

# Creating a Roadmap for Change: Design Thinking to Make California's Carbon Credit Work for Underserved Communities

**R. TODD FERRY**

Portland State University

**SERGIO PALLERONI**

Portland State University

**In the spring of 2014, the Center for Public Interest Design (CPID) was approached by the Sacramento Area Council of Governments to begin the process of exploring how public interest design could be used to address the needs of some of Sacramento's most disinvested and environmentally impacted neighborhoods. This collaboration began at a crucial time, as California was in the process of implementing the first Cap and Trade legislation in the country. A significant percentage of funds collected through the sale of carbon tax credits associated with this legislation are required to be invested in disadvantaged communities. This case study examines the potential for design to play a role in identifying investment opportunities to create healthier communities through the CPID's work with students in Sacramento.**

## CONTEXT

The Center for Public Interest Design (CPID) is a research, education, and community design center whose mission is to investigate, promote, and engage in inclusive design practices that address the growing needs of underserved communities worldwide through sustainable methods. Based in the Portland State University (PSU) School of Architecture, the CPID fosters opportunities for transdisciplinary collaboration among faculty, professionals, community members, and students. CPID faculty Todd Ferry, Sergio Palleroni, and BD Wortham-Galvin began working with the Sacramento Area Council of Governments (SACOG) in the Spring of 2014 to begin the process of exploring how public interest design can be used to address the needs of some of Sacramento's most disinvested neighborhoods. The goal was to use the power of design to promote healthier and more equitable places and people.

Immediately prior to the CPID beginning its research and building its relationship with potential collaborators, there was an ad campaign emphasizing the disparate life expectancy of Californians based on

where they live within the state. The campaign was an effort of the California Endowment, a nonprofit focused on improving the health of Californians, to raise awareness about inequality in the state.<sup>1</sup> The billboards and print ads compared two different places, providing a zip code and average age of death in each, accompanied by the question, "Did you know your zip code is a better predictor of your life expectancy than your genetic code?"<sup>2</sup> This provocative question is supported by research that substantial differences of as much as a decade or more in life expectancy can be found in areas just a few miles from one another, including in Sacramento.

This revelation about zip codes as predictors of health underscores unsettling realities of our growing income inequality in the US, and was highlighted in a report published by the American Human Development Project titled *A Portrait of California 2011* (Burd-Sharps and Lewis, 2011).<sup>3</sup> This report uses the American Human Development Index to provide a framework by which to evaluate the success of a population outside of conventional monetary-based metrics, such as GDP. While health is just one of three major categories in the human development index, the others, access to knowledge and standard of living, have a direct impact on health outcomes. These collectively indicate that one's zip code is indeed a primary determinant of health.<sup>4</sup>

While extreme inequities underscored in the report due to factors such as race and ethnicity, gender, nativity, and geography impacting the socio-economic and environmental conditions were disheartening, Californians concerned with social justice were finding new cause for cautious optimism. In 2012, the Legislature passed Senate Bill 535 and Assembly Bill 1532, requiring State and local agencies to invest in and improve disadvantaged communities using funds from the Greenhouse Gas Reduction Fund (GGRF). Commonly known as cap and trade strategies, this program places a limit, or cap, on greenhouse gas emissions by issuing a limited number of emission allowances (equal to the limit that will be reduced progressively) to sources responsible for 85 percent of the total emissions in California. The California Air Resources Board now conducts quarterly auctions for available allowances, with revenues from these auctions collected in the GGRF.



Figure 1: Designs for bus stops that can double as micro community centers.

Of the several billion dollars in annual proceeds from this initiative, this legislation states that a minimum of 25 percent of proceeds is required to go to projects that *benefit* disadvantaged communities, with at least 10 percent of the total funds supporting projects located *within* disadvantaged communities. (In 2015, it was reported that 39% of all projects and \$356M were dedicated to disadvantaged communities).<sup>5</sup> The goal of the funds are to improve public health, quality of life, and economic opportunity in California’s most environmentally impacted communities, while at the same time reducing pollution that causes climate change. While the state had designated funding for disadvantaged communities in 2012, it wasn’t until 2014 that the California Environmental Protection Agency (CalEPA) fully defined what constituted a disadvantaged community for these purposes.

CalEPA created the CalEnviroScreen 2.0 tool to inform their process of identifying disadvantaged communities by using a “science-based method for evaluating multiple pollution sources in a community while accounting for a community’s vulnerability to pollution’s adverse effects (CalEPA, 2014).”<sup>6</sup> Like the Human Development Index, the CalEnviroScreen tool acknowledges that traditional metrics of evaluating environmental health impacts are often insufficient to tell the whole story, and socio-economic factors and other considerations were included in the evaluation made up of 19 individual indicators. This is a significant step in considering public health. As is noted in the report, “Existing research on environmental pollutants and health risk has consistently identified socioeconomic and sensitivity factors as ‘effect modifiers.’ For example, numerous studies on the health effects of particulate air pollution have found that low socioeconomic status is associated with about a 3-fold increased risk of morbidity or mortality for a given level of particulate pollution (Samet and White, 2004).”<sup>7</sup> The CalEnviroScreen tool provides a clear means to identify disadvantaged communities eligible for investment of cap and trade proceeds to begin addressing some of the inequities and determinants of health based on zip code outlined in A Portrait of California.

The driving question for the faculty and students at the Center for Public Interest Design entering this complex context was, “Is there a role for design to play in the creation of healthier communities through a participatory process that identifies opportunities and provides visions for strategic investment in Sacramento’s underserved communities?”

#### ON THE GROUND

CPID and SACOG began their collaboration in the spring of 2014 with a listening tour, meeting with stakeholders and community leaders in Sacramento’s most disadvantaged communities. Following an intensive period of research, stakeholder meetings, and site visits, the team identified two ideal community partners in the neighborhoods of Del Paso Heights and South Sacramento. The community organizations in these neighborhoods (Mutual Assistance Network in Del Paso Heights and La Familia in South Sacramento) had incredible leadership, the trust of their communities, and the desire to pursue projects together, all qualities needed to support a successful effort.

The two neighborhoods differ from one another significantly enough in demographics, geography within the city, and specific concerns, while sharing similar challenges like, lack of education, underemployment, and violence, that together they can inform design systems that are flexible and able to be employed in a range of neighborhoods throughout the city. South Sacramento is predominantly Latino, while Del Paso Heights has a larger percentage of African American and Asian American citizens. A goal of developing potential design systems within these neighborhoods would certainly have to reflect the cultural richness in these areas and not simply propose a generic one-size-fits-all solution.

CPID faculty developed a series of strategies for engaging the community and approaching the issues that emerged as being most crucial to addressing environmental and economic marginalization they suffered. This framework established a method of:

- Multi-stakeholder participation through an open, transparent, and iterative design process.



Figure 2: PSU Architecture student with engagement tool and community members at Del Paso Heights Harvest Festival.

- Integration of physical, social, environmental, and economic strategies in single interventions, recognizing a need to think beyond individual structures to include design of programs, processes, and enterprises with the help of a multi-disciplinary team.
- Networked interventions of small-scale projects as catalysts and strategic elements to inform larger community goals.

These strategies were brought into studios at PSU's School of Architecture in the fall of 2014 where three studios were taught concurrently by project faculty. Two of the studios consisted of fourth year undergraduates and one was made up of graduate students, resulting in a total of 45 students working on the initiative. Students had the opportunity to travel to Sacramento and meet with community leaders, government officials, and project stakeholders before beginning the process of proposing design responses. A series of mapping exercises documented assets and challenges in the neighborhoods, informed by community engagement activities. In Del Paso Heights, for example, students set up engagement tools aimed at understanding and documenting community hopes and concerns at the neighborhood's annual Harvest Festival (the most well-attended community event of the year), a tradition the CPID has continued in subsequent years.

## DESIGN

The design responses in this first studio ranged from transportation systems to allow communities to better connect to needs, to recreation centers and business incubators, to street improvements and systems of occupying vacant lots with pop-up shops. Ultimately, the

project partners have chosen to move forward with several strategic ideas that were developed in the studios, including the design of a series of bus stops which explored the possibility that a bus stop could double as a micro community center. The bus stops seek to take advantage of funding available for transportation systems through cap and trade proceeds, while responding to community desires for spaces and amenities that might not yet be achievable at a larger scale. For example, one early bus stop proposal by PSU graduate student, Nicole De Jong, envisioned a core bus shelter that remained in place while a metal screen shell extends to create a secondary space of equal size to be programmed by the community, such as a place for local entrepreneurs to sell food and crafts, an outdoor classroom for a local youth group, or a safe gathering space (see figure 3). We see this approach as a strategic way to begin working with community members on specific interventions that can serve as a proof of concept for other investment.

Following these initial design studios, CPID staff, students, and interns have continued to explore opportunities for design to play a role on a variety of scales, including further developing concepts for tactical bus stops. The design strategies for the bus stops emphasize a fully participatory process with the community, and have ranged from a kit of parts that allow the community to choose the elements they would like in their neighborhood, to a system of building the stops with the community using reclaimed materials found within the area. The bus stops address issues of safety, environmental impact through increasing choice ridership of public transportation, enhancing community identity, and responding to the need for various community amenities. While we are developing a system for dozens of these bus shelters to be designed, funded, and built, we imagine that no two will be the same, reflecting the unique needs and character of each community. A significant reason for this is that the system the CPID is proposing empowers the community to take control of the project for themselves.

The CPID is in the process of designing the first bus stop with stakeholders in Del Paso Heights, which will be completed by the summer of 2017. This stop will be placed on the site of another design studio investigation the CPID has conducted as part of this process, the creation of a competitive sports park in the area. The Del Paso Heights Sports Center (DPHSC) will serve as an economic generator by becoming a destination for hundreds of Californians outside of the neighborhood each weekend, and provide the valuable community amenity of a healthy and safe recreational facility that is desperately needed in the area. The bus stop will respond to community desire in its design while expressing the programmatic link of the DPHSC and the new Sacramento King's basketball arena downtown that are connected by the transit line.

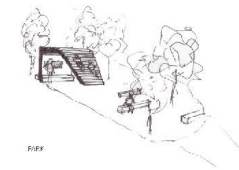
This first bus stop will test the larger system developed by the CPID, including the tools it has created to enable this process; a comprehensive manual that empowers communities to create their own transit stops, and an online tool that will provide opportunities for ongoing feedback about community desires, challenges, and opportunities, while documenting community needs to help stakeholders

## COMMUNITY PROCESS: PROGRAM SELECTION



PROGRAM SELECTION

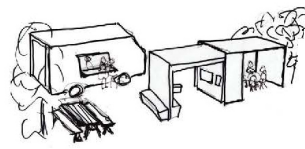
The neighborhood community is the expert on what types of programs would best serve the residents and the type of design that will best reflect the neighborhood. The intent is that the community drives the development of the Oasis Stops through a series of workshops with local residents. The workshops offer the residents a voice in choosing the program of each Oasis Stop as well as the physical aesthetics of each given Oasis Stop. In addition these workshops offer potential funding and service partners an opportunity to interact with the people that they are hoping to serve.



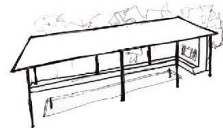
FIX



LEARNING LIBRARY



FOOD TRUCK

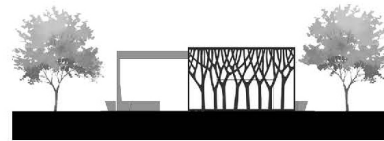
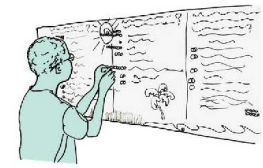


WORKSPACES

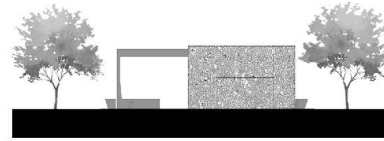
## COMMUNITY PROCESS: SCREEN DESIGN



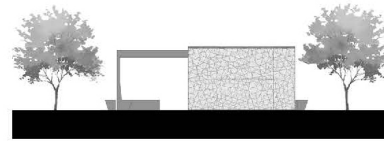
COMMUNITY PARTNERSHIPS



ORIGINAL ARTWORK



MAP OF NEIGHBORHOOD



PATTERN

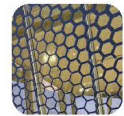


Figure 3: A diagram of participatory bus stop design (Nicole De Jong).

advocate for change. The online tool stems from the innovative work of Madrid-based design firm Ecosistema Urbano who have created participatory web-based platforms for a “networked design” approach on projects like Dream Hamar in Norway (Ecosistema Urbano, 2012). The firm has helped the CPID adapt one of these web-based tools for use in Sacramento, called With Sacramento. Consistent with the CPID’s practice, the tools and systems developed during this process are intended to be expanded throughout Sacramento and beyond if proven to be successful.

## CONCLUSION

The Center for Public Interest Design’s work in Sacramento represents an early investigation into how designers might intersect with government agencies and community organizations to identify opportunities for strategic projects in disadvantaged communities funded through legislative initiatives. By working with stakeholders, the CPID has been able to propose interventions that amplify community voice in an effort to improve community and environmental health. By incorporating the work into architecture studios, students have learned to become more conscientious designers by involving the community in the process. The type of legislation being leveraged represents a significant opportunity for designers to apply their skills toward positive social impact in underserved communities. The approach of the CPID has been extremely well-received in the area, and the Center is expanding its role in Sacramento through a partnership with Sacramento Regional Transit on the design of several light rail stations in underserved communities. While working with

governmental organizations to identify opportunities for projects in historically marginalized communities made possible by funding available through complex legislation is not without its challenges, there is a significant need for designers to contribute to the process in order to make healthier places and people. When major developments in policy present themselves in situations like the creation of California’s massive cap and trade program, designers need to be ready to use the power of design to ensure that the ensuing investments from these policy changes are made with meaningful vision, intent, and the co-authorship of stakeholders whose lives these investments will impact.

## ENDNOTES

1. The California Endowment created a web tool that allows Californians to enter their zip code and see the average life expectancy in their area. That tool can be accessed here: [www.calendow.org/news/your-zip-code-lifetime](http://www.calendow.org/news/your-zip-code-lifetime)
2. A 2012 article by Deborah Schoch for USC’s Center for Health Reporting covers this campaign in more depth. <http://centerforhealthreporting.org/blog/tale-two-cities-and-two-life-expectancies>
3. Burd-Sharps, Sarah and Kristen Lewis. A Portrait of California: California Human Development Report 2011. American Human Development Council, 2011.
4. This concept of zip codes as determinants of health is by no means isolated to California. A 2015 New York Times article by Sabine Tavenise and Albert Sun, “Same City, But Very Different Life Spans,” discusses the phenomenon and provides infographics for several cities.
5. From the California Climate Investments 2016 Annual Report.
6. CalEPA. *California Communities Environmental Health Screening Tool, Version 2.0 (CALENVIROSCREEN 2.0)*, 2014.
7. Ibid.