now required to provide easy and regular access to shaded rest areas, drinking water, and trainings on the symptoms of heat illness and emergency plans in the employees' primary language. Although first in the nation, with over 35,000 farms in California and a multi-lingual farm labor force, workers will only be protected if OSHA adequately enforces these standards and enable workers to report violations.

United Farm Workers and other advocates say the 2005 standards are insufficient to protect farmworkers – regulatory agencies poorly enforce these standards and farm growers poorly follow them. Heat-related illness, they say, continues to affect agriculture workers, with at least 16 hyperthermia deaths since these standards were enacted.²⁷ It is no surprise, then, that the American Civil Liberties Union (ACLU) sued Cal-

²² "Deadly Heat Waves Are Becoming More Frequent In California." *Science Daily News*, 26 Aug. 2009. Web. 4 Oct. 2011. <http://www.sciencedaily.com/releases/2009/08/090825151008.htm>.

²³ Centers for Disease Control and Prevention. National Environmental Public Health Tracking Network. Web. Accessed: 29 June 2012. www.cdc.gov/ephttracking.

²⁴ "California: Heat Deaths, Drought, Data." *Rural Migration News* 14(14) Oct 2008. University of California, Davis. Web. 19 Aug. 2011. http://migration.ucdavis.edu/rmn/more.php?id=1339_0_3_0.

²⁵ RC Luginbuhl. June 20, 2008. Heat-Related Deaths Among Crop Workers—United States, 1992-2006 Morbidity and Mortality Weekly Report (MMWR), Centers for Disease Control and Prevention, California Department of Health. Web Jan 14, 2012 <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5724a1.htm#fig>

²⁶ California is consistently the top state in cash farm receipts, \$37.5 billion in 2010. California Department of Food and Agriculture, Production Statistics. <http://www.cdffa.ca.gov/Statistics/>

²⁷ "California Legislature Welcomes Summer By Addressing Heat Illness Prevention," The Cohen Group: Environmental Health and Safety Consulting Services and "Support UFW's new legislation to Support Farm Workers from Heat," United Farm Workers. Nationally, the fatality count of "agriculture workers" and "agriculture managers" (all) due to "exposure to harmful substances or environments" between 2006-2010 is 87 and 66 people, respectively. <http://stats.bls.gov/iif/oshcfo1.htm>.

OSHA in 2009 for failing to properly conduct inspections and fine non-compliant growers,²⁸ and efforts to tighten regulations continue this summer with AB 2346, a bill which passed the State Assembly and would let farmworkers sue employers if they fail to supply water and shade within shorter distances.²⁹

California's rising temperatures create a deadly formula for farmworker communities in the Central Valley. The unequal structures of employment in California's rural communities make residents vulnerable to poverty and other climate-sensitive diseases. Agricultural workers in California earn an average of \$21,500 a year (disaggregated by gender, women average \$16,300 a year).³⁰ In California, the agricultural counties of Madera, Merced, Tulare, and Fresno have some of the highest proportions of people living below the poverty line, ranging between 21 and 27 percent.³¹

Like neighborhoods in urban settings, certain populations in rural areas are more likely to suffer adverse health impacts from heat waves. Those most vulnerable to heat-related illness include the elderly, children, those who are socially isolated, the poor, outdoors workers, or those who have pre-existing medical conditions.³² Farmworkers depend on year-round and seasonal work with constant exposure to extreme temperatures, pesticides and dangerous chemicals, and are sometimes in remote areas far from hospitals or essential resources. Furthermore, farmworker communities are likely to have English language barriers that prevent them from using public services and are less likely to have access to air conditioning that allows them to escape the heat.³³

Members of the Organización en California de Líderes Campesinas, Inc. (Lideres) live this reality as farmworkers, retired farmworkers, or family members of farmworkers in California's industrial farms.³⁴ Itxel De La Cruz, a mother of two boys and one

of Lideres' newest members, describes the challenges she deals with on the job with a keen understanding of the industry's practices: "I regularly work picking tomatoes and working conditions are unbearable. Why? Because employers' need for more profits forces us to work during peak hours of the afternoon when the sun is the strongest. They also create dangerous conditions for us...sometimes we don't have enough water, or the water is not fresh enough to drink; sometimes they spray pesticides nearby and the employers don't order us to stop working. These are very strong chemicals, but they do not share that information with us."

"EMPLOYERS' NEED FOR MORE PROFITS FORCES US TO WORK DURING PEAK HOURS OF THE AFTERNOON WHEN THE SUN IS THE STRONGEST. THEY ALSO CREATE DANGEROUS CONDITIONS FOR US... SOMETIMES WE DON'T HAVE ENOUGH WATER, OR THE WATER IS NOT FRESH ENOUGH TO DRINK."

- ITXEL DE LA CRUZ, MEMBER OF LIDERES CAMPESINAS

²⁸ ACLU of Southern California, 2009. "Landmark Lawsuit Accuses State of Failing to Protect Farm Workers from Heat-Related Death and Illness," American Civil Liberties Union of Southern California, posted in Criminal Justice and Drug Policy Reform. Web 4 July 2012. <http://www.aclu-sc.org/landmark-lawsuit-accuses-state-of-failing-to-protect-farm-workers-from-heat-related-death-and-illness/>

²⁹ Dreier, H. 2012. "Assembly Approves Farm Worker Protection Bill," Assemblymember Betsy Butler (D-District 53). Web. 4 July 2012. <http://asmcd.org/members/a53/ab-2346-latest-news/item/2855-assembly-approves-farm-worker-protection-bill>

³⁰ U.S. Census Bureau, 2010 American Community Survey 1-Year Estimates, Industry by Sex and Median Earnings in the Past 12 Months (in inflation adjusted) for Full-time, Year-Round Civilian Employed Population, 16 years and over. Occupation in "Farming, fishing, and forestry" in the state of California. Web. 1 June 2012. http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?_afpt=table

³¹ U.S. Census Bureau, 2010 American Community Survey 1-Year Estimates, Selected Economic Characteristics. Web. 19 Aug. 2011. http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?_afpt=table.

³² Public Health Impacts of Climate Change in California: Community Vulnerability Assessments and Adaptation Strategies. Heat-Related Illness and Mortality. By Paul English, Kathleen Fitzsimmons, Zev Ross, et al. 2007. Web. 19 Aug. 2011. http://www.ehib.org/paper.jsp?paper_key=climate_change_2008

³³ Shonkoff SB, Morello-Frosch R, Pastor M, Sadd J. 2009. Minding the Climate Gap: Implications of Environmental Health Inequities for Mitigation Policies in California Environmental Justice 2(4): 173-177

³⁴ A group interview was conducted in Spanish at a Lideres member's apartment in the City of Madera. A cross-generational group of five Lideres members shared stories of their challenges and successes living in a small agricultural town in California's Central Valley. Their interview responses were transcribed and are translated into English here.

Exposure to harsh working conditions and toxic chemicals – and the industry’s fundamental inequality – negatively affects farmworkers’ health and quality of life. Members listed allergies, arthritis, high blood pressure, asthma, and diabetes as common health issues they face. “Asthma is everywhere,” says Sofía Gonzales, Lideres’ youngest member and a first year student at Madera’s community college. Others, they say, are facing infectious diseases such as valley fever, a fungal infection most commonly seen in desert regions and at increasing rates in the U.S. Southwest.

The valley fever infection, coccidioidomycosis, starts in the lungs and then, and in serious cases, spreads to other parts of the body through the bloodstream – typically the skin, bones, and membranes surrounding the brain.³⁵ Lideres member Juana Hernandez has two friends, who contracted valley fever most likely by breathing in fungal particles from ground soil while working in agricultural fields. “The two men cannot walk, they now sit in wheelchairs,” she says. Research indicates that global warming-induced events such as rising temperatures, dust storms, increased rainfall and/or flooding will multiply the incidence of airborne infectious disease such as valley fever.³⁶ For places like the Central Valley and states like Arizona, Utah, Nevada, and New Mexico, the incidence of valley fever is already on its way up.³⁷

In California, the incidence rate of valley fever cases has dramatically increased over the last decade, jumping from a rate of 4.3 to 11.5 cases per 100,000 people from 2001 to 2010.³⁸ A disproportionate number of the victims are Latinos in the San Joaquin Central Valley.³⁹ Sonia Gonzalez’s father is among one of those new cases. “My dad worked for many years in garlic farms. He has large fungus tumors in his body.

“WORKERS GET HOME SICK BUT BEAR ALL THESE HARSH WORKING CONDITIONS BECAUSE THEY NEED TO SUSTAIN THEIR FAMILIES AND FEAR BEING FIRED IF THEY COMPLAIN.”

- GUADALUPE MARTINEZ,
MEMBER OF LIDERES
CAMPESINAS

He has four, two on his back and two more by his throat...but the fungus [virus] is everywhere in his body: in his blood stream, his bones, his lungs, and has an infection in his brain, but it is under control. He’s been under treatment for five years.”

Guadalupe Martinez, who joined Lideres after lobbying Sacramento’s legislators around farmworker issues, says that workers must often choose between their health and their family’s economic survival. “Workers get home sick but bear all these harsh working conditions because they need to sustain their families and fear being fired if they complain.” This was exactly what transpired when two Lideres members,

became ill from heat stress, while working in the fields. It was during the day’s hottest hours, when the women experienced their first heat exhaustion symptoms but continued working until the end of their shift. Although the women spoke with Lideres Campesinas about the incident, they were afraid to file an official workplace violation report for fear of losing their jobs.

³⁵ Galgiani, JN. Coccidioidomycosis. In Goldman L, Ausiello D, eds. *Cecil Medicine*. 24th ed. Philadelphia, PA: Saunders Elsevier; 2011: Chap 341. As cited by the U.S. National Library of Medicine Web. 19 Aug. 2011. <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002299/>.

³⁶ Kolivras, K. N., and A. C. Comrie. 2003. “Modeling valley fever (coccidioidomycosis) incidence on the basis of climate conditions.” *International Journal of Biometeorology* 47: 87-101.

³⁷ Vugia, D.J., Wheeler, C., Cummings, K.C., Karon, A. 13 Feb 2009. Increase in Coccidioidomycosis—California, 2000-2007 Morbidity and Mortality Weekly Report (MMWR), Centers for Disease Control and Prevention, California Department of Health. Web. Jan 14, 2012. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5805a1.htm>

³⁸ California Department of Public Health. “Coccidioidomycosis Yearly Summary Report 2001-2010.” Center for Infectious Diseases Division of Communicable Disease Control Infectious Diseases Branch Surveillance and Statistics Section. Web. 14 Jan 2012. <http://www.cdph.ca.gov/data/statistics/Documents/COCCIDIOIDMYCOSIS.pdf>.

³⁹ California Department of Public Health. 30 Aug 2011. “Epidemiologic Summaries of Selected General Communicable Diseases in California, 2001-2008.” Center for Infectious Diseases - Division of Communicable Disease Control Infectious Diseases Branch - Surveillance and Statistics Section. Web. 14 Jan 2012. <http://www.cdph.ca.gov/programs/sss/Documents/Epi-Summaries-CA-2001-2008-083111.pdf#page=17>.

In response to these problems, Lideres formed 23 years ago in the Coachella Valley and has since spread its efforts statewide with eight membership chapters across California’s rural communities. Primarily designed to empower and develop leadership skills of *campesinas* (women farmworkers), Lideres is a multi-issue organization that provides trainings and educational workshops on health, heat stress, labor protections, domestic violence and public advocacy. Their collaborative and advocacy initiatives have reached organizations like Cal-OSHA, the California Environmental Protection Agency, and the California Rural Legal Assistance.

Lideres’ most effective response is to develop members’ leadership skills to help them become agents of change in their respective communities. They recruit members and disseminate culturally-sensitive information through localized social networks—in laundry mats, grocery stores, and schools. Most recently, their work has brought them to address Madera’s poor public transportation system. De La Cruz explains many of Madera’s workers lack access to reliable transportation to get to and from work, to run errands, and to find cool places to rest in times of extreme heat. She says that most farmworkers rely on each other for transportation.

Madera’s poor transportation services are especially sparse during the weekends when services stop at noon. Residents are left on their own to figure out how to get to the grocery store, family members’ homes, clinics, and even church. During extremely hot days, public transportation is particularly taxing on bus riders. Many bus stops do not provide shade or benches for riders who must often wait for more than an hour for the bus. Poor access to transportation also means that many Central Valley residents have difficulty making it to cooling centers or other places that can offer refuge during heat waves.

Lideres members have been working with City and County Officials to make basic improvements in transportation access. “We’ve spoken with [Madera County’s Transit Advisory Board] to improve bus stops that don’t have shade or benches for people to relax. They’ve responded and by the end of the year, they will install shade and more benches,” De La Cruz affirms. A reliable transportation system is especially important for communities already facing unequal health impacts and those in need of health resources such as clinics, grocery stores, and cooling centers.

Extreme heat can worsen the amalgam of issues facing farmworker communities, but Lideres’ work is empowering *campesinas* and fostering individual and community-level resilience. Maria Trejo, a now retired farmworker from El Salvador, joined Lideres because “I wanted to learn to defend myself.” After multiple training and education sessions with Lideres members, she says she can now express herself in public and her involvement has transformed her life. At the community level, Hernandez adds that Lideres members have collectively strived for transportation benefits that impact everyone. Members “have spoken with legislators to remind them that many people who work in the fields need public transportation.”

“[I JOINED LIDERES BECAUSE] I
WANTED TO LEARN TO DEFEND
MYSELF”

- MARIA TREJO, MEMBER OF
LIDERES CAMPESINAS

Local leadership is important to transform vulnerable populations into resilient communities as temperatures continue to rise and climate change disproportionately impacts farmworker communities. Lideres’ efforts to educate farmworkers about heat-related illness and improve public transportation services are helping farmworker women build confidence and better prepare their communities for extreme heat events. Improved transportation alleviates some risk factors of heat-related illnesses; and in doing so, Lideres is also strengthening the resilience of California’s agricultural communities.

As a result of this work, De La Cruz has seen important changes in her community. “I’ve noticed that [county officials] have paid attention to us. I’ve noticed that we are important—that we are an important

organization—and we are taken seriously in everything that we do to help our community.” Lideres’ heat-related advocacy is important, and will continue to be so as temperatures rise. Decision-makers would be wise to continue to pay attention to their members’ voices as they look for environment, public health, and climate change solutions.

Confronting California's Water Crisis

Based on an interview with Susana De Anda, Co-Director of the Community Water Center and Coordinator of the AGUA Coalition

Although most of us take the safety of our tap water for granted, access to clean, safe, and affordable drinking water remains uncertain for many Californians. Water supply, funding for water treatment and infrastructure, and opportunities to participate in policy and management decisions do not flow equitably to all California communities,⁴⁰ leaving many without this basic resource. Over eight million Californians pay for tap water that violates the state's Safe Drinking Water Act standards.⁴¹ In the Central Valley, where more than half of all drinking water health violations in California occur,⁴² agricultural activity has created some of the most contaminated groundwater sources in the nation.⁴³ Moreover, the effects of climate change further compromise the quality and quantity of the State's water resources.⁴⁴ California is facing a water crisis, and the residents of the Central Valley are the state's hardest hit.

"WE HAVE GOT TO STOP THINKING THAT THIRD WORLD COUNTRIES ARE THE ONLY ONES WHO ARE FACING THESE KINDS OF CRISES. WE ARE IN A CRISIS."

- SUSANA DE ANDA, CO-DIRECTOR OF THE COMMUNITY WATER CENTER

Because California is relatively arid and semi-arid, modest changes in precipitation can have extreme impacts on water supplies.⁴⁵ Climate change has already contributed to measurable effects on fresh water resources, including reductions in snowpack, rising sea levels, and more erratic river flows.⁴⁶ These effects will be exacerbated in the future due to more frequent and extreme weather variations, such as increased flooding in the winters and longer periods of drought in the summers, that will severely impair water supply reliability from the northern Sierra and Sacramento-San Joaquin Delta.⁴⁷ These hydrologic challenges, coupled with increased water demand for residential and agricultural use, will lead to lower water tables, drier wells, and poorer drinking water quality.⁴⁸

Climate-related changes in water supply affect *all* Californians by damaging coastal infrastructure, compromising the productivity of farms and fisheries, and increasing risks for waterborne illness. But

⁴⁰ "Californians from disadvantaged, small, and underrepresented communities continue to face economic and environmental inequities with respect to water supply, participation in water policy and management decisions, and access to State funding for water projects. All Californians do not have equal opportunity or equal access to State planning processes, programs, and funding for water allocation, improving water quality, and determining how to mitigate potential adverse impacts to communities associated with proposed water programs and projects." Department of Water Resources. 2009. "California Water Today." California Water Plan Update 2009. Volume 1, Chapter 4. Page 44. Web. 1 Feb 2012. http://www.waterplan.water.ca.gov/docs/cwpu2009/0310final/v1c4_califtoday_cwp2009.pdf.

⁴¹ Assembly Bill 685 (Eng) Factsheet. 2011. "The Human Right to Water." Environmental Justice Coalition for Water. Web. 15 Jan 2012. http://www.cawatersummit.org/cawatersummit/Human_Right_to_Water_files/AB%20685%20EJCW%20Fact%20Sheet.pdf

⁴² Vanderwarker, A. 2009. "Central Valley Water Woes." *Race, Poverty, and the Environment*, a project of Urban Habitat. Web. 15 Jan 2012. <http://urbanhabitat.org/node/4925>

⁴³ Dubrovsky N.M., Burow, K.R., Clark, G.M., Gronberg, J.M., Hamilton, P.A., Hitt, K.J., et al. 2010. The Quality of our Nation's Waters—Nutrients in the Nation's Streams and Groundwater, 1992–2004. Web. 15 Jan 2012. <http://pubs.usgs.gov/circ/1350/>

⁴⁴ State of California, Department of Water Resources, 2007. "Climate Change in California Fact Sheet." Web 6 Jan 2012. www.water.ca.gov/climatechange/docs/062807factsheet.pdf

⁴⁵ Frederick, K. & Gleick, P., 1999. "Water and Global Climate Change: Potential Impacts on U.S. Water Resources." Pew Center of Global Climate Change, Arlington, Va.

⁴⁶ State of California Department of Water Resources. 2012. "Climate Change." Web 18 Jan 2012. <http://www.water.ca.gov/climatechange/>

⁴⁷ State of California, Department of Water Resources, 2007. "Climate Change in California Fact Sheet." Web 6 Jan 2012. www.water.ca.gov/climatechange/docs/062807factsheet.pdf

⁴⁸ State of California, Department of Water Resources, 2007. "Climate Change in California Fact Sheet." Web 6 Jan 2012. www.water.ca.gov/climatechange/docs/062807factsheet.pdf

communities that rely on groundwater are especially vulnerable.⁴⁹ Drought and drops in water tables can increase concentrations of contaminations in well water supplies, resulting in public health risks from poor water quality and expenses related to infrastructure maintenance.⁵⁰ The San Joaquin Valley is the lower eight-counties of the California Central Valley that lies between Sacramento and Los Angeles. Here, over 90 percent of the nearly four million residents depend solely on groundwater sources.⁵¹ The region already has the worst water quality in the state,⁵² and the number of contaminated wells is increasing.^{53, 54} Poor drinking water quality is linked to a number of adverse health outcomes, including weakness, depression, miscarriage and premature births, nervous system disabilities, thyroid disruption, cancer, and other acute and chronic diseases.⁵⁵

Contaminated water in the San Joaquin Valley is of even greater concern because the region also has high levels of other environmental hazards (e.g. air pollution and intense pesticide use), high rates of social stressors (e.g. poverty), and above-average rates of chronic disease.⁵⁶ These cumulative health risks can act together, exacerbating health disparities and increasing vulnerability in already disadvantaged communities.⁵⁷ For example, the region has some of the highest rates of poverty in the state (19 percent in San Joaquin County, up to 27 percent in Fresno County),⁵⁸ low levels of formal education (29 percent of the population 25 years and over does not have a high school diploma), and low English literacy (20 percent of the population five years and over speak English less than “very well”),⁵⁹ all of which can limit the community’s capacity to cope with and attend to environmental hazards. Furthermore, Central Valley residents pay twice for safe drinking water when they have to buy bottled or vended water, in addition to paying their monthly bills for unsafe drinking water. These costs add up to as much as 10 percent of a household’s income, decreasing funds available for other essentials such as food and healthcare. The United States Environmental Protection Agency considers water costs over 2.5 percent of annual income to be unaffordable.⁶⁰

Recognizing the enormity of California’s water crisis and the adverse and unjust effects in many San Joaquin Valley communities, Susana De Anda and Laurel Firestone founded the Community Water Center in 2006. De

⁴⁹ California Natural Resources Agency. 2009. California Climate Adaptation Strategy. <http://www.climatechange.ca.gov/adaptation>. Accessed 26 Aug 2011.

⁵⁰ Ibid.

⁵¹ Balazs, C., R. Morello-Frosch, et al. (2011). "Social Disparities in Nitrate-Contaminated Drinking Water in California’s San Joaquin Valley." *Environ Health Perspect* 119(9). Raw data from CDPH (California Department of Public Health). 2008. Permits, Inspections, Compliance, Monitoring and Enforcement (PICME). Sacramento, CA: California Department of Public Health, Division of Drinking Water and Environmental Management.

⁵² *Thirsty for Justice: A People’s Blueprint for California Water*, The Environmental Justice Coalition for Water (EJCW) 73 (June 2005), <http://www.eicw.org/Thirsty%20for%20Justice.pdf>

⁵³ Moore, E. and Matalon, E. 2011. “The Human Costs of Nitrate-contaminated Drinking Water in the San Joaquin Valley” Pacific Institute. Web. Accessed 15 Dec 2011. http://www.pacinst.org/reports/nitrate_contamination/nitrate_contamination.pdf

⁵⁴ Harter, T and J.R. Lund. (2012). Addressing Nitrate in California’s Drinking Water. Center for Watershed Sciences, University of California, Davis, Groundwater Nitrate Project, Implementation of Senate Bill X2 1. Prepared for California State Water Resources Control Board. <http://groundwaternitrate.ucdavis.edu>. Web 25 May 2012.

⁵⁵ Community Water Center. “Water & Health in the Valley: Nitrate Contamination of Drinking Water and the Health of San Joaquin Valley Residents.” Web. 15 Dec 2011. <http://www.communitywatercenter.org/files/PDFs/2011%20Nitrate%20Health.pdf>

⁵⁶ London, J., Huang, G., Zagofsky, T. Nov 2011. “Land of Risk, Land of Opportunity: Cumulative Environmental Vulnerabilities in California’s San Joaquin Valley.” UC Davis Center for Regional Change. Web. 30 Jan 2012. http://regionalchange.ucdavis.edu/publications/Report_Land_of_Risk_Land_of_Opportunity.pdf

⁵⁷ Morello-Frosch, R., M. Zuk, et al. (2011). "Understanding The Cumulative Impacts Of Inequalities In Environmental Health: Implications For Policy." *Health Affairs* 30(5): 879-887.

⁵⁸ ⁵⁸ U.S. Census Bureau, 2010 American Community Survey 1-Year Estimates, Selected Economic Characteristics. Web. 19 Aug. 2011. http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?_afpt=table.

⁵⁹ U.S. Census Bureau, 2006-2010 American Community Survey. County level data. Web. 2 Feb 2012. <http://factfinder2.census.gov>

⁶⁰ Environmental Protection Agency. 2011. “Small Drinking Water Systems Variances.” Web. 10 Feb 2012. <http://water.epa.gov/infrastructure/drinkingwater/pws/affordability.cfm>

Anda, a community organizer, and Firestone, a lawyer, worked together at the Center for Race, Poverty, and the Environment (CRPE) on a variety of environmental justice issues in the region, including separate campaigns around air quality, land use, hazardous waste, and water. They realized, however, that safe and affordable drinking water was such a common concern for residents that there was a need for an organization to focus solely on water issues in the region. “It was out of necessity to really leverage all the resources to really focus on one issue....It was just unrealistic that one campaign would solve the water issues in California when it is just so big. So, today we have seven fulltime staff, and our mission is to be a catalyst for community-driven water solutions through organizing, education and advocacy in the Central Valley,” explains De Anda.

Also in 2006, De Anda helped coordinate the Asociación de Gente Unida por el Agua (People United for Water, or AGUA), a grassroots coalition that advocates for systemic change for water quality improvement in the Central Valley. “We realized that the problem is just everywhere. We were winning local fights and building relationships with people on the ground, but it was really unfathomable to think that we were going

“YOU WILL GO TO THESE SCHOOLS AND THEY HAVE LAMINATED SIGNS THAT SAY ‘DON’T DRINK THE WATER.’ WHEN THOSE THINGS ARE LAMINATED, YOU KNOW YOU ARE CONFORMING TO A PROBLEM!”

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CENTER

to be able to solve this issue community-by-community...So, we called a meeting inviting all the communities that we had been working with, including some that we knew had problems but we had not worked with...It was a packed meeting, and that day AGUA was born,” recalls De Anda.

The AGUA coalition has 64 members, including representatives from 17 impacted communities and eight non-profit organizations. The coalition now also includes youth members who organized into a group called Youth for AGUA, after attending AGUA

meetings with their parents. “[Youth for AGUA] kind of just naturally evolved,” says De Anda, who recalls how surprised and impressed she was when the kids started answering questions during meetings. Youth for AGUA has two elected representatives on the AGUA coordinating council and helps drive AGUA’s action agenda. “Our youth component is very powerful because they are able to talk not only about water in their homes, but they are campaigning in their schools too...You will go to these schools and they have laminated signs that say ‘Don’t Drink the Water.’ When those things are laminated, you know you are conforming to a problem!”

Pushing back on the region’s status quo of contaminated drinking water, CWC staff and AGUA Coalition members have achieved significant victories throughout the region. For example, in Ducor, an unincorporated community of 600 people in southern Tulare County, persistent advocacy work forced the water provider to address concerns about noxious odors and dark coloring in the area’s water. “A woman called me,” remembers De Anda, “and she said ‘you know I am pregnant and the water is coming out brown, come help us.’”

De Anda and other community members mobilized meetings and workshops to train residents on how to communicate their concerns to the local water provider, Ducor Community Services District (DCSD). After the DCSD was unresponsive to their requests for action, community leaders contacted Tulare County regulators and the State Department of Public Health. “[After] a couple of months, our campaign achieved many things. One of them was we filed a complaint with the County, and the County actually sent out an investigator. We found out that the operator was not properly injecting chlorine into the well, that’s why the water was coming out like this.” De Anda recounts as she points to a plastic bottle filled with brown water that came from a Ducor family’s tap.

The residents of Ducor realized, however, that they couldn’t stop there. To ensure the DCSD did not shirk its operational duties again, the Ducor community encouraged a local leader who worked on the campaign, Ruth

Martinez, to fill the vacant seat on the DCSD's water board. Her appointment to the board is an important step toward addressing deep inequities in the water governance of the region. In Tulare County, for example, Latinos and women comprise only 19 and 21 percent, respectively, of the governing bodies of the special districts that manage water in the San Joaquin Valley even though 57 percent of the districts' population is Latino and 50 percent are women.⁶¹

"Not only is it important for community residents to understand their rights...but also to be able to feel empowered to join the decision-making body that will affect them ultimately," remarks De Anda. Accordingly, the CWC and AGUA coalition also worked to have Sandra Meraz appointed to the Central Valley Regional Water Quality Control Board, an agency that has been traditionally dominated by the interests of the agricultural industry. Meraz is the first and only board member who is a low-income person of color.⁶²

Because communities in the region have overlapping contamination from both anthropogenic and natural sources, such as nitrates from agricultural fields and animal feedlots as well as naturally occurring arsenic and uranium, the CWC and AGUA coalition advocate for upstream solutions that secure more effective groundwater protection and treatment. "The target is to think regionally, and bring all these communities together to think about how we can, as a collective, push for broader solutions," explains De Anda.

At the regional and statewide scale, AGUA members and the CWC work with the Central Valley Regional Water Quality Control Board and the State Water Board to better enforce existing standards and to create new policies when needed. For example, they secured a permitting process to monitor and regulate wastewater discharge from the region's 1,600 dairy farms, and they actively hold both agencies accountable to these requirements. CWC and AGUA lift up their solutions by communicating with media, residents, and local and state representatives about specific water concerns and needed actions. "Our perspective is not just talking about the problem, but really our members are proposing recommendations and solutions. Because people know what is going to work on the ground," said De Anda.

"I'M A BELIEVER THAT IF YOU DRINK WATER YOU ARE A POTENTIAL ALLY [WHO CAN] HELP."

- SUSANA DE ANDA, CO-DIRECTOR OF THE COMMUNITY WATER CENTER

After years of collaboration with other advocacy and research organizations and thousands of miles spent driving to lobby and testify in Sacramento, many of the solutions prioritized by CWC and the AGUA coalition were translated into State law in October 2011. The legislature passed, and Governor Jerry Brown signed, four of the five bills that were included in a "Human Right to Water Bill Package."⁶³ By design, the new laws include provisions that target benefits to currently underserved communities, such as requirements that public health notifications about water are translated into languages the community speaks (AB 938), improved grant funding for water infrastructure improvements (AB 983), access to funding to clean up contamination (AB 1221), and attention to infrastructure needs in municipal general plan updates (SB 244).⁶⁴

⁶¹ Community Water Center. 2012. "Water Injustices in the Valley: The face of water governance." Web 9 Feb 2012. <http://www.communitywatercenter.org/about.php?content=Research>

⁶² Community Water Center. "The History." Web. 18 Feb 2012. <http://www.communitywatercenter.org/about.php?content=History>

⁶³ California Water Summit. "Legislators Announce Legislative Package to Establish Human Right to Water in California." Web. 10 Feb 2012. http://cawatersummit.org/cawatersummit/Human_Right_to_Water.html

⁶⁴ California Center for Public Health Advocacy. "Human Right to Water Bill Package Summaries." Web. 8 Feb 2012. <http://www.publichealthadvocacy.org/PDFs/legislation/HRTWFactSheet.pdf>



Yet, one of the key bills that CWC and AGUA have been fighting for – AB 685, entitled the “Human Right to Water” bill – has not been signed into law. The bill would establish a state policy that “every human being has the right to clean, affordable, and accessible water for human consumption, cooking, and sanitary purposes” and would direct state agencies to implement the policy priority.⁶⁵ This piece of legislation is considered a crucial step toward leveling the playing field so that all people in California have a right to safe water. “Unfortunately, we like to say that California has clear and consistent policies—water will flow towards money and power,” says De Anda. This is the second time that CWC has worked to pass legislation that affirms water as a human right; a similar bill was vetoed by former Governor Schwarzenegger in 2009. AB 685 faces heavy resistance from the Association of California Water Agencies (ACWA), a statewide coalition of public water agencies.

Undeterred, the CWC and AGUA coalition continue to advocate for improved rights to safe water because there is no time to waste. “When it comes to climate change, a lot of our community partners are dealing with it now,” explains De Anda. “With changes in the environment, [such as] less snowpack coming down the mountain [and] mixing with groundwater, concentrations

of contaminants are going to go up. That means that a lot of other systems are going to be out of compliance.” A water system is out of compliance when the concentrations of particular contaminants in the water exceed levels considered safe for public health as determined by California’s Safe Drinking Water Act and the Federal Clean Water Act. Communities with high proportions of Latinos and renters are exposed to drinking water with higher nitrate levels than communities with higher proportions of white residents and homeowners.⁶⁶ Without immediate action to address already polluted groundwater sources, California’s changing climate will likely exacerbate these environmental health inequities.

The struggles that San Joaquin Valley residents experience with their water systems are emblematic of effects that may soon affect other regions of California, too. “When it comes to water, we are like the canaries in the coal mine,” warns De Anda. Fortunately, the CWC’s work in the San Joaquin Valley is having an impact. “We really do serve as a center of resources for the whole state... Voters need to be informed when it comes to water—where is your water coming from?” De Anda emphasizes that residents should not assume that they are drinking safe water and should make a focused effort to know about their water supply’s quality, reliability, and connection to other water systems in the state. “First you get informed, and then people are

⁶⁵ Assembly Bill 685. Introduced by Mike Eng. 10 Feb 2012. Web.http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab_0651-0700/ab_685_bill_20120113_amended_sen_v94.html

⁶⁶ Balazs, C., R. Morello-Frosch, et al. (2011). “Social Disparities in Nitrate-Contaminated Drinking Water in California’s San Joaquin Valley.” *Environ Health Perspect* 119(9): 1272-1278.

inspired to act once you figure out what is in your water...I'm a believer that if you drink water you are a potential ally [who can] help.”

CWC lifts-up an important issue rarely highlighted in association with climate change: clean water. Most think of having too much water – sea level rise – but, alternatively, lower water tables will result from drier climate in some areas and the concentration of contaminants in the water will go up. Places where this is already a problem, like the Central Valley, can take the lead on this aspect of climate justice and environmental sustainability.

Rooting Justice in Food Security

Based on interviews with Charles Mason, Jr., Founder, President, and CEO of Ubuntu Green, and Rafael Aguilera, Founder of Sacramento Yard Farmer and Liberation Permaculture

Would you prefer to eat a pesticide-free tomato grown in your neighborhood or one grown hundreds of miles away in an industrial farm? While most of us would certainly prefer the first, many lack the luxury of this choice. Over 400 agricultural goods and nearly half of all U.S. grown fruits, nuts, and vegetables are produced on California soil,⁶⁷ but more than 3.7 million Californians lack food security⁶⁸—defined as reliable access to sufficient, safe, nutritious food to maintain a healthy and active life.⁶⁹

California's agricultural abundance may become even further out of reach for Californians due to the effects of climate change. U.S. Secretary of Energy Steven Chu warns, "I don't think the American public has gripped in its gut what could happen. We're looking at a scenario where there's no more agriculture in California."⁷⁰ Although such an extreme outcome is not currently modeled at the state level,⁷¹ altered weather patterns are expected to negatively impact many crop and livestock yields due to more extreme weather events, decreased water availability, and increased risk for disease and pest invasions.⁷² The effects of climate change on food production are already materializing, with recent increases in global food prices linked to changes in the climate.⁷³

Current and projected increases in prices for food disproportionately affect poor households that spend a higher portion of their income on food compared to higher income households. In 2009, nearly 15 percent of U.S. households (50.2 million people) experienced food insecurity at some time.⁷⁴ African Americans, Latinos, low-income households, single-parent households, and children disproportionately experience food insecurity in the U.S.,⁷⁵ and in California undocumented immigrants and the unemployed are also more likely to be food insecure.⁷⁶

But decreased food production and increased food prices are not the only concerns regarding food and climate change; contemporary agricultural practices are also a cause of climate change. Food and livestock production is a significant source of climate altering pollutants. Agriculture creates all three types of the most

⁶⁷ California Department of Food and Agriculture. 2011. Agricultural Resource Directory 2010-2011. Agricultural Statistical Review. <http://www.cdffa.ca.gov/Statistics>. Accessed 25 Aug 2011.

⁶⁸ California Health Interview Survey. 2009. <http://www.chis.ucla.edu/main/DQ3/output.asp?rn=0.9469416> Accessed 2 Oct 2011.

⁶⁹ World Health Organization. 2011. "Food Security." <http://www.who.int/trade/glossary/story028/en/> Accessed 2 Oct 2011. Also see United States Department of Agriculture Economic Research Service. 2009. "Food Security in the United States: Measuring Household Food Security." <http://www.ers.usda.gov/Briefing/FoodSecurity/measurement.htm>. Accessed 2 Oct 2011.

⁷⁰ Los Angeles Times. Feb 4, 2009. "California farms, vineyards in peril from warming, U.S. energy secretary warns." <http://articles.latimes.com/2009/feb/04/local/me-warming4>. Accessed 25 Aug 2011.

⁷¹ Costello, C. J., O. Deschênes, C. D. Kolstad. 2009. "Economic Impacts of Climate Change on California Agriculture." California Climate Change Center. California Energy Commission's Public Interest Energy Research (PIER) Program. <http://www.energy.ca.gov/2009publications/CEC-500-2009-043/CEC-500-2009-043-F.PDF> Accessed 27 Aug 2011.

⁷² California Natural Resources Agency. 2009. California Climate Adaptation Strategy. <http://www.climatechange.ca.gov/adaptation/>. Accessed 26 Aug 2011.

⁷³ Lobell, D. B., W. Schlenker, et al. (2011). "Climate Trends and Global Crop Production Since 1980." *Science* 333(6042): 616-620.

⁷⁴ United States Department of Agriculture, Economic Research Service. 2009. Food security in the United States: key statistics and graphics. http://www.ers.usda.gov/Briefing/FoodSecurity/stats_graphs.htm. Accessed 29 Aug 2011.

⁷⁵ Ibid.

⁷⁶ Harrison, G.G., M. Sharp, G. Manalo-LeClair, A. Ramirez, N. McGarvey. 2007. "Food Security Among California's Low-Income Adults Improves, But Most Severely Affected Do Not Share in Improvement." UCLA Center for Health Policy Research and California Food Policy Advocates. http://www.healthpolicy.ucla.edu/pubs/files/foodinsecurity_06082007.pdf. Accessed 28 Aug 2011.

impactful greenhouse gases; carbon dioxide is released from farm equipment and soil tillage, methane is given off by the digestive processes of cows and other ruminant animals, and nitrous oxide is emitted from the production and application of fertilizers.⁷⁷

Globally, agriculture is directly responsible for 10 to 12 percent of total greenhouse gas emissions,⁷⁸ but the impact may be as high as 32 percent if the effects of land use changes, such as deforestation for croplands, are taken into account.⁷⁹ In California, the agricultural sector creates six percent of the state's greenhouse gas emissions, but this number does not account for the manufacture of inputs, such as pesticides and fertilizer, or post-farm processing and distribution.⁸⁰

Past and current farm policies have contributed to the creation of our unsustainable food system by directing billions of tax payer dollars as subsidies to the largest-scale polluters, including confined animal feeding operations (CAFOs)⁸¹ and the biggest corn, wheat, and soybean producers.⁸² To reduce human-induced climate change and ensure food security for current and future generations, it is essential to rethink how and where we produce our food.

One approach is to localize agriculture and such local-level solutions that are sprouting up in Sacramento through the work of Ubuntu Green, Liberation Permaculture, Sacramento Yard Farmer, and other food justice advocates across the valley region. For example, Ubuntu Green and Sacramento Yard Farmer co-created an Edible Garden Campaign, which pledges to create at least 350 edible home gardens by 2013 to encourage more healthy and sustainable eating and reduce the region's carbon footprint. Growing food organically and consuming locally can reduce greenhouse gas emissions by reducing vehicle miles travelled, limiting the use of industrial farm equipment and nitrogen-based fertilizers, and sequestering carbon in the plants and soil.

The Edible Garden Campaign's goal of creating 350 gardens was inspired by the 350.org campaign, a global grassroots movement to decrease carbon dioxide emissions worldwide. The number 350 refers to 350 parts per million of carbon dioxide in the atmosphere, a level that scientists say we must reach to prevent the most disastrous effects of climate change. The current global level is 392 parts per million.⁸³

Ubuntu Green, named after the African-based concept of community and interconnectedness, is a non-profit organization based in the Oak Park neighborhood of Sacramento. It was formed in 2009 under the leadership of Charles Mason, Jr., a resident of Oak Park. Mason recognized that his community's priorities for health, sustainability, and equity could be brought together through the goal of "greening." Ubuntu Green

⁷⁷ United States Department of Agriculture, Natural Resources Conservation Service and Sustainable Conservation. 2008. "California Agriculture and Climate Change Challenges & Opportunities for Profitability".

<http://www.suscon.org/cowpower/pdfs/CaliforniaAgricultureandClimateChange.pdf> Accessed 28 Aug 2011.

⁷⁸ Smith, P., D. Martino, Z. Cai, D. Gwary, H. Janzen, P. Kumar, B. McCarl, S. Ogle, F. O'Mara, C. Rice, B. Scholes, O. Sirotenko. 2007. "Agriculture." In *Climate Change 2007: Mitigation*. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. http://www.ipcc.ch/publications_and_data/ar4/wg3/en/ch8.html. Accessed 28 Aug 2011.

⁷⁹ Bellarby, J., Foeroid, B., Hastings, A. and Smith, P. 2008. *Cool Farming: Climate impacts of agriculture and mitigation potential*. The University of Aberdeen for Greenpeace. <http://www.greenpeace.org/international/Global/international/planet-2/report/2008/1/cool-farming-full-report.pdf>. Accessed 25 Aug 2011.

⁸⁰ California Air Resources Board. 2008. "Climate Change Scoping Plan Appendices Volume 1: Supporting Documents and Measure Detail." Appendix C: Sector Overviews and Emission Reduction Strategies http://www.arb.ca.gov/cc/scopingplan/document/appendices_volume1.pdf Accessed 28 Aug 2011.

⁸¹ Union of Concerned Scientists. 2008. "Confined Animal Feeding Operations Cost Taxpayers Billions, New Report Finds." http://www.ucsusa.org/news/press_release/cafo-costs-report-0113.html. Accessed 28 Jun 2012.

⁸² Environmental Working Group. 2012. "The United States Summary Information."EWG Farm Subsidies. <http://farm.ewg.org/region.php?fips=00000>. Accessed 28 Jun 2012.

⁸³ 350.org. 2011. "Our Mission." <http://www.350.org/en/mission>. Accessed 29 August 2011.

works to empower community members through education and advocacy around land use, environmental health justice, transportation, energy efficiency of buildings, and access to healthy food.

In each program area, including the Edible Garden Campaign, Mason emphasizes the significant changes that can happen once people are spurred into action. “People start talking about climate change, but unless it is making you sick and you know it is making you sick, [they think] what does it have to do with me? And what can I do about it? Most people don’t think they know how to change such a huge thing. But to the contrary if everyone did one thing, you would start seeing a significant impact to mitigate the effects of climate change. I think that is part of the positive messaging that we try to do.”

In addition to mitigating the causes of climate change, community and household gardens also play a role in climate change adaptation and improving public health. By producing food in their own yards or neighborhoods, households and communities improve their resiliency to fluctuations in food availability and affordability. Sacramento County produces over \$300 million worth of agricultural goods,⁸⁴ but many of these are exported or not made accessible to local residents. Over 40 percent of low-income adults in Sacramento County are not able to afford enough food, ranking it 48th out of California’s 58 counties for food security.⁸⁵ However, the growth of community gardens and local food initiatives is increasing awareness and action around this discrepancy.

Rafael Aguilera, a Sacramento native, recognized that the contradiction between agricultural abundance and hunger is unjust and preventable. He works closely with Ubuntu Green and has started a business, Sacramento Yard Farmer, to build garden boxes across Sacramento. He coordinates a community event series called Liberation Permaculture to provide a forum for lively discussions and “food for thought” around community relationships with nature. Aguilera explains, “In Sacramento, 2 percent of the food grown in this region is consumed in the area. We have a city wide goal to move that up to 10 percent in 10 years...Doesn’t that sound crazy? We grow 90 percent of food for export, when there are people hungry and starving in this area. So it would be one thing to increase the amount of food that we eat locally, it would be another thing to increase the amount of food that people who don’t have food eat locally.”

“WE GROW 90 PERCENT OF FOOD FOR EXPORT, WHEN THERE ARE PEOPLE HUNGRY AND STARVING IN THIS AREA. SO IT WOULD BE ONE THING TO INCREASE THE AMOUNT OF FOOD THAT WE EAT LOCALLY, IT WOULD BE ANOTHER THING TO INCREASE THE AMOUNT OF FOOD THAT PEOPLE WHO DON’T HAVE FOOD EAT LOCALLY.”

- RAFAEL AGUILERA, FOUNDER OF SACRAMENTO YARD FARMER AND LIBERATION PERMACULTURE

To ensure that some of Sacramento’s most food insecure households benefit from the edible garden campaign, 150 of the 350 gardens will be targeted for low and moderate-income families, and include additional educational and technical assistance services. Aguilera adds that the Edible Garden Campaign is all about, “getting people the means of their own production, not just in an economic sense, but it’s really about resiliency, self-sufficiency, people becoming producers and not just consumers.”

Mason emphasizes that there are also health benefits of improving access to fresh fruits and vegetables, such as changing dietary habits that contribute to chronic diseases like diabetes and obesity. “We just started our

⁸⁴ California Department of Food and Agriculture. 2011. Agricultural Resource Directory 2010-2011. http://www.cdffa.ca.gov/Statistics/PDFs/ResourceDirectory_2010-2011.pdf. Accessed 25 Aug 2011.

⁸⁵ California Food Policy Advocates. 2010. 2010 Sacramento County Nutrition and Food Insecurity Profile. <http://www.cfpa.net/2010CountyProfiles/Sacramento.pdf>. Accessed 23 Aug 2011.

new youth team [in 2011]. In the beginning of the summer, they were walking into meetings with candy bars, and chips, and sodas...In a 3-month period they stopped badgering me to have junk food and hamburgers, and they started eating different foods.”

Ubuntu Green’s Green Youth Leadership Team (a.k.a. G-Squad) is now excited to combine their new interest in healthy food with a project to improve their neighborhood. “They are going to call it Ubuntu Urban Gardens and use artistic quality graffiti as part of the community garden they are going to build...They are deciding how they want to impact their environment. They figure this is what they need to do; turn this eye sore, a potentially bad space, into a green space in the community and incorporate art,” says Mason. Ubuntu Green procured a site for the youth-created garden behind a store that used to sell liquor and now sells fresh local produce instead.

Other community-based gardens have already had transformative impacts. Aguilera explains a particularly moving experience working with residents of a low-income apartment complex to put garden boxes in the courtyard of their building that used to be known for violence and drugs. “We built some raised beds right in the middle of the complex, where the property manager said someone had gotten stabbed and died at one point in time. But now, there are garden boxes there, and there are tomatoes and squash and sunflowers popping out. They have barbeques out there now; people come into the space rather than ignoring it or trying to stay away from seeing their neighbors. It’s become the focal point of that place. They call it ‘the palms’ now instead of ‘white castle’ and they have an organic community garden.”

“THERE IS A MOVEMENT THAT PEOPLE ARE STARTING TO TEAR DOWN THEIR FENCES...THINGS ARE CHANGING FOR THE BETTER. THERE’S BEAUTIFICATION GOING ON, AND WHEN YOU PUT A GARDEN IN THE FRONT IT REALLY STARTS CONVERSATIONS ABOUT THINGS.”

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Mason and Aguilera have partnered with other organizations, including Soil Born Farms and Alchemist Community Development Corporation, to construct a number of community gardens. But, most of their work has been creating gardens for individual households. Aguilera explains that he likes when the sunniest part of a household’s yard happens to be in the front, and they get to build a garden where everyone can watch the bounty grow. “There is a movement that people are starting to tear down their fences. Charles [Mason] is a good example. He had a fence, and he tore it down and put in garden boxes ...Things are changing for the better. There’s beautification going on, and when you put a garden in the front it really starts conversations about things,” says Aguilera. Another resident in Oak Park told Aguilera that she has met a lot of her neighbors because of her garden. “They come by and ask ‘what is this?’ and ‘can I pick a flower?’... It’s a nice thing to be able to offer your neighbors some flowers.”

Despite the successes of the campaign so far, creating and maintaining thriving garden boxes in the diverse neighborhoods of Sacramento poses challenges. “There is a huge challenge on the messaging to the community,” says Mason. The Oak Park area in particular is incredibly diverse, with 60 percent people of color, including 23 percent Black, 11 percent Asian, and 26 percent Other.⁸⁶ Thirty percent of residents are

⁸⁶ Community Services Planning Council. 2008. Social Indicator Reports by Zip Code in Sacramento County: 95817. <http://www.communitycouncil.org/level-3/zipcodes/95817.pdf>. Accessed 27 Aug 2011.

non-native English speakers,⁸⁷ and Ubuntu Green budgets extra resources to make its meetings and outreach materials available in English, Spanish, Hmong, and Vietnamese.



Mason reflects that the mainstream food movement is perceived as largely aimed at white and upper-income residents and is not readily embraced by all in South Sacramento and Oak Park. The Oak Park community has a history of being negatively impacted by infrastructure development decisions, such as the construction of three freeways in the 1960s that partitioned the community, the lack of light rail service in the area, and the numerous toxic land uses that have persisted. In light of these past failures in public participation, Mason sees that it is absolutely necessary to pay special attention to engaging residents in ways that are culturally and ethnically relevant. “It is about the relevance of the types of food, and recipes, and education,... and relative to their daily realities. How do you address untraditional work schedules? How do you address families that aren’t structured the same way as other people, and fast lifestyles?” Mason adds that Ubuntu Green is working now to “improve our penetration into immigrant communities [and confront] culture issues, comfort issues, trust issues, and immigration status issues.”

While cultural competency will remain an ongoing programmatic need for all community-engaged work in Sacramento’s diverse communities, there are two main policy targets that could directly support the Edible Garden Campaign and other food access work in the region. The long-term viability of community and home gardens could be greatly improved by comprehensive changes to city zoning ordinances. Mason describes that, “The goal is to take away the restrictions and the cost barriers to convert private and public land for community gardens,...to make it easier to set up farm stands, and...for all these gardens to resell food into the community.”

The Sacramento City Council approved an ordinance to allow privately-owned, residentially zoned vacant lots to become community gardens that can sell goods on-site.⁸⁸ This ordinance is a step in the right direction, but many food justice advocates point out that the costs associated with the re-zoning are prohibitive, especially for non-profit organizations and residents in low-income areas.⁸⁹ The new law also does not account for re-zoning publicly-owned land for gardening uses. Mason hopes that someday he will be able to convert the fenced, vacant lot across the street from his house into an open, community garden.

⁸⁷ Ibid.

⁸⁸ Sacramento City Council. 2011. Ordinance No. 2011-030. <http://qcode.us/codes/sacramento/revisions/2011-030.pdf> Accessed 28 Aug 2011.

⁸⁹ Sala, A. 2011. “Celebrate Community Gardens... but who’s not present at the table?” *Sacramento Press*. 6 Aug 2011. http://www.sacramentoexpress.com/headline/54605/Celebrate_Community_Gardens_but_whos_not_present_at_the_table. Accessed 29 Aug 2011.

Another way to support the expansion of local food production is through investments in research on urban agriculture. Aguilera and Mason both express concern about the potential contamination of the soil beneath the gardens they have been building. So far, they have been constructing raised beds and bringing in organic soil and compost to avoid the risk of planting in soil that may have lead or other toxins in it. Assessments about which areas are safe for planting or not would really help expand the Campaign, says Mason. “We have to be getting out there dealing with how do we clean up this land...or at least get out there and test them.” Aguilera adds that, “This is important for sensitive areas like playgrounds and schools, where kids are scratching the soil and getting balls lost in it. We need to do this all over the place, it’s not just Sacramento.”

At the individual level, Aguilera reflects that there are three steps to transition from a reliance on climate-damaging, unstable industrial agricultural practices, to more community-based food production. “One, try to stop the bleeding of what is going on. Two, lead by example...be the change and do what you think is necessary. And then three, adopt it as a lifestyle and practice what you do every day. I mean that is the environmental justice struggle to me.” He also focuses on the large impact of seemingly small accomplishments. “Installing a drip system is tedious and time consuming, but this is it. This is the revolution right here. What’s most empowering about all this work is training people to do things that they didn’t do before, but they are things that they will come to do more often.”

“WHEN A KID COMES TO ME AND SAYS, ‘I’M RECYCLING’ OR ‘I’M DOING COMPOSTING,’ THEY NOW HAVE MADE A SIGNIFICANT IMPACT ON THE COMMUNITY AND THE CLIMATE, JUST WITH THEIR OWN EFFORTS. IF THAT IS SOMETHING THAT WE CAN INSTILL THROUGHOUT THE COMMUNITIES, THEN WE’LL SEE AN IMPACT.”

- CHARLES MASON, JR., FOUNDING LEADER OF UBUNTU GREEN

By combining institutional change and resources with individual education and action, Mason and Aguilera believe there is hope for creating more sustainable and equitable systems of food production. “When a kid comes to me and says, ‘I’m recycling’ or ‘I’m doing composting,’ they now have made a significant impact on the community and the climate, just with their own efforts. If that is something that we can instill throughout the communities, then we’ll see an impact,” affirms Mason. Aguilera echoes, “That’s our mission: to transform the way people relate to nature and relate to each other.” And in the process, by creating food system alternatives to industrial agriculture, they will decrease their carbon footprint and slow climate change.

THE NEXT WAVE: HEALTH, ZONING, AND TRANSIT

While heat, water, and food are cases where climate impacts on the poor and communities of color are clear, there are a series of other arenas where environmental justice actors are raising concerns. Here, we examine a sort of “next wave” of such concerns: the intersection of land use and transportation policies. As it turns out, the unequal and damaging effects of incompatible land uses, including industrial polluters and busy transportation corridors right next to neighborhoods, will be exacerbated by the effects of climate change. Reducing pollution in neighborhoods where toxic land uses are most concentrated may yield disproportionate reductions in greenhouse gases.

In San Diego, for example, the Environmental Health Coalition has a history of community-driven land use planning to combat environmental injustice work in San Diego’s Barrio Logan and National City. That work is even more important now in connection to broader concerns of climate change impacts. In Los Angeles, Clean Up, Green Up is a wide-ranging coalition of grassroots environmental justice organizations intending to repair poor planning and incompatible zoning through a comprehensive vision and strategy: 1) *Prevent* more pollution, 2) *Reduce* existing pollution, and 3) *Revitalize* communities through green economic development and open space.

Another land use dimension: repairing the long-lasting legacy of our excessive reliance on the private automobile. California is notorious for cars and congested freeways – many of which disproportionately cut through low-income neighborhoods of color and are sites of disproportionate pollution. The Bus Riders Union is working to reverse California’s “car addiction” by building public transportation infrastructure and increasing transit services in underserved neighborhoods.

Turning from cars to big rigs, East Yard Communities for Environmental Justice in Los Angeles County and the Center for Community Action and Environmental Justice in Riverside and San Bernardino counties are working together to dampen the burden of the region’s logistics industry. Trucks and trains that carry cargo from international suppliers at the Port to inland warehouses, to our supermarkets and shopping centers leave a trail of greenhouse gases and toxic co-pollutants, including asthma-inducing particulate matter. While trade is an important economic driver, concentrated emissions from trains, trucks, and ships are causing ill-health along these busy corridors – and addressing the disparities will reduce the pressures on communities as well as on the climate.

Planning for Health

Based on interviews with Georgette Gómez, EHC Campaign Director for Toxic Free Neighborhoods Campaign, Carolina Martinez, EHC Policy Advocate for Toxic Free Neighborhoods Campaign in National City, and Jose Medina, EHC Board Member and Resident of National City

Nobody wants an industrial facility for a neighbor, yet many families have manufacturing centers, auto body shops, metal recycling centers, freeway intersections, and other hazardous land uses as close as a few yards from their bedroom windows or front doors. The technical term to describe industrial and residential areas in close proximity to one another is “incompatible land use,” but impacted communities call it injustice – an injustice that public health advocates say will be exacerbated by the effects of climate change.

Air pollution from point sources (e.g. factories and auto body shops) and mobile sources (e.g. diesel trucks and cars) causes numerous short and long-term health effects, including asthma, cancer, and cardiovascular disease.⁹⁰ In California, air pollution exposure is responsible for 19,000 premature deaths, 280,000 cases of asthma symptoms, and 1.9 million lost work days each year.⁹¹ Furthermore, neighborhoods that have factories and freeways instead of grocery stores and parks prevent residents from accessing essential resources and walking for recreation and transportation. People of color and low-income individuals are more likely to live in close proximity to hazardous land uses,⁹² and are more vulnerable to the risky conditions created by such land uses due to high rates of chronic disease, including respiratory diseases, obesity, and cardiovascular disease.⁹³

These unequal and damaging effects of incompatible land uses will be exacerbated by the effects of climate change unless significant pollution reductions and urban rearrangements are realized. Rising temperatures, which are already happening in California,⁹⁴ increase the formation of ground-level ozone, the primary component of smog. Increased temperatures of just one degree Fahrenheit significantly increase ozone levels and can cause costly adverse health impacts, especially in California where a large proportion of the population lives in urban areas that already have high ozone levels.⁹⁵

The main source of ground-level ozone is vehicle exhaust. Therefore, reductions in local vehicle miles traveled can greatly improve health outcomes.⁹⁶ Smart growth land use patterns, such as high-density and mixed-use developments near public transit centers, can decrease vehicle miles traveled and improve air quality.⁹⁷ At

⁹⁰ Environmental Protection Agency. 2010. “Effects of Air Pollution – Health Effects.” <http://www.epa.gov/eogap1/course422/ap7a.html>. Accessed 13 Sept 2011.

⁹¹ California Air Resources Board. 23 November 2009. “Quantified Health Impacts of Air Pollution Exposure.” www.arb.ca.gov/research/health/qhe/qhe.htm. Accessed 21 June 2010.

⁹² Bullard, R., Mohai, P., Saha, R., Wright, B. 2007. “Toxic Wastes and Race at Twenty 1987-2007.” A report prepared for the United Church of Christ Justice and Witness Ministries. <http://www.ucc.org/assets/pdfs/toxic20.pdf> Accessed 15 Sept 2011.

⁹³ United States Department of Health and Human Services. Centers for Disease Control and Prevention. 2011. “CDC Health Disparities and Inequalities Report — United States, 2011” <http://www.cdc.gov/mmwr/pdf/other/su6001.pdf> Accessed 15 Sept 2011.

⁹⁴ Moser, S., Franco, G., Pittiglio, S., Chou, W., and Cayan, D. 2009. “The Future is Now: An Update on Climate Change Science Impacts and Response Options for California.” California Climate Change Center Special Report. Prepared for the California Energy Commission. <http://www.energy.ca.gov/2008publications/CEC-500-2008-071/CEC-500-2008-071.PDF> Accessed 10 Sept 2011.

⁹⁵ Perera, M., Sanford, E. and Sanford, T. 2011. “Climate Change and Your Health: Rising Temperatures, Worsening Ozone Pollution.” Union of Concerned Scientists. http://www.ucsusa.org/assets/documents/global_warming/climate-change-and-ozone-pollution.pdf Accessed 13 Sept 2011.

⁹⁶ Friedman, M. S., K. E. Powell, et al. (2001). “Impact of Changes in Transportation and Commuting Behaviors During the 1996 Summer Olympic Games in Atlanta on Air Quality and Childhood Asthma.” *JAMA: The Journal of the American Medical Association* 285(7): 897-905.

⁹⁷ Urban Land Institute. 2010. *Land Use and Driving: The Role Compact Development Can Play in Reducing Greenhouse Gas Emissions*. Washington, D.C.: Urban Land Institute.

the same time, substantial scientific evidence shows that sensitive land uses, such as residential communities, schools, and senior centers, must be located at considerable distances from point and mobile sources of pollution to decrease health risks.⁹⁸ To avoid perpetuating the already extreme and unjust burdens of toxic exposures that threaten our health and environment, current and future land use patterns must keep people

away from pollution sources as well as out of their cars.



Some guidance on how to change land use planning from the status quo can be found on a 20-foot tall mural in the Barrio Logan neighborhood of southeastern San Diego: “Varrío Sí, Yonkes No!” The simple message, “Neighborhood Yes, Junkyards No!”, is displayed across a large concrete pylon below the Coronado Bridge and is one of many works of art that make up Chicano Park. The Park was created after a decade-long struggle to receive at

least some community benefit from the land use decisions in the 1960s that allowed the construction of the Coronado Bridge and I-5 freeway, which partitioned the community and displaced residents. This particular mural stands as a response to a history of zoning decisions in the area that allowed industrial land uses, such as 48 auto junk yards that were owned by people from outside the neighborhood, to move into a thriving Latino residential community. The park as a whole, with heavy flows of loud traffic that literally cover the park and neighboring homes, stands as a symbol of how land use decisions can have real and long-term damaging effects on communities. However, the fact that the park exists at all and contains a diverse collection of art to remind us of the continuing struggles for environmental justice, demonstrates the benefits that can be created from land use planning when public participation and concern for existing residents is considered.

Environmental Health Coalition (EHC), one of the oldest grassroots environmental justice organizations in the country, sees that merely *considering* residents’ concerns in land use decision processes is not enough. To both address current incompatible land uses and to avoid future developments that further harm environmental and public health, it is necessary to *prioritize* public participation through education, outreach, and open dialogue. EHC has worked for over 20 years in the Barrio Logan neighborhood and engaged in land use issues when a member expressed concern about emissions from a metal plating business that included cancer-causing

⁹⁸ California Environmental Protection Agency, California Air Resources Board. 2005. “Air Quality and Land Use Handbook: A Community Health Perspective.” <http://www.arb.ca.gov/ch/handbook.pdf>. Accessed 10 Sept 2011.

chemicals such as hexavalent chromium. “The amount going in the air was pretty significant. And literally no more than three feet away you have a family...and the exhaust from the business is going into their yard. That was when we started going deeper into the land use,” recalls Georgette Gómez, Campaign Director for Toxic Free Neighborhoods at EHC.

The metal plating business finally received heavy fines and was forced to close up shop, but only after EHC consistently organized residents, conducted research, and advocated at the local, county, and state level for 10 years—all while residential neighbors continued to be exposed to dangerous levels of toxic pollutants.

“Having gone through this whole process and having it take 10 years, we realized that we couldn’t go shop by shop. So, [we began] looking at the underlying issue, which is zoning in the community,” says Gómez.

“WE WANT TO BE ABLE TO ATTRACT AND ENCOURAGE DEVELOPMENT THAT IS SERVING THE COMMUNITY, THAT IS NOT GOING TO [ADVERSELY] IMPACT THE HEALTH OF THE COMMUNITY.”

- GEORGETTE GÓMEZ, EHC CAMPAIGN DIRECTOR FOR TOXIC FREE NEIGHBORHOODS CAMPAIGN

The foundation for zoning in Barrio Logan is the community plan, a document that EHC realized had not been revised since 1978 and is the oldest community plan in San Diego. EHC pressured the City to begin the updating process. When the City failed to take action in a timely manner, EHC began its own planning process by holding meetings with community leaders. They created a list of community priorities and drafted a plan to get feedback from the entire neighborhood. “We did canvassing, we did a lot of different presentations with groups to talk about it and see if it really reflects what people wanted in the community. And then from there we have been utilizing that piece of work to influence the current process that the City has started...it has been a very important tool to influence that process,” says Gómez. The plan includes specific ways to meet residents’ priorities, which include preserving community character, creating and maintaining affordable housing, and improving access to open space.

Gómez emphasizes that employment and business opportunities can be created in the community while also protecting the health of residents and the environment. “We want to be able to attract and encourage development that is serving the community that is not going to [adversely] impact the health of the community. Right now we have a zone that basically allows anything. It doesn’t matter what it is. If you pay, you are welcome to come. So that is a problem... We have recyclers, we have junkyards, everything that you can think of we have it. At one point we had a power plant. This is a very impacted community,” she says. EHC is helping residents and the City see that the land uses do not have to remain this way.

Through policies in the community plan update, EHC is defining what types of industry are most appropriate and strategies to sensitively organize them in Barrio Logan. For example, “We just don’t want to welcome any type of industrial [land use], it should be for a purpose,” says Gómez. She specifies that maritime industries and businesses that support the San Diego Port and U.S. Naval Bases near Barrio Logan should be located close to those hubs to minimize greenhouse gas emissions and local air pollution. “If they have to go 10 or 20 miles away, there is an impact on the climate...Knowing that this type of industry has to live somewhere, it makes better sense in terms of placement to have it closer.” EHC’s plan also includes buffers around industrial land uses to ensure that residential and other sensitive areas are not located too close to the industrial activities.

Strategically separating sensitive and industrial land uses is crucial for addressing health and equity concerns in other neighborhoods as well. Just south of Barrio Logan is National City, a community that is larger but has a similar demographic profile as Barrio Logan: the median household income is well below the rest of San Diego County, over 60 percent of households are renter occupied, and the majority of the population is

Latino. National City has more than twice the concentration of polluting land uses per square mile (44 mi²) than San Diego County as a whole (17 mi²).⁹⁹ One of National City's neighborhoods, Old Town (also known as Westside), has a concentration of 222 polluting businesses per square mile¹⁰⁰ and a childhood asthma rate of 14 percent, twice the state average.¹⁰¹ In addition to compromising public health, National City's mix of industries and homes within such close proximity has caused deadly fires and is considered a significant threat to public safety.¹⁰²

In 2005, National City's City Council responded to residents' concerns by preparing a Westside Specific Plan that could address the incompatible land uses. To ensure that residents' priorities for change were adequately included in the planning process, EHC conducted a community survey in collaboration with the San Diego Organizing Project and the Old Town Neighborhood Council. EHC's SALTA program, which stands for "Salud Ambiental, Lideres Tomando Acción" or "Environmental Health, Leaders Taking Action," trained 18 community leaders, educating them about the Specific Plan process, land-use, redevelopment, environmental health, community organizing, and data collection.

The leaders then collected survey information from over 100 individuals and created a vision for the area that differed from the direction of the Council's plan. "The City wanted the Old Town area to become like downtown San Diego, and so the residents got involved and they started to reclaim their neighborhood and say 'we want industries out, we want affordable housing, we need more parks,'" recalls Carolina Martinez, a Policy Advocate for EHC's Toxic Free Neighborhoods Campaign in National City. In 2010, the City Council approved a Westside Specific Plan that included many of the elements put forward by EHC's grassroots-engaged plan, including affordable housing development, residential re-zoning, and an amortization ordinance.

The amortization ordinance requires industrial businesses that are within the boundaries of newly re-zoned areas to conform their land use to comply with the new zoning regulations or else re-locate or close. The policy gives the City the ability to enforce changes in existing land uses that would otherwise be exempt from the re-zoning specified in the new Westside Plan. "In planning, when you do zone changes the previous zoning is still protected by the

"THE RESIDENTS GOT INVOLVED AND THEY STARTED TO RECLAIM THEIR NEIGHBORHOOD AND SAY 'WE WANT INDUSTRIES OUT, WE WANT AFFORDABLE HOUSING, WE NEED MORE PARKS.'"

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legal non-conforming rule. We saw that as a problem because once the local jurisdiction does its changes, and they clearly want to do the right thing, by law previous uses are still protected," Gómez explains. Amortization is not traditionally included in residential land use policies, but EHC identified it as an essential policy tool to ensure the zoning changes that they advocated for have real effects. "[It] basically gives the authority for the City to move forward in how they want to see the community evolve," describes Gómez. The amortization ordinance will be implemented over time, with each of the 50 polluting businesses in the area

⁹⁹ Environmental Health Coalition. 2011. Amortization Frequently Asked Questions.

¹⁰⁰ Ibid.

¹⁰¹ Environmental Health Coalition. 2005. "Reclaiming Old Town National City: A Community Survey." http://www.environmentalhealth.org/PDFs/PDFs_Archive/OTNC_CommSveyReport_09_13_05.pdf. Accessed 10 Sept 2011. Joy Williams, Research Director at EHC, reports that the survey of Old Town residents asked parents about current asthma presence for their children and found a rate of 14%. EHC determined that the most comparable statewide rate is from the Behavioral Risk Factor Surveillance System (BRFSS) by the Centers for Disease Control and Prevention, which reports a childhood asthma rate of 6.8% for California.

¹⁰² Environmental Health Coalition. 2011. Amortization Frequently Asked Questions.

being phased out one by one through separate legal proceedings. Martinez reports that two to three businesses are expected to be phased out within the next two years.

While the Westside Specific Plan is a significant victory for the 1,500 residents in the Old Town neighborhood, there is also a need to make sure that the other 56,000 people in National City can benefit from upcoming land use decisions. EHC and community leaders worked with the City Council to incorporate a Health and Environmental Justice Element into the General Plan update that was approved in June 2011. The Council was already onboard with adding a Health Element, but the community input encouraged the City to also include environmental justice priorities, such as attention to geographic and procedural equity. “[The City’s] intent was to start with the health piece because it is becoming the popular thing, but we were able to get them to incorporate the environmental justice aspect of it. I know in the past we have had other cities in San Diego County, such as Chula Vista and San Diego, incorporate environmental justice language, but not a full on element to a general plan. This would be the first one of its kind,” says Gómez. She added that the rationale for adding a Health and Environmental Justice Element was to ensure that current and future Council members would address, rather than perpetuate, the injustices that previous Council members caused by ignoring the needs and priorities of certain communities.

EHC’s success in modifying land use patterns and decision-making processes in Barrio Logan and National City is due in large part to the organization’s attentive grassroots-level organizing in both communities. Jose Medina, a 40-year resident of National City, became involved in EHC’s organizing and policy work because of the focus on issues that are most important to him and his neighbors. “What EHC does is, it does not come into a neighborhood and say ‘we’re going to do this.’ It comes in and asks from the neighborhoods, ‘what do you need?’ It can be done through lists, it can be done through surveys of course, and then [based on] the topics that the people need, EHC will work on what is the most relevant...and encourage the people who are taking interest in becoming community leaders.” Medina attended EHC’s SALTA training sessions and now serves as Chair of the Old Town Neighborhood Council and as a board member for EHC.

Another National City resident, Adriana, connected with EHC because of concerns for the health of her children who have asthma. “She [Adriana] moved from Barrio Logan because the doctor said that if you want your kids to be healthy you need to move away from Barrio Logan. She ended up in National City, and in National City she faced the same issue. She realized that she couldn’t continue to move, but rather needed to make changes in her community so that her kids would be ok. She has been involved in the campaign for the last 5 years and is one of our *promotoras* [community health leaders],” recalls Martinez.

EHC’s use of the *promotora* organizing model has also been influential for residents in Barrio Logan. For example, Maria Martinez has worked with EHC for over 17 years. “She came to San Diego as a migrant with her family, and she literally started getting involved from the beginning...[In] the beginning, she was extremely shy, wouldn’t want to talk to anybody. Now, she has been in front of different types of people,” and she is much more comfortable, reports Gómez. Maria Martinez has worked on all stages of EHC’s work, including data collection, data verification, and presentations to other residents and local, regional, and state decision-makers. “That has assisted her in her confidence because when she is outreaching to somebody she knows the issues...[and] she knows the science of it as well,” Gómez adds.

Jose Medina explains that EHC’s organizing efforts have created “a bubbling up of leadership, of empowerment, right from the neighborhoods themselves,” and it is something that could be replicated in other neighborhoods or cities. “I recommend that any other community do that. Go on out, knock on doors, feel who is going to be a leader and encourage that person...and so where you have none, you have one, you have two,” he encourages. Carolina Martinez affirms that targeted grassroots organizing is essential to create

more equitable land use policies that also consider the potential impacts of climate change. “Local context affects everything, it is through people being engaged in the planning process that they are able to make changes...Helping residents become more meaningfully engaged in the planning process is key to being able to push policies that are really beneficial to the local community. That is one of the things that would make a huge difference in other cities,” she describes.

In addition to EHC’s community organizing, their policy-level approaches may also translate into benefits in other communities. For example, Old Town’s implementation of the amortization ordinance may provide a useful example to other areas that seek to rectify a legacy of unjust and unhealthy land use patterns. “We are hoping that with the amortization - once we are able to go through at least the first 2 or 3 cases - it becomes another tool that communities are able to use to create more compatible land uses or prevent incompatibility,” says Martinez.

Public health and environmental justice goals are not required elements in city general plans, but Martinez suggests that a state policy could help bring those priorities to the forefront of land use planning and climate change adaptation and mitigation. “We would want to see health and environmental justice be integrated in the required elements at the statewide level...low-income

communities of color are the ones that are most affected by the policies, so they need to be considered in all policies when they are put

together.” Most policies, Martinez says, only prioritize evaluating economic impacts, but “you should also be thinking about health and environmental justice at the same level.”

“WE WOULD WANT TO SEE HEALTH AND ENVIRONMENTAL JUSTICE BE INTEGRATED IN THE REQUIRED ELEMENTS AT THE STATEWIDE LEVEL...LOW-INCOME COMMUNITIES OF COLOR ARE THE ONES THAT ARE MOST AFFECTED BY THE POLICIES, SO THEY NEED TO BE CONSIDERED IN ALL POLICIES WHEN THEY ARE PUT TOGETHER.”

- CAROLINA MARTINEZ, EHC POLICY ADVOCATE FOR TOXIC FREE NEIGHBORHOODS CAMPAIGN

Figuring out more sustainable land use could be one of the most efficient ways to decrease GHG emissions. And EHC has brought those concerns and strategies directly into the climate change debate, mobilizing its members to bring their perspectives and their voices to climate change hearings held by the City of San Diego as well as the Port of San Diego. Their message: reducing greenhouse gas emissions starts with a local commitment to cleaner air and healthier neighborhoods. It’s a bottoms-up approach that is both building a new policy platform and engaging new constituencies in the fight to protect the planet.

From Separate and Unequal to Clean and Green

Based on interviews with Elva Yañez, Clean Up Green Up Campaign Policy Consultant, and Yuki Kidokoro, Communities for a Better Environment Southern California Program Director (formerly)

Working-class communities of color across Los Angeles are coming together to address a historical and disproportionate burden of industrial pollution near their homes, schools, and churches. Their argument: while posing health threats to local residents, these industrial land uses also contribute to greenhouse gas emissions and must be addressed in any effective effort to curtail climate change.

The Clean Up, Green Up (CUGU) campaign is a policy initiative born out of years of participatory action research, progressive academic and philanthropic partnerships, and a drive to revitalize environmentally and economically degraded communities. Under the Los Angeles Collaborative for Environmental Health and Justice, Pacoima Beautiful (PB) in the Northeast San Fernando Valley, Union de Vecinos (UV) in Boyle Heights, Communities for a Better Environment (CBE) and Coalition for a Safe Environment (CFASE) in Wilmington are working with impacted residents and City officials to develop a pilot initiative that integrates land use policy and economic revitalization strategies in innovative ways.

Emphasizing a “Prevention, Reduction, and Revitalization” framework, community members are using traditional planning tools to convert their disproportionately impacted neighborhoods into environmental justice zones, or in the words of former CBE Southern California Program Director Yuki Kidokoro, “turning toxic hot spots into green zones.” Within these green zones, community members are asking local government officials to 1) *prevent* further pollution in their neighborhoods,¹⁰³ 2) provide adequate enforcement to *reduce* current levels of industrial pollution, and 3) *revitalize* the green zones by targeting financial and other

incentives to clean up and green up existing businesses, and to retain and stimulate new, green jobs in these areas.



When conducting risk-assessments, regulatory agencies normally evaluate the effects of a single pollutant or exposure source. However, residents’ action research (community-based participatory research) shows that traditional chemical-by-chemical and source-specific assessments of environmental hazards

¹⁰³ The CUGU policy initiative does not stop new business from coming into neighborhood green zones, but requires that they follow performance standards.

do not capture the cumulative impact of multiple environmental and social stressors within a geographic community.¹⁰⁴ Rather than imposing new quantitative controls on single polluters or pollutants, CUGU's mitigation strategy is focused on establishing "green zones" that account for entire geographic zones and sets standards for prevention of new pollution, reduction of existing pollution, and economic revitalization.

The transformation of toxic hot spots across the City of Los Angeles is directly linked to the City's potential efforts to reduce greenhouse gas emissions. Incompatible land uses near schools and residential areas "are also emitting the greenhouse gases" from the same smokestacks that emit other sources of pollution, confirms Kidokoro. "For Wilmington in particular, oil refineries represent a huge contributor to climate change and also local air pollution and air contaminants that threaten the health of local community." This approach also provides a safeguard against the concern that any market-based approach to reducing greenhouse gas emissions could worsen such hot spots – rather than leave that issue to one side, the CUGU approach makes such areas a central focus of environmental remediation.

However, CUGU's real policy breakthrough is uniting two important but distinct approaches to community transformation—economic development strategies and land use policy. Combining these tools with a focus on the problem of toxic hot spots provides a unique opportunity to overcome the usual framework of "environment versus economy," and instead build sustainable, healthy and prosperous communities in the face of an environmentally uncertain future. CUGU

Policy Consultant Elva Yañez, explains this is a breakthrough initiative which transforms traditional policy tools into an integrated planning process – CUGU uses "land use mechanisms to prevent [increased pollution], heightened inspection and enforcement to mitigate [pollution], economic development strategies to revitalize" L.A.'s overburdened neighborhoods.

"[CUGU USES] LAND USE MECHANISMS TO PREVENT [INCREASED POLLUTION], HEIGHTENED INSPECTION AND ENFORCEMENT TO MITIGATE, AND ECONOMIC DEVELOPMENT STRATEGIES TO REVITALIZE [L.A.'S OVERBURDENED NEIGHBORHOODS]."

- ELVA YAÑEZ, CUGU POLICY CONSULTANT

The proposed initiative will specifically target incentives to help existing businesses clean up their operations and attract new green businesses to the pilot communities while establishing specific performance standards for new and expanded businesses to reduce and prevent pollution. This upstream approach, combining economic development and land use, addresses some of the "structural conditions underlying the problem of toxic hot spots," according to Yañez. "It is not just polluting industrial facilities; it's the concentration of freeways, the lack of parks and other environmental amenities, and the historic lack of involvement of marginalized communities in land use planning and policy making."

This innovative policy effort is also unique for its hybrid process of collaboration between policy specialists and community residents. With a leadership group of approximately 40 members, "monthly cross-community gatherings...[bring together] core leaders of each of the communities" to develop the policy, shares Kidokoro. "First, we asked the community members to develop a common vision that reflected what they wanted their communities to ultimately look like." With a vision statement in hand, community residents set out to develop a policy framework "going back and forth between policy experts in our team... [in order to] understand what were some of the parameters of [the City's jurisdiction]. So it was a dialogue between the organizers, the members, and the policy team to help frame what the City could do."

¹⁰⁴ Los Angeles Collaborative for Environmental Health and Justice. Dec 2011. "Hidden Hazards: A Call to Action for Healthy, Livable Communities." <http://www.libertyhill.org/document.doc?id=202>.

“FIRST, WE ASKED THE COMMUNITY MEMBERS TO DEVELOP A COMMON VISION THAT REFLECTED WHAT THEY WANTED THEIR COMMUNITIES TO ULTIMATELY LOOK LIKE.”

- YUKI KIDOKORO, FORMER CBE SOUTHERN CALIFORNIA PROGRAM DIRECTOR

themselves in order to fight those injustices in general and if we want a cleaner more just world we need to organize ourselves...[and] build community power to win things like this. There needs to be community voices and community pressure.”

This vision squares with public health literature that shows that increasing capacity at the local level results in reduction in risk for chronic disease, as well as an improved prevention infrastructure and policy environment.¹⁰⁵ Current best practices for chronic disease prevention focus on designing interventions that build capacity at the local level to change social norms and community environments, leading to improved health behaviors and effective policy development and implementation. Only by increasing community capacity and building relationship with decision-makers will communities improve over the long-haul.



explains. “Real health benefits can be realized through cleaner, more efficient business operations that increase the safety for employees and the general public.”

Community engagement is the core of both democratic philosophies and strategies for community power, shares Kidokoro. “In order to create change and fight against injustices, the folks who are best equipped to change that are the folks who are subject to those injustices. People of color, low-income communities need to organize

themselves in order to fight those injustices in general and if we want a cleaner more just world we need to organize ourselves...[and] build community power to win things like this. There needs to be community voices and community pressure.”

The literature also suggests that those who are most affected need to be most engaged – and the community residents involved in CUGU come from neighborhoods in Los Angeles most impacted by environmental injustice “where concentrations of industrial pollution [most strongly] coincide with higher concentrations of people of color and low-income communities. We have chosen these pilot communities because of this injustice. Ultimately we want to cover all communities, but we have to start where it’s worst at the frontlines of pollution,” adds Kidokoro.

CUGU’s equity priorities will translate into comprehensive health benefits through reductions in toxic emissions, re-direction of truck traffic away from sensitive land uses, investment in new technologies, and greening for improved walkability and more active lifestyles. For example, locating sensitive land uses at least 1,000 feet away from incompatible land uses, such as distribution and chrome plating centers, helps to reduce cancer risk and other health impacts. “Targeting incentives to clean up existing businesses as well as establishing performance standards will benefit all Angelenos, especially those living and working in the proposed green zones,” Yañez

¹⁰⁵ Freudenberg, N., Pastor, M., and Israel, B. 2011. “Strengthening Community Capacity for Decision-Making to Reduce Disproportionate Environmental Exposures,” *American Journal of Public Health*, 101 (S1), December: S123-S130.

Should the CUGU policy be enacted by the Los Angeles City Council, these toxic hot spots would serve as testing grounds for community-driven policies to transform overburdened areas into sustainable, healthy, and equitable neighborhoods. The CUGU policy will hopefully serve as a model for other communities to fill in the gaps and limitations of state and federal regulatory systems. According to Yañez, “the strongest and most innovative policies are found at the local level... local land use policies are the most effective tool to address the problem of toxic hot spots and the first step towards community transformation.”

“THE STRONGEST AND MOST INNOVATIVE POLICIES ARE FOUND AT THE LOCAL LEVEL... LOCAL LAND USE POLICIES ARE THE MOST EFFECTIVE TOOL TO ADDRESS THE PROBLEM OF TOXIC HOT SPOTS AND THE FIRST STEP TOWARDS COMMUNITY TRANSFORMATION.”

- ELVA YAÑEZ, CUGU POLICY CONSULTANT

Only at the local level has the Los Angeles Collaborative for Environmental Health and Justice been able to bring together residents, urban planners, legal advocates, policy makers, and scientists to craft a strong and innovative policy framework. Yañez acknowledges that “the Collaborative’s learning curve is steep and is multiple layered—not only are we doing something that has never been done before, but the groups themselves are developing expertise in proactive policy development, working relationships with government and elected officials, and partnerships instead of adversaries. This is what it takes to break new ground in environmental justice policy.”

Such local efforts build up the community capacity necessary to address complex concerns like environmental injustices – and climate change as well. Addressing the unequal histories of economic development, city planning, and environmental health is no easy task. But combating environmental inequality for them will slow the climate change crisis for us. The reverse is less likely – that is, simply slowing climate change will not remedy inequalities, especially if narrow proposals like cap-and-trade reduce greenhouse emissions and co-pollutants in some areas but yield higher burdens or less reductions in other, already over-burdened communities. In fact, the story of Clean Up Green Up shows that there is no “us vs. them” – in order to save the environment, the planet, and our human future, efforts need to be united, local, and now.

Busing Out Greenhouse Gases

Based on interviews with Sunyoung Yang, Clean Air Clean Buses Clean Lungs Senior Organizer with the Bus Riders Union

Whether for convenience or necessity, Angelenos' top mode of transportation is cars. Suburban sprawl has encouraged drivers to stay in their cars while making it increasingly challenging for non-drivers to navigate the city— if not impossible for amateur cyclists and riders to get anywhere.

But it's not just a question of private taste for private transit. Historically, federal policies have lavishly funded road and highway expansion, allowing for the interrupted growth of suburbia, including the sprawling Los Angeles County.¹⁰⁶ And the pattern is not just a matter of history. The last long-term federal transportation bill, which passed in 2005 under the Bush Administration - prioritized highway expansion (\$228 billion) over (\$53 billion) public transit.¹⁰⁷ The 2012 federal transportation bill – passed after several years of stopgap bills – preserves highways over mass transit (and even reduced requirements for pedestrian and bike alternatives to car use).¹⁰⁸

As a result, drivers are left dependent on their cars – and this dependence makes automobile use one of the biggest sources of greenhouse gas emissions. In California, passenger automobiles are responsible for 27 percent of greenhouse gas emissions.¹⁰⁹ But where there's a will, there's a way; with re-prioritized funding and infrastructure investments, reductions in car use can surely make a dent in greenhouse gas emissions in California and slow down climate change.

However, not everyone is equally contributing to the problem. Households and individuals with low incomes are less likely to own cars and more likely to rely on public transportation.¹¹⁰ In the Los Angeles-Long Beach Metropolitan Area, 11 percent of households do not have access to an automobile, and higher proportions of African-American (20 percent), Latino (17 percent), and Asian (10 percent) households do not have access to a car.¹¹¹

Yet, while low-income households and individuals contribute less to automobile greenhouse gas emissions, these communities are disproportionately affected by the impacts of expanding road and highway infrastructure and the underfunding of public transportation services. The Bus Riders Union (BRU), an environmental and transportation justice organization with over 1,000 dues-paying members in metropolitan Los Angeles, is working to reduce greenhouse gas emissions and improve air quality by first prioritizing public transportation for transit-dependent, low-income communities and, second, rewarding those Angelenos who voluntarily get out of their cars and use public transportation.

¹⁰⁶ Shoup, L., and Lang, M. March 2011. "Transportation 101: An Introduction to Federal Transportation Policy." Transportation For America: Washington DC. Web. 01 June, 2012. <http://t4america.org/docs/Transportation%20101%20SUMMARY.pdf>

¹⁰⁷ Ibid.

¹⁰⁸ Malouff, D. "Federal Transportation Bill Clings to the Status Quo," Greater Greater Washington July 3, 2012. Web 4 July 2012. <http://greatergreaterwashington.org/post/15422/federal-transportation-bill-clings-to-the-status-quo/>

¹⁰⁹ Air Resources Board, California Greenhouse Gas Inventory for 2000-2008, last updated May 2010. Passenger automobiles contributed 128.51 million tons of CO2 equivalent out of the 477.74 million tons of CO2 equivalent reported for the year 2008. Web. 29 Nov. 2011 <http://www.arb.ca.gov/cc/inventory/data/data.htm>

¹¹⁰ Fussell, E. 2006. "Leaving New Orleans: Social Stratification, Networks, and Hurricane Evacuation." Understanding Katrina: Perspectives from the Social Scientists. Web. 19 Oct. 2011 <http://understandingkatrina.ssrc.org/Fussell/>

¹¹¹ Morello-Frosch, R., Pastor, M., and Shonkoff, S. B. 2009. *The Climate Gap: Inequalities in How Climate Change Hurts Americans and How to Close the Gap*. Los Angeles: USC Program for Environmental and Regional Equity.

Founded in 1992, the BRU's first battle was a civil rights lawsuit against the Metropolitan Transportation Authority (L.A. Metro) for neglecting public transportation services that served the needs of Black, Latino, and Asian neighborhoods. The lawsuit resulted in forcing the agency to re-invest a monumental \$2.7 billion and improve the bus infrastructure in Los Angeles. Since then, the BRU has expanded its civil rights platform to advance transportation justice and environmental health in the city.

For the BRU, a just transportation system is the nexus between public health and climate change. Their Clean Air, Clean Buses, Clean Lungs Campaign aims to reduce car use in Los Angeles by half, double MTA's bus fleet, create auto-free zones, ban highway expansion, and create bus-only lanes in order to address health impacts locally and climatic change globally. This is a unique effort to link local-global impacts and action against climate change that especially threaten the health of Latino, Black, Asian/Pacific Islander, and indigenous communities around the world. Success will require getting seven million cars off the streets of the "auto capital of the world," says Sunyoung Yang, Senior Organizer of the Clean Air Campaign.

Yang explains that some Angelenos contribute least to greenhouse gas emissions, but are the first to feel the economic effects of bus service cuts. Moreover, many of these same groups live in neighborhoods with the worst air quality. They are the communities "living next to oil refineries and living next to polluting stationary sources as well as next to high-traffic roads, highways, and highway intersections." Boyle Heights, for

"IF YOU GET ON A TYPICAL BUS AND ASK WORKING CLASS BUS RIDERS, 'HOW MANY PEOPLE DO YOU KNOW WHO HAVE ASTHMA OR ARE SUFFERING FROM RESPIRATORY DISEASES?' ALMOST EVERYBODY RAISES THEIR HAND."

- SUNYOUNG YANG, BRU SENIOR ORGANIZER

example, is a predominantly and historically Latino neighborhood "with the largest freeway interchange... thousands and thousands of cars on a daily basis pollute the air in their neighborhood... If you get on a typical bus and ask working-class bus riders, 'How many people do you know who have asthma or are suffering from respiratory diseases?' almost everybody raises their hand," says Yang.

BRU's global-local worldview was inspired by the leadership of the 2002 World's Summit of Sustainable Development in Johannesburg, South Africa, where the organization asserted its "moral obligation" to respond to Third World demands to address climate change—"especially from island states like Tuvalu and the Marshall Islands, that are calling out and demanding accountability from industrialized countries like the United States," which is responsible for a large proportion of greenhouse gas emissions and environmental destruction, adds Yang. Although China is the leading greenhouse gas emitter in terms of quantity, the U.S., is second in line and the world's largest emitter per capita (19.18 tons) compared to China (4.91 tons).¹¹²

In June 2011, BRU's Clean Air, Clean Buses, Clean Lungs campaign achieved a major victory. The Los Angeles City Council approved a 7.7-mile, rush hour, bus-only lane on Wilshire Boulevard, one of the busiest corridors in Los Angeles running from MacArthur Park to Santa Monica. The Wilshire Boulevard bus-only lane is an important victory six-years in the making, which sets a precedent to prioritize fast, clean, and accessible bus services in a highly congested, residentially dense, part of Los Angeles. The project will "potentially motivate both drivers who are stuck in traffic [to use public transportation] and reward bus riders who are not contributing to the pollution or the congestion [problems], by taking a lane away from single passenger automobiles and dedicating it as bus-only use," explains Yang.

¹¹² As analyzed by Union of Concerned Scientists from the U.S. Energy Information Administration. Web. 29 Nov. 2011
<http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=90&pid=44&aid=8>



While not a new concept around the world, in Los Angeles, the Wilshire bus-only lane marks a break from car-centered transportation planning. Winning the policy victory required the participation of a broad coalition of Wilshire Boulevard bus riders; local businesses; Pico-Union and Koreatown neighborhood councils; hotel, janitorial, and restaurant unions whose members use Wilshire Boulevard to commute to the West Side; mainstream and environmental justice organizations; and many outspoken students. “There was a time when on Wilshire Boulevard it took a [UCLA] student like my sister almost two hours to get from Pico Union all the way to Westwood...that commute has gone down to an hour [with the BRU-led] expansion of Rapid bus service in 2000. The bus-only lane will only improve on these gains, bringing travel time to 45 minutes. That is a significant impact for bus riders, where every minute makes the difference between missing your transfer and arriving on time for a job interview,” Yang points out.

But BRU’s work is far from over. “We are working to ensure the last ten years of bus

improvements that we were able to make through the Civil Rights Consent Decree are not undone by the L.A. Metro. Metro again pushed through another 305,000 hours of bus service cuts that went into effect in June of 2011.” These service cuts, Yang explains, are “a civil rights and environmental justice issue because they impact poor, low-income communities of color.” Ana Exiga, who is a BRU member, “commutes anywhere from an hour to two plus hours to get to her school [from Watts].... She uses three buses and two trains to get there,” says Yang about a young college student who, for financial reasons, was forced to transfer from the University of California, Los Angeles to East Los Angeles Community College. “When rapid buses were running in South L.A., it would take her exactly an hour to get to school, despite all the transfers.”

These most recent service cuts are due to Metro’s funding and decision-making structures, explains Yang. Funding allocation between existing operations and new transit projects are pitted in competition with each other. This is one dynamic of the Mayor’s 30/10 Plan (or “America Fast Forward”)—a plan to borrow federal loans to accelerate transportation projects in 10 years instead of 30, and repay the loans with future revenues from Measure R sales tax. The Measure R tax revenue passed in 2008 and will generate \$40 billion for traffic relief and transportation upgrades throughout Los Angeles County during the next 30 years.

“FUNDAMENTALLY DEMOCRATIZING COMMUNITY ENGAGEMENT IN METRO BOARD DECISIONS COULD GIVE BUS RIDERS THE POWER TO PUSH BACK AGAINST THESE HARMFUL POLICIES... ONE OF THE DEMANDS THAT THE BRU HAS PUSHED [IS] A PUBLICALLY ELECTED METRO BOARD.”

- SUNYOUNG YANG, BRU SENIOR ORGANIZER

As Yang explains, “There are 12 multi-billion dollar transit construction projects that Metro is pushing to build but never had enough funding inside Measure R or its \$4 billion budget to build and run the system. Historically when projects’ costs [exceed available revenue], Metro shell-games funding from its own transit maintenance and operation budget to cover the funding holes. This practice leaves fewer resources to run the existing bus system that serves transit-dependent communities of color, so service cuts and fare increases ensue.” Bus riders have seen close to one million hours of bus service eliminated despite Metro’s 52 percent growth in revenues in the last three years.¹¹³ Yang says that “Metro cannibalizes the working-class bus system to finance multi-billion dollar rail contracts and real estate developers because it sees bus riders as disposable.”

In November 2010, the BRU filed a Title VI civil rights administrative complaint to the Federal Transit Administration (FTA) against Metro, arguing that Metro was in violation of passenger civil rights as a result of cutting bus services, which disproportionately hurt low-income communities and people of color. Metro has since undergone a comprehensive investigation of this complaint and other Metro policies, which might be in violation of Title VI - in particular, “the elimination of nearly one million hours of bus services between 2007 and 2011,” according to the BRU. While some of Metro’s policies have been rectified to be compliant, the FTA in an April 2012 ruling delivered “stern words” to Metro “but no remedies” for the services cuts. The BRU is now urging President Obama to intervene.¹¹⁴

“Fundamentally democratizing community engagement in Metro Board decisions could give bus riders the power to push back against these harmful policies”, says Yang. “One of the demands that the BRU has pushed [is] a publically elected Metro Board.” The Metro Board is composed of individuals already serving in other political offices throughout the County: the five Los Angeles County Supervisors, the Mayor of the City of Los Angeles, three L.A. City appointees by the Mayor, and four representatives from the League of Cities (the conglomerate of 87 other cities in Los Angeles County). The Board’s structure and decision-making process is important for deciding on future projects and current services – especially as funds from the 2012 Federal Transportation Bill trickle down to Los Angeles.¹¹⁵

“OUR COUNTYWIDE BUS PLAN CAN BE IMPLEMENTED AT A FRACTION OF THE COST OF THE WEST SIDE SUBWAY WITHOUT RAISING FARES, CUTTING SERVICE, AND PUSHING OUT WORKING CLASS BUS RIDERS FROM THE TRANSIT SYSTEM”

- SUNYOUNG YANG, BRU SENIOR ORGANIZER

Yang believes that Metro Board funding allocations and decision-making need to be more accountable to the needs of transit-dependent riders. To get there, BRU is pushing for their *Clean Air and Economic Justice Plan*¹¹⁶ that aims to create a multi-tiered countywide bus service network by running on bus-only-lanes, lowering fares and creating long-term jobs as an alternative to the current Measure R projects. “Our countywide bus plan

¹¹³ Bus Riders Union, et al. Oct 2011. *Transit Civil Rights and Economic Survival in Los Angeles, A Case for Federal Intervention*. The Labor Strategy Center: Los Angeles, CA. http://www.thestrategycenter.org/sites/www.thestrategycenter.org/files/MTA_civil_rights_report_11-11-11.pdf

¹¹⁴ Federal Transit Administration Letter to Arthur Leahy, Chief Executive Officer of the Los Angeles Metropolitan Transportation Authority, dated April 23, 2012. Romann, E, 24 April 2012, “UPDATED! FTA ruling is out on LA Metro civil rights violations-we’re calling on Obama to intervene, reverse MTA service cuts,” The Bus Riders Union, Web 18 Sept 2012 <http://www.thestrategycenter.org/blog/2012/04/24/updated-fta-ruling-out-la-metro-civil-rights-violations-were-calling-obama-intervene>

¹¹⁵ Simon, R., and Bloomekatz, A. “Congress set to Ok bill that would help fund L.A. transit projects.” *Los Angeles Times*, June 28, 2012. Web 4 July 2012. <http://articles.latimes.com/2012/jun/28/local/la-me-transit-20120629>

¹¹⁶ Bus Riders Union. July 2009. *Clean Air and Economic Justice Plan*. The Strategy Labor Center: Los Angeles, CA <http://www.thestrategycenter.org/sites/www.thestrategycenter.org/files/bruCAEJFINAL7.14.09.pdf>

can be implemented at a fraction of the cost of the West Side subway without raising fares, cutting service, and pushing out working class bus riders from the transit system” says Yang.

The BRU’s vision is big, but at its center is a commitment to equity through the provision of transit opportunity. This is, however, not a question of serving a special interest; Yang reminds us that “a viable and just public transit system is measured by how well we uplift even the most vulnerable communities—if our transit system can provide convenient, affordable service for someone without a car, it will for everyone else with more resources.” It is this sort of vision of inclusion that the BRU says will drive the biggest gains against greenhouse gases—and the logical policy implication is that federal, state, and local transportation policy needs to re-prioritize public transit as part of any effort to address climate change.

Log-jamming the Logistic Industry's Co-Pollutants

Based on interviews with Isella Ramirez and Angelo Logan, Co-Executive Directors of East Yard Communities for Environmental Justice, and Penney Newman, Director of Center for Community and Environmental Justice

Globalization has exponentially increased the quantity of goods that travel thousands of miles across the world, through the Ports of Los Angeles and Long Beach, and onto the loading docks of retail stores throughout the United States. By one measure, nearly 40 percent of all U.S. imports, such as refrigerators, cars, and other consumer products, come through Southern California Ports.¹¹⁷ Goods movement is a complex and massive trade system that generates wealth, jobs, and resources – and also significant costs to public health and the environment.

The diesel-powered vehicles that move goods through the ports and across the country emit over 40 pollutants that fall into two categories: 1) climate altering pollutants such as carbon dioxide, methane, and nitrogen oxides (known as greenhouse gas emissions), and 2) co-pollutants such as particulate matter (PM), sulfur dioxide, and volatile organic compounds. While climate-altering pollutants released at one point have global effects, the co-pollutants that accompany greenhouse gas emissions adversely affect the health of local communities along these distribution routes.

In the United States, the transportation sector is the fastest growing source of greenhouse gas (GHG) emissions, contributing to 47 percent of the net increase in emissions since 1990.¹¹⁸ Heavy-duty vehicles and freight transportation make up the second largest source of transportation-related GHG emissions (20 percent¹¹⁹), which has been increasing twice as fast as passenger transportation in emissions every year over the last 15 years. This is due to increasing demand in freight transportation and decreasing energy efficiency in the freight sector.¹²⁰

“GOODS MOVEMENT IS A SYSTEM OF INDUSTRIES THAT WORK TOGETHER TO MOVE PRODUCTS FROM THE PLACES THEY ARE MANUFACTURED OR CULTIVATED TO THE PLACES WHERE THEY ARE SOLD. THIS MOVEMENT KILLS OUR NATURAL RESOURCES AND PUTS CORPORATIONS’ NEEDS OVER OUR COMMUNITY’S HEALTH EVERY STEP OF THE WAY, FROM THE EXTRACTION AND PRODUCTION OF RESOURCES IN CHINA, TO THE RAIL DISTRIBUTION CENTERS IN COMMERCE OR SAN BERNARDINO, CALIFORNIA...EVERYONE IS IMPACTED BY THE INFRASTRUCTURE THAT FACILITATES GLOBAL TRADE. MASS PRODUCTION OVERSEAS IS NOT ONLY DEPLETING OUR NATURAL RESOURCES BUT IT IS ALSO DAMAGING OUR LOCAL COMMUNITIES EVERYWHERE.”

- ISELLA RAMIREZ, CO-EXECUTIVE DIRECTOR OF EAST YARD COMMUNITIES FOR

¹¹⁷ United States Environmental Protection Agency, Pacific Southwest, Region 9, Los Angeles Area Environmental Enforcement Collaborative, last updated June 2011. Web. 17 Aug 2011 <http://www.epa.gov/region9/ej/enforcement.html>.

¹¹⁸ Environmental Agency Protection, Office of Transportation and Air Quality. 2006. *Greenhouse Gas Emissions from the U.S. Transportation Sector 1990-2003*. <http://www.epa.gov/otaq/climate/basicinfo.htm>

¹¹⁹ Passenger vehicles are the largest contributor of transportation GHG emissions (35 percent), as calculated from direct emissions from fuel combustion reported in Environmental Agency Protection. 2011. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2009*. Washington, DC. (EPA 430-R-11-005). <http://www.epa.gov/climatechange/emissions/usinventoryreport.html>

¹²⁰ Ang-Olson, J., Facanha, C. 2009. *Policies to Reduce Greenhouse Gas Emissions Associated with Freight Movements*. Conference Proceedings of Innovations for Tomorrow's Transportation, Issue 1. Federal Highway Administration (FHWA), U.S. Department of Transportation. Web 17 Aug 2011 <http://www.fhwa.dot.gov/policy/otps/innovation/issue1/index.htm>

In Southern California, the negative impacts of the global goods movement industry disproportionately falls on low-income communities and residents of color in Los Angeles, San Bernardino, and Riverside counties. Conventional fossil-fuel and diesel combustion threatens human health by increasing air pollution or what we call co-pollutants.¹²¹ These “fence line” neighborhoods are the epicenter of the Los Angeles/Inland Empire Trade Corridor because they are located next to the corridor’s ports, rail yards, rail lines, truck routes, and warehouses. The forced exposure to co-pollutants, such as PM, contribute to an increased localized risk of cancer and non-cancer effects, including premature death, low birth rates, asthma, bronchitis, and increased heart and cardiovascular system failures, among other health concerns.¹²²



But when not shipped by rail, these imported containerized goods are carried by truck, leaving yet another wave of illness in their wake. Indeed, the Ports

“THESE MILLION SQUARE FOOT BUILDINGS NOT ONLY WIPED OUT OUR AGRICULTURAL BASE AND RURAL CULTURE BUT IT ALSO ATTRACTED THOUSANDS AND THOUSANDS OF DIESEL SPEWING TRUCKS. THIS AREA HAS SOME OF THE HIGHEST PARTICULAR POLLUTION LEVELS IN THE NATION; WE’RE FOURTH IN THE WORLD.”

- PENNY NEWMAN, EXECUTIVE DIRECTOR OF CENTER FOR COMMUNITY ACTION AND ENVIRONMENTAL JUSTICE

because they are located next to the corridor’s ports, rail yards, rail lines, truck routes, and warehouses. The forced exposure to co-pollutants, such as PM, contribute to an increased localized risk of cancer and non-cancer effects, including premature death, low birth rates, asthma, bronchitis, and increased heart and cardiovascular system failures, among other health concerns.¹²²

Two organizations that are addressing the environmental health and climate change impacts of goods movement are East Yard Communities for Environmental Justice (EYCEJ) in Los Angeles County and the Center for Community Action and Environmental Justice (CCA EJ) in the Inland Empire. East Yard and the Center for Community Action connect the industry’s climate change impacts—such as more frequent heat waves—to localized impacts where people live, play, and work with deadly concentrations of co-pollutants that accompany greenhouse gas emissions.

A 2008 impact assessment by the California Air Resources Board’s (CARB) found that Union Pacific’s rail yard operations near the Long Beach/Los Angeles ports emit 23.7 tons of particulate matter per year. For the estimated 597,500 residents living within eight miles of the rail yard facilities, this means an average cancer risk 10 times greater than EPA’s cancer risk guideline of one in a million.¹²³

But when not shipped by rail, these imported containerized goods are carried by truck, leaving yet another wave of illness in their wake. Indeed, the Ports

¹²¹ Cifuentes, L. et al. 2001. "Hidden Health Benefits of Greenhouse Gas Mitigation." *Science* 293.5533: 1257-259. Web. 6 Jan. 2012. <http://www.sciencemag.org/content/293/5533/1257.full.pdf?sid=8d711265-a048-46b8-ac34-cf01ccaa270f>

¹²² California Air resources Board. 2011. Supplement to the June 2010 Staff Report on Proposed Actions to Further Reduced Particulate Matter at High-Priority California Railyards. <http://www.arb.ca.gov/railyard/commitments/commitments.htm>

¹²³ California Air Resources Board, Stationary Source Division. 2008. Health Risk Assessment for the UP Intermodal Container Transfer Facility (ICTF) and Dolores Railyards. www.arb.ca.gov/railyard/hra/up_ictf_hra.pdf

of L.A. and Long Beach send a daily estimate of 40-50,000 trucks up and down the I-710 freeway. Ramirez refers to the I-710 freeway – the artery connecting the ports to the heart of Los Angeles – as the Wal-Mart Super Highway. Many of these diesel cargo trucks stop in the City of Commerce, a mixed industrial, commercial, and residential community 20-miles north of the ports and just four miles southeast of downtown Los Angeles. Here, cargo containers are sorted, loaded onto trains, and prepared for long distance trips across the country.

Home to four rail yards, the City of Commerce and southeast Los Angeles residents are most impacted by two facilities that operate 24 hours a day. Burlington Northern and Santa Fe Horbart Railway (BNSF) and Union Pacific (UP) East Los Angeles Facility each lift over one million containers onto a rail line per year, comments Isella Ramirez, Co-Executive Director of East Yard Communities for Environmental Justice (EYCEJ). In 2008, BNSF Horbart alone was estimated to produce 24 tons of particulate matter (co-pollutants) – ranking it second in diesel emissions compared to 19 other rail yards in the state.¹²⁴

EYCEJ has big plans to tame a big industry – but it started with a group of residents who simply said “*¡Ya Basta!*” [‘Enough!’], to the number of cancer cases in their neighborhood.” For them, port, freeway, rail, and road expansions were many phases of the same project, Ramirez explains. In her view, the emphasis “should be about improving air quality, improving public health, and improving traffic safety—and not about blind expansion and accommodation for global free trade that comes in through our communities in the form of trucks.”

On the other end of the Los Angeles/Inland Empire Trade Corridor, along freeway Route 60, are San Bernardino Westside residents who live among BNSF’s intermodal rail yard. This facility produces 10.6 tons of diesel emissions per year and poses a cancer risk of 3,300 in a million for fence line neighbors.¹²⁵ Not too distant from San Bernardino is Riverside’s Mira Loma and Glen Avon neighborhoods, which are home to the largest warehouse districts in the nation. “These million spare foot buildings not only wiped out our agricultural base and rural culture but it also attracted thousands and thousands of diesel spewing trucks. This area has some of the highest particulate pollution levels in the nation; we’re fourth in the world,” shares Penny Newman, founder and Executive Director of CCAEJ.

“The Inland Empire has the highest level of ischemic heart disease in the state. This is linked to diesel exhaust and the area’s poor air quality.” Newman frequently cites a University of Southern California Children’s Health Study showing that kids in her community have some of the weakest lung capacity and the slowest lung growth of all children in Southern California. These respiratory effects are linked to the high concentrations of particulate matter.¹²⁶ “These are the things we know are happening and we know how to stop it. Just nobody

“INDUSTRYWIDE STANDARDS ON PARTICULATE MATTER AND THE OUTCOME WOULD BE A MORE ACCELERATED REDUCTION OF DIESEL EMISSIONS. THAT WOULD HAVE TWO MAIN BENEFITS. ONE OF THEM IS THE REDUCTION OF TOXINS AND THE EXPOSURE OF TOXINS TO COMMUNITIES, ESPECIALLY COMMUNITIES THAT ARE AROUND DIESEL SOURCES LIKE TRAIN YARDS, TRUCK ROUTES, AND PORTS, OR WAREHOUSES. THE OTHER BENEFIT: IF YOU HAVE MAJOR REDUCTION IN DIESEL EXHAUST THEN YOU HAVE MAJOR IMPACTS TO REDUCING CLIMATE CHANGE AS WELL.”

- ANGELO LOGAN, CO-DIRECTOR EAST YARD COMMUNITIES

¹²⁴ California Air Resources Board, Stationary Source Division. 2007. Health Risk Assessment for the Union Pacific Railroad Los Angeles Transportation Center Railyard. www.arb.ca.gov/railyard/hra/up_latc_hra.pdf

¹²⁵ California Air Resources Board, Stationary Source Division. 2008. Health Risk Assessment for the BNSF Railway San Bernardino Railyard. www.arb.ca.gov/railyard/hra/bnsf_sb_final.pdf

¹²⁶ Peters, J. 2004. “Epidemiologic investigation to identify chronic effects of ambient air pollutants in Southern California.” California Air Resources Board and the California Environmental Protection Agency.

wants to confront the money and the power behind these industries,” Newman argues.

But EYCEJ and CCAEJ and their members are confronting these large industries. EYCEJ and CCAEJ joined forces in 2001. Since, jointly and separately, they have been collaborating with different regulatory agencies, local governments, and goods movement companies to prioritize public health and, as a consequence, reduce greenhouse gas emissions.

One strategy is to develop and implement industrywide rail regulations. This opportunity represents an important shift away from voluntary agreements, says Ramirez. She refers to the Rail Yard Agreement of 2005, which sets a 20 percent emissions reduction benchmark between CARB and Union Pacific and BNSF. The Rail Yard Agreement lacks legally binding enforcement mechanisms and was criticized by the Southern California Air Quality Management District and community organizations.¹²⁷

EYCEJ and CCAEJ are also pursuing a federal recognition of diesel particulates as a “hazardous air pollutant” under the Clean Air Act (CAA), a federal legislation which sets standards for hazardous air pollution in the country. Currently, the CAA lists 187 hazardous air pollutants as amended in 1990, but particulate matter is not one of them. East Yard Co-Director Angelo Logan explains that this strategy would impose “industry wide standards on particulate matter and the outcome would then be a more accelerated reduction of diesel emissions. That would have two main benefits: one of them is the reduction of toxins and the exposure of toxins to communities, especially communities that are around diesel sources like train yards, truck routes, and ports, or warehouses; the other benefit [is] if you have major reduction in diesel exhaust, then you have impacts to reducing climate change as well.”

Because regulatory measures that could slow climate change and reduce local asthma rates are slow to come, EYCEJ and CCAEJ are also pursuing legal strategies. They have filed a complaint against Union Pacific and BNSF under the Resource Conservation and Recovery Act (RCRA), which is the first federal pollution prevention measure to regulate hazardous and solid waste from “cradle-to-grave.” This law normally oversees the generation, transportation, treatment, storage, and disposal of hazardous waste such as solvents, battery acid, chemical wastes, and various pharmaceutical wastes from facilities like industries, universities, and hospitals.¹²⁸ EYCEJ and CCAEJ argue that elements from diesel exhaust should be treated as “solid waste.” If so, EYCEJ’s and CCAEJ’s potential victory would set a new precedent for the classification of PM and ultimately set enforceable reductions of “PM solid waste.”

“THEIR EXPERTISE IS BEING ACKNOWLEDGED AND HONORED SO THAT THEY COME TO THE TABLE AND TALK TO [REGULATORY] AGENCIES, AND [IF NEEDED], CAN CONFRONT THEM.”

Environmental justice advocates are persistent in their call for industrywide regulations because, as Ramirez argues, “Residents in Commerce, East L.A. and West Long Beach recognize that the pollution these rail yards bring to our neighborhoods is a human rights issue. They’ve seen a family member, seen a neighbor, and seen themselves go through a health nightmare.”

- PENNY NEWMAN, DIRECTOR CENTER FOR COMMUNITY ACTION AND ENVIRONMENTAL JUSTICE

Residents’ personal trajectories, skills, and knowledge are at the forefront of EYCEJ’s and CCAEJ’s work. In the Inland Valley, residents come together under three Community Action Teams (CATs), and collectively push for

¹²⁷ South Coast Air Quality Management District. “AQMD Calls on Air Resources Board to Strengthen Railroad Agreement.” Last updated Dec 2005 Web 19 Aug 2011. <http://www.aqmd.gov/news1/2005/CARBMOUCommentLetter.html>

¹²⁸ United States Environmental Protection Agency. 2002. *25 Years of RCRA: Building on Our Past To Protect Our Future*. Web 2 Nov 2011. <http://www.epa.gov/osw/inforesources/pubs/k02027.pdf>

local mitigation projects to reduce diesel exposures to nearby residents. Projects include: leveraging funding for classroom indoor air filters in five schools that give nearly 7,000 students some relief from pollution; working with city officials to create vegetative barriers between the BNSF rail yard and an adjacent neighborhood; and lastly, working with local government agencies on a traffic-calming project and the installation of anti-idling signs that redirect diesel trucks out of residential streets. These initiatives are part of a much larger process of cultivating and acknowledging “indigenous leadership,” says Newman, because residents are the most knowledgeable about their rail yard neighbors – more than any regulatory agency. “Their expertise is being acknowledged and honored so that they come to the table and talk to [regulatory] agencies, and [if needed], can confront them,” shares Newman.

In Los Angeles County, EYCEJ is training local community members to build their capacity as “well-informed, well-equipped, self advocates” who can proactively contribute towards improving their community’s air quality, explains Logan. EYCEJ’s training workshops are “real organizing tools” because they provide residents with an analysis of the issues in their communities and an opportunity to apply their knowledge to advance policy campaigns. Trained residents “help make change happen,” adds Logan.

As a person who grew up in the City of Commerce, Ramirez intimately understands how East Yard’s organizing work has impacted residents in her community.

Her cousin is one person who has redefined the meaning of protecting the health of her children. “[She] always worried about feeding her kids the right kind of food and making sure they had the right kinds of drinks – a balance of fruits and vegetables...[at first living in Commerce makes] you think that you don’t have much control over the air that you breathe. But with East Yard Communities, she learned that’s not true. It may not be as easy as choosing healthy products in the store, but she now has the power to make sure her kids are breathing cleaner air than they otherwise would if she wasn’t doing anything.”

“INDIVIDUALLY, PARENTS MAY NOT HAVE A LOT OF POWER, BUT WHEN THEY JOIN FORCES WITH OTHER PARENTS ACROSS THE STATE, THEY ARE VERY POWERFUL... THESE RAIL AND TRUCKING COMPANIES ARE GIGANTIC CORPORATIONS, BUT THAT DOESN’T MEAN WE CAN’T DO ANYTHING ABOUT IT. BECAUSE WE AS A PUEBLO ARE MUCH LARGER THAN THEY ARE; WE ARE ALL OVER THE PLACE. THEY ARE JUST TWO PARTIES. IT’S A VICTORY WHEN PEOPLE RECOGNIZE THE POWER THAT THEY HAVE IN NUMBERS.”

- ISELLA RAMIREZ, CO-DIRECTOR OF EAST YARD COMMUNITIES

“Individually, parents may not have a lot of power, but when they join forces with other parents across the state, they are very powerful,” says Ramirez. “These rail and trucking companies are gigantic corporations, but that doesn’t mean we can’t do anything about it. Because we as a *pueblo* are much larger than they are; we are all over the place. They are just two parties. It’s a victory when people recognize the power that they have in numbers,” she affirms.

By highlighting the connections between global and local impacts of the goods movement industry, East Yard Communities and Center for Community Action are changing the broader conversation on climate change. Both organizations argue that future transportation planning needs to critically evaluate and transform goods movement infrastructure and technology, its spatial locality, and even question its scale. Federal transportation policy is therefore one of the most important places to include environmental justice priorities and comprehensively integrate transportation projects – from commuter transportation to logistics systems.

Logan explains, “We want to have an effect on transportation infrastructure, so that future projects are the best projects that would reduce existing pollution.” Their ultimate goal is a zero-emissions goods movement, which no longer relies on the “traditional expansion of freeways, ports, more ships, and more trains,” says



Logan. EYCEJ is pushing for “zero-emission technologies for moving goods, as well as making sure there is equity in the funds that go to goods movement [infrastructure], at minimum, equal the amount [of funds] going to public transit. [This will put] more people on public transit and people out of their cars.” According to Logan, a comprehensive approach to transportation should address emissions from both personal vehicles and commercial transportation of goods.

Perhaps California will not see a one meter sea level rise by the year 2100,¹²⁹ but communities in Southern California are certainly – and already – facing higher risks of asthma and lower air quality. Because cities and their industries

contribute sizeable amounts of the greenhouse gas emissions causing climate change, cities and their industries can be important leaders and problem solvers for today’s mitigation strategies. Grassroots organizations like East Yard Communities and Center for Community Action have outpaced their leadership by mapping mitigation strategies that move massive industries, like the goods movement industry, towards more sustainable practices locally and now. Indeed, their local efforts are helping global cities like Los Angeles lead solutions for the climate change crisis.

¹²⁹ Heberger, M. et al. 2009. “The Impacts of Sea-Level Rise on the California Coast.” Paper from the California Climate Change Center with funding by the California Energy Commission, the California Environmental Protection Agency, Metropolitan Transportation Commission, California Department of Transportation, and the California Ocean Protection Council. Web 2 Nov 2011.
http://www.pacinst.org/reports/sea_level_rise/report.pdf

LOOKING FORWARD: TRANSITIONS TO A SUSTAINABLE AND EQUITABLE ECONOMY

Community-based organizations have often led in the fight against polluters but as we have been stressing throughout, they have also led in terms of proposing local solutions. Heat islands got you down? Urban Releaf is out planting trees. Food security at threat? Ubuntu Green is forging a path for local agriculture. Mass transit underfunded? The Bus Riders Union has pressed for prioritizing low-income users. Local polluters hurting health and climate? The Environmental Health Coalition and the Clean Up Green Up campaign have ideas for preventive zoning. Truck traffic heating the planet? Allies from along the logistics corridor are linking to reduce emissions.

But it is not just a reaction and it is not just issue by issue. In Richmond, California, residents are not just worried about pollution from local refineries; they are asking for “just transitions” out of fossil fuel-based economies, with their efforts led by the Asian Pacific Environmental Network and Communities for a Better Environment. At the same time, Solar Richmond’s effort to build localized renewable energy through subsidized solar installations in Richmond’s residencies and to start a worker-owned cooperative for commercial solar installations are resulting in the growth of the community’s renewable energy portfolio. And all of this is wrapped together by growing consensus for a community plan intended to decrease greenhouse gases, improve public health, and increase employment.

The employment part of the picture is key: community groups are arguing for both health and jobs. In Los Angeles, for example, Strategic Concepts in Organizing and Policy Education (SCOPE) was a key part of a broad coalition of community, labor, and environmental partners that persuaded the City of Los Angeles to pass its first Green Retrofit and Workforce Program in 2006; in 2009, the City began a pilot program that set the goal to retrofit 100 city-owned buildings to conserve energy and keep city workers – otherwise laid off – employed. Meanwhile, the Los Angeles Conservation Corps (LACC) has been training and employing youth in rain water collection systems, solar installations, and landscape design programs.

Putting it all together into a cohesive whole, the Ella Baker Center and the Oakland Climate Action Coalition (OCAC) have been working together to push along efforts to create and implement Oakland’s Energy and Climate Action Plan. But such an integrated approach to looking forward also harkens back to an earlier understanding of how people and the planet are deeply interconnected. We conclude our review in this section by examining the efforts of the Karuk tribe in Northern California to blend traditional ecological knowledge with Western science-based approaches into a holistic approach for protecting the ecosystem against the ravages of climate change.

Getting Richmond Off the Fossil Fuel Treadmill

Based on interviews with Jessica Tovar, former Organizer at Communities for A Better Environment, Ken Davis at East Bay Coalition of Concerned Citizens, Roger Kim at Asian Pacific Environmental Network, and Michele McGeoy at Solar Richmond, and feedback from Nile Malloy, Northern California Program Director at Communities for a Better Environment

Every time you get in a car, bus, or plane, it is likely being powered by one of the “Big Five” oil companies—Chevron, ExxonMobil, BP (ARCO), Shell and ConocoPhillips. In California, approximately 329,000 gallons of Chevron gasoline are dispensed every hour of every day across the state, fueling one out of every five vehicles on the state’s roads, busiest airports and commercial transporters.¹³⁰ California’s fossil fuel dependence makes Chevron one of the largest companies¹³¹ and the largest overall greenhouse gas (GHG) emitters¹³² in the state. Oil refineries emit about 10 percent of the state’s total greenhouse gases,¹³³ and the use of transportation fuels produced by oil refineries creates a combined total of 37 percent of greenhouse gases.¹³⁴

Tired of the environmental and health effects of the petrochemical industries in their city, Richmond residents have begun work towards long-term sustainable solutions, or what community organizers call a “just transition.” This process entails proactive and community-engaged planning to address social, economic, and health inequalities. The ultimate goal is to shift the city’s economic base away from a dependence on fossil fuel energy and production, while providing opportunities for residents to work and live in non-toxic environments, and to earn livable wages.

The origins of “just transitions” is traced to the Navajo Nation and Hopi Tribe people who endured the environmental and health burdens of a dirty coal plant neighbor, but were also economically devastated when it shut down.¹³⁵ But under the Just Transition Coalition, affected communities managed to divert the company’s annual revenues from the sale of pollution credits towards renewable energy investments on tribal lands, such as wind and solar plants, as well as use the revenues to help offset the economic burden of lost coal royalties.¹³⁶

¹³⁰ Chevron Corporation. 2009. “Chevron in California.” <http://www.chevron.com/documents/pdf/ChevronInCalifornia.pdf>. Accessed 18 Aug 2011.

¹³¹ Fortune 500. 2011. “Annual Ranking of America’s Largest Corporations, by State.” Web. 18 Aug. 2011
<http://money.cnn.com/magazines/fortune/fortune500/2011/states/CA.html>.

¹³² California Environmental Protection Agency & California Air Resources Board. 2009. Mandatory Green House Gas Reporting 2008 Reported Emissions, 25 Nov. 2009. Web. 19 Aug 2011 <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-reports.htm>.

¹³³ May, J. April 2009. “The Increasing Burden of Oil Refineries and Fossil Fuels in Wilmington, California.” Communities for a Better Environment.

¹³⁴ California Air Sources Board Greenhouse Gas Inventory Data 2000-2008, last updated May 12, 2011. Web 26 Dec 2011
http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-08_2010-05-12.pdf

¹³⁵ McLeod, C. “Seeking a Just Transition.” *Earth Island Journal: News of the World Environment*. Web June 2011.
http://www.earthisland.org/journal/index.php/eij/article/seeking_a_just_transition/

¹³⁶ Begaye, E., Johns, W., Selestewa, L., et al. 2007. “The Just Transition Plan Brining Environmental Justice and Clean Energy to the Navajo and Hopi People,” Conference Paper for the State of Environmental Justice in America. Washington D.C.: Just Transition Coalition.
http://www.eiconference.net/images/The_Just_Transition_Coalition.pdf

Although California's and Chevron's fossil fuel energy capacity generates prosperity for some, it adversely affects environmental quality and health for others.¹³⁷ Established in 1902, the Richmond Chevron Oil Refinery is the company's oldest and third largest refinery in California with a refining capacity of 245,270

The Origins: Just Transitions in Indigenous Communities

The origins of "just transitions" can be traced to multiple grassroots environmental battles. One is the fight of the Just Transition Coalition against Southern California Edison. On December 31, 2005, the Mohave Generating Station, a coal-fired generating station in Nevada which was owned and operated by Southern California Edison and supplied electricity to Southern California residents, was closed down. In doing so, it also forced its only coal supplier, Arizona-based Peabody Energy Black Mesa Coal Mine, to shut down. The closing of the Peabody Coal Mine, located in Navajo Nation and Hopi Tribe lands, was a partial victory: according to the EPA and indigenous communities, the Coal Mine was one of the dirtiest in the nation and the Navajo/Hopi Tribes had already passed resolutions to cease Peabody's business authority in their lands.

However, the power plant-coal mine closure caused massive unemployment in the Navajo/Hopi communities. The Just Transition Coalition, composed of the Indigenous Environmental Network, Honor the Earth Foundation, Apollo Alliance, Black Mesa Water Coalition, To'Nizhoni Ani, Grand Canyon Trust, and the Sierra Club sued Southern California Edison and proposed that annual revenues from the sale of pollution credits (from the Mohave plant) be reinvested in renewable energy on tribal lands, such as wind and solar plants, as well as be used to help offset the economic burden of lost coal royalties and jobs in Indian Nations. Black Mesa Water Coalition has since created a community-driven plan for green jobs which advocates for solar energy generation and artisan economies.

barrels per day.¹³⁸ Employing between 1,950 and 2,460 people, Chevron is the largest employer and principal property tax payer in the City.¹³⁹ A mixed industrial town with demographics that reflect a history of racial segregation, new migration, and wartime industrial activity, Richmond is home to a linguistically-diverse community of nearly 80 percent people of color.¹⁴⁰ Thousands of African Americans moved to Richmond in the early and mid-20th century for jobs in the then-booming railroad and maritime industries. In the 1970's after the Vietnam War, Laotian war refugees (of various ethnic and linguistic backgrounds: Mien, Lao, and Khmu) arrived in Richmond.¹⁴¹ More recently, the city has also had a growing Latino population.

Many residents work in hazardous production, transportation, and material moving occupations (8.9 percent), and construction, extraction, manufacturing, and repair occupations (14 percent). Approximately 36 percent of Richmond City households earn less

¹³⁷ Collin, R.W. and Collin, R.M. 1998. "The Role of Communities in Environmental Decisions: Communities Speaking for Themselves," *Journal of Environmental Law and Litigation* 13: 3789.

¹³⁸ U.S. Energy Information Administration. Basic Petroleum Statistics: Ranking of U.S. Refineries, Last Updated/Reviewed June 2011. Web. 11. Aug 2011 <http://www.eia.gov/neic/rankings/refineries.htm>

¹³⁹ City of Richmond, California, Financial Department. "Comprehensive Annual Financial Report for the Fiscal Year ended June 30, 2010." www.ci.richmond.ca.us/DocumentView.aspx?DID=6622. "Comprehensive Annual Financial Report for the Fiscal Year ended June 30, 2009." www.ci.richmond.ca.us/DocumentView.aspx?DID=5386.

¹⁴⁰ 26.6% of residents identify as Black, 13.5% as Asian, 0.01% as Native American, Alaska Native, or Native Hawaiian, and 39.4% as Hispanic or Latino—totaling 79.51% people of color. U.S. Census Bureau: 2010 American Community Survey.

¹⁴¹ University of Washington, Evans School of Public Affairs. "Developing Leadership and Political Capacity Among Laotian Refugees: Healing a Culture, Building a Community: Laotian Organizing Project." Web. 2 Nov. 2011 <http://hallway.evans.washington.edu/cases/details/developing-leadership-and-political-capacity-among-laotian-refugees-healing-culture-bu>

than \$35,000 annually.¹⁴² Children in Richmond experience a much higher than average rate of hospitalizations due to asthma, and adults are disproportionately affected by heart disease, cancer and stroke.¹⁴³ Many residents live near the fence lines of nearly 350 industrial sites,¹⁴⁴ including auto dismantlers, chemical manufacturers, waste incinerators, and, the Chevron facility.¹⁴⁵

The “just transitions” movement was catalyzed when in 2007 the communities neighboring Chevron’s oil refinery organized to oppose Chevron’s proposal to expand its oil refining capacity. Asian Pacific Environmental Network (APEN), Communities for a Better Environment (CBE), and West County Toxics Coalition created a multilingual and multiracial coalition of hundreds of residents and insisted that the expansion would lock the community’s future to the production of dirtier crude oil. Increasing energy demand, pricing, and concerns about the security of supply have led oil companies to refine “unconventional” stocks of heavier crude oil with higher sulfur content. Compared to the higher grades of crude oil, refining lower grades of petroleum requires more energy and releases more greenhouse gases per gallon before becoming gasoline.¹⁴⁶

Despite strong scientific evidence regarding pollution and health concerns, the City Council approved Chevron’s expansion proposal triggering a joint lawsuit by APEN, CBE, and West County Toxics Coalition in 2008. They contested Chevron’s proposal arguing the company concealed its plans to refine higher-sulfur crude oil without proper disclosure of assessment or mitigation of health impacts under its Environmental Impact Report (EIR). In April 2010, Richmond’s residents were handed a victory when the California Court of Appeals - led by three Republican judges - halted Chevron’s expansion proposal because the Environmental Review Report was inadequate.

This victory spawned a long-term “just transition” strategy. CBE Organizer Jessica Tovar explains that residents advocate to “only do things to the refinery that would reduce pollution in the community [and] at the same time create an infrastructure that would work for the transition off fossil fuel...We are interested in having alternative forms of energy and fuel, and we should be spending more of our time and resources into researching those and making those happen in our community.”

“RICHMOND DESERVES MORE GHG REDUCTION AND CLEAN ENERGY JOBS LOCALLY INSTEAD OF OFFSETTING LOCAL EMISSIONS ABROAD. RICHMOND SHOULD GET THE HEALTH, CLIMATE REDUCTIONS, CLEAN ENERGY, AND ECONOMIC BENEFITS LOCALLY.”

- NILE MALLOY, CBE NORTHERN CALIFORNIA PROGRAM DIRECTOR

What would a “just transition” look like for Richmond? Our conversations with community advocates revealed several key elements: first and foremost are verifiable reductions of greenhouse gas emissions by major industrial polluters – such as Chevron; second, proactive and community-engaged city planning that sets benchmarks for sustainable and equitable economic development; third, political structures that reflect a true

¹⁴² U.S. Census Bureau, 2010 American Community Survey 1-Year Estimates. Web. 6 Jan. 2011 http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?_afpt=table.

¹⁴³ City of Richmond General Plan Element 11: Community Health and Wellness. Web. 2 Nov. 2011 <http://www.cityofrichmondgeneralplan.org/docManager/1000000919/11.0%20Health%20and%20Wellness%20Element.pdf>

¹⁴⁴ Asian Pacific Environmental Network 2001. “Fighting Fire With Fire: Lessons from the Laotian Organizing Project’s First Campaign.” Richmond, California.

¹⁴⁵ Chevron’s Richmond plant emitted 4,792,052 of CO2 metric tons equivalent California Air Resources Board. Mandatory GHG Reporting Data Emissions Reported for Calendar year 2008..Report Generated April 2010. Web 11 Aug 2011 <https://ghgreport.arb.ca.gov/eats/carb/>.

¹⁴⁶ Raloff, J. “Heavier Crudes, Heavier Foot Prints.” *ScienceNews Magazine*, December 3, 2010. Web. 18 Aug. 2011 http://www.sciencenews.org/view/generic/id/66955/title/Heavier_crudes,_heavier_footprints

commitment to addressing the needs and concerns of local residents; and lastly, development of projects that actualize alternative modes of energy generation and consumption.

APEN Executive Director Roger Kim explains that the campaign against Chevron's expansion was a "catalyst" for more long-term solutions to a fossil fuel-based economy. "The expansion of Chevron and the infrastructure that they were trying to put into the ground would have kept Richmond locked into dirty oil for generations to come. We needed to head that off in order to even have the semblance of a future where Richmond could be cleaner and more environmentally just."

One way Richmond residents and advocacy organizations have attempted to reach verifiable reductions in greenhouse gases is through its community planning process. CBE Northern California Program Director, Nile Malloy states, "Richmond has an opportunity to utilize its land use authority to reduce greenhouse gas emissions locally by including industrial and commercial sources of emissions. Chevron can use more renewable energy on-site of its refinery and to increase energy efficiency while processing oil. Richmond deserves more greenhouse gas reductions and clean energy jobs locally instead of offsetting local emissions abroad. Richmond should get the health, climate reductions, clean energy, and economic benefits, locally."

APEN and CBE members, many of whom are Chevron's neighbors and all too familiar with its environmental and health risks, are now becoming Richmond's just transition and sustainability planners. Community residents are actively involved in the City of Richmond's "General Plan" update and implementation. Most notably, the Plan now includes an "Energy and Climate Change Element" and a "Community Health and Wellness Element," both of which seek to reduce climate change impacts, and promote revitalization and sustainable development for a healthy, sustainable community.¹⁴⁷ These efforts make Richmond one of the first cities to prioritize the combination of reducing regional greenhouse gas emissions and increasing local health benefits – what some call the co-benefits of local climate action.

Richmond's political transition has strengthened the commitment of City officials to promote sustainable economic development and a path towards a "just transition." As Kim explains, "Richmond, for 100 years, has been a company town. It has been owned by Chevron; they owned the mayor, they owned the City Council, they owned the Planning Commission." But tireless community organizing finally shifted political power during the last City Council election when every candidate that Chevron supported lost. This created a majority bloc of progressive council members for the first time in the City's history. This political transformation, Kim explains, "Is why we have this opportunity to really set Richmond on a different path towards *not* being a hub for the dirty fossil fuel economy but actually being a hub for this green economy that we want to build."

Social enterprises like Solar Richmond offer a vision of this new green economic hub. Founded in 2006, Solar Richmond provides solar installation training to underemployed and low-income residents, staffing services to solar companies, and recently initiated a worker-owned clean energy cooperative. The organization works with youth and young adults to develop their customer service and construction skills and ultimately gets trainees excited about learning. Solar Richmond founder Michele McGeoy explains, "A goal of the program is really to inspire [youth] to further their education."

¹⁴⁷ City of Richmond, California. Government website. <http://www.ci.richmond.ca.us/index.aspx?NID=1737>

Solar Richmond also helps local residents and government officials of fossil-fuel company towns to visualize new economic futures. Through collaboration with the City of Richmond and federal support, Solar Richmond works to implement a solar panel rebate program by



conducting outreach and solar installations in low-income neighborhoods. McGeoy states, “It’s an exciting program and a great partnership, and I think it’s a great example of policy...The City got money through the Federal Energy Efficiency Block Grant dollars and decided, ‘not only do we want to decrease carbon emissions, but we also want to create jobs.’” These efforts have put the City of Richmond in first place for watts per capita and second place for total watts generated among Bay Area cities.¹⁴⁸

Building on the momentum from the solar training and residential installation programs, Solar Richmond launched a worker-owned clean energy cooperative that employs graduates from Solar Richmond, RichmondBuild, and the East Bay Green Jobs Corps in commercial-scale solar installations. “It [meaning, the cooperative] will create not just more work experience, but really a ladder that’s not just a pathway out of poverty but really into prosperity,” reflects McGeoy. The cooperative business model enables workers to become owners, moving beyond green jobs to green, local, ownership and asset creation. Richmond’s clean energy cooperative is modeled after successful programs in Cleveland, Ohio and the Mondragon Cooperative in Spain. “To build a co-op that’s employing hundreds of people is going to take a long time, but to have something where people can say, ‘oh, I can become an owner’ is just an incredibly powerful thing to be able to have in the community.”

Grassroots community participation in these just transition initiatives is important especially as polls show that more people of color are supportive of climate change mitigation initiatives than their white counterparts, regardless of income and education

“[ALTHOUGH] PEOPLE OF COLOR ARE THE MAJORITY IN THE STATE OF CALIFORNIA, THERE HAS BEEN A HUGE DISCONNECT BETWEEN THE WAY THAT POLICIES HAVE BEEN SHAPED AND THE PRIORITIES THAT HAVE BEEN DESIGNED.”

- ROGER KIM, APEN EXECUTIVE DIRECTOR

¹⁴⁸ Northern California Solar Energy Association. 2010. 2009 Bay Area Solar Installations Report. Web. 18 Aug. 2011 <http://www.norcal solar.org/media/41-2009-bay-area-solar-installations-report-released.html>

levels.¹⁴⁹ Kim points out that these voter trends make sense considering “who is most impacted by the dirty economy, and it really makes sense that these are the communities that want something different...[Although] people of color are the majority in the state of California, there has been a huge disconnect between the way that policies have been shaped and the priorities that have been designed. The justice piece isn’t central...what is missing is making sure that we have policies that really reflect what people in California want.”

Current developments underway in Richmond, California, however, show that community members most impacted by a fossil-fuel based economy have ostensible power, and are best equipped, to create sustainable alternatives. They are radically altering the relationships between profit-powerful polluters, their neighborhoods, and the environment. Longtime North Richmond resident, Reverend Kenneth Davis acknowledges “Chevron’s been here for over 100 years...[but] if I lived in a perfect world I would have a world where we didn’t have to be as dependent as we are [on] petroleum. I would have a green world, one where we could use solar and wind [energy] and all the other technologies. We’d be able to exist without filling up our gas tank.” Reverend Davis’ hopes may soon become a reality and will help close the climate gap, in the process.

¹⁴⁹ Metz, D. and Weigel, L. “Key Findings from National Voter Survey on Conservation Among Voters of Color.” Memorandum from Fairbank, Maslin, Maullin & Associates and Public Opinion Strategies, October 6, 2009. In Park, A. December 2009. “Everyone’s Movement: Environmental Justice and Climate Change.” Environmental Support Network, Washington DC.

Maximizing L.A.'s Energy Efficiency Starts with "Green Jobs"

Based on interviews with Alex Lopez, Program Director at Los Angeles Conservation Corps, Graciela Geyer, former Lead Organizer at Strategic Concepts in Organization and Policy Education, and Teresa Sanchez, Program Director of the Green Retrofit and Workforce Program

Strategic Concepts in Organizing and Policy Education (SCOPE) and Los Angeles Conservation Corps (LACC) were among the first community-based organizations in California to spur regional conversations about "green jobs" – before either "green" was "in" or a promise of government funds. SCOPE's Green Retrofit and Workforce Program is a policy-driven jobs initiative, and LACC heads youth, green job training programs – both attempt to reduce energy consumption in California's largest metropolis while securing economic benefits for traditionally disinvested populations through government funding.¹⁵⁰ Their efforts will contribute towards determining how we can deliver on the promise of green jobs and continue to build broad support for tackling climate change.

In 2006, through a partnership with the Apollo Alliance – a community, labor, and environmental partnership of 24 organizations – SCOPE set out to develop a policy initiative to stimulate economic growth and lay the foundation for a clean energy future. They proposed a policy that would retrofit 1,000 city-owned buildings, save the City thousands of dollars in energy and water costs, and connect low-income residents to new skilled jobs in green construction and maintenance occupations. By April 2009, the City passed an ordinance instituting the Los Angeles Green Retrofit and Workforce Program, triggering the successful acquisition of funds from the American Recovery and Reinvestment Act (ARRA), President Obama's stimulus recovery initiative, which included funds from the Department of Energy (EECBG) and Qualified Energy Conservation Bonds (QECB).¹⁵¹

These federal funds supported the first implementation phase of the city ordinance, a pilot program that set the goal to retrofit 100 city-owned buildings. This creatively-funded pilot program has since trained 40 workers in energy efficient retrofits and retrofitted 28 buildings, with a projection of an additional 52 by the end of the 2012-13 fiscal year. These accomplishments make the L.A. Green Retrofit and Workforce Program one of the first successful city projects that link the goals of energy efficiency and socially just employment opportunities.

In Fiscal Year 2009-2010, Los Angeles City Council voted to lay-off up to 3,000 workers for the first time in 25 years.¹⁵² At the time, Los Angeles County faced one of the worst unemployment rates in its history, still at a high 12.3 percent in 2011.¹⁵³

Although far from making a dent on unemployment rates, the Green Retrofit and Workforce Program is prioritizing city workers who were first hit by City

"SAVINGS GENERATED WILL BE MEASURED AND USED TO RE-INVEST IN FUTURE RETROFIT PROJECTS."

- TERESA SANCHEZ, PROGRAM DIRECTOR OF THE GREEN RETROFIT AND WORKFORCE PROGRAM

¹⁵⁰ While not elaborated here, it is important to note that Communities for a Better Environment was involved in questioning Southern California's fossil fuel-based energy dependency. CBE was an integral player in the campaign that stopped the expansion of the City of Vernon Power Plant (recently renamed to Southeast Regional Energy Center).

¹⁵¹ United States Government. The Recovery Act. Web. 29 Nov. 2011 http://www.recovery.gov/About/Pages/The_Act.aspx.

¹⁵² Reston, M., & Willon, P. "L.A. City Council Orders 3,000 More Job Cuts." *Los Angeles Times*. February 10, 2009. Web 3 Oct. 2011 <http://articles.latimes.com/2010/feb/19/local/la-me-la-budget19-2010feb19>

¹⁵³ Unemployment decreased to 11.8% in 2012. State of California, Employment Development Department, Labor Market Information Division. 2011. Los Angeles-Long Beach-Glendale Metropolitan Division. Pacoima, CA: Employment Development Department. Web. 3 Oct. 2011 [www.calmis.ca.gov/file/lfmonth/la\\$pd.pdf](http://www.calmis.ca.gov/file/lfmonth/la$pd.pdf).

layoffs. Program Director Teresa Sanchez estimates that about 50 percent of program graduates are female and all “are incumbent City workers who would have been laid off last [2010] summer.”

Beyond aiding city workers, the Green Retrofit and Workforce Program was intended to offset energy costs and greenhouse gas emissions. Los Angeles powers 3.9 million residents and, in the previous fiscal year 2010-2011, supplied over 25.2 million megawatt-hours to its industrial, commercial, and residential customers – making the Los Angeles Department of Water and Power (LADWP) the nation’s largest publically-owned utility company.¹⁵⁴ Unfortunately, nearly 40 percent of LADWP’s electricity is generated through coal burning plants – as compared to a seven percent coal mix in the state as a whole¹⁵⁵ – and coal-generated electricity accounts for 70 percent of all greenhouse gases produced by the LADWP.¹⁵⁶ Anything that can reduce energy use can have a major impact on climate change.

More directly, the program’s building retrofits are expected to save the city hundreds of thousands of dollars in energy costs per year. According to Sanchez “savings generated will be measured and used to re-invest in future retrofit projects.” More generally, increasing energy efficiency in buildings is one of the most inexpensive ways to steeply reduce greenhouse gas emissions. An estimated 2,200 megatons of CO₂ are released into the atmosphere from buildings in North America, contributing to 35 percent of the continent’s total greenhouse gas emissions.¹⁵⁷ Programs like L.A.’s Green Retrofit and Workforce Program can help the city move towards more sustainable infrastructure, increase energy conservation, and save money on utility bills.

The Los Angeles Conservation Corps is behind another government funded initiative to upgrade buildings, recreational facilities, and infrastructure. Celebrating 25 years of experience, LACC is a job training and educational program for young adults between the ages of 18 and 24. Senior Manager Alex Lopez, says LACC’s “primary mission is to serve young people through conversation, through education, and through community projects...where they will gain valuable jobs skills [and] move forward to a bigger and better [future].” Where the public education system fails, LACC helps students complete high school credits, pass the California High School Exit Exam, and receive their high school diploma or GED – all while receiving training and work experience in conservation and renewable energy projects.

“[LACC’S] PRIMARY MISSION IS TO SERVE YOUNG PEOPLE THROUGH CONVERSATION, THROUGH EDUCATION, AND THROUGH COMMUNITY PROJECTS...WHERE THEY WILL GAIN VALUABLE JOBS SKILLS [AND] MOVE FORWARD TO A BIGGER AND BETTER [FUTURE].”

- ALEX LOPEZ, SENIOR MANAGER AT LOS ANGELES CONSERVATION CORPS

Lopez’s personal story highlights the impact of the LACC’s work – and how they are recovering people as well as recovering the environment. When he started as a Corps member in 1991, he was actively involved with gangs in East L.A. As Lopez explains, “I moved up as staff, but I got in some trouble. I was incarcerated for about 5 years came back in 2002 and they hired me back as a staff—gave me a second chance—and now

¹⁵⁴ Los Angeles Department of Water and Power, Facts and Figures. Web 19 June 2012. https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-factandfigures?_adf.ctrl-state=i5kzuiimn_4&_afLoop=441216450649000

¹⁵⁵ Los Angeles Department of Water and Power. 2010. “Power Content Labor Annual Report of Actual Electricity Purchases for LADWP, Calendar Year 2010.” http://www.energy.ca.gov/sb1305/labels/2010_labels/LADWP_PCL.pdf

¹⁵⁶ Los Angeles Department of Water and Power. 2010. Building a New Los Angeles: Water & Power Budget Presentation Fiscal Year 2010-2011. Pg. 11. In Los Angeles Alliance for a New Economy. 2012. “Clean Power, Good Jobs: Realizing the Promise of Energy Efficiency in Los Angeles.” Los Angeles, CA. <http://www.repowerla.org/wp-content/uploads/2012/02/RePower-LA-Clean-Power-Good-Jobs-Report-February-2012.pdf>

¹⁵⁷ Commission for Environmental Cooperation (CEC). 2008. *Green Building in North America: Opportunities and Challenges*. Montreal (Quebec), Canada. Web. 3 Oct. 2011. <http://www.cec.org/Page.asp?PageID=122&ContentID=2237&SiteNodeID=355>

I'm a program director. There are only three more steps to move up here in the Corps. I'm only one example of what other young people are facing."

With contracts with the City of Los Angeles Department of Recreation and Parks and the County of Los Angeles Parks and Recreation Department, LACC trainees plant trees, shrubbery, and school garden beds, landscape parks and sidewalks, and install rain water collection systems, and – most recently – solar panels. Corps members are even collecting and recycling hundreds of pounds of aluminum cans, glass bottles, and plastic trashed by game day tailgaters at the Pasadena Rose bowl and Los Angeles Coliseum. LACC is helping the City reduce costs, Lopez explains, but is also teaching young people "how [their work] impacts climate change...[it is] not just to go out there and do the job for a dollar, but know what they are doing and why they are doing it. We are a job training program and education plays a key part [in] their experience."

As part of the national and California associations of conservation corps, LACC's work is made possible from diversified funding of federal, state, and local governments. LACC is the biggest non-profit conservation corps in the nation with a budget of \$25 million and four offices in Los Angeles. But LACC's diversified funding also comes from what Lopez calls "fee-for-service projects where we compete against other contractors." One such project was the organization's largest solar installation project at CBS studios with a capacity of 100 kilowatts. LACC also has an upcoming solar installation project in the City of La Puente and another installation at Obregon Park in East L.A., a neighborhood where an estimated 97 percent of its population is Latino.¹⁵⁸

"[THEY ARE] GOING TO WORK BUT AT THE SAME TIME [THEY ARE] GOING TO GIVE BACK TO THE COMMUNITY AND [THEY'RE] GOING TO MAKE A DECENT DOLLAR AND WE ARE TEACHING THEM THE VALUES OF THAT...EVERYDAY.... THERE ARE NOT ENOUGH TREES IN THE URBAN COMMUNITIES, ESPECIALLY IN IMPOVERISHED AREAS. WE GO TO THOSE COMMUNITIES AND PLANT TREES, REMOVE THE GRAFFITI, EDUCATE THE RESIDENTS – AND MOST OF OUR YOUNG PEOPLE ARE FROM THOSE COMMUNITIES SO THEY ARE ABLE TO GIVE BACK."

- ALEX LOPEZ, SENIOR MANAGER AT LOS ANGELES CONSERVATION CORPS

Lopez explains that students are "going to work but at the same time [they're] going to give back to the community and [they are] going to make a decent dollar and we are teaching them the values of that...everyday." Lopez elaborates, "There are not enough trees in the urban communities, especially in impoverished areas. We go to those communities and plant trees, remove the graffiti, educate the residents – and most of our young people are from those communities so they are able to give back." Corps members' work also has long-term multiplier effects: it "gives the community an opportunity to grow vegetables and eat healthy. And rain harvesting helps save on utility bills, and [so does] installing solar and weatherization; and those resources can help poverty-level families bring in other resources for a healthy living," describes Lopez.

¹⁵⁸ As analyzed by the Los Angeles Times Mapping L.A. Project. Web. 3 Oct. 2011 <http://projects.latimes.com/mapping-la/neighborhoods/neighborhood/east-los-angeles/>



While addressing community and environmental needs, LACC is also helping young people attain employment and training opportunities. In the fiscal year 2010-2011, LACC's Clean & Green program seasonally employed over 1,000 youth who collectively cleaned over 10,000 alleys and city blocks, painted 11 murals, planted and maintained over 6,000 trees, and maintained over 68,000 square feet of gardens.¹⁵⁹ In June 2011, 157 students graduated from their charter-certified school, Youth Opportunities High School in Watts. One of their students obtained employment with International Brotherhood of Electrical Workers (IBEW) Local 11 in Los Angeles, while others got jobs with a solar installation company called Solar City.

The relatively small numbers of those actually obtaining work may be surprising given the hype about the green sector. But it is important to remember that the conversation about green jobs emerged just as the national economy was collapsing – and what

was originally proposed to be *one* solution to unemployment was thought to be *the* solution. Expectations need to be adjusted – but because conversations began early in Los Angeles, this is one of a handful of testing grounds in the nation to have critical reflection on how (if at all) a green jobs sector can be built. Money has been invested and programs have been established, and successes need to be clarified and broadcasted so that other regions can move forward feeling more uncertain around the promise of green jobs.

While LACC and SCOPE are two different examples of green job growth initiatives, they share in common a dependency on policy makers' commitment to long-term investment in sustainable infrastructure, and workforce and economic development to meet the needs of the future. However, a state with the largest renewable energy infrastructure,¹⁶⁰ California has the power to potentially ensure thriving futures for traditionally disinvested populations, as well as energy conservation to mitigate climate change impacts. Alternative energy projects coupled with socially just employment strategies are necessary to help the City of Los Angeles move towards a sustainably just future. SCOPE and LACC show the readiness and commitment of organizations and residents to collaborate and work towards that future.

¹⁵⁹ Los Angeles Conservation Corps, Clean and Green. <http://www.lacorps.org/clean-and-green.php>

¹⁶⁰ U.S. Energy Information Administration, Energy Distributions: California Quick Facts, last updated October 2009. Web. 26 Dec. 2011 <http://www.eia.gov/state/state-energy-profiles.cfm?sid=CA> http://www.eia.gov/state/seds/hf.jsp?incfile=sep_sum/html/rank_use_gdp.html

Collaborating to Create Change

Based on interviews with Colin Miller, former Organizer, Green-Collar Jobs Campaign at the Ella Baker Center, Emily Kirsch, Lead Organizer, Green-Collar Jobs Campaign at the Ella Baker Center, and Garrett Fitzgerald, Sustainability Coordinator at the City of Oakland Public Works Agency

When thinking about green cities, Oakland may not be at the top of your list, but the Bay Area city of nearly 400,000 is determined to set the stage for innovative solutions to climate change. In March 2011, Oakland's City Council approved an Energy and Climate Action Plan (ECAP) that establishes the strongest greenhouse gas reduction goals of any city in the country.¹⁶¹ Contrary to other city's top-down approaches to climate policy, Oakland's ECAP was driven by a diverse coalition of more than 50 local and regional groups who are ready to make sure the City's ambitious goals are realized.

The Oakland Climate Action Coalition (OCAC) is a cross-sector coalition that works to build a thriving green economy through the equitable development and passage of Oakland's Energy and Climate Action Plan. The Coalition, made up of labor, business, environmental and social justice organizations, assembled in 2009 to work with the City on the creation of Oakland's ECAP. The Coalition transformed what could have been a typical rule-making procedure into an innovative, grassroots-based policy collaboration. "We are proud of the plan because we helped to write it. Fifty of the 150 policies that are in the plan were written by us. We also incorporated benefits for low-income communities and communities of color into the remaining policies in the plan," says Colin Miller, former Coordinator for the Oakland Climate Action Coalition and former Organizer for the Green-Collar Jobs Campaign at the Ella Baker Center, which convened the OCAC and serves on the steering committee.

Many other cities and regions across the country have also set goals to reduce greenhouse gas emissions and energy consumption, but Oakland's target levels are some of the first to comply with the reductions recommended by the Intergovernmental Panel on Climate Changes (IPCC).¹⁶² By 2020, Oakland will reduce greenhouse gas emissions to 36 percent below 2005 levels and more than 80 percent below 2005 levels by 2050. These reductions surpass California's statewide requirement for achieving 1990 levels by 2020¹⁶³ and the California Air Resources Board's recommendation for local governments.¹⁶⁴ Garrett Fitzgerald, Sustainability Coordinator at the City of Oakland Public Works Agency, worked closely with the OCAC to incorporate their suggestions into the Plan and emphasizes their crucial role in moving the pioneering Plan forward. "With greenhouse gas reduction goals as aggressive as ours, we have to do just about everything we can do, so the more ideas, the better. The Coalition used their creativity and contacts to think of many actions that we [the City staff] would not have thought of on our own."

In addition to its ambitious benchmarks, Oakland's ECAP is among the first to incorporate benefits for traditionally marginalized populations. The plan includes specific measures for Oakland's low-income

¹⁶¹ Kirsch, E. 2011. "Oakland Passes Landmark Energy and Climate Action Plan." Ella Baker Center.

<http://www.ellabakercenter.org/blog/2011/03/oakland-passes-landmark-energy-and-climate-action-plan/>. Accessed 10 Nov 2011.

¹⁶² Gupta, S., D. A. Tirpak, N. Burger, J. Gupta, N. Höhne, A. I. Boncheva, G. M. Kanoan, C. Kolstad, J. A. Kruger, A. Michaelowa, S. Murase, J. Pershing, T. Saijo, & A. Sari. 2007. "Policies, Instruments and Co-operative Arrangements." In *Climate Change 2007: Mitigation of Climate Change*. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

¹⁶³ California Assembly Bill No. 32: California Global Warming Solutions Act of 2006. 27 Sept 2006. http://www.leginfo.ca.gov/pub/05-06/bill_asm_ab_0001-0050/ab_32_bill_20060927_chaptered.pdf. Accessed 10 Apr 2010.

¹⁶⁴ California Air Resources Board. "Climate Change Proposed Scoping Plan." <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>. Accessed 20 Oct 2011.

residents and those currently underserved by existing resources, such as affordable housing, public transit, food access, and employment opportunities. Through the OCAC, community organizations were the engineers of the plan's focus on equity and provided feedback to the City on which policy actions to focus on first. "The plan includes over 150 actions, so we can't do everything at once. The Coalition's input shaped what was prioritized in the Plan in addition to the overall value of the Plan," says Fitzgerald. For example, the OCAC highlighted that 60 percent of the City's households are renters, but nearly all existing energy efficiency programs only benefit homeowners. The City is now collaborating with the Cities of Berkeley and Emeryville through the Multifamily Building Energy Efficiency Solutions Project to implement outreach strategies and develop policy opportunities to lower utility bills for tenants.¹⁶⁵

"WITH GREENHOUSE GAS REDUCTION GOALS AS AGGRESSIVE AS OURS, WE HAVE TO DO JUST ABOUT EVERYTHING WE CAN DO, SO THE MORE IDEAS, THE BETTER. THE COALITION USED THEIR CREATIVITY AND CONTACTS TO THINK OF MANY ACTIONS THAT WE [THE CITY STAFF] WOULD NOT HAVE THOUGHT OF ON OUR OWN."

- GARRETT FITZGERALD, CITY OF OAKLAND
SUSTAINABILITY COORDINATOR

Drawing from experience in state and local policy work, Emily Kirsch, Founding Coordinator of the OCAC and Lead Organizer of the Green-Collar Jobs Campaign at the Ella Baker Center, knows that goals are nothing but words on paper until action turns them into reality. "There are two types of plans in the world; those that get implemented and those that collect dust. Oakland's ECAP must be the former in order to be effective." As such, the OCAC has formed four committees to monitor and support the implementation of each of the Oakland ECAP's target areas, including local clean energy, food justice and urban agriculture, land use and transportation, and climate resilience and adaptation. All OCAC members work on the ECAP's fifth priority area, community engagement. Each of the committees has two co-chairs, one from a policy-based organization and another from a grassroots-based group, to ensure a balance of expertise in policy implementation and on-the-ground experience.

The work of the OCAC will be crucial for re-evaluating the successes and shortcomings of the ECAP as the implementation plan moves forward. "The ECAP will be rewritten every three years. This gives us a chance to evaluate what the city has done well and what they can do better," says Kirsch. The ECAP states that the City will produce annual reports on implementation achievements, and it will be updated every three years "to review progress, identify new priority actions and maintain momentum."¹⁶⁶

One way that the OCAC will help implement the ECAP is by bridging City-level infrastructure transformations with complementary household and individual-level behavior changes. "There are certain areas of the plan that require citizen action that can't be done by public authority... a lot of it requires behavior change that is made possible in turn by certain corresponding investments, say, in buses and bike lanes instead of freeways. There is the infrastructural investment and sort of the public policy change that's needed, but then there is also the behavioral change and sort of a mind shift required for people to actually use the new infrastructure that has been put in place," describes Miller. Fitzgerald confirms the need for continued collaboration between the City and community-based organizations. "Many of the policies laid out in the plan will only happen, or will only happen well, if they are supported through strong community engagement."

¹⁶⁵ City of Berkeley. "Multifamily Building Energy Efficiency Solutions." Office of Energy and Sustainable Development. <http://www.ci.berkeley.ca.us/ContentDisplay.aspx?id=65822>. Accessed 19 Jun 2012.

¹⁶⁶ City of Oakland. City of Oakland Energy and Climate Action Plan. <http://www2.oaklandnet.com/GreenOakland/OAK024383>. Accessed 10 Aug 2011.

An example of such community engagement includes a “people-powered solar” project that emerged from a partnership between the Ella Baker Center and Solar Mosaic, a for-profit social enterprise. The Oakland Solar Mosaic partnership used crowd funding to create the upfront capital to fund solar panels for three, and soon to be four, Oakland non-profit organizations that serve low-income communities of color in Oakland. The Asian Resource Center, People’s Grocery, and St. Vincent de Paul now have more available funds to invest in their critical work because of savings on utility bills.¹⁶⁷ Financial benefits to each non-profit range from \$30,000 to \$100,000 depending on the size of the installation,¹⁶⁸ and the installations created 2,700 hours of local construction jobs and a carbon savings equivalent of planting 4,600 trees.¹⁶⁹ The Youth Employment Partnership in East Oakland will also soon have solar panels installed.

Moving forward, a major challenge is funding for the ECAP’s full implementation. Miller reports that the plan has an estimated annual cost to the City of at least \$9 million, which is not easy to scrape up during times of drastic budget cuts. “We have done a great deal of work in framing the Plan as an investment in Oakland; an investment in our energy, our water, our food, and our public transportation. As with any investment, there is an initial upfront cost, but ultimately many of these investments pay for themselves over time,” explains Miller.

To generate revenue for the ECAP’s implementation, the OCAC is exploring the feasibility of various revenue generating opportunities. For instance, implementing a community choice energy aggregation plan would pool the City’s buying power for alternative energy and may produce cost-savings that can free up public funds to support new priority programs.¹⁷⁰ Another potential funding source includes transportation and development impact fees, which would charge developers for the greenhouse gas emissions associated with new commercial or residential projects.

“AS WE LOOK AT AB 32 AND THE BILLIONS OF DOLLARS THAT WILL BE GENERATED BY MAKING POLLUTERS PAY FOR THEIR POLLUTION, WE CAN POINT TO CITIES LIKE OAKLAND AND POINT TO PLANS LIKE OUR ECAP AND SAY, ‘THAT’S WHERE THIS MONEY SHOULD GO, TO IMPLEMENT CLIMATE SOLUTIONS ROOTED IN EQUITY.’”

- EMILY KIRSCH, ELLA BAKER CENTER
LEAD ORGANIZER FOR GREEN-COLLAR
JOBS CAMPAIGN

While the OCAC’s main focus is on Oakland, they hope their ground-breaking work will attract support from the state government. For example, Assembly Bill 32, California’s Global Warming Solutions Act, was passed in 2006 and calls for various strategies, including market-based approaches, to reduce statewide greenhouse gas emissions. Senate Bill 535, the California Communities Healthy Air Revitalization Trust, has not yet been voted on in the Assembly but would direct 10 percent of revenues generated from AB 32 – whether from cap-and-trade or fees – to benefit disadvantaged and impacted communities. “We are tying the work of the Oakland Climate Action Coalition to the work of the Ella Baker Center’s Green-Collar Jobs Campaign at the state level. As we look at AB 32 and the billions of dollars that will be generated by making polluters pay for their pollution, we can point to cities like Oakland and point to plans like our ECAP and say, ‘that’s where this money should go, to implement climate solutions rooted in equity,’” says Kirsch.

¹⁶⁷ Ella Baker Center. 2012. “Oakland Solar Mosaic.” <http://ellabakercenter.org/green-collar-jobs/oakland-solar-mosaic>. Accessed 20 Jun 2012.

¹⁶⁸ Solar Mosaic. 2012. <https://solarmosaic.com/>. Accessed 20 Jun 2012.

¹⁶⁹ Ella Baker Center. 2012. “Solar Mosaic Milestone in Oakland.” <http://ellabakercenter.org/blog/2012/04/solar-mosaic-milestone-in-oakland>. Accessed 20 Jun 2012.

¹⁷⁰ Local Clean Energy Alliance. 2012. “Clean Power Jobs Oakland Campaign.” <http://www.localcleanenergy.org/policy-platform/campaign2012>. Accessed 20 Jun 2012.

The work of the OCAC and the City of Oakland may also be relevant for other cities and regions that are formulating or revising their climate action plans.¹⁷¹ Oakland's ECAP is uniquely designed to integrate the priorities and actions of both City administrators and community organizers and advocates. Kirsch describes that their collaboration in Oakland can be looked to as "a proving ground for what's possible across the rest of the state and country. Other cities that want to develop or update their ECAPs can look to Oakland and say 'what did you do in Oakland, and how do we do that?'" For this reason, the Ella Baker Center's Green-Collar Jobs Campaign will soon launch a "Toolkit to Create Climate Action in Your Community." In the end, Miller adds, everyone has something to gain and a role to play. "What we have in common is that we are facing this thing called climate change. And it is going to impact everyone differently but nonetheless everyone will be impacted...Climate justice as a unifying frame has been very powerful for us, and I think our work could serve as a replicable model for other communities."



¹⁷¹ The City of Oakland and the Green Cities California coalition have been working with the California Governor's Office of Planning and Research to write guidance for cities on how to plan and implement greenhouse gas reduction policies and projects in compliance with the California Environmental Quality Act (CEQA) review process requirements. <http://www.greencitiescalifornia.org/>

Learning from the First Californians for the Next California

Based on interviews with Bill Tripp, Karuk Tribe Member and Eco-Cultural Restoration Specialist at the Karuk Tribe Department of Natural Resources

Long before scientists began investigating the causes and consequences of climate change, indigenous and many agrarian communities across the world recognized unusual patterns in the environment – erratic rainfall, scarcer fish flows, more intense droughts and frequent wildfires – at fine spatial and temporal scales. This is perhaps not surprising: for communities whose livelihoods and worldview are entrained to the rhythms and flows of the environment, they would be the first to notice. From oil drilling and coal mining, to destructive river dams and tree logging, these observations were a clear result of the mass extraction of natural resources and fossil-fuel based economies.¹⁷²

What may be more surprising is that it has taken so long for academic scholars and policy experts to recognize that indigenous ecological knowledge and practices are an “invaluable basis” for developing adaptation and natural resource management strategies in response to environmental changes.¹⁷³ But that recognition is coming as observers are becoming increasingly convinced that these knowledges can contribute to Western-based climate science and fill gaps overlooked by adaptation strategies.

In California, there are over 100 government recognized tribes,¹⁷⁴ representing more than 700,000 people.¹⁷⁵ For a better understanding of climate change impacts on, and contributions by, these knowledge-rich communities, we profile the Karuk Tribe and their Eco-Cultural Resource Management Plan. The Karuk Tribe is the second largest Native American tribe in California, with over 3,200 members.¹⁷⁶ The Karuk Tribal lands expand over an estimated 1.48 million acres along the middle course of the Klamath River Basin and Salmon Rivers and sits among the Klamath and Six Rivers National Forests in the far northwest region of California. Six Rivers National Forest alone contains more than 35 percent of California’s Wild and Scenic Rivers and 1,500 miles of waterways,¹⁷⁷ and the Klamath National Forest is considered one of America’s most biologically diverse regions.¹⁷⁸

“A LOT OF PEOPLE DON’T REALIZE THAT TRIBES EVEN EXIST IN CALIFORNIA, BUT WE ARE STAKEHOLDERS TOO, WITH THE RIGHTS OF INDIGENOUS PEOPLES.”

- BILL TRIPP, KARUK TRIBE MEMBER AND ECOCULTURAL RESTORATION SPECIALIST

¹⁷² Parker, A., Grossman, Z., Whitesell, E., et al. 2006. “Climate Change and Pacific Rim Indigenous Communities.” Northwest Indian Applied Research Institute. Evergreen College, Olympia, WA. <http://academic.evergreen.edu/g/grossmaz/IndigClimate2.pdf> Accessed 20 Jun 2012.

¹⁷³ Nakashima, D., McLean, K., Castillo, A., et al. 2012. “Turning Tables on Climate Change: Indigenous assessments of impacts and adaptation.” United Nations Educational, Scientific and Cultural Organization, France, and the United Nations University, Traditional Knowledge Initiative, Australia. <http://unesdoc.unesco.org/images/0021/002166/216613E.pdf> Accessed 20 Jun 2012.

¹⁷⁴ National Conference of State Legislatures. 2012. “Federal and State Recognized Tribes.” <http://www.ncsl.org/issues-research/tribal/list-of-federal-and-state-recognized-tribes.aspx>. Accessed 20 Jun 2012.

¹⁷⁵ 723,000 people in California self-identified their race as “American Indian and Alaskan Native” as a single race or in combination with one or more other races. U.S. Census. 2010. Profile of General Population and Housing Characteristics: 2010 Demographic Profile Data. http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP1&prodType=table. Accessed 20 Jun 2012.

¹⁷⁶ Reed, R. & Norgaard, K.M. 2010. “Salmon Feeds our People: Challenging Dams on the Klamath River.” In Walker Painemilla, K., Rylands, A. B., Woofler, A. and Hughes, C. (eds.). “Indigenous Peoples and Conservation: From Rights to Resource Management.” *Conservation International*, Arlington, VA. Pp. 7-16. http://www.conservation.org/Documents/CI_ITPP_Indigenous_Peoples_and_Conservation_Rights_Resource_Management.pdf. Accessed 20 June 2012.

¹⁷⁷ United States Department of Agriculture, Forest Service. Rivers to Ridges Ecological Restoration. <http://www.fs.usda.gov/detailfull/srnf/home/?cid=STELPRDB5203397&width=full> . Accessed 21 Jun 2012.

Despite their extensive understanding of, and reliance upon, some of the most valuable natural resources in the state, tribes in California are often left out of key policy processes and decisions. “A lot of people don’t realize that tribes even exist in California, but we are stakeholders too, with the rights of indigenous peoples,”



says Bill Tripp, a member of the Karuk Tribe and Eco-Cultural Restoration Specialist at the Karuk Tribe Department of Natural Resources. Tripp emphasizes that there are three sovereign groups in the United States: the Federal Government, States, and Tribes, and that Tribes have distinct rights as outlined in the United Nations Declaration of the Rights of Indigenous Peoples.

Indigenous peoples’ low-carbon traditional ways of life have contributed relatively little to climate change and, yet, indigenous peoples are among the most adversely affected. Many Native Americans’ livelihoods, culture, and identities depend heavily on natural resources, and they are disproportionately affected by current and projected environmental changes.^{179,180} Climate change impacts on the Karuk Tribe are numerous, including threats to the region’s cultural practices, forests, rivers and watersheds, and plant and animal species. Here, we focus on the interconnected challenges dealing with climate-related threats to two particular natural resources that are crucial for the Karuk Tribe’s livelihoods, forests and fish.

Historically, wildfires have had devastating environmental, economic, and public health impacts in California, and their occurrence is expected to increase by more than 100 percent in northern California forests due to increased temperatures and longer dry seasons.¹⁸¹ Recent research on the trends and influences on wildfires in northwestern California forests shows that fire frequency, size, and total burned area have strongly increased over the past 20 years due to both climate-related and human influences (e.g. fire suppression and land management policies) on the landscape.¹⁸² Similarly, both environmental conditions and management

¹⁷⁸ United States Department of Agriculture, Forest Service. 2012. Welcome to the Klamath National Forest! <http://www.fs.usda.gov/main/klamath/home>. Accessed 25 Jun 2012.

¹⁷⁹ Department of the Interior (DOI). 2010. ORDER NO. 3289, Amendment No. 1. ELIPS: Electronic Library of Interior Policies, 22 Feb. 2010. http://elips.doi.gov/app_so/act_getfiles.cfm?order_number=3289A1. Accessed 18 Jun 2012.

¹⁸⁰ National Wildlife Federation. 2011. “Facing the Storm: Indian Tribes, Climate-Induced Weather Extremes, and the Future for Indian Country.” http://www4.nau.edu/tribalclimatechange/resources/docs/res_NWF_TribalLandsExtremeWeather.pdf. Accessed 20 Jun 2012.

¹⁸¹ California Natural Resources Agency. 2009. California Climate Adaptation Strategy. <http://www.climatechange.ca.gov/adaptation>. Accessed 26 Aug 2011.

¹⁸² Miller, J. D., C. N. Skinner, H. D. Safford, E. E. Knapp, and C. M. Ramirez. 2012. “Trends and causes of severity, size, and number of fires in northwestern California, USA.” *Ecological Applications* 22:184–203. <http://dx.doi.org/10.1890/10-2108.1>

decisions influence the abundance and health of freshwater fish species; increasing temperatures and reduced snowmelt associated with climate change are expected to limit the spawning and survival of fish, especially where dams impede their migration along rivers.¹⁸³

The most drastic human influences on Karuk Tribal forests include logging activities and fire suppression policies enforced by regulatory agencies that have depleted old growth forests and limited cultural burning practices, resulting in increased fire risk, decreased water quality, and reduced plant and animal species abundance across tribal and surrounding lands.¹⁸⁴ “It has been huge to just try to adapt to the past 100 years of policies that have lead us to where we are today. We have already been forced to modify our traditional practices to fit the contemporary political context,” reports Tripp. In the past, the Karuk used low-intensity fires to promote more open forest growth for ecological productivity and resilience, but these traditional management practices have been nearly eliminated since the U.S. Forest Service implemented fire suppression policies in the 1930s.¹⁸⁵

On top of these detrimental forest management policies, the construction of a series of dams along the Klamath River by PacifiCorp has decreased access to salmon and other fish species that are central to the Karuk diet and culture, resulting in severely damaging environmental, cultural, and public health impacts.^{186,187} Discriminatory policies and regulations by regional, state, and federal agencies have also contributed to the Tribe’s environmental, economic, social, and health vulnerabilities.¹⁸⁸ The Karuk Tribe experiences high rates of poverty, unemployment, and chronic diseases,¹⁸⁹ fragmented lands, and limited tribal resources and infrastructure, all of which can impede their ability to cope with environmental and social stressors from climate change.¹⁹⁰

“OUR FOCUS IS ON CAPACITY AND BUILDING OUR PROGRAMMATIC INFRASTRUCTURE TO BE ABLE TO HANDLE THESE AND OTHER CHANGES. BEING ADAPTABLE TO CLIMATE CHANGE IS PART OF THAT, BUT PRIMARILY IT IS ABOUT ENABLING US TO MAINTAIN OUR IDENTITY AS A PEOPLE OF THIS PLACE IN PERPETUITY.”

- BILL TRIPP, KARUK TRIBE MEMBER AND ECOCULTURAL RESTORATION SPECIALIST

¹⁸³ California Natural Resources Agency. 2009. California Climate Adaptation Strategy. <http://www.climatechange.ca.gov/adaptation/>. Accessed 26 Aug 2011.

¹⁸⁴ Karuk Tribe. 2010. Eco-Cultural Resources Management Plan Draft. Department of Natural Resources. http://www.karuk.us/karuk2/images/docs/dnr/ECRMP_6-15-10_doc.pdf. Accessed 19 Jun 2012.

¹⁸⁵ Ibid.

¹⁸⁶ Salter, J. 2003. “White paper on behalf of the Karuk Tribe of California: A Context Statement Concerning the Effect of the Klamath Hydroelectric Project on Traditional Resource Uses and Cultural Patterns of the Karuk People Within the Klamath River Corridor.” <http://www.mkwc.org/publications/fisheries/Karuk%20White%20Paper.pdf> Accessed 20 Jun 2012.

¹⁸⁷ Reed, R. and Norgaard, K.M. 2010. “Salmon Feeds our People: Challenging Dams on the Klamath River.” In Walker Painemilla, K., Rylands, A. B., Woofter, A. and Hughes, C. (eds.). “Indigenous Peoples and Conservation: From Rights to Resource Management.” *Conservation International*, Arlington, VA. Pages 7-16. http://www.conservation.org/Documents/CI_ITPP_Indigenous_Peoples_and_Conservation_Rights_Resource_Management.pdf. Accessed 20 June 2012.

¹⁸⁸ Karuk Tribe. 2010. Eco-Cultural Resources Management Plan Draft. Department of Natural Resources. http://www.karuk.us/karuk2/images/docs/dnr/ECRMP_6-15-10_doc.pdf. Accessed 19 Jun 2012.

¹⁸⁹ Reed, R. & Norgaard, K.M. 2010. “Salmon Feeds our People: Challenging Dams on the Klamath River.” In Walker Painemilla, K., Rylands, A. B., Woofter, A. and Hughes, C. (eds.). “Indigenous Peoples and Conservation: From Rights to Resource Management.” *Conservation International*, Arlington, VA. Pages 7-16. http://www.conservation.org/Documents/CI_ITPP_Indigenous_Peoples_and_Conservation_Rights_Resource_Management.pdf. Accessed 20 June 2012.

¹⁹⁰ National Wildlife Federation. 2011. Facing the Storm: Indian Tribes, Climate-Induced Weather Extremes, and the Future for Indian Country. http://www4.nau.edu/tribalclimatechange/resources/docs/res_NWF_TribalLandsExtremeWeather.pdf. Accessed 20 Jun 2012.

However, the Karuk are not passive victims to these drastic environmental and cultural transformations. Instead, they are actively involved in creative problem-solving and adaptive management techniques. “Our focus is on capacity and building our programmatic infrastructure to be able to handle these and other changes. Being adaptable to climate change is part of that, but primarily it is about enabling us to maintain our identity as a people of this place in perpetuity,” describes Tripp. In 2010, the Karuk Natural Resource Department drafted an Eco-Cultural Resources Management Plan (hereafter referred to as “the Plan”), which aims to manage and restore “balanced ecological processes utilizing Traditional Ecological Knowledge supported by Western Science.”¹⁹¹ The Plan brings together diverse forms of information from tribal and academic sources to outline the historical context, current priorities, and future goals for the many interconnected issues¹⁹² affecting the Karuk Tribal Territory.

The traditional ways of life and ecological knowledge which the Karuk people aim to preserve against contemporary circumstances, climate change, or otherwise, are the same knowledges and wisdoms that make the Karuk Tribe among the most prepared to confront climate change impacts. The Plan includes more than twenty “Cultural Environmental Management Practices” that establish specific tribal priorities, resource objectives, and management indicators to guide an iterative process of assessment, implementation, evaluation, and monitoring of management practices within dynamic environments. “It is designed to be a living document,” explains Tripp. “We are building a process of comparative learning, based on the principals and practices of traditional ecological knowledge to revitalize culturally relevant information as passed through oral transmission and intergenerational observations.” The Karuk Tribe worldview incorporates the place-based spiritual and cultural philosophy of “World Renewal,” which re-affirms human-environment relationships that are compatible with interconnected ecological processes, sustainable economies, and ecosystem resilience.¹⁹³

Many of the Cultural Environmental Management Practices re-establish traditional burning practices to decrease fuel loads and decrease the risk for severe wildfires and their negative consequences when they do happen. “The practice of utilizing fire to manage resources in a traditional way not only improves the use quality of forest resources, it also builds and maintains resiliency in the ecological process of entire landscapes” explains Tripp. The Karuk tribe is collaborating with researchers from universities and public agencies so that their unique management practices can be used to inform quantitative models of environmental change and risk. Traditional Ecological Knowledge fills in crucial knowledge holes in current mainstream and academic understandings of climate change mitigation and adaptation approaches¹⁹⁴ and can systematically reduce taxpayer cost burdens by re-establishing land management practices that are more cost-effective than those currently promoted by public agencies.^{195,196}

¹⁹¹ Karuk Tribe. 2010. Eco-Cultural Resources Management Plan Draft. Department of Natural Resources. http://www.karuk.us/karuk2/images/docs/dnr/ECRMP_6-15-10_doc.pdf. Accessed 19 Jun 2012.

¹⁹² The Plan includes sections on air quality, cultural resources, environmental education, enforcement/regulation, environmental justice, fire/fuels reduction, fisheries, forestry, solid waste, soils/minerals, watershed restoration, water quality, and wildlife.

¹⁹³ Lake, F., Tripp, W., and Reed, R. 2010. “The Karuk Tribe, Planetary Stewardship, and World Renewal on the Middle Klamath River, California.” *Bulletin of the Ecological Society of America*. P. 142-149. http://www.fs.fed.us/psw/publications/lake/psw_2010_lake001.pdf

¹⁹⁴ Raygorodetsky, G. 2011. “Why Traditional Knowledge Holds the Key to Climate Change”. *United Nations University*. <http://unu.edu/articles/global-change-sustainable-development/why-traditional-knowledge-holds-the-key-to-climate-change>. Accessed 20 Jun 2012.

¹⁹⁵ Karuk Tribe. 2010. Eco-Cultural Resources Management Plan Draft. Department of Natural Resources. http://www.karuk.us/karuk2/images/docs/dnr/ECRMP_6-15-10_doc.pdf. Accessed 19 Jun 2012.

¹⁹⁶ For example, Bill Tripp reports that, “In the 1990’s, the Tribe began demonstrating practices that restore landscape resilience to disturbance. The fuels reduction treatments demonstrated averaged \$1,200 per acre, but achieve long term effectiveness, and set the stage to monitor ecosystem response for planning multiple entries. Compared to the costs of responding to fires in conjunction with conifer planting, hardwood release, and

Another set of Cultural Environmental Management Practices in the Plan build upon Traditional Ecological Knowledge regarding life cycle dynamics for fish species, such as salmon, that are crucial for Karuk food security and ecosystem health. For example, traditional management practices for fishing allowed the first salmon to pass to ensure that those first upstream migrants with the best chances for survival could reach the coldwater spawning grounds unimpeded. They also set time periods and locations where fishing could not occur to promote the optimal reproduction processes. “These practices are based on world renewal principals and are directly linked to the Karuk ceremonial observances and cultural identity. Today, regulatory agencies permit the harvest of fish that would otherwise be protected under traditional harvest management principles and close the harvest season when the fish least likely to reach the very upper river reaches are passing through,” reports Tripp. Traditional fisheries management practices and the removal of the many dams along the Klamath River would better-support the long-term resilience of the salmon, especially in light of rising temperatures and reduced river flows.

Full implementation, formal adoption, and Federal recognition of the Karuk Eco-Cultural Resource Management Plan have been impeded by regulatory barriers and budgetary constraints.¹⁹⁷ Thus far, the Karuk Tribe has relied on fragmented Federal grant funding to pursue portions of the Plan, but there is no long-term implementation funding for all of the Plan’s goals. The Karuk Tribe would ideally like to create a workforce development program that will improve their local capacity to realize their tribal management goals. For example, re-vitalizing, monitoring, and evaluating their cultural burning practices on a transforming landscape will require a well-trained workforce. Tripp reports that the Karuk Tribe continues to apply for funding to realize their unwavering mission to restore and preserve their tribal traditions and ecosystem.

Although the state’s key climate policy reviews scarcely mention Native peoples,^{198,199} Californians would greatly benefit from their traditional ecological knowledge and leadership. Climate change and resource management strategies should reflect the best available information, including that which can be derived from traditional knowledge, science, practice, and belief. A co-production of knowledge that respects and incorporates all forms of environmental understandings and adaptive practices can improve the Klamath Basin for the Karuk Tribe and all of California.

alteration of natural succession (ecological process and function) in areas that repeatedly burn, that are typically implemented by management agencies, the cost of maintaining resilience would be much cheaper using tribal practices in the long run. Though programmatic initial treatment costs may rise, they would be predictable, and the savings would be realized in reducing the cost of maintenance and need for emergency spending. Programmatic research and monitoring coupled with comparative analysis of these costs and benefits would undoubtedly show the importance of building programmatic tribal capacities for planning, implementation, research, monitoring, and identification of adaptation needs. Since the initial tribal demonstration, many state and federal agencies, non-governmental organizations, and private landowners, have enacted similar treatments and are enabled to do so, with the change in funding standard from \$300 to \$1,200 per acre.” (Email correspondence, 28 Jun 2012)

¹⁹⁷ The Karuk Eco-Cultural Resource Management Plan must go through a formal review process as mandated by the National Indian Forest Resources Management Act (NIFRMA) and the National Environmental Protection Act (NEPA)

¹⁹⁸ California Natural Resources Agency. 2009. California Climate Adaptation Strategy. <http://www.climatechange.ca.gov/adaptation/>. Accessed 26 Aug 2011.

¹⁹⁹ California Emergency Management Agency and National Resources Agency. 2012. California Climate Change Draft Adaptation Policy Guide. http://resources.ca.gov/climate_adaptation/local_government/adaptation_policy_guide.html. Accessed 14 June 2012.

TOWARD A JUST AND SUSTAINABLE CALIFORNIA

In a sustainable and equitable California, our communities would look very different: Our cities' countless trees and edible gardens would grow a new appreciation for, and ecological unity with, earth; industrial workers, workers of color, and immigrants would have jobs in safe environments, with living wages and without being forced to choose between an unsafe livelihood and unemployment; high-quality transportation systems would connect all neighborhoods regardless of who lives there and actually be a legitimate alternative to private automobiles; all people would be protected against the extraction, production and disposal of toxic waste; responsible land use practices would be the norm in every community, and all residents regardless of sex, color, or creed would be actively involved in civic life and decision-making processes that directly impact their lives. While this may sound like the quixotic and romantic principles of environmental justice, it's really part and parcel of the vision that drives the organizations in this report – and what will save us from the climate change crisis.

How do we reach this better future? The usual thought is to look to government agencies or to consider the comprehensive plans of traditional environmental organizations. We do not dispute that government is key – we have been among those who fought to preserve AB 32, the state's Global Warming Solutions Act, against the assault of oil companies. We also acknowledge that many of America's mainstream environmentalists have much to offer in terms of their commitment, resources, and policy approaches.

But we also think that another source of creativity has been overlooked: those grassroots leaders most directly facing the "climate gap." Confronting the disproportionate and immediate impact of climate change on their communities, these leaders have been forging a new set of visions and concrete actions that can move the state in the right direction. Indeed, the organizations profiled in these case studies are promoting adaption, working to decrease greenhouse gas emissions, tackling issues of mass transit, offering ways to promote both employment and a healthy environment, and working to restore natural ecosystems. Learning from these efforts is instructive for the state as a whole.

As noted in our introduction, our conversations with community leaders shone a light on five key lessons: (1) the value of promoting empowerment and engagement, something seen in communities planting trees, educating farmworkers, and sustaining local agriculture; (2) the need to incorporate community knowledge in policy design, something evident in our examples about land use planning and indigenous efforts to rebalance our relationship with the natural ecosystem; (3) the mutual importance of mitigation and adaptation, something seen in the green retrofit strategies and the efforts to forge a new approach to transit; (4) the importance of deriving concrete equity measures for climate change policy, such as "green zones" and local hiring thresholds; and (5) the need to collaborate across sectors and scale up as in the "just transition" efforts in Richmond and comprehensive climate policy efforts in Oakland.

Collaboration and scaling are key. In places where equity actors team up with environmental and other actors, there is often a broader consensus for change and bigger environmental wins. Consider the Los Angeles/Long Beach Ports where a labor-community-environmental coalition was able to unite workers, neighbors, and environmentalists to win important decreases in carbon (and other) emissions. While those in adjacent communities are looking forward to breathing easier (literally), the entire region should experience less pollution, and the Ports will contribute less to global warming. So, the work of organizations like those in this report has the potential to be a boom to all Californians.

Scaling means using local insights and community wisdom to derive new approaches to statewide policy. The California Environmental Justice Alliance (CEJA), for example, is worked to connect the benefits of solar power

with low-income communities of color. CEJA is promoted AB 1990, a measure written to create feed-in tariffs for about 1000 small scale projects (375 MW) between 2014 and 2020 as one part of a broader commitment to building 12,000 MW of new Renewable Distributed Generation (RDG). The bill proposed geographic targeting of these projects to disadvantaged communities on the grounds that such communities bear the brunt of environmental burdens and need utility bill relief as well as access to solar employment – and that without such targeting, the tariff would constitute a form of regressive taxation. Ultimately, the legislation could have provided ways to bring down the cost of solar so that small RDG systems would have been installed in all communities.²⁰⁰ However, the bill fell just short of passing the Senate in the summer of 2012, as a result of major state and national utilities mobilizing against it. Scaling policy also means scaling support to be able to overcome industry opposition.²⁰¹

Another set of bills – SB535 and AB1532 – were more successful. As mentioned earlier, both were signed by the governor, with AB 1532 setting up a process to allocate revenues from auctioning allowances and SB 535 requiring that at least a quarter of these auction revenues be invested in projects that provide benefits to disadvantaged communities and that ten percent be directly invested in projects in those communities. While advocates have been rightly concerned about the risks of cap and trade, the research above clearly demonstrates that there are innovative grassroots ideas on how to invest revenues regardless of what system generates them.

This is exactly the sort of approach that translates the long-term benefits of reducing greenhouse gas emissions to benefits that are immediate and concrete to California voters. This is also why incorporating co-pollutant reductions and green job promotion into any regulatory scheme is also so critical: a cooler planet may come in several decades, but clean air and a weekly paycheck are experienced right away. And such a blending of equity, economy, and the environment is what we will need as a state to continue political and policy momentum on the broader challenges of climate change.

There will be continuing fights about cap-and-trade in California and new and different tensions are likely to emerge as the changes in land use and transportation mandated under the AB 32's companion bill, SB 375 (the "Sustainable Communities and Climate Protection Act of 2008"), force the state's residents to make tough choices about how and where we live. California's progress may also be stymied by a lack of supportive action in Washington, particularly given the rightward drift (or perhaps we should say lurch) of national politics.

Our simple point here is that that we can build a new approach to climate change from the bottom as well from as the top, from the collaborations of communities as well as from the politics of policymakers. Individually, the grassroots organizations we have profiled are often campaigning on specific issues, such as high asthma rates, lack of trees, un- and under-employment, and inadequate mass transit. Collectively, they are forging solutions for the climate crisis while often delivering immediate improvements to public health – now, locally, and for all of us. By incorporating the concerns, insights and strategies of those communities most directly facing the climate gap, California can continue to lead on protecting the planet for generations to come.

²⁰⁰ For more on AB1990, see here: <http://caleja.org/wp-content/uploads/2012/01/Solar-For-All-Fact-Sheet-v10.pdf> ; http://caleja.org/wp-content/uploads/2012/01/CEJA_DG_Values.pdf ; <http://www.sustainablebusiness.com/index.cfm/go/news.display/id/23748> ; http://caleja.org/wp-content/uploads/2012/01/SmallScaleRDGfitProposal_FINALv4.pdf.

²⁰¹ "CEJA and Allies Fight Hard for Solar for All," California Environmental Justice Alliance, 7 September 2012, Web 18 Sept 2012 <http://caleja.org/2012/09/ceja-and-allies-fight-hard-for-solar-for-all>

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